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and
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Conference on

**ASYMMETRIES IN GLOBALIZATION:
OPPORTUNITIES AND RISKS**

PROCEEDINGS OF SELECTED PAPERS

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PREFACE

We are pleased to present the collection of revised versions of most of the papers presented to the Athenian Policy Forum/Loyola University Chicago Conference on January 4, 2007. The organizers of this Conference acknowledge with gratitude both the financial support and encouragement of Dean Abol Jalilvand and the School of Business Administration of Loyola University Chicago. We also thank the 40 conference participants for attending and presenting their work and all authors and co-authors for submitting revised versions included in this volume.

The proceedings also include four papers presented earlier at the Athenian Policy Forum/Universidad Nacional Autonoma de Mexico, organized jointly by Professors Alicia Giron and Eugenia Correa during April 21-23, 2005 in Mexico City, Mexico. We thank Professors Giron and Correa for allowing the editors to include these papers to the current volume of proceedings.

Co-editor Mary Malliaris has produced this electronic version of the proceedings.

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ASYMMETRIES IN THE AMERICAS AND THE QUEST FOR UNITY

Rosario Green*

Introduction

Let me begin by referring to the short but brilliant book by Felipe Fernandez-Armesto, published in 2003 under the title, **The Americas: the History of a Hemisphere**, which was considered by its editorial house, Weidenfeld and Nicolson, as “the first history to be written of the Americas as a whole.”

In his text the author contends that in spite of the fact that the whole hemisphere or the Americas, as I will refer to it in my lecture, was once “the new world” pure and simple, like Europe today is “a Humpty Dumpty” hemisphere that has to be reconstructed. The question is, I believe, how we go about it, considering that as important as the knowledge of history is the examination of the present is vital if we are going to be able to plan any future at all.

That is the scope of what I intend to do in the time that I have at my disposal: to go from the American singularity of the past, to its present multiplicity and diversity, in order to begin exploring if there is any chance of passing to the new generations at least a hint of a “united Americas.”

1. From the past

As Fernandez -Armesto so well states in his book, “America possessed unity and integrity of a sort long before it was well delineated.” The origin of its name goes to Amerigo Vespucci wrongly reporting as “America” the coastlands of what are now Venezuela, Guiana and Brazil. The name stuck regardless of the fact that it was Columbus who actually discovered the territory that could rightly be called America. In fact, the lands now politically delineated as Mexico and the Central American and Andean countries had seen the rise of very important civilizations such as the Olmec, Mayan, Incan, and Aztec to mention the more relevant. Curiously enough, the northern region of the Americas was either deserted or populated by nomad tribes that left almost no traces.

The discovery of America by Spain and Portugal, two countries that were in many ways less developed or at least less sophisticated than the civilizations they took over but did not appreciate, meant a very harsh conquest. Such a conquest brought exploitation and destruction, together with five centuries of colonization and domination. It nourished, however, a moment of glory: independence.

By having gone to Europe and by being in touch with revolutionary ideas in the Old World, heroes such as Bolivar, San Martin, Hidalgo, Morelos and many more, were able to dream about freedom and began fighting for it by the early eighteen hundreds. By mid

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century however, an independent Latin America was still struggling to define its fate as much as to protect its sovereignty.

In the northern part of the hemisphere, independence had come earlier and from that moment on, the tendency to expand either through war or commercial transactions became the way to construct a new empire in the Americas. Therefore, if what Fernandez-Armesto calls “gringo privilege” is clearly a product of history and not of fate, it can be either reverted or cancelled. It can also be put to work constructively in favor of a greater community. But that is talking about the future too early in my presentation.

Independence in the Americas meant freedom but also the destruction of its singularity through multiplication, fragmentation and confrontation of all sorts. Not only had the cosmographers drawn a map separating North from Central and South America, but also a very significant division was established on the basis of cultural roots and faith. The idea of a Latin America stemmed from its Ibero origin as well as the Catholic religion. The United States on its part, took the name of America for itself and, as a consequence, a bad feeling began to develop: in time Latinos would hate gringos, in time as well gringos would fear Latinos.

By that, I do not mean to say that Americans and Latin Americans hate or fear each other all of the time, but even public opinion polls such as the ones put forward by the Chilean organization *Latinobarómetro* show a growing anti-American feeling among Latin Americans, reflecting mainly their dislike *vis-à-vis* certain aspects of US foreign policy. No one better describes the conflicting feelings of love and hate that Latinos have for gringos than the Mexican Nobel Prize winner Octavio Paz, when he says that we love the American way of life but hate the imperial behavior of its government.

Probably what Latinos resent the most from Americans is what they consider their abandonment. In fact, somehow they feel orphans of a father that even though as early as 1823 through the so-called Monroe Doctrine claimed “America for the Americans”, was not only unable to protect them from invasion from extra-regional powers, but eventually became the invader itself. Frustration was even greater as history showed, in many occasions, the unwillingness of an already powerful United States to come to the rescue of the Latin American countries.

Some examples of the eternal postponement of Latin American expectations for assistance in the agenda of US foreign policy are the following. Immediately after the conclusion of the Second World War, Latin American countries anticipated financial aid from the United States to support development efforts, as a way of recognizing their siding with the Allies during the conflict. It did not happen. Instead, all financial assistance was channeled to Europe through the Marshal Plan in order to secure its reconstruction. Even when the Old World was back on its feet, Latin America did not appear on the US radar. Development support was addressed mostly to Asia in fear of the spread of international communism. When the Berlin Wall came down in 1989 Latin America still stood waiting. The transit from centrally planned economies to market-oriented ones absorbed all the financial resources available for developmental purposes.

However, when the European Union stepped in to take over much of the responsibility for the transformation of Eastern Europe, hopes for Latin American development efforts being assisted by US financial resources took force again. Furthermore, there had already been a statement by the then US President George Bush Sr. entitled “Initiative for the Americas” that called for a strong policy of cooperation

with Latin America. Unfortunately, the Gulf War postponed the project and Bush lost his re-election. The new President, the democrat Bill Clinton, liked the idea of a *rapprochement* between the US and Latin America; so the Summit of the Americas was born in Miami in 1994. The commitment was to establish by the year 2005 a Free Trade Area of the Americas (FTAA) comprising the 800 million people living between Alaska and Tierra del Fuego, a proposal unanimously adopted by the 34 participating countries (all of the Americas except for Cuba). Although progress was slow, when six years later George Bush Jr. took over the US Presidency, he joyfully received the Miami legacy: he could fulfill his fathers' dream, and, therefore, presented himself as "an American president with a Latin American agenda." The possibility for the region to finally become a US priority was never more feasible. Bush would even receive from the Congress the authority to negotiate trade agreements *à la* "fast track". Once more, however, fate stepped in. The terrorist attacks on September 11th 2001 changed the scenario. From then on, fighting terrorism became the only priority of US foreign policy and Latin America was again put on hold.

But besides this lack of constancy and achievement of southern hopes by the northern neighbor, there is still another matter of deep resentment in the hearts of many Latin Americans with respect to the United States. It has to do not only with the frequent insensitive ways American authorities as well as civilians, deal with undocumented migrant workers coming from our countries in search of better opportunities in the United States, but also with the fact that there is even a trend of thought among some intellectuals such as Samuel Huntington, that advertises that Latino is a synonym for danger. This is particularly serious not only because Huntington is a professor that influences the minds of those young persons who eventually will lead the country, but also because the horror that happened on September 11th seems to have given him certain authority. After all, when he published his work **The Clash of Civilizations (Foreign Affairs**, summer 1993), he claimed that in the new phase world politics had entered after the end of the Cold War, "the great division among human kind and the dominating source of conflict would be cultural." And when he went on to say that "the next world war, if there is one, will be a war between civilizations", agreeing with Indian author Akbar, that such a confrontation was definitely going to come from the Muslim world, he became the obliged reference when discussing September 11th. Later on, Huntington became a name that Latin Americans do not wish to be linked to.

In his article **The Hispanic Challenge (Foreign Policy**, March/April 2004), Samuel Huntington contends that the US confronts a new peril: its division into two peoples, two cultures and two languages through the constant penetration of Hispanic immigrants. He warns that the Latinos who are legally or illegally in the United States, with the exceptions of Cubans who fled the island to build an international Miami, by refusing to speak English all the time, by not subscribing to the protestant faith and by reproducing at a higher rate than Americans from a European or an African origin, would eventually erode the foundations of the US society, and even its credo. They have, therefore, to be feared.

Huntington worries mostly about what he calls the new Mexican immigration which according to him "differs from past immigration and most other contemporary immigration due to a combination of six factors":

- Contiguity: Mexicans have only to cross the border.

- **Scale:** In the nineties Mexicans composed more than half of the Latin American immigrants to the USA.
- **Illegality:** In the year 2000 almost five million undocumented Mexicans entered the United States, accounting for nearly 70% percent of illegal immigration.
- **Regional Concentration:** In that same year, nearly two thirds of Mexican immigrants lived in the West and virtually half of them in California.
- **Persistence:** Mexican immigration will not subside unless the country grows at a rate greatly exceeding that of the United States.
- **Historical Presence:** Almost all of Texas, New Mexico, Arizona, California, Nevada and Utah were part of Mexico until 1848.

2. The present

Unfortunately, divisions in the Americas are not only those already described between the United States and Latin American countries. We have also our own history of conflict and asymmetries. Even in Central America, composed of five nations of similar size that at one point had joined together in a Federation, the efforts beginning in 1960 in order to build a common market were seriously damaged nine years later by the so-called football war between Honduras and El Salvador. Presently, despite the conflict being solved, relations between those two countries are fragile, as fragile is the peace reached in the latter as well as in Guatemala.

In the Andean region the situation is not so different. In spite of the similarities among the countries that constitute the Community of Andean Nations, the conflict between Chile and Bolivia regarding sea access for the latter resulted in the first abandoning the economic integration scheme. There are still no diplomatic relations between the two countries. Furthermore, although the border difficulties between Peru and Ecuador were solved by the Rio Treaty, a couple of years ago new disputes arose showing the frailty of the balance in that area.

For their part, the four countries that in 1991 decided to begin constructing a common market of the south (MERCOSUR), have been so far unable to take the necessary steps conducive to the establishment of a custom union, and the permanent controversies between its two most important members, Argentina and Brazil, threaten to slow down their economic integration process even more.

When last year all the South American countries gathered in Cusco, Peru, determined to launch a Community of Southern Nations, several aspects were seriously overlooked: the territorial conflicts I have referred to, the asymmetries among its member states, and their very different positions with respect to two extremely relevant issues: the FTAA and the bilateral trade agreements with the United States. Another aspect was also unaccounted for: purposely or not, Mexico had been excluded from such a community, and so had been Central America. Experts have offered different explanations. In the case of Central America, they agree that its absence was probably due to a lack of interest of both parties. In the case of Mexico, it's another story. Some argue that the absence of Mexico has to do with a position commonly attributed to Brazil that says that Mexico is no longer part of Latin America having chosen to associate itself with the north. Others are kinder and justify such exclusion referring either to distance or to the fact that Mexico never conducted much trade with the south. Whatever the case, two things are clear: on

the one hand, there will be no FTAA in the year 2005 as originally planned. On the other hand, it would indeed be much better for Latin America to overcome rivalries, jealousies, conflicts and confrontations in order to join forces to help the region conquer its asymmetries and stand stronger in its negotiations not only with the United States, but with the rest of the world as well.

3. Towards the future

A Free Trade Area for the Americas is not a bad idea, but the way it has been presented is certainly insufficient. A NAFTA plus, meaning a mere extension of the North American Free Trade Agreement between Mexico, the United States and Canada to the rest of the Americas, not only is not enough, but also is totally unfeasible. Unless asymmetries among its components are tackled, rhetoric about a “united Americas” will prevail over real actions towards its construction.

Right after the conclusion of the second World War, an old European aspiration, possibly linked to what the 13 colonies had done in North America as early as 1776 and which led to the formation of the United States of America, took new impetus as a way to prevent Europe from ever again falling victim to the scourge of war. In September 19, 1946 Winston Churchill delivered a speech at the University of Zürich calling for a “united States of Europe”, but the real creation of what today constitutes the European Union began in 1951 with the European Coal and Steel Community (ECSC), composed of six countries: the three in Benelux plus Germany, France and Italy. Its purpose was to pool the steel and coal resources of the member states, but deep down such a move meant both reconciliation and commitment to prevent another European war by those who had been enemies for a very long time. The idea of an ECSC which has always been attributed, and justly so, to a French civil servant Jean Monnet although it was publicly presented by the French Foreign Minister Robert Schuman, became the best example of what the will of sovereign states can achieve not only for peace but also for development.

This is not the occasion to delve into a long analysis of the European struggle to integrate, both economically and politically, but it is indeed a great opportunity to put forward a wish, a hope, that the Americas will some day be able to create the American Community, maybe not following step by step what the Europeans did, but learning from some of their experiences.

After trying first some defense and political union efforts that failed, Europeans decided to concentrate for a while on economics. Through the Treaty of Rome (1957), the six founding members established the European Economic Community (EEC) in order to set a customs union pursuing the “four freedoms”, meaning the elimination of restrictions to movement of goods, services, capital and people among its participants.

The success of those efforts brought the European Community (EC), formerly known as the EEC, to enlarge itself for the first time in 1973 adding the UK, Ireland, and Denmark, giving birth to the “Europe of the nine.” This gathering would become the “Europe of the twelve” in the eighties with its second enlargement and the addition of Greece, Spain and Portugal. At that time a very important decision was also adopted. If uncontrolled migration to the richer nations from the poorer ones was to be avoided, development had to be encouraged in the latter. The “cohesion and structure funds” were designed to help the least developed regions within the European Community to achieve progress and close the gaps, so those three new members found it easier to merge.

In 1992 the Maastricht Treaty changed the name of the EC to that of European Union (EU), and three years later its fourth enlargement brought Austria, Finland and Sweden into its realm, creating the “Europe of the fifteen”, which last year went through its fifth enlargement, incorporating 10 new members from Eastern Europe and therefore becoming the most important economic block of countries on Earth.

Along the more than half a century in which the European integration process has been taking shape, many institutions have been built making this exercise one that is not only economic but also political, as initially intended. The European Union is a common market, but it is as well and has been so since the beginning, a European Atomic Energy Community, it contains also a European Parliament, a European Court, a European Commission of Human Rights, a common foreign and security policy, a quasi-common currency, and even a Constitution that is being discussed and adopted at the national level of its member states.

But what I would like to stress, however, it is not so much what the Europeans have accomplished, but rather the long road that the Americas would have to tread if the goal is not a “soft NAFTA” as it has already been stated, but a true block of countries, united by common interests and capable of competing in a world where such formations would be common or where countries as big as China would be fully participating.

When in 1826 Simon Bolivar convened the Panama Congress, he hoped that given the fact that the United States had achieved independence half a century before and the rest of the Americas was consolidating its own, it was time to begin building the “united Americas” that he had dreamed about. Difficulties of all sorts besides distance, proved to be greater than imaginings and Bolivar had to abandon his thoughts for post-independence unity. He had tried, he confessed before dying, to “plough the sea.” Even if the Latin Americans were independent, intestine wars did not subside until the second part of the eighteenth century. Meanwhile, the United States paid little attention to the world, cultivating isolationism more than participation, engaged as it was in expanding and defining its own borders.

As Fernandez-Armesto says, in Spanish America “the independence wars [and I would add the civil wars that followed] were, in short, the making of the United States and the ruin of much of the rest of the Americas ... To fight the wars, all the affected states had to sacrifice liberties to *caudillismo* and civil values to militarism. In most states the army inherited the only political legitimacy left by the wars; those who had won independence became its guardians. The founding constitutions echoed the enlightened rhetoric and sometimes, indeed copied the very words of the US Declaration of Independence and Constitution. But they had no opportunity to register the same effects. In cauldrons of war the ingredients of successful state making sometimes coagulate, but the longer the wars go on, the less likely the outcome. In most of the Americas in the era of independence, the pacification of society, the demythification of the leader, the submission of government to the constitution and the rule of law simply could not happen. People in the Americas often speak of the chaotic politics, democratic immaturity, and economic torpor of Latin American tradition as if they were an atavistic curse, a genetic defect, a Latin legacy. Really, like everything else in history, they are product of circumstances, and of the circumstances, in particular, in which independence was won.”

Almost two centuries later we have to ask ourselves if it is possible to go back to the days when dreams like the Bolivarian one were dreamt. In other words, do the Americas have a feasible common future? Does it depend only on the strongest country in the hemisphere? Would it have to be the result of either yielding or confronting? Can we not agree on a project to which all of us contribute not only with speeches and ideas, but also with financial resources? Is it not a wise popular saying that advises us to put our money where our mouth is? Can we not learn from the European experience the importance of closing gaps between regions while economically integrating? Are we not able to create our structure funds, our cohesion funds? How real is our desire to integrate? How deep is our commitment to economic integration? How difficult is it for the thirty-five countries of the Americas (including Cuba) to understand and defend the idea that “political stability could be a building block of economic prosperity and improved quality of life”? What would it take all of us to contribute to the implementation of such an idea? I guess the true question is: can the Americas become one?

Conclusions

By putting upfront all those issues, we should not beg the very important question of asymmetries. It is a fact that the Americas is profoundly marked from north to south and east to west with deep asymmetries, which are the result not only of huge socio-economic disparities, but also of the different capacities of its countries and regions participating in economic integration agreements to solve the problems of coherence among the commitments taken on by each nation in its various spheres of foreign policy.

It is also a fact that in spite of all the progress made in regards to economic growth during the nineties, very few countries have indicated even modest progress in the reduction of poverty and high levels of inequality not only persist, but have tended to worsen, even in the cases of those countries with the highest growth rate in the region which by the way, has the worst distribution of wealth indicators in the world. It has not been possible either to reduce unemployment or improve the quality of jobs, and the United States and Canada can easily be thrown together with the Latin American countries when discussing this particular issue.

It is also well known that there is very little, if any, macroeconomic coordination among the countries involved in the different integration agreements and this is even true of NAFTA in general terms. Such a lack of coordination is dangerous because the progress made so far in terms of investments and trade liberalization is leading to a high degree of economic interdependence, and countries are becoming more vulnerable to the problems of other economies. Memories of the so-called “tequila effect” on the Latin American countries are still fresh as much as the quickness with which the US administration assisted Mexico at the end of 1994, because it was already a partner in NAFTA, but was very slow coming to the rescue of Argentina, for example.

When discussing asymmetries, something must be said also about the enormous deficiencies that Latin America has in terms of infrastructure for communications and transportation. There is some hope, however, involved in two specific projects: one in the northern part of the Latin American region, called the Puebla-Panama Plan, promoted by Mexico and adopted by Central America, seeking to develop infrastructure and production activities in an area where economic instability has always been accompanied

by political instability. And the other in the southern part of our region, integrated in the so-called Community of Southern Nations that seeks the building up of better ways to connect locations and people as well as making natural resources accessible to one another (e.g., roads, railways, ports, dams, pipelines). Two things seem to be lacking however, the link between the two projects in order to create a true economic space, and the funds to finance both, the projects and the link. That and not a NAFTA plus is what is needed if a “united Americas” is to be born.

NAFTA: PAST, PRESENT AND FUTURE

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Abstract. The North American Free Trade Agreement (NAFTA) – an extension of the Free Trade Agreement (FTA) between Canada and USA to include Mexico – went into effect on January 1, 1994, primarily as an agreement to eliminate restrictions on trade and investment over the course of twelve years. NAFTA is a trade agreement and after twelve years remains as such with limited prospects, if any, of widening or deepening the integration process. Despite its narrow scope, the agreement became, from the start, controversial – and continues to be so – not only for trade and investment matters but for a whole host of other related issues. The other related issues include: the dispute settlement mechanism and side agreements on labor and environmental issues.

JEL Classification: F03, F15, F31

Keywords: North American Free Trade Agreement, NAFTA, Canada, Mexico, United States, trade, investment, agricultural integration, monetary integration.

1. Introduction

“Put simply, NAFTA has been neither the disaster its opponents predicted nor the savior hailed by its supporters” Audley J, (2003, p. 7)

The North American Free Trade Agreement (NAFTA) – an extension of the Free Trade Agreement (FTA) between Canada and USA to include Mexico – went into effect on January 1, 1994, primarily as an agreement to eliminate restrictions on trade and investment over the course of twelve years. NAFTA is a trade agreement and after thirteen years remains as such with limited prospects, if any, of widening or deepening the integration process.

Despite its narrow scope, the agreement became, from the start, controversial – and continues to be so – not only for trade and investment matters but for a whole host of other related issues. The other related issues include: the dispute settlement mechanism, membership enlargement, monetary integration, and side agreements on labor and environmental issues.

As NAFTA moves into its second decade, these issues require more urgent attention especially as the long-term effects of the treaty, anticipated or not, is slowly emerging. In this study we provide a retrospective assessment and evaluation of NAFTA thirteen years later and raise some of the issues that require immediate attention as we look to the future. Accordingly, in Section 1 we contrast NAFTA with the European Union (EU), in Section 2 we discuss the recent trend towards bilateralism, in Section 3 we look critically at NAFTA thirteen years later, and in the last section we raise some of the challenges affecting the future of NAFTA.

2. NAFTA and the EU

At the time, NAFTA was a unique case of integration in the world as it involved the integration of a developing country with two industrial ones. The per capita income of the US was six times that of Mexico. Whereas, in contrast, the per capita income of Germany – wealthiest – was twice that of Greece – poorest – among the EU 15.

NAFTA, unlike the European Union, is a trilateral agreement. NAFTA is structured as three bilateral agreements, one between Canada and the United States, a second between Mexico and the United States, and a third between Canada and Mexico. The first accord is CFTA, which took effect on January 1, 1989, and is subsumed by NAFTA. The second and third agreements are found in NAFTA itself.

Today, more than a decade later, NAFTA has not enlarged its membership to include other countries in the Americas. Since its inception, however, there have been several efforts to expand free trade agreements – at a multilateral level – in the Americas. But unlike the EU, which has established an elaborate legal process and criteria – albeit bureaucratic and sometimes intrusive – for the accession of new members, the NAFTA accession clause – article 2204 – provides no such clear guidance and criteria. It leaves it up to the individual members.

According to Robert A. Pastor (2004, p. 124):

“Although NAFTA fueled the train of continental integration, it did not provide conductors to guide it”.

“No clause in the agreement established a mechanism to anticipate or respond to market failures. Whereas the EU has created too many intrusive institutions, North America made the opposite mistake: it created almost none”

In fact, in the absence of clear criteria in the Agreement, the candidate country must be willing and able to accept the conditions of the so-called Washington Consensus, a term coined by John Williamson which includes reducing fiscal deficits, tax reform, exchange and interest rate reform, privatization, FDI, deregulation, etc.

Chile tried without success to become part of NAFTA. Instead all three NAFTA countries opted to sign separate bilateral agreements with Chile. For sometime now there is a preference for bilateral over multilateral agreements. In all three countries there are a number of bilateral free trade agreements. This attitude, according to Pastor, has been largely deliberate. He points out that “Integration has usually taken the form of dual

bilateralism – U.S.-Mexican and U.S.-Canadian – rather than a continental partnership.” We will elaborate on this issue in the next section.

It is important to remember that unlike the EU, NAFTA was designed as a trade agreement with no political dimension or vision attached. The treaty was solely based on unlocking the economic benefits within the three trading countries of North American. NAFTA was more of an experiment in international trade and economic theory but on no account did include the political aspiration of the EU. This fundamental difference casts a shadow over NAFTA’s achievements so far and its future development.

3. NAFTA and Rising Bilateralism

The World Bank (2005) reports that there is a proliferation of regional trade agreements (RTAs) that now surpasses 200, a six-fold increase in the last twenty years. This covers more than one-third of world trade and “... is fundamentally altering the world trade landscape.” The World Bank report notices that the EU and United States are the most prominent players in this proliferation process. This includes reciprocal treaties such as NAFTA, the EU-Mediterranean Bilateral Agreement, and South-South agreements like MERCOSUR.

Moreover, according to Francois Bourguignon (2004)

“Since Cancun, it can be observed that major economies in North America and in Europe have redoubled efforts to seek bilateral and regional trade agreements. The U.S. has recently signed a trade agreement with Chile, and has a trade agreement with Central America. The EU is presently negotiating with MERCOSUR. And then the question arises whether these agreements complement the effort to achieve a pro-development WTO round, or do they stand in the way and threaten to derail these negotiations in WTO. We need to address this question.”

The report argues that agreements leading to open regionalism – that is, deeper integration of trade as a result of low external tariffs, increased services competition, and efforts to reduce cross-border and customs delays costs – are effective as part of a larger trade strategy to promote growth. Such regional agreements can complement a strategy that, on the one hand, includes autonomous liberalization to promote productivity gains and, on the other hand, leverages domestic reforms to enhance market access. Although regional agreements can prove beneficial to member countries, they can have adverse effects on excluded countries. Lowering of border barriers around the world is crucial to minimizing these effects. It is hoped that future agreement by all countries in the World Trade Organization on global trade issues will reduce the risk of trade diversion associated with regional agreements and will decrease trade losses of countries excluded from agreements.

The report also says that key ingredients of RTAs that promote development include low external border barriers, promotion of new cross-border competition, nonrestrictive rules of origin, few sectoral and product exemptions, and more open services markets. Effective RTAs can help reduce regional political tensions, exploit economies of scale in infrastructure provision, and lead to joint programs to improve

border crossings. However, Richard Newfarmer, Economic Adviser in the Bank's Trade Department and lead author of GEP (2005) states that

“Neither North-South bilateral agreements nor South-South arrangements get universally high marks,” “U.S. and EU bilateral agreements often fall short of full free trade because they exclude sensitive products, commonly agriculture, or they adopt restrictive rules of origin that effectively deny market access. South-South agreements are sometimes more liberal in goods trade, but rarely expand competition in services and often lag in implementation. And few agreements seize the opportunity to provide for temporary movement of workers.”

William R. Cline (2004), in a comprehensive study published by the Center for Global Development and the Institute for International Economics argues that the elimination of tariffs and other protective barriers globally would:

- lift at least 500 million of people out of poverty over 15 years
- create long-term economic benefits to developing countries of \$200 billion per year, and
- liberalization of agriculture would account for about half of the total gains for both developing and industrial countries. (Cline, 2004)

Notwithstanding the above, the World Bank report concludes: “... regional trade agreements offer benefits to developing countries provided that these trade agreements do not occur behind a wall of protection or behind an increased role of protection.”

However, some strongly argue against the bilateral trend currently pursued by the U.S and the E.U. Jeffrey Schott (2004), in a major study by the Institute for International Economics, proposes that “The United States should recast its trade negotiating priorities to pursue fewer but bigger deals.” (Schott, 2004). He argues that “big stakes” FTAs yield the largest payoff for US firms, workers, and farmers, while also providing strong support for ongoing WTO negotiations. As such, we believe the U.S. needs to refocus its efforts away from bilateralism in the interest of more comprehensive and multilateral trade agreements.

4. NAFTA after Thirteen Years: A Critical Assessment

It has been thirteen years since the implementation of NAFTA and the controversy over its value continues. The promises of the proponents of NAFTA – that it would create hundreds of thousands of new jobs, raise the standards of living of USA, Mexico, and Canada, improve the environment and boost the development of Mexico – are questionable. The opponents of NAFTA argue that jobs have been lost, domestic policy making has been undermined, and environmental and health conditions have suffered. Why such disparity of views? The proponents of NAFTA have apparently built their position on the assumptions that free trade is good for every country and that privatization is largely the answer to development. Powerful organizations such as the World Bank and the International Monetary Fund have been among the proponents of this view. The opponents to NAFTA argue that the market and free trade alone are not

necessarily the best ways to economic development, sustainability, and social justice. Furthermore, they argue that the questionable results from NAFTA mitigate against its expansion into more countries in Latin America.

One of the problems with NAFTA is that integration was tried among countries of such disparate levels of development. For instance, gross national income per capita for Mexico, Canada, and the USA was \$7,310, \$32,600, and \$43,740 in 2005 respectively; that is, Mexico's gross national income per capita was one sixth of that of the USA. Because of NAFTA there was an assumption that Mexican agriculture would be modernized and become more productive, but NAFTA provided no financial assistance to this end. Since 1958 the European Union has provided under the common agricultural policy large amounts of financial assistance to old and new members in support of their agriculture. New members whose income levels were low became eligible to receive structural funds for economic development in an effort to move the European Union members toward social and economic cohesion. A more specific look into developments in the three NAFTA countries in recent years shows briefly the following.

NAFTA and the US Case. In the case of the US a small trade surplus with Mexico before NAFTA has become a large trade deficit after NAFTA. The US trade deficit with Canada has increased fivefold. It is estimated that about half a million US jobs have been lost due to NAFTA. Many workers who lost high paying jobs in manufacturing have moved into service jobs with considerably lower wages. The US had a total trade deficit of \$436 billion in 2002 of which 20% was with its NAFTA partners.

It is also argued that NAFTA is an investment agreement which grants foreign investors a new set of rights to encourage relocation abroad of businesses. US farmers were told that NAFTA would provide access of US agricultural exports to Mexico and Canada and would improve the status of US farmers. The experience of farmers after NAFTA shows that 38,000 US small farms have been eliminated and farm income has gone down. However, agribusiness profits are up.

NAFTA had a minimal effect on the wage level and widening disparity between skilled and unskilled labor in the U.S. But Sandra Polaski observes a decoupling in productivity growth from wage growth in the U.S which, she argues, can partly be attributed to NAFTA because workers bargaining position had been weakened. (Polaski, 2006)

NAFTA and Canada. Canada has experienced a large increase in its exports to the USA but not as large an increase as in its imports from the USA. Canada's real per capita growth averaged an increase of 1.6% per year during the period 1989-2002. Productivity growth averaged 2% per year for the 1994-2001 period while wages rose by an annual rate of .4% per year (Foster and Dillion). This suggests that employers, not workers, benefited from the higher output per hour. Between 1995 and 2001 unemployment averaged 8.6% per year. Many of the jobs created during NAFTA have been part-time, insecure jobs with few benefits. A study of the labor market in Canada found that under NAFTA part-time workers, mostly women, earn about two-thirds the wages of full-time workers and less than 20% receive benefits. In 1996 11.6% of employed workers held temporary jobs.

There were 2400 fewer jobs in the agri-food processing industry in 2002 than in 1988. Some 16% of Canadian farmers have been forced off the land. The National Farmers Union said in 2002 that free-trade agreements may increase trade but they alter

the relative size and market power of the players. “Free trade helps Cargill and Monsanto, not farmers.”

According to Polaski, Canada has experienced an increase in productivity since the signing of NAFTA. However, this growth in productivity has not translated into an equivalent growth in wages. Increase in productivity has substantially exceeded growth in wages both in the manufacturing and nonmanufacturing sectors. (Polaski, 2006)

She goes on to say that income inequality in Canada has been trending upward for the past decade with only the richest 20 percent of households experiencing an increase in real income. The rest experienced a sharp decline in real income in the early years of the treaty followed by a slight recovery. However, the recovery was not strong enough to overcome the initial decline.

NAFTA and Mexico. Concerning Mexico the argument advanced was that NAFTA would help raise the standard of living and make it closer to its partners in NAFTA. Thirteen years later more than 1.5 million farm jobs have been destroyed as cheap US corn came into Mexico reducing prices received by Mexican farmers by 70%. As a result rural workers have moved into Mexico’s urban areas where under-employment has kept wages low. The average wage paid to Mexico’s main factory workers dropped from \$5 per day to \$4.

When NAFTA got started about 8 million of Mexico’s people were involved in agriculture (about ¼ of the active labor force). By 2003 this number had fallen to 6.5 million. Most of Mexico’s agricultural economy, was comprised of small plots of land (ejidos) given to Mexico’s farmers through land reform that took place in Mexico’s post-revolution era in 1917. But NAFTA asserted that land could be owned by foreigners. It allowed plots of land to be sold. It also permitted creditors to seize land. Farm programs that provided price guarantees, low interest rates, and subsidies were eliminated.

Desperation among farmers has stimulated a social movement under the name “The Countryside Can’t Take It Anymore” leading to national protests in 2002 and 2003. After ten years, increased investment and exports have not translated into the promised benefits.

Data show that foreign direct investment in Mexico increased from the annual average in 1986-93 of \$3.46 billion to \$24.73 billion in 2001. Exports of Mexico ranked 54th in 2002. Per capita income increased by 9% during the NAFTA years, but this is less than 1/3 of the increases in the 1960s and 1970s.

Increased investment and exports have not had a broad impact. Specific rules of NAFTA limited regulation of foreign investors in terms of the impact on the Mexican economy. Mexico became an easy in, easy out, investment country. About 1/3 of the 800,000 manufacturing jobs created under NAFTA have disappeared because companies have gone to cheaper labor markets such as China, Malaysia, and Guatemala.

The environment and public health not only have not improved but industrialization on the border has increased toxic dumping and water contamination. The environmental infrastructures in Mexico have not kept pace with increases in pollution as a result of the rapid growth in trade. NAFTA has proven unable to address these problems.

5. Summarizing the Main Problems with NAFTA

All the indications are that Mexico has not greatly benefited from NAFTA. Exports have not been an engine of growth. Exports are concentrated in a few companies with few

connections to local production. Their export production has not created more employment. Foreign investment has not created much employment either because much of it represents the acquisition of companies. Sandra Polaski, in her testimony to the senate finance committee, points out the surprising weak job creation in Mexico which operated at less than full employment level, a result that does not sit well from the perspective of economic and trade theories. As a result, some call into question the value of NAFTA and argue that NAFTA represents a model not to be imitated. Market forces may not solely be relied on to produce development. A national plan to establish conditions conducive to each country's development is needed.

With regard to Canada, University of Toronto Professor Stephen Clarkson declares that NAFTA is essentially a "Supra-Constitution." It empowers some actors and disempowers civil-society organizations and citizens who look to the state to resolve their problems. Corporations enjoy and exploit their rights under NAFTA. What is needed is an enhanced NAFTA accord which goes beyond the silent integration of markets and deals with the social dimensions of development, that is, environment, labor, energy, services, and transport. This sort of project, something close to the European model, is not likely to receive much support among businesses and the respective parliaments of the NAFTA partners.

Many economists argue that trade liberalization has contributed to income inequality in the US in recent years. Trade liberalization has helped increase corporate profits and the income of highly educated workers at the expense of less educated workers. Estimates state that trade liberalization has cost 75% of US non-college workers an amount equal to 12.2% of their current wages. In 1973 the real hourly wage for high-school graduates peaked at \$13.36 a level to which they had still not returned by 2001. On the other hand, US corporate profits rose by 88% in the 1990s and CEO pay by 463% (Lawrence, Bernstein and Boushy, 2003).

6. Future Prospects for NAFTA

The empirical evidence gathered thus far lends little support for the value of NAFTA in its current structure as a trade agreement to eliminate restriction on trade and investment among its members. The empirical data challenge the economic rationale behind NAFTA which advocates that free trade on its own will promote economic efficiency and growth. In a paper that examines the history and fate of regional economic integration attempts, A.G Malliaris and A.J Kondonassis show that "Integration agreements that did not progress beyond trade aspects eventually faded away" and "Regional economic integrations schemes that went beyond free trade to monetary union, often resulted in full political unions." (Malliaris and Kondonasis, 1996, p. 33)

In light of these historical cases, will NAFTA eventually "fade away" or is the prospect for further economic integration, including monetary integration? Will the trend towards bilateralism outlined above lead to the demise of NAFTA or will this trend ultimately strengthen NAFTA by offering pathways to more comprehensive multilateral agreements? These are some of the questions on which the future of NAFTA depends. Where does the current debate stand on these issues?

On the monetary front, there has been little development in the past thirteen years. But as NAFTA moves into its second decade, the issue remains in the background and debate continues on whether or not a further economic integration is possible or

desirable. With the European template in sight, monetary union of NAFTA appears as the natural progression and extension of the trading treaty. However, the issue doesn't seem to attract much attention and is quietly debated in the academic circles and among business leaders with no apparent rush.

With the exception of two periods – namely, the 1994-1995 peso crisis and the latter part of the 1990's when the Canadian dollar weakened against the dollar – none of the members has been in a hurry to push the monetary integration issue. Mexico and Canada fully understand that pursuing further integration at this stage would likely occur on U.S. terms and conditions. This means mirroring the U.S. institutional, financial, and regulatory approach in NAFTA. From the U.S. perspective, further integration at this stage may be met with political resistance as people are still anxious and unconvinced that the trade agreement, let alone a monetary union, has been in the best interests of the U.S.

Although the debate has not reached the desk of policy makers, all members of the treaty recognize the benefit of monetary integration of some sort. The direction of any further economic integration is unclear with some arguing for a dollarization approach in which Mexico and Canada would adopt the U.S. dollar as their official currency while others argue for a full monetary union that mirrors that of European Union. Neither approach is a clear winner. Proponents of dollarization argue that given the dominant role of the United States in NAFTA, dollarization is the most reasonable and likely outcome of any monetary integration of the region. Furthermore, NAFTA shouldn't be compared with the EU as a model for monetary integration since the two treaties are fundamentally different. For starters, none of the EU members carries the weight and dominance that the United States has in NAFTA. But more importantly, the monetary union of the EU members is a product of a wider political agreement between its members. NAFTA, in contrast, was drafted as a trading agreement with no political dimensions or aspirations. Since NAFTA lacks the political dimension on which the EU was built, the best approach to monetary integration is, perhaps by default, dollarization.

The other important issue that confronts NAFTA is the rise in bilateral trade agreements and away from comprehensive multilateral agreements. We can only hope that the trend towards bilateral agreements, which tend to be less cumbersome and easier to accomplish, is not a rejection of the multilateral approach. Since the greatest payoff for the U.S. lies in a comprehensive multilateral agreement, we hope that numerous but smaller agreements, as they mature, will pave the ground for larger and more comprehensive agreement.

It is clear from this debate that NAFTA is in need of redefinition of its identity and restructuring of its current purpose to go beyond trade for the treaty to have future prospect.

7. NAFTA: the Second Decade

Looking ahead to the prospects of economic integration in the Americas, here are some of the issues that we believe need to be addressed, with deliberate speed, in the second decade:

1. NAFTA is a trade agreement and after ten years remains as such, but is limited. It falls short of a full free trade agreement because it includes many exclusions that effectively deny market access. Although the prospects of removing these exclusions,

and widening or deepening the integration process are limited, it is imperative that the three countries move towards a common external tariff.

2. Despite its narrow scope, the agreement became, from the start, controversial - and it will continue to be so - not only for trade and investment matters but for a whole host of other related issues. The other related issues include: the dispute settlement mechanism and side agreements on labor and environmental issues.

Accordingly, the impact on the environment, migration, the Mexican democracy and NAFTA's dispute settlement mechanism will dominate public debate. Although political pressure for corrective action, some within the next ten years, is - in our view - expected, we believe political pressure on immigration and outsourcing will be more immediate.

In short, what is needed is a NAFTA plus accord which goes beyond the silent integration of markets and deals with social dimensions of development, e.g., environment, labor, energy, services, transport.

3. NAFTA and North American economic integration is at a crossroads as it faces an immediate challenge. The fallout from 911 threatens to seriously undermine North American integration. According to Hufbauer and Schott (2004):

“After Sept. 11, 2001, the United States imposed new security measures that made it costly and cumbersome to move goods and people across borders. They created a zone of uncertainty around Canada and Mexico. The threat of another terrorist attack risks a new round of onerous controls on cross-border flows. Clearly, joint action by the three NAFTA partners is essential to minimize that danger” (Hufbauer and Schott, 2004)

4. The blackout of August 2003 that left 50 million people without electricity raises serious concerns over the adequacy of the regional electric grids. This highlights the urgency of energy issues that NAFTA failed to address.

5. A 34-country free trade arrangement through the newly proposed 'Free Trade Areas of the Americas' (FTAA) is planned to be signed no later than December 2005. The Trade Negotiating Committee (TNC) presented the third draft of the Agreement in November 2003 at the Miami Ministerial Conference. The FTAA draft is based on NAFTA provisions on trade and investment, and on the GATS provisions on services under the WTO. Not surprisingly, the FTAA has been controversial from the start, not only for trade and investment matters, but for a whole host of other related issues that were bitterly debated over NAFTA.

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Post-NAFTA Changes in the Financing of Canadian Corporate Activity

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Abstract. This paper updates the work of Brox and Maclean (1986) and tests for the stability of the model structure with the inclusion of the post-NAFTA data and hence tests whether the increased integration of international trade has led to similar convergence in financial behaviour.

JEL Classification: E47, G32

Keywords: flow of funds; Canadian Firms

1. Introduction

In a recent paper, Laurence Klein argues that work with the flow-of-funds accounts “is more urgent, particularly in interpreting the international economy in the age of globalization” (Klein, 2003, p. 269). Klein further states: “I would go so far as to say that deep economic understanding of what has happened in the currency/financial crises of Latin America and East Asia (even the US S&L crisis) require resorting to careful FF analysis” (Klein, 2003, p. 270). Following Copeland (1952) and Goldsmith (1965), many studies have examined sectoral flow-of-funds to gain insight into economic activity. Among the relatively few such studies for the Canadian economy are Brox and Maclean (1986), Brox and Cornwall (1989) and Andrikopoulos *et al.* (1992).

The liberalization of trade in financial services contained in Chapter 14 of the North American Free Trade Agreement suggests that the difference between the financial behaviour of American agents and those found in earlier studies of Canadian sectors may have been lessened. Such changes in response to increased financial integration under NAFTA have been analyzed by Trivoli and Graham (1998) and Salehizadeh (1998) for Mexico, and to some extent by Paraskevopoulos *et al.* (1996) and Serletis and Krause (1996) for Canada.

With respect to Canada under NAFTA, some have argued that Canada and the United States form an optimal currency area and thus the adoption of a common currency and further integration of the financial systems would be beneficial [Michelis (2004), Courchene and Harris (2000), Grubel (2000)], while others [Murray *et al.* (2003) and Carr and Floyd (2002)] argue that, in spite of exchange rate volatility, Canada is better served by a floating exchange rate and a certain degree of financial independence. Ewing *et al.* (1999) found that North American stock markets remained segmented following NAFTA.

The purpose of this paper is to update the work of Brox and Maclean (1986) to test for the stability of the model structure with the inclusion of the post-NAFTA data and hence to test whether the increased integration in the area of international trade has led to similar convergence in financial behaviour.

2. The Structure of Financial Flow Models

In the relatively short history of financial model building, many models have tended to abandon asset demand and supply in favour of a term structure approach for determining interest rates, as do the US financial models of Tinbergen (1939), de Leeuw (1969), and Silber (1970). Others, following the Brainard and Tobin "Pitfalls" paper (1968), impose the sources-equal-uses balance-sheet approach, as do the US financial flows models by Bosworth and Duesenberry (1973), Backus *et al.* (1980) and several UK models such as Green's (1982). In Canada, a financial sector consisting of seven liquid asset demand equations has been part of the Bank of Canada's econometric model of the Canadian economy (1971). Hendershott (1977), in his US flow-of-funds model, follows a quite different approach in estimating behavioural parameters of the asset demand and supply equations directly.

The model of Brox and Maclean (1986), re-estimated in this paper, is most heavily influenced by Hendershott's study. The resulting similarity of approach allows some comparison of US and Canadian financial behaviour. To specify the model for any sector, we begin with the balance-sheet identity:

$$NW = RA + \sum_i F_i \quad (1)$$

which states that net worth (NW) is equal to real assets (RA) plus the sum of financial assets and negatively signed liabilities (F). For the flows model, consistent with the published data, we first-difference equation (1), and subtract valuation changes from the assets where they accrue to obtain:

$$SAV = \Delta RA + \sum_i \Delta F_i \quad (2)$$

The typical asset demand or supply equation for estimation is:

$$\Delta F_i + a_{i1} SAV + a_{i2} \Delta RA + \sum_j b_{ij} X_j \quad (3)$$

where X_j represents portfolio shift variables, including interest rates and economic activity indicators. The balance-sheet identity (2) implies the following constraints:

$$\sum_i a_{i1} = 1; \sum_i a_{i2} = -1; \sum_j b_{ij} = 0 \quad (4)$$

A. Data Base

The Canadian financial flow data, published quarterly by Statistics Canada, are, for the most part, consistent with other data in the System of National Accounts. The flows matrix reports estimates of the sources and uses of funds and the net lending position of each of twelve sectors on a market transactions basis. The system is closed, i.e., summed over the sectors, the change in each asset category and net lending equal to zero. The data are not seasonally adjusted since they are subject to large irregular movements not attributable to seasonality.

The data for the private non-financial business sector are based on a quarterly survey of all companies resident in Canada which have assets over ten million dollars, and on a less adequate survey of small companies which still account for 30 per cent of

total assets of the sector. The result is an impairment of the quality of some categories, most notably the bank loans data, since smaller companies rely disproportionately on bank financing.

Stocks of assets and liabilities of this sector are summarized in Table 1. The major liability shift over the period is a reduction in long-term liabilities and stocks in favour of loan liabilities, which include bank loans, other loans, and trade credit. There have also been modest increases in short-term liabilities and mortgages. The asset portfolio appears relatively stable. However, the proportion of the portfolio in the form of real assets has declined and holdings of long-term assets have increased as have holdings of money.

Table 1: Non-financial Private Corporations, Portfolio Composition
(per cent)

	1961	1971	1981	1991	2001
	Assets				
Real Assets	73.02	70.10	69.49	62.95	55.96
Money	3.09	2.42	4.09	4.27	5.26
Shorts	0.21	0.37	0.23	1.79	0.78
Foreign assets	0.57	0.56	0.70	0.84	1.37
Loans	10.13	11.98	11.59	10.32	9.78
Mortgages	0.68	0.64	0.86	0.57	0.27
Bonds	0.93	0.08	0.01	0.06	0.03
Longs	11.33	13.81	12.97	19.15	26.55
	Liabilities				
Shorts	0.19	0.84	1.26	3.34	2.75
Loans	12.97	16.69	26.56	21.94	17.34
Mortgages	3.15	5.36	4.41	6.75	4.62
Longs	17.25	15.06	11.41	11.15	15.11
Stocks	49.51	46.12	38.26	43.44	46.82
Net worth	16.90	15.90	18.07	13.35	13.36

B. Asset Categories

The published data include 25 asset and liability categories, so that some aggregation has been required to build a model of manageable size.

The asset categories used are currency and deposits (MON), foreign holdings (FOR), short-term assets (SH), government bonds (BONDS), loans and receivables (LOANS), and long-term assets (LONG). The latter includes corporate bonds, claims on associated enterprise, and stock. Liability holdings are divided into short-term paper (LSH), net mortgage liabilities (MORT), loan liabilities (LLOAN), and long-term liabilities (LONGL). For the corporate sector, stock and corporate claims liabilities (STOCK) are disaggregated from the long-term category. The currency and deposits category includes all types of deposits. Thus we cannot differentiate money from near-money. As well, government bonds include all government issues of maturity of one year or more, so that this category must be regarded as homogeneous with respect to risk and marketability, rather than term to maturity.

C. Interest Rates

Portfolio adjustment in response to yield changes is monitored using seven interest rates. These are: (1) the prime lending rate (RPM), (2) the covered rate on U.S. commercial paper (RFPUC), (3) the rate on bank term deposits (RBTD), (4) the finance company paper rate (RFP), (5) the yield on long-term government bonds (RLB), (6) the yield on industrial bonds (RIB), and (7) the conventional mortgage rate (RMT). Each rate is first-differenced and scaled by the sector's total financial assets at the start of the quarter in order to measure the effects in relation to the approximate size of the portfolio being adjusted. The scaling also recognizes that there are stock as well as flow adjustments in response to movements in interest rates.

This treatment of interest rates differs from Hendershott's (1977) approach. Two major arguments support the most important change we have made in not imposing the Slutsky symmetry constraints. First, the coefficients capture not only symmetric substitution effects, but also asymmetric wealth effects. Second, interest-rate changes are often partly caused by changes in risk, which will also influence portfolio response, leading to further asymmetries. Our early specifications included the constraints, but they yielded perversely signed or statistically insignificant coefficients. Roley (1983) formally tested the symmetry constraints, and his results confirm our conclusions. Our general specification does not preclude the possibility of symmetrical effects being identified empirically.

3. Model Specification

The balance-sheet identity providing the theoretical base for our model, first-differenced for consistency with the published flows data, is:

$$\begin{aligned} & \Delta MON + \Delta SHORT + \Delta FOR + \Delta BONDS + \Delta LOANA \\ & + \Delta LONGA - \Delta LSHP - \Delta MORT - \Delta LONGL - \Delta STOCK \\ & - \Delta LOANL = ADJSAV - GFCF - VPCINV \end{aligned} \quad (5)$$

where GFCF is gross fixed capital formation, and VPCINV is the value of physical change in inventories. The variable ADJSAV is net less the published statistical discrepancy, adjusted for acquisitions of used and intangible assets.

The eleven categories of financial securities are held to be endogenous to this system. Adjusted savings and real asset formation are treated as exogenous, under the assumption that firms in this sector view their financial activity as a by-product of their primary non-financial operations. Therefore, real asset formation and savings are a predetermined input into the portfolio allocation decision.

The typical equation to be estimated for this sector is:

$$\begin{aligned} \Delta F_i = & a_{i1}ADJSAV - a_{i2}GFCF - a_{i3}VPCINV + b_{i0} + b_{i1}S1 \\ & + b_{i2}S2 + b_{i3}S3 + b_{i4}LAGSAV + b_{i5}CHGDP \\ & + b_{i6}CHINFL + b_{i7}EXPRIB + b_{i8}NAFTA \\ & + \sum_j c_{ij} \Delta R_j * TFA_{-1} + u_i \end{aligned} \quad (6)$$

The constraints on the system require that the a_i 's sum to unity and that the remaining coefficients and the random error terms, u_i , sum to zero across all equations.

The inclusion of an intercept term implies a time trend reflecting changes in assets preferences over the estimation period, and three seasonal dummies ($S1$, $S2$, $S3$) capture purely seasonal activity. Lagged adjusted saving (LAGSAV) is included to monitor portfolio reallocation after one quarter. This effect captures timing problems due to the use of discrete quarterly data. The impact of the level of economic activity is captured by including the quarterly change in gross domestic product (CHGDP). The current value minus an eight-period average of the longer-term interest rates (EXPRIB) is used as a proxy for expectations to find any tendency to adjust expectations toward a "normal" rate of interest. The rate of inflation, as measured by a four-period moving average of percentage increases in the consumer price index (CHINFL), is included to study substitution of assets in response to differences between real and nominal interest rates. Both interest expectations terms and CHINFL are scaled by the lagged total financial assets of the sector.

Finally, a dummy variable, NAFTA, taking the value one from 1994 to 2004 and zero otherwise, is included to test for portfolio shifts following the formation of the North American Free Trade Agreement.

4. Empirical Results

A. Estimation

The constraints imposed on the system imply that the random errors in each sector sum to zero. Each sector model is therefore a set of equations related via the residuals. These have been estimated using Zellner's Seemingly Unrelated Regressions Estimator (1962) with coefficient constraints imposed at the second step. The liabilities are negatively signed so that the constraints on the coefficients are more clearly seen.

Quarterly data for 1964 I - 2001 IV are used for estimation, and an out-of-sample forecast period (2002 I - 2004 IV) has been created to further test the model's performance. The R^2 between observed and predicted values is used as a measure of the goodness of fit of the estimated equations. The Theil's inequality coefficient and its decompositions measure the forecasting performance. This measure penalizes failure to predict turning points. A value of zero signifies perfect prediction; a value of one means that the forecasting power is equivalent to a naive "no change" prediction. Some equations have very low R^2 values. In each case the asset category has very little activity in the sector reported.

Some expectations for signs of the coefficients have been used as part of the specification process. In particular, own interest-rate effects should be positive and cross effects negative. All wrongly signed coefficients and most insignificant coefficients have been constrained to equal zero.

B. Empirical Results for the Canadian Non-Financial Private Corporations Sector

The estimates for this sector are shown in Table 2. The exogenous source of funds, adjusted savings which is assumed to accrue as shorts and foreign currency deposits, is reallocated within the quarter to increase long-term assets and to reduce loan and short-term liabilities. Of the amount of savings retained in short-term and foreign assets, about

Table 2: Regression Results for the Non-financial Private Corporations Sector

	Mon	SH	FOR	BON	Loan	Long	LLoan	LSH	Lmort	Longl	LSt	Constraint
Constant	496.9388.19	2.44	96.01	968.89	-601.92	-2167.5	491.03	313.66	-294.64	606.88		0
	(1.15)	(0.57)	(0.01)	(1.85)	(3.63)	(-0.93)	(-4.13)	(1.22)	(2.34)	(-0.67)	(1.08)	
S1	-1484.4	-202.31	413.74	-180.10	-715.50	-253.64	2027.3	-493.81	-49.88	898.00	40.62	0
	(-3.14)	(-1.02)	(1.03)	(-3.19)	(-2.46)	(-0.32)	(3.10)	(-0.99)	(-0.34)	(1.91)	(0.07)	
S2	3.18	184.57	218.96	-64.10	-599.29	406.67	1283.9	-950.82	-243.99	-40.81	-198.30	0
	(0.01)	(1.05)	(0.51)	(-0.92)	(-1.68)	(0.49)	(1.90)	(1.84)	(-1.50)	(-0.10)	(-0.26)	
S3	-904.6	-178.19	218.71	-80.71	-454.67	-263.65	2892.6	-664.43	-303.03	-88.14	-173.87	0
	(-1.37)	(-0.96)	(0.43)	(-1.02)	(1.11)	(-0.27)	(3.55)	(1.07)	(-1.28)	(-0.13)	(-0.21)	
ADJSAV	*	0.008	0.247	*	*	0.341	0.171	0.100	*	0.132	*	1
		(0.35)	(4.66)			(3.28)	(1.83)	(1.42)		(1.64)		
LagSAV	0.0740.025	-0.254		0.020	0.147	0.042	0.122	0.027	-0.072	-0.133	0	
	(2.22)	(1.02)	(-4.83)		(0.99)	(1.43)	(0.45)	(1.74)	(1.28)	(-0.89)	(-1.53)	
GFCF	*	*	*	*	*	*	-0.337	-0.194	-0.143	-0.113	-0.213	-1
							(-3.93)	(-2.99)	(-7.06)	(-1.56)	(-1.53)	
VPCINV	*	-0.011	-0.121	*	*	-0.006	-0.468	-0.394	*	*	*	-1
		(-0.29)	(-1.59)			(-0.04)	(-3.83)	(-4.30)				
EXPRIB	*-0.0001	-0.0005	*	*	0.0004	-0.0001	*	*	0.0001	0.0002	0	
		(-1.12)	(-2.40)			(1.09)	(-0.07)			(0.23)	(0.49)	
RBTD	0.0014	*	*	*	*	*	-0.0014	*	*	*	*	0
	(3.76)						(-3.76)					
RFP	-0.0001	0.0001	*	*	*	*	-0.0003	0.0003	*	*	*	0
	(-0.28)	(1.26)					(-0.48)	(3.20)				
RFPUC	*	*	0.0003	*	*	*	-0.0003	*	*	*	*	0
			(1.26)				(-1.26)					
RPM	*	*	*	*	0.0004	-0.0004	0.0005	-0.0005	*	*	*	0
					(1.08)	(-0.38)	(1.54)	(-1.94)				
RMT	-0.0007	*	*	*	*	*	*	*	0.0007	*	*	0
	(2.15)								(2.15)			
RLB	-0.0004	*	*	0.0006	-0.0002	*	*	*	*	*	*	0
	(0.38)			(5.24)	(-0.39)							
RIB	*	*	*	*	*	0.0008	*	*	*	0.0003	-0.0011	0
						(0.98)				(0.42)	(-1.45)	
GDP	0.054	*	-0.016	-0.0006	0.113	-0.064	-0.080	-0.057	0.033	-0.002	0.025	0
	(1.04)		(-0.44)	(-1.01)	(3.52)	(-0.85)	(-1.32)	(-1.22)	(2.14)	(-0.03)	(0.40)	

CHICAGO, IL

BROX: POST-NAFTA CHANGES

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INFL	-0.0016	0.0001	0.0013	-0.0001	0.0004	-0.0013	-0.0005	-0.0004	0.0001	0.0012	-0.0001	0
	(-2.99)	(0.11)	(3.24)	(-0.24)	(1.24)	(-1.75)	(-0.77)	(-0.83)	(0.71)	(2.30)	(-0.03)	
NAFTA	259.63	-310.35	694.46	79.39	841.2	396.5	508.13	-685.33	1690.8	-1590.8	-1883.7	0
	(0.41)	(-1.32)	(1.44)	(1.04)	(2.14)	(0.43)	(0.67)	(-1.18)	(8.68)	(-2.45)	(-2.34)	
R ²	0.205	0.127	0.309	0.056	0.348	0.671	0.355	0.290	0.437	0.254	0.637	
DW	2.76	2.25	2.21	2.44	1.78	1.56	1.99	2.14	1.11	1.95	1.64	

half is reallocated to long-term assets or the reduction of liabilities in the next quarter. Fixed capital formation is financed 53 per cent by the issue of loans or short-term liabilities, 26 per cent by mortgage and other long-term liabilities, including corporate bonds, and 21 per cent by the issue of equity. Inventory changes are financed approximately 86 per cent by issuing loans and other short-term liabilities and the remainder by drawing down holding of financial assets.

With respect to interest-rate effects, the behaviour of firms towards long-term liabilities warrants some discussion. This category includes industrial bonds and “other liabilities”. The latter is made up of taxes payable, dividends declared but not paid, and prepayment for goods not yet delivered, so that the possibilities for adjustment of holdings are largely confined to the industrial bond component. For this category, we find no significant cross-effects with respect to any other interest rates. Further, an increase in the industrial bond yield reduces the issue of long-term liabilities and increases the issue of stock and the holdings of long-term assets, with no other significant portfolio shift effects. If the industrial bond rate is above its expected “normal level”, we find a shift from short-term to long-term assets and a shift from long-term to short-term (loans) liabilities.

There are significant stock adjustment effects in response to other interest-rate changes. An increase in the bank term-deposit rate causes holdings of money to increase, offset by an increased issue of loan liabilities. Deposits are substituted for bonds when the government bond rate decreases, and are reduced to repay mortgages when the conventional mortgage rate rises. An increase in the rate on finance company paper causes broad shifts across the shorter-term components of the portfolio. Foreign assets are sold to repay loans as the covered rate on US paper falls. This effect is very weak and may reflect the offsetting effects of interest spreads and exchange-rate expectations.

Changes in business activity as measured by GDP increases cause the holdings of loans and the issue of both short-term paper and loans to increase, and to reduce the reliance on mortgage liabilities. Increases in inflation tend to increase foreign asset holdings and to shorten the term to maturity of both the asset and liability side of the balance sheet. This latter effect is likely due to the resultant risk premiums that adjust the term structure of interest rates in periods of rising inflation.

Finally, the dummy variable for the NAFTA period is significant in four of the eleven categories, in almost all cases indicating an expansion in financial market activity of the private non-financial firms over this period. The exception is the indicated decline in mortgage financing in the more recent period.

C. Comparison of the Sector and with Earlier Studies

Our models are similar enough to Hendershott's US model to allow some comparisons to be made. Caution must be exercised, however, because of the different definition used in the data matrix. As summarized in Table 3, the major conclusion of Brox and Maclean (1986) was that US firms had a greater level of marginal activity in equity, with respect to both allocation of funds and financing of fixed capital, than Canadian firms did. Canadian firms showed a greater marginal reliance on financing by bond issue. In the current study, the estimated results still indicate a smaller marginal reliance on equity, for the allocation of cash flow and for the financing of real asset formation, but with a tendency for borrowing for real asset formation to take the form a shorter-term paper or

Table 3: Comparison of Estimated Financial Behaviour

	Liabilities				
	Assets Paper & Loans	Shorts	Bonds	Stock	Mortgages
A: Allocation of cash flow (per cent of total)					
US: Hendershott (1977)	21	17	32	30	--
Canada: Brox & Maclean (1986)	22	--	55	13	12
Canada: Brox (2006)	60	27	13	--	--
B: Fixed capital financing (per cent of total)					
US: Hendershott (1977)	--	15	46	31	8
Canada: Brox & Maclean (1986)	--	21	63	7	9
Canada: Brox (2006)	--	53	11	21	15
C: Inventory financing (per cent of total)					
US: Hendershott (1977)	46	54	--	--	--
Canada: Brox & Maclean (1986)	17	68	15	--	--
Canada: Brox (2006)	14	86	--	--	--

loans rather than in the form of longer-term bonds. Thus it is still concluded that Canadian firms prefer borrowing to equity issue, a fact likely attributable to the significant amount of foreign ownership of Canadian non-financial firms.

Inventories are found to be financed by drawing down assets and by the issue of short-term liabilities. Here our results are similar to those of Brox and Maclean (1986) in that inventories are financed to a much larger extent by liability issue than that found by Hendershott for the American economy.

D. Forecast Performance of the Model

A test of the predictive performance of the models is provided in Table 4. The Theil's U is the ratio of the root mean square error for the model's predictions divided by the root mean square error from the naive no-change forecast. In almost all cases, the model performs well with a value of U less than the critical value of unity, indicating that the model has out-performed the naive no-change model. The only cases where this is not true is for the issue of mortgage liabilities, a category with very little activity and thus where the root mean square error for the naive no-change model is nearly zero, making it a tough target.

The three components of the U-statistic are constrained to sum to unity. For the ideal case, the bias component and the variance component should be zero and the covariance component should be unity. The predictive performance in all cases is reasonably acceptable. In every category, the bias component of the forecast error is low, representing less than ten percent of the error for every case, except for the holding of short-term paper. The variance component of the forecast error is generally slightly larger than the bias component, but in no case is it significantly more than one third of the

error. Overall the performance of the model in terms of prediction ability is quite good and compares favourably with the performance reported in Brox and Cornwall (1989).

Table 4: Forecast Performance: Non-financial Private Corporations

	Theil's U	Bias	Variance	Covariance
Assets				
Money	0.614	0.23113E-02	0.33423	0.66345
Shorts	0.721	0.77892E-01	0.21218	0.70993
Foreign Assets	0.635	0.18772E-02	0.24758	0.75054
Bonds	0.672	0.25108E-02	0.17069	0.82680
Loans	0.730	0.24330E-02	0.15771	0.83985
Longs	0.882	0.91438E-02	0.49355E-02	0.98592
Liabilities				
Loans	0.729	0.59409E-03	0.28902	0.71038
Shorts	0.600	0.20395E-03	0.30782	0.69197
Mortgages	1.156	0.18565E-02	0.78084E-01	0.92006
Longs	0.712	0.66966E-03	0.30786	0.69147
Stock	0.849	0.59769E-02	0.36313E-01	0.95771

5. Conclusion

This paper has examined the portfolio behaviour of Canadian non-financial private enterprises and compared the results to those reported in Brox and Cornwall (1989) for Canada in the pre-NAFTA period. The similarity of method and of the definitions of many variables to those used by Hendershott in his study of the US financial flows has also permitted comparisons of the financial behaviour of the corporate sectors of the two countries. Here the greatest difference lies in the Canadian preference for borrowing rather than equity issue at the margin. This preference almost certainly reflects the high level of foreign ownership of Canadian resident corporations. Those owned outright do not issue stock, and those with foreign affiliates have a source of borrowing that reduces the necessity to issue stock.

The quality of the Canadian data is good, and the models reported here provide insight into financial behaviour and include equations with useful forecasting capability. A test of the predictive performance of the models is provided and the predictive performance in all cases is reasonably acceptable.

Extension of this research could involve re-estimation and simulation of the full 106 equation model of the Canadian financial flow matrix contained in Brox and Cornwall (1989). Alternatively, the sector examined in this study or others could be estimated following other specifications. One such example is Andrikopoulos *et al.* (1992) which estimated the household sector of the flows matrix using a variant of the Generalized Linear Expenditure System. Yet another alternative would be to model the portfolio decisions using a variant of the Almost Ideal Demand System (AIDS) suggested by Deaton and Muellbauer (1980). The advantage of the latter approach is that the functional form is more flexible and it allows nested testing of various hypotheses including symmetry constraints.

Notes:

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LONG RUN STOCK MARKET PERFORMANCE AND ECONOMIC GROWTH IN MEXICO

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Abstract

This paper discusses the theoretical issues and empirical studies concerning the role of stock markets on long-run economic growth. Based on that framework, it also tests the relationship between the stock market and development for the case of Mexico; the proxy for economic development is industrial production. Three econometric models are applied: (a) unit root tests; (b) cointegration analysis, and (c) Granger causality tests. Results suggest for the 1968-2002 period that the variables involved are non-stationary, are cointegrated and present a bilateral Granger-causality relationship.

I. Introduction

The importance of the financial sector on economic growth has been widely studied, deriving important liberalization recommendations to enhance its contributions to increase savings and investments in the developing countries. From the pioneering studies of Gurley and Shaw (1955; 1960), Goldsmith (1969) and McKinnon (1973), research has emphasized the importance of financial structure to enhance development. Research on the specific contributions of stock markets to economic development is wide for the case of developed countries. However, the empirical evidence is mixed. While some researchers (Brainard and Tobin, 1968; Fama 1990; Barro, 1990) have found that stock returns precede output changes, other researches (Binswanger, 2000, 2004) maintain that stock returns do not lead real activity, at least during the last two decades. For the case of emerging markets the issue is even more controversial. Recently, Bencivenga **et al** (1996) reason that level of economic activity is affected favorably by stock market liquidity creation; however, Demirgüç-Kunt and Levine (1996) maintain an opposite view. Moreover, although cross-country analysis suggest a strong connection between stock market performance and economic growth, those results should be viewed as important leads for further research in order to find more complementary and relevant findings to suggest policies and needed reforms to promote the development of financial markets at the emerging markets economies.

Notwithstanding the varied experience of many countries, this paper examines the long run relationship between economic growth and stock market performance for the case Mexico; its capital markets have had continuous activity since the last decade of the XIX Century. Co-integration analysis is used to determine long run equilibrium relationship; finally, the Granger causality approach is used to determine whether or not stock market activity influences growth or vice versa. The paper employs monthly data for real stock prices and real industrial production for 1968-200 period. Economic data was obtained from **International Financial Statistics**. Stock market prices were obtained from local market report sources. The paper is divided in five sections.

Following this Introduction, Section II reviews the literature in the context of emerging markets. Section III presents the data and methodology. Section IV presents the results. Section V concludes the work.

2. Emerging Capital Markets And Economic Development

Influential financial theories postulate a positive relationship between the financial sector and economic growth. The size, structure and maturity of a nation's financial sector measure financial deepening, an essential factor to promote economic growth. This is only achieved in a free market environment; otherwise, financial repression, i.e. excessive government controls over the markets inhibit financial growth and the potential role of financial intermediaries on economic activity. However, there are also controversial views, particularly in understanding how stock markets promote development. Stiglitz (1985) argues that developed stock exchanges may not provide incentives for information acquisition because of the public nature of good and bad news information which is readily available at those markets. In the case of developing markets the lack of information might lead to ambiguous decisions by both investors and corporate managers. Moreover in both developed and emerging markets asymmetric information inhibits investments: interest rate policy becomes inefficient, and banking and corporate decisions become inefficient in discriminating between good and bad borrowers. Under those circumstances firms face binding financial constraint as credit rationing and quantitative constraints are imposed by creditors and investors in the stock markets (Stiglitz and Weiss, 1981). Similarly, Singh (1997) claims that financial development may be not be beneficial for growth, pointing out three reasons. First, the inherent volatility and arbitrariness of the stock market pricing process at emerging markets which makes them poor guides to efficient investment allocation. Second, the linkages between the stock and currency markets in the wake of unfavorable economic shocks may exacerbate macroeconomic instability and reduce long-term growth. Finally, stock market development is likely to weaken the existing strong group-banking relationship in those countries; in spite of many problems a errors this relationship has promoted investments and corporate growth several countries, particularly in the highly successful East Asian economies.

Functions of financial intermediaries, including stock exchanges, identified to promote economic growth are: (a) risk amelioration through trading of (undesired) securities; (b) hedging using derivative products and other risk control mechanisms; (c) diversifying and pooling risks, i.e. optimizing returns for given levels of risk by structuring portfolios by individual risk aversion levels; (d) information acquisition needed for resource allocation, (e) monitoring managers and exerting corporate control; trading and asset pricing send managers signals concerning their performance; (f) mobilizing savings, that is, promoting savings and channeling them to productive investments; increased liquidity provided by stock exchanges have a key role in this savings-investment process; and (g) promoting corporate specialization by facilitating exchange of shares to efficient firms (Levine, 1997). In short, the increased availability of financial instruments and institutions increase savings and investments and reduces transaction and information costs in an economy benefiting investors, firms, and policy makers strengthening their decisions and optimizing wealth management which in turn enhances economic growth.

These theories have become the basis for research and policy making in the case of developed economies. They can be extended to the case of developing economies with one caveat: financial repression inhibits development because savings mechanisms are limited, financial intermediaries cannot allocate savings efficiently among competing real investments, firms are discouraged from investing because financial repression reduces returns or makes them uncertain. Thus, to enhance stock market activity and long run growth financial liberalization policies must be implemented in those nations.¹ Indeed, the McKinnon-Shaw theory seeks to explicitly relate capital-market developments to long-term economic growth in the developing countries (McKinnon 1973; Shaw 1973). They propose that a repressed financial sector interferes with development in several ways: savings vehicles are not well developed; financial intermediaries that promote and pool savings do not allocate them efficiently among competing uses; also, firms are discouraged from investing because of financial repression policies that reduce the returns to investment or make them uncertain; as a result growth is held back. Thus financial liberalization theory argues for greater growth through financial deepening and financial sector reform. These assertions have been confirmed by empirical research. Christopoulos, and Tsionas (2003) investigated the long run relationship between financial depth and economic growth, using panel unit root tests and panel cointegration analysis. The long run relationship was estimated using fully modified OLS. For 10 developing countries, the empirical results provided clear support for the hypothesis that there is a single equilibrium relation between financial depth, growth and ancillary variables, and that the only cointegrating relation implies unidirectional causality from financial depth to growth.

The key relations of financial liberalization paradigm are: (a) positive real deposit rates raise the saving rate (the stock-market promotes savings by providing households with an additional instrument which may better meet their risk preferences and liquidity needs); (b) a positive correlation between the degree of financial deepening and the growth rate (financial deepening includes banking, stock markets and all financial intermediation mechanisms); (c) increased real savings rates raise the level of investment and resource allocation; and increased real deposit rates promote economic growth (Dornbusch and Reynoso 1989; Oshikoya 1992).. Stock markets therefore play a critical role in this flow of funds transformation.

Several studies confirm the importance of stock exchanges to economic growth. Key variables from capital market activity having a favorable impact on development are liquidity (Levine, 1991; Benchivenga, Smith and Starr (1996), risk diversification (Saint-Paul, 1992; Deveraux and Smith, 1994); liquidity provided by stock markets induces and supports new real investments; additionally, firms go public strengthening corporate

¹ Gurley and Shaw (1955; 1960), Goldsmith (1969), McKinnon (1973) Brainard and Tobin (1968) pioneered these propositions; however, they were followed in limited ways because following World War II high state intervention in the economy was an accepted practice, namely because developing countries were characterized by an incipient capitalist sector, small and imperfect markets, and little institutional development. Market oriented policies began only to be applied in these nations as a result of the need to become competitive and to take advantage of opportunities of the globalized economy which emerged mainly during the last two decades of the last century.

governance in all those countries where family owned firms usually prevail. Indeed the presence of tight controlled “industrial groups” in developing economies is related to the absence of capital markets Fischer *et al* (1994). Firms have limited opportunities to finance their projects and the creation of multipurpose industrial groups are the means to diversify risk. Thus, the establishment and/or consolidation of stock exchanges can overcome liquidity shortages, supply funds and offer alternatives for corporate securities issuing, and provide adequate diversifying alternatives for investors. Following World War II financial repression was implemented in most developing economies limiting the growth of stock markets which nevertheless played a silent role on economic development. Globalization has brought about in these countries much needed deregulation and liberalization policies, spurring among other things stock market activity. One important change, in addition to incrementing their capitalization and turnover indicators, as well as becoming attractive alternatives to diversify the portfolios of individual and institutional investors from developed countries, is a clear move towards efficiency (Aguilera 2002; Arbelaez and Urrutia, 1998; Cajueiro and Tabak; 2004; de la Uz, 2001; Kawakatsu and Morey, 1999; Laopodis, 2004; Ma, 2004, Neritz Jara, 1991; Zablotsky, 2001). Publicly available information leads to both better investment portfolio and real investment decisions. Stock markets should therefore now be consolidating long-term trends of favorable impacts to the economies of developing countries.

Nonetheless, empirical evidence dealing with the causal relationship between stock exchanges and economic growth is still limited. Levine and Zervos (1996) applied regression analysis on a sample of 41 countries for the period 1976-1993. Akin to the pioneer studies by Gurley and Shaw, Goldsmith and McKinnon, previously mentioned, their study examines the relationship between financial deepening and economic growth; one indicator of financial deepening included a composite index (volume, liquidity and diversification) while real economic growth was represented by Gross Domestic Product per capita. Results suggested a strong positive correlation between stock market liquidity and economic growth; furthermore vis a vis other financial deepening variables, stock market development seemingly was the most influential variable to influence economic growth. It is worth noting that the endogenous growth literature also stresses the influence of financial markets on economic growth (Bencivenga *et al*, 1995; Greenwood and Smith, 1997; and Obstfeld, 1994). These authors have included in their models financial intermediaries, information collection and analysis, risk sharing etc In this line of research Benhabib and Spiegel (2000) argue that a positive relationship is expected between financial development and total factor productivity growth and investment. However, their empirical results are very sensitive to model specification. Further, Beck *et al*, (2000), Neusser and Kugler (1998) find that financial development has a large positive impact on total factor productivity, which feeds through to overall GDP growth.

Yet, a fact that has characterized developing economies is their limited use of capital markets to mobilize resources. Indeed, current financial literature reveals that while developed economies have mobilized resources using both money and capital markets (Samuel, 1996; Demiguc-Kunt and Levine 1996), in the case for the developing economies emphasis has been in the money markets. Thus, although stock markets are growing in these countries, their development has been complex and their benefits to economic growth has not been fully proved. However the recent and wide literature on

emerging markets has not dealt with enough amplitude the relationship between stock markets and economic growth. Levine *et al* (1999), argue that the economic significance of stock markets to economic development vary according to the level of economic development; moreover, the impact is greater in developing economies. Similarly, Bencivenga, Smith and Starr (1996) find that the level of economic activity is influenced by the stock market liquidity creation ability. Away from short term financing, stock markets induce long run investments enhancing long term economic growth. Savings and investments also increase due to the reduction of riskiness facilitated by stock exchanges. However, Demirgüt-Kunt and Levine (1996) observe that liquidity can also deter growth because the rate of savings may be reduced, limiting in turn economic growth. This is the case when there are increasing returns on investment through income and substitution effect. Similarly, reductions on the uncertainty of investment might impact negatively savings rate, albeit a positive effect might also occur. Finally, corporate governance might also be affected negatively. Liquidity of stock holdings could weaken the commitment of investors to monitoring the firm to insure good performance.

Emphasizing the case of developed economies, a number of recent empirical studies has analyzed the relationship between real activity and stock returns for several countries by using multiple equation analysis such as vector autoregressions (Lee, 1992; Lee, 1995; Gjerde and Saettem, 1999; Kwon and Shin, 1999; Groenewold, 2000; Rapach, 2001 and Hassapis and Kalyvitis, 2002) or vector error correction models (Cheung and Ng, 1998 and Nasseh and Strauss, 2000). As far as the G-7 countries are concerned, Hassapis and Kalyvitis (2002) find a strong relation between real stock price changes and growth rates of real activity from the 1950s to the mid 1990s in all G-7 countries with the exceptions of Italy and France. Nasseh and Strauss (2000) report significant long-run relationships between stock prices and industrial production in five European countries (France, Germany, Italy, The Netherlands, Switzerland and UK) testing for data sets from 1962 to 1995. And Cheung and Ng (1998) find a significant relation between stock returns and future GNP growth rates in Canada, Germany, Japan and the U.S. but not in Italy for data from 1957 to 1992.

The experiences of developed countries are mixed. Atje and Jovanovic (1993) confirming cross country studies find a significant correlation between average economic growth and stock market capitalization for 40 countries, including developing economies. Levine and Zervos (1998) extended this study enlarging the sample size and the coverage period, They also used various measures of stock market development and controlled for other economic and political factors which might influence growth. Results showed that stock market liquidity is strongly related to economic growth, capital accumulation and productivity; amazingly, the stock market size apparently is not robustly correlated to economic growth. On the contrary, bank lending to the private sector strongly influences economic growth. Similarly, Harris (1998) in contrast with Atje and Jovanovic find no hard evidence that the level of stock market activity helps to explain growth in per capita output. Estimating their model using current investment rather than lagged investment suggests that the stock market effect may be weaker than Atje and Jovanovic results. Using two stage least squares to circumvent the possible endogeneity of current investment and dividing the sample into developed and less developed countries their evidence shows that for the developing economies, as well for the full sample, the stock market effect is at best very weak. However, for the developed

countries, stock market activity does have some explanatory power. Mixed results are also presented by Mauro (1993). His research examines the correlation between output growth and lagged stock returns in a panel of emerging market economies and advanced economies. It finds that the proportion of countries in which this correlation is significant is the same for emerging market economies as it is for advanced economies using yearly data, but somewhat lower using quarterly data. Asset prices therefore seem to contain valuable information to forecast output also in emerging market economies. It is worth noting that the findings also suggest that the strength of the correlation between output growth and lagged stock returns is significantly related to a number of stock market characteristics, such as a high market capitalization to GDP ratio and, less robustly, English legal origin and the number of listed domestic companies and initial public offerings.

Assessing the Nigerian experience after independence, Edo (1995) observed a remarkable expansion of stock market activity which in turn became a good alternative to increase savings and channel them to real investments. This view is in line with Harry Johnson (1960) assertion that one of the conditions for being developed is having a large stock of per capita capital, which must be replaced and replenished when used up; stock markets are an ideal mechanism to fulfill these function. Thus, underdevelopment can be identified with the absence of this condition (Osibini, 1998). A study by Baier and Dwyer, Jr. (2003) confirms this view; analyzing the connection between the creation of stock exchanges and economic growth their empirical evidence suggest that economic growth increases relative to the rest of the world after a stock exchange opens. The empirical evidence also shows that increased growth of productivity is the primary way that a stock exchange increases the growth rate of output, rather than an increase in the growth rate of physical capital.

However, using an aggregate index of capital market development Nyong (1997) found that capital market development is negatively and significantly correlated with long-run growth in Nigeria. His research also showed a bi-directional causality between capital market development and economic growth. Oshikoya and Ogbu (1999), found for the African case that financial saving appears to be favorably influenced by real interest rates, but not total saving. There appears to be a positive relation between the stock of financial assets held in the financial system, banking sector credit to the private sector and the level of investment. The particular importance of stock markets are also related the their potential to motivate external financial inflows. Further, while higher bank-based financial savings are often crowded out of productive investments through the overbearing influence of the public sector in Africa, equity flows through the stock markets are directly tied to real investments.

Similarly, testing for causality in possible unstable VAR's, Caporale, Howells and Soliman (2003) inferred that stock market development affects economic growth through its impact on investment for the cases of Chile, Korea, Malaysia and the Philippines, for the period 1979q1 to 1998q4. Using the autoregressive distributed lag (ARDL) bound test approach, Choog, Yusop, Law and Sen (2003) found that stock market development is cointegrated with economic growth for the case of Malaysia for a sample period 1978-2000; Granger causality tests also revealed that stock market development Granger-causes economic growth. Similarly, analysis based on panel data for 20 countries, revealed a two-way causation between stock market development and

economic development; individual country analysis could not lead to more precise conclusions, albeit suggested a somewhat stronger link between stock market development and economic growth in developing countries. This study by Tuncer and Alövsat (2000) included five emerging capital markets: India, Indonesia, Pakistan, Turkey and Greece; the sample period covered mostly the 1981-1994 period. Finally, using a multivariate time-series methodology to test for long-run trends and causality between variables that proxy for stock market development, credit market development and economic development for five important emerging markets, Kassimitis and Spyrou (2001) found that in financially repressed markets, such as India, stock market activity does not affect economic growth; in the case of relatively liberalized economies, like Chile and Mexico equity markets have a role to play; in South Korea, equity and credit markets both affect economic growth, but not vice versa; finally, in speculative markets, such as Taiwan, the stock market had a negative impact on economic development. Modeling financial structure, the banking system and the securities markets, to total factor productivity for the case of Egypt, Bolbol, Fatheldina and Omranb (2004), found that bank-based indicators have a negative effect on total factor productivity unless they are associated with a threshold level of per capita income. On the contrary, the effect of market-based indicators is positively reinforced by private net resource flows. Thus, promoting capital markets development enhances economic growth. These findings are consistent with views of the McKinnon-Gurley and Shaw views on the need to end financial repression. Development of securities markets, in particular the stock exchanges is viewed as a medium to encourage savings, help channel savings into productive investment, improve the efficiency and productivity of investments. The emphasis on the growth of stock markets for domestic resource mobilization have also been strengthened by the need to attract foreign capital in non-debt creating forms.

In short, from both the theoretical point of view and recent research findings, stock markets are crucial to economic development in the case of emerging markets economies. However, in spite of some encouraging findings, one might be sceptical about some results. As indicated by Rajan and Zingales (1988), concerning causality between stock markets and growth, it is worth noting that financial institutions might tend to lend more if they expect future economic growth and the stock market capitalizes the present value of growth opportunities. In this case financial development really is a leading indicator rather than a causal factor. Moreover, many panel data studies have not appropriately dealt with issues of causality and cross country heterogeneity in factors such as savings rates that might cause both higher growth rates and greater financial development (Casselli *et al*, 1996). Although a number of techniques have been developed to deal with methodological shortcomings, ultimately the best alternative to assess whether stock markets promote development is an issue that should be considered country by country. This is the approach followed in this paper, concentrating its analysis for the case of Mexico..

3. Data And Methodology

To study the relationship between stock market activity and economic growth for the case of Mexico, time series properties for the real stock market price index (**Indice de Precios y Cotizaciones** from **Bolsa Mexicana de Valores**), real stock market prices and real industrial production are examined; Monthly data for January 1968 to December

2002 is used. Industrial production, and inflation rates were gathered from IMF International Financial Statistics; stock market series were gathered from information released by the Mexican Stock Exchange (MSE). Monthly series provide a better basis to assess the long run and short term relationship between stock markets and development.

Several measures have been used to proxy economic development, among them real GDP, and GDP per capita. However, data for these indicators is restricted to quarterly releases. To overcome this limitation, present in most studies concerning the role stock markets on economic development, this study uses industrial production index. Industrial production is not only an important indicator of economic development, but also should reflect its relationship with the stock market because its most important sector comprises industrial firms listed in this market. Similarly, several measures have been used to proxy stock market development, among them capitalization rates, turnover rates and changes in number of listed companies. Data availability to construct these indexes is also scarce, particularly, long-run information for the case of developing countries is limited; information from emerging markets is really recent thanks to financial liberalization policies and the internationalization of emerging markets; this fact has limited many studies to really medium term analysis. Hence to assess long run market activity price index, and market price series are used in this study.

Three econometric models are the methodological framework to attain the most possibly clear view on stock market performance and development in Mexico: (a) unit root tests; (b) cointegration analysis and (c) Granger causality tests.

To test non-stationarity of the series the Augmented Dickey- Fuller and Phillis-Perron models are employed. Since many financial series tend to show an increasing trend in their mean and variance over time to determine the possibility of a significant long-run relationship between some variables, i.e. a cointegration tests, unit tests must be carried out. The Dickey-Fuller (1979) test for a series Y_t unit root tests consist of a regression of the first difference of the series against the series lagged k times:

$$\Delta y_t = \alpha + \rho y_{t-1} + \sum_s^k \beta \Delta y_{t-s} + \varepsilon_t \quad (1)$$

where $y_t = y_t - y_{t-1}$ and $y_t = \ln(y_t)$.

The null and alternative hypothesis are $H_0: \Delta = 0$; $H_1: \Delta = 1$. Acceptance of the null hypothesis indicates nonstationarity. The Phillips-Perron (1988) statistic is an alternative test to $\Delta = 1$. There are no lagged differences terms:

$$\Delta y_t = \mu + \rho y_{t-1} + \varepsilon_t \quad (2)$$

Once the presence of a unit root in the first difference of each variable has been established, it can be tested whether each of the series analyzed has different unit roots, meaning non cointegration, or else shares the same unit root, i.e. meaning cointegration. Cointegrated variables, if disturbed, will not drift apart from each other. Thus, a linear combination of two or more variables non-stationary series may be stationary; if such linear exists, the non-stationary time series are cointegrated; in this case they possess a long-run equilibrium relationship. The Johansen (1991; 1995) test has been widely used

to determine cointegration among financial variables. It is applied using alternative lag lengths in the vector autoregression (VAR). Concretely, consider a VAR of order p :

$$y_t = Ay_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t \quad (3)$$

where y_t is the k vector of the non-stationary $I(1)$ monthly variables; x_t is a d -vector of deterministic variables; and ε_t is a vector of innovations. This VAR can be rewritten as:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + Bx_t + \varepsilon_t \quad (4)$$

and

$$\Pi = \sum_{i=1}^p A - I_t; \quad \Gamma_t = - \sum_{j=i+1}^p A_j \quad (5)$$

According to Granger's representation theorem (Granger, 1969), if the coefficient matrix A has reduced rank $r < k$, then there exists $k \times r$ matrices \forall and \exists each with rank r such that $A = \forall \exists'$ and $\exists' y_t$ is $I(0)$. R is the number of cointegrating relations, i.e. the rank of cointegration, and each column of the of \exists is the cointegrating vector. The elements \forall are the adjustment parameters in the vector error correction model. Johansen's method estimates the A matrix in an unrestricted form, and then tests whether reject the restriction implied by the reduced rank of A .

Granger causality explains whether x causes y , that is, how much of current y can be explained by past values of y and then see whether adding lagged values of x can improve the explanation. In this respect, y is said to be Granger-caused by x if x helps in the prediction of y ; equivalently, if the coefficients on the lagged x 's are statistically significant. A bilateral causation is frequently the case: x Granger causes y and y Granger cause x . The model can be represented as follows:

$$\begin{aligned} y_t &= \beta_0 + \beta_1 y_{t-1} + \dots + \beta_l y_{t-l} + \beta_1 x_{t-1} + \dots + \beta_l x_{t-l} + \varepsilon \\ x_t &= \beta_0 + \beta_1 x_{t-1} + \dots + \beta_l x_{t-l} + \beta_1 y_{t-1} + \dots + \beta_l y_{t-l} + \varepsilon \end{aligned} \quad (7)$$

Here \therefore indicates the number of lags.

4. Empirical Results

Table 1 shows the unit root tests. The results indicate that industrial production and stock prices, are non stationary in their autoregressive representation, according to the Dickey-Fuller test; however using the Phillips-Perron test there is no significance, since the t -statistic is less than the critical value, i.e, $-4.28 < 3.98$ in their autoregressive representation. However, all these variables can be characterized as stationary after first differencing.

Table 1
Unit Root Test Results for Series of Stock Market, Exchange Rate and Industrial Production

Serie	ADF	PP	Unit Root
Level Index Stock Market Real	1.60***	-1.57***	Yes
1° Difference Index Stock Market Real	-7.62	-15.74	No
Level Real Industrial Production	-2.54***	-4.28	Yes
1° Difference Real Industrial Production	-10.05	-36.16	No

McKinnon Critical values for Augmented Dickey-Fuller and Phillips-Perron test with trend and intercept at 1% and 5% and 10% levels of significance are -3.98, -3.42 and -3.13 respectively.

* Denote significance at the 10% level.

** Denote significance at the 5% level.

*** Denote significance at the 1% level.

Proof of nonstationarity leads to proper cointegration testing, Table 2 shows the results. Both the trace statistics and Maximum Eigen value indicate one cointegrating vector at the significance level of 5 percent. This is encouraging for long term analysis, particularly considering that during the period analyzed Mexico suffered three major crisis, in 1976, 1982, and 1994. Furthermore, during the same period Mexico adopted several exchange regimes, from pegged exchange rates to the dollar, to various schemes of managed adjustments, to current free exchange markets.²

Table 2
Johansen Multivariate Cointegration Test Results for Series of Stock Market, Exchange Rate and Industrial Production

Hypotesis		Test Statistics	Critical Values	
Null	Altenative		5%	1%
$r = 0$	$r = 1$	49.64**	29.68	35.65
$r \leq 1$	$r = 2$	7.17	15.41	20.04

Evidence from nonstationaty, univariate and bivariate regression analysis, and cointegration analysis should be reflected in causality tests. Results are shown in Table 3. The null hypothesis that stock market levels do not Granger-cause (industrial) growth is rejected at the 1 percent significance level; similarly, the null hypothesis that industrial

² For a full analysis of changing exchange regimes and exchange market efficiency for the case of Mexico see: Ortiz (2005).

(growth) does not Granger-cause stock market activity is rejected. therefore there is a two way influence between these variables. This is also an encouraging finding since underlies the importance of stock markets on development and vice versa. In other words, the feed back, i.e., market and stock market information signals are important for industrial managers for their decision making process. Similarly, signals of both stock market activity and industrial production are important for investors portfolio investments and adjustments.

Table 3
Granger Test for Series of Stock Market, Industrial Production

Null Hypothesis:	Observations	F-Statistic	Probability
INDUSTRIAL does not Granger Cause IPC	408	1.84	0.040
IPC does not Granger Cause INDUSTRIAL		3.81	0

Summing up, considering the long range analysis presented in this paper, stock market and industrial growth tend to show in Mexico long run equilibrium, relationship, are cointegrated, and present a dynamic two way feed back of signals that encourage both industrial activity and stock market investments. Hence, considering the two-way relationship between stock market activity and industrial activity, it can be concluded that stock markets are important to economic development in Mexico.

5. Conclusions

The role of stock exchanges on long-run development has been debated over four decades. Economists and financial economists have advanced important theories asserting a positive impact of stock market activity on growth; their theories additionally recommend for the case of developing economies, characterized for many years by financial repression, to undertake financial liberalization policies and promote stock market development. Nevertheless, empirical studies give somewhat inconclusive results. For most developed countries stock markets seemingly have had a positive impact on growth, albeit it might change during certain periods. For the case the developing economies financial research is still limited; cross country studies based on several econometric techniques suggest that stock markets have had a positive result on their economic growth. However, such research might present some biases because it does not take into account the size and level of development of the advanced countries. Most studies concentrating in emerging markets, or in specific country studies, show with greater clarity the favorable impact financial depth, achieved thanks to market liberalization policies, on economic activity; measures of financial deepening have including stock market activity and show a positive impact on growth, suggesting the need to concentrate research on the stock market-development issue on a case by case study. Examining the case of Mexico for the period 1968-2002, empirical research indicates that these two variables maintain a long term, equilibrium relationship, are cointegrated and maintain a two-way Granger causality relationship. These results are very encouraging considering the 35 years span period considered for the analysis. The

bilateral relationship can be explained by the forward looking nature of stock prices which becomes a source of important information for decision making by corporate managers, while industrial activity becomes an important signal for investors in the stock exchange. However, further research must be carried out. Particularly, one immediate step that should be taken is to examine the causal relationship to determine common breakpoints in the series to determine the changing role of the Mexican Stock exchange during different periods. The evolution of the economy suggests analysis taking into consideration the ensuing of economic crisis in Mexico during the last four decades, 1976; 1982, and 1994; yet the behavior of the time series might suggest other alternatives, too. Further, recent research shows that cointegration is a process with ups and downs in its magnitude. In fact, for the case of Mexico Galindo and (1999) and Lopez-Herrera (2005) show that integration of the Mexican stock exchange with that from the United States changes over time.

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Asymmetries in Exports and Imports in the Americas: 1980 to 2005

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Abstract. This paper compares Exports and Imports in agricultural products, fuels & mining products, manufactures, and commercial services in the American countries involved in the NAFTA, and Mercosur-Andean trade agreements. Data on exports and imports between these countries and the world ranges from 1980 through 2005. This study traces the path of these relationships over a twenty-five year period and comments on the relationships of the net export gaps within these trade groups. Similarities and differences in export and import patterns are reported. In analyzing these 25 year trends, this paper underscores the asymmetries in trade that have occurred in these select countries in the Americas.

1. Introduction

Most nations are better at producing some products than other products and are better at producing specific products than are other nations. Natural resources can have a great impact on what a country can produce and export, but beyond natural resources, there are other factors that influence trade today. Some of the major ones are exchange rates, reciprocal economic advantages, customs procedures, economic cycles of growth and recession, disruptive geopolitical events, the fast growing economy of Asia, trade agreements, decreasing transportation costs, and flexible production systems [1].

Trade liberalization in the Americas has improved access to markets, with the main attraction for countries being the US market. The Free Trade Area of the Americas (FTAA) was formed in 1994 and has affected steel exports from Brazil and Argentina. It has also had an impact on crude oil and steel from Venezuela [10]. Increased trade can be beneficial to the economy with greater exports, but a problem for the one with greater imports. So, the amount of trade in each direction has been carefully watched. Not only the amount, but also the effects of trade on the environment in North and South America have become a focus of concern due to problems with corn in Mexico, fish in Argentina, soybeans in Brazil and mining in Chile [8].

These concerns have led to more discussions of sustainability assessments with analysis about possible harm to the environment. President Bush has worked to grow US exports by, for example, expanding free trade agreements with Singapore and Chile, working to change Indian import requirements on textiles, negotiating for removal of Mexican barriers on auto parts, and enforcing copyright laws in Paraguay. However, in the US, imports are growing faster than exports. It is reported [11] that trade deficits are large relative to GDP, large absolutely, and large relative to the US export base. The US deficit in international trade increased again in 2004 [12]. In light of increased trade agreements, increased environmental awareness, and increased demand for goods throughout the world, what has actually happened in trade flows in the Americas? Rose [11] questions whether the WTO has actually increased trade. He argues that the results have been negligible.

This paper looks at export and import amounts measured per year in US Dollars at

current prices from 1980 through 2005 for agriculture, manufactures, fuel & mining, and commercial services in North and South American countries involved in the NAFTA, Mercosur, or Andean trade agreements. The trading partner is the entire world. The Mercosur agreement originally included Argentina, Brazil, Paraguay, and Uruguay when it began in 1991. The older Andean accord, dating from 1969, included the countries of Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela. Gradually, the Andean countries have merged into the Mercosur group. As of 2006, all the Andean countries have either joined the Mercosur or become associates. NAFTA includes the United States, Canada, and Mexico.

The commodity data are collapsed to four broad categories by the WTO and thus hide much detail within each category. For example, because all agricultural products are considered as one group, we are not able to follow specific trends in agriculture. It has been reported, for example, that trade in fruits and vegetables has expanded faster than other agricultural products [3] and that there are significant differences in trends among individual fruits [4]. Studies have shown that much of the world, specifically the European Union, Asia, and the NAFTA countries depend on the Southern Hemisphere countries for juice and fruit [3]. Among the NAFTA countries, the US is the leading importer of fruits and vegetables [4] and horticultural trade among NAFTA partners has increased greatly [5]. It has also been reported that Mexico has lost ground in agricultural arenas since NAFTA and that 1.7 million countryside jobs have been lost [7].

This paper focuses on similarities and differences in patterns in exports and imports of the specified products and country groups in the time period from 1980 to 2005. This study traces the path of these relationships over the twenty-five year period and considers the relationships of the net export gaps within and between countries.

2. Data Set

The source of the data is the World Trade Organization Statistics Database. All data is free to the public and can be downloaded from the WTO from their website at <http://stat.wto.org/Home/WSDBHome.aspx>. The WTO has several data sets from which data can be selected. The data sets used for this paper were merchandise trade by commodity and trade in commercial services. Trade flow can be measured by value or volume [2]. This paper uses value measured in dollars per year.

The data set contains values for all the countries in the NAFTA trade agreement, hereafter designated simply as North America, and the countries of South America that are part of either the Mercosur or Andean trade groups, hereafter called South America.

Movement in exports and imports in North and South America often exhibit a high correlation while the Gap (exports – imports) correlation does not. Table 1 shows the correlations in five year increments between North and South America.

Tables 2 and 3 give, in billions, the amount of exports, imports, and net exports (exports – imports) for the North American NAFTA countries and the South American countries in the ANDEAN and MERCOSUR trade agreements.

3. Agriculture during 25 Years

Exports and imports in agriculture have shown an increasing trend during the twenty-five year period in both North and South America. Figures 1 and 2 illustrate these paths. The correlations between North and South American exports are high and positive, except for

Table 1. Correlations between North and South American trade values

Years	80-84	85-89	90-94	95-99	00-05
Exports, Agriculture	0.81	0.92	0.96	-0.04	0.96
Exports, Comm. Services	-0.55	0.97	0.98	0.90	0.97
Exports, Manufactures	0.64	1.00	0.99	0.99	0.93
Exports, Mining	0.17	0.64	0.74	0.81	0.99
Gap, Agriculture	-0.74	0.69	0.46	-0.21	-0.90
Gap, Comm. Services	-0.74	-0.07	-0.9	-0.57	-0.48
Gap, Manufactures	-0.89	0.92	0.74	0.12	0.29
Gap, Mining	0.83	-0.86	-0.83	-0.50	-0.99
Imports, Agriculture	-0.26	0.97	0.97	0.34	0.98
Imports, Comm. Services	-0.76	0.96	0.97	0.87	0.87
Imports, Manufactures	-0.68	1.00	0.95	0.86	0.93
Imports, Mining	0.88	0.89	-0.37	0.80	0.99

the period from 1995 to 1999 where they leveled out in North America while continuing to rise in South America. In the North, exports increased from 65.6 billion to 123.85 billion in the 25-year period, an increase of 89%, while in the South, exports moved from 24.85 billion in 1980 to 92 billion in 2005, an increase of 270%.

Imports of agriculture show an overall increasing path in both continents. In the North, the 25-year period showed steady growth, from 32.6 to 117.26 billion (a 260% increase). In contrast, the increase in the South for agriculture imports over all 25 years was from 12 billion to 32.7 billion, a 171% increase. The ratio of North to South American imports in 1980 was 32.6 to 12, or 2.7, while by 2005, this had increased to 117 to 32.7, or 3.6.

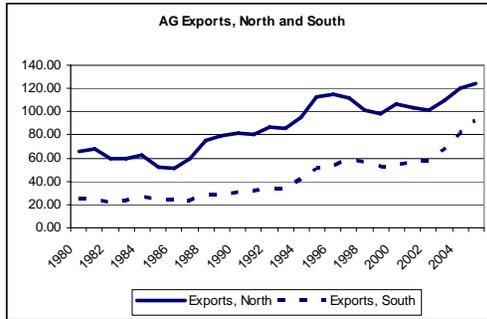
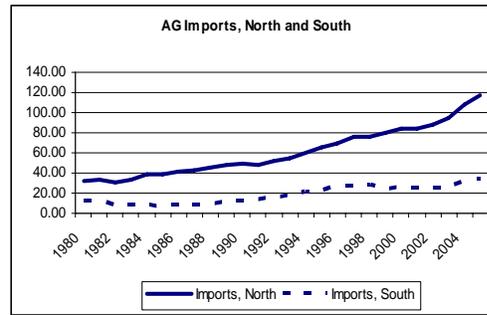
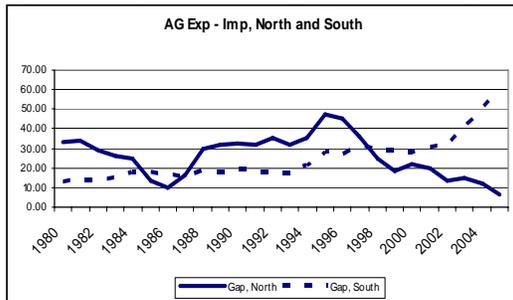
Figure 3 illustrates the gap between exports and imports in North and South America. In North America, the gap has been on a steady decline since 1995. In 1995, exports in agriculture were 112.7 billion while imports were 65 billion, a difference of 47 billion. By 2005, exports were 123.8 and imports were 117.26 billion, a gap of only 6.6 billion. In South America, on the other hand, the gap between exports and imports has increased over the years. In 1980, the difference between exports and imports was 12.8 billion, while in 2005, this difference grew to 59 billion, an increase of 361%. Since 1998, then South American net exports surpassed those of North America, the difference between net exports in the two continents has continued to increase.

Table 2. North America, Values of Exports, Imports and Net Exports, in Billions

Year	Exports				Imports				Gap			
	AG	MA	MI	CS	AG	MA	MI	CS	AG	MA	MI	CS
1980	65.60	172.22	37.21	45.22	32.58	165.44	104.91	39.00	33.02	6.78	-67.70	6.22
1981	67.68	190.01	35.20	54.04	33.44	189.80	107.34	43.39	34.25	0.21	-72.15	10.65
1982	59.67	177.12	35.10	58.49	30.71	185.95	84.25	48.09	28.96	-8.84	-49.16	10.40
1983	59.76	173.40	32.32	59.32	33.40	210.63	77.61	51.46	26.36	-37.23	-45.30	7.86
1984	62.83	194.74	34.49	69.22	38.34	281.73	82.90	65.27	24.49	-86.99	-48.41	3.95
1985	52.07	199.46	35.38	72.85	38.69	312.23	73.39	70.32	13.38	-112.76	-38.01	2.53
1986	51.00	206.55	28.98	85.38	41.42	351.43	57.43	79.81	9.57	-144.88	-28.45	5.57
1987	59.85	234.89	31.53	96.01	43.28	388.32	65.09	90.75	16.57	-153.42	-33.56	5.26
1988	74.91	288.97	37.51	112.36	45.06	440.29	66.62	101.25	29.85	-151.31	-29.11	11.11
1989	79.19	319.89	42.58	130.53	47.38	459.04	82.00	108.66	31.82	-139.15	-39.42	21.86
1990	81.74	363.80	47.43	151.23	48.98	468.55	95.38	125.43	32.77	-104.75	-47.95	25.80
1991	80.24	392.93	47.16	167.30	48.37	475.51	81.05	129.39	31.87	-82.58	-33.89	37.91
1992	86.79	419.40	44.83	179.17	51.59	519.11	80.90	133.93	35.20	-99.71	-36.08	45.24
1993	85.86	444.36	43.16	187.57	54.36	572.90	81.58	141.67	31.50	-128.54	-38.41	45.90
1994	95.00	501.55	45.58	204.49	59.92	662.43	86.24	152.86	35.08	-160.88	-40.67	51.63
1995	112.73	568.41	55.34	223.93	65.32	743.46	94.94	162.21	47.41	-175.05	-39.60	61.71
1996	114.47	609.29	58.94	245.25	69.35	773.20	109.30	174.73	45.13	-163.92	-50.36	70.52
1997	111.60	688.27	61.67	263.59	75.60	861.45	118.38	189.48	35.99	-173.18	-56.71	74.10
1998	101.10	698.31	52.02	271.57	76.43	927.23	96.62	203.82	24.68	-228.92	-44.60	67.74
1999	98.54	734.35	52.88	294.28	80.42	1026.36	114.77	223.57	18.12	-292.01	-61.89	70.71
2000	106.20	824.55	76.08	317.36	84.39	1168.95	186.17	251.48	21.81	-344.40	-110.09	65.88
2001	103.74	763.74	75.07	304.52	83.97	1088.14	172.02	247.71	19.76	-324.40	-96.95	56.81
2002	101.40	729.61	67.78	312.78	87.81	1118.60	160.07	253.85	13.59	-388.99	-92.29	58.93
2003	109.94	753.96	84.21	325.81	95.26	1186.08	206.34	273.80	14.67	-432.12	-122.14	52.01
2004	119.67	856.89	106.60	369.73	107.49	1354.58	274.05	315.95	12.18	-497.68	-167.46	53.78
2005	123.85	938.55	142.93	406.21	117.26	1487.39	373.39	345.34	6.59	-548.83	-230.46	60.87

Table 3. South America, Values of Exports, Imports and Net Exports, in Billions

	Exports				Imports				Gap			
1980	24.85	16.36	40.57	12.35	12.05	55.24	17.69	23.57	12.80	-38.88	22.87	-11.21
1981	25.57	17.68	43.24	13.18	11.76	61.72	19.04	26.78	13.80	-44.04	24.20	-13.60
1982	21.08	15.68	44.02	11.76	8.32	47.07	16.58	23.85	12.77	-31.38	27.44	-12.09
1983	22.74	20.06	40.13	10.84	8.02	30.89	13.32	17.22	14.73	-10.83	26.81	-6.38
1984	25.71	25.19	42.75	11.48	8.05	34.03	12.80	17.54	17.66	-8.84	29.94	-6.06
1985	24.39	26.61	40.24	11.88	6.59	36.34	11.91	17.31	17.79	-9.73	28.33	-5.43
1986	24.01	27.65	22.71	12.01	7.95	40.90	8.53	18.76	16.05	-13.25	14.18	-6.75
1987	23.31	32.85	29.94	13.31	7.83	46.83	10.38	18.92	15.48	-13.98	19.56	-5.61
1988	28.18	43.25	30.04	14.63	9.57	57.04	10.36	21.49	18.60	-13.78	19.68	-6.86
1989	28.67	49.40	35.77	17.36	10.70	60.32	11.55	23.15	17.96	-10.92	24.22	-5.79
1990	30.60	50.78	44.37	19.86	11.65	68.50	12.94	28.57	18.95	-17.72	31.43	-8.70
1991	31.09	56.11	38.33	20.48	12.97	80.48	12.93	30.92	18.12	-24.37	25.40	-10.44
1992	32.98	62.64	37.93	23.09	15.82	108.63	13.76	35.42	17.15	-45.99	24.17	-12.33
1993	33.79	73.17	36.54	24.22	16.94	121.80	13.52	40.20	16.85	-48.63	23.02	-15.98
1994	42.12	84.53	39.51	27.35	20.71	139.80	13.89	43.31	21.41	-55.27	25.62	-15.96
1995	50.79	103.55	48.97	29.46	22.70	158.89	17.43	44.90	28.09	-55.34	31.54	-15.44
1996	53.47	117.38	57.39	30.40	26.30	180.28	19.18	46.09	27.17	-62.90	38.21	-15.69
1997	59.00	137.60	57.57	32.39	27.02	221.93	22.36	51.56	31.99	-84.33	35.21	-19.16
1998	56.63	148.62	43.81	34.81	27.81	234.55	18.89	54.16	28.82	-85.92	24.92	-19.35
1999	52.49	159.96	53.32	34.10	23.81	226.64	19.20	52.50	28.68	-66.69	34.12	-18.40
2000	52.84	191.80	77.68	38.58	25.37	259.64	27.85	58.41	27.47	-67.84	49.83	-19.83
2001	56.25	188.40	66.57	37.16	25.86	257.92	26.61	58.63	30.39	-69.52	39.97	-21.47
2002	57.05	187.87	67.09	35.25	25.00	236.33	23.35	52.51	32.05	-48.46	43.74	-17.25
2003	67.88	193.77	78.50	37.82	27.22	239.92	27.44	54.79	40.66	-46.15	51.06	-16.98
2004	81.42	228.81	113.80	44.57	30.69	291.29	39.58	62.77	50.72	-62.48	74.21	-18.20
2005	92.00	260.02	159.18	53.23	32.72	342.81	52.17	75.16	59.28	-82.79	107.01	-21.94

Figure 1. Agriculture Exports, in billions**Figure 2. Agriculture Imports, in billions****Figure 3. Agriculture, Exports Minus Imports**

Manufactures

This category includes iron & steel, chemicals, pharmaceuticals, leather, wood products, machinery, etc. Figures 4 through 6 show the exports, imports, and net exports for North and South America. Exports for both continents increased overall during this period. In North America, exports in 1980 were 172.2 billion. By 2005, exports had reached a level of 938.6 billion, a 445% increase. In South America, the 1980 exports were 16 billion, while by 2005, exports reached 260 billion, an amazing 1490% increase.

Imports also grew in both continents. In North America, manufactures increased from 165 billion in 1980 to 1,487 billion in 2005, a 799% increase. In South America, the 1980 level of imports was 55 billion while the 2005 level grew to 342.8 billion, a 521% increase. Thus, both continents experienced large increases in imports of manufactures.

The gap, or net exports, moved from 6.8 billion to -548.8 billion over 25 years in North America and from -38.8 billion to -82.8 billion in South America. That is, the North American movement showed the positive distance between exports and imports turning from positive to negative with an overall drop of 450% throughout the period, while South American movement showed imports surpassing exports throughout the 25 years, but with a negative increase of 80%. So, while both continents show, increases in exports and imports, in the North, imports have grown so fast that the increase in exports is not able to have a positive impact on the value of net exports.

Figure 4. Manufactures Exports, in billions



Figure 5. Manufactures Imports, in billions

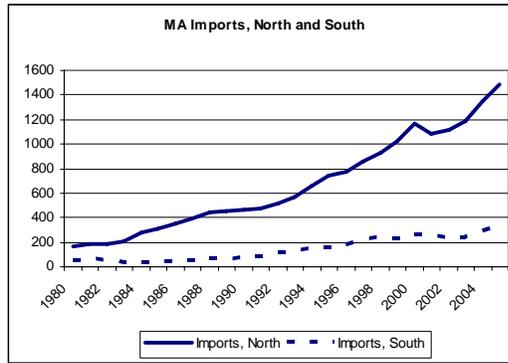
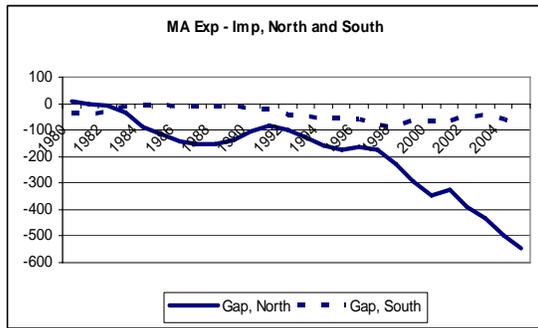


Figure 6. Manufactures, Exports minus Imports



Mining and Fuels

The mining and fuels category includes ores, minerals, and fuels. Figures 7, 8, and 9 show the exports, imports, and net exports for North and South America. The correlations between mining exports in the two continents indicate a steadily increasing positive correlation while imports show a fairly stable strong correlation, except during the 90-94 period. Since 1985, the correlations between net exports in both continents has been definitely negative.

In North America, mining exports grew from 37 billion in 1980 to 143 billion in 2005, an increase of 284%. North American imports grew from 105 billion to 373 billion, an increase of 256%. Thus net exports show imports greater than exports the entire period, with a strong downturn since 2000.

South America began 1980 with 40.6 billion in exports and ended 2005 producing 159 billion in exports, an increase of 292%. Imports in South America also grew, from 17.7 to 52 billion, an increase of 195%. The gap, however, was always positive and has increased over the years from 22.9 to 107 billion (368%). So, even though both exports and imports grew, imports grew at a faster rate.

In 1980, the ratio of North to South American exports was .92 while in 2005, it was .90, showing little difference in change in relative amount of exports. The ratio of North to South American imports, on the other hand, in 1980 was 5.9 and in 2005 was 7.2, another indication that relative amounts of imports are increasing in North America faster than in South America.

Figure 7. Mining, Exports, in billions

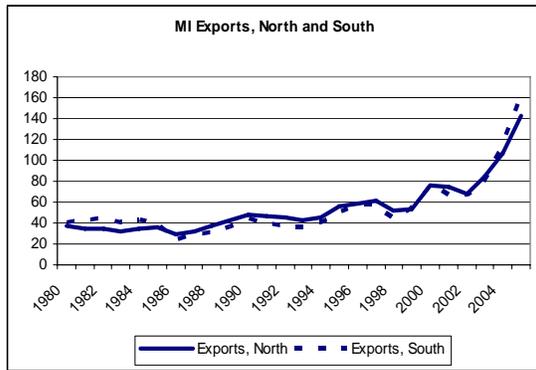


Figure 8. Mining, Imports, in billions

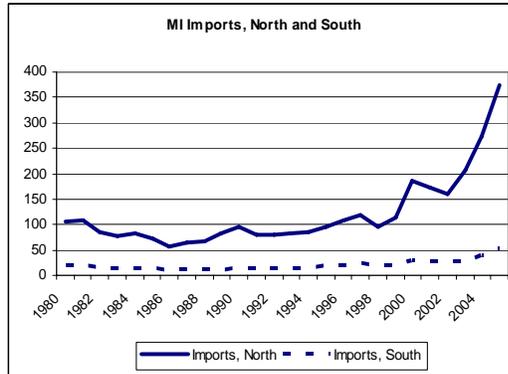
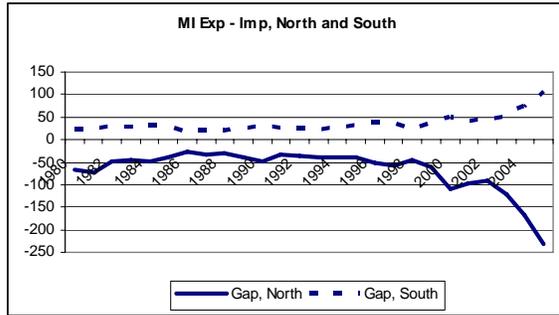


Figure 9. Mining, Exports minus Imports



Commercial Services

Commercial Services include communication services, construction services, insurance services, financial services, computer and information services, etc. The patterns of exports, imports, and net exports are shown in figures 10, 11, and 12. North America experienced strong growth in this area over the 25 year period. In 1980, exports were 45 billion. By 2005, exports reached 406 billion, an increase of 798%. Imports also grew. In 1980, they were 39 billion, while in 2005, they were 345 billion, an increase of 785%. Net exports grew from 6 to 60.8 billion. The growth was strongest from 1987 to 1997, and has been increasing again since 2004.

South America also showed growth in this area, but imports remained greater than exports. The 1980 values for exports and imports were 12 and 23.6 billion, respectively, and these grew to 53 and 75.2 billion in 2005. The net export value was -11 in 1980 and -22 billion in 2005. From Figure 12, we see that net exports exhibited a slow but steady decline from 1985 onward.

Figure 10. Commercial Services, Exports

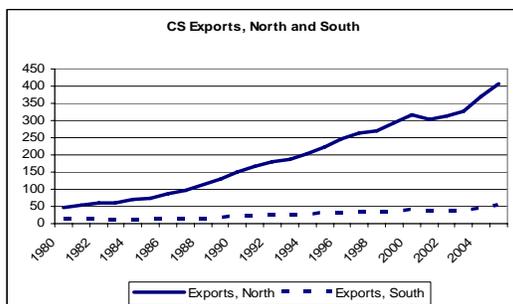


Figure 11. Commercial Services, Imports

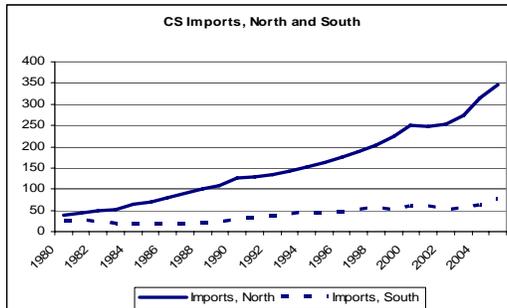
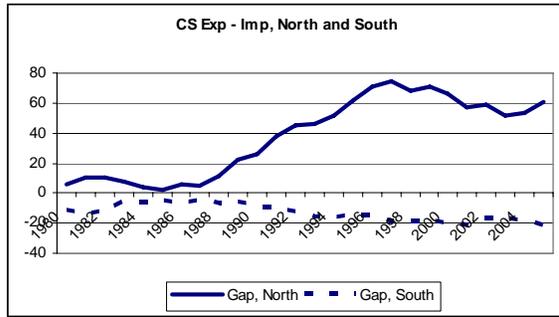


Figure 12. Commercial Services, Exports minus Imports



All Categories Combined

The last set of figures, 13 to 15, show the sums of exports, imports and net exports across all four categories (agriculture, manufactures, mining, and commercial services). We see overall increases in exports in both North and South America, as well as increases in imports. Figure 15, which captures net exports, shows that the North American gap is trending negatively with a sharp drop since 1998. South American net exports hovered around 0, fluctuating above and below, but have stayed above 0 since 2002.

Total exports over these four categories in North America increased from 320 to 1,611.5 billion in 25 years, while total imports increased from 342 to 2,323.4 billion. Thus North American net exports in 2005 were around -711.8 billion. The change in North American net exports over a 25 year period has been an increase of 3,184% in the negative direction. That is, the gap of exports minus imports has grown from -21.7 to -711.8 in this time period.

In South America, exports increased from 94 to 564 billion, while imports went from 108 to 502 billion. Net exports in 1980 were -14.4 and ended at 61.6 billion in 2005. The change was a difference of 527% with the move from negative to positive.

In 1980, the ratio of North to South American exports was 3.4, and in 2005 it was 2.9. The ratio of imports was 3.2 in 1980 and 4.6 in 2005. The gap ratio, however, was a positive 1.5 in 1980 and a negative 11.6 in 2005. Thus, all indicators reflect total movement in North America in a strong downward trend and in South America in a mild upward trend.

Figure 13. All Categories, Exports

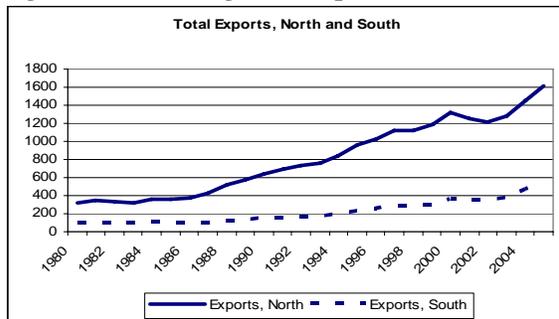


Figure 14. All Categories, Imports

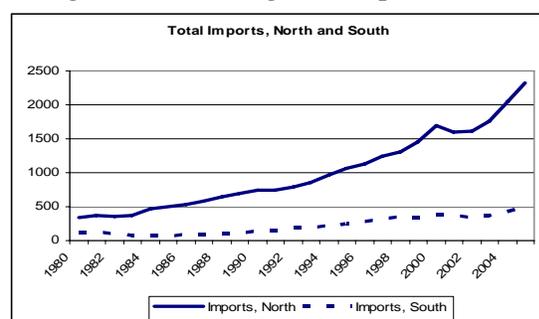
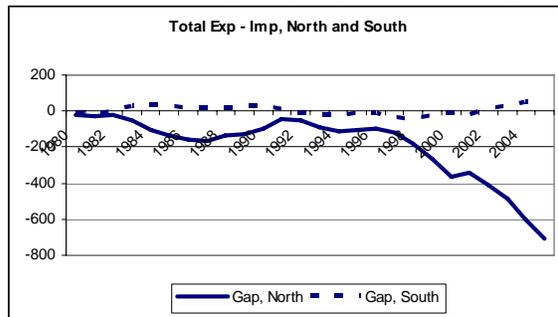


Figure 15. All Categories, Exports minus Imports

Conclusions

Exports, imports, and net exports during the 25 year period, from 1980 to 2005, in the North and South American countries involved in the trade groups of NAFTA, ANDEAN, and MERCOSUR were examined. Table 1 showed strong positive correlations between exports in most cases, indicating that North and South American exports moved in the same direction during this period. Imports, for every area except mining, were correlated negatively in 1980, but had all moved to strong positive correlations by 2005 (.87 to .99). The correlation between net exports in North and South America was strongly negative in agriculture, manufacture, and commercial services in 1980, and strongly positive in mining. By 2005, the mining and agriculture correlations were very strongly negative; commercial services was mildly negative, and manufactures was very mildly positive.

Figures 3, 6, 9, 12, and 15 show net exports for North and South America for each commodity and overall. Agriculture shows several times when the lines crossed with a final crossing in 1998 and a diverging path since. Manufactures shows South America below zero but steady while North America exhibits a strong negative trend. Mining shows South America always positive and trending up since 1999 while North America is always negative and trending down since 1999. Commercial services in the South has a slight negative trend while the North shows a sharp rise from 1986 to 1997, then a trend down with a turn-around in 2004. Looking at net exports of all categories, we see the NAFTA countries with an increasing downward trend since 1992, while the South American groups hovered around zero until 2002 and have moved into positive territory.

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OUTSOURCING AND FDI IN DEVELOPING COUNTRIES: THE CASE OF THE MEXICAN ECONOMY

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Abstract

The remarkable FDI ascent carried out during the years ninety by TNCs, developed important industrial outsourcing, due to the favorable environment generated by the economic reforms. Highlight the investments carried out in automovile industry and in export assembly plant, creating an exporter platform to USA. This paper study the trajectory in these industries, showing as the absence of an endogenous base as well as the wide international competition, create the conditions to restart the outsourcing process but this time toward other countries. Also, it analyze the scarce interaction reached among international financing, capital formation, manufactures exports growth and economic performance.

1. Introduction

During the 1990's and until 2000 there is a remarkable increase of the FDI inflows (FDI). Some great companies with headquarters in developed countries are displaced part of their assets towards some developing countries and economies in transition. In other cases they have celebrated contracts so that firms of those countries are in charge from the process of production of certain goods. The outsourcing has as main destiny some countries and zones of southern Asia and to a lesser extent some Latin America countries. For that reason the recent performance of the world-wide economy has being characterized as a model supported by a growing international demand (UNCTAD, 2004:6).

This process has been antecedented by the economic reforms in the developing countries from the 1980's that impelled the trade and financial liberalization. Throughout those first half 1990's the world-wide trade reached a remarkable performance and the FDI a new dynamism. Nevertheless, it has been properly in the latest half of 1990's and first years of the present century when the FDI is being the vehicle of the trade expansion, so that the outsourcing is explaining a substantive part of the growth of the world-wide trade of the last years. The Mexican economy also journeyed quickly towards the trade opening, the Inter-American Development Bank (I.A.D.B., 1992: 250-254) indicates that it began with a reduction in the imports tariffs in 1983 and the drastic reduction of the import's licence of a number of products in 1984; it continued with the

elimination of subsidies and FDI countries restrictions; until including diverse measures that released the balance of payments and reduced imports tariffs applied. Part of these changes are negotiated the free trade agreement (Nafta) that took effect in January of 1994.

These changes in the economic policy created the conditions for the increase of the manufacturing exports, so that the foreign trade became a fundamental component of the process of economic transition in Mexico (BNCE, 1999). Thus, by more than twenty years the diverse governments have maintained the idea of the private investment preeminence and specially of the FDI, considering that is indispensable to count on external resources for the economic growth, in regard to thinking that Mexico is a country with abundance of labor and shortage of capital. This is the framework that it must be examined the investments outsourcing that some transnational companies (TNC) make towards the mexican territory.

In this work it analyze the FDI inflows during the 1990's, their remarkable growth specially in the last half of the decade and until 2001. This remarkable increase motivated not only the accelerated change in the composition of the exports towards those coming from the manufacture sector; but also, the increasing weight of the external sector and the remarkable opening degree of the economy. The facts allow to maintain that a concentrated export platform in few activities of the manufacture industry were analized. These activities are from investments made by some of the greater transnational companies, specially in the automotive industry and in the electric and electronic equipment and apparatuses. In this work it is maintained that the process of investments outsourcing on behalf of a reduced group of TNC is explained by the course of the constitution of the region of North America. Nevertheless, this export platform has one limited endogenous base. In this work it is argued that as a whole this export dynamics does not count on excellent domestic productive linkings; its growth is almost completely broken ties with the performance of the domestic market; in a great number of companies inputs produced in Mexico are not used; there are not other links that allow to spread technology; and even, important part of the products that the companies of these branches sell in Mexico are imported. The permanence of some companies is subject to: the fiscal treatment that receives in the United States some of the inputs and products of the sector; and, to the establishment in commercial agreements, since the participation of the economy of Mexico in the elaboration of these articles, as in the case of the clothes fabrication, it is by cheap labor and energy. The outsourcing of some investments to count on an important capacity of manufactures exports explains great part of the FDI inflows during the 1990's. However, one is an outsourcing that assumes the form of "enclave" and for that reason it does not generate the links to conciliate high levels of economic growth with increase of the export capacity. It is so, as time studies in this work has appeared a tendency to new outsourcing is leaving Mexico towards other countries.

2. FDI, domestic market and manufactures export platform .

As in the case of other countries of Latin America, in the following years to World War II and until end of the 1970's the FDI is one of the sources of the capital formation in Mexico. The accumulated amount of FDI when finalizing the year of 1980 was of 8 459 million dollars, of which more of 65% came from the United States and 75% were

concentrated in the manufacturing industry. During those years, the presence of foreign companies in the production in some manufacturing activities was important, for example: automotive, chemical pharmaceuticals, industrial chemical agents, electrical apparatuses, equipment of office and tobacco (Fajnzyłber and Martínez Tarragó, 1976). During the 1970's the investments made in the industry of capital goods were valuable that included participation of private capital, foreign capital and development banks, with financing and technology, contributions. Nevertheless, also the operations of purchase of assets or companies with foreign participation on behalf of local capitals were multiplied, that was known like the process of "mexicanización" of foreign companies, impelled by legal modifications like the law to promote the Mexican investment and to regulate the foreign investment and the transference of technology sent in 1973 (Vidal, 2002). In all the cases, diverse companies intended to supply the demand of the domestic market and the weight of the manufacturing exports was smaller or nonexistent. The companies consumed inputs produced in the country and regulations and mechanisms of promotion had even settled down to increase the national components of diverse goods, for example in the automotive industry. In the first half of the 1980's the situation is not modified, so that in the year of 1980 the manufacturing exports represent the 19.5% of the total exports; whereas in 1985, after three years in declination, they reach the 23.3% (NAFINSA, 1988:387). The generation of a manufacturing industry with exporting capacity appears after initiate the trade opening, when also the FDI annual inflows are greater and the application of the law on foreign investment is made flexible. In the period from 1984 to 1987 the annual average FDI inflows was of 2 365 million dollars, with which the accumulated balance stops 1987 is more of the double of the reached in 1980. In the following years, as it is observed in **figure 1**, the inflows continue increasing emphasizing the reached amounts from 1996 to the 2001.

From 1988 to 1990 the annual average inflows are of 3 126 million dollars, data highest than the annual inflows from the 1950 to 1980 (NAFINSA, 1981:330-333). In the years from 1991 to 1993 it is increased again to 4 billion annual dollars. Until the year of 1993 - with the previous methodology of calculation - the FDI stock was of 42.374 billion dollars. From 1994 to 1997 the annual average inflows are 12.235 billion dollars, whereas in following the four years it reaches the greater average to date, with annual inflows of 17.244 billion dollars. The FDI inflows since 1993 to 2003 sum 143 billion dollars, that are equivalent to more than five times of the inflows in the years from 1987 to 1993 and more than seven times to the FDI stock until 1986. In addition to the remarkable increase, the FDI inflows from 1987 give account of a new behavior because an important part of this was made by transnational companies of the automotive industry, another part talk about to imports of fixed assets carried out by companies assembly plants with foreign investment and another amount was made by TNC with headquarters in the United States or some Europe countries to acquire companies, emphasizing financial services and trade.

In the period from 1989 to 1996 the five greater companies of the terminal automotive industry with operations in the country from many years before, make important investments, **see table 1**. Altogether these investments are equivalent to 16% of the total of the FDI inflows in those years. As it is exposed in the following pages, it is from these investments that the mentioned TNC develop an important exporting capacity. The amount of the resources inverted and the weight of these investments in the total of

the FDI in those years, allow to maintain that there are not another set of companies that has had a similar behavior. These companies decided to transfer the production from some models to Mexico considering the market of North America. It is a case of outsourcing that includes the assembly of some cars models, the manufacture of some automotive parts, and motor for vehicles that are assembled in the United States. In the period from 1997 to 2002 the inflows of foreign investment in the automotive industry added 8,4 billion dollars, that are equivalent to the 9,1% of the total of the FDI made in that period.

On the other hand, the maquila industry, explains another part of the FDI flows, because their imports in capital goods from 1994 to 2003 add 19.4 billion dollars, the 13.5% of the total inflows in the period. As in the case of the automotive companies that they have decades operating in Mexico, it assembles plants for export (maquiladoras) arose from the 1960's, still before 1980's trade opening. In the origin, its main intention was to create jobs in the border zone, and it was only after the crisis of 1982 debt, when their capacity to generate cash flows in dollars was considered like arguments to support their growth (Gerber, 1999: 788).

The maquila industry participates in a zone of free trade that establishes Mexico - United States border, whereas the laws of this last country allow the temporary export of parts and inputs manufactured with aims of return without considering taxes. As the I.A.D.B. said "the assembly plants constitute a Mexican variant of the zone of free trade... where the trade was free of tariffs and nontariff barriers" (I.A.D.B., 1992: 252). Slowly the industry export assembly plant (maquiladora) began to change the Mexican exports composition, from agricultural products and towards manufactures (Reynolds, 1996: 677). A year after the maquiladora program settled down, in 1966 existed twelve plants, in 1969 were 108, 540 plants in 1979; whereas in 1989, arrived itself at 1 660 establishments (García Zamora, 2001: 128). From 1989 until 2001 it is an increase maintained in the number of plants that settle, reaching in that year to 3 630 establishments. In the following years the companies diminish export assembly plants, reporting themselves 2 801 establishments in June, 2004. In the measurement in which it advanced the economic reform in the 1980's, maquiladoras went growing, began to operate intensive plants in capital, the exception fiscal regime was maintained and the relation with US has been narrowed. Another substantive part of the growth of the FDI inflows, specially from 1996, explains by the purchases of companies or assets that are in operation. From 1998 to 2001, the operations of overseas fusions and acquisitions made by transnational companies add 46 billion dollars (the OECD, 2002: 11). This number represents the 67.3% of the FDI inflows in the period. From second half of the 1990's overseas fusions and acquisitions they have continued, so single in the first semester of 2002 reported inflows in this line by 3.9 billion dollars. It can be considered that at least 40% of the FDI inflows from 1994 to the date it destines to the acquisition of companies that are operating. As in the case of banking services and pensions funds, the acquisitions of companies for trade, the food industry, drinks and others of the manufactures, they are made to obtain portions of the domestic market. They are operations that are part of a internationalization strategy and for some firms are investments necessary to maintain the group and to defend themselves of the possible competitive acquisition. An example is the financial corporations that made large investments in Latin America at the end of the 1990's, so that their branches initiate the

present decade with a market participation by their assets, higher or near to 60% in Argentina, Chile, Peru and Venezuela; while in Mexico it is 90% and in Brazil 48% (Cepal, 2002).

Thus, even though the outsourcing operations are concentrated in few manufacturing activities, great part of the FDI inflows has other destinies. Unlike the year of 1980, when - as it stood out previously - of the total FDI stock in Mexico, 75% were located in the manufacturing industry; but in the period from 1994 to June 2004 the distribution is: manufactures, 48.6%; financial services, 25.8%; commerce, 10.1%; other services, 7.6%; communications, 5.1%.

The remarkable growth between 1994 to the 2001 and drastic fall that begins in 2002 appreciate in the **figure 1**, in which also it emphasizes the predominate of the FDI inflows coming from the United States, **figure 2**. In the period of 1994 to June of 2004 after the United States they locate Spain and Netherland, altogether they explain almost 80 % of the FDI inflows, **figure 3**. The opening of the economy, the growth of the manufacturing exports, the signature and take off in several free trade agreements and the establishment of other means of commercial liberalization have not limited or diminished the relation with the United States, on the contrary they have narrowed it. The Spain and Netherland investments are located in some activities, in a case emphasizes the financial system; and, in the other, in addition to the financial system, some activities of the manufacture. They are investments makes to count on portions of the domestic market but also to take advantage of the increasing economic relationships with the United States. For example, the sale of the 24.9% of the capital of the financial group Santander - Serfin on the part of Santander Central Hispánico to the Bank American of America had the strategic target to have a partner who allowed to take a greater portion from the remittances market coming from Mexican workers in the United States. It announced in September of 2004 the acquisition of Laredo National Bancshares (LNB) by the BBVA that will be integrated with the Valley Bank and with Bancomer Transfer Service (BTS) also it has the objective to fortify the operations in the remittances market and the attention to Mexican workers in the United States.

The magnitude of this process of integration also is expressed in the origin of the capital goods imports made by the maquiladora firms. Between 1994 and March of 2004, the 88,2% come from the United States, follows Japan (2.3%), Korea South del (1.8%) and Netherland (1.8%). This characteristic of the FDI stands out in the behavior of the equipment and electrical and electronic apparatuses exports. That is to say, they are investments that are made in Mexico considering the dynamics of the economy of the United States.

3. Economic reforms and FDI promotion

The law that regulated the FDI in Mexico from 1973 was modified during the first years of the economic opening. The important change in the economic policy inspired by the Consensus of Washington operated in the FDI scope starting from 1983 to 1993 by means of regulations changes, authorities decisions by case and a flexible application of the law. Between the executed measures they are:

- They were promulgated new rules and decrees by the National Commission for Foreign Investment (CNIE) in 1984, that allowed to increase limits of 49% of the property of the foreign capital.

- It was authorized in 1984 to install companies with majority or totally foreign capital in exporting, or in sector with high technology or with intensive in fixed capital.
- A new rules for law was established in 1989 to allow in ahead the possession of the 100% of the capital by foreign investors, with the exception of some restricted sectors and observing some rules of operation and geographic location.
- In some industries like the glass, the cement, the cellulose, the iron and the steel, previous authorization of the CNIE, became possible until the 100% of foreign capital.

In the year of 1993, once the TLCAN had been approved, that includes an ample chapter on investments and diverse rules of origin that regulate the FDI behavior, it is approved a new law of foreign investments. The law considers the regulations contained in the TLCAN, eliminating themselves the restrictions for the secondary petrochemical FDI, parts for automobile and the manufacture of buses, trucks and their parts. In secondary petrochemical, they were including a great amount of activities that years back were considered basic petrochemical and in that measurement they were exclusive of the State, reason why the opening to the FDI in this sector was very large.

The proportion of activities opened to majority foreign participation rose to 91% and the manufacture sector was totally open to the foreign capital (Clavijo and Valdivieso, 2000). However, as it occurs with the TLCAN, the new FDI law does not suppress all the restrictions for the foreign capital inflows. It defined some activities in which was necessary the CNIE authorization when participation of the foreign capital surpasses 49%, between these cases are: marine transportation, airports administration, cellular telephony, gas and oil perforation, insurance agents and education.

The law of Credit Institutions approved in 1989 allowed the transformation of the banks (that had been nationalized in 1982) in joint-stock companies and its privatization, fixed a limit of 30% for foreign participation, established the conditions so that the bank was controlled by domestic capitals and impelled the creation of financial groups. Later, these limits were incorporated to the specific restrictions for the foreing capital participation contained in the annexes of NAFTA chapter 14. The own treaty created in addition some restriction against foreign capitals in favor to domestic banks owners, among them market fixe quotas that protect by a time of the external competition to the banks that just had been privatized. (Strap, 1995 and Armendáriz and Mijangos, 1995).

From those years, with the NAFTA and the new foreign investments law, one allows the foreign capital participation in the manufactures and many other economic activities, practically without exclusion. Only in some activities, like the bank, they subsisted important safeguard, but as a result of the 1994 financial crisis, they were disappearing, in some cases to great speed. In cellular telephony the foreign capital participation includes the possibility of full control of the firm, reason why has been possible expansion of European companies. In the airports administration, the association prospered; whereas in oil sector they have been the denominated multiple services contracts. In the railroads also changes were made to allow the total foreign capital participation. As one stood out in the previous part of this text, a remarkable result is the foreign capital inflows in order to buy banks, insuring and investment societies.

The laws, regulations and the own management in areas of the public administration or state companies as PEMEX allows a large participation of foreign capital, without considering the origin area geographic. In some activities it keeps the safeguards agreed in the NAFTA.

The origin rules agreed for some activities are benefited by the tariff reductions in the NAFTA, are equipped with a specificity that does difficult to conciliate with the idea of free trade. That are the cases of the automotive industry, the equipment and electrical and electronic apparatuses and the textile industries. In the automotive industry a particularly high origin norm was established, at least 62,5% of the value added, calculated on the base of the net cost. In addition, for the case of Mexico, other changes were considered, like the national content inputs proportion, allowing that account the maquiladora elaborated automotive parts. Also the import of automotive vehicles was allowed and the requirements were made flexible on the net currency generation, considering themselves their possible elimination. A greater access to the market of the United States for the companies that operated in Mexico reducing the tariff levels in the case of finished vehicles of 2,7% in 1993 to a 0,6% in 1997 and of 1,7% to 0,6% for automotive parts (Cepal, 1998 occurred: 256).

In the TV manufacture industry was established that some parts had to be made in some of the three signatory countries of the treaty to benefit from the tariff regime. In the textile industry was agreed that the thread or fiber with which the article elaboration begins certain had to be of North American origin. By virtue of that's are specific rules, there have been groups of companies more benefitting than others, constituting part of which we can denominate the specific regulation of the investments regime in North America region. As diverse authors wrote (Borja, 2001; Cepal, 1998) there were companies that ran the risk of being outside the American market. Even companies of the automotive industry with headquarters in Europe and Japan, and plants established in Canada had this risk, although the government of this last country lobbied to obtain that the origin rule was smaller than 62.5% (Mayer, 2001). Several Asian electrical and electronic companies and some European had to make investments in the zone of North America or to look for suppliers of the area. Particular - as it emphasizes Gerber (1999:791-793) - a significant portion of the Asian firms investment in Mexico during the 1990's was made considering the origin rules in the NAFTA and looking for not to be outside of the treaty area.

In synthesis, the measures adopted in the NAFTA in the matter of origin rules for the automotive industry and in some others manufacture products as electrical and electronic apparatuses, are an important aspect to explain the course of the FDI in Mexico, even from the previous years to the NAFTA signature. The outsourcing that makes some transnational companies considers this situation and at the moment it explains part of the investment decisions that are been taking. Also it is important to establish that, in principle, the adopted rules of origin in the NAFTA unequally affect the TNC, according to the location of his headquarters.

In the automotive industry it look for the benefit to which in those years they were the three great producers of the United States: General Motors, Ford and Chrysler. In the electrical and electronic industry also favorable conditions to the TNC of that country were generated, that the Asian producers have had to overcome. Thus, the decisions to outsourcing some plant or industrial activity have considered commercial the policy

continued, the negotiations between governments and in specially the terms in which the trade treaties negotiate.

4. Export manufacture platform: automotive industry and electrical and electronic equipment .

The economic reforms adopted behind the NAFTA were feeding the economic model transformation, now sustaining in the external sector dynamics. From 1995 to 2000 there is an important export growth, so in these represent 25% of the GDP; but also there is a remarkable imports increase, reason why altogether they add 50% or so of the GDP, **see figure 4**. Nevertheless, as it happened during the stage of the model of imports substitution, the exports tend to be smaller than the imports. At the moments of greater exports growth, that gap is even high and mighty, as it can be seen in **figure 4**. The opening degree must also incorporate the foreign trade of the maquiladora industry, that maintains the weight around the 20 points of the GDP. In spite of the change of model, the exports continue having a high imports content.

The increasing manufacture exports composition is also a characteristic of the foreign trade from 1995. In the set of these highlight the automotive industry - including the manufacture of parts -, the equipment and electrical and electronic apparatuses and the machinery and special equipment for diverse industries. Altogether they represent from 1998 more of 60% of the total exports (**figure 5**), but also these same activities exemplify the tendency to maintain a high imports content in the exports (**figure 6**).

The manufacture of equipment and electrical and electronic apparatuses and of machinery and special equipment for diverse industries to a large extent is maquiladora industry, operate with imports of machinery and intermediate inputs that represent 97% of the total (Robertson and Hanson, 2003). In which it touches to the maquiladora automotive export, that is dedicated mainly to the parts manufacture, in 2002 the 96,7% of the inputs was imported (INEGI, 2003). The vehicles maquiladora firms, that mainly are auto-parts firms, but they are simultaneously important automobiles importers.

Thus, the form in which operates the top exporters firms of the manufacture industries includes a consistent imported content, or like part of the own products which they are re-exported or like part of the sales that the own firms make in the domestic market. In this sense, the exports platform, result of the outsourcing that has made by a reduced TNC group does not have endogenous bases.

4.1 Automotive vehicles

The investments made from end of the 1980's and during the 1990's remarkably extended the capacity of production of the automotive companies to the point that in 1998 occupied the twelve place producing in the world, with a capacity very near of Brazil. In 2000, Mexico is located in the site number 9 in front of Brazil, but also of Italy and United Kingdom. The production of the automotive industry, including cars, light trucks, heavy trucks, tractotrucks and buses, increased of 822 thousand units in 1990 to 1 million 890 thousand units in 2000. In the following years the numbers have diminished until the 1 540 565 units in 2003 (AMIA, 2004). The changes in the production of automotive vehicles in Mexico include the incorporation of the system toyota elements and other reforms that have elevated the average production by employee. In the period of 1970 to 1993 it is considered that the average production by employee is increased of 12 to 18.8

vehicles. And in the period from 1987 to 1996 the real GDP by occupied person increase in the terminal automotive industry in 1.5 times (Cepal, 1998).

Nevertheless, it emphasizes that between the fourteen top producers in the world, Mexico is the unique one with so high percentage of exports on the total of its production. The growth of the last years is directed to the external market: in 1990, 34% of the total production were exported; in 1994 the 52.4%; whereas in 1998 it was exported the 68,5% of the production; in 2000 the 75,8% and 2003 76% (Bancomext, 1999, Bancomext, 2001 and AMIA, 2004). These exports have by almost absolute destiny the US market, followed by great distance of Canada; in 1997 of the total of exported automobiles and trucks the 81,4% went to the United States and the 9,16% to Canada; in 1999 the numbers were 84,2% and 7.74%; in 2000, 83,7% and 10.3%; in 2002 the numbers are 85,1% and 9,8% respectively (INEGI, 2003). Thus, still in the years in which the export is reduced towards the United States due to the economic cycle of that country, there are no changes in the currents of foreign trade. The multiplication in commercial agreements signed by Mexico has not altered this behavior either. In 2003 the export towards North America was the 94,6% of the total and 93.6% until 2004 august. Even the non-american TNC that have assets in Mexico destine most of their exports towards the north of the continent. The European firms Renault - Nissan and Volkswagen send towards the United States around 75% of their exports; whereas Daimler-Chrysler all exports it towards the United States and Canada. It should remember that Daimler Benz and Renault returned to North America region by the acquisitions of Chrysler and Nissan.

The automotive companies plants that operate in Mexico assemble very few models of vehicles, revealing that the local production is part of a work division constructed from the conditions of the US market. For that reason, also the number of automotive vehicles imports sold in Mexico has grown. The imports of vehicles were authorized in December of 1989, although they were of small account until 1993. In that year the vehicles import reached the 844.9 million dollars, whereas in 2000 it surpassed the 6 billion dollars, which represents 20% of the automotive industry exports like a whole. Considered by units, until 1997 at least three fourth parts of the market are covered with produced automotive vehicles in Mexico. In the following years these number decreases, so that for 2000, when the highest point of units produced is reached, the total sales in domestic market was 48% of imported vehicles. In 2003, 62% of the sold vehicles are imported, getting up new marks and a great amount of models, benefitting still the American producers from the commercial agreements that Mexico has signed in recent years. Once the Free Trade Agreement with the European Union went into effect and for the sales made in domestic market, the import of a number of automotive vehicles from that zone does not pay high tariffs. The dispute of the small market of Mexico does not imply to diversify plus the production of units in the country, with which the work division is decided for the zone of North America by each one is reinforced by the top firms of the automotive industry.

4.2 Automotive parts

The automotive parts industry has a similar scheme of foreign trade to the one of the terminal automotive industry. In year 2000, 78% of the total production were exported and the main destiny was the United States with the 76,9%, followed of Canada

(4%) and Germany (3.6%). Mexico of being the US third supplier of automotive parts in 1990, reaches to being the first in 2000, moving to Canada and Japan (Bancomext, 2001:12). Altogether, Canada and Mexico provide 50% with the imports vehicle parts by the industry automotive companies that operate in the United States, reaffirming themselves the regionalization that these companies have developed to provide the US market demand. In motors, Mexico exports the 14,4% of the American imports, whereas Canada explains the 30.2%. The other important suppliers are Japan and Germany, in each case link to the companies whose headquarters are in those countries. In the motors parts, between Mexico and Canada imports are distributed proportionally 54% of US imports, followed by Japan and more back Germany (**table 2**).

The result of this form to operate in vehicles and parts is that, despite the increase of this industry exports mainly from 1995, the positive balance of its foreign trade for Mexico diminishes as proportion of the total exports, in the measure of the exports increase or the trade liberalization is deepened. In 1995 the foreign trade surplus of the automotive sector represented the 41,7% of the total exports of the own sector and in 1998 it diminished until 39%; in 2000 it was of the 27,9%, whereas in 2002 it was of 26.2%. It can induce to a greater reduction of the export surplus in this activity, due to the greater relative demand of cars different from the models that make in the country, considering the high concentration in income distribution, and the demand of compact cars, of luxury and sport that can imply; as well as, the growth in the sales of some cars models that commercialize solely in Mexico.

If we take in account the equipment goods imports that must make the manufacture vehicle plants, plus the FDI returns outflows, the transferences by uses of marks and patents and the interests paid to the foreign banks payed by TNC of the automotive industry, the inflows currency contribution can be minimum, even though it is the economic activity branch with greater export, in which the maquia industry isn't dominated.

4.3 Electrical and electronic apparatuses

In the industry of equipment and electrical and electronic apparatuses manufacture the great majority of the exports make companies that belong to maquiladora industry. As one stood out before, they operate almost with imported machinery and the totality of imported inputs. The main origin of these imports is the United States. In 2003, of the total of the exports in this activity, 87% were made by maquiladora companies, in previous years the numbers have been similar. As in the case of the automotive parts industry, the electrical and electronic maquiladora industry are, in a good part, onwer by TNC. In automotive parts they emphasize Delphi and Lear, the top and one of the tops transnational companies of the sector respectively, both with US heatquarters; in electrical and electronic equipment and apparatuses the location of the parent company is a large diversity considering, among others are: Philips, Siemens, Sony, Matsushita Electric, Sumitomo Wiring, Sanyo, Canon, Hitachi, Samsung, Daewoo, Nortel, Thomson Consumer (RCA), Motorola, IBM, Lucent Technologies, General Instruments, Seagate.

These companies, as occurs with the maquiladora industry as a whole, produce for the US market. In the case of the electrical and electronic industry the main exportas are the communications equipment, audio video equipment, electrical equipment and its parts, home apparatuses and control instruments. In several of these products Mexico is the main foreign supplier for the United States or is one of the two tops. (Table 2).

Nevertheless, as some recent studies emphasize, in several of those products it tends to lose importance, considering the appearance of new competitors like China. For example, in radios, tv and other communications equipment, Mexico provided in 1998 the 26% of the US imports and in 2003 the 17.9%; in equipment of audio and video the numbers are 31.9% and 20.7% respectively. In addition to the relative displacement in some activities, there is a descence in the number of establishment and in the total of workers contracted from the year 2002, done that not only involves companies of the electrical and electronic industry, also too chemical products, other manufacture industries and in the textile industry.

The substantive discussion about this reduction considers the effect of the US recession, but it adds other causes that can be understood like structural. Berges raises that in the period from 1999 to 2002 Mexico loses participation in recording and telecommunications equipment and in clothes, that means between 20 top products than exports to the United States. Nevertheless, in 2003, considering the period of January to September, loses participation in 13 of the 20 top export industries (Berges, 2003). Only in television and video monitors, the United States imports from Mexico 71% in year 1998 and 49% in the 2002 (Watkins, 2003).

The point is that the own regime under which works the maquila industry allows displacement taking care of the rate of growth of the US economy, but also to the effective legal dispositions and the evolution of some costs as the wage. Indeed, a modification in the US trade policy that extended the Caribbean Basin Trade Partnership in 2000 to include textiles and clothes with which was possible that Guatemala, Honduras, Nicaragua and El Salvador have the same treatment that Mexico for the clothes export, has impelled the transfer of this type of maquiladora companies towards that zone. It is a change that is beyond the US economic cycle and points out of changes in the sectorial composition of this industry (Gerber and Mundra, 2003).

The outstanding data on the evolution in the electrical and electronic industry allow to raise the hypothesis that it exists in some activities of maquiladora industry a structural displacement. Berges (2003) raises that this occurs on cellular telephones, notebooks, modems and electrical articles of smaller added value. Unlike the automotive industry, in which there are at least two elements relative to production and organization which they make inefficient move out the production. They are: just in time, the weight and cost of the transport of vehicles and parts and the engineers requirements to put in its right point the pieces that arrive from other plans.

4.4 Maquiladora export industry in perspective

In summary, the maquiladora industry growth will be difficult that it reaches to be that the 1990's. Textil maquiladora industri has lost importance and the same it can happen with some electrical and electronic products. That is why the dynamism of previous years in the matter of jobs creation not necessarily will continue. The productive networks have not been created, since the companies that operate in Mexico are not suppliers of this maquiladora industry. Even, the companies that make automotive parts almost export the totality of their production, even though they are suppliers of TNC like Ford and General Motors. For example, Delphi with near 80 thousand employees in 2000 exported the 94,5% of its sales. Whereas Lear, with near 40 thousand employees exported near 70% of its total sales (Vidal, 2001: 147). The decisions in this field do not have because to

vary in the years to come. As in the case of the automotive industry great part of the trade in these activities is made inside of the same firm and it is properly a intracompany relation. Since 50% of the manufacture exports have been considered in diverse studies (Weintraub, 1997) are almost made between TNC automotive industry parent and filial, the same is hapening in computation, pharmaceuticals and others industries. The TNC foreign branchs make at least 30% of the world-wide exports and much more if it is considered international subcontract and the manufacture under contract (UNCTAD, 2002). In the trade between Mexico and the United States it is remarkable the weight of the TNC and its branchs and the increase of the intrabranh trade with products that are exported from Mexico with a high import content. Thus, the outsourcing has not triggered large inter-industrial relationships inside the Mexican economy, as well it does not contribute to increase the capital inflows in order to be sustainable the model of growth on which it has been created.

5. Conclusions

The mexican economy since the last half of 1980's changed from a model of imports substitution towards an export led growth model. From those years the economic reforms reduce tariffs and liberalize the foreign trade, many restrictions over FDI are eliminated, and the NAFTA was signed. Yet it, the foreign trade became a fundamental component of the economic transition process.

The new model includes the FDI, whose increase is particularly remarkable from second half of the 1990's. An important amount of FDI inflows since 1998 is destined to buy companies assets in operation, and it is not destined to companies that stand out as manufactures exporter and properly have the objective to gain space in the domestic market or to control some aspects of the economic relations with the United States, as it is the case of the remittances. Another part of the FDI inflows, that which is linked with manufactures export, is concentrate in a few activities: automotive industry, electrical and electronic equipment and apparatuses and machinery and special equipment for diverse industries. The TNC exporters in these activities makie their investments from last 1980's like part of outsourcing strategies and with the objective to create an export platform that pick up the benefits from the maquiladora industry specific rules and of the NAFTA.

The manufacture exports correspond in a high proportion to intrabranh trade, the large part are operations between the parent company and its branchs. In the maqyula industry and in the automotive export industry too, there are a high import content, and that is why important technological and productive links are not generated with the rest of the domestic economy. Even, there is a displacement of some activities of maquiladora towards other countries of central America and China. Mexican economic authorities can made so little in order to oppose against these facts due to the almost null domestic content of the inputs that are used in these activities.

In synthesis, the main characteristics of the manufactures export insertion are: high import content with low local productive linking; one market destine, so that the dynamics of its investment follows considering the US market changes; corporations export platform in competition for the largest world market; part of these strategies includes an intense process of overseas mergers and acquisitions between TNC; great

part of these trade operations are properly relations intra-firm so that they establish administered prices.

Thus, the growth of these activities, the new FDI inflows by TNC and the large part of the export activities do not imply a large and diverse participation of companies with headquarters in Mexico; on the contrary, there are an increasing internationalization of the more dynamic domestic sectors. All these characteristics of the export led growth model in operation in Mexico confirm the exogenous character of the accumulation determinants. This last one prospect will depend on the depth whereupon it is dynamic advance towards a greater number of economic activities, mainly those that concentrate the sense that is the economic growth in the last years.

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Table 1
Mexico: Automobile industry annual investment by firm.
(million dollars)

	1989	1990	1991	1992	1993	1994	1995	1996	Total
Chrysler	49	45	52	230	332	392	490	409	1999
Ford	142	69	167	441	297	124	229	114	1583
General Motors	131	29	49	87	235	631	888	227	2277
Nissan	0	76	302	317	242	154	164	89	1344
VW	38	91	305	273	100	61	66	251	1185
Total	360	310	875	1348	1217	1363	1837	1090	8400

Source: ECLAC, *La inversión extranjera en América Latina y el Caribe*, Santiago de Chile, 1998 p. 258.

	billion dollars		percentage	
	1998	2003	change 98-03	% of total 2003
Total	907.0	1305.3	30.5	100
Canada	174.0	227.7	23.6	17.4
Mexico	93.0	139.7	33.4	10.7
China	71.0	163.3	56.5	12.5
Japan	121.0	121.2	0.2	9.3
Others	448.0	653.5	31.4	50.1
Electric equipment and parts	19.4	24.8	21.8	100
Mexico	5.7	7.9	27.9	31.7
Japan	2.6	3.0	15.1	12.1
China	2.7	3.4	20.9	13.7
Germany	1.2	2.0	40.4	7.9
Canada	2.2	2.2	1.0	9.0
Others	5.1	6.4	19.6	25.6
Communication equipment	14.9	30.8	51.6	100
Corea	0.9	6.1	85.5	19.7
Mexico	3.1	6.0	49.1	19.5
China	1.9	6.0	67.5	19.4
Malaysia	0.7	2.6	74.1	8.4
Canada	2.7	1.8	-54.2	5.8
Otros	5.6	8.4	32.9	27.2
from which are: radios, TVs and others for wireless communication	7.6	21.2	64.2	100.0
Korea	0.8	5.9	86.4	27.8
Mexico	2.0	3.8	47.4	17.9
China	0.4	3.3	87.9	15.6
Malaysia	0.2	1.5	86.7	7.1
Otros	4.2	6.7	37.3	31.6
Audio and video equipment	23.2	33.6	30.9	100
China	4.5	10.4	56.9	30.8
Mexico	7.4	7.0	-6.0	20.7
Japan	4.9	6.7	27.4	20.0
Malaysia	2.4	2.8	11.4	8.2
Korea	0.6	1.7	63.7	5.2
Others	3.4	5.1	32.3	15.1
Home apparatus	7.1	12.7	44.2	100
China	2.1	5.7	62.6	44.7
Mexico	1.4	2.2	38.4	17.4
Canada	0.7	1.0	31.2	7.6
Korea	0.5	0.9	38.7	7.0
Germany	0.4	0.7	47.1	5.6
Others	2.0	2.2	10.5	17.7
Semiconductors and other electronic components	69.3	57.8	-19.9	100
China	3.5	7.6	53.4	13.1
Malaysia	8.0	7.0	-13.6	12.2
Taiwan	7.5	6.3	-19.2	10.9
Japan	11.3	6.2	-81.7	10.7
Mexico	5.5	5.5	0.7	9.5
Others	33.5	25.2	-33.2	43.6

Continue Table 2				
	billion dollars		porcentaje	
	1998	2003	change 98-03	% of total 2003
Instruments for control, measuring and sailing	17.3	26.4	34.6	100
Japan	3.9	4.4	10.8	16.7
Mexico	2.3	4.0	42.6	15.1
Germany	2.1	3.5	38.5	13.1
Switzerland	1.3	2.1	39.8	8.0
China	0.8	1.7	52.5	6.5
Others	6.9	10.7	36.2	40.6
Electric and illumination equipment	4.6	6.9	33.3	100
China	2.1	3.9	45.9	56.5
Mexico	0.6	1.0	39.0	14.1
Canada	0.3	0.4	19.5	5.4
Japan	0.2	0.2	-4.0	3.2
Germany	0.1	0.2	28.7	2.9
Others	1.2	1.2	0.3	17.9
Vehicle motors	95.8	133.7	28.3	100
Canada	37.4	40.4	7.4	30.2
Japan	25.9	33.4	22.5	24.9
Germany	11.5	19.9	42.2	14.9
Mexico	13.4	19.3	30.6	14.4
Korea	1.8	8.2	78.4	6.1
Others	5.9	12.6	52.9	9.4
Motor vehicles parts	42.1	59.2	28.8	100
Canada	12.3	15.9	22.5	26.9
Mexico	11.0	15.8	30.6	26.8
Japan	9.8	12.0	17.8	20.2
Germany	2.3	4.4	46.9	7.4
China	0.5	1.8	74.5	3.1
Others	6.2	9.2	33.2	15.6
Clothes	50.6	64.4	21.5	100
China	6.2	9.5	34.2	14.7
Mexico	6.3	6.7	6.1	10.4
Hong Kong	4.6	3.9	-18.2	6.1
Vietnam	0.0	2.5	99.0	3.9
Others	33.4	41.8	20.2	64.9

Source: <http://dataweb.usitc.gov>

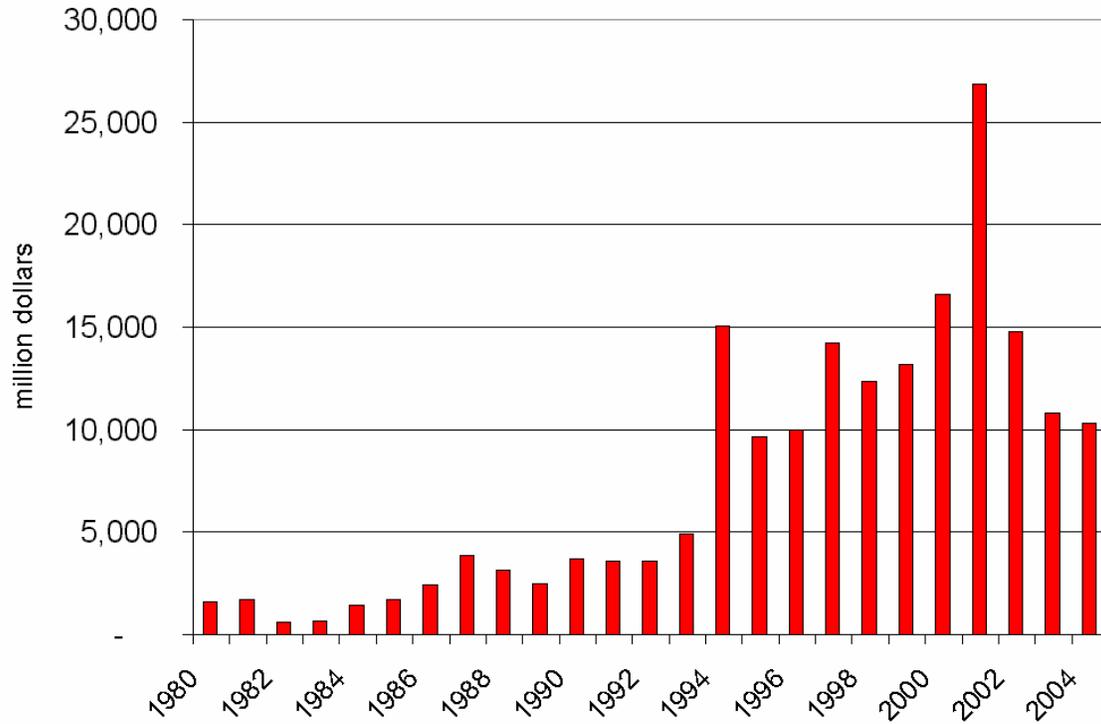
Figure 1 Mexico: FDI annual inflows

Figure 2 Mexico FDI inflows by origin country

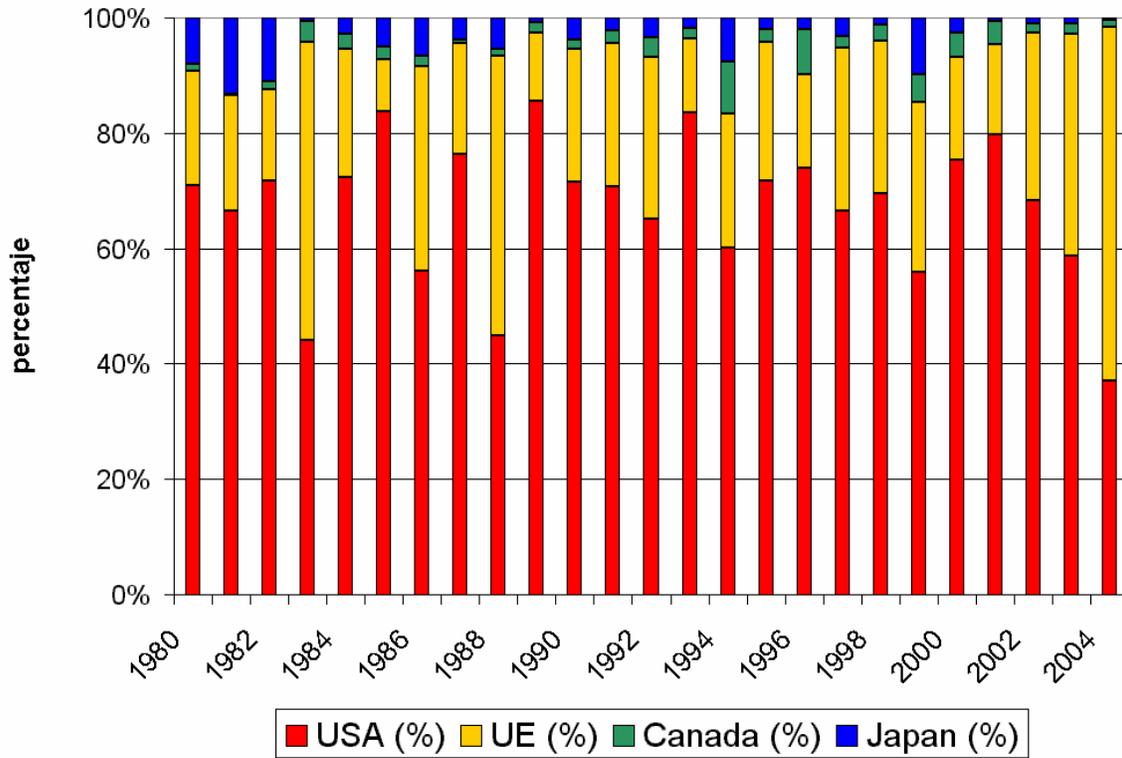
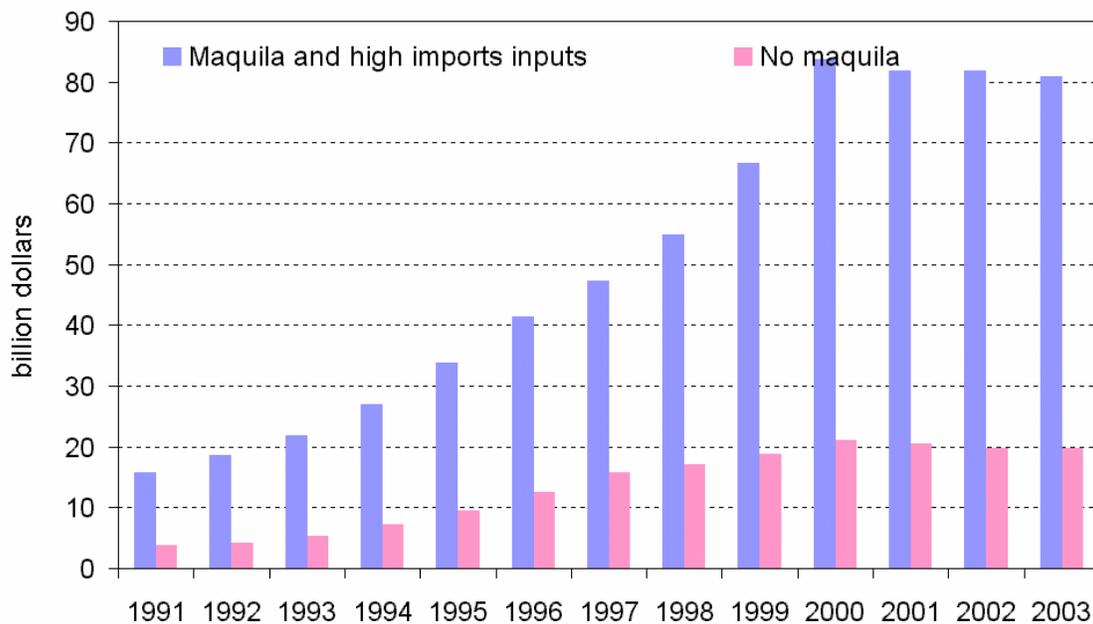


Figure 6 Mexico: top exports from maquila and high imports inputs * 1991-2003



* Included electric and electronic equipment exports, vehicle industry exports and other industries special maquinas and equipment exports.

Asymmetries and Tariff-Tax Reforms in the Asia-Pacific Economic Cooperation: A Quantitative Assessment

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Abstract. Many asymmetries among member countries in the Asia-Pacific Economic Cooperation may cause conflicting interests, or may offer opportunities for collaboration. This paper investigates an optimal coordinated tariff-tax reform, and examines the factors which significantly affect the level of welfare. Through the examinations, we see whether fiscal policy issues are affected by those asymmetries. An optimal coordinated tariff-tax reform keeps up with the current global trend of domestic tax reform, directed towards increasing consumption taxes. Sensitivity analyses imply that tariff-tax reforms are not likely to favor developed countries which have a lower degree of dependence upon foreign trade and lower tariff rates.

JEL Classification: F13, H30.

Keywords: Tariff-tax reforms, Asymmetries, Asia-Pacific Economic Cooperation, Computational general equilibrium

1. Introduction

The economic cooperation agenda within the Asia-Pacific Economic Cooperation has been primarily focused on free and open trade and investment. However, the APEC may have some difficulties in reaching internal consensus among member countries, due to asymmetries which are attributes of the APEC. These asymmetries may cause conflicting interests, and eventually create potential tension, or may offer opportunities for collaboration.

There has been growing interest in Free Trade Agreements among member countries. As the United States and Korea currently negotiate a bilateral FTA, several sensitive issues draw the attention of both countries' officials. Under the asymmetries between two countries, each country set its own objective in the FTA negotiations. In the negotiations, do those asymmetries finally work for conflict or collaboration?

This paper investigates an optimal coordinated tariff-tax reform, and examines the factors which significantly affect the level of welfare. Through the examinations, we will see whether fiscal policy issues are affected by those asymmetries. This paper is organized as follows. The second section gives a brief overview of asymmetries within the APEC. Section 3 introduces an outline of previous studies on coordinated tariff-tax reforms. A simulation model and calibration issues are presented in section 4. Section 5 provides simulation results and interpretation. Finally, the last section summarizes this study and suggests policy implications.

2. Asymmetries in the Asia-Pacific Economic Cooperation

The Asia-Pacific Economic Cooperation economy represents 56 percent of the world GDP and 48 percent of the world trade. More than 2.6 million people from twenty one member countries are involved in the APEC economy. Developed countries and developing countries are all intertwined. There are dissimilarities or asymmetries in trade patterns and tax structures.

Table 1 shows the GDP per capita of the APEC member countries. In Table 2, the countries are listed by the order of the degree of interdependence upon foreign trade (especially upon imports). Trade patterns are different among member countries. Many developed countries, including the U.S., Japan, and Australia, have a lower degree of interdependence upon foreign trade, whereas many developing countries, including Malaysia, Thailand, the Philippines, and China, heavily rely on foreign trade.

Tax structures are also different among member countries. Import tariff rates are much differentiated between developed countries and developing countries. Since developing countries, in general, mostly rely on tariffs as sources of tax revenue, they have relatively higher tariff rates. The ratio of consumption taxes to income taxes in developing countries has consistently remained more than double the ratio in developed

countries.² It is true that developing countries rely more on indirect taxes, such as consumption taxes and import tariffs.

Table 1: Gross Domestic Product per Capita

Tiers	GDP per capita	Countries
Tier I	Over \$30,000	U.S., Japan, Canada, Australia
Tier II	\$29,999-\$10,000	Singapore, New Zealand, Hong Kong, Korea, Taipei
Tier III	\$9,999-\$5,000	Mexico, Chile, Russia, Malaysia
Tier IV	Under \$4,999	Peru, Thailand, China, Indonesia, Philippines

Source: Asia-Pacific Economic Cooperation (2005)

Table 2: Degree of Interdependence upon Foreign Trade

Tiers	Imports/GDP	Countries
Tier I	Over 50%	Hong Kong, Singapore, Malaysia, Thailand, Taipei
Tier II	49%-25%	Philippines, China, Korea, Canada
Tier III	24%-15%	Chile, Mexico, New Zealand, Indonesia, Australia
Tier IV	Under 14%	Russia, U.S., Peru, Japan

Source: Author's calculations, based on Asia-Pacific Economic Cooperation (2005)

3. Coordinated Tariff-Tax Reforms

In 1994, when the economic leaders of the Asia-Pacific Economic Cooperation came together at Bogor, Indonesia, they agreed to adopt long term goals of free and open trade and investment in Asia-Pacific regions. In 2005, the economic leaders gathered in Busan, Korea and declared a firm support for the WTO Doha Development Agenda negotiations by reiterating the importance of the Bogor Goals. Under the pledge for freer trade, the APEC is now trying to achieve the long term goals by 2010 for developed member countries and by 2020 for developing countries. Therefore, lowering tariff rates and reducing quantitative restrictions are unavoidable issues to the APEC member countries.

Domestic tax reform is moving toward lowering capital taxes and increasing consumption taxes. There are many previous studies that quantitatively dealt with domestic tax reform. Goulder, Shoven and Whalley (1983) analyzed the capital flow effect with a very cursory treatment of the foreign sector. Thalmann, Goulder and Delorme (1996) employed an infinite-horizon formulation which may overstate intertemporal effects, since it yields very high responses of savings to changes in tax rates. Mendoza and Tesar (1998) assumed a fully integrated world capital market which may overstate the degree of international capital mobility. Ballard and Kang (2003) used a static model, in which capital is internationally mobile, but with incomplete adjustment in the world capital market. They found that unilateral elimination of U.S. capital taxes generates welfare gains for the U.S., and estimated 1.4 percent of the GDP as annual static gains.

Tariffs are major sources of tax revenues, especially for developing countries. So these countries need to find alternative taxes to preserve revenue loss from tariff cuts. This is the why tariff policy should be coordinated with domestic tax policy. Studies on coordinated tariff-tax reforms include: Anderson (1999), Keen and Ligthart (2002), and Emran and Stiglitz (2005). They all analyzed coordinated reforms theoretically. Even though some details differ, they all concluded that a cut in tariffs combined with an increase in consumption taxes can increase welfare levels. A few papers have dealt quantitatively with coordinated tariff-tax reforms. Rutherford and Tarr (2002) assessed the welfare effect of trade liberalization, and showed that complementary reforms were crucial for determining gains from the trade reform.

4. Simulation Model and Parameter Calibration

I used a standard small open economy (SOE) model, which was formulated using the GAMS/MPSGE computational general equilibrium modeling. MPSGE constructs production and utility functions based on reference prices, quantities and elasticities. A brief description of functional forms is as follows. I consider three sectors in production: agriculture, industry, and services. Each production sector produces domestic goods and exports which are assumed to be imperfect substitutes. For production, each sector uses capital, labor, and intermediate goods. Intermediate input is an Armington aggregate of domestic outputs and imports which are assumed to have a constant elasticity of substitution. An Armington aggregate is also used for private consumption, government consumption, and investment. A representative agent maximizes

her private consumption, given an endowment of labor and capital, and an exogenously fixed investment and the government sector's output.

On the top of the standard SOE model, labor/leisure choice was incorporated in the utility function. With an endogenous labor-supply decision, we can fully capture the distortionary effect of income taxes, and also grasp the fact that the effect of consumption taxes on real wage rate leads to changes in the labor supply. If there is no labor-supply decision in the model, then income taxes are equivalent to lump-sum taxes, so it is not possible to precisely evaluate trade reform with realistic distortionary income taxation.

There are important parameters in this model. In general, a time-endowment ratio chosen arbitrarily leads to an exceptionally large value of total-income elasticity.³ Therefore, a better strategy is to choose the desired value of the total-income elasticity of labor supply and to solve for the value of the time-endowment ratio that is consistent with that elasticity. Based on the econometric literature, a value of -0.1 for the total-income elasticity would be reasonable.

To calibrate the time-endowment ratio, I begin with the expenditure function, and derive the compensated labor-supply elasticity.

$$E = V \left\{ \beta^{\sigma_{cl}} P_c^{1-\sigma_{cl}} + (1-\beta)^{\sigma_{cl}} P_\ell^{1-\sigma_{cl}} \right\}^{\frac{1}{1-\sigma_{cl}}}, \quad (1)$$

where V is the indirect utility function, P_c is price of consumption, P_ℓ is wage rate, and σ_{cl} is the elasticity of substitution between consumption and leisure. Shephard's Lemma tells us that the compensated leisure-demand function is the derivative of the expenditure function with respect to the wage rate.

$$\frac{\partial E}{\partial P_\ell} = \ell^* = V (1-\beta)^{\sigma_{cl}} P_\ell^{-\sigma_{cl}} \left\{ \beta^{\sigma_{cl}} P_c^{1-\sigma_{cl}} + (1-\beta)^{\sigma_{cl}} P_\ell^{1-\sigma_{cl}} \right\}^{\frac{\sigma_{cl}}{1-\sigma_{cl}}} \quad (2)$$

Then, the compensated leisure-demand elasticity is

$$\eta_\ell^* \equiv \frac{\partial \ell^*}{\partial P_\ell} \frac{P_\ell}{\ell^*} = \frac{\sigma_{cl} P_\ell^{\sigma_{cl}+1} \left\{ (1-\beta)^{\sigma_{cl}} P_\ell^{-2\sigma_{cl}} \Omega^{\frac{2\sigma_{cl}-1}{1-\sigma_{cl}}} - P_\ell^{-\sigma_{cl}-1} \Omega^{\frac{\sigma_{cl}}{1-\sigma_{cl}}} \right\}}{\Omega^{\frac{\sigma_{cl}}{1-\sigma_{cl}}}} \quad (3)$$

where $\Omega = V \left\{ \beta^{\sigma_{cl}} P_c^{1-\sigma_{cl}} + (1-\beta)^{\sigma_{cl}} P_\ell^{1-\sigma_{cl}} \right\}^{\frac{1}{1-\sigma_{cl}}}$. This equation can be converted to the compensated labor-supply elasticity which is represented as a function of time-endowment ratio, Φ .⁴

$$\eta_L^* = (1-\Phi) \sigma_{cl} \left(\frac{P_\ell \ell}{Y_1} - 1 \right) \quad (4)$$

Finally, equation (4) can be used to calibrate the time-endowment ratio that is consistent with the desired value of the compensated labor-supply elasticity. As you see in Table 3, I calibrated the time-endowment ratio as 1.3, and this value is much lower than the values researchers previously used. I also calibrated the elasticity of substitution between domestic goods and imports which depends on the price elasticity of import demand and expenditure share of imports and domestic goods.

Table 3: Parameter Values

Parameters	Value	Calibrated
Total-income elasticity of labor supply	-0.1	
Uncompensated labor supply elasticity	0.15	
Time-endowment ratio (Φ)	1.3	Yes
Elasticity of substitution b/w domestic good & imports	1.5	Yes

5. Simulation Results and Interpretation

An extreme case of zero tariffs is considered for the simulation. The lost revenues are replaced by higher rates of consumption taxes and labor taxes, respectively. The changes in consumer welfare are calculated by equivalent variations, along with marginal excess burden (MEB) of new tax policies.⁵ The negative values of MEB mean that tariff cuts generate negative efficient cost. In other words, tariff cuts generate, so called “efficient benefit”. Higher absolute value means more benefit.

Based on the results in Table 4, we can interpret that zero tariff improves production efficiency. This is partly due to the fact that tariffs, in general, impose higher distortion costs than other taxes because it favors domestic production over imports. The results are consistent with the findings from a theoretical approach on coordinated tariff-tax reforms. Compared with the result of labor tax replacement, consumption tax replacement is shown to produce larger welfare gains. Tariff cuts with higher rates of consumption tax generate the welfare gains amount to 2.15 percent of GDP, whereas tariff cuts with higher rates of labor tax generate the gains amount to 1.83 percent of GDP. An efficient benefit from consumption tax replacement is shown to be larger than that from labor tax replacement. This is partly due to the attribute of labor taxes which distorts labor/leisure choice. I also analyzed the case of tariff reduced by the same proportion in all sectors, and then compare it with the case of tariff cut only in one sector. The results are in Table 5. I find that if the tariff is reduced by the same proportion in all sectors, it brings more efficiency by keeping relative prices constant across sectors.

Table 4: Central Case Simulations - Zero Tariffs

	EV (% of GDP)	MEB
tm=0 (consumption tax replacement)	2.151	-0.405
tm=0 (labor tax replacement)	1.825	-0.255

Table 5: Tariff Reduction by Same Proportion

	EV (% of GDP)
tm=0 in the industrial sectors	1.223
tm reduced by same proportion in all sectors (*keep revenue constant)	1.505

I have performed sensitivity analyses with respect to two parameters: trade elasticities and initial tariff rates. First, as you see in Figure 1, higher trade elasticities bring more welfare gains.⁶ Higher values imply more responsive behavior when taxes are changed. The more consumers are responsive, the greater welfare gains they enjoy by the reduction of tariff rates. Second, Figure 2 shows that a larger initial tariff rate generates higher welfare gains. A lower initial tariff does not enjoy as much production efficiency gains. If the rates are reduced, the gains decrease.

Figure 1: Welfare Changes As a Function of Trade Elasticity

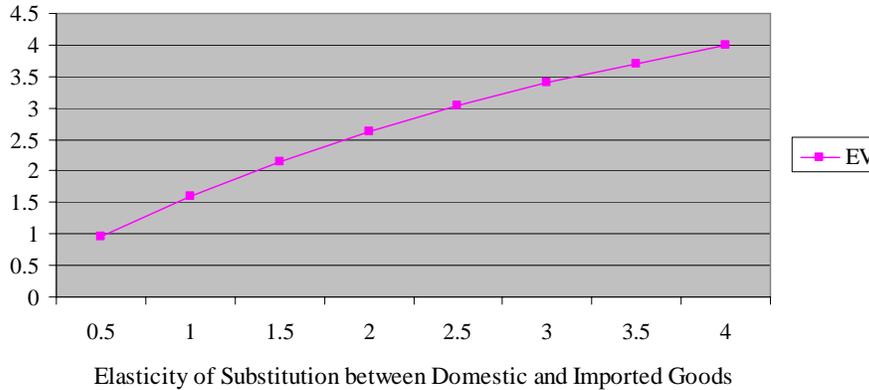
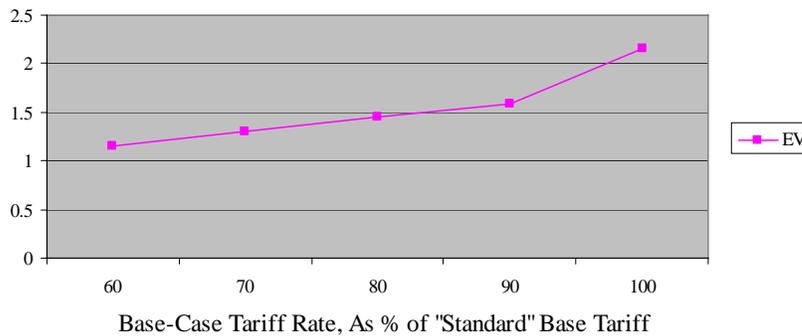


Figure 2: Welfare Changes As a Function of Initial Tariff



6. Summary and Policy Implications

Under the regime of the Doha Development Agenda, lowering tariffs is an unavoidable issue. By lowering tariffs, large tax revenue losses are expected in developing countries. To preserve tax revenue, an alternative revenue source should be considered. Based on the simulations, consumption tax replacement would be better than labor tax replacement. This keeps up with the trend of domestic tax reform which is moving toward increasing consumption taxes. It is found that more production efficiency can be achieved through the tariff reduction by the same proportion. Sensitivity analyses tell us that an increase in welfare gains is positively correlated to trade elasticity and initial tariff rates. In this light, a tariff-tax reform is not likely to favor developed countries which have a lower degree of interdependence upon foreign trade and lower tariff rates.

There has been growing interest in Free Trade Agreements among member countries. Some FTA critics believe that the FTA negotiations would be set by the more advanced industrial countries and that the outcomes would reflect their economic power. In the negotiations, do asymmetries between countries cause conflicting interests, or offer new opportunities for collaboration? What are the implications of the simulation results to countries' officials involved in a bilateral Korea-U.S. Free Trade Agreement? The FTA will be particularly beneficial for the U.S. agricultural producers, since average applied tariff on agriculture products in Korea is four times greater than the U.S. average. It creates new opportunities for U.S. farmers. But the welfare effect on the U.S. will be much smaller, because the United States has lower initial tariffs and its interdependency upon foreign trade is relatively small. On the other hand, Korea expects relatively large overall welfare gains, and the gains will be primarily coming from allocative efficiency effects. From the perspective of efficiency, coordinated tariff-tax reforms are likely to favor Korea, which has relatively large initial tariffs and more heavily relies on foreign trade. However, fiscal

policy-makers in Korea should pay attention to equity issues, since overall gains can be achieved at the expense of losses to one particular sector, agriculture. Therefore, it is suggested that reforming agricultural policies to enhance farmers' competitiveness should precede, or at least keep pace with market openings.

Notes

1. Kiwon Kang is a Visiting Assistant Professor of International Studies and Programs at Michigan State University. Comments from seminar participants at International University of Japan on October 30, 2006 are gratefully acknowledged. Special thanks are given to Professor Charles L. Ballard in the Economics Department at Michigan State University. Author's mailing/email addresses: 1 International Academic Center, Michigan State University, East Lansing, Michigan 48824-1035; kangkiw1@msu.edu
2. Compared with developing countries, developed countries derive proportionally twice as much revenue from income tax than from consumption tax. See Tanzi and Zee (2001).
3. In Ballard (1990), the value of the time-endowment ratio, which is consistent with the reasonable value of the total-income elasticity, was calibrated as 1.213. He also showed that the values of the time-endowment ratio chosen arbitrarily, 2.5 and 5.0, produce respectively -0.4414 and -0.6787, which are far larger than the most of the econometric estimates of the total-income elasticity, -0.1.
4. The time-endowment ratio is the ratio of the consumer's endowment of time and the amount of labor supplied in the base case.
5. A marginal excess burden is defined as a negative value of changes in welfare level over the amount of distortionary tax revenue replaced by consumption tax and labor tax, respectively. It would be a useful tool to evaluate welfare changes under differential analysis. Under balanced budget analysis, the concept of marginal welfare cost, which is defined as a negative value of changes in welfare level over changes in government revenue, is generally used.
6. I considered a trade elasticity as a "proxy" parameter which represents the degree of interdependence upon foreign trade, based on the fact that imports become closer substitutes with domestically produced goods as a country's consumption relies more on imports.

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A Futuristic Solution to the North Korean Dilemma: An Economic Perspective

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Abstract. The October 2006 North Korean nuclear bomb test startled the international community for its provocative boldness in light of its starving population. A partial answer to the question of how and where North Korea had obtained the resources necessary to finance such an expensive project might be found in the South Korean economic aids given to North Korea. The North Korean tactic of threatening the international community, particularly South Korea, may work in the short run, but not in the long run. A viable long-run solution to North Korean economic development should be found. The Kaesong Industrial Complex can be an excellent starting point.

JEL Classification: F02, P31.

Keywords: North Korea, Economic Aids, Kaesong Industrial Complex

1. Introduction

Ever since North Korea (NK) tested a nuclear device on October 9, 2006, the world has recognized both the seriousness of the nuclear threat posed by a rogue nation, and the urgency that something must be done to remove that threat. Given NK's extensive history of arms sales as a means of earning hard currency, the possibility of terrorists obtaining a nuclear device with which it can threaten the world has come closer to reality.

A puzzle for many economists and politicians is how NK was able to garner the means to carry out nuclear research and development in light of its starving population and dire economic condition. South Korea's (SK) role in providing the means, even if indirectly, has received much attention, and the financial dealings between North and South Korea have to be examined further. Unfortunately, NK's secrecy on all matters related to its politics and economy has resulted in a dearth of research on this interaction. With this asymmetry in published data on which economists depend for research, the truth regarding this interaction may never be known. The extent of this cross-border relationship, however, must be investigated, even with incomplete data. The arrangements that made the North's nuclear program possible may be the means by which the nuclear threat is reduced.

This paper examines the financial relationship between NK and SK, using published sources, available mainly from the South Korean media and the South Korean and U.S. governments, with a particular emphasis on the role of the Kaesong Industrial Complex (KIC). We argue that the interactions between the Koreas such as KIC may be the means by which the nuclear threat is reduced. The political problems appear intractable, and economic overtures that would bring NK into the international economic arena may be the only way to avoid nuclear confrontation.

There are 4 additional sections in this paper. Section 2 presents basic background information about the contentious relationship among SK, NK, and surrounding countries. Section 3 explains the various projects that reveal what role SK plays in supporting and sustaining the NK economy. Section 4 elaborates the role of the KIC in sustaining the NK economy and thus, its regime, which may possibly reduce a future nuclear threat by NK. Finally, Section 5 draws a conclusion that summarizes a futuristic solution to the NK dilemma.

2. Background

Since the cessation of hostilities of the Korean War in 1953, the U.S. has had a very significant role in maintaining the tenuous truce, and has acted as a peace keeper for the Korean peninsula. This role,

however, has been questioned in recent years by the new generation² of South Koreans who did not directly experience the devastation of the Korean War or the damage inflicted by NK. The younger generations have begun to view the U.S. forces in SK as occupiers rather than as peace keepers. This nationalistic view is a direct byproduct of the rapid economic growth SK has experienced since the 1970s. Increased national wealth has brought about a self-confidence that was lacking among the previous generations.

Since the 1980s, a labor union organized by a group of elementary and high school teachers, representing this new generation in SK, began to exert its power by educating children about the deleterious presence of the U.S. in Korea. The union's intentional, single-minded focus on the negative role of the U.S. was quickly accepted by the SK children, who naively believe that the U.S. presence in Korea acts as an impediment to the unification effort between SK and NK. They were taught that without foreign forces in Korea – particularly those of the U.S. – the two Koreas could easily be reunited. They were also taught that NK is a brother whereas the U.S. is an outsider, pursuing its own interests over those of South Koreans. The byproduct of this ideological education on SK children resulted in a type of national identity crisis³. However, it is clear that these young, indoctrinated Koreans, who are now in their mid-twenties, favor a strong-willed and independent-minded SK which can stand up to the U.S. in pursuit of its own interest, including a possible solution resulting in Korean unification.

As evidence that SK and NK, if left alone, could work out their differences and create a common good, the young point to former President Kim Dae Jung's visit to NK and Kim Jong Il in Pyongyang. The two leaders, Korean brothers to the young, presented a joint declaration of peaceful coexistence to the world on June 15, 2000. This breakthrough is in stark contrast to the announcement by President George Bush two years later that NK is a member of the Axis of Evil, a labeling which soured the relationship between NK and the rest of the world, particularly that with the U.S. In Mr. Bush's view, a nation that is starving its own citizens while funding a massive military is evil on its face. In NK's view, however, it was an unnecessary provocation on domestic issues. What more evidence of the deleterious effect of the U.S. presence on the peninsula is needed, say the young?

The NK announcement that it possesses a nuclear weapon on February 2005, followed by an attempted missile launching on July 2006 and finally a nuclear bomb testing on October 2006, were belligerent acts condemned by the rest of the world. Joining the U.S. in the condemnation in this instance were Japan, China, and Russia, all three of whom could be threatened by a militarily powerful and unstable NK. The fact that NK was secretly developing a nuclear bomb in light of its repeated international denials, a large throng of still malnourished citizens, and stagnant economic growth made the international community doubt the sanity of NK leaders, especially that of Kim Jong Il⁴. Consequently, international focus turned to the source, or sources, of the economic means by which NK funded such a long-term project as developing a nuclear bomb. Suspicion was cast immediately on the role played by its neighbor and brother, SK.

3. South Korea's Aid to North Korea

South Korea had for years provided humanitarian and economic aid to NK prior to the Sunshine Policy⁵ instituted after the visit of SK president Kim in 2000. However, the amount of aid increased significantly with the Sunshine Policy, allowing the North to shift resources originally intended for non-military use to its quest for nuclear arms.

The current president, Roh Moo Hyun, adopted the conciliatory posture inherent in the Sunshine Policy, but renamed it the Policy of Peace and Prosperity. His administration increased government aid budget to NK from \$1.25 billion⁶ in 2005 to \$2.48 billion in 2006, an increase of almost 100 percent. The interesting point about the 2006 budget is the \$1.25 billion set aside to pay for the compensatory damage to NK for not completing the construction of a light water reactor plant in NK⁷. This light water reactor has been the center of the original dispute and discord among SK, NK, Japan, and the U.S.

Under the last two South Korean presidents, NK received substantial economic aid, for all practical purposes, with no strings attached; evidence is shown in Table 1. The humanitarian food aid given by SK was rumored to have sustained NK's military, instead of helping its starving citizens⁸. Furthermore, the compensatory monetary penalty paid to NK for not constructing the light water reactor plant on time probably helped NK continue its research into nuclear bomb development as well⁹. Again, what we see is that NK uses aid indirectly to fund its military activities: for each won given in aid, NK can realign its own spending from civilian to military purposes.

Table 1: SK Government Budget for Economic Aids to NK, 2005 and 2006 (in \$ million*)

	2005	2006	Change (%)
Fund Support	738.4	1,272.20	72.3
Citizen Exchange Program	3	6	100.0
Cultural Program Support	7.5	11.5	53.3
Economic Coop Loan	55	71	29.1
Economic Coop Loss Reserves	7.5	4.6	-38.7
People's Unification Loan	155	167.2	7.9
People's Unification Grant	398.6	805.3	102.0
Financial Institution Support	2.5	2.5	0.0
Light Water Reactor Loan	109.2	204.1	86.9
Fund Administration	1.6	1.9	18.8
Repayment of Fund Principal	282	773	174.1
Interest Payment for Borrowing	92.7	153.3	65.4
Fund Operation	137.8	278.7	102.2
Total	1,252.50	2,479.10	97.9

* An exchange rate of 1,000 won to 1 U.S. dollar was used.

Source: Korean Ministry of Unification, Major Statistics on South-North Korean Cooperation, November 30, 2006, P. 1 and various issues.

Specific monetary amounts and the respective shares of payments made in relation to the failed construction of the light water reactor to NK by SK and the rest of the Korean Peninsula Energy Development Organization (KEDO)¹⁰ countries are shown in Table 2. Initially, the international community bore a larger share of the payment burden as seen in the last column in the table. However, since 2000, SK's payments to compensate for the failed light water reactor construction had significantly increased, reaching at times as large as 65 percent of the total payment made to NK. In fact, SK's payments were almost negligible prior to 2000 but then, increased to an average annual sum of over \$0.25 billion. The total payments made by SK alone to NK to compensate for the failed light water reactor construction since 2000 amounted to over \$1 billion. Given the size of NK economy, the additional payments made by SK and the rest of KEDO countries summed up to be over \$2 billion, which can be a significant resource with which a rogue nation can pursue its military ambitions.

Table 3 shows many interesting developments in humanitarian and economic aid given to NK by SK and the international community. The first point of interest is that the combined SK aid given to NK increased by almost 140 percent between 1999 and 2000. June 13, 2000, marks the first-ever meeting of two political heads of SK and NK¹¹, which clearly relaxed the tension between the two countries. Consequently, it is interesting to observe a greater aid package that was given to NK¹².

The second point of interest is that the amount of SK aid has been significantly smaller than that of the international community prior to 2003 when Roh became the president. In fact, the proportion of SK aid in relation to the international community aid was less than 40 percent. Since the inauguration of Roh, however, that proportion has exceeded 50 percent. Also, the total amount of aid given to NK by the Roh administration within the last 4 years is estimated at \$903.03 million, in contrast to the \$462.8 million given by the Kim Dae Jung's administration over its 5 year term. The current rate of aid is almost twice as much as that given by Kim's administration¹³.

The third point of interest is that the size and proportion of SK government aid has been steadily increasing while the private sector aid peaked in 2004 and since then, has slowly decreased. Furthermore, the role played by the international community via non-governmental organizations (NGOs) has been erratic.¹⁴ To illustrate the political posturing that goes on with aid to NK, we see that NGO aid ceased in 2006, but not because the NGOs pulled the funds but rather because NK refused to accept it. The international community rightfully demanded to know how its aid packages will be distributed and

Table 2: Financial Support Given to KEDO by South Korea and the Rest of KEDO Countries (in million US dollars), 1995-2004.

Year	South Korean Share		Rest of KEDO	Total	SK's Share (%)
	LWR*	Total			
1995	0.00	1.80	24.50	26.30	0.00
1996	6.00	8.90	53.30	62.20	9.65
1997	0.00	3.00	63.60	66.60	0.00
1998	45.00	50.60	73.80	124.40	36.17
1999	0.00	6.40	88.30	94.70	0.00
2000	288.80	308.80	212.10	520.90	55.44
2001	233.00	271.00	185.80	456.80	51.01
2002	241.20	288.70	211.40	500.10	48.23
2003	276.70	333.00	92.50	425.50	65.03
2004	75.00	137.10	35.00	172.10	43.58

* LWR stands for

Light Water Reactor. This column indicates the payment made to NK by SK specifically for LWR-related compensation.

Source: Tabulated on the basis of the 2004 Annual Report of the Korean Peninsula Energy Development Organization (KEDO), March 4, 2005, P 12-15.

consumed in NK, which the NK government deemed an intrusion into its domestic affairs. Even though NK had yielded earlier on this international demand when food supply was low, that was not the policy they intended to carry on for good. It is reasonable to conclude that the acceptance of international aid was a stop-gap measure, and that aid will be accepted on the NK's terms only. The rejection of international aid by NK in 2006 in light of its malnourished citizens proves that point. This behavior also makes clear the NK's assessment and realization that it should rely more heavily on SK for its most immediate needs because SK does not ask where and how the aid will be used. In short, NK chose to rely on SK which provides aids without any strings attached, instead of the international community, in spite of the consequences for its people.

The reason why NK can be so bold as to refuse the international aid may be found in the relative magnitude of SK's aid in relation to NK's economy. Though in-country, reliable data on the North are not available, we can work with estimates made by the U.S. government on growth rates and the exports and imports of NK economy. According to the Central Intelligence Agency, NK's 2005 purchasing power parity-based gross domestic product (GDP) is estimated at \$40 billion, with a growth rate in real terms of 1 percent¹⁵. According to the U.S. State Department, the 2004 gross national income (GNI) is \$20.8 billion, with a growth rate of 0.98 percent¹⁶. It also estimates NK's exports at \$1.34 billion and imports at \$2.72 billion for 2005. Given this economic size of NK, the SK's aid to NK is significant. In fact, an average annual aid of about \$225 million given to NK during the first 4 years of Roh Moo Hyun represents about 16.8 percent of the 2005 NK imports of \$1.34 billion each year. That is, SK alone provided an aid that is equivalent to about one-sixth of the NK's imports each of the last 4 years.

NK knows that aid from SK and the international community will end eventually if its belligerent behavior continues, and that future aid, if it is to continue, will come with greater restrictions. Given the secretive nature of the NK regime, it is safe to conclude that, if at all possible, NK would choose to not receive aid from anyone, including SK. Aid accepted with strings attached can, in their eyes, undermine their regime in the long run. When and if North Koreans eventually conclude that their current regime is inadequate in serving even their most basic needs, it will be time to overturn the dictatorship of Kim Jong Il and his followers¹⁷. Knowing this possibility exists, the NK government will wish to maintain the status quo at any cost. At the same time, NK will employ any and all means to earn hard currency to sustain its regime.

It is known that NK has several avenues through which it earns hard currency. First, it is a notorious counterfeiter, trafficking in U.S. hard currency printed and circulated with regularity. Second,

Table 3: South Korean and the International Community's Aid Contributions to North Korea in Million U.S. dollars

	Kim Young Sam's Administration			Kim Dae Jung's Administration					Roh Moo Hyun's Administration				Total
	95.6	96	97	98	99	2000	2001	2002	2003	2004	2005	2006*	
South Korean government	232	3.05	26.67	11	28.25	78.63	70.45	83.75	87.02	115.12	123.88	210.8	1070.62
South Korean civilian sectors	0.25	1.55	20.56	20.85	18.63	35.13	64.94	51.17	70.61	141.08	88.66	65.86	609.29
Total (A)	232.25	4.6	47.23	31.85	46.88	113.76	135.39	134.92	157.63	256.2	212.54	276.66	1679.91
International community (B)	55.65	97.65	263.5	301.99	359.88	181.77	357.25	257.68	139.32	163.23	145.64		
Total (A+B)	287.9	102.25	310.73	333.84	406.76	295.53	492.64	392.6	296.95	419.43	0		
A/A+B(%)	80.7	4.5	15.2	9.5	11.5	38.5	27.5	34	53.1	61.1	59.3		
Total by President			284.08					462.8				903.03	

* Figures are as of October 31, 2006, based on an exchange rate of 1000 won to one U.S. dollar.

Source: Korean Ministry of Unification

NK is a major player in markets for illegal drugs and military weapons.¹⁸ Third, it had also engaged in legitimate businesses such as selling raw materials overseas, providing sightseeing opportunities to South Koreans, and developing a joint economic project, namely the Kaesong¹⁹ Industrial Complex (KIC) project. With these very limited options on the table, NK's only viable chance to earn hard currency in a legitimate way is to cooperate, and rely on SK's capital and technology. That is, developing a manufacturing base within NK such as KIC with the help of SK businesses is the only viable long-term solution to earning hard currency in a legitimate way. We discuss below the current development at KIC, and its potential for success and failure.

4. A Solution to North Korean Dilemma: An Economic Perspective

The KIC project has the potential of providing the best long-term solution to NK's economic dilemma, and with economic stability can come peace. In a nutshell, KIC provides NK with employment, capital, technology, electronic power, infrastructure, and a nearby market in Seoul. For the time being, the nature and importance of KIC is unknown among North Koreans; the NK regime seems to have effectively shielded its citizens from a rapid and widespread exposure to SK's capitalism. This successful containment should be a welcome sign to NK for its broader expansion and support of the KIC project.

The KIC project was the direct outcome of a private negotiation between Chung Joo Young, the late chairman of the Hyundai Group, and Kim Jong Il on August 2000²⁰. Initially, parcels of land totaling from 16,000 to 33,000 acres²¹ were earmarked for development as a private industrial complex under the initiation of the Hyundai Group. This agreement made sense to both sides because it was based on the comparative advantage of the two parties, combining the capital and the technology of SK with the land and the labor of NK²².

The KIC project provides many advantages to SK businesses and NK workers. They include (1) effective communication that enables quick and timely technology transfers and smooth management of human resources, (2) low labor costs, (3) inexpensive land, (4) low initial capital investment and protection, and (5) a strategic location advantage of being close to China, Russia, Japan, and SK. Let's consider each of these advantages in turn.

4.1. Language is Not a Barrier to Progress

Even though some differences in dialect exist between SK and NK due to the North's 50+ years of isolation, it is still easier for SK businessmen to communicate with NK workers because they share a common language and ethnic background. The fact that miscommunication between SK managers and NK workers is minimized serves as one of many great advantages that exist in operating the KIC. This enables not only easier and speedier technology transfers but also a cohesive work environment, both of which are often lacking when a Korean firm opens up a manufacturing operation outside Korea. With this advantage comes a challenge, however. The paranoid view of the outside world attributed to the words and actions Kim Jong Il is evident throughout the population, and this distrust must be chipped away with care and patience.

4.2. Labor is Low Cost and Plentiful in NK

Reported NK labor force participation rates of nearly 70 percent may not reveal the true availability and abundance of labor. However, given an industrial capacity utilization rate of about 30 percent, it is reasonable to conclude that there is an excess labor supply in NK²³. Especially, when the agricultural sector which currently employs about 36 percent of North Koreans becomes more efficient, it can release much needed labor into the industrial sector as seen in many developing economies such as China and Southeastern Asian countries.

The quality of labor in NK is high given that everyone goes through an 11-year compulsory education program. Therefore, they can be easily trained on sophisticated technology and become very productive within a short time period. This, coupled with the unique working environment of KIC, can further lower the cost of labor to SK businesses²⁴. In fact, the initial labor cost of 2000 NK won per month per worker represented an U.S. dollar-equivalent of \$80 to \$120, depending upon the exchange rate used. However, after July 1, 2002, when NK drastically devalued its currency from 2.1 NK won/\$ to 145 NK won/\$, the monthly wage per worker was quoted by NK government to SK businesses at \$57.50. This rate was further being negotiated down to below \$40, which may be equivalent to that paid to workers in Vietnam by SK businesses.

4.3. Land is Available and Inexpensive

Another reason for the lower production cost to SK businesses is the low cost of land. Fully functional factory space in KIC is allocated at a price of \$4.22 per square feet²⁵. This price is roughly one-tenth the price of comparable land price in SK. If the environmental and other regulatory costs are added to the development of an industrial complex in SK, the cost can be as high as 100 times more than the cost of operating in KIC. Thus, KIC is very attractive to SK businesses as far as land cost is concerned.

4.4. The Low Initial Capital Investment and Protection

The average start-up cost in KIC for SK business is \$4.5 million, which is significantly lower than what it would cost to open up a manufacturing business in SK²⁶. Furthermore, the SK government had increased its share of loss coverage insurance against any possible loss incurred by SK businesses operating in KIC to \$5 million through the Korean Ex-Im Bank, practically assuring full return of capital to SK businesses. Any loss arising from the intra-trade between SK and NK can be covered up to \$1 million²⁷. These two insurance measures give SK investors in KIC significant relief from any potential losses arising from political uncertainty.

4.5. The Strategic Location Advantage

The distance from Kaesong to Seoul is only 50 miles, a one-hour drive by delivery truck. On December 15, 2004, for example, pieces of furniture produced in KIC were on sale in Seoul within 7 hours of its Kaesong departure. What is so efficient about this shipment is the realization that there may no longer be a need to carry an inventory in an expensive Seoul warehouse. In fact, production, sale, and delivery can practically occur in real time without any additional in-transit cost. This significant cost reduction can only benefit the SK businesses and consumers. The realization of serving a market with 20 million people at a production-to-sale distance of 50 miles, with only minimal inventory management costs, is clearly very attractive and profitable to any producer.

What is also important to note is that the products produced at KIC can easily be sold in the neighboring countries such as China, Japan, and Russia due to their proximity. All of these countries can be reached within an hour by air and within a several hours by car or delivery truck if need be. If the high quality products engineered by SK businesses can be manufactured by NK workers at a low cost, and then sold directly to consumers in these countries while incurring minimal inventory costs, the KIC can be very competitive in the international marketplaces.

4.6. Success So Far

Many SK firms are interested in having an operation in KIC due to these potential advantages. For example, out of 15 SK firms that had participated in KIC in the first wave of applicants, 13 were in operation as of September 2006. The second wave of 24 additional firms had received licenses to operate in KIC in 2005 and are actively preparing for operation in the near future.

Overall, KIC is a success, judging by the production value and export opportunities shown in Table 4. Since its active operation in 2004, the September 24, 2006 Yonhap News reported that about \$11.3 million worth of products produced in KIC were exported to foreign countries via SK. This export amount represented about 20% of the total KIC production valued at \$54.6 million as of August 2006. The remainder was consumed in SK. The interesting point about this is that SK is exporting the products made in NK to foreign countries – largely to the ASEAN countries - under its brand name.

4.7. Many Problems Ahead

Once KIC is fully operational, it will be a profitable, win-win outcome for both Koreas and contribute greatly to the long-term peace between the two countries. However, many problems remain, and both sides must recognize and resolve them if they hope to achieve a productive, sustainable relationship.

First, NK leadership must be convinced that economic development can coexist with the regime stability. As evidence we need only point at the Chinese economy and regime. Without this conviction within its own leadership, the progress toward improving its economy can be made only at a snail's pace. This issue is not just that of NK's alone, rather it should be addressed by SK and the U.S. with the help of China, Japan and Russia. The assurance that NK regime is to be unruffled can make NK leadership to be more open to economic development.

Assuming then that the NK government opens itself to the idea of joint economic development, the success of the KIC can be better assured. In order for KIC to succeed in a reasonably short period, however, NK must devote resources to

Table 4: Value of Monthly Production and Exports from the Kaesong Industrial Complex (in thousand U.S. dollars), 2005-2006.

Year	Month	Production (A)	Shipped to SK (B)	Ratio (%) (B/A)	Exported (C)	Ratio(%) (C/B)
2005	1	201	201	100	0	0.0
	2	122	92	75.4	0	0.0
	3	182	141	77.5	0	0.0
	4	336	376	111.9	38	10.1
	5	441	458	103.9	64	14.0
	6	437	366	83.8	5	1.4
	7	775	711	91.7	37	5.2
	8	1,193	1,068	89.5	135	12.6
	9	2,051	1,967	95.9	181	9.2
	10	2,844	2,727	95.9	141	5.2
	11	2,942	2,560	87.0	138	5.4
	12	3,382	3,200	94.6	127	4.0
	Total	14,906	13,867	93.0	866	6.2
2006	1	3,396	3,561	104.9	655	18.4
	2	3,792	3,619	95.4	661	18.3
	3	5,209	4,970	95.4	964	19.4
	4	4,350	4,188	96.3	1,020	24.4
	5	5,143	4,881	94.9	1,131	23.2
	6	5,508	5,280	95.9	1,624	30.8
	7	5,515	5,301	96.1	2,183	41.2
		Total*	47,819	45,667	95.5	8,238	18.0

* As of July 31, 2006.

Source: Korean Ministry of Unification, Major Statistics on South-North Korean Cooperation, November 30, 2006, and various issues.

increasing the pool of managers who understand and embrace the nature of individual incentives and capitalism, instead of managers wed to the incentive destroying ways of communism. This effort can be accelerated by SK and the international community if we can pledge to educate them.

Currently, SK businesses operating in KIC have no control over their NK employees because they are selected and provided by the NK officials. This means there are no hiring and firing options, no monetary incentives or penalties, available to SK managers. This arrangement aggravates the disparity in labor productivity among skilled versus unskilled workers, among North and South. This disparity can be alleviated if and when NK officials recognize the importance of individual incentives and allow SK managers to take control; both sides must understand fully the ultimate importance in increasing labor productivity.

NK must increase a pool of experts in international business as well. For example, NK did not grant trademark registrations requested by SK businesses. According to the Korea Economic Daily (Hankook Kyungje Shinmoon), a total of 21 trademark registrations were filed with the NK authority since 2003 but

none were granted as of September 14, 2006. This tardiness may be due to the lack of experts in reviewing and granting such privileges. If so, NK needs more lawyers and patent experts who can deal with international issues if it wishes to be active in international trade. Given that NK needs to increase the number of experts in many other areas of business such as international financing, marketing, etc., the help of SK, China, and the U.S. in educating them is essential for its long-term success.

Second, NK also needs to improve its infrastructure. If NK is not capable of doing so by itself (most likely it is not), it must allow an international consortium to tackle this issue. As for the current KIC project, the infrastructure is woefully weak as the center of production and distribution for Seoul; this is all the more the case if expansion is to be done to neighboring countries such as China, Japan, and Russia. The contribution of the South is extensive: electricity is currently generated and sent to Kaesong by SK; telephone lines are laid and serviced by SK; roads and other means of transportation are all furnished by SK as well. While the North Korean railroads could play an important role in transportation, and could do so with convenience and low cost, they do not due to the objection of the NK military. Another essential transportation option, shipping by sea, is an infant industry in NK. These infrastructures have to be improved significantly in a short period.

Third, SK must expand the participation of SK businesses in the KIC to chaebols. Currently, only small and medium-sized SK businesses are allowed to participate. On the surface, this ban may initially reduce the possibility of moral hazard from the SK government's view, for no big firms will go bankrupt due to a KIC failure. However, the ban's unintended consequence is that KIC is unable to ever realize the advantages brought about by economies of scale in production, marketing, and distribution.

As it is currently regulated, only labor-intensive industries can prosper in KIC, taking advantage of low labor and start-up costs. This bias toward labor-intensive production is not due solely to cost structure and firm size. Any technologically sophisticated industries – chaebols for example - cannot enter KIC due to the restrictions imposed by SK government at the behest of the U.S. government, which demands that KICs adhere to the Export Administration Regulations (EAR). Under provisions of EAR, any technology that is deemed to help the enemy cannot be transferred over and thus, EAR serves as the last word on who can or cannot operate in KIC.

In light of this U.S. government involvement, the expansion of the KIC project requires the full understanding and blessing of the U.S. and surrounding countries. This is the fourth and one of the most important difficulties that must be addressed and resolved: the current on-going negotiations between SK and the U.S. for a free trade agreement (known as KORUS FTA) is very important in determining the future of KIC and that of NK economy and its regime. Unfortunately, as of this writing the FTA talks with SK have hit a snag, primarily regarding the issues tied to agriculture and textiles. In addition, political considerations have arisen due to the change in power in the U.S. Congress, with Democrats taking over leadership roles. More emphasis will be put on dumping and trade controls, which may derail further progress on the agreement.

One issue of importance in the current FTA negotiations is SK's wish that the U.S. treat KIC-produced products as if they were made in SK. The U.S. position does not mention or recognize its possibility. As far as the U.S. is concerned, Kaesong is a part of NK, not SK. Both parties know for sure the impact and consequence of this stance. If the products made in KIC are not treated equivalently with those made in either Korea in particular or a most favored nation in general, the current and future value of KIC will be significantly reduced. Of course, this will further reduce the sustainability of the NK leadership as well. Unlike SK, the U.S. has strong reservations about NK's lack of assurance and transparency in the use of funds paid to it via the KIC and other projects. That is, the U.S. worries that NK is diverting hard currency earned via trade to military purposes, such as developing a nuclear bomb.

The possibility of KIC-produced products being sold worldwide requires the trust of the international community that the funds earned would not be used for military purposes by NK. Especially, the U.S. and Japan must be convinced of this before they would buy any of the KIC products. Thus, NK must understand the importance of being a trustworthy member of the international community for it to prosper. It cannot rely solely on SK alone. Because the fast track approval privilege will end in June 2007, NK must work with the Bush administration to determine the future of KIC and many other similar projects before that time. Time for progress is running out.

We must recognize that the North Korean leadership is not sure what it will get by cooperating with the U.S. At the same time, the U.S. is not sure if NK will comply to an agreement if it is agreed. This creates a lack of trust on both sides due, essentially, to asymmetric information: no one can negotiate with trust since neither side knows what the other side knows. In this regard, the U.S. should let NK know the

benefit it will get. This may be one of the reasons why NK wants to have a direct talk with the U.S., instead of the 6-party talk that the U.S. insists. Bilateral talk may be more useful and productive because there would be less distraction from the other four members who seek their own interest before anyone else's.

5. Conclusions

Despite a weak economy and a starving population, NK has spent its limited resources on developing a nuclear bomb, much to the dismay of the international community. In order to understand the role played by others in this allocation, we examined the methods SK chose in giving NK humanitarian and economic aid. In absolute terms the overall size of aid is small, but in relation to the size of NK's overall economy the aid is considerable. On average, annual aid has totaled \$225 million over last 4 years, equivalent to roughly one-sixth of NK's annual imports.

There exist several asymmetries between NK and the rest of the world involving economic systems, economic and political information, and goals for the future. The main concern of NK is the survival and longevity of the regime, whereas SK and the rest of the world strive for peace and economic prosperity. However, in the world of politics, no one trusts anyone. In light of these asymmetries, the six-party talks appear to desire a political solution first, followed by an economic solution. In this paper, however, we presented an alternative view that once the merit of an economic solution is widely recognized, a political solution can be formulated to support economic success for both sides. For the case of NK, the economic development via the Kaesong Industrial Complex (KIC) can serve as that economic solution. Synergies can be realized via the combination of SK's capital and technology with NK's land and labor, resulting in a change in output and income growth larger than could be earned by either country individually. Once economic stability is established in NK via such economic development projects as the KIC, then the rogue and illegitimate behavior of NK can be expected to decrease. The main concerns of KIC are, however, of two types. First, all parties must work together for the long-run viability and success of such projects in NK. Second, there has to be a clear transparency of the fund uses once the income is generated to NK.

When NK becomes aware of the true economic value of being a trustworthy member of the international community, it can be more bold and self-confident in pursuing its economic development. For this end, the international community can work together. One such possible opportunity may be present at this point via the successful negotiation of the U.S.-SK free trade agreement that should include the future of the KIC and KIC-like projects in NK.

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Notes

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² This is loosely defined as any Korean born in 1960s and thereafter. The foremost group among them is known as the "386" generation in Korea. This group of Koreans is born in the 1960s, attended college in the 1980s, and in their 30s in the 1990s.

³ Ahn (2003, 6) states "... many South Koreans today face a fundamental dilemma: whether to emphasize with North Koreans because they are our blood brothers, or with Americans who shed their blood for us."

⁴ Dwor-Frecaut (2005, 148) argues that NK might have not known the serious consequence of a nuclear bomb testing given the leniency shown India and Pakistan by the international community, including the U.S. after their respective nuclear bomb testing.

⁵ As in the Aesop's fable, a warm sunshine on a heavily coated person will eventually force the person to voluntarily take some clothes off. Likewise, this policy is designed in hope and anticipation of forcing NK to voluntarily shed its tough and hostile stance against SK as SK provides more economic aids and cooperation to NK. The judgment on the success or failure of this policy is still being debated in SK. The impact of various policies, including the Sunshine Policy, is summarized by Foley (2001, 34-44).

⁶ An exchange rate of 1000 Korean won to one U.S. dollar is used here. The reason for this simplicity is to show the overall magnitude and importance of a particular monetary figure, instead of the truly reflecting constantly varying nature of the won-dollar exchange rate.

⁷ Not all of this will be paid out as a lump sum payment. Some portion of this payment is in the form of a loan to NK. However, NK denies repayment of this loan by arguing that it is a penalty for not completing the light water reactor by 2003 as promised.

⁸ Even if there is no known public record that supports such rumors and claims, unofficial reports by the UN and other humanitarian agency workers who had worked in NK vouch for such claims. Noland (2004, 17-43) highlights and builds on this notion.

⁹ Yang (2001, 33) states that "In addition to long-term economic benefits, the Democratic People's Republic of Korea (DPRK) has earned valuable hard currency from the Light Water Reactor (LWR) Project" by providing various service related to the construction of the light water reactors.

¹⁰ KEDO is an organization founded on March 15, 1995 by the United States, South Korea, and Japan to implement the 1994 U.S.-North Korea Agreed Framework that called for the construction of a light water reactor nuclear power plant in NK to replace NK's existing reactors that were suspected of being used for a nuclear weapons program. Since 1995, many other countries joined in as KEDO members. The original target date for completion was 2003.

¹¹ At the time, there was a rumor that Kim Jung Il of NK agreed to meet with Kim Dae Jung of SK, provided that SK give significant economic aid. This was proven as fact at a later date and shown here as a part of the evidence.

¹² The unusually large aid given to NK in the early 1990's (up to 1996) was a compensation for NK declaration of denuclearization of the Korean peninsula which was negotiated between SK, NK, and the U.S. This declaration was supposed to have stopped NK from developing a nuclear bomb.

¹³ If a total aid given during the Roh's administration is extrapolated to 2007, the last of the Roh's presidency, it is possible to say that it would be more than double the aid package given during the previous Kim's administration.

¹⁴ The peak of the NK food crisis was in 1996-1997, according to Zellweger (2002, 40). However, the NK food condition did not improve in subsequent years and thus, international aid continued at an increased pace.

¹⁵ The source is: <https://www.cia.gov/cia/publications/factbook/geos/kn.html#Econ>

¹⁶ The source is: <http://www.state.gov/r/pa/ei/bgn/2792.htm>

¹⁷ The interesting point about the demise of the Kim Jong Il's regime is that SK does not want it due to a large cost of reconstructing NK economy if it inherits NK. China also seems to be against it because it will lose a foothold in the Korean peninsula. The only nation that may be strongly in favor of this is, for now, the U.S.

¹⁸ The San Francisco Chronicle in its October 22, 2006 article lists the detailed weapons sales to the Middle East nations and Pakistan initiated by NK since the 1980s.

¹⁹ Kaesong is the Korean government's official spelling. However, it is also written in various ways in English such as Gaesung, Gaesong, Kaesung, etc.

²⁰ Prior to this project, numerous attempts to establish an economic development zone in NK were made. For example, in the late 1990s, Daewoo Group unsuccessfully initiated a Nampo Industrial complex project. Also, as late as October 1999, NK suggested to Chung Joo Young the site of Shineijoo. However, due to its strategic location being closer to Seoul and a nearby port accessibility, Kaesong was selected.

²¹ Calculation is based on the conversion unit of 1 acre to 1224 pyung, the traditional Korean unit of land measure.

²² Around 1988, NK initially opted for an indirect trade with SK. However, the payment arrangement and other monetary settlement issues surfaced and thus, NK later preferred an OEM style trade where NK produced on the basis of SK specification. This also created the problem of proper technology transfer and speed along with high transportation costs.

²³ Per Dong (2006, 26-27).

²⁴ At the earlier stage of operation, many SK managers encountered the slow work pace of NK workers who did not have any individual incentives to work harder. Despite this lack of incentive, NK workers became more productive over time when properly instructed and managed to complete a task.

²⁵ The official price quoted in South Korean won is 150,000 won per pyung. This was converted into \$ per square feet by using an exchange rate of 1000 won to \$1, 1224 pyung per acre, and 43,560 square feet per acre.

²⁶ Per the January 18, 2006, article in the Korean Economic Daily, known as the Hankook Kyungje Shinmoon (in Korean.)

²⁷ These insurances, however, come at an annual average insurance premium of 0.53% of the pledged investment value. This is about \$53,000 for a \$10 million investment, which can be a significant cost to a SK business especially at an earlier stage of investment in KIC.

Korean Demilitarized Zone: Opportunity to Help Reduce Economic Asymmetries on the Korean Peninsula

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Abstract. The economy of the Republic of Korea (ROK, South Korea) is many times the size of the Democratic People's Republic of Korea (DPRK, North Korea) and ranks as the world's twelfth largest. The two countries share 5,000 years of history but since 1953 have pursued separate paths. The South thrives on a diverse industry base including automobiles, ship building and electronics; the North depends on such products as coal and zinc, some agricultural products like ginseng, missile technology and cigarettes among others. China and South Korea are attempting to bolster DPRK's economy with significant investment, oil and food aid. While North Korea has introduced some market reforms, major restrictions on capital formation remain.

This paper proposes one potential vehicle to help diminish asymmetries between North and South Korea: the Demilitarized Zone (DMZ). The DMZ is a treasure trove of cultural and natural resources, including five rivers, hundreds of bird, fish and animal species, forests and historically significant sites. With proper planning, implementation and management, these resources can be used *sustainably* to maintain present biodiversity, develop significant jobs and revenues and create a viable path towards symmetry between the two Koreas.

JEL Classification: Q34, Q51, Q56, Q57, Q58

Keywords: Ecosystem services, Valuation of environmental effects, Environment and development, Sustainability, Biodiversity conservation

Introduction

The ROK possesses the twelfth largest economy in the world based on Gross Domestic Product (GDP) in 2006. The GDP of North Korea, its historic brother and neighbor, is a fraction of South Korea's. Both countries lag behind much of the rest of the world in protecting environmental and natural resources. Yale University's Environmental Sustainability Index (ESI)² of global environmental stewardship ranks North and South Korea near the bottom, at #146 and #122 respectively. However, the Korean DMZ provides an excellent opportunity to help diminish these disparities, with its many species and habitats, some of which are extremely rare and not found anywhere else on the Korean Peninsula or in the world. Conserving the DMZ in a sustainable manner can help energize the North Korean economy, be a catalyst for peace *and* preserve biodiversity upon which all Koreans depend. The DMZ is a relatively uninhabited 2.4 by 155 mile (4 by 258 kilometer) strip of land that separates a densely populated and economically expansive South Korea from a North Korea seeking its own economic growth. What is the highest and best use of this land? This paper will offer an answer.

The paper focuses on the potential economic value and benefits of a sustainably managed DMZ to both Koreas and discusses ways of valuing DMZ assets. We also

examine what economic benefits other natural areas around the globe have garnered for their countries and citizens to serve as examples of what is possible for the DMZ.

Asymmetries

After World War II, the two Koreas took different paths toward economic development. In 2006, sixty-one years after freedom from Japanese rule, South Korea had a \$965 billion GDP. In 2005, North Korea's estimated GDP was \$40 billion in Purchasing Power Parity. South Korea had a GDP in 1945 of \$1.3 billion, then it went on to achieve a nearly seven percent annual growth rate in GDP between 1953 and 2004. Export growth has fueled much of its prosperity, advancing from \$27.7 billion in 1952 to \$254 billion in 2004.³ After World War II, South Korea's exports were primarily labor-intensive items like textiles and wigs. Now they are electronics, telecommunications, automobiles, steel, shipbuilding and petrochemical products. South Korea's place on the world stage can be symbolized by their Foreign Minister, Ban-ki Moon's appointment as Secretary General of the United Nations in January 2007.

North Korea has exports of agriculture products, chemicals, mining of coal, iron ore, copper, zinc and lead. Its military expenditures are about \$5 billion annually, or about 12.5 percent of its GDP, while South Korea's expenditures are \$21 billion, amounting to 2.6 percent of its GDP.

Other comparative statistics, both economic and non-economic, are shown in Table 1 below.

Thomas Friedman's *The World is Flat*⁵ offers another way to look at Korean asymmetries. His thesis suggests there are ten key ingredients to reducing disparities between economies around the world: the fall of the Berlin Wall in 1989, popularizing of the internet, work flow software, the ability to upload files and globalize them, outsourcing of tasks, offshoring of tasks to the most cost-effective locations, worldwide supply-chaining, insourcing-the synchronizing of global supply chains, in-forming-having the ancient library of Alexandria, Egypt, and then some, on your desk through Google and Yahoo, and, as Friedman calls them, the 'steroids'-technologies like wireless, cell phones, digitizing, being virtual and being personal that supercharge the other nine ingredients. These factors are fostering wealth creation around the world in ways never before possible. Certainly, South Korea is helping to make the world flat, to reduce asymmetries through its technologically based economy. While North Korea has almost none of these ingredients, it is augmenting capabilities in software development and networking.

The Demilitarized Zone (DMZ) of Korea (see Figure 1 below) could help reduce asymmetries between these two countries. For over 50 years, it has been part of a geopolitical vacuum and a symbol of war, tension and separation. During this period, nature in the zone has regenerated. The DMZ and contiguous Civilian Control Zone (CCZ) in South Korea-5 to 20 kilometers (3-12 miles) across the peninsula contain five rivers and many ecosystem types, thousands of plant species; dozens of mammal and fish species. Hundreds of bird species live in and migrate through the DMZ.

Safeguarding the DMZ as a transboundary reserve, like those in South Africa, Central and South America and Southeast Asia will provide: (1) significant jobs and revenues from sustainable agriculture and eco-tourism; (2) water resources for the peninsula; (3) a symbol of peace, a buffer, assistance in economic and environmental sustainability and

Table 1: Comparative Statistics of North and South Korea⁴

Factor	North Korea	South Korea
Area	120,540 square kilometers	98,480 square kilometers
Natural resources	Coal, tungsten, lead, zinc, graphite, iron ore, copper, gold, hydropower	Coal, tungsten, graphite, molybdenum, lead, hydropower 'potential'
Arable land	22.4 percent	16.6 percent
Irrigated land	14,600 square kilometers (2003)	8,780 square kilometers (2003)
Electricity production-in billions of kilowatt hours	18.75 (2003)	342.1 (2004)
Oil consumption-in barrels per day	25,000 (2003)	2.061 million (2004)
Exports-total-in \$billions-"freight-on-board" (f.o.b.)	\$1.275 (2004 estimate)	\$288.2 (2005 estimate)
Number of telephones-main lines in use	980,000 (2003)	26,595,100 (2004)
Non-Economic Factors		
Factor	North Korea	South Korea
Population (estimate-2006)	23,000,000	49,000,000
Birth rate (per 1,000 population-2006 estimate)	15.54	10
Death rate (per 1,000 population-2006 estimate)	7.13	5.85
Life expectancy at birth-total-2006 estimate	71.65 years	77.04

Figure 1: The Korean DMZ and CCZ



an example of cooperation; (4) an opportunity to maintain and reintroduce species and habitats largely eliminated from the rest of Korea; (5) a laboratory and a rare chance to study what happens when an area like this is left untouched for over 50 years.

Ecosystem Services Valuation Methodologies

Ecosystem services are defined as the contributions of nature to human well-being or welfare. While these services are important, economic calculations normally do not include their value. When we buy a cashmere sweater, mahogany table or tuna, we aren't readily able to calculate the environmental impact of that decision. Policy, purchase and development decisions are often made without considering the economic loss resulting from diminishing ecosystem services in the future. Attaching monetary values to these services encourages their protection in cases where their loss would be greater than the monetary value of what is produced at their expense. Valuing provides reliable, objective data to inform decision makers how to manage the ecosystem sustainably. In addition to economic valuation, of course, the resource possesses intrinsic value on ethical, philosophical and cultural grounds. For example, cranes that use Korea as part of their annual flyway and winter over in the DMZ have been a symbol of longevity and family life in Asian culture for thousands of years. However, in the world of political decision making, finance is often the medium for making decisions and setting priorities, though it should not be used in a vacuum when deciding how to manage natural resources.

Until recently, ecosystems have been controlled and managed primarily from a regulatory perspective, as in the U.S. Now there is more emphasis on market-based incentives designed to lead to a change in behavior by people impacting the health of the environment. Appropriate valuation of resources and use of their results can lead to programs that reinforce appropriate behavior change.

Another reason to quantify ecosystem services is that many of their benefits are considered 'free' and taken for granted, and of which people may not even be aware. Examples include: air and water purification, flood and pollution control, raw materials such as wood for consumer products, carbon absorption and sequestration, soil formation and maintenance, plant pollination, seed dispersal and nutrient recycling.

Benefits of valuing ecosystem services economically include:

- Providing a common denominator for decision making
- Creating a holistic picture of resources and showing their interdependencies
- Demonstrating previously unknown benefits of ecosystem services
- Investigating trade-offs and alternative ways to manage them
- Determining present and future discounted values, changes in those values and in resource conditions
- Assisting in raising and allocating funds and prioritizing projects
- Identifying potential solutions to resource issues
- Increasing public awareness, understanding and buy-in
- Involving parties affected by and making resource decisions
- Foreseeing and avoiding unintended consequences

Economists typically classify ecosystem goods and services by how they are used: direct, indirect, option and non-use values.⁶ *Direct use* is defined as those goods and

services used directly by human beings. This category includes 'consumptive' uses like timber, medicinal products and harvesting of food products and 'non-consumptive' uses like recreation and cultural activities. *Indirect use* values give benefits such as water filtration and flood control provided by a wetland. *Option* values are obtained by preserving the option to use those resources in the future. *Non-use* values come from the enjoyment of knowing the resource exists, even if people never intend to use it themselves, such as tigers in the wild. Direct values are usually the easiest to calculate because they are observable marketplace activities. Indirect values are harder to measure since they may not become part of a commercial activity and people may not be aware of them. Option and non-use values are the hardest to assess, since they are not reflected in peoples' behavior and thus can't be observed. There are two general categories of valuation: 'revealed preference', based on observations of peoples' behavior; and 'stated preference', based on questioning people about hypothetical situations.

Below we examine several valuation techniques that seem most applicable to the DMZ and what it could become - travel cost, contingent, contingent choice, hedonic pricing, market price and productivity. Governmental entities and corporations have employed these techniques for decades to facilitate decision making.

Travel Cost Valuation

One 'revealed preference' technique is *travel cost*, commonly employed for recreational activities such as sustainable fishing and hunting, hiking and skiing. It estimates benefits and costs of changes in travel and access fees, elimination or addition of a destination and changes in environmental quality of a site. It uses actual observed behavior and assumes the value of the site or its services is reflected in how much people are willing to pay to get there.

Costs might include gasoline and related travel expenses such as hotels, restaurants, buses, guides, travel agents and park entrance fees. Variations on the theme include visits to alternative sites with different characteristics and multiple motivations for visiting them. This method is ideal when there are no endangered species or highly unique qualities that would make non-use values significant, and when expenses to protect the site are relatively low. Under these conditions, it is a relatively inexpensive and uncontroversial method to employ, interpret and explain. It cannot be used to measure non-use values.

Twenty-five million people, about half of South Korean residents, live in the Seoul metropolitan area, and an untold number of North Koreans live just north of the DMZ; Seoul is within two to four hours of the entire DMZ, making it an ideal tourist destination.

Contingent Valuation

Contingent valuation is the most widely used method to assess non-use values that don't involve marketplace purchases and may not involve direct participation. A representative sample of people is surveyed and asked what they would be willing to pay to conserve that resource. Included would be such activities as a wilderness experience, bird watching, viewing scenery, any basic life support function or just knowing that, for example, the Asiatic Black Bear or Amur Goral, a relative of the camel, exists in the DMZ. While widely employed for use and especially non-use applications, the method

still evokes controversy among policy makers due to its being based on hypothetical information. The survey must clearly define the services being protected and the context, so that respondents are indicating their values for the services. Pre-testing helps ensure survey validity. This method can be of particular benefit to DMZ preservation, since there is little presently observable data on assets of the DMZ. It also can be helpful in looking at alternative uses of DMZ and CCZ land, such as development versus habitat preservation. Care should be taken in describing assets and scenarios as clearly as possible, which will be easier to do once an inventory of DMZ and CCZ resources is completed.

One contingent valuation case study involved re-regulation of Glen Canyon Dam⁷ in the U.S. in the early 1980s. Operation of the dam was adversely affecting the downstream ecosystem and recreational rafting. Contingent valuation was used to determine a water release pattern “that increased the economic value of all uses of the river”. Additional valuation was conducted to determine what households throughout the U.S. would be willing to pay to protect all natural resources of the Grand Canyon. Results of both studies led to ‘substantial changes’ in dam management towards a higher flow regime. The project represented one of the first U.S. contingent valuation studies included as part of a federally funded economic analysis and used to estimate non-use values.

Contingent valuation has been employed in South Korea to compare to the traditional ‘cost-benefit’ method used in determining the value of public works projects. In 1997, the government’s Ministry of Construction and Transportation along with Korea Water Resource Company calculated the cost-benefit ratio of a dam on the Tong River, as seen in Table 2 below.

Table 2⁸: Economic Analysis of Tong River Dam, South Korea (in Won, at approximately \$1 to 1,000 Won)

Tong River	
Factor	Value/Ratio
Benefit	936,398,000,000
Cost	922,331,000,000
Net Present Value	14,067,000,000
Benefit/Cost Ratio	1.02

Realizing the study had not included consideration of the area’s environmental value, Seung-Joon Kwak (1999)⁹ of Korea University estimated environmental damage costs through contingent valuation methods by asking residents in four communities, Seoul, Chongsun, Young Il and Pyong Chang how much they would be willing to pay for the river to remain as it was, without a dam. Residents indicated they would be willing to spend on average 2,654.3 Won, or approximately \$2.65 per month. Multiply this times 12 months times the 3,512,384 residents in the area and the contingent value of the area remaining unchanged was 111,875,100,000 Won, or approximately \$111,875,100. When compared to the benefit-cost calculation, there was a negative Net Present Value of -111,241,100,000 Won for the project. The government canceled the dam project on the strength of this comparative analysis.

Contingent Choice

Similar to Contingent Valuation, contingent choice focuses on trade offs among different scenarios. It is particularly helpful when looking at policy decisions that might have varying impacts on ecosystems and their services and where non-use values are important. It can be used to estimate monetary values of these alternatives or to rank order them in selecting the most preferred option(s). The difference between this and the contingent valuation method is that here respondents are not asked directly about their values, but those values are inferred from the hypothetical choices and trade offs they make. Also called 'conjoint analysis', the technique has been employed in corporate marketing for decades. The method could be especially helpful in examining different levels of development and habitat protection in the DMZ and CCZ.

Hedonic Pricing

Hedonic pricing is employed to estimate economic values for ecosystem services that directly affect market prices, for example with air and water quality, scenic views or proximity to recreational activities. It is most often used to value environmental amenities, such as distance from open space, that affect the price of residential properties.¹⁰ From a valuation study you can determine the portion of the housing price that relates to each characteristic, enabling you to determine the worth of open space, for example, and how the value of housing changes when the amount of open space changes. In one study conducted in the U.S. in Southold, Long Island, New York, it was shown that properties adjacent to open space had an average of almost 13 percent higher value per acre than similar properties elsewhere.¹¹ This method could be used to look at benefits of open space preservation where open land might be rapidly developed, a not unlikely potential scenario for the DMZ and CCZ. When existing Geographic Information Systems and housing data are able to be used, the method can be relatively inexpensive. Highest applicability will be achieved by employing studies in Korea, perhaps even near the DMZ and CCZ.

Market Price

This method estimates the economic value of ecosystem products and services bought and sold in commercial markets and is based on observable market price data.¹² It allows you to compare the costs, for example, of developing sustainable fishing, hunting or skiing to the benefits created, such as fishing and hunting licenses and fees at ski resorts. The method also can be used to assess the impacts of changes in quantity or quality of that good or service, such as the number of animals hunted or fish caught, and even whether those fish become contaminated. If prices are not now available for certain goods or services in the DMZ or CCZ, they can be used from other parts of Korea. The method is relatively inexpensive to employ when relying on existing data, and, importantly, it is an accepted economic technique. Peoples' values for these goods also are usually well-defined and understood. One caution when calculating the benefit of rice production in the DMZ and CCZ is that this rice feeds both human beings and endangered and other migratory birds; thus, some of it may fall within the 'non-use' economic category.

Productivity

This method estimates values for ecosystem products and services that contribute to, or are a factor in the production of commercially marketed goods.¹³ Examples include water and air quality, where environmental quality can directly affect the cost of producing a marketed product. For example, it can be used to determine if it is more cost effective to clean up water at its source or to treat it with chemicals prior to irrigating crops or supplying municipal drinking water. You also can examine the economic benefits of different levels of agricultural productivity or decreased water purification costs for a municipality resulting from cleaner water. In the case of the DMZ and CCZ, this technique could help determine the costs *beforehand* of letting water quality degrade from development of the DMZ or CCZ.

Table 3 below summarizes how valuation methods just described could be used in the DMZ and CCZ context.

Table 3: Potential DMZ, CCZ Valuation Applications

<u>Ecosystem Services Valuation Method</u>	<u>Potential Applications Related to DMZ, CCZ Activity</u>
Travel cost	Recreation-skiing, hiking, boating
Contingent valuation	Non-use-endangered species, bird watching
Contingent choice/conjoint analysis	Policy decisions, trade offs, differing impacts-development versus habitat protection-for example in Cheorwon, South Korea
Hedonic pricing	Housing development versus open space, habitat protection
Market price	Sustainable timber, fishing, hunting, farming
Productivity	Water quality related to sustainable agriculture, municipal drinking water

Caveats of Valuation

While valuation is a useful tool, no method is perfect. Cautions to remember when employing it include:

- Understanding results from multiple stakeholder perspectives
- Ensuring accuracy and conducting a reality check of assumptions, data and results
- Using the most appropriate method
- Helping people understand when data is hypothetical but that it can still be valuable for decision making

To help manage expectations and results of valuing resources and mitigate their improper use and caveats mentioned above, several tactics can be employed:

- Including stakeholders in the process from the beginning
- Having stakeholders understand the process, techniques and data used
- Cultivating decision makers on the importance of the process
- Creating accountability for decisions and plans that are made
- Developing metrics and measuring progress of plan implementation
- Remaining flexible to changing conditions, resources and stakeholder needs
- Using a partnership and multiple funder approach to obtain consensus, involvement and financial assistance

Global Transboundary Park Examples

Renowned biologist and conservationist Edward O. Wilson describes how we need to look at more than a single species and its known ‘practical value’ in a business accounting sense.¹⁴ To appropriately determine the value of the DMZ, we want to look at it holistically, with all its ‘ecosystem service’ components. While this kind of work has not yet been conducted for the DMZ, other examples from around the world can give us an indication of the DMZ’s and CCZ’s potential value. At Yellowstone Park in the U.S., for example, Cetus Corporation conducted ‘bioprospecting’ and using just one organism, produced a heat-resistant enzyme for the synthesis of DNA. Cetus Corporation is now earning over \$200 million annually from that initial investment.¹⁵ Similar work is being carried out by other pharmaceutical firms, including Merck and Pfizer. Grants and a share of the profits from this work go to the areas involved, at Yellowstone, in Costa Rica, Madagascar and Brazil. Examples below further underscore the kind of potential that lies ahead for a sustainably managed DMZ and CCZ.

South Africa

South Africa’s Peace Parks Foundation has helped designate and manage numerous transboundary parks. Twenty of them exist or are being formed between South Africa and their neighbors in the South African Development Community (SADC) region. “*Conservation and tourism are ... seen as the vehicle for socio-economic development of the region.*”

Figure 2: Transfrontier Parks in South Africa and Neighboring Countries



Lubombo Transfrontier Conservation and Resource Area and Lubombo Conservancy-Goba on the borders between South Africa, Mozambique and Swaziland are two prime examples. Salient economic impacts of these transfrontier parks include¹⁶:

- There has been a 60 percent growth rate in tourism establishments resulting directly from Lubombo being developed
- 300 jobs and six new lodges have been created
- A significant share of the revenues from these projects go to the local people
- 26 craft groups have been formed, with 600 people employed in them
- 16 parcels under different ownership were consolidated to make the park
- An old military base was removed and migratory bird routes have been restored; and the amount of species and the numbers of game have increased
- Hotels, bed and breakfasts, lodges, conference facilities and restaurants have been built
- Infrastructure improvements have enhanced roads and stormwater management
- Sustainable harvesting of game animals is employed
- Research is being conducted
- An anti-malaria campaign in the area has all but eradicated the disease

Park development has provided a bridge to a better life for local residents and wildlife. Another benefit of sustainable conservation projects is demonstrated with the South African parks: investment funds come in locally and from around the world to support a successful program. In a recent snapshot, Mozambique received over \$21,000,000 from the World Bank to support conservation of biodiversity and natural ecosystems in the Lubombo Park, which borders on the two countries, as well as for the Greater Limpopo Park, also bordering with South Africa and Chimanimani Park. Mozambique obtained almost \$264 million for various tourism projects and \$6 million from the German government. Additional benefits of South African conservation include: the Southern African Wildlife College and a research center which has trained more than 3,000 conservation managers, field guides, game rangers and tourist guides from 20 countries in Africa.

United States

Americans engage in many activities that relate to ecosystem service offerings, including fishing, hunting and wildlife watching. Table 4 below demonstrates the levels of participation in these activities.

Table 4: U.S. Selected Ecosystem Service Activities-2001¹⁷

Ecosystem Service Activity	Participation (in numbers of people, age 16 years and older)	Participation (in percent of U.S. population, 16 years and older)
Fishing	28 million	16
Hunting	13 million	6
Wildlife watching	67 million	31

The numbers of people involved in wildlife watching increased by 5 percent from 1996 to 2001 and expenses for trips, equipment and other items increased 16 percent. Bird watchers in the U.S. accounted for 46 million people, or roughly 21 percent of the population. This activity generated an estimated \$32 billion in retail sales (food, lodging, equipment, et al), \$85 billion in overall economic output and \$13 billion in state and federal taxes. It also generated over 863,000 jobs.¹⁸ Expenditures in the case of bird watching included travel-transportation, lodging, guide fees, public and private land use fees, and purchases such as cameras, tents and other camping equipment, clothing, bird food, binoculars, nest boxes and magazines. Since these data were generated from observable actions, the method employed here was more akin to the travel cost technique. While the amount of participation involved in these activities may not seem relevant to the DMZ, it is highly likely that the market for the DMZ is world-wide and that there is significant pent up demand in Korea itself.

One particular study¹⁹ of the Platte River in the state of Nebraska, United States, used contingent valuation and other survey techniques to determine the value of a major migratory pathway for Sandhill Cranes and other birds. The study revealed that non-Nebraska respondents to the survey came to the river about 3.5 times, not just during migration, and spent a total of about \$790 per person. Participants also indicated they had invested about \$1,500 in birding equipment. The Total Gross Economic Output (TGO) from these activities on the Platte River is estimated at between \$21.8 and \$48.5 million. If you add the approximately 60,000 local, single day travelers, that figure is increased by another \$3.3 to \$4.7 million. Using the contingent valuation method to calculate visitor 'willingness to pay', it was determined that respondents were willing to pay an additional \$192.75 before they would cancel their trips to and within the Platte River. This brings the total value of wildlife (bird) watching on the Platte River to a range of \$27.9 to \$57.5 million annually. Respondent interest in coming to the Platte is closely tied to maintaining the populations of Sandhill Cranes; if they diminish, it can be expected that attendance would decrease as well.

Australia-Goulburn Broken Catchment

A major valuation study was conducted of Goulburn Broken Catchment, a 2.4 million hectare area in Australia.²⁰ The area was chosen because it was largely agricultural and undergoing significant population growth. Project goals included to: estimate a range of ecosystem service benefits to help policy makers, managers and planners; raise awareness of ecosystem values; and recommend policies and practices. Main elements and aims of the studies included: engaging stakeholders, inventorying ecosystem services and developing scenarios. Focus of the studies included the following ecosystem services: climate regulation, habitat maintenance and regeneration, provision of shade and shelter, maintenance of soil health, healthy waterways, water filtration and erosion control and regulation of river flows and groundwater levels. Through this work, there were specific goals and programs decided on, including: a higher level of re-vegetating the Sheep Pen Creek from its current level of native vegetation of 8 percent to 15 percent; policies that promote native vegetation to offset greenhouse gas emissions elsewhere; and investing in research on various aspects of tourism and recreation. Total gross dollar value of the production of the catchment in 2001 was Australian

\$8,709,000,000 (with 80,446 jobs) and it is predicted to grow. This study has direct parallels with the DMZ and CCZ.

Korean Demilitarized Zone (DMZ)

At least 136 clusters of adjoining protected areas or transboundary protected area complexes exist world-wide²¹, made up of 488 different protected areas. A number of them fall under the UNESCO World Heritage Convention, Ramsar Convention, Man and Biosphere Reserve programs, some with *multiple* designations. The earliest known transboundary area in modern times occurred when Czechoslovakia (now Slovakia) and Poland created such a park in 1924. Many transboundary protected areas have been spawned out of conflict and have helped reduce turmoil. The concept of the Korean DMZ becoming a transboundary reserve has been around a long time. In a 1990 speech at the UN, then South Korean President Kim Dae-Jung suggested that the DMZ should be a peace park.

As shown in Kashmir²², reduction in tensions and warfare can lead to significant increases in wildlife. It is also possible that establishment of a transboundary park between the two Koreas could help reduce tensions and create more prosperity for both countries, as parks have done in Africa, not to mention the potential for assisting the Koreas in their inevitable reunification. Table 5 below depicts DMZ and CCZ ecosystem types identified in prior studies²³ matched with ecosystem services they could provide, adapted from the UN's Millennium Ecosystem Assessment²⁴ reporting categories for ecosystem services.

The prior studies mentioned above demonstrate that there are thousands of plant species, dozens of fish and mammal and hundreds of bird species inhabiting or using the DMZ and/or the CCZ as part of their life cycle. These include: endemic fish species, the endangered river otter (*Lutra lutra*), endangered bird species including Red-crowned and White-napped Crane (*Grus japonensis* and *Grus vipio*), Black-faced Spoonbill (*Platalea minor*) and Black Vulture (*Aegypius monachus*). Mammals include Korean Water Deer (*Hydropotes inermis argyropus*), Asiatic Black Bear (*Selenarctos thibetanus ussuricus*) and Amur Goral (*Nemorhaedus goral raddeanus*).

Military history offers one of the main DMZ tourist/ecosystem service attractions. An estimated 900 people per day or over 300,000²⁵ annually come to the DMZ, including South Koreans and U.S. veterans of the Korean War. The current military establishments include North Korea with over one million troops and South Korea with about 680,000. These forces create economic impacts such as jobs, food and transportation. By their very presence they dictate the current land use of the DMZ and surrounding areas. As tensions diminish, these economic drivers will be supplanted; there will be a transition period as new activities and land use patterns come into being. The challenge is to replace old practices with activities that are ecologically and economically sustainable. Maintaining a 'green' DMZ with its interconnected north-south natural corridors will help develop a sustainable green economy of reunified Korea.

Other countries have discovered additional military history related ecosystem services as well. A large number of annual visitors travel to French World War I and II battle sites, even 60 to 90 years later! Gallipoli, a well-known Turkish World War I battle ground still draws tens of thousands of visitors from Australia and other countries each year. There is an on-going interest in recovering bodies of those Missing-in-Action

Table 5: Korean Demilitarized Zone (DMZ) Ecosystem Services and Ecosystem Types

Ecosystem Service	Ecosystem Types									
	Coastal, Marine	Island	Mountai	River, inland	Wetland	Grassla nd,	Farmlan	Forest	Urban	
Freshwater			+	+	+		+	+		
Food	+	+	+	+	+	+	+	+	+	
Timber, fuel, fiber	+						+	+		
Products	+			+		+	+	+		
Biodiversity regulation	+	+	+	+	+	+	+	+	+	
Nutrient cycling	+			+		+	+	+		
Air quality, climate	+	+	+	+	+	+	+	+	+	
Human health	+			+	+	+	+	+	+	
Detoxification	+			+	+	+		+	+	
Natural hazard regulation	+			+	+			+		
Cultural, amenity	+	+	+	+	+	+	+	+	+	

(MIA) from the Korean War from the over 20 nations whose soldiers fought there, particularly now with DNA identification techniques. When the DMZ and CCZ become accessible, these quests would undoubtedly continue and accelerate. There would be potential for “Rest in Peace” parks, as in other former war zones. Governments of these same countries have a stake in peaceful use of this land and could be potential investors and donors in its sustainable future.

Another way to look at the DMZ’s potential for ecosystem services is as a ‘connector’, from a ‘niche market’ perspective. Peter Hayes identified²⁶ several niches that North Korea could exploit, including certain types of software development, reactivation of magnesite and zinc mining and re-connecting of railroads and roads. Rail corridors are being extended through the DMZ to link South and North Korea on the west and east sides of the peninsula. Some day soon they will join up with rail in China and Russia for ultimate connection into Europe, another market for eco-tourists and ecosystem goods and services.

Low labor rates, at an estimated \$600 (in Purchasing Power Parity) per year for professionals, combined with a literacy rate of over 90 percent, create another niche for North Korea. The development currently underway in the North Korean city of Kaesong, right at the DMZ, takes advantage of those strengths. In all of these fields North Korea possesses a level of uniqueness. Viewed from this perspective, the DMZ and related

corridors along with geographic features like Mt. Kumgang are *globally* unique. Their value can be exported sustainably for tourism and research. To support these activities, at least initially, infrastructure need not be high, primarily for training and education, and could be reinforced with help from Japanese and South Korean scientists and non-government organizations (NGOs) that already have connections and activities in North Korea. Nascent computer networking and software capabilities in North Korea also could be tied into systems available in these countries for tracking wildlife patterns, like those now used in Korea for rare cranes and re-introduced otters. Activities can begin slowly so as not to overload current political and system capabilities. As Kaesong is a special zone to take advantage of one set of North Korean strengths, the DMZ can become part of another, even larger, special zone.

Perhaps the most significant aspect of the DMZ/CCZ ecosystem services lies in their being at the core of existing biodiversity “corridors”. Laterally, the DMZ and CCZ are one corridor with many diverse ecosystems. However, for hundreds of bird species these lands are an integral part of vertical corridors that stretch from Mongolia, Russia and China in the north to Japan, Vietnam, the Philippines and Australia in the south. These pathways are crucial to the lives of hundreds of species. They can be expanded to include areas like Jeju Island and Mount Seorak in the south and Baektu and Kumgang Mountains in the north.

These regional corridors would open up protection and eco-tourism possibilities for mammals as well, perhaps even tiger. There could be collaboration with World Wildlife Fund’s (WWF) active tiger protection efforts in Primorsky Krai of the Russian Far East, near the North Korean and Chinese borders. River otter also are being released into the DMZ near Hwacheon, South Korea. Existing wetland education and protection efforts near the Nakdong River in the south, with Baikal Teal and other species that migrate from Siberia, could become part of these pathways. Extensive ‘Green Belts’ are being established in Europe along former Soviet borders, around major cities in the U.S. like Chicago and in the western U.S., the latter to safeguard mountain lion habitat. The ecological and economic value of the DMZ *and* these interdependent corridors is greater than the sum of the individual parts. In fact, their ecological and economic value *increases* as a whole, for one reason because the whole can sustainably support *more* wildlife and ecosystem services than if they were confined to isolated locations. Efforts to establish and expand these corridors can go on independently from work involving the DMZ and CCZ. Then, when politically feasible, they can be linked.

Various components of ecosystem services are already present in some form in or near the DMZ and CCZ, with most even in North Korea, as exemplified below.

- Exhibits, museums
- Observation towers, decks
- Sports facilities
- Resorts, hotels
- Archeological, historical sites
- Souvenir shops
- Underground tunnels
- Cruises
- Agriculture

- Local conservation groups
- Parks
- Local nature and wetland centers used for education, outreach, training

Not all are sustainable at this time, but they could be the beginning of more encompassing activities and revenues for local people and governments of both nations. Some of the components, particularly the observation towers and decks, are not accessible to the general public and currently serve more of a military purpose. Under peaceful conditions, however, these facilities and related personnel can become part of the ecosystem service infrastructure, along with roads and related support systems.

The North Korean resort at Mountain Kumgang (Diamond Mountain) is a five hour bus ride from Seoul. Hyundai Asan invested \$200 million there to build a resort community with hotels, restaurants, spa, golf course, roads and a port.²⁷ The resort has been receiving an average of 850 South Korean and foreign visitors per day since 1998. For their concession to construct the resort, Hyundai Asan has provided North Korea with close to one half billion dollars since 1998. Hyundai's original estimate of visitors to Mt. Kumgang was 370,000 per year; now due to North Korea's recent nuclear and missile tests, that figure is down to 250,000 per year. Other tours are planned for Baektu Mountain and the historically significant city of Kaesong, both in North Korea.

In the south, even where travel within the DMZ is limited due to security concerns, some tourist traffic to observation posts does exist, as mentioned above. Sites are located on Kanghwa Island; near Panmunjom, where the 1953 Korean War armistice was signed. At Dorasan Station and a few others also within the DMZ, tourists go to observe the DMZ and animals such as water deer and migratory birds. Hotels in Korea advertise DMZ tours. It has been estimated that even under these conditions, the Dorasan Station location alone receives about \$10 million per year from tourists buying souvenirs and paying a small entrance fee. Imagine what revenues could be generated under more relaxed conditions! The number of visits South Koreans make to their own parks provides one indicator of DMZ tourism potential, as shown in Table 6 below.

Table 6: Number of Visitors Per Year to South Korean Parks²⁸ (in thousands of visitors)

Year	1999	2000	2001	2002	2003	2004	2005
Number of Visitors to South	21,320	21,057	19,610	18,864	20,358	19,845	19,244

With a predicted \$20,000 per capita Gross Domestic Product in 2007²⁹, South Koreans will have adequate income to journey to these locations, reinforced by the fact that about one half of South Korea's 49 million people live in the Seoul metropolitan area-an ample supply of visitors for the DMZ and CCZ, along with North Koreans.

Another target market for DMZ attractions is an estimated two million overseas Koreans formerly from both North and South Korea, one million of which live in the U.S. With reunification of the Koreas and opening up of the DMZ and CCZ for sustainable

activities, there will be some fraction of that 2 million people interested in DMZ ecosystem services. An estimated 4.3 million foreign visitors traveling to South Korea each year³⁰ comprise an additional target audience. Korean expatriates could be investors in sustainable DMZ activities, the subject of the paper's final section.

Programs to Facilitate Formation of a Korean DMZ Transboundary Park

The following programs exemplify ways to help create a sustainable transboundary park in the DMZ and CCZ. Clearly, this project is for the Korean people to accomplish. Local, regional and national governmental aid will be crucial to its success. International agency and non-government organizations (NGOs) aid in the form of grants and loans also will play an important role, particularly in the beginning. However, to make the park sustainable, it is recommended that market-based incentives be the mainstay, as is the trend in other parts of the world. The intent of incentives is to develop a lasting foundation and infrastructure. Hopefully, in the long term, few if any of them will be required. However, while properly managed eco-tourism, agriculture and other sustainable activities can provide the best long term use of these areas, DMZ assets are rare and under pressure. Thus, there may need to be continuing incentives and controls to help protect such globally unique resources. Also, overall management of the park may best be achieved through a collaborative arrangement between governments of the two Koreas-eventually a reunified country-and international agencies such as the UN.

- *Micro financing*-Like the Grameen Bank in Bangladesh, micro lending can assist local people in both Koreas, but particularly in the north, to develop entrepreneurial skills and raise their standard of living. Loans on the order of a few thousand Won can launch local residents on meaningful careers of making souvenirs and handicrafts, cooking, starting a food stand or restaurant. With its proven track record, Grameen Bank would be a good model for North Korea.
- *Tax incentives*-Tax incentives can take many forms in both North and South Korea. To promote development of sustainable facilities in the north, where arguably they are needed the most to generate jobs, there could be higher taxes in the south and lower ones in the north. These receipts could help establish resorts, hotels, restaurants and even museums or compensate northerners if there were no facility in their particular area. Taxes could be put in a fund to support job and revenue creation activities in the north. One appropriate model might be Tax Increment Finance (TIF) programs in the U.S. that use future gains in taxes to finance current improvements that will create those gains. TIFs typically provide a 20 to 25 year hiatus in local taxes to landowners willing to clean up contaminated properties, so-called 'brownfields'. This kind of an approach has reinvigorated formerly industrial areas of many cities across the U.S. Tax incentives for North Koreans may not work as well as in the south, at least initially, since there is not the lengthy history of a tax collection and disbursement system there.
- *Investment credits*-The flip side of taxes would be to provide investment credits for South Korean and foreign funders for investing in sustainable infrastructure and ecosystem service projects in the north and south.
- *Investment funds*-These funds can be established with resources from China, Russia, South Korea, Japan, the U.S., other countries and international agencies with a stake in

the peninsula's future. As demonstrated in the South African examples, funds are coming from various local and international sources.

- *Ecosystem services system*-To look at sustainably preserving species and habitats of the DMZ and CCZ, as well as to make this effort profitable to the Korean people, it will be necessary to examine the entire "value chain", in other words, all segments of society and nature, all those involved in the preservation on a holistic basis. This includes farmers, middlemen in the commercial structure, local citizens, local, regional and national governments and international agencies. It also includes transportation, energy production and related components of the biological and commercial systems. All stakeholders need to see that they are a part of the solution and to believe in that solution. The ecology of the area is a system or systems. Developing solutions without considering the linkages between those systems can result in un-intended consequences not observable for decades.
- *Education, training and outreach*-A critical element for success will be educating policy makers and residents on the importance of protecting ecosystem services for their children's and grandchildren's well-being. Training of park rangers and other professionals to operate and maintain the facilities also will be important. Local, regional, national and international universities and specialized educational institutions, like those in South Africa, can participate in and benefit from these activities.

Conclusions, Recommendations

While North and South Korea have shared a common history for millennia, their separation over the past 50 plus years has resulted in significant asymmetries in economic and social terms. The Demilitarized Zone and contiguous Civilian Control Zone have substantial natural and cultural resources with potential to help reduce those disparities when managed sustainably. Even from limited survey information, it is clear that in the intervening years since the 1953 Armistice, nature has come back to these isolated areas. Up to now, surveys have focused on their biological value in terms of species and habitats. Various economic valuation techniques exist that have been employed many times around the world that can be used to calculate how financially valuable DMZ and CCZ ecosystem services are.

There are hundreds of transboundary parks around the world, such as those in South Africa, which have demonstrated that they can create meaningful revenues and jobs locally and nationally as well as manage the natural resources sustainably. In order to assist policy makers in Korea determine how best to manage the DMZ's and CCZ's irreplaceable assets, it is recommended that a study be commissioned as soon as possible to show what the economic value of their ecosystem services can be, using proven valuation techniques. This paper has discussed the reasons for conducting such a study. Its intent is to initiate a dialogue, a dialogue about that process and subsequent benefits.

As we have discussed, DMZ and CCZ ecosystem services will furnish tangible, quantifiable economic benefits, as well as more intangible, non-quantifiable aesthetic, ethical, philosophical and cultural benefits. Fundamentally, biodiversity contained in the DMZ and CCZ, as elsewhere, is an integral part of and essential to the web of life upon which all humans depend. Many of the species in the DMZ and CCZ exist nowhere else in Korea or the world. The planet Earth is a closed, interdependent biological system, with its species, including humans, relying on each other for survival. We do not clearly

understand what would happen to our own chances for survival if the greatest extinction of species since the time of the dinosaurs were to continue. Let us not flirt any further with that potential.

Notes

1. Hall Healy is Interim President of The DMZ Forum, Inc., a New York City-based 501 (c) 3 organization devoted to preservation of the Korean Demilitarized Zone, its species, habitats and cultural resources. He also is Principal of Facilitated Solutions International, dedicated to helping people world-wide to resolve conservation issues. He gratefully acknowledges concepts for this paper provided by Dr. George Archibald, Co-founder of International Crane Foundation; Fred Carriere, Executive Director, The Korea Society; Daniel K. Darnell, Project Director, Oracle Corporation; Michael Finley, President, Turner Foundation; Dr. Kai Frobel, Green Bund Germany; Dr. Peter Hayes, Director and Co-founder, Nautilus Institute; Dr. Ke Chung Kim, Chairman and Co-founder of The DMZ Forum; Environmental Economics Professor Kim, Il-Chung, Dongguk University, Seoul, Korea; Landscape Architecture Professor Kim, Kwi-gon of Seoul National University; Dr. Seung-ho Lee, Co-founder of The DMZ Forum; William H. Shore, Treasurer of The DMZ Forum; Dr. Willem Van Riet, CEO of Peace Parks Foundation of South Africa and staff; Dr. John Waugh, IUCN; and Dr. Arthur Westing, Westing & Associates. The author is very grateful for the input and comments of these and other contributors, though he is totally responsible for the paper's contents and views are his own.
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A View from the Stands: John Kenneth Galbraith on the Discipline of Economics and on the Governance of the Public, Corporate and Financial Sectors

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Introduction: Galbraith as a Reviewer

The Canadian-born economist John Kenneth Galbraith (1908-2006) won a wide readership, and the envy of peers whose books did not sell nearly as well, with the acerbic wit he applied irreverently to the upholders of vested interests and what he termed the conventional wisdom. With an erudite glee unmatched among economists since Thorsten Veblen (one of his heroes), he devoted himself to afflicting the comfortable as fervently as Mother Theresa devoted herself to comforting the afflicted. Galbraith's many books sold hundreds of thousands of copies and remained (and remain) in print in new editions, including some new editions marking the fiftieth anniversary of original publication. His books (and those occasional pieces that he chose to reprint in four collections) are well known to the general public and to heterodox economists. However, one substantial body of his writing, replete with wit and insight, remains little known: the (at least) eighty-two book reviews and review articles that he wrote from 1933 to 1997. Galbraith was a talented and fluent writer, and typically after reading a book found himself with an opinion to express about it, so writing book reviews came naturally to him. Only a few were reprinted. One these, his retrospective review of John Maynard Keynes's *General Theory of Employment, Interest and Money* in the *New York Times Book Review* in 1965, became, as "How Keynes Came to America," Galbraith's most frequently reprinted article. Many fewer people have read his further reflections on Keynes in his 1984 *New York Review of Books* review article on Keynes's *General Theory* and two other volumes of Keynes's *Collected Writings*. Galbraith's not yet reprinted reviews contain gems such as, reviewing in Leonard Silk's *Economics in the Real World* in the *New York Times* in 1984, his discovery of "a chapter-long interview with Friedrich Hayek, the noted conservative economist and philosopher, in which the latter expresses his strong commitment to democracy, his grave dislike for majority rule. I found this a fascinating point"

Many of Galbraith's reviews were addressed to a professional audience. Starting as an agricultural economist, he reviewed extensively for the *Journal of Farm Economics* and later for the *American Economic Review* (before its book review section was transferred to the new *Journal of Economic Literature*). Less frequently, Galbraith reviewed books for the *Harvard Law Review* (in 1938 on the English cooperatives, soon after his arrival at Harvard), the *Journal of Political Economy*, and the *Economic Journal* (in which he published three reviews from 1938 to 1988, the last on a biography of Nicholas Kaldor). Later he turned to high-profile venues beyond the academy, although as late as 1995 he reviewed Robert Frank's and Philip Cook's *The Winner-Take-All Society* in the *Harvard Business Review*. Beginning in 1955, Galbraith wrote for the *New York Times Book Review*, and later also for the *Washington Post's Book World*. From 1976 to 1990, Galbraith published full-scale eighteen review articles in the *New York Review of Books*.

Not only are Galbraith's reviews and review articles a substantial body of work, written in his characteristic style, but they also reflect the contours of a long and full career. Galbraith's selection to review Hugh Rockoff's *Drastic Measures: A History of Wage and Price Controls* in the *Journal of Economic Literature* in 1985 stemmed from his service as head of price control during World War II. Similarly, his review the same year in the *Washington Post* of a biography of Lord Mountbatten, the last British Viceroy of India, followed from Galbraith's term as President Kennedy's Ambassador to India from 1961 to 1963 (service that contributed to a gap from 1958 to 1965 in Galbraith's reviews). The previous year, he had reviewed a biography of Mohammed Ali Jinnah, the founder of Pakistan, also in the *Washington Post*. Galbraith's collection of Indian miniatures (now in the Fogg Art Museum at Harvard) and his co-authorship of a book on Indian painting led to his reviewing W. G. Archer's *Indian Paintings from the Punjab Hills* in the *New York Times* in 1974. Galbraith's experience at the end of World War II as head of the US Strategic Bombing Survey interviewing captured Nazi bigwigs qualified him to review Peter Hoffman's *History of the German Resistance 1933-1945* for the *New York Review of Books* in 1977. Galbraith won the first of his two Presidential Medals of Freedom for his work on the Bombing Survey (General Colin Powell is the only other two-time recipient of the medal). Galbraith's experience of wartime Washington led the *New York Times* to invite him to review Isaiah Berlin's *Washington Dispatches 1941-1945* in 1981. Galbraith's honored position on the Nixon White House's "enemies list" made him a worthy choice to review Richard Nixon's memoirs in the *New York Review of Books* in 1978, and Spiro Agnew's novel *The Canfield Decision* for the *New York Times* in 1976. Galbraith singled out the latter as an instance where, no matter how incompetent the author was as a novelist, he should not be encouraged to return to his day job. Also in the *New York Times* in 1976, Galbraith reviewed a biography of Adlai Stevenson, for whose 1952 and 1956 Presidential campaigns Galbraith had written speeches. The *New York Times* invited Galbraith to review a reprint edition of Anthony Trollope's *Last Chronicles of Barchin* in 1976 and to review Robertson Davies a decade later, presumably because of Galbraith's more general reputation as a man of letters. Exceptionally for an economist, Galbraith was President of the American Academy of Arts and Letters.

The topics of Galbraith's reviews show him as an economist, but as far from being an ordinary economist. His five reviews in the *Journal of Farm Economics* from 1933 to 1956 serve as reminders of his professional origin in agricultural economics. Galbraith liked to quote then-Senator John F. Kennedy as saying "I don't want to hear about farm policy from anyone but you, Ken, and I don't want to hear about it from you either." As his stature within and beyond the economics progression grew, Galbraith was invited to reflect on broader themes. In 1958, Galbraith published a review article (along with one by Kenneth Boulding) in the *Business History Review* on Thomas Cochran's *The American Business System: A Historical Perspective, 1900-1955*. In 1983, Galbraith reviewed Fernand Braudel's magisterial history of capitalism for the *Washington Post's Book World*. "It is hard, and for that matter inappropriate, to restrain one's enthusiasm. ... Braudel is concerned to show that capitalism, in this volume the merchant capitalists of the pre-industrial era, was the great motivating and unifying force in the development and spread of European civilization. But never does he neglect a fact." Such subjects allowed Galbraith free rein to explore his vision of the political economy in those reviews.

Galbraith's Vision of How Economy Works, as Seen in his Reviews

In the *Washington Post's Book World* in 1985, Galbraith lamented that "I read economic books these days with every expectation of boredom – of being told in ineffable detail what I already believe or have already declined to believe." He contrasted this dismal (albeit rational) expectation with "this splendid book," Robert Heilbroner's *The Nature and Logic of Capitalism*, although demurring from Irving Howe's claim on the back jacket that the book was "pleasurably readable." Heilbroner's topic gave Galbraith a chance to stress a favorite theme, what Galbraith termed "the highly complementary and, at the same time, deeply tense relationship between the regime of capital and the government." He approvingly quoted Heilbroner's observation that it is "a profound mistake to conceive of capitalism as being in essence a 'private' economic system. What the economic realm can do, the government is generally enjoined from doing. That which business cannot do, but requires to be done, becomes the business of the public sector ... Remove the regime of capital and the state would remain ... remove the state and the regime of capital would not last a day." Similarly, the previous year Galbraith praised Leonard Silk for wanting "recognition that, whatever the discontent or agitation of the right or the left, ours is inescapably a mixed economy in the management of which ideology must surrender to practical common sense." In the *American Economic Review* in 1957, Galbraith applauded Walton Hamilton for "attacking the notion that a sharp line divides the sphere and functions of the private firm from that of government – a notion that is at once so oversimplified as to be all but simple-minded and that rules in at least nine-tenths of our economic and political comment. For while the professional business orator proclaims the need for preserving the integrity of private enterprise in face of the inroads of public authority, the private corporation has long been occupied in appropriating the authority of the national state for its own purposes."

However, Galbraith did not find another of his favorite themes in Heilbroner's book. "I am sorry that Heilbroner did not muse more on one of the more compelling of the modern developments of capitalism – its evolution into a structure of bureaucratic authority in which, typically, the owners of capital have no power and in which there has been a notable convergence with the bureaucratic apparatus of the state. The emphasis in so much contemporary business rhetoric on the innovating entrepreneur is really a kind of nostalgic requiem for a system that has been largely replaced by the faceless structures of the modern corporation and conglomerate. Perhaps Heilbroner's view of capitalism is, itself, a trifle nostalgic."

Galbraith's reviews reveal that this theme, the subject of *The New Industrial State* (1969), had its intellectual roots in the writing of Gardiner Means, both alone and with Adolf Berle. Veblen and Keynes are towering figures in Galbraith's intellectual heritage (both directly and as mediated by Galbraith's Berkeley teacher Leo Rogin), but Berle and Means (1932) on the separation of ownership and control in US corporations was just as crucial to the formation of Galbraith's distinctive approach to economics. In the *Journal of Farm Economics* in 1940, Galbraith reviewed "a document of first rate importance", *The Structure of the American Economy, Part I, Basic Characteristics* by Gardiner C. Means and the staff of the National Resources Committee. "Our entire research tradition is to amass a large amount of information about a small sector of economic activity. The, recognizing that this does not always improve the picture of the system as a whole, we

dare someone else to synthesize or to ‘coordinate’ the results. Means has accepted the dare and he has shown that something can be done about it.” Building on Berle and Means (1932), Means and his associates used census data to tabulate the market shares of the largest four and the largest concerns in each of 250 industrial markets. “The result, it may be noted, does not look much like the kind of market which has long been honored by the textbooks.”

Galbraith noted that Means and his associates “focused their attention on the differential flexibility or ‘depression sensitivity’ of prices because they consider it to be an important factor in the low level of employment and the underutilization of resources of the past decade. This much they say and no more; they do not explain the relationship which they assume to exist between price behavior and the level of employment.” In my view price disequilibrium has been over-worked as an explanation of cyclical instability and under-employment and the corollary, that the level of employment can be restored through restoration of price equilibrium, is a blind alley.”

In the *American Economic Review* in 1946, Galbraith was also enthusiastic about a Committee for Economic Development research study on *Jobs and Markets* during the postwar transition co-authored by Means (together with Albert G. Hart, Herbert Stein, Theodore Yntema, and others). Galbraith’s concluding sentences to that review are striking, and somewhat surprising from him. “Without suggesting that the C. E. D. economists should get into the overly competitive business of model building, I would have wished for some weighting of their measures in relation to the contingencies to be met. An active fiscal policy poses questions both of kind and of amount.”

Galbraith’s affinity with the institutionalist tradition, and his wistful regret for its displacement by ascendant neoclassicism, is shown in his praise for Walton Hamilton’s *Politics of Industry* in 1957. “In recent times, as economists have become increasingly concerned with respectability, it has come about that some of the older generation seem very young in their surviving criticism and complaint, just as some of the younger seem very old in their amiable conformity. Walton Hamilton is less young in years than others. ... But throughout there is a fine, youthful exuberance which manifests itself in repeated assaults on the more comfortable *cliches* of free enterprise and a marked conviction that the economic world could still do with some remaking. The essays are also both lucid and learned as befits a man who has combined a career as lawyer, public servant, economist, and instructor in medieval history. They are spiced with gay and wicked humor – he has Adam Smith observing that lawyers do not meet, even on the most innocent of occasions, without causing an increase in the price of retainers – and are altogether a delight.” Hamilton held that “we are by way of having a rebirth of the ‘honorable’ trading company which reinforces ordinary functions with a *de facto* grant of public authority. The several lectures are concerned with various ways in which this power is won – by having control of the public regulatory process, as the railroads have, if not controlled, at least profoundly influenced the Interstate Commerce Commission; through skilful manipulation of the patent law; through international operations that, in effect, transcend national authority; and in many other less portentous ways.” However, since Hamilton had “shown that the regulation of the regulators is an admirable device for turning public power to corporate purpose, he is a little handicapped when it comes to urging stronger government regulation.”

The concluding paragraph of Galbraith's 1958 review article on Cochran's *The American Business System: A Historical Narrative, 1900-1955* gave Galbraith an opportunity, by reformulating Cochran's thesis, to restate one of his own positions. "Professor Cochran's central thesis, if one may separate it from the overlay of historical narrative, is that in the American business system entrepreneurship has given way to organization and that, within broad limits, the pursuit of profits has become secondary to the preoccupation with security. At the same time businessmen, subject to the liturgical lag, have made their adjustment to the public and political environment appropriate to this change. (He perhaps might have argued that the Eisenhower Administration presents not only a coming to terms with the political environment but its appropriation.) To have remained more closely with this theme would have produced a more compact and, I think, rather more effective book."

Not only do the reviews reveal the intellectual roots of Galbraith's distinctive view of corporate power and what he called the "technostructure", but on occasion they show him paying heed to constructive criticism. Reviewing Anthony Sampson's *Company Man: The Rise and fall of Corporate Life* in the *New York Times Book Review* in 1995, Galbraith reported, "Nothing is quite so unstable in structure and form as the modern business enterprise. It survives only with constant adaptation and change. ... [Sampson] doesn't spare me and my Harvard colleague Alfred Chandler, for ascribing permanence to corporate structures that were excessive as to the levels of command, vulnerable as to competition and soon in decline."

Galbraith's 1985 *Journal of Economic Literature* review of Hugh Rockoff's *Drastic Measures: A History of Wage and Price Controls in the United States* enabled him to restate his position on wage and price controls. He also took the opportunity to remark sardonically on "the exceptionally well-timed and politically successful use of controls by President Nixon as a bridge across the election of 1972" that helped swamp George McGovern's Presidential bid (in which Galbraith was active). He ticked Rockoff off for "undue tact" in attributing the Nixon controls to the Vietnam War rather than to political need. Galbraith argued that the poor reputation of controls followed from the misuse of wage and price controls, as in Latin America and Israel, "as an antidote for an enduring inflationary movement propelled by a persisting excess of aggregate demand," a "use of controls we have been largely spared so far in this country." In Galbraith's summary, "Over all, and one judges slightly to his surprise, [Rockoff] finds that controls, especially in more recent times, have been very serviceable. They have altered inflationary expectations and tempered the inflationary thrust that proceeds from wage/price interaction in the modern highly organized economy. In their most comprehensive use in World War II, they rendered major service in arresting the inflationary dynamic."

Galbraith's 1988 *Economic Journal* review of Anthony Thirlwall's book on Nicholas Kaldor used the at least partial failure of Kaldor's voyages of advice to India, Mexico, Ghana and other Third World countries to make an important point about development strategy. Kaldor's "recommendations on taxation to the countries he advised were at the highest level of economic judgement and sophistication with a strong commitment to social equity. They did not, alas, economise of the scarcest of resources in these countries, namely competent and honest administrative skills. Frequently they were also far from being what weak governments could do in the face of powerful economic interest."

Galbraith made his clearest and most pungent statement of his position with regard to Marxism in a book review, his 1976 *New York Times* review of Michael Harrington's *The Twilight of Capitalism*. Galbraith admired Harrington for having "read and thought deeply about the books that I only intended to read and several that never even reached that level of my consciousness." However, Galbraith was not persuaded by Harrington's defense of Marx against accusations of narrow materialism and economic determinism. "There is a problem here. Marx himself wrote in 1859, as Harrington is quick to concede, that 'The mode of production of material life determines the social, political and spiritual life process in general.' Harrington says, though much more politely than other Marxist scholars, that anyone who takes these plain words literally does not understand Marx – is wrong. Similarly on other propositions. I have never been able to see why the person who takes Marx's words to mean what they say is always wrong – or naïve. Additionally, the sentence just quoted has always seemed to me a very good description of things as they are."

Galbraith was more enthusiastic about the second half of Harrington's book, which concerned "the inherent contradictions of capitalism in their modern setting. No one needs to be a Marxist to find them compelling. ... Whatever might lead to a more equitable distribution of income, whether in private revenues or public services, and thus temper dissent and dissatisfaction is strongly resisted and abetted by solemn though highly convenient doctrine. ... Bankers and businessmen, in a truly wonderful exercise in social obtuseness, take the lead in demanding cuts in the already inadequate services of the City of New York. The cuts are urged in the name of banking solvency; their primary and most devastating impact is on the low income recipients and the poor – again on those who have least reason to love the system."

Galbraith returned to this example the following year, in his *New York Times* review of *The Abuse of Power: The Permanent Government and the Fall of New York* by Jack Newfield and Paul Du Brul. As one of the two epigraphs for his review, Galbraith quoted Newfield and Du Brul, "They are making a desert and calling it a balanced budget." The other epigraph was from R. H. Tawney, writing in 1931 about *Equality*: "It is not till it is discovered that high individual incomes will not purchase the mass of mankind immunity from cholera, typhus, and ignorance, still less secure them the positive advantages of educational opportunity and economic security, that slowly and reluctantly, amid prophecies of moral degeneration and economic disaster, society begins to make collective provision for needs which no ordinary individual, even if he works overtime all his life, can provide himself." Galbraith lamented that New Yorkers had been persuaded that the financial plight of their city was due to excessive provision of public services. "The idea that debt service should take second place to civilized survival, that Zaire in default would be treated more tolerantly than New York, ... went undiscussed. So, in the main, did both the areas of true extravagance and the identity of those really responsible – the World Trade Center, the other massive outlays to sustain real estate values in downtown New York, the structures, or some of them, flowing from moral-obligation bonds devised by Nelson Rockefeller and John Mitchell. Almost no one observed that these extravagances had been accomplished by, or with the applause of, those who were now guiding or instructing the city on its escape from waste. There was a similar silence on delinquent taxes, and it was quickly agreed that it was taxes, not the deterioration of services and security, that were driving people out of the city." Galbraith concluded, "The

case against the social perspicacity and the business competence of men of financial eminence is never an easy one to make. Association with vast sums of money conveys to many an unmistakable impression of solemn wisdom. In some minds there will always be a suspicion, however far-fetched, of anti-Establishment bias. Perish such thought. But Newfield and Du Brul, together with the evidence of the eye, show unequivocally the results of such management. And, in a perverse way, this is encouraging. For once one realizes how badly New York has been governed – and how badly it has been burdened with tasks and deprived of money by the national Government and fiscal system – one sees how much better things *could* be with honest and socially realistic administration in City Hall, Albany, and Washington.” Hardly a ringing Marxist call for revolution, it was rather a heartfelt case for reform and for saving the system by making it more bearable.

Galbraith on Economics and Economic Writing

Noted for his skilful writing, Galbraith as a reviewer consistently looked askance at the style as well as the substance of much that was written about economics and business, emphasizing that obscurity and muddle in style reflected obscure and muddled thought. Reviewing Anthony Sampson’s well-written social history of the corporation in 1995, Galbraith noted, “In economic writing, the distinction of ‘unquestionably the worst’ is a hard competition to win. But the elementary training in awfulness of businesspeople who themselves write about their enterprise has given business prose the edge. Some years back, a leading business school asked me to participate in an effort to see if anything could be done. For a semester I joined some young colleagues in trying to find ways to encourage and guide improvement. The effort was a ghastly failure. The last papers still spoke of ‘charmatizing’ the product; one budding executive, talking about worker participation, commented on the need for producing ‘an osmotic upward flow of intelligence.’ There was more, some of it worse.” In the *New York Review of Books* in 1976, Galbraith began a review of a book about the United Fruit Company, “The author of this book was for twenty years a senior official of United Fruit and one fact must be put down at the outset: it is about as bad a book as a book can be and still get printed, which is now very bad.”

Galbraith was also skeptical of the products of Ivy League universities, not just business schools. The central figure of Spiro Agnew’s novel was “a Princeton graduate of good family, his brilliance attested by a cum laude degree, although when I taught there 37 years ago this honor only just established literacy, and while with democracy the students have no doubt improved, the grading has probably gotten easier.” Political prose was no better than business rhetoric. Galbraith considered Agnew’s novel “a major document on the way English is used in Washington and how the plague can spread. ... The book is also useful as a compendium of bureaucratic and other styles, although there is the problem of reading it.”

In the *Journal of Political Economy* in 1946, reviewing a Brookings study on farm credit by Earl Butz (later President Nixon’s Secretary of Agriculture until he used a mock Italian accent to joke, at a press conference, about the Pope and contraception), Galbraith complained, “The subject matter is simple, but the language is pretentious and obscure. One random example: ‘Realistically speaking it will be politically difficult to promulgate contract interest rates which differ geographically.’ Why not say, ‘Congress will object if one part of the country is charged a higher interest rate than another’?”

In the *Journal of Farm Economics* in 1956, Galbraith wrote that, “Were one to list the economic principles and attitudes which, on matters of farm policy, have reduced the once-influential profession of agricultural economics to the role of neglected scolds, there would perhaps be four. Younger members of the profession may wish to put them under the glass tops of their desks as a guide to the accepted code of behavior. They are:

- 1) Always identify conservatism with wisdom.
- 2) Accept the uninhibited price system as a social and scientific norm.
- 3) Avoid controversy at all costs.
- 4) If the foregoing rules do not apply advocate more research.

The Committee which the Twentieth Century Fund established to make recommendations on agricultural policy has at least the virtue of having provided a classic example of the application of these rules. ... As the influence of the agricultural economists has dwindled on policy matters there has been a not unnatural tendency to seek compensation by resort to numbers. Collective pronouncements on farm policy have become commonplace.”

Reviewing Irving Kristol’s *Two Cheers for Capitalism* in the *New York Review of Books* in 1978, Galbraith urged that Kristol and other defenders of capitalism no longer try “to get people to believe the patently unbelievable about the subordination of the modern large firm to the market and the state, an effort that principally persuades people that there must be something vaguely illegitimate or fraudulent about the large corporation since it tries so elaborately to misrepresent itself. Having accepted that the corporation transcends its markets and has power in the state, then an effective and adequately insouciant defender would say, What a good thing! By controlling its prices and managing its customers, it can plan.” Kristol was not persuaded.

Galbraith could be sharply critical of the style of books he otherwise strongly approved. In *Economics in the Real World*, Leonard Silk “is unduly tolerant of the metaphors that economists contrive – German locomotives pulling the world economy out of recession, oil shocks hitting the inflation button – as a substitute for clearly stated thought. And he even allows himself an occasional flourish. Speaking of monetary policy in the summer of 1983, he notes, far from succinctly, that ‘despite the White House’s Canute-like view that interest rates should not rise, with the economy gathering force the tide was coming in. “An upward bias in interest rates is now in motion,” said Henry Kaufman.’ Also, one feels, on occasion, that he has retrieved his notes and columns on interviews, policies and events without exercising a sufficiently strenuous judgement on their relevance or importance in the longer view.”

Other social sciences did not entirely escape Galbraith’s scrutiny. In 1994, he reviewed *The Social Meaning of Money* by Viviana Zelizer (chair of Princeton’s Sociology Department) for the *New York Times Book Review*. Galbraith found that “Ms. Zelizer can be unforgiving as to detail. She is also relentless in her commitment to scholarly references. And, especially in the early chapters, to abstract generalization – abstraction is to sociology what equations are to economics. ... All this notwithstanding, she has written an interesting and informative book showing that there is more to the meaning of money than the aforementioned economic theory and its formidable equations ever imply.”

Galbraith’s critique of much writing on economics and social issues was also displayed in his praise for a book quite unlike such efforts, Barbara Ward’s *Progress for*

a Small Planet, which he reviewed for the *Washington Post* in 1979. “By all accepted standards of scholarly and political discussion, it is a terrible thing that she has done. No one, it is held, can speak competently over such a wide range of knowledge. Also she writes on deeply technical matters in clear English without jargon. This does not inspire confidence. Obscurity, besides obscuring incomplete thought, often suggests that the thought was quite deep. Worst of all, Barbara Ward retains an absolute conviction that by social and cooperative effort and by intelligent resort to government, people can solve in a reasonably prompt way most of the problems by which, in fear or reality, they are oppressed, including those of energy supply, air pollution, urban living, adequate nutrition and economic development. ... It strikes an especially odd note at a time when so many are proclaiming so ardently the virtues of self-centered individualism for an increasingly interdependent world and when the really sophisticated politicians are joining the revolt of the rich against the poor. ... No book could strike a more bizarre note in this year of Arthur Laffer, Milton Friedman and good old Howard Jarvis. Accepting the risk of eccentricity, I found both her information and her faith quite wonderful.” Significantly, Galbraith’s review of War was entitled “Our World Can Be Saved.” In 1955, Galbraith’s first review in the *New York Times* had been of another book by Barbara Ward, *The West at Bay*.

Conclusion: Galbraith as Revealed in his Reviews

When reviewing an author he found sympathetic, Galbraith on occasion described himself as well as the nominal subject of his remarks. Reviewing Robert Heilbroner’s *The Nature and Logic of Capitalism* in 1985, Galbraith observed, “It should not be supposed that Heilbroner is an especially astringent critic of the system. He explores, reflects and comments upon the absurdities of the motivated belief but is not especially aroused. He is at pains to note that the regime of capital allows of more liberty than the ‘tributary’ systems that preceded it. Indeed, because of what he calls, somewhat awkwardly, the ‘commodification’ of ideas – their reduction to the role of saleable commodity – capitalism cannot resist marketing ideas, such as those of Heilbroner himself, that are eminently inconvenient for, or adverse to, its deeply institutionalized ideology.” However critical he might be of the United Fruit Company’s record in Central America, of the junk bond raiders, or the looting of the savings and loan associations at the ultimate expense of the taxpayers (the subjects of *New York Review of Books* articles by Galbraith in 1976, 1988, and 1990), Galbraith always kept his temper and his sense of perspective. He made his points by wit and ridicule rather than indignation. He was sharply critical of the excesses of capitalism, but not blind to its achievements and advantages. Galbraith’s book reviews display his wit, his insights, his characteristic positions about the mixed economy and the modern business enterprise, his critiques of sloppy writing and thinking in economics and politics, and his wide-ranging interests. With the exception of a few that were reprinted in his books, Galbraith’s reviews and review articles are the least widely-known substantial portion of his writings, other than the ten-volume report of the US Strategic Bombing Survey (and even that work, of great importance but only likely to be read by specialist scholars, was reprinted by Garland in 1987). Galbraith’s writings as a prolific book reviewer deserve to be collected, reprinted, and read.

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Instrumentalism: A Tool of Governance to Limit the Employment Losses of Outsourcing

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Key words: aggregate effective demand, incomes policy, instrumentalism, involuntary unemployment, outsourcing, political economics, uncertainty

Abstract.

The central issue confronting the political economy of governance in the present global economy is whether the process of guiding society is compatible with a price directed system of resource allocation. The conventional wisdom considers price directed resource allocation optimal, and by agreement under GATT (1947) and the WTO (1993) the principle was extended to international trade. As the commodity and labor markets of Western economies have become integrated with those of the newly developing and third world economies, globalization has resulted in trade imbalances that are exacerbated by outsourcing, which is adding to the number of workers being subjected to involuntary unemployment and its consequent income loss. These socially adverse results are indicative of what the late Adolph Lowe termed “disorderly” markets, which he believed can be reshaped by “instrumentalist” inducements. Adolph Lowe, whose work like that of Keynes is a challenge to the conventional wisdom that economic outcomes can safely be left to the market, described “instrumental inference” as a tool to induce socially responsible choices.

It is possible to establish a “target outcome” (say the number of additional jobs required) toward which market participants can be induced to move by tax inducements and penalties linked to employment creation. Viewed historically, a proposal for an employment policy linked to tax incentives for business firms to create jobs is a modern day prototype of the incomes policy proposals that post Keynesians offered to protect employment against “tight” money policy some thirty five years ago. It is thus an employment policy that is compatible, in principle, with the free trade policies to which members of the WTO are committed. Just as post-Keynesian incomes policy might well have helped in the 1970s to control stagflation, so Political Economics can be envisioned as discovering new forms of incomes policy to encourage the economy’s largest firms to develop new high tech comparative advantages to create employment opportunities as an alternative to outsourcing, retrain laid-off workers, and encourage exports.

Instrumentalism: A Tool of Governance to Correct Trade and Other Imbalances

Introduction

The political economy of governance is concerned with principles to guide the functioning of a society. At issue is whether and to what degree the process of governance is compatible with a price directed democratic system of resource allocation that the conventional wisdom considers optimal. The conventional wisdom of the efficiency of free markets was extended to international trade with the passage in 1947 of

the General Agreement on Tariffs and Trade (GATT), which established the basis for subsequent “rounds” of negotiated reductions in tariffs and quotas. These overlapped with the organization in 1992 of the European Economic Community (EEC), the North Atlantic Free Trade Treaty (NAFTA) in 1993, and the World Trade Organization (WTO) in 1993 to take over the responsibilities of GATT. Each of the latter are committed (among other objectives) to promoting the unimpeded movement of commodities. Yet, with the phenomenon of globalization, the historically negative assessment of a positive role for governance, particularly in the U.S. and the UK, may well become reassessed.¹ The U.S. import surplus and the frequency and scale of outsourcing by multinational corporations is compromising the employment and earning opportunities associated with contemporary middle class living standards. The practice of importing physical inputs as components of domestically produced goods is quite standard; the practice of contracting out services has been made possible by the information technology revolution, and reflects a wholly new dimension of acquiring worker services and property. Outsourcing therefore exacerbates what the late Adolph Löwe described as the “disorderliness” of capitalistic markets (1977, p.325). Market “uncertainty” has become so pervasive that individual marketers, the most important of whom are multinational corporations, are “unable to achieve the interlocking patterns of behavior on which the stability of aggregate provisioning and full resource utilization and balanced growth depend” (ibid). While markets are subjected to interest rates, taxes, tariffs, quotas, and other policy controls intended to alter the operations of its micro units, these conventional controls, which Löwe terms “primary”, fail because they do not control the *responses* of market participants. Additional or “secondary” controls are thus needed to alter how they respond to controls. It is the task of Political Economics to utilize instrumental inference to discover what these secondary controls should be in order to assist a State concerned about socially responsible outcomes to induce market participants toward goal appropriate choices and behaviors.

The present paper seeks to examine this broad terrain of ideas about governance under the following headings. Part I introduces Löwe’s “instrumentalist” tool in the context of globalization, linking his objectives to those of the *General Theory* and the New Deal. These serve as a bridge to examining what protectionist measures are permissible under international agreements to limit unemployment and its adverse effects in import beleaguered industries. Part II addresses outsourcing as a relatively new profit enhancing tool, on which multinational firms increasingly rely, and links the permanent loss of export markets and outsourcing to involuntary unemployment, which Keynes identified as originating in insufficient aggregate effective demand. Given the present day insistence of business firms on labor market “flexibility”, and the apparent inability of either monetary or fiscal policy to help overcome U.S. import surpluses, Part III suggests a new version of incomes policy as an instrumental tool to constrain the job losses that accompany the loss of export markets and multinational outsourcing. A proposal for tax incentives to large employers who create employment opportunities in the application of high tech processes that support the growth of domestic demand is reminiscent of proposals for incomes policy dating back to the 1960s and 1970s. While their objective was to control “stagflation”, the dual problem of inflation and unemployment, their adoption was politically unacceptable in the U.S., in spite of the proposal’s reliance on responses by business firms and workers to price-like incentives. While the present

political environment remains hostile to interference with the price mechanism, the threatened return of involuntary unemployment, this time impacting the middle class, may enhance the political acceptability of measures that help create well-paid jobs. A brief concluding part IV speculates about the possibilities for international cooperation to address the problems inherent in global free trade.

Adolph Löwe's instrumentalist conceptions are known only to relatively few economists, despite his long and active professional life at the New School in New York City, to which he emigrated from England in 1941 as a refugee who had been fired by Hitler from his prestigious academic post at the University of Frankfurt.² Yet, his work as a political economist, like that of Keynes, is a frontal challenge to the conventional wisdom that economic outcomes can safely be left to the operation of the market mechanism. Löwe's "political economics" was set forth in several works, in particular *On Economic Knowledge; Toward a Science of Political Economics* (1977), *The Path of Economic Growth* (1976), and *Essays in Political Economics: Public Control in a Democratic Society* (1987).³ The conceptual roots of Löwe's thinking can be traced to both Adam Smith's theory of economic growth and to Keynes's principle of aggregate demand. It is also compatible with the Keynes-Shackle emphasis on uncertainty and imperfect knowledge, the Allyn-Kaldor perception of learning by doing and generating increasing returns to scale, and the Kaleckian perception of the central role of income distribution for explaining household spending decisions. The technique of instrumentalism takes the outcomes that the majority of a country's citizens have identified as desirable as its starting point. These foundational blocks, all familiar to heterodox economists, were coupled with Löwe's commitment to personal freedom as ranking among the highest goals to which a society can aspire.⁴

Instrumentalism is rooted in essentially the same intellectual soil as that which sparked the great wave of interventionism that grew out of widespread acceptance of full employment as a priority policy objective. Löwe's intention was to seek a strategy for attaining a desired outcome by means of institutional changes that substantially re-engineer the range of possible micro-choices to those that are consistent with the outcomes society desires. His objective is appropriately viewed as identifying the traverse from one growth path to another. It is "instrumental" in the sense that the system is guided toward designated goals through an appropriate set of market-like incentives; it is "enlightened" in the sense that it reflects widely supported goals, in particular as they relate to the macroeconomy. In principle, there is much support in the U.S. for The Full Employment Act of 1946 to this day. Yet there is only minimal support at present for tampering with the micro-choices of firms to further the macro outcome of high employment at the expense of free trade and lower prices. Most economists and government officials have given the principle of free trade their almost uncompromising allegiance. Their anti-policy point of view reminds us of Keynes's disappointment about the "rule of the Treasury School" (JMK XXI, 496-97). Their resistance to his theoretical insights and their implications for public policy was clear in his conclusion that "it is my fellow economists, not the general public, I must convince" (JMK VII, vi). Sixty years after Keynes' lament about his fellow economists, many in the profession today remain indifferent, if not hostile, to political economy, and would very likely reject the application of Löwe's instrumentalism to address the unemployment and underemployment problems that are accompanying free trade. The conventional wisdom

is that free trade assures allocative efficiency in the use of the economy's resources, and promotes growth and high living standards.⁵

Two assumptions underlie this conclusion about free trade. First, consumers who are able to purchase lower priced high quality goods from developing countries such as China, India, and Eastern European countries will enjoy higher living standards, and secondly that the resources that are displaced by imports will be reallocated into other uses with only minimal adjustment costs. The premise is that the historical pattern of resource use has always been that the decline and eventual disappearance of old industries will coincide with the emergence of new industries that generate job opportunities for those laid off, or are new labor market entrants. The inference is that new entrants will have new skills that are encouraged by wage rate differentials that the market generates in response to new labor requirements. The re-allocation of workers and capital is expected to be essentially the same when a domestic industry confronts competitors from abroad.

The key weakness of this expectation in the present global economy is that the traditional free trade argument assumes away the magnitude of adjustment costs, especially as they relate to the distribution of income as labor resources are displaced when import substitutes replace domestically produced goods. In light of the more than a few European and American plant closings and associated job losses in several industries, it is clear that there has been a shift of many comparative advantages to the Pacific Rim and East European countries.

Adolph Löwe did not live long enough to even anticipate the economic integration of national economies that has accompanied the globalization that became accelerated with the expansion of the EU and China's entry into the WTO. The commodity and labor markets of Western economies have become integrated with those of the newly developing and third world economies in consequence of global free trade. The latter are characterized by high population growth rates that are accompanied by essentially the same high technology and capital intensive production patterns that characterize the industries of Western economies. Beginning with the industries that were the earliest to industrialize, ranging from textile and clothing and, subsequently, to steel, automobiles, and now high tech equipment, substantial parts of Western production activities have been shifted to the newly developing economies. Thus, substantial growth rates are virtually certain in China, India and several of the East European countries that were once part of the Soviet Union. The case is otherwise for the industries of the United States and most other Western economies, which are losing their export markets and experiencing the great social cost inherent in the loss of employment and workers benefits imposed by not being able to restore their earlier comparative advantages. The labor saving technologies of computer chips and robotics, combined with the labor cost differentials characteristic of the labor surplus economies of Pacific Rim and Eastern European countries has taken its toll in the labor markets of the US and Western Europe. The steel industry is a classic case of an industry whose lack of competitiveness was already apparent in the 1960s, because it was not earning a sufficiently high rate of return to invest in new/labor-saving capital. As the nominal average hourly earnings of steel workers continued to increase more than their productivity, increases in unit labor cost made the industry unable to compete with steel imported from Japan (Crandall 1981, pp. 169-70). Additionally, the industry's lack of competitiveness was exacerbated by the

over-valuation of the U.S. dollar in terms of the yen. Yet, the industry's failure was accepted with relative equanimity, as is apparent in a comment by then Ambassador Brock that "the (Reagan) administration believes companies have a right to fail" (Forbes, June 8, 1981, p. 160).

The experience of the U.S. automobile industry also underscores Adolph Löwe's argument that contemporary markets have become so disorderly that the economists' traditional deductive logic is inadequate for problem solving. The oil price shock of 1973 is a case in point that reflects changes that were too abrupt and fundamental to be amenable to prediction. Oil prices generated a taste on the part of American consumers for less expensive automobiles, but unfortunately industry managers were slow to produce the small cars they wanted, causing the industry to lose its market share. The quality of the product was also compromised in comparison with that of its Japanese competitors. Since the automobile industry recovered nicely, the inference was that its loss of market share world-wide was attributable to some combination of managerial and domestic industry inefficiencies that were transient, so that the industry's future, unlike the steel industry, could safely be left to the market. In its most recent (2005) contract, the United Auto Workers Union was amenable to wage givebacks and even plant closings. These are a reflection of the degree of American de-industrialization that has, disturbingly, been accompanied by a large proportion of new jobs that are part time, temporary, and low paid, particularly in the service industries. Additionally, income inequalities have worsened, and the proportion of the labor force identified as part of "the working poor" has increased. These outcomes reflect the down side of free trade, which is being exacerbated by the relatively new practice of outsourcing.

For manufacturing industries that are only now confronting a loss of competitiveness, an obvious first step is to invoke the various forms of import relief that can be requested under Section 201-3 of the Trade Agreement Act of 1974 to provide relief from injurious foreign competition.⁶ These range from tariffs and quota arrangements on selected imports, which the US has instituted against selected goods from China. The treaty also authorizes changes in marketing arrangements for periods up to five years, with the possibility of extensions to prevent sale in the U.S. of imports at prices considered to be less than fair market value (i.e., dumping). This sort of relief is entirely compatible with the 1974 Agreement, as are requests for alteration in exchange rates that help by promoting manufacturing exports in industries that might become capable of becoming more competitive as an alternative to being phased out of the economy. The international competitiveness of any industry is the result of a combination of cost determinants that depend first, on the resources and environmental conditions in the home country, coupled with net domestic efficiencies in comparison with those of its foreign competitors. Each industry offers a separate opportunity to utilize Löwe's instrumentalism to determine whether a particular industry is vulnerable to foreign competition, and whether and what type of protection it might require to avoid ultimate failure, which confronts experienced workers with a type of unemployment which can only be described as "involuntary" (Rima 1984). This Keynesian concept has long since become discarded in favor of the so-called "natural rate", and the non-accelerating inflationary rate of unemployment (NAIRU). The latter concept came into vogue in the days when the perspective of "labor market flexibility" was made tenable by the positive contribution of globalization, which included the emergence of capitalism's "golden age".

It would, of course, be ideal for the revival of American industry if China were to allow the renminbi (as its currency is known) to float, offsetting its present undervaluation. While some slow progress has been made in this direction, it is also clear that China's undervalued currency suits her present economic and political agenda, and that she will steadfastly resist US pressures toward change. It is equally unrealistic to envision a near term return in the United States of the "Labor Accord" that was initiated by the Wagner Act of 1935, known as "labor's Bill of Rights", (and amended in 1947 by the Taft Hartley Act), to protect the rights of workers by outlawing discriminatory employer practices against unions and their members. Even though almost two thirds of union eligible workers never became members, this legislation changed the "style" of labor management practices throughout much of the 20th century. Many non-union companies adopted the strategy of guaranteeing unorganized workers wages and benefits comparable to those achieved by unionized workers. But the "good faith" relationship of labor and management became substantially changed when, in 1981, the right to strike was undermined when then President Ronald Reagan fired the air traffic controllers for exercising a labor practice that had become a virtual guarantee. What followed was the beginning of an era extending to the present of almost unequivocal labor market "flexibility" in which the rules of the labor market "game" came to assure employers the right to reduce their wage costs by whatever measures promised to enhance their profits. While the US economy substantially recovered during the 1980s from the process of de-industrialization, employment growth in the industrial and manufacturing sectors fell absolutely, and relative to employment growth overall. In the years since the emergence of outsourcing as a new tool to enhance profits is exacerbating the costs inherent in the loss of competitive advantage in manufacturing industries.

II

It is perhaps relevant to recall that the most dramatic feature of the emergence of money manager capitalism in the 1990s was the international mobility of financial capital. The availability of the internet facilitated a world wide pooling of funds to finance capital investment with the help of the National Association of Securities Dealers Automatic Quotation System, better known as NASDAQ, the world's first electronic stock market. The transfer of financial services that it facilitated generated substantially increased personal contacts by American and European business persons with Asian counterparts from all of the Pacific Rim countries that are participating in global trade. The latter countries, as already noted, are characterized by high population growth rates that are accompanied by essentially the same high technology and capital intensive production patterns that characterize the industries of Western economies. These characteristics enhance their ability to supply both high quality components to American and European manufacturers, as well as exporting finished goods and supplying the knowledge dependent services for which the internet opens a world-wide market. The focus of these economies, China in particular, is on export-led growth, which is contributing to a record U.S. trade deficit. The practice of outsourcing contracts to foreign suppliers, ostensibly to circumvent rising unit labor costs in a home market, has become sufficiently frequent to become identified as a key aspect of the ongoing U.S. import surplus. Outsourcing has become an alternate technique for managing input supplies, partly because of the relatively lower wage rate available abroad. Additionally,

the *keiretsu* culture of Japan, and the *guanchi* culture of the Chinese, increasingly provides an assurance for a seamless linkage with their input suppliers and marketing networks.

Even an efficient foreign source of inputs necessarily involves the transactions costs of product design and quality assurance at a distance, along with the inherent uncertainty of satisfying a particular market niche. While outsourcing has become a key technique for firms seeking enhanced performance, the fact is that American managers, engineers, and economists have little concrete knowledge relating to outsource optima. Many large firms have divisions that act as cost centers; often there are resource transfers between divisions of modern firms by internal negotiations based on shadow prices for internal accounting. Because these divisions may not have a separate legal status, the exchanges are internal transfers so that they do not involve an exchange of legal property rights. To the extent that exchanges within multinational corporations may circumvent real property rights and real power to determine prices, the expanding presence of the multinational firm in international trade may be compromising the rationale of modern neo-liberalism that is embedded in the free trade acts that have come into existence since GATT.

Japanese firms, on the other hand, with their long histories of keiretsu arrangements to facilitate product design and input suppliers networks, are far more sophisticated than their American counterparts about design efficiencies, import procurement, and even the marketing of outputs. Nor are they driven by neo-liberal principles which, in Hayek's language, establishes clear rules "that enable man to distinguish between what is thine and what is mine" (Hayek 1948, p. 18). Besides lack of clarity about property rights, some other drawbacks of outsourcing, especially in product design, have become evident. The process of product development is an activity in which outsourcing does not inherently generate a better and less expensive product. Production costs may be lower, but are likely to be offset by the higher transactions costs associated with product development intended for different niche markets across international borders. These suggest that there may be advantages to vertical integration, which promotes the practice of maintaining more tasks "in house".

A definitive conclusion about these issues will require a careful examination of corporate archival data that is no doubt available at the product and/or product division level in consequence of normal operations. It is by no means certain that individual managers will have incentives to organize and examine these data with a view to re-conceptualizing which supply chain is optimal. Analogously, there are probably limited in-firm incentives to rethink their sourcing strategies to significantly redevelop domestic production, which would also encourage the creation of new manufacturing and high tech knowledge job opportunities. On the other hand, it is reasonable that corporations will be amenable to policies that encourage a reallocation of resources in response to tax incentives.⁹ This scenario suggests the prospective relevance of utilizing Löwe's instrumentalism as a basis for the suggestion that tax policy might be a technique for encouraging multinational firms to study their own cost records as a condition of tax relief, based on job creation in the domestic economy. Policies of tax incentives to encourage industries to invest in new capital are, of course, nothing new. But new capital investment is typically labor saving, rather than job creating, which is a reasonable possibility if a production process is relocated with a given technology. What would be new, at least for U.S. industry, would be a tax incentive to reorganize specific industries based on their own decisions to reallocate resources in response to evidence that it is cost efficient to perform

additional activities “in house”, given the added tax incentive, rather than in foreign markets to which they have outsourced. The role of instrumentalism is to establish a specific number of new jobs as a “target variable”⁸. By postulating a numerical value for the target variable, it identifies the desired terminal state toward which the tax incentive will motivate decision-makers to alter both their production and employment decisions. When these decision changes are aggregated, they alter the path which international firms are expected to follow in response to the tax rate change contributing toward the macro goal of fully utilizing resources. Such an incentive is comparable to those that the supporters of incomes policy had in mind when they conceived the implementation of tax penalties on employers who failed to resist wage increases in excess of worker productivity gains in the bargaining process. In effect, the government would be utilizing business tax incentives as a tool to limit job losses.

Historically speaking, policy to protect employment harkens back to the late 1960s into the 1980s. Austria, Japan, Norway, Sweden, and Switzerland, relied on incomes policy to contain inflation, and achieved low inflation and low unemployment by means of a “social contract” that linked wage bargaining with their employment objectives. In the UK, the Heath government relied on incomes policy during the 1970s, but when Mrs. Thatcher’s election in May 1979 returned the conservative party to power, the country shifted to a reliance on monetary policy. Incomes policy was never used in the U.S., in spite of the availability of a potentially workable proposal that utilized tax incentives (TIP) in the form of a tax rebate as a “carrot” to workers for restraining wage increases below productivity increases, combined with the “stick” of tax penalties to punish employers’ for excessive wage increases (Weintraub 1978). In contrast to the low rate of inflation and low unemployment rates achieved by countries relying on the social contract principle, by 1980 the tight money policy of the U.S. generated a rate of increase in the price level of 10 percent, coupled with an unemployment rate of 7.5 percent. Clearly, the results of tight money were inferior to those of the social contract.

Incomes policy would assuredly be an enabling tool to facilitate Löwe’s instrumentalism.⁹ His intention was to seek a strategy for attaining a desired outcome by means of institutional changes that substantially re-engineer the range of possible micro-choices to those that are consistent with the outcomes society desires, in particular low levels of unemployment. With ongoing technical progress, the growth of well-paid employment also requires ongoing schooling and training. What was accomplished under the Trade Agreement Act of 1974, which extended the provisions of the Comprehensive Employment and Training Act (CETA 1973) to include benefits to workers whose joblessness was attributable to import competition was patently inadequate. Because the CETA program was conceived primarily to assist poor workers who were unskilled, what is needed for workers whose skills have become obsolete is clearly retraining, in particular on-the-job training. Minimally skilled labor in the US (and indeed in other long industrialized economies of the world), confront the likelihood of long term involuntary unemployment in consequence of increasing imports of high quality, low cost products produced by the newly industrialized economies of the Pacific Rim and the East European countries. Instrumentalism must therefore proceed with tax (and other) incentives for large firms, in particular those that are multinational, to generate more employment opportunities in the application of information and other advanced technologies. Especially if anti-unionism continues, which hardens employer attitudes toward raising wages and

benefits, it is essential for government to simultaneously offer ongoing tax and other incentives to offset worker financial burdens. What is needed is to identify the optimal adjustment path from a set of possible paths to return GNP growth and employment rates to levels comparable to those of the golden years of market capitalism, while also improving the distribution of income.

IV

The most formidable international challenge is to design public controls and institutions capable of encouraging business, household and government behaviors at national levels that are consistent with the desired global outcomes of growth, more equitable income distribution, and environmental protection. A reasonable source of improved international competitiveness can be envisioned as being derived from better use of information technology products, such as those produced by Dell, Microsoft, and Intel to enhance their returns to scale, and improve their management of supply-side chains. This is consistent with the finding that between 1995 and 2000 about half of the growth resurgence of the U.S. was attributable to IT (Jorgenson 2004).

The path of capitalist development in any one country depends not only on the institutional framework of particular economies, but also on those of others around the globe. Easing resource constraints through science and technology may well help render “beggar thy neighbor” policies less attractive so that nations may become more favorably disposed toward free trade, along with provision of what Kindleburger termed international public goods (1986). If so, a fertile new area for research in Political Economy may emerge which has much to learn from classical political economy. When judged by modern standards, the scope for public sector activity was extremely circumscribed in Smith’s famous Book V; yet, a consensus toward international economic support to provide public goods like the International Monetary Fund, the World Bank and the European Central Bank is a reasonable extension of Smith’s vision of the scope of Political Economy.

The European Community has taken steps to eliminate impediments to trade among its member states. The seemingly natural tendency which nations have towards mercantilistic restrictions on imports, quite clearly, can be curbed only to the extent that many nations work towards their joint removal. There thus appears to be agreement among nations that “international linkage” problems require cooperative efforts to prevent crises like that of the 1920s-1930s. There appears to be a greater prospect for international financial cooperation, because improvements in opulence have never been more fully realized than in post war Germany, Japan and the United States. The rich countries of the world increasingly appear to be willing to “tax” themselves to support international-izing certain controls. Thorny problems are, nevertheless, on the horizon. In particular, the US displays an overbearing attitude, and the French and the Germans are fearful about surrendering authority over domestic monetary affairs to a European central bank. Thus the quest among nations to improve their relative positions, though it be at the expense of their neighbors, remains a source of international conflict. Their reluctance to surrender control of their economies at a national level reflects their awareness that private enterprise economies are, in fact, not endowed with self regulating mechanisms that can reliably be counted on to ameliorate negative outcomes. Despite the happy prospect of easing resource constraints through science and technology, there is fear that these gains are likely to be offset by the limits to growth from another direction. In

particular, there is concern about uncontrolled migration and, even worse, population explosion. The limited capacity of space-ship earth (to use Kenneth Boulding's descriptive metaphor) to absorb additional waste, the gradual exhaustion of essential natural resources, and the progressive deterioration of the environment, poses problems whose complexities are almost beyond comprehension. The larger their magnitude, the less likely they can be managed without policies to address the emerging problem of unemployment that is inherent in globalization.

The absence of international hegemony such as the United Kingdom exercised during the 1920s and 1930s, and the United States exercised during the post-World War II period up to the 1970s, compromises the kind of leadership required to realize instrumentalism on a global level. On the other hand, the Maastricht Agreement appears to signal a level of international cooperation that might conceivably become a prelude to a Löwe type of instrumentalism on a global level.

Notes:

1. Most neo-liberal thinkers, Hayek among them, recognize the existence of a role for government intervention. There are some appropriate limits to the allocational role of markets, and also some limited constitutional role for the state (Hayek, 1960).
2. Philip Arestis and Mike Marshall (1995) are among the relatively few (outside the New School orbit of scholars) who appreciate the pioneering influence of Löwe's work.
3. It is relevant to distinguish Löwe's Political Economics from Political Economy in the sense of Lionel Robbins, who draws the distinction between economic science as relating to the technical apparatus of the discipline, and Political Economy as covering that part of our sphere of interest which essentially involves judgments of value. Political Economy, thus conceived, is quite unashamedly concerned with the assumptions of policy and the results flowing from them. (Robbins, 1981, pp.1-10.)
4. My own acquaintance with Löwe's work dates from the republication of *On Economic Knowledge* in 1977, about which we corresponded from time to time for the next several years. In 1983, as editor of the *Eastern Economic Journal*, I prepared a special issue commemorating his work as a 90th birthday tribute. It was a particular pleasure to present it to him personally in his hometown of Wolfenbuttel. Though our correspondence continued up to his 100th year, his 90th anniversary was our only meeting.
5. The study of political economy was held in low repute both in England and the U.S. in the late 19th and early 20th centuries (Coats 1985, p.349). The British university system was more committed to serving the interests of the business community than to training future civil servants or political economists. When founding the London School of Economics, Sidney and Beatrice Webb envisioned governmental departments taking on expanded research roles, and looked forward to the prospects for a separate official body devoted to economic intelligence. But it was not until the 1920s that the Labor government implemented the Economic Advisory Council (EAC), that economists were provided with a basis for a role in government. Keynes was optimistic that economists in government "would provide guidance for the evolution of our economic life" (Howson and Winch 1977, p.21), and called for "deliberate control" of currency and credit by a central institution, and "intelligent judgment" (Keynes VIII, p. 287).

6. Appendix B: “The Legal Institutional Environment for Protection in the US”, from Peter Gray’s *Free Trade or Protection*, is the source of the legislative details and measures that are available in the US to address the inefficiencies that compromise American exports.
7. Lowe attributes the term to Tinbergen, who used it in *On the Theory of Economic Policy*, 1952, p.14. Tinbergen’s “theory of economic policy and operations research” are conversant with methodologies that are concerned with achieving multiple postulated goals and evaluating their compatibility. The focal point of these procedures is to identify the cost minimizing way of achieving the ends in view. In principle, activity analysis is a familiar example of instrumental analysis.
8. It is also reasonable for Congress and the public to reconsider whether multinational corporations may be inconsistent with a system in which an individual can own property on his own account. (Buchanan 1993, p. 51)
9. Seidman’s “Tax-Based Incomes Policies”. This collection of the *Brookings Papers on Economic Activity* includes papers that examine the relative strength of reward versus penalty incentives in the administration of tax based policies. However, the analogies break down because their reforms did not involve an attempt to shift toward a market directed economy.

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Corporate Governance: The Managerial Revolution Revisited - Asymmetries in the Distribution of Power and Wealth

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Abstract. Shareholding, or the acquisition of units of ownership (property) attested to by share certificates which also set limits to liability, greatly facilitated the rise, in the USA, between the 1870s and the 1930s, of the large scale or giant corporation and its pre-eminence in the production and sale of goods and services. One important effect of the broad dispersal of shareholdings was the separation of ownership from control, the so called “Managerial Revolution”, with use and control passing to professional managers or from the property system to the power system. The advent of Pension Fund Capitalism between the 1970s and the 1980s served to carry the separation of ownership from control to the ultimate extreme. Unrestrained by compliant directors and free of pressure from the new class of employee owners as yet without effective voice, the managerial class felt free to aggressively pursue self interests often engaging in misconduct and malfeasance. This paper looks at the reforms that have been instituted to redress the asymmetries in power which has made possible a massive transfer of wealth from millions of owners to a small class of managerial professionals.

1. The Managerial Revolution –From subservience to impersonal market forces to Managerial Autonomy in Market Decision-making

The Backdrop: Under the power of impersonal market forces

In the model of the economy developed by the Classical School of Political Economy, (Adam Smith 1723-1790 and David Ricardo 1772-1823) both consumers seeking to achieve maximum satisfaction of wants or individual self interests, and producers seeking to maximize profits even while supplying the wants or needs of consumers, were subject to the discipline of “the invisible hand” or self regulatory power of the interacting forces of demand and supply. A system of exchange made possible the simultaneous satisfaction and balancing of individual self interests as well as the furthering of the general welfare, or sum of individual self interests, provided economic freedom and competition were allowed to prevail. In other words, unless it was disturbed by the acquisition of privilege, whether due to the market imperfection arising from the acquisition and exercise of monopoly power or the ill-advised intervention of government, the natural economic order could be expected to achieve an equilibrium or balance of competing motivations and a natural harmony on the part of all cooperating in the production process. This conclusion, it may be noted, rested on a static or mechanistic perception of the economy and society as being comprised of atomistic individuals.

The presumption of harmony was, however, brought into question by David Ricardo, when he pointed out that in terms of social dynamics, the sharing of the product of industry involved a distribution among the classes which concur in its formation, namely capitalists (profits), workers (wages) and landlords (rent). Distribution among classes, as distinct from individuals, then opened up the possibility of conflict between classes which may have to be mitigated by political action or governmental intervention.

Another reality that intruded upon the “competitive” or self equilibrating model of the economy, also referred to as the “Laissez-faire” model, was the growth of corporate power. The new “middle or capitalist” class who, between 1750 and 1850, effected the transformation of Commercial Capitalism or Mercantilism, into Industrial Capitalism, performed multiple and overlapping roles, as inventors, entrepreneurs/investors and, pioneering captains of industry. As investors, they relied on financing (capital) from personal, family and partnership sources, which, however, soon proved inadequate to meet the growing demand of technology driven or capital intensive industries. It prompted a return to the model of the joint stock or great trading companies of the mercantilist era characterized by the pooling of resources or contributions (the forerunner of shareholding) and sharing of risks (the precursor of limited liability).

2. Changes in Corporate and Market Structures and the Impact on Economic Theory

The Leveraging of Institutional Market Power

By the end of the Nineteenth Century and early part of the Twentieth Century, Classical Economic Theory had undergone refinement to the point where differentiation could be made between the Classical School,

and its successor the Neo-Classical School. It reflected, in part, the growing prestige of economics as an academic discipline and the concern of academic economists to make analysis more rigorous, so that it could be regarded as the science of economics. In the process, economics became stylized or esoteric and remote from the reality it sought to explain. In fact, the evolution of economic theory and the evolution of structures of production were moving in opposite directions. This trend was perhaps best exemplified by the Trust and Merger movements in the U.S.A. in the latter part of the Nineteenth Century.

In 1879, Samuel Dodd, a legal luminary of the Standard Oil Company, devised the instrument of a Trust under which Shareholders surrendered shares to a Board of Directors Trust, and gave over working control of power in return for entitlement to profits. By this device, Standard Oil Directors could wield control over associated companies. The efficacy of this structural innovation was borne out by the fact that, by the late 1800's, new giant corporations financed by the great entrepreneurs – the so-called Robber Barons – had been created in steel, railroads, oil, coke, shoes, tobacco, meat-packing and agricultural machinery. While the entrepreneurs of the industrial revolution had emphasized the engineering function, the new wave of entrepreneurs were industrial and financial strategists, and the engineering function became more the province of salaried production experts.

3. Big Business, Big Union, Big Government

Faced by what they perceived to be the threat to their survival by growing capital accumulation and corporate concentration, small businesses agitated for government intervention to afford them protection and the result was the enactment of the Sherman Anti-Trust Act of 1890 which declared Trusts illegal. But mergers continued through the use of the Holding company or financial conglomerate, again posing what appeared to be the threat of economic feudalism, and this time legislators responded with the Clayton Act of 1914 which prohibited certain forms of price discrimination and mergers by stock acquisitions.

The large-scale unit of production represented by the modern corporation, not only involved systematizing of operations and tasks, but also the creation of large work forces within the ambit of a single establishment or employer, so that Big Business also begat Big Unions, and it became the responsibility Government to institutionalize conflict between management and organized labour by creating a legal regulatory framework or system of industrial relations.

4. The Modern Corporation and the Managerial Revolution

By the 1930's, the characteristics of the modern corporation and the corporate civilization had been fleshed out:

- Legal personality and legal fiction of equality at law, notwithstanding the great concentration of corporate economic power. The competitive model had postulated a market place comprised of large numbers of small producers, each individually incapable of influencing price. The contradiction of the large firm exercising market influence, was resolved by legal ingenuity, in creating the fiction of corporate personality with the corporation being treated as a person and equal at law to an individual, be it consumer or employee.
- Capacity for self-generating growth and continuity.
- A changing concept of property based on share-holding or fragmentation of property into pieces of paper, and along with it, dispersal of ownership.
- Separation of ownership from control – *the managerial revolution* – with use and control passing to professional managers, in effect, from the property system to the power system. This transition was captured in the classic study by Adolf Berle and Gardiner Means in *The Modern Corporation and Private Property* (1932) and later by J. K. Galbraith in *American Capitalism – The Concept of Countervailing Power* (1952).

Berle and Means pointed out that the volume and spread of share ownership of American corporations had become so great that owners no longer controlled the organizations they legally owned. But even more startling was their assertion that the Boards of Directors (BOD) no longer represented the interests of owners, if they ever had, but had become the instruments of managers of the enterprises. Though legally responsible for monitoring or supervision of management and ultimately for the over all well-being of the enterprise, the BOD had nothing to do with the operations of the corporation. The authors also felt that the divorce of ownership from control could be detrimental to the survival of capitalism.

The necessity of adjusting economic theory to the realities of evolving market structures was not lost upon academic economists and was hastened by the publication by Professor Joan Robinson of Cambridge

University of *The Economics of Imperfect Competition* (1933) and of Harvard Professor Edward Chamberlin's parallel work *The Theory of Monopolistic Competition* (1933). Both books explored a range of market structures between the extremes of perfectly competitive and least competitive or most monopolistic, and gave special recognition to markets characterized by a relatively few, very large firms in particular industries which have the power to influence both price and output (oligopoly). But it's fair to say that main stream economists remained captivated by the competitive model of the economy and the efficacy of competition in preventing monopolistic exploitation.

The presumption that market competition would be sufficient to constrain the ability of managers of large corporations to exercise influence over markets was also challenged by J.K. Galbraith in *American Capitalism-The Theory of Countervailing Power* (1932). Instead of being price takers, firms could become price makers as a result of the leveraging of institutional power as, for example, in the case wage determination under the institutional process of collective bargaining. The ability of large corporations to guide the "invisible hand" of the market was elaborated further by Galbraith in *The Affluent Society* (1952) in which he argued that firms spend huge sums of money in designing, planning and manufacturing a new product and to make sure that it is sold, they have to create a want for it. ("Wants are created by those who satisfy them"). In *The New Industrial State* (1967) he also developed the theme that managerial and other experts – "the techno-structure" run the economic system subordinating even the activities of the state to their own goals of corporate growth and personal esteem.

The thesis of Berle and Means that the BOD had become nothing more than the handmaidens of the managers of enterprises remained primarily of concern to Organization and Management theorists and Institutional economists, for the next fifty year from the 1930's until the 1980's. One reason for the general complacency was that the BOD tended to be seen as something that the law required incorporated organizations to have. Another was that in terms of organization and administrative theory the development of management as a professional cadre in control of operations was consistent with rational administration or the hierarchical or bureaucratic structure, embodying the principles of division of labour, differentiation of function and specialization and coordination or centralization of control, made necessary by large size and scale of operations. In other words the managerial revolution could be regarded as having logically come full circle.

It may also be noted that the professionalization of the management function, the emergence of managerial cadres and attendant separation of ownership from control was also facilitated and legitimized by the rise of the institutional labour market and wage determination under a system of Collective Bargaining between trade unions representing workers and management representing employers.

In the United States, in the wake of the Great Depression, under President Roosevelt's New Deal legislation, the Wagner Act of 1935 created a charter of rights for trade unions including compulsory recognition of unions and collective bargaining through a process of certification under the purview of an administrative board rather than the courts. The end result of the bargaining process, a collective agreement created mutual rights and obligations and in effect a system of joint regulation and administration of the rules governing conditions of employment at the work place. This gave rise to the perception of the corporation being the repository of a number of Stake holder interests. Shareholder or investors entitled to a reasonable return on investment, workers/employees entitled to stable wages or income, suppliers/ financiers to be compensated for supportive infrastructure and customers entitled to quality goods and services at reasonable prices; and the public administration concerned to varying degrees with economic growth and development, price stability, equity and good governance.

The trusteeship theory of management was increasingly espoused by professional corporate managers concerned to achieve stable labour-management relations and to achieve a workable balancing of the expectations of stakeholder interests, including that of professional management. This theory was not without controversy. On the one hand it implied that managers should no longer been seen as agents of owners, bound to the wealth maximizing presumption of neo-classical theory, especially since ownership had been redefined in terms of intangible paper rather than physical property and beneficiary ownership control could be achieved with minority bloc holding rather than full ownership.

5. The Managerial Revolution Revisited

The return to Corporate Feudalism: 1980's Takeovers and mergers

The issue of the management of the corporation, by whom and for whose benefit, began to attract the attention of social scientists and policy makers in the mid 1980's as a result of the convergence of two

major currents, a new wave of corporate concentration via takeovers and mergers and the advent of full blown "Pension Fund" capitalism.

The 1980's phenomenon of "hostile" takeovers and mergers was facilitated by the development of "junk" bond financing and other financing schemes. It provoked a defensive response, this time on the initiative of executive management, of "poison pills" or shareholder rights plans concocted to place restrictions making it more difficult for take over offers to be made, much less succeed. It also gave rise to discussion among academics as well as practitioners as to whose interests were being served or furthered, shareholders/owners or the managerial elite as well as to a spate of academic interest and studies for the first time under the rubric of "corporate governance" reform.

For instance, proponents of the "Agency Theory" or financial model of the corporation held that the interests of shareholders and managers are not necessarily congruent, for the former presumptively want maximization of shareholder value while the latter are interested in maximizing their own wealth through executive compensation packages. Accordingly, it was the responsibility and obligation of BOD to control these "agency costs" thereby making the function and role of BOD a central issue in corporate governance reform. During this period the rallying cry became "maximizing shareholder values".

Full blown Pension Fund Capitalism: Characteristics and impact on Corporate Governance

Pension Fund Capitalism, to the extent that it introduced another tier of financial intermediation between owners and management, contributed to an even greater dispersal of ownership thereby strengthening the autonomy of the managerial autonomy within the existing legal structure of governance and accountability. To better appreciate this development a summary will be provided of the characteristics and implications of Pension Fund Capitalism.

- Employees in Canada, the USA, the UK and other developed countries, in their capacity as institutional investors/owners control the majority of stock in the largest publicly traded companies. In doing so they have become the new class of long term owners of capitalist enterprises.
- Within the traditional regulatory framework the trustees who legally administer scheme assets have little to do with management or determination of corporate equity investments.
- In discharging their fiduciary responsibilities of duty of loyalty and of care, trustees and or competing professional managers hired by them seek to realize the best possible returns for plan members by focusing on short term fund results. This short term perspective has been reinforced by the presence among institutional investors of mutual fund trusts which have been designed for total liquidity.
- Employees, as institutional owners, are more vulnerable than investors in Mutual Funds (pooled financial resources), in that, while the latter are controlled by fund managers, exit from pension schemes is costly, if not impossible.
- Pension fund participants also have become exposed to a double jeopardy. On the one hand, to the loss of retirement savings, due to corporate failures and the market vagaries, and on the other hand, to the loss of employment and income as cutbacks in the workforce has become the preferred management technique for dealing with short term variations in profits and earnings.

6. Pension Fund Capitalism and relationship to Corporate Governance Reform

The debate over the implications of Pension Fund Capitalism has been influenced by two perspectives:

1. Those who view this development as primarily a new method of corporate financing and believe that the huge reservoir of pension funds can be accommodated within existing financial and the market theory without raising the ideological issue of structural reform. In this view, the concentration of financial resources in pension funds, coupled with the fact that trustees and their advisers have considerable autonomy from plan beneficiaries, is analogous to the separation of ownership from control so characteristic of modern corporations.
2. Those who are persuaded that the emergence of a new class of long-term owners requires substantial modification of existing corporate governance including an equity structure and an accountability structure which reflect the needs of different classes of investors and to allow for a more effective system of monitoring management performance. The underlying premise of the proponents of structural reform has been that the self-regulatory capacity of the free market cannot be relied upon to achieve the necessary reform. Hence, the remedial power of public policy is necessary. This position has been reflected in major inquiries and studies undertaken in a number of countries (for example, Treadway Report in the U.S.A. 1987; Cadbury Report in Great Britain 1993; Toronto Stock Exchange Committee on Corporate Governance in Canada 1994).

7. The Managerial Revolution Revisited: The Absence of Countervailing Power

The thrust of this Paper is that the corporate debacle in the U.S.A. involving the spectacular collapse of several mega corporations and multinational corporations during the Winter of 2001, and the Summer of 2002, clearly demonstrated that the separation of ownership from control of the managerial revolution, had been carried to the ultimate extreme and with widespread detrimental effects. It produced the largest bankruptcy in the history of the United States (WorldCom, Inc. July 21, 2002) and a litany of corporate management abuses and scandals, most notably associated with the Enron Corporation, an energy trader, (declared bankrupt on Dec. 2, 2001) and used as a bench mark in terms of the Enron and Post Enron era. This crisis of corporate management was systemic in that it involved the complicity of leading audit/consulting companies, stock brokerages and investment and law firms all wedded to the culture of aggrandizement and entitlement. Quite apart from shaking confidence in the market economy, thousands of employees lost not only their jobs, but also pension savings and investments.

It is the view of this writer also that the ability of corporate management to pursue a policy of aggrandizement and maximization of welfare as a professional class was made possible by the weakening, if not breakdown, of the system of institutional checks and balances encompassed by Galbraith's concept of "countervailing power". Labour markets bore the full brunt of the effects of "globalization" by way of downsizing and retrenchment of work forces that affected predominantly blue collar workers who were members of trade unions, thereby weakening their collective bargaining capabilities. The trend towards declining membership and the institutional clout of trade unions has persisted and intensified. For instance, the US Bureau of Labor Statistics has reported that union membership fell by 326,000 in 2006, bringing the percentage of employees in unions to 12 percent, down from 12.25 percent in 2005. Those figures are down from 20 percent in 1983 and 35 percent in the 1950's. For the first time also in modern history, the percentage of manufacturing workers in unions fell below the percentage of workers in unions. (New York Times, January 26, 2007).

Post takeover and merger rationalizations also exacerbated unemployment and cost cutting replaced growth through investment in new productive capacity as corporate management focused on the short term objective of maximization of shareholder values. As the net worth of new national and global mega corporations were expressed in billions rather than millions, so, it appears did CEOs, as a dominant and virtually non-accountable organizational class, use their power to exponentially increase their compensation and perquisites and privileges.

The Sarbanes-Oxley Act of 2002 (SOA) was the legislative response to this crisis of management. The immediacy and scope of this response reflected not only sensitivity on the part of lawmakers to the political consequences of the corporate melt down, but also the growing strength and relevance of shareholder concerns and activism since the 1980's. Until then, much of shareholder activism had been inspired by social reformers, often ideologically inspired, as was the case with Ralph Nader, the crusader of consumerism. The strategy adopted was to purchase token shares of high profile companies so as to acquire platforms for promoting social, environmental or political changes. They were seen as having a nuisance value. By the 1990's, however, pension and mutual funds had become very significant institutional investors holding sizable equity in major public companies. Their growing public concern, and arguments for, corporate governance reform was lent credibility by the fact that they invoked and relied upon a profit oriented rationale-maximization of shareholder values- which was consistent with prevailing economic theory, and therefore non-threatening, ideologically.

The SOA introduced new criminal penalties and jail terms for company fraud and malfeasance; prohibited most types of personal loans and insider trading on the part of directors and executives; prohibited certain accounting malpractices and introduced codes of ethics for senior financial officers; strengthening of both internal and external auditing functions including financial disclosure requirements.

The Securities Exchange Commission (SEC) was also given enhanced powers to more effectively undertake its monitoring and policing and enforcement responsibilities and one of its first remedial measures was to require the 1000 largest publicly traded corporations to provide sworn statements from their CEOs vouching for the accuracy of financial reports.

8. Corporate Governance Reform and Accountability: Culture of Compliance versus Culture of Ethics

The overriding concern of American legislators was to limit the "contagion effect" of the corporate debacle and to forestall a major economic crisis. Accordingly, the Sarbanes-Oxley Act focused on preventive and punitive measures which would serve as a deterrent to corporate misconduct and malfeasance, as well as on

structural reforms that would enhance management accountability within the traditional framework of corporate governance. The deterrent effect has been amply demonstrated by the successful prosecution and conviction of several high profile corporate executives. To illustrate, in regard to Enron Corporation, the company which has come to be identified with the early 21st century corporate malaise of fraud and corruption and abuse of power, 16 executives including the CEO and CFO have been indicted, tried, and convicted, of fraud and other infractions and have suffered imprisonment and /or fines and/or payments of restitution.

Much more difficult to meet, however, may be the challenge of how to accommodate or institutionalize the interests of the new capitalist class of long term employee owners/investors. There are, however, alternate models of corporate countervailing power which have been waiting in the wings. In the USA since the 1980s the California Public Employees Retirement System (CalPers) has been a standard bearer of shareholder activism and has exploited the mechanism of shareholder proposals or the proxy process to curb managerial pursuit of self interest by constraining management initiated and board rubber stamped poison pills designed to prevent takeovers; to make BOD more representative of, and accountable to, shareholders/owners and, to force out CEOs deemed to be acting contrary to the best long-term interests of institutional investors/owners.

On the regulatory or administrative side the SEC also has directed its efforts towards reform of the proxy process which has been central to managements' ability to retain effective control of companies through domination of BOD nominations and to manipulate proxy information and the voting process. For instance, up to 2003, shareholders were precluded from nominating directors. By way of redress the SEC proposed, subject to certain qualifications, that shareholders be allowed to nominate candidates and to include nominees in proxy material sent out by the company.

The SEC also has moved to bring within its regulatory ambit, the administration of Mutual funds, another major player in Institutional or Fund Capitalism. The relationship between fund managers and employee investors appears analogous to the separation of ownership from control in the corporation. Another reality is the symbiotic relationship that operationally exists between fund managers and managers of companies in which they invest and so to prevent conflict of interests the SEC introduced, and made effective in 2004, measures to enhance transparency. Fund managers must make public the policies and procedures used to determine how proxies are voted in relation to portfolio securities and also file with the SEC, as well as make available to shareholders, the records of how such proxies were voted. This rule was projected to impact on 3700 managers administering \$20 trillion of equity or about 18 percent of all equity.

Similar concerns led the SEC to require that some 6200 Investment Advisers administering about \$19 trillion in assets adopt policies to ensure that: they vote proxies in the best interests of clients and disclose how clients may obtain information as to how proxies were voted. Fiduciary responsibilities also have been extended to include the duty to monitor corporate events and vote proxies. In effect, therefore, the adviser is obliged to exercise proxy votes in a manner consistent with the best interests of investors and must not subrogate (subordinate) their interests to that of the adviser.

It should be noted that in Canada also, steps have been taken at both federal and provincial levels of government, to liberalize BOD election procedures.

9. Executive Compensation: The Ammunition for Corporate Governance Reform

There has been a sympathetic reception on the part of public policy makers and regulators to calls from business leaders in the USA to review whether the costs of implementing the internal financial controls and disclosure requirements imposed by SOA could be impairing the competitive position of American capital markets, leading to a decline in the numbers of companies choosing to be listed on US stock exchanges. By itself, this development could have been construed as a cooling of enthusiasm for further corporate governance reforms but if so, it has been overshadowed by negative public reaction to the seemingly unrelenting executive management push for phenomenally high executive compensation.

The compensation package of corporate executives is made up of basic salary, bonuses, allowances and perquisites, stock options, benefits and pensions and separation payments or "golden handshakes" which may involve calculations based on all the previously named elements. These are also precisely the elements that appear to be subject to "creative" manipulation by CEOs which also includes their ability to have compensation packages rubber stamped by BOD. The end result, which an increasing number of US studies undertaken post Enron seem to confirm, has been a massive transfer of wealth, quite unprecedented, from owners to a small class of professional managers. To illustrate, in 2003 the top 5 executives in all publicly traded companies collectively received compensation which was equivalent to 10

percent of their companies combined profits. In 2005 CEOs earned on average US\$11 million or 262 times the pay of their workers, the highest level in 40 years. It has long been a truism of economic theory that increases in real output (Productivity) are the source of economic growth and development and of higher standards of living for workers to the extent that wages bear some relationship to productivity. However, according to data compiled by the Center for Labor Market Studies at Northeastern University in Boston, between 2000 and 2006 labour productivity in the non farm sector of the US economy grew by an impressive 18 percent but the weekly inflation adjusted wages of workers increased by just one percent. (Bob Herbert, New York Times, January 8, 2007). From another perspective, the combined real annual earnings of some 93 million production and non supervisory workers (farm workers excluded) rose over a period of 6 years, from 2000 to 2006, by \$15.4 billion. But in just one year alone, 2006, the top 5 Wall Street investment firms, (Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch and Morgan Stanley) were expected to award more than twice that amount (an estimated \$36 billion to \$44 billion) to their 173,000 employees. Goldman Sachs which reported a record profit of \$9.5 billion for 2006 also disclosed in its regulatory filing that it paid to its Chairman and CEO a \$53.4 million bonus and to its two co-presidents bonuses of about \$52.5 million each. Altogether this investment firm paid its 26,467 employees \$16.5 billion in compensation during 2006, an average of \$622,000 per employee (New York Times February 22, 2007).

An equally telling manifestation of the “culture of entitlement” is the finding of the Corporate Library in Washington, a research organization, that the CEOs of 11 of America’s largest companies over a two year period collectively received \$865 million by way of compensation even while presiding over the loss of \$640 billion in shareholder value. It also speaks volumes to the assertiveness of the “culture of entitlement” or of aggrandizement, that the gate keepers of the system of corporate governance and accountability – auditors, investment brokers, analysts and advisers- appear to have offered so little resistance to the excesses which culminated in the management crisis at the onset of the 21st century, presumably because of their concern to please executive management as a means of furthering their own careers, as well as sharing in the spoils of the system.

In seeking to rein in runaway executive compensation the remedy most readily available appears to be enhancement of disclosure requirements. In the regulatory arena, the SEC has proposed a new catch all definition of compensation to include pay, severance bonus, stock options, retirement benefits and perquisites including entertainment budgets, club memberships, tax payments, security provisions and use of company aircraft, in relation to the CEO, CFO (Chief Financial Officer) and the next 3 highest paid executives as well as up to 3 other employees who receive more than any of the first five. The identity of the three highest paid may be withheld but their titles must be disclosed. Here, the intent appears to be to bring to account windfall compensation paid to “stars” as well as to bond traders, super salespersons, studio heads, financiers and athletes.

The SEC has also zeroed in on the manipulation of stock options, and in particular on the practice, becoming more pervasive, of back dating of stock options so as to maximize their cashable value. Potentially one of the most effective means of enriching executive compensation, it involves choosing an earlier date when prices were lower, as the grant date. The SEC, the Internal Revenue Service (IRS), and federal prosecutors have been investigating whether this practice is in violation of federal and state laws requiring corporate officers to act in the best interest of shareholders. Reportedly, over 100 publicly traded companies including Fortune (Magazine) 500 companies are under investigation for using backdating to enrich the compensation of their executives, and already, there is on public record the successful prosecution of the founder and former head of a software company who pleaded guilty to a felony and agreed to pay \$7.3 million in penalties to New York State and to the SEC for falsifying records in a stock-option back dating scheme. (New York Times, February 15, 2007).

It may also be noted, that beginning in 2007, the SEC will require publicly traded companies, to explain for the first time, the value of stock options and how they chose the grant dates.

The issue of executive compensation, its apparent unfairness in terms of earned income distribution and what it implies as far as corporate governance is concerned, has been brought more sharply into national focus as a result of the decision of US President George W. Bush to wade into the public controversy. In a State of the Economy speech delivered during a visit to Federal Hall, Wall Street, on January 31, 2007, the President observed that income inequality is real, that it has been rising for more than 25 years and that the income gap is now twice as wide as it was in 1980. He also realized that stories about enormous salaries and other perks for CEOs create anger and uncertainty that affect the country’s investors. However, he did not endorse any government role in determining or reducing compensation of American

corporate executives. Nevertheless, their salaries should be based on their success in improving their companies and bringing value to their shareholders. President Bush also invited America's corporate board rooms to step up to their responsibilities and to pay attention to the executive compensation packages they approve, bearing in mind their obligation to show the world that American businesses are model of transparency and good corporate governance (<http://www.corpgov.net/news/news/html>).

The President's intervention came against a backdrop of public furore over the severance packages of a number of CEOs pressured by institutional and other significant individual shareholders to relinquish their jobs. Among the most controversial were the severance packages of \$187.5 million claimed by Richard Grasso after demitting office as the CEO of the New York Stock Exchange in 2003; of \$213 Million received in July 2006 by Hank McKinnell outgoing CEO of Pfizer and of \$210 million realized in January 2007 by Robert Nardelli for exiting as CEO of Home Depot.

Grosso's case was controversial in that New York State Attorney General Eliot Spitzer (more recently elected Governor of the State of New York) sued the directors of the NYSE for failure to observe due care and responsibility in the matter of the chief executive's compensation and arising out of litigation and counter litigation, Grosso was ordered by the court to return a substantial portion of the compensation received.

The case of Robert Nardelli, CEO of Home Depot, is also likely to be considered a benchmark in shareholder activism for corporate governance reform. Long the target of shareholders ire for his level of compensation from 2000-2006 during which the company encountered flagging stock prices, Nordelli brought matters to a boil when he conducted the Company's AGM solely by himself without the presence of directors and limited the questions of participating shareholders. He was pressured to reign which he did but at a cost of a \$210 million severance package.

It appears likely that shareholder activism, especially on the part of institutional (pension and mutual funds) shareholders/investors will press, increasingly, for adoption, by legislative or regulatory fiat if necessary, of proposals (precatory policy), requiring advisory votes by owners on corporate pay practices of public companies. Incidentally, this has been the practice in Great Britain since 2001 and in Australia since 2005.

10. Boards of Directors and the Management Culture of Entitlement.

Given the focus that is on directors, their functions and role, it may be worthwhile exploring if only briefly, why directors apparently have been so receptive to the Management Culture of Entitlement.

All available evidence seems to support the contention that directorships have been treated as sinecures to be bestowed by CEOs. Since the rise of the modern corporation traced earlier in this paper, they have had almost complete control over the selection and retention of nominees. Innovations such as Evaluation Committees or boards to independently evaluate the performance of directors and to effect the removal of non-performers, are of recent vintage. For the most part, therefore, directors, once appointed, have been accountable to no one except to themselves, and this is certainly the hallmark of a sinecure. They also constitute a closed group who meet in private and under the cloak of confidentiality and are fairly homogeneous. The weight of research indicates that in Canada and the USA more than 80 percent of directorships are held predominantly by men who are themselves retired business executives. More recent attempts to broaden the base of this circulating elite have led to experiments with nominating committees to search out and recommend candidates, but the reality is that people tend to choose people who they know or are comfortable with, hence the preponderance of business types.

Based on this writer's personal experience, another factor that constrains the ability of directors to offer effective supervision or oversight of executive management is that proposals reaching the Board are placed on the agenda with the imprimatur of the CEO, who is also able to draw on professional in-house expertise for back-up support at Board meetings and thus forestall the misgivings or reservations that might be anticipated from independent minded directors.

It appears also that instead of being hard nosed about executive presumptions as to appropriate levels of compensation, directors may find vicarious pleasure as well as material benefits from, sitting on BOD of organizations led by very highly paid executives. It must be remembered, also, that multiple appointments give rise to interlocking directorships which in turn provides a conduit through which ongoing manipulation of the components for the purpose of enhancing compensation, are passed along. A case in point, are stock options and the rapid spread of the practice of back dating to allow for windfall gains.

Space does not allow but for a cursory mention and treatment of the range of proposals that have been proposed to make the BOD more effective. They include limiting the number of Boards on which an

individual may serve, a restraint which is applied in the public sector in the Province of Ontario, Canada; requiring directors to have a meaningful personal financial stake in their corporations, the rationale being that the director shares the fortunes, good and bad, experienced by shareholders, but this could be a two-edged sword; and, more universally, selecting directors by nominating committees composed of Independent Directors. This last proposal, however, raises the issue of defining independence. It may be of interest that in Canada, an unrelated or independent director is deemed to be one who is free from any interests or relationships which might reasonably be perceived to interfere with the director's ability to act with a view to the best interest of the organization. Of course, it may be argued that independence may be as much a state of mind as an objective condition; limiting the number of functional or insiders allowed on Boards; designating a "lead" Director when the CEO and Chair are the same person. On this issue, it will suffice to note that combining the positions of chairman and chief executive is still by far the norm in the United States where according to the Institutional Shareholders Services only 7 per cent of S&P companies split the roles, in marked contrast to Canada with nearly 60 per cent of Canadian companies separating the roles.

11. Impact of Globalization on Governance Regime of Pension Fund Capitalism

In the industrially advanced countries as well as in a number of developing countries, employees and their pension (and mutual) funds are the primary source of the enormous amount of capital needed for investment and development purposes not only nationally but internationally. The trend towards becoming "universal owners" is a result of the practice on the part of the largest institutional investors to index significant proportions of their portfolios in foreign equities and collectively, they now account for the greater part of the traded volume in most of the world's stock markets. For instance, it has become the norm for most institutional investors to invest between 15 to 20 percent of equity portfolios in foreign equities.

As "universal owners", therefore, institutional investors/owners have been caught up in the exploration of universal or global principles of governance for both the profit and not-for-profit sectors. International as well as regional development financing institutions, along with a plethora of business and labour and third sector organizations have contributed variously to this end and it appears that greater recognition is being given to the stakeholder or constituent model of the corporation (stockholders, management, employees, financiers, and civil society), an orientation which has not featured prominently in the Anglo-American tradition of corporate governance and accountability. It may be noted, however, that CalPERS referred to earlier as the pension pioneer of shareholder activism has promulgated its own Global Governance Principles. As a result of the globalization of pension fund capitalism, it appears that the traditional Anglo-American concepts of Governance and Fiduciary Duty are being leavened by the non-pecuniary concept of "Social Responsibility" In other words, while risk and return are likely to remain the predominant operating standards in the Anglo-American model of the corporation, they may be qualified by concerns such as environmental protection, fair labour practices at home and abroad, and employee training and development (conservation and development of human resources).

As a global phenomenon, therefore, corporate governance reform is being pursued under various modalities. They range from moral suasion or "comply or explain standards" (pioneered in the U.K.) which fall short of regulatory mandating; to best practices promulgated in codes of conduct, or rules imposed by market-based organizations such as Stock Exchanges through their listing requirements, to the ultimate of legislation such as the Sarbanes-Oxley Act in U.S.A.

The scope of reforms instituted since 2000 has been impressive and a look at British experience should be instructive, especially since very influential voices in the USA have been agitating for lessening the financial burden of implementing SOA financial reporting standards on the grounds that business is being lost to stock exchanges in the United Kingdom. There, the publication and endorsement major of the UK Corporate Governance Code and the principles it embodied proved to be a major reform initiative. For instance, for some 350 exchange listed companies, the goal is for one half of Boards of Directors (BOD) to be made up of non-executive directors. Further, the senior independent director jointly with other non-executive directors will be required to appraise the chairman in satisfaction of the mandate that each BOD should carry out a formal and rigorous evaluation of its own performance and that of its Committees. The Code also requires more disclosure including the work of the BOD principal committees such as the audit committee. Auditors will be empowered to request information from directors who must also attest that they have not withheld information from their auditors.

The Derek Higgs Report, the product of an independent review of the role and effectiveness of non-executive directors has also recommended that they should be drawn from a wider pool of candidates, be given more training and play a more important boardroom role. Moreover, at least half of the BOD should be independent of management and focus on improving their relationship with shareholders. The Report also recommends the separation of the functions and role of chairman and chief executive with the latter being precluded from ever becoming chairman of the same country. These recommendations have sparked a debate as to whether the reforms will herald a drift from the unitary board (the tradition in the UK, the USA and Canada) to the two tiered level board of continental Europe where there is a management board responsible for day to day operations and a supervisory responsible for reviewing and approving financial statements and exercising the hiring and firing power over the management.

The convergence thesis draws on the fact the enhancement of the role of audit committees under Sarbanes/Oxley, shareholder activism for more widespread appointment of independent directors in the United States and the expansion of the role of independent directors espoused in the Higgs report in the UK, the Anglo-American unitary board will, in practice if not in law, more closely approximate the two tiered board of Continental Europe.

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An Empirical Study of Economic Growth and Expanding Role of Government in Ghana: 1965-2004.

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Abstract

Wagner's law is tested by using traditional versions and our own versions which account for prices. Results show that Wagner's law exists in Ghana. However, there is no empirical support to the view that increases in government expenditures lead to economic growth. We also find that changes in interest rates influence economic growth, which means that monetary policy is also important in stabilizing the Ghanaian economy. This means that the government can only facilitate economic growth in Ghana, but it cannot serve as an engine of economic growth.

Keywords: Wagner's law, economic growth, government spending, Granger causality, Ghana.

JEL: C3, E6

Introduction

It has been longed observed that as economies develop and grow their expenditures on public services and regulations also increases but even at a higher rate than their economic growth. Adolph Wagner who pioneered the empirical test of this observation found that the elasticity of government expenditures with respect to income was greater than unity. Among the reasons for this observation is the fact that as economies grow, the role of government and its expenditures increase even faster because population in urban areas increases which in turn places more demand on social amenities such as road networks, electricity, good drinking pipe borne water, refuse collection and extensive sewer systems. Additionally, expenditure on education, security services and protection of people and property, health services, and many more public goods become urgently needed to meet the social and political needs of the growing population, especially in the urban areas. Wagner's law therefore sees economic development and growth as a factor that causes more than proportional share in growth of government expenditures.

On the other hand, during the Great Depression, John Maynard Keynes observed that relying on the views of classical economists that market forces are invisible hands that must be left unfettered by nations and their governments to efficiently drive economic growth, hindered the economic recovery process from the mass unemployment of both people and resources which brought in their wake untold misery and poverty to the world from 1929 to 1945. In his 1936 *General Theory*, he advised nations and their governments to stop relying on the self correcting mechanism of market forces to pull them out of the massive unemployment during the Great Depression, and rather lead their economies to economic recovery and growth by actively engaging in public economic activities. His recommendation on how to bring nations out of the Great depression led to the birth of fiscal and monetary policy or the field of macroeconomics. He called on

governments to spend more money in building road networks, bridges, social infrastructures, hospitals, etc. which were destroyed by the Second World War (WW2). In response to his recommendation the Marshall Plan was launched by President Franklin Roosevelt of the US in the New Deal, and the expanding role of government in spending and other public activities and regulations pulled the world from the Great Depression shortly after the WW2.²

Thus, whereas, Wagner's law suggests that economic growth causes growth in government expenditures, Keynes' views which are dubbed as Keynesian economics suggest that growth in government expenditures causes economic growth and development. It is in the light of these two views that the current study wants to find out what the historical time series data informs us about the Ghanaian economy over the period 1965 to 2004, a sample of at most 39 years. Does the economy of Ghana exhibits Wagner's law or Keynesian economics? This question although has been answered in studies for several developed countries and some developing countries, we have employed Ghana's data to answer it in this study.

The paper is organized along the following format. The literature on Wagner's law is presented in Section 2. The model employed in the study and data are presented in Section 3. In Section 4, the empirical results on Wagner's law are reported and discussed. The paper is summarized and the policy recommendations gleaned from the empirical results are presented to conclude the paper in Section 5.

2. Literature Review

2.1. Wagner's Law

Adolph Wagner pioneered a principle which he described as a 'law of increasing extension of state activity' in the late 1870s. In 1958, his works were translated into English from German, and because it occurred at a time when the Cowles Foundation was promoting econometrics as a branch of economics discipline, it stimulated a plethora of empirical studies. The traditional version of the law was formulated by Peacock and Wiseman (1961). They expressed government expenditures as a function of economic growth or development which was captured by gross domestic product (GDP) or gross national product (GNP). Pryor (1968) tested the law by substituting government consumption for government expenditures. However, other earlier studies modified the traditional version by either deflating government expenditures with population or GDP, and GDP by population. See Gupta (1967), Musgrave (1969), Michas (1975), and Mann (1980). These studies employed the classical econometric method to estimate the relationship between the two variables. Most of the studies conducted for developed countries have employed time series data, but because of the paucity of such data in developing countries, cross-sectional data are used. Often studies of developing countries have also been carried out in a generalized way by pooling cross-sectional data of several of such countries together to expand the sample period. See Gupta (1967), Beck (1979), Abizadeh and Gray (1985), and Ram (1987).

The law has also been tested in recent times using the new econometric methods of cointegration and causality tests developed by Granger (1969), and Engle and Granger (1987), Johansen (1988) and Johansen and Juselius (1990). See Murthy (1993), Hondroyannis and Papapetrou (1995), Oxley (1994) and Demirbas (1999). Dritsakos and Adamopoulos (2004) tested a modified version of Musgrave's specification of the law by

replacing the per capita GDP with per capita real GDP. But their specification did not yield the result predicted by the Wagner's law. As an extension of the existing empirical literature on Wagner's law, we have modified Goffman's version, Peacock-Wiseman's version, Gupta-Michas version and Musgrave's version by accounting for prices. We have therefore expressed Wagner's law as a relationship between real economic growth and real government expenditures. This is because the law was developed during a period when inflation was not a problem in the economies of the world. However, inflation is now a problem, especially after the late 1960s. We have therefore interpreted the law to mean that when a country experiences real economic growth (per capita), its real government expenditures (per capita) increases even faster with the elasticity of the latter exceeding unity.

We have estimated ten versions of Wagner's law for Ghana: six versions from other authors and four versions from our own modification of the earlier versions. These are as follows:

$$\text{Peacock-Wiseman's version: } \ln G = \alpha_1 + \alpha_2 \ln Y + u_1 \quad (1.1)$$

$$\text{Goffman's version: } \ln G = \alpha_3 + \alpha_4 \ln(Y/\text{Pop}) + u_2 \quad (1.2)$$

$$\text{Musgrave's version: } \ln(G/Y) = \alpha_5 + \alpha_6 \ln(Y/\text{Pop}) + u_3 \quad (1.3)$$

$$\text{Gupta-Michas's version: } \ln(G/\text{Pop}) = \alpha_7 + \alpha_8 \ln(Y/\text{Pop}) + u_4 \quad (1.4)$$

$$\text{Mann's version: } \ln(G/Y) = \alpha_9 + \alpha_{10} \ln Y + u_5 \quad (1.5)$$

$$\text{Dritsakis-Adamopoulos' version: } \ln(G/Y) = \alpha_{11} + \alpha_{12} \ln(Y/(\text{Pop} \times \text{CPI})) + u_6 \quad (1.6)$$

Gharthey's versions are modified from the existing models as follows:

$$\ln(G/(\text{CPI})) = \alpha_{13} + \alpha_{14} \ln(Y/(\text{CPI})) + u_7 \quad (1.7)$$

$$\ln(G/\text{CPI}) = \alpha_{15} + \alpha_{16} \ln(Y/(\text{Pop} \times \text{CPI})) + u_8 \quad (1.8)$$

$$\ln(G/(\text{CPI} \times \text{Pop})) = \alpha_{17} + \alpha_{18} \ln(Y/(\text{Pop} \times \text{CPI})) + u_9 \quad (1.9)$$

$$\ln(G/(Y \times \text{Pop})) = \alpha_{19} + \alpha_{20} \ln(Y/(\text{Pop} \times \text{CPI})) + u_{10} \quad (1.10)$$

where, G = government expenditures, Y = incomes, Pop = population, CPI = consumer price index. The a priori expectation is that the coefficients of real per capita income on the right hand side of the equations which measure the elasticity of real per capita income with respect to the left hand side variables should be greater than unity. The error terms are also assumed to be either white noise or serially uncorrelated.

In using the recent econometric methods, Wagner's law is tested by establishing that there is a long-run equilibrium relationship (i.e. cointegration) between economic growth and government expenditures as a first approximation. The sufficient condition for testing the law is to establish that economic growth or development causes government expenditures, and this is done by using Granger causality techniques. However, because Keynes proposed fiscal expansion as a means for promoting economic growth, reverse causation will be interpreted as in support of Keynesian economics view.

3. The Model

3.1. The Error-Correction Model

Variables (X , and Y) are cointegrated if there is a long-run equilibrium relationship between them. We write their relationship as

$$Y_t = AX_t \quad (1a)$$

By log-linearizing, we obtain

$$\ln Y_t = \ln A + \ln X_t \quad (1b)$$

We use smaller case letters for log forms of the variables, and re-write equation (1b) as

$$y_t = a + x_t \quad (2a)$$

in the long-run the above equilibrium relationship becomes

$$y_t = x_t, \text{ and } a \rightarrow 0, \text{ as } t \rightarrow \infty. \quad (2b)$$

A disequilibrium relationship of equation (2a) in an estimation form can be written as

$$y_t = b + \alpha_0 x_t + \alpha_1 x_{t-1} + \beta y_{t-1} + \varepsilon_t \quad (3)$$

where $0 \leq \beta \leq 1$ for stability. Equation 3 is autoregressive distributed lag order (ARDL) (1,1), where the number in parentheses are lag length of the dependent variable followed by the independent variable.

In the steady-state $y_t = y_{t-1}$, and $x_t = x_{t-1}$,

By substituting the steady-state condition into equation (3), we obtain

$$y_t = b + (\alpha_0 + \alpha_1)x_t + \beta y_{t-1} + \varepsilon_t \quad (4)$$

But in the long-run equation (2a) equals equation (4) if the coefficients are equal. This means that

$$(\alpha_0 + \alpha_1) = (1 - \beta) = \lambda, \text{ and } E(\varepsilon_t) = 0 \text{ or } \varepsilon_t \text{ is iid.}$$

Therefore

$$\alpha_1 = \lambda - \alpha_0 \text{ and } \beta = 1 - \lambda.$$

By substituting the above into equation (3) we obtain

$$y_t = b + \alpha_0 x_t + (\lambda - \alpha_0)x_{t-1} + (1 - \lambda)y_{t-1} + \varepsilon_t$$

which is then rearranged as follows:

$$y_t - y_{t-1} = b + \alpha_0(x_t - x_{t-1}) - \lambda(y_{t-1} - x_{t-1}) + \varepsilon_t$$

or

$$\Delta y_t = b + \alpha_0 \Delta x_t - \lambda(y_{t-1} - x_{t-1}) + \varepsilon_t \quad (5)$$

Equation (5) is the error-correction model (ECM), and can be expressed as ARDL(1,0), where the number in parentheses are the lag lengths of the error correction term, followed by the lag lengths of the first difference form independent variable. The expression in the parentheses in equation (5) is the long-run equilibrium relationship and it is obtained by invoking the steady state condition to yield

$$y_{t-1} - x_{t-1} = 0 \text{ or } y_t = x_t$$

The error-correction term in equation (5) is λ , and it measures the speed by which deviations from a long-run equilibrium are corrected. It ranges from -1 to 0. In an econometric estimation, if λ is significant and has the correct sign, it means both variables are cointegrated. According to Granger (1991) and Engle and Granger (1987) the causal relationship can be inferred from the significance of the error-correction term if the associated sign is correct. We have therefore used the ECM to infer long-run equilibrium relationship between our variables of interest and their Granger causal relationship. We have also employed the Johansen cointegration technique to test for the long-run equilibrium relationship, and the traditional Granger definition of causality to test the causal relationship between the variables.

3.2. The Stationarity Test

The unit root tests of the variables of interest are found by using the augmented Dickey-Fuller (ADF) test, Philip-Perron (PP) test and efficient unit root test (ADF-GLS) which was developed by Elliott, Rothenberg and Stock (1996). The augmentation in the ADF test is chosen from a maximum lag length of four by using a 't-sig' technique employed by Campbell and Perron (1991) which Ng and Perron (1995) found to be superior to other information based techniques. In this technique, a maximum lag length is arbitrarily set based on the sample size, and it is chosen for the ADF test if its t-ratio is significant, otherwise it is reduced by a unit and retested. The process is continued successively until the last lag length is found to be significant. If no significant lag length is found, the Dickey-Fuller test is done by setting the augmentation lag length to zero. The ADF test is specified as follows:

$$\Delta y_t = \alpha + \beta t + \rho y_{t-1} + \xi \sum_{i=1}^{i=k} \beta_i \Delta y_{t-i} + \xi_t \quad (6)$$

The PP which is a first order autoregressive process is specified as

$$\Delta y_t = \alpha + \beta t + \rho y_{t-1} + \xi_t \quad (7)$$

The ADF test corrects for higher order serial correlation by adding lagged differenced terms as explanatory variables. The PP test employs Newey and West (1987) dynamic estimates with truncation lags to correct the t-statistic of the coefficient of the lagged endogenous variables in the first order autoregressive process for serial correlation in the error term. The correction is non parametric, and robust to heteroscedasticity and autocorrelation of unknown forms. The final ADF-GLS test is an efficient unit roots test for variables that are affected by autoregressive problem.

3.3. Granger Causality Test

Granger (1969) defines causality in terms of errors associated with forecasting a variable. If y is predicted by using all available information (U) and the associated forecast error is $\sigma^2(y/U)$, and it is again predicted using all available information except x and the forecast error is $\sigma^2(y/U-x)$, and $\sigma^2(y/U) > \sigma^2(y/U-x)$, then x causes (\Rightarrow) y . In an operational form, Granger causality is defined by using past information instead of all available information. Thus, if y is predicted by using all of its past information and the associated forecast error is $\sigma^2(y/\underline{y})$ and it is again predicted using both its own past information and past information of x and the associated forecast error is $\sigma^2(y/\underline{y}, \underline{x})$, then $x \Rightarrow y$ if $\sigma^2(y/\underline{y}, \underline{x}) < \sigma^2(y/\underline{y})$. In a trivariate model we will expect the forecast error associated with past information of the three variables to yield a smaller forecast error than the forecast error from its own past. To determine the lag lengths of the past information, we have in the past used Akaike's Finite Prediction Error (FPE) or information criterion, or Schwarz Bayesian criterion (SBC) or Hannan-Quinn criterion (HQC) or the log-likelihood ratio of Simms. In this study, we have also used the 't-sig' method.

The bi-variate model for Granger causality test is specified as

$$\Delta y_t = \beta_0 + \sum_{i=1}^{i=k} \beta_{1i} \Delta y_{t-i} + \sum_{i=1}^{i=l} \beta_{2i} \Delta x_{t-i} + \xi_t \quad (8)$$

$$\Delta x_t = \alpha_0 + \sum_{i=1}^{i=k} \alpha_{1i} \Delta x_{t-i} + \sum_{i=1}^{i=l} \alpha_{2i} \Delta y_{t-i} + \xi_t \quad (9)$$

where $k \geq l$ are the lag lengths chosen from the 't' sig method or other information criterion. ξ_t and ξ_t' are error terms and assumed to be white noise or iid. For a causality test between Δy_t and Δx_t in a bivariate model, we shall test for the significance of the coefficients of Δx_{t-i} in equation (8), and that of Δy_{t-i} in equation (9). If the coefficients of both Δy_{t-i} and Δx_{t-i} are significant as judged by the Wald test or F-test, then there is a feedback or bi-directional causal relationship between them or $\Delta y_t \Leftrightarrow \Delta x_t$. If on the other hand, the coefficients of Δx_{t-i} are significant either independently as judged by their respective t-ratios or jointly as judged by Wald test or F-test, whereas the coefficient of Δy_{t-i} are not significant either independently as judged by their respective t-ratios or jointly as judged by Wald test or F-test, then we conclude that $\Delta x_t \Rightarrow \Delta y_t$. Similar exercise is then repeated for trivariate models to resolve a situation of bi-directional causation results. There is no causal relationship between any two variables if their coefficients are found to be insignificant in such exercise. For instance, if the coefficients of Δx_{t-i} and Δy_{t-i} are not significant in similar exercise, then we conclude that Δx_t and Δy_t are either independent or not causally related. See also Ghartey (1993).

3.4. Data

Data used are collected from various issues of the International Monetary Fund's *International Financial Statistical Yearbooks*. The notations of the variables are as follows: Y is gross domestic product or GDP, X is government expenditures, CPI is consumer price index using 1995 as the base year, Pop is population, and I is interest rates taken from Treasury Bills Rates. The sample period is 1965 to 2004 which gives us 39 years. In different estimation the sample size may vary due to either the number of lags used or the estimation techniques.

4. Discussion of Empirical Results

The results in Table 2 show that with the exception of Musgrave, Mann and Dritsakis and Adamopoulos versions, all the remaining traditional versions yield income elasticity of government activities (or the elasticity of government expenditures with respect to income) coefficients of more than unity and significant at 0.01 levels, which support Wagner's law in Ghana. Considering that all the results are plagued with serial correlation problems which affected the functional forms of the variables in some cases, we have employed a first order autoregressive process to correct them by using the Cochrane-Orcutt's (CORC) method. We have also employed the dynamic ordinary least squares (DOLS) estimator which uses the Newey and West method to adjust standard errors of ordinary least squares (OLS) estimates by using Parzen's weight with truncation lags of 24 to correct for hetroscedasticity and serial correlation problems. There are therefore no R^2 and DW reports on the DOLS, because they are the same as the R^2 and DW obtained in the OLS results.

Our versions of Wagner's law reported in Table 3 also yield income elasticity coefficients' results which are also greater than unity with the exception of our modified

Gupta-Michas model which yield 0.956 to 0.983. All of our results are significant at 0.01 levels, and robust: the diagnostic tests show that there are no serial correlation and heteroscedasticity problems, and the functional forms are also correct.

The stationarity tests at 0.01 significant levels using unit roots tests show that all three different tests indicate that all variables except government expenditures from the ADF-GLS tests are stationary in their first difference forms. The level form of government expenditures in the ADF-GLS form is stationary at 0.01 significant levels.⁴ See Table 4.

The Johansen's cointegration results without trends and intercepts reported in Table 5 for the trivariate model show that there are at most one cointegrated equations which is significant at 0.05 levels as judged by the trace (λ_{Trace}) and the maximal eigenvectors (λ_{Max}) of the stochastic matrices.⁵ Pairing the variables confirm that there is possibly one endogeneous variable between them.

We also tested Granger causality between the variables using the first difference form of the variables. The optimum lag length for these tests is unity and is chosen by using the t-sig method, which is also supported in most cases by the SBC and in a few cases by FPE and HQC. The results of the Granger's causality test are reported in Table 6. We find that changes in interest rates cause changes in economic growth; changes in economic growth cause changes in government expenditures; these results therefore support Wagner's law as was reported in Tables 2 and 3; and crowding effect can be inferred from the finding that changes in interest rates cause changes in government expenditures.

We note that even though the results are robust, as judged by the diagnostic tests, and the stability of coefficients test, both Philip-Perron's tests and ADF tests show that all the variables are integrated at degree one, and are stationary in their first different form. Additionally, the ADF-GLS efficient tests show similar results with exception of government expenditures which are stationary at the level form. For this reason, we have employed the ARDL estimator developed by Pesaran and Shin (1995) which allows us to estimate error-correction model without the pre-condition of having all the variables integrated at the same order. The results of the ARDL error-correction model allow us to test cointegration, short-run dynamics and the causal relationship between the variables. The results reported in Table 6 are far more robust and confirm that Wagner's law holds in Ghana over the long-run, and in the short term as changes in economic growth cause changes in government expenditures. The estimated error-correction terms show that the speed of adjustment to correct for long-run deviation from equilibrium for Wagner's law is -0.26. The long-run elasticity of public expenditures with respect to changes in income is -1.09. Stability tests using both cumulative sum of squares (CUSUMSQ) of recursive residuals and cumulative sum (CUSUM) of recursive residuals shown in Figures 1a-2b are favorable. Forecasts of government expenditures using income are reported in Figure 3. It is clear from the figures that actual values of government expenditures match their predicted values.

5. Conclusion

The empirical evidence provided in the study by using the earlier specifications of Wagner's law by Peacock-Wiseman, Goffman, and Gupta-Michas, and our own modified versions which account for changes in prices because of inflation tendencies in economies of the world in recent times, support the law's application in Ghana. Thus,

economic growth results in a more than proportionate share in growth of government expenditures. The statistical results are further supported by recent advances in econometrics, as there is one cointegration relationship between economic growth and growth in government expenditures, and both vector auto-regressions and error-correction approaches support that economic growth causes growth in government expenditures.

There is no empirical support that growth in government spending stimulates economic growth in the country. This means that Keynesian-type fiscal expansion cannot lead to economic growth; in fact, it is likely to crowd out private businesses in the country. Economic growth should be the source of expanding the activities of the government. The government can only facilitate economic growth; it cannot be an engine of economic growth in the country

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Table 1: Levels and Growth Rates of Government Expenditures as a Ratio of GDP

	Levels	Growth Rates
Years	GEX/GDP (%)	GEX/GDP (%)
1965	25.314	-
1970	20.713	4.742
1975	21.696	34.070
1980	10.893	-28.435
1985	13.340	35.211
1990	12.526	-9.650
1995	21.911	-0.000
2000	27.713	5.833
2004	33.286	15.580

Table 2: Estimates of the Elasticity Coefficients of the Six Versions of Wagner's Law

Version	Elasticity	\bar{R}^2	DW	F(k,n-k-1)	$\chi^2_{SC}(1)$	$\chi^2_{FF}(1)$	$X^2_H(1)$
Goffman's Version (1.2)							
OLS	1.132	0.990	0.258	3408.5*	24.861*	24.681*	0.962
	[58.383]*						
DOLS	1.132						
	[59.333]*						
CORC	1.121	0.997	1.722	6273.0*			
	[14.439]*						
Peacock-Wiseman's Version (1.1)							
OLS	1.024	0.992	0.252	5064.1*	28.809*	30.558*	0.005
	[71.163]*						
DOLS	1.024						
	[34.255]*						
CORC	1.052	0.998	1.758	9894.2*			
	[20.933]*						
Musgrave's Version (1.3)							
OLS	0.042	0.111	0.260	5.129*	24.505*	25.010*	0.614
	[2.265]**						
DOLS	0.042						
	[1.153]						
CORC	0.056	0.777	1.746	56.753*			
	[0.890]						
Gupta-Michas' Version (1.4)							
OLS	1.042	0.990	0.260	3211.1*	24.505*	25.010*	0.917
	[56.666]*						
DOLS	1.042						
	[28.842]*						
CORC	1.056	0.997	1.746	5904.0*			
	[16.761]*						
Mann's Version (1.5)							
OLS	0.023	0.043	0.252	2.769**	28.809*	30.558*	0.094
	[1.664]						
DOLS	0.023						
	[0.801]						
CORC	0.052	0.764	1.758	62.489*			
	[1.036]						
Dritsakis-Adamopoulos' Version (1.6)							
OLS	0.457	0.169	0.282	7.697*	24.870*	14.688*	0.693
	[2.774]*						
DOLS	0.457						
	[1.932]**						
CORC	0.158	0.778	1.858	57.170*			
	[0.612]						

Notes: Figures in parentheses are degrees of freedom, and the figures in square brackets are t-ratios. *, ** and *** denote significance at 0.01, 0.05 and 0.10 levels, respectively. OLS is least squares, DOLS is dynamic least squares, CORC is Cochrane-Orcutt iterative technique; χ_{SC}^2 is based on the Lagrange multiplier test of residual serial correlation, χ_{FF}^2 is based on Ramsey's RESET test using the square of the fitted values, and χ_H^2 is based on the regression of squared residuals on squared fitted values. R^2 is the adjusted coefficient of determination, and DW is Durbin-Watson statistic. DLS and DIV are based on Newey-West adjusted standard errors and Parzen's weights with truncation lags of 24.

Table 3: Estimates of the Elasticity Coefficients of Own Versions of Wagner's Law

Version	Elasticity	\bar{R}^2	DW	F(k,n-k-1)	$\chi_{SC}^2(1)$	$\chi_{FF}^2(1)$	$\chi_H^2(1)$
Modification of Dritsakis and Adamopoulos Version (1.10)							
OLS	6.471	0.439	0.087	26.846*	30.725*	9.866**	0.139
	[5.181]*						
DOLS	6.471						
	[4.138]*						
CORC	1.389	0.991	1.824	1867.2*			
	[3.114]*						
Modification of Goffman's Version (1.8)							
OLS	1.042	0.278	0.097	13.728*	30.547*	14.438*	1.553
	[3.705]*						
DOLS	1.042						
	[2.534]*						
CORC	1.148	0.931	1.934	217.916			
	[4.485]*						
CORCAR(2)	1.005	0.926	1.906	137.857			
	[3.882]*						
Modification of Gupta-Michas' Version (1.9)							
OLS	0.956	0.991	0.264	3564.1*	24.036*	25.186*	0.938
	[59.700]*						
DOLS	0.956						
	[30.331]*						
CORC	0.983	0.997	1.781	6545.2*			
	[18.541]*						
Modification of Peacock-Wiseman's Version (1.7)							
OLS	1.917	0.894	0.991	320.963*	9.100**	0.959	0.073
	[17.915]*						
DOLS	1.917						
	[13.664]*						
CORC	1.409	0.930	1.943	245.928*			
	[8.193]*						

Notes: CORCAR(2) is a Cochrane-Orcutt estimation where the error term is expressed as a second-order autoregressive process, AR(2). If ε is an error term which follows an AR(2) behavior then the error term is expressed as $\varepsilon_t = \rho_2 \varepsilon_{t-2} + \rho_1 \varepsilon_{t-1} + u_t$, where u is a white noise innovation. See also the notes in Table 2.

Table 4: Stationarity Tests using Unit Roots

		ADF(k)		PP		ADF-GLS	
Level form of Variables							
Gross Domestic Products, y		-0.852	[-2.95]	0.048	[-3.6]	0.874	[-2.6]
Government Expenditures, x		-0.092	[-2.95]	1.688	[-3.6]	-2.85*	[-2.6]
Interest Rates, i		-1.884	[-2.95]	-1.827	[-3.6]	-1.84	[-3.6]
First Difference-form of Variables							
Δy		-3.292*	[-2.95]	-9.78*	[-3.6]	-9.36*	[-2.6]
Δx		-3.113*	[-2.95]	-5.63*	[-3.6]		
Δi		-5.153*	[-2.95]	-8.26*	[-3.6]	-8.23*	[-3.6]

Notes: Small case letters denote the log form of variables. The figures in the square brackets are t-ratios at 0.01 significant levels. The t-ratios for the Philip-Perron test for both level form and first differenced form at 0.01 significant levels is -3.6, ADF test is -2.9, and ADF-GLS developed by Elliott-Rothenberg-Stock is -2.6 for all except interest rates which is -3.6 for both level form and first difference form. K is the augmentation lags, and is unity.

Table 5: Johansen's Cointegration Test Results

Multivariate relations					
	H_0	H_1	λ_{MAX}	H_1	λ_{TRACE}
y, x and i	$r = 0$	$r = 1$	75.693*	$r \geq 1$	83.895*
	$r \leq 1$	$r = 1$	7.539	$r \geq 2$	8.203
	$r \leq 2$	$r = 2$	0.663	$r = 3$	0.663
y and x	$r = 0$	$r = 1$	72.471*	$r \geq 1$	73.010*
	$r \leq 1$	$r = 2$	0.538	$r = 2$	0.538
y and i	$r = 0$	$r = 1$	62.507*	$r \geq 1$	63.217*
	$r \leq 1$	$r = 2$	0.709	$r = 2$	0.709
X and i	$r = 0$	$r = 1$	58.549*	$r \geq 1$	58.550*
	$r \leq 1$	$r = 2$	0.001	$r = 2$	0.001

Notes: * denotes significance at 0.05 levels.

Table 6: Autoregressive Distributed Lag Estimates of Long-run and Error Correction Model for Validating Causal Relationships; 1965-2004.

H_0 : No Causal Relationship	ARDL Order (p,q,s)	Long-run Estimates	Coef. Of EC Term	Causal Direction
Incomes do not cause Gov't Expenditures	(1,0) n = 39	1.087 [40.504]*	-0.262 [5.079]*	$\Delta y_t \Rightarrow \Delta x_t$
Gov't Expenditures do not cause Income	(1,1) n = 39	1.011 [4.817]*	0.039 [0.438]	$\Delta x_t \Delta y_t \Rightarrow$ (No causation)
Incomes do not cause Interest Rates	(1,1) n = 39	0.115 [2.520]	-0.280 [2.171]***	$\Delta y_t \Delta r_t \Rightarrow$
Interest Rates do not cause Incomes	(1,0,0) n = 39	8.125 [4.021]*	-0.027 [1.847]***	$\Delta r_t \Delta y_t \Rightarrow$
Gov't Expenditures do not cause Interest Rates	(1,0) n = 39	14.866 [1.244]	-0.013 [0.874]	$\Delta x_t \Delta r_t \Rightarrow$ (No causation)
Interest Rates do not cause Gov't Expenditures	(1,0) n = 39	0.114 [2.031]***	-0.223 [1.706]***	$\Delta r_t \Delta x_t \Rightarrow$

Notes: For the null hypotheses that states that incomes do not cause government expenditures, incomes are the manipulated or exogenous variables, and government expenditures are the controlled or endogenous variables. \Rightarrow denotes 'cause', so $\Delta x_t \Rightarrow \Delta y_t$ means changes in government expenditures cause changes in incomes. Figures in parentheses are the order of the ARDL, and those in the square brackets are the absolute values of the t-ratios. *, **, and *** denote significant levels at 0.01, 0.05 and 0.10, respectively, EC denotes error correction, and n is the sample size. The EC model specified as ARDL (p, q, s) are two variables ECM where the lag lengths of the EC terms, dependent variable and the independent variable p, q and s, respectively. In the case of an ARDL (p, q, s) of three variables, p is the lag length of the dependent variable and q and s are the lag length of first and second independent variables.

Figure 1a: Income causing government expenditure

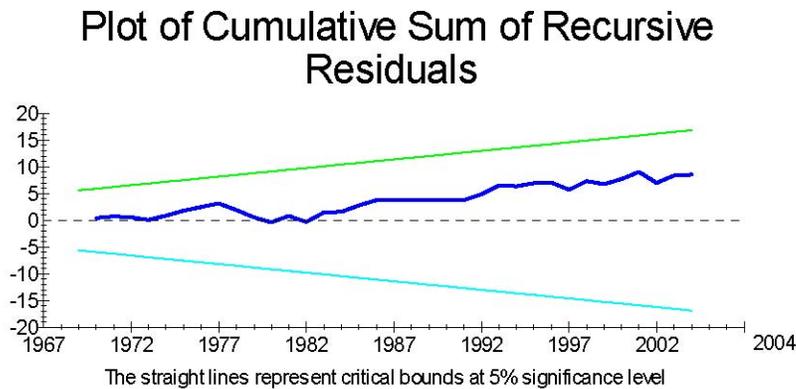


Figure 1b: Income causing government expenditures

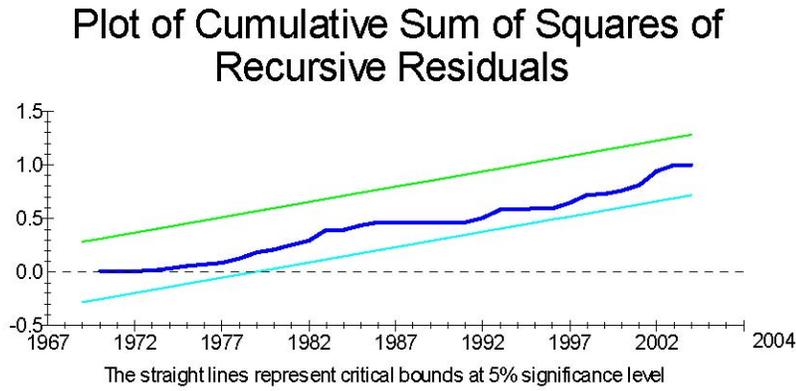


Figure 2a: Government expenditures causing income

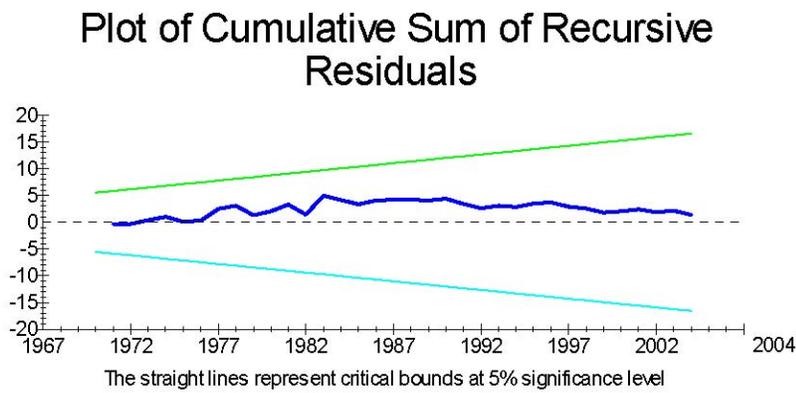


Figure 2b: Government expenditures causing income

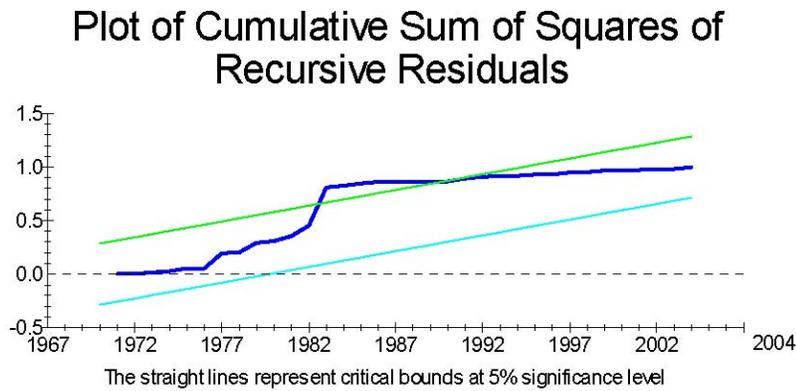
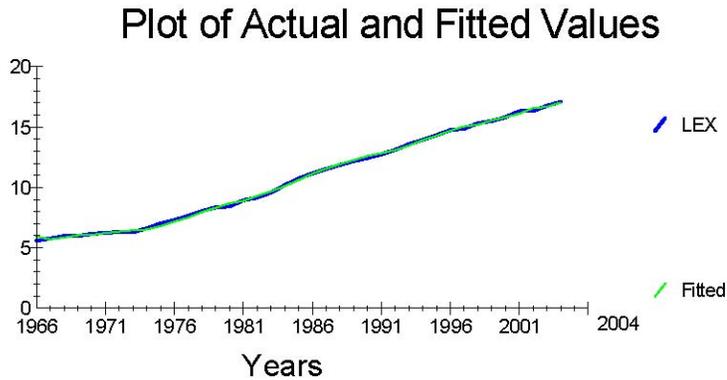


Figure 3: Plot of actual and predicted values of log form government expenditures from estimation using lagged income



Notes

¹ Sr Lecturer-above-bar, Department of Economics, The University of the West Indies, and Sr Fellow, The Institute of Economic Affairs, Ghana. The author acknowledges The University of the West Indies and The Institute of Economics Affairs, Ghana for their valuable assistance in completing the study.

² Milton Friedman disputes the notion that Keynesian economics advocacy of fiscal policy led to the economic recovery of Nations from the mass unemployment of both people and resources that saddled the world during the Great Depression. He attributes the economic recovery to the WW2 and the resilience of the economy which is euphemistically known as the invisible hands or market forces. See John Hawkins (undated) interview of Milton Friedman in the Right Wing News, pp. 5 and 6.

³ See Ansari, et al. (1997).

⁴ We have erred in favor of majority by using the ADF and PP tests to determine the stationarity of the government expenditure variable. This means that all of our variables of interest are integrated at degree one, I(1) or their first difference form are stationary.

⁵ Results in Table 5 are consistent with the Johansen's cointegration results with intercept but no trends, although we have not reported the latter to conserve space.

WHAT CAUSES THE ASYMMETRIC EFFECTS OF MONETARY POLICY?

Size or Sign of Money-Supply Shocks?

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Abstract

Recent research has moved from the question of *whether* the effects of monetary policy are asymmetric to the question of *why*. This paper sheds some light on the nature of these asymmetries by focusing on two distinct types: sign asymmetry (monetary expansions have different effects than monetary contractions) and size asymmetry (large monetary shocks have different real effects than smaller monetary shocks). Using quarterly data from the 1964-2004 period, money-supply shocks and their effects on output, consumption, and investment are estimated for a panel of 12 OECD countries. The paper's findings support both types of asymmetries. First, monetary contractions are shown to have a stronger effect on output, consumption, and investment than monetary expansions. Second, the effectiveness of monetary policy is often a decreasing function of (the absolute value of) the size of the monetary shock, particularly for negative shocks. These findings are robust to many different specifications and the inclusion of fixed effects.

JEL classification: E52

Keywords: Monetary Policy, Asymmetric Effects, Business Cycles, Stabilization.

1. Introduction

Several theoretical models and a large number of empirical studies have argued that the effects of monetary policy are asymmetric.¹ The exact nature of this asymmetry, however, has not been determined. Theoretically, for example, asymmetries can be generated by (i) a convex aggregate supply, (ii) models that emphasize credit mechanisms, (iii) models with menu costs, or (iv) monetary authorities that respond differently to expansions than to downturns.

Empirically, as well, asymmetry may refer to a situation in which (i) monetary expansions have different effects than monetary contractions (*sign* asymmetry), (ii) large monetary shocks have smaller real effects than smaller monetary shocks (*size* asymmetry), (iii) monetary policy responds differently to expansions than to recessions, or (iv) monetary policy has greater effects during recessions than during expansions (*phase* asymmetry).²

This paper focuses on the first two types (*sign* and *size*) and investigates the nature of these asymmetries by examining the effects of monetary policy shocks on several components of aggregate expenditure for a panel of twelve OECD countries. First, quarterly data are used to identify money-supply shocks over the period 1964-2004.

Then the effects of these shocks on aggregate consumption, investment, and GDP are estimated.

The paper's findings strongly support *sign* and *size* asymmetries. First, monetary contractions are shown to have a stronger effect on output, consumption, and investment than monetary expansions. In fact, the effect of monetary expansions is often statistically insignificant. Second, the effectiveness of monetary policy is often a decreasing function of (the absolute value of) the size of the monetary shock, particularly for negative shocks.

The rest of the paper is organized as follows. Section 2 outlines the paper's empirical methodology, which nests sign and size asymmetries, and discusses the data. Section 3 presents the empirical results. Section 4 summarizes and concludes.

2. Empirical Methodology and Data

2.1. Sign Asymmetry

The empirical methodology implements a modification of the approach of Cover (1992), and Karras (1996a, 1996b), and thus will be described briefly.

Let j index over countries and t over time. The estimated system consists of two equations, the first of which describes the money supply process:

$$m_{j,t} = \alpha_0 + \sum_{i=1}^M \alpha_i^m m_{j,t-i} + \sum_{i=1}^N \alpha_i^y y_{j,t-i} + u_{j,t}^m, \quad (1)$$

where m is the money growth rate, y is the output growth rate, the α 's are coefficients, and u^m is the money-supply shock. Define the positive money-supply shock as

$$u_{j,t}^{m(+)} = \max(u_{j,t}^m, 0),$$

and the negative money-supply shock as

$$u_{j,t}^{m(-)} = \min(u_{j,t}^m, 0).$$

Letting o denote the growth rate of the real price of oil (a proxy for supply-side shocks), the second equation is:

$$x_{j,t} = \beta_0 + \sum_{i=1}^P \beta_i^y x_{j,t-i} + \sum_{i=0}^Q \beta_i^o o_{t-i} + \sum_{i=0}^R (\beta_i^+ u_{j,t-i}^{m(+)} + \beta_i^- u_{j,t-i}^{m(-)}) + u_{j,t}^x, \quad x = y, c, i, \quad (2)$$

where x may stand for output growth (y), the growth rate of real consumption (c), or the growth rate of real investment (i); and the β s are coefficients to be estimated. If

$\beta_i^+ = \beta_i^-$, $\forall i$, the effects of money-supply shocks are symmetric. Using (for now) the sum of these coefficients as a simple metric of effectiveness,³ the "traditional" kind of asymmetry requires $\sum_i \beta_i^- > \sum_i \beta_i^+ \geq 0$, so that monetary contractions have larger effects than monetary expansions.⁴

2.2. Including Size Asymmetry

We now want to allow for the possibility that large monetary shocks have different effects than small monetary shocks. To estimate these size asymmetries, we measure the size of the shock by its absolute value and specify the monetary-policy effectiveness coefficients as linear functions of size:

$$\beta_{j,i}^+ = \tilde{\beta}_i^+ + \tilde{\beta}_i^{size(+)} |u_{j,t-i}^{m(+)}| = \tilde{\beta}_i^+ + \tilde{\beta}_i^{size(+)} u_{j,t-i}^{m(+)},$$

and

$$\beta_{j,i}^- = \tilde{\beta}_i^- + \tilde{\beta}_i^{\text{size}(-)} \left| u_{j,t-i}^{m(-)} \right| = \tilde{\beta}_i^- - \tilde{\beta}_i^{\text{size}(-)} u_{j,t-i}^{m(-)}.$$

To nest the size and sign asymmetries, simply substitute the last two expressions in equation (2) and rewrite as

$$x_{j,t} = \beta_0 + \sum_{i=1}^P \beta_i^y x_{j,t-i} + \sum_{i=0}^Q \beta_i^o o_{t-i} + \sum_{i=0}^R \left(\tilde{\beta}_i^+ u_{j,t-i}^{m(+)} + \tilde{\beta}_i^{\text{size}(+)} u_{j,t-i}^{m(+)} \left| u_{j,t-i}^{m(+)} \right| + \tilde{\beta}_i^- u_{j,t-i}^{m(-)} + \tilde{\beta}_i^{\text{size}(-)} u_{j,t-i}^{m(-)} \left| u_{j,t-i}^{m(-)} \right| \right) + u_{j,t}^x,$$

or

$$x_{j,t} = \beta_0 + \sum_{i=1}^P \beta_i^y x_{j,t-i} + \sum_{i=0}^Q \beta_i^o o_{t-i} + \sum_{i=0}^R \left(\tilde{\beta}_i^+ u_{j,t-i}^{m(+)} + \tilde{\beta}_i^{\text{size}(+)} \left(u_{j,t-i}^{m(+)} \right)^2 + \tilde{\beta}_i^- u_{j,t-i}^{m(-)} - \tilde{\beta}_i^{\text{size}(-)} \left(u_{j,t-i}^{m(-)} \right)^2 \right) + u_{j,t}^x. \quad (2')$$

In order to test for size asymmetries we need to investigate the estimated $\tilde{\beta}_i^{\text{size}(+)}$ and

$\tilde{\beta}_i^{\text{size}(-)}$ coefficients. For example, if we cannot reject the null hypothesis that

$\tilde{\beta}_i^{\text{size}(+)} = \tilde{\beta}_i^{\text{size}(-)} = 0, \forall i$, then the effectiveness of monetary-policy shocks does not

depend at all on their size. If, on the other hand, $\sum_i \tilde{\beta}_i^{\text{size}(+)} < 0$ or $\sum_i \tilde{\beta}_i^{\text{size}(-)} < 0$, then

the effectiveness of monetary policy shocks declines with their (absolute) size, consistent with the predictions of “menu cost” theories. Note that nesting the size and sign asymmetries allows us to test whether the size effects are present in the positive shocks, in the negative shocks, or in both.

A system of equations (1) and (2) (or (2')) can be estimated with the 2-step OLS procedure used by Barro (1977, 1978), or by the nonlinear least squares method used by Mishkin (1982, 1983), or by a system-wide multivariate maximum likelihood (ML) technique. The empirical section will focus mostly on the ML results, so the approach is illustrated here briefly. The log-likelihood function of an M-System, for example, is specified as

$$L(\alpha, \beta, \Sigma) = -.5 \ln \Sigma - .5 (\mathbf{u}' \Sigma^{-1} \mathbf{u}),$$

where α and β are the parameter vectors of equations (1) and (2), $\Sigma = \begin{bmatrix} \sigma_{11} & \sigma_{12} \\ \sigma_{12} & \sigma_{22} \end{bmatrix}$ is

the covariance matrix of the error vectors \mathbf{u}^m and \mathbf{u}^x , and $\mathbf{u}' = ((\mathbf{u}^m)', (\mathbf{u}^x)')$. Initial values are obtained from the 2-step OLS regressions and the function is maximized with the BFGS method (a modification of the Davidon-Fletcher-Powell algorithm).

As the models will be estimated with cross-section and time-series data, it is likely that the covariance matrices of $u_{j,t}^m$ and $u_{j,t}^x$ for the M-Systems, and of $u_{j,t}^r$ and $u_{j,t}^x$ for the R-Systems will not be diagonal. In such a case, conventional estimation may be inefficient and may also yield inconsistent standard errors. To prevent this, the estimation will allow for country-specific fixed effects in all estimated equations.⁵

2.3. The Data

All data are quarterly and obtained from the OECD's *Economic Outlook* in the *Statistical Compendium on CD-ROM*. Real GDP (volume indices) is used to construct the variable y , the M1 money supply for m , real private consumption for c , real total fixed investment for i , and the crude oil price in US\$ per barrel for o . The time period is 1964:1-2004:4. Country selection is strictly based on data availability. The sample consists of the following twelve countries: Australia, Greece, Iceland, Ireland, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, the U.K., and the U.S.

3. Empirical Results and Discussion

3.1. Estimating Sign Asymmetries

We begin by estimating the system of equations (1) and (2) for the full sample of the 12 OECD countries over 1964:1-2004:4. Table 1 reports the estimated β^+ and β^- coefficients in equation (2) for output ($x = y$) under the assumption that money enters only contemporaneously ($R = 0$). We start by imposing this constraint not because we believe that it holds (see below), but in order to establish a benchmark and to better compare and contrast our findings to those of the earlier literature. The Table reports results for four estimated systems: OLS without fixed effects, MLE without fixed effects, OLS with effects, and MLE with fixed effects. As expected, all estimated money coefficients are positive, but note that only the β^- coefficients are statistically significant. Moreover, the estimated β^- coefficients are always substantially larger than the β^+ coefficients. The last row of Table 1 shows that the differences between the β^+ and β^- coefficients are statistically significant at the 5% level with OLS and at the 1% level with MLE. All these results are robust to whether fixed effects are included or not. We conclude that sign asymmetry in this OECD sample is a fact.

Table 2 also estimates the system for output ($x = y$) but relaxes the assumption of contemporaneous-only effects, and adds four lagged terms of the money-supply shocks in equation (2): $R = 4$.⁶ Once again, all estimated money coefficients are positive, but now the sums of both the β^- and the β^+ coefficients are statistically significant. The last three rows of Table 2 test three hypotheses about the effects of positive and negative money-supply shocks. The first two of these rows test whether the coefficients of the positive or negative shocks are jointly zero. In all four specifications, this is rejected for both the positive shocks and, even more strongly, for the negative shocks. The last test is the test of symmetry. The null hypothesis here is that the sum of β^+ coefficients equals the sum of the β^- coefficients. For each of the four specifications, the null hypothesis of symmetry is soundly rejected in favor of the negative shocks having a greater effect. Consistent with our earlier findings, therefore, the effects of money-supply shocks on output are shown to be asymmetric.

Next, we investigate whether the effects of money-supply shocks on consumption and investment are also asymmetric. This is a useful exercise, as consumption is the largest component of GDP, and investment the most volatile. Table 3 reports the results for both consumption ($x = c$) and investment ($x = i$) with four lags, but because of space

limitations only the MLE results are given (the OLS results are qualitatively very similar). Specifications with and without fixed effects are reported. Again, as expected, all sums of the estimated money coefficients are positive, but now the sums of both the β^+ and the β^- coefficients are statistically significant, though the point estimates of the β^- sums are greater in every case. Focusing in the χ^2 tests in the last three rows of Table 3, it is first apparent that the sums of the β^- coefficients are statistically significant for both consumption and investment; while the sums of the β^+ coefficients are significant only for consumption. We conclude that a monetary contraction is followed by statistically significant reductions in both consumption and investment, whereas a monetary expansion raises only consumption statistically significantly. Of course, for our purposes, the most interesting test is the last one in Table 3, the test of symmetry. The null hypothesis again is that the sum of β^+ coefficients equals the sum of the β^- coefficients. Once more, for each of the four specifications, the null hypothesis of symmetry is soundly rejected in favor of the negative shocks having a greater effect. We conclude, therefore, that the effects of money-supply shocks on consumption and investment are also asymmetric.

These findings can be visualized with the help of Figures 1, 2, and 3 which plot the simulated responses of output, consumption, and investment to positive and negative money-supply shocks, using the estimated values of Tables 2 and 3. Figure 1 reports these “impulse response functions” for output, using the coefficients of the models with fixed effects (dashed lines) and without fixed effects (solid lines). Asymmetry is very strongly indicated: the cumulative effect of negative money-supply shocks is five to six times larger than the effect of positive money-supply shocks. Note that fixed effects make virtually no difference in this assessment. Figure 2 plots the consumption “impulse response functions,” presenting a very similar picture with that of Figure 1, both qualitatively and quantitatively. Figure 3 repeats the exercise for investment. The main difference between Figure 3 and Figure 1 (or 2) is that investment is shown to be appreciably more responsive to money-supply shocks than overall output or consumption. Indeed, the cumulative effects are almost twice as high for investment compared to those for output or consumption. This is consistent with most theoretical explanations of how monetary policy works, which emphasize the role of investment. Despite this difference, however, the evidence of asymmetric effects on investment is (at least) as strong as for output and consumption: the cumulative effect of negative money-supply shocks is (again!) five to six times larger than the effect of positive money-supply shocks.

3.2. *Estimating Sign and Size Asymmetries*

The last section has shown that sign asymmetries characterize the effects of monetary policy. Now, we allow for the possibility that there are size asymmetries as well by estimating the system of equations (1) and (2') for the full sample of the 12 OECD countries over 1964:1-2004:4.

Using the format of Table 1, Table 4 reports the estimated $\tilde{\beta}^+$, $\tilde{\beta}^-$, $\tilde{\beta}^{size(+)}$, and $\tilde{\beta}^{size(-)}$ coefficients in equation (2') for output ($x = y$) under the assumption that money enters only contemporaneously ($R = 0$). The first thing to note is that including the size variables does not change our results regarding the sign asymmetry. In particular, all estimated $\tilde{\beta}^+$ and $\tilde{\beta}^-$ coefficients are positive, and again only the $\tilde{\beta}^-$ coefficients are statistically significant and substantially larger than the $\tilde{\beta}^+$ coefficients. The last row of Table 4 shows that the differences between the $\tilde{\beta}^+$ and $\tilde{\beta}^-$ coefficients remain statistically significant in all specifications. It follows that allowing for size asymmetries does not change the finding that sign asymmetries exist. Now, let's turn to the results on size. All the estimated $\tilde{\beta}^{size(+)}$, and $\tilde{\beta}^{size(-)}$ coefficients in Table 4 are negative, indicating that the effectiveness of money-supply shocks declines with their (absolute) size, as expected. However, only the $\tilde{\beta}^{size(-)}$ coefficients are statistically significant, suggesting that the size asymmetry may be confined to the negative money-supply shocks.

Table 5 generalizes in various directions by allowing for four lags (as in Tables 2 and 3) and by investigating output, as well as consumption and investment (as in Table 3). To preserve space, Table 5 reports only the MLE results (once again, the OLS results are very similar) but both with and without fixed effects.

The first two columns of Table 5 estimate the system (1)-(2') for output ($x = y$). Once more, the first thing to note is that including the size terms does not change the implications regarding sign asymmetry. In particular, the null hypothesis that the sum of the $\tilde{\beta}^+$ coefficients equals the sum of $\tilde{\beta}^-$ coefficients (the null of sign symmetry) can be rejected both with and without fixed effects. Even more strongly, only the $\tilde{\beta}^-$ coefficients are jointly statistically significant, while the $\tilde{\beta}^+$ coefficients are not. Sign asymmetry, therefore, is very robust. Regarding size asymmetry, the sums of the estimated $\tilde{\beta}^{size(+)}$ and $\tilde{\beta}^{size(-)}$ coefficients are either negative or statistically insignificant, as expected. However, only the $\tilde{\beta}^{size(-)}$ coefficients are jointly statistically significant and only the sum of the $\tilde{\beta}^{size(-)}$ coefficients is statistically significant, suggesting again that the size asymmetry on output characterizes only the negative money-supply shocks.

The rest of Table 5 looks at the consumption ($x = c$) and investment ($x = i$) versions of estimated systems (1) and (2'). In terms of sign asymmetry, the findings mirror those of output very closely. Allowing for size asymmetries does not change the evidence for sign asymmetries on consumption and investment: just like for overall output, negative money-supply shocks are more potent for both consumption and investment. Next, we evaluate the size effects. Here there is a difference between consumption (and output) on the one hand, and investment on the other. For consumption (just like for output), the evidence is clear that size asymmetries apply, at least to the negative money-supply shocks: the sum of the $\tilde{\beta}^{size(-)}$ coefficients is negative

and statistically significant, and the $\tilde{\beta}^{size(-)}$ coefficients are jointly statistically significant. For investment, however, there is no evidence of statistically significant size asymmetries, either for positive or negative money-supply shocks. It seems that size reduces the potency of money-supply shocks for output and consumption, but not for investment.

In that sense, the two types of asymmetries differ. Sign asymmetries exist for all three aggregates, but may be more pronounced for investment; while size asymmetries are statistically significant only for output and consumption.

4. Conclusions

This paper has investigated two types of asymmetric effects of money-supply shocks on output, consumption, and investment. Quarterly data from the 1964-2004 period have been used to identify money-supply shocks and their effects for a panel of 12 OECD countries. The paper's empirical findings support the following conclusions:

(i) There is clear evidence of *sign* asymmetry: monetary contractions have larger effects than monetary expansions (the effects of which are sometimes statistically insignificant). This is the case even when sign and size asymmetries are jointly estimated.

(ii) Sign asymmetry holds for overall output, as well as for consumption (its largest component) and investment (its most volatile component).

(iii) Sign asymmetry appears to be most pronounced for investment.

(iv) There is some evidence of *size* asymmetry: smaller shocks often appear to have bigger effects than larger shocks.

(v) Size asymmetry appears to be confined to negative money-supply shocks.

(vi) Size asymmetry is most pronounced for output and consumption.

These results are robust to all specifications considered, including various estimation methods and the inclusion of fixed effects.

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Table 1

Sign Asymmetric Effects on Output (No Lags)

	No Fixed Effects		Fixed Effects	
	OLS	MLE	OLS	MLE
$\overline{\beta_0^+}$	.0036 (.0067)	.0028 (.0082)	.0037 (.0067)	.0022 (.0074)
β_0^-	.0563** (.0197)	.0648** (.0183)	.0602** (.0208)	.0740** (.0213)
<i>F-Tests</i> or χ^2 - <i>Tests</i>				
Null: $\beta_0^+ = \beta_0^-$	<u>5.997</u> *	8.319**	<u>6.222</u> *	9.108**

Notes: Estimated standard errors in parentheses. **:significant at 1%, *:significant at 5%.

Table 2

Sign Asymmetric Effects on Output (4 Lags)

	No Fixed Effects		Fixed Effects	
	OLS	MLE	OLS	MLE
$\sum_i \beta_i^+$	.0474** (.0148)	.0469* [8.173]	.0386** (.0147)	.0512** [8.815]
$\sum_i \beta_i^-$	.1864** (.0373)	.1940** [37.12]	.1968** (.0405)	.2767** [55.16]
<i>F-Tests</i> or χ^2 - <i>Tests</i>				
Null: $\beta_i^+ = 0, \forall i$	<u>10.20</u> **	13.83*	<u>6.94</u> **	12.5*
Null: $\beta_i^- = 0, \forall i$	<u>25.00</u> **	76.90**	<u>23.58</u> **	108.4**
Null: $\sum_i \beta_i^- = \sum_i \beta_i^+$	<u>14.62</u> **	20.46**	<u>14.34</u> **	32.2**

Notes: Estimated standard errors in parentheses (); χ^2 values for the null of statistical insignificance in square brackets []. **:significant at 1%, *:significant at 5%.

Table 3

Sign Asymmetric Effects on Consumption and Investment (4 Lags)

	Consumption		Investment	
	No FE	FE	No FE	FE
$\sum_i \beta_i^+$	.0524**	.0433*	.0957*	.0490
	[10.17]	[6.127]	[3.973]	[0.881]
$\sum_i \beta_i^-$	.1813**	.2352**	.5044**	.4875**
	[25.60]	[34.46]	[17.83]	[11.59]
<i>χ^2-Tests</i>				
Null: $\beta_i^+ = 0, \forall i$	15.82**	11.33*	10.47	3.88
Null: $\beta_i^- = 0, \forall i$	44.91**	61.18**	26.85**	21.24**
Null: $\sum_i \beta_i^- = \sum_i \beta_i^+$	13.00**	21.47**	12.81**	9.03**

Notes: Joint estimation of equations (1) and (2) with Maximum Likelihood. "FE" denotes Fixed Effects. χ^2 values for the null hypothesis of statistical insignificance in square brackets []. **:significant at 1%, *:significant at 5%.

Table 4

Sign and Size Asymmetric Effects on Output (No Lags)

	No Fixed Effects		Fixed Effects	
	OLS	MLE	OLS	MLE
$\tilde{\beta}_0^+$	.0201 (.0186)	.0255 (.0154)	.0107 (.0202)	.0037 (.0171)
$\tilde{\beta}_0^-$	.1009** (.0320)	.1101** (.0265)	.1060** (.0334)	.1390** (.0395)
$\tilde{\beta}_0^{size(+)}$	-.0114 (.0110)	-.0178 (.0106)	-.0053 (.0118)	-.0019 (.0134)
$\tilde{\beta}_0^{size(-)}$	-.3104* (.1503)	-.3631* (.1441)	-.3649* (.1828)	-.4938* (.1985)
<i>F-Tests</i> or χ^2 - <i>Tests</i>				
Null: $\beta_0^+ = \beta_0^-$	<u>3.748</u> *	5.415*	<u>4.489</u> *	6.743**

Notes: Estimated standard errors in parentheses. **:significant at 1%, *:significant at 5%.

Table 5
Sign and Size Asymmetric Effects on Output, Consumption, and Investment (4 Lags)

	Output		Consumption		Investment	
	No FE	FE	No FE	FE	No FE	FE
$\sum_i \tilde{\beta}_i^+$	.0467	.0025	.0660	.0302	.0228	-.0501
	[2.750]	[0.006]	[3.688]	[0.648]	[0.056]	[0.150]
$\sum_i \tilde{\beta}_i^-$	.3124**	.4641**	.2996**	.3809**	.7795**	.6683**
	[45.31]	[65.21]	[39.78]	[35.09]	[14.82]	[8.780]
$\sum_i \tilde{\beta}_i^{size(+)}$	-.0025	.0226	-.0223	-.0065	.0223	.0473
	[0.012]	[1.128]	[1.073]	[0.078]	[0.113]	[0.411]
$\sum_i \tilde{\beta}_i^{size(-)}$	-.7911*	-1.459**	-1.112**	-1.594**	-2.334	-1.633
	[4.578]	[11.15]	[8.602]	[10.15]	[2.671]	[0.821]
χ^2 -Tests						
Null: $\tilde{\beta}_i^+ = 0, \forall i$	14.36*	7.22	10.26	9.80	12.35*	4.55
Null: $\tilde{\beta}_i^- = 0, \forall i$	87.91**	119.9**	55.87**	67.22**	25.21**	23.04**
Null: $\sum_i \tilde{\beta}_i^- = \sum_i \tilde{\beta}_i^+$	22.98**	37.80*	18.26**	17.89**	10.58**	5.90*
Null: $\tilde{\beta}_i^{size(+)} = 0, \forall i$	7.31	4.86	6.00	5.80	6.65	2.87
Null: $\tilde{\beta}_i^{size(-)} = 0, \forall i$	23.27**	27.83**	14.48*	13.66*	3.82	2.54
Null: $\sum_i \tilde{\beta}_i^{size(-)} = \sum_i \tilde{\beta}_i^{size(+)}$	4.77*	11.48**	8.49**	9.98**	2.77	0.86

Notes: Joint estimation of equations (1) and (2) with Maximum Likelihood. "FE" denotes Fixed Effects. χ^2 values for the null hypothesis of statistical insignificance in square brackets []. **:significant at 1%, *:significant at 5%.

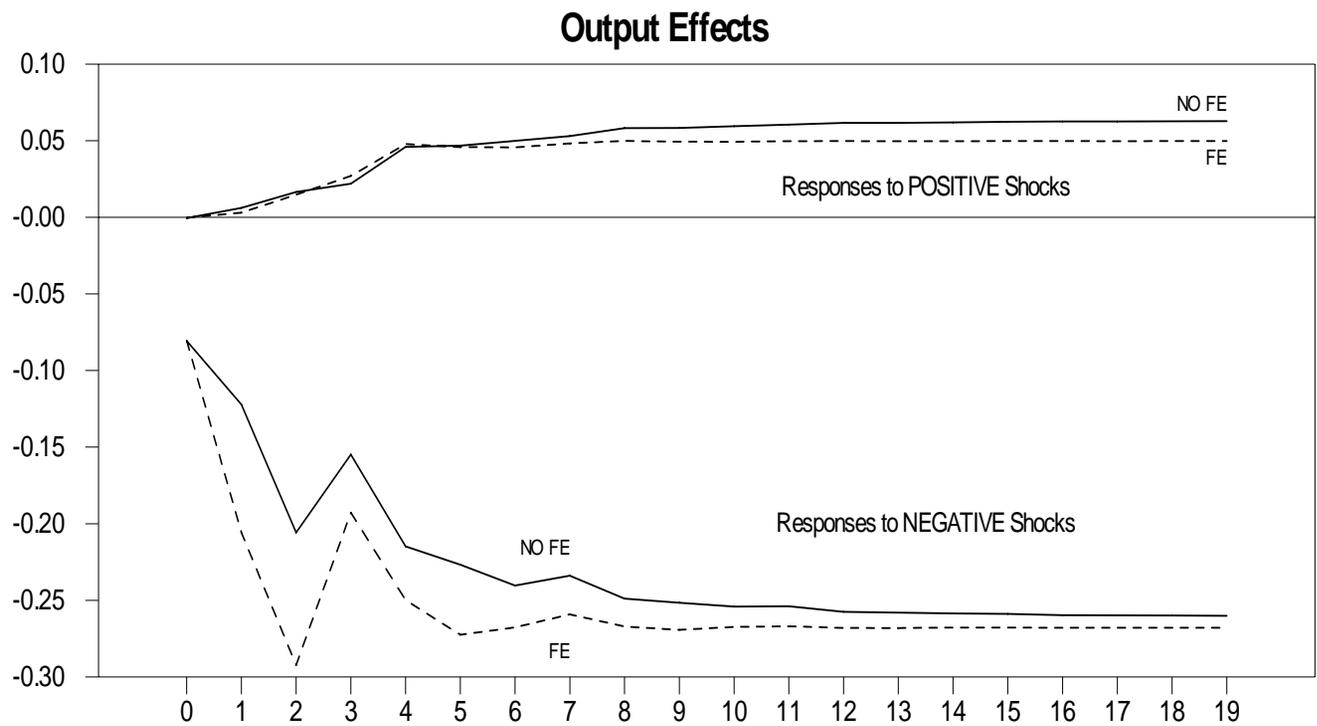


Figure 1

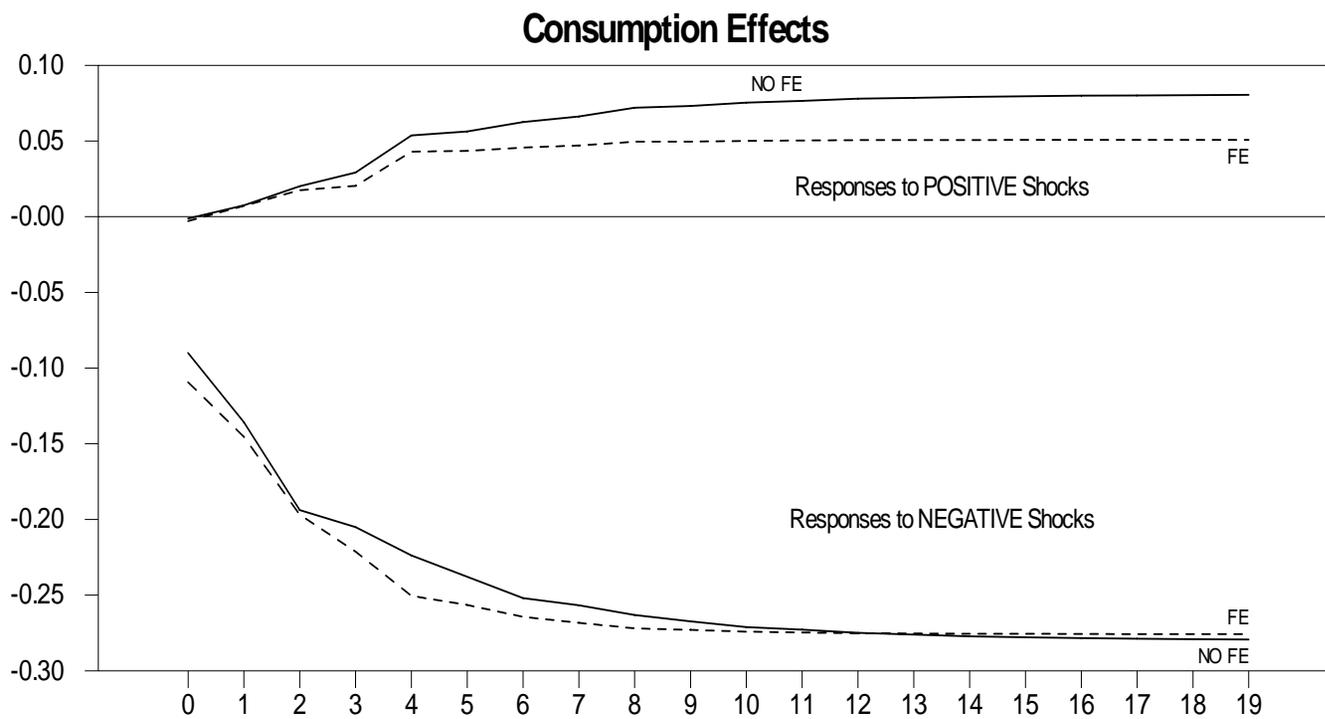


Figure 2

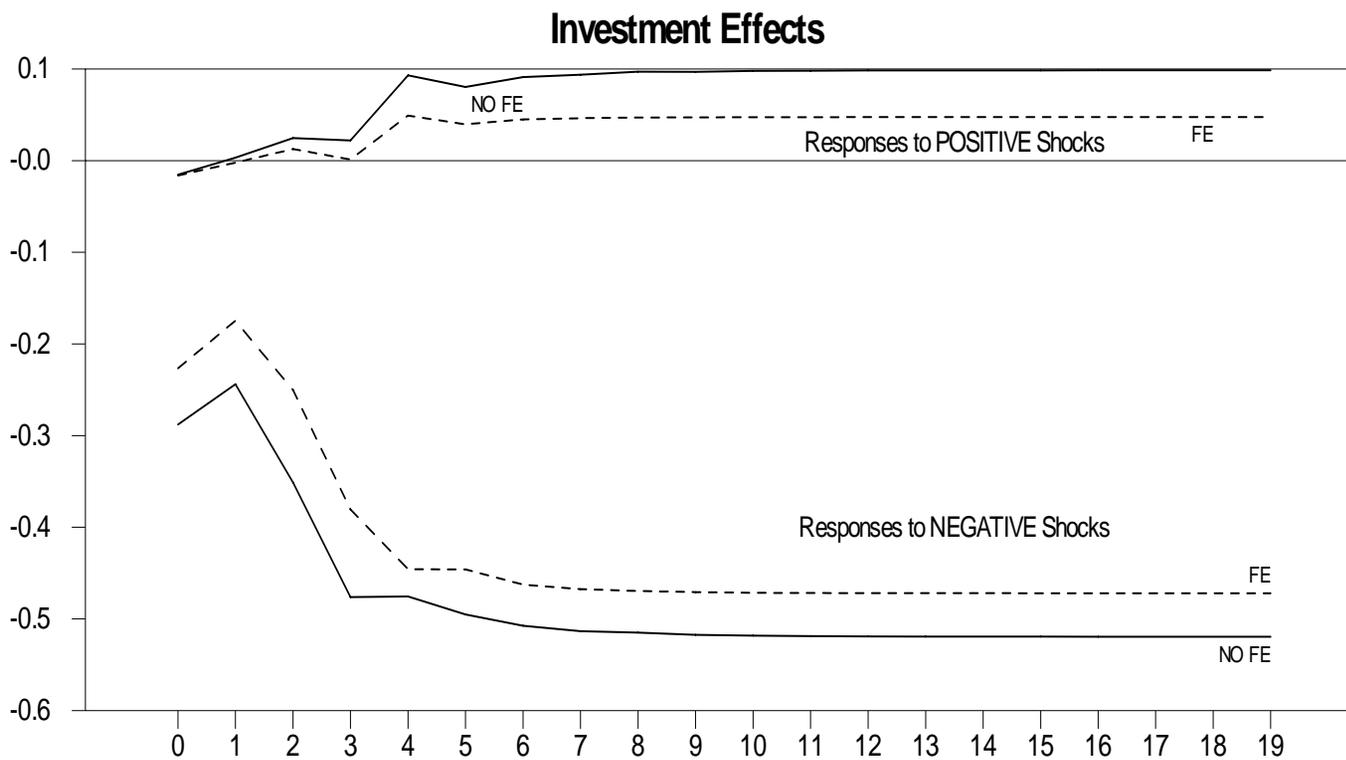


Figure 3

Notes:

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I wish to thank participants at the 2006 Illinois Economic Association Conference and the 2007 Athenian Policy Forum/Loyola University conference for helpful comments and suggestions. Errors and omissions remain mine.

¹ See Cover (1992), Karras (1996a, 1996b).

² This literature is vast. See Florio (2004) for a recent survey. Recent contributions that show some of the variety of monetary asymmetries that have been considered are Sensier, Osborn, and Ocal (2002), Ravn and Sola (2004), Bruinshoofd and Candelon (2005), and Lo and Piger (2005).

³ Alternative metrics include joint statistical significance, as well as the implied impulse response coefficients. All of these are examined formally in the next section.

⁴ Note that “pushing on a string”, a special case of the traditional asymmetry, would predict $\sum_i \beta_i^- > \sum_i \beta_i^+ = 0$.

⁵ Specifically, the error terms are modeled as $u_{j,t}^m = f_j^m + z_{j,t}^m$, $u_{j,t}^r = f_j^r + z_{j,t}^r$, and $u_{j,t}^x = f_j^x + z_{j,t}^x$, where the f_j^m 's, f_j^r 's, and f_j^x 's are the fixed effects, and $z_{j,t}^m$, $z_{j,t}^r$, and $z_{j,t}^x$ are i.i.d. (see Judge et. al., 1985).

⁶ Various other lag lengths were also tried, but did not alter the basic results.

Inflation Control and Banking Systems: The Case of Tunisia

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Abstract

Tunisia is a developing country with embryonic bank regulations and a central bank that succeeded in achieving and keeping a low inflation rate using mainly controls on credit, interest rates and capital flows and the exchange rate. Removing controls and moving to a full fledged inflation control monetary policy requires market determined interest rates and withdrawing the current policy of implicit deposit insurance. This shift in the use of instruments might destabilize economic activity. I argue in this paper that this need not be the case. I show that Tunisia does not have appropriate institutions for appropriate banking regulations and transparent monetary policy but it has some well performing banks in terms of profit rates and most banks are profitable. Using panel data on Tunisian and Turkish banks, I show that banks that have low profit rates are those that have poorer management. Thus, the creation of appropriate institutions and laws would force delinquent banks to improve their governance and probably enable the central bank of Tunisia to adopt an open inflation control policy.

Introduction.

The central bank of Tunisia (BCT) has brought down inflation from over 10% in the late nineteen eighties to two and half percent in 2005. Yet, its monetary policy seems to have no clear objective and Tunisia's financial system is frail and fragile. In 1993, The government amended the law that created BCT to add among other things, "The Central Bank (*BCT*) general assignment is to defend the internal and the external value of the national currency and preserve its stability". Furthermore, according to the Economic Intelligence Unit of the Economist, "The banking system of Tunisia remains inefficient, state-dominated and burdened by nonperforming loans (NPLs)". The credit rating agency Maghreb Fitch concurs.¹ Yet the Tunisian economy seems to have withstood the pressures of such a significant reduction of the inflation rate apparently without incurring significant costs in terms of growth since its GDP continued to grow at a rate no less than 3%. The only perceived cost was the teetering on the verge of insolvency of a number of financial institutions but their conditions has always been precarious.

BCT succeeded in achieving and keeping a low inflation rate using mainly controls on credit, interest rates and capital flows and the exchange rate. Removing controls and adopting a full fledged inflation control monetary policy requires credibility, transparency and independence of the central bank. It also requires a healthy financial system with an appropriate regulatory framework. Otherwise, the policy might destabilize economic activity. I argue in this paper that this need not be the case for Tunisia. I show that Tunisia does not have appropriate institutions for appropriate banking regulations and transparent monetary policy. It has some relatively well performing banks in terms of profit rates and many banks are profitable except that they don't hold adequate provisions for non performing loans. To put the analysis into perspective I compare the performance

of the Tunisian banking system and its financial regulations to those of Morocco and Turkey. Using panel data on Tunisian and Turkish banks, I show that banks that have low profit rates are those that have poorer management. The final section of this paper draws the implication for Tunisia's monetary policy and its financial regulation framework.

Central Banks with Multiple Objectives

Until recently, the Moroccan, Tunisian and Turkish governments shared a common view about the role of the financial system. The central bank and the banking system constitute virtually the whole financial system of the country and they are under the direct and tight control of the government. For long years, the government of each country maintained a tight grip on its financial system. Although each one of the three governments introduced many reforms during the last ten years, no one of them is ready yet to release its hold because control of the financial sector was and still is one of the pillars of their respective economic development strategies. This strategy calls for the use of monetary policy and the financial system as an essential tool of economic development both for the collection of savings and the distribution of credit at the right price, in the right amounts, and at the right time in order to insure that priority sectors reach their output targets.

Central Bank of Tunisia: BCT

The Tunisian government created BCT in 1958 by Law 58-90. As article 6 stipulates, the government retains full ownership of the bank. That law, as occasionally amended, provides BCT with extensive powers to control money supply and credit and to supervise the financial system of Tunisia, including all banks. The law leaves the means of control and evaluation of BCT's performance unspecified.

Article 33 of Tunisian law 58-90, as amended in early 2002, states that the general mission of BCT is to "defend the value of the (national) currency and insure its stability". On the other hand, article 34 of the same law requires BCT to support the government's economic policy. Often, the latter policy is in conflict with the vague notion of a stable currency and there is no clear way of resolving the conflict.

Central Bank of Morocco, Bank Al Maghrib, (BM)

The government of Morocco created BM in 1959 by law 1.59.233 and retains full ownership of the bank. Like for BCT, article 5 of the law states the objectives of BM. The first objective is to help the government achieve its social and economic objectives. A second objective is to insure the stability of the national currency and its convertibility. A third objective is to stabilize the money market. Currently, Morocco has a pegged exchange rate. Thus, neither the government can force nor BM can choose an inflation rate independently from that of its major trade partner, the European Union. Furthermore, article 21 of law 1.59.233 requires BM to maintain a stock of gold or foreign exchange convertible into gold equivalent to one ninth of the total amount of national currency in circulation. Thus, BM is a sort of currency board. Without additional instruments of control, BM would not be able to achieve all three objectives at the same time.

Central bank of Turkey CBRT, ambiguity of purpose

The government of Turkey carried out a major overhaul of the statute of the Central Bank of the Republic of Turkey (CBRT) in 1970 and promulgated the corresponding Law

1211. The law has undergone many amendments the latest and major one of them is the 2001 amendment. Before this amendment, CBRT was an organ of the government's treasury department.

Just like with BCT and BM, the government of Turkey has assigned CBRT many objectives. Article 4 of Law 1211 assigns CBRT two objectives: maintain price stability and support government's policies of growth and employment. The law establishes the priority of the first objective over the second one. CBRT should strive to achieve the second objective as long as it is not in conflict with the first objective. The same article goes on to establish yet another objective for CBRT. It has the financial duty to carry out open market operations to protect the domestic and international value of the Turkish Lira. It has the duty to establish jointly with the government the exchange rate policy to determine the parity of the Lira in terms of gold and other currencies. Article 53 of Law 1211 empowers CBRT to determine the value of the Turkish Lira. The second part of the same article 4 of the Turkish Law 1211 charges the CBRT with another mandate that of determining jointly with the government the target inflation rate.

These objectives leave little room for the bank to conduct any independent monetary policy forcing it to use one instrument to achieve multiple objectives. Clearly, if CBRT is to protect the domestic value of the national currency, it cannot protect its international value since the latter depends also on the monetary and economic policy of other countries. Neither CBRT nor the Turkish government has any control over the policies of these countries.

Conclusion

The central banks of many developed countries do have multiple objectives but inflation control is the overriding objective and the other objectives are derivatives of output and employment stabilization not growth. There is no conflict between growth and inflation control if the latter is conceived to reduce price volatility and improve transparency of monetary policy. The distinguishing feature of the statutes of the central banks of Tunisia and Morocco is the possibility for them often mandated by their respective governments to use their power of money creation to engineer additional forced savings.

Structure of Governance of the central banks

Different historical experiences in the three countries are probably responsible for significant differences in the governance structure of the three central banks. First, I describe the three structures, and then I draw the implications for monetary policy in the three countries.

Governance structure of BCT (Tunisia)

A government decree appoints the governor of BCT who is responsible for the management of all affairs of the bank. The law allows for a council (Conseil d'Administration) that assists the governor. The government appoints by decree all ten members of the council of governors. Six of the council members are government bureaucrats. These include the governor and the vice governors. The other four are chosen for their professional experience. A council member cannot exercise legislative functions or be simultaneously a member of government. During their tenure and additional three years thereafter, the governor and the vice governor cannot offer any of

their services to any private institution without an explicit permission of the prime minister. All other eight members of the council receive no pecuniary remuneration for the services rendered to the bank. The distribution of the voting power and the lack of remuneration of most of the council members guarantee government control over the council's decisions. Tunisian law 58-90 requires the council members to meet at least once every month. Among the business they transact, they fix the interest rates that BCT charges in connection with all its operations taking into account the economic and monetary situation of the country. Although there are safeguards to prevent corruption, there are no safeguards to prevent political or government interference in the formulation and conduct of monetary policy, rendering monetary policy opaque.

Governance structure of BM (Morocco)

Like in the case of BCT, a governor appointed by the government and assisted by a vice governor and a thirteen member (including the governor and vice governor) council is responsible for the management of all affairs of the bank. The government appoints the vice governor and every member of the council. Six members of the council are bureaucrats representing different departments of the government and five members are non bureaucrats known for their professional expertise in monetary, economic and financial matters. The latter cannot exercise simultaneously functions of any kind in any credit institution. Like in Tunisia the distribution of powers favors the government and cast a serious doubt on the independence of BM. Among its mandates, the council fixes the basic rate of discounting commercial papers by BM and discusses all matters of BM policy, including monetary policy,

The Moroccan banking law 1-93-147 created the committee of credit establishments and a national council of money and savings called "Conseil National de Monnaie et d'Epargne". The committee of credit establishments includes representatives from all banks and other financial institutions. The committee advises BM on technical issues relating to monetary policy. The law requires BM to consult the council of money and savings in matters relating to the conception and conduct of monetary and credit policy. In other words, BM must take into consideration when conducting its monetary policy the opinion of other agencies regarding the effects of the latter policy on interest rates and other economic variables. This requirement hinders monetary policy and ties the hands of the central bank. As in Tunisia, there are no safeguards to insure the independence of the BM. Political interference in the formulation and conduct of monetary policy is legitimized.

Governance structure of CBRT (Turkey)

In 2001, following a serious economic crisis, the government introduced serious amendments of the statute of the central bank of Turkey. These amendments set CBRT apart from the other two central banks. They grant CBRT autonomy to carry out its duties and the central bank is now a joint stock company. The government retains 51% ownership and the remainder of the bank shares is divided among three groups of institutions and physical persons. National (government owned) banks have a right to own an undisclosed number of shares. Privately owned banks have a right to own a maximum of 15000 out of a total of 250 000 shares. Certain national banks, commercial institutions and physical persons have the right to own the rest.

A board composed of six members and the governor of CBRT helps the governor manage the bank. Members of the board cannot engage in trade or own shares of financial and non-financial institutions. They shall not participate or vote on credit issues concerning themselves or other people related to them. The board is empowered to discuss monetary policy issues.

The general assembly approves the financial statement of the bank and elects the six members of the board of governors. Elected board members cannot hold any office in any other financial or non-financial institution, they cannot engage in trade or become shareholder of any financial or non-financial institution and their term of office is limited to three years but they can be reelected. Members of the board cannot participate or cast votes on decisions involving credit to themselves.² The board shall hold at least one meeting a month. The board's mandate includes decisions about monetary policy and its instruments. It also establishes regulations regarding discount rates reserve requirements and management of gold and foreign exchange reserves. It also makes decisions about lending of last resort.

Turkish law 1211 also created the Monetary Policy Committee. The committee members are bureaucrats except for one outside member appointed by decree.³ The committee is responsible for elaborating a monetary policy the objective of which is to maintain price stability and it is responsible for determining, *jointly with the government*, an inflation rate target consistent with the chosen monetary policy. Finally, it is responsible for taking appropriate actions to protect the domestic and international value of the Turkish Lira and practically establish a fixed exchange rate of the lira against gold and other currencies.

Conclusion

Unlike in Tunisia, the monetary policy in Morocco and Turkey is the responsibility of two different institutions: the board of governors of the central bank and the Monetary Policy Committee. This feature helps to make the central bank more independent and more accountable in Turkey and less accountable and less independent in Tunisia from government interference. However, it risks paralyzing the monetary policy of the country.

Instruments of Monetary policy

As we have seen earlier, each one of the three banks has multiple objectives. In order to serve all objectives at the same time, if necessary, the banking laws in every country provide its central bank with a variety of instruments.

Versatility of objectives require Versatility of Instruments

The instruments available to the three banks vary in detail but they are all meant to help each one of them meet its multitude of objectives.

Central Bank of Tunisia

The council decides the discount rate, the interest rate applicable to purchase and resale of securities and the conditions of eligibility of securities or commercial paper for discounting or for purchase and resale. Within maximum amounts it fixes itself, it can discount and accept securities for purchase and resale (*prise en pension*). The council can provide a line of credit on the security of government bonds, the maturity of which does not exceed three months. The lines of credit are renewable for a maximum of two times.⁴

In order to support the economic policy of the government, Tunisian law 58-90 allows BCT to discount securities issued by private or public enterprises and individuals. BCT can also make three months loans extendible to a maximum of nine months on collateral of securities traded on the Tunis Stock Exchange (Tustex) or issued by government. BCT can also make advances to banks on the security of securities traded on Tustex but not government securities. Thus, in Tunisia, money is both inside and outside money.

To control the distribution of credit and to achieve its goals of monetary policy and credit distribution article 41 of Law 58-90 allows BCT to discount private commercial paper that banks and certain credit institutions hold. While BCT cannot go bankrupt since it can print money at will, there is no general criteria established beforehand to prevent BCE from discounting worthless paper. The law endows BCT with a council empowered to specify the conditions of admissibility for discount of non government securities but the process is still ad-hoc and shrouded in secrecy. I shall discuss later the financial conditions of all banks, the shares of which constitute a large proportion of securities traded on the Tustex, to show that securities traded on the exchange could technically be worthless paper.

To the credit of the legislator, Tunisian Law 58-90 allows BCT to require its borrowers to post margins in proportion to the deterioration of the values of the securities that serve as collateral. Since the Tunisian stock market is illiquid and thin, the issuer of the collateral security could go bankrupt before the security becomes worthless. Accordingly, there is little that BCT can do when the borrower is cashless or technically or legally insolvent. Clearly, loans to private businesses and the purchase of non government securities are not necessary for the achievement of BCT's general mission given that the central bank has full control over an existing money market. Such practices expose BCT to undue risk and force it to continue to exercise quantitative control on the amount and distribution of total credit in the country. The two requirements are a consequence of the perpetuation of the government's conviction that economic development requires it to have full control of the financial system. In its country report for Tunisia,⁵ IMF (2006) confirms the existence of a strict and indirect method that BCT uses to control credit growth, credit distribution and inflation.

There is also a risk in discounting government bonds or granting credit lines secured by government bonds. This is the risk of government addiction to consider money printing as source of income leading to galloping inflation, as it happened in Turkey between 1960 and 2000. BCT's statute provides for one way to avoid this risk since it specifies that BCT has the responsibility to maintain the inflation rate within a certain fixed band and to make this its sole objective. Given that BCT's statute assigns it a multitude of objectives, concern about conflicts among those objectives made it necessary to add some safeguards. Articles 48 and 50 of Tunisian law 58-90 specify that the maximum total amount of discounting and line of credit granted by BCT on the security of government bonds is 10% of government revenues during the preceding year. Furthermore, BCT is empowered to grant advances to the government treasury for a total period not exceeding 240 days and a total amount not exceeding 5% of government revenues during the preceding year. The government added these safeguards recently, a clear indication of the versatility of the instruments made available to BCT to match the versatility of the objectives assigned to it. However, there are no safeguards against excessive lending on the security of private securities. This is important because the Turkish economy did fall

in this trap. Right before the 2001 economic crisis in Turkey, the government decided not to borrow anymore from the central bank and turned around and borrowed from the private sector including banks. All the same, inflation continued unchecked.

Central bank of Morocco

BM marshals also a variety of instruments. It can discount, accept for purchase and resale (*prise en pension*) government securities and commercial paper. It can make loans or provide a line of credit on the security of commercial paper or government securities. Articles 28 and 29 of the Moroccan law 1-59-233 requires that the commercial papers involved must mature in less than 120 days from the date BM acquires them and bear the signatures of three (two for agricultural or industrial commercial paper) well known and solvent physical or moral persons. Furthermore, Article 31 of the Moroccan Law 1.59.233 allows it to discount medium term commercial paper maturing in less than five years when used to develop means of production, equipment or exports and must bear the guarantee of three moral or physical persons. Clearly, the Moroccan legislator gives priority to economic development over inflation control.

As stated above, BM operates partially as a currency board. The government is thus, aware of the risk of its addiction to inflationary finance. Accordingly, although Moroccan law 1-59-233 allows BM to provide a line of credit to the government, its article 35 restricts the maximum amount to 10% of government revenues in the previous year. Unlike the case for the Tunisian central bank, BM can provide other credit facilities to the government sanctioned by a decree.

Central Bank of Turkey

The Turkish economy experienced serious inflation in the nineteen eighties and nineties that culminated in the 2001 crisis. Thus, it is not surprising that, under the prodding of the World Bank and IMF, the government amended the statutes of the CBRT to protect the central bank from its addiction to force CBRT to finance its deficits with money printing. The amended Turkish law 1211 is much tighter relative to what it was and relative to the Moroccan and Tunisian laws. Article 45 of Turkish law 1211 empowers CBRT to discount commercial bills if they bear the signatures of three solvent persons and mature in less than 120 days. Article 52 of law 1211 empowers CBRT to use open market operations to implement its monetary policy. The law does not restrict the securities that are object of open market operations to government type securities but they must be low risk and liquid. Furthermore, CRBT cannot use open market operations for purposes other than to conduct its monetary policy. Thus, Article 56 of Turkish law 1211 explicitly prohibits CRBT from providing liquidity to the government treasury or any other public or private institutions. This article was meant to enable CBRT to refuse financing government budget deficits and fuel inflation as it did until 2001. In addition to open market operations, Turkish law 1211 assigns CBRT the role of lender of last resort for financial institutions that experience serious liquidity problems.

Analysis

Both the Tunisian and Moroccan governments have sought to encourage economic development by allowing their central banks to offer credit facilities to owners of government bonds and private businesses. The currency board aspect of BM and the

requirement of three guarantors imposed on admissible commercial paper operate as a safeguard against inflationary finance addictions of government in Morocco in order to counter the aggressive development latitude that the statute of BM allows it. These safeguards are not present in the statute of the Tunisian central bank but the latter contains absolute limits on the credit facilities BCT can offer to government and government bond owners. The fact remains, however, the two central banks do not have an irrevocable responsibility to keep the inflation rate within a pre-specified band and this responsibility is not their top priority.

The independence of the central bank of Turkey is better protected than that of the central bank of Tunisia. The amended statute of the Turkish bank shows clearly the dangers of setting multiple objectives for the central bank and the necessity to sever the relationship between the central bank and the government. It also shows the necessity to limit the number of objectives assigned to the central bank to a single objective of inflation control. Turkish law 1211 prohibits the central bank from using the instrument of open market operations for purposes other than the execution of its monetary policy. The statutes of the Tunisian and, especially, the Moroccan central banks continue to force them to promote economic development directly through credit. CBRT is still prone to use the discounting of commercial paper to promote economic development at the expense of inflation control, although the requirement of three signatures helps somewhat to reduce the danger of using the available instruments for purposes other than the execution of its monetary policy.

The strict prohibition imposed by Turkish law 1211 not to use open market operations for purposes other than the execution of its monetary policy is partly due to the lessons learned from the serious 2001 crisis in Turkey and partly due to the endeavor of the Turkish government to win accession to membership in the EU. Although the inflation record of Turkey before 2001 is much worse than that of Tunisia and Morocco, article 56 of Turkish law 1211 has helped CBRT to bring down the inflation rate from 80% in 1996 to 9% in 2006. The strict limits on the use of open market operation have strengthened the credulity of its monetary policy, especially in view of the fact that the government has allowed free capital flows.

Oversight, Transparency and Accountability

All three countries have inherited a central bank that is responsible only to the government. The government owned the central bank and considered it as a cookie jar and an instrument of fiscal policy and economic development. The government of Turkey used to treat openly the growth of money supply as a source of revenue to cover its budget deficits. The central bank was just a department of the ministry of finance. The Tunisian and Moroccan governments had the same attitude towards their respective central banks and they have showed a certain respect for the quantity theory. However, they have kept the central bank as their undisputed fiefdom, although in Morocco there is a legal barrier consisting of a partial currency board arrangement that prevented the government from openly raping the central bank. Accordingly, the three governments have reserved for themselves the power of management and oversight of central banks. There are auditors but their role was to check the accounting practices of the central banks to make sure that they are profitable.

The amount of information provided by the central banks of all three countries to the

public concerning monetary policy was meager and the accountability of the central bank was limited to the publication of comments on economic growth in various sectors of the economy and on inflation supported by time series data about monetary aggregates including interest rates and exchange rates. The central bank was responsible for nothing. As we shall see presently, things have changed dramatically in Turkey, where the rape of monetary policy was the most flagrant, after a taste of a very serious economic crisis in 2001 and the announcement by the European Union of its acceptance of the candidacy of Turkey to membership of the union. During the last decade, there was also a change in Morocco and Tunisia but their respective governments have clung to their self-given rights of complete control and lack of accountability to the public in the matter of monetary policy.

Central Bank of Tunisia

Tunisian law 58-90 requires that the council publishes a short statement every month. Currently, the council's statement describes the growth rates of economic activity in the rest of the world and in the key sectors of the Tunisian economy, and the behavior of the major components of the balance of trade during the previous three to six months. It also describes the behavior of the basic monetary aggregates, the behavior of the exchange rate of the Tunisian Dinar with respect to the Euro and the US dollar, and the behavior of the inflation rate during the previous three to six months period. It uses these facts to justify at the end of the statement its decision about the interest rate that BCT will enforce in the money market during the following month. BCT calls this rate the "guiding rate" (taux directeur). For each of the twelve months between August 2004 and August 2005, the council maintained unchanged the "guiding rate" and justified its actions every time almost with the same terse statement.

There is no clear evidence of the accountability of BCT in terms of achieving the objectives assigned to it by Tunisian law 58-90. Tunisian law 58-90 requires the governor of BCT to report to the President of the country instead of parliament. The governor of BCT does make annual reports to the president of the republic in which he/she describes the achievements of the Tunisian economy, the development of inflation, the evolution of the monetary aggregates, the balance of payments, and the balance sheet and profit realized by the central bank during the previous year.⁶

The auditor general monitors all BCT affairs and has the power to make propositions to the council. Every year, the auditor general writes an annual report on the conduct of the bank's affairs to the minister of finance. These routine auditing procedures are necessary but not sufficient for the conduct of an efficient monetary policy and they do not help much to anchor expectations. There is no high frequency periodic accountability to the public concerning the success or failure of the central bank to achieve its assigned goals nor a description of actions the **BCT** intends to take to achieve those goals in the future.

Clearly, there is a vague notion of accountability that emphasizes responsible management of the affairs of the central bank as a concern or an institution. There are no explicit norms to measure the performance in terms of achievements of the central bank's monetary policy goals.

Central bank of Morocco

The oversight process of BM is slightly different from that of BCT. The council meets every three months and records its minutes but the Moroccan law 59-233 does not require it to publish a report about its monetary policy. However, BM publishes on its website a summary of the council's discussions during its quarterly meeting with vague statements about its future intentions. An interesting but weak oversight of the conduct of monetary policy by BM is the requirement of the Moroccan law that the government appoints an officer that oversees the management of the affairs of BM. The officer is an ex-officio member of the council and he could force a second reading of any decision made by the council but he has no vote. Although, the functions of the officer seem to be concerned with accounting books and management of the daily affairs of BM, his temporary veto allows him to exercise some power of persuasion as to the conduct of monetary policy.⁷ Like in the case of BCT, the problem remains that there is no accountability to the public about the degree of success of BM in the achievement of its assigned goals.

Central bank of Turkey

According to Turkish law 1211, the monetary policy committee, an organ of CBRT, is responsible for preparing and providing to the government and the public, at specified time intervals, information about its monetary policy targets and the implementation of its monetary policy. Article 39 requires CBRT to announce from time to time the rates of discount and the conditions of open market policy. Furthermore, CBRT is responsible for preparing reports about its monetary policy targets and the actions taken to achieve those targets and for publishing them at times left to its discretion. Accordingly, CBRT publishes on its website a quarterly monetary policy report.⁸

In 2001, the government decided that CBRT must start a transition to an inflation targeting monetary policy. The transition period lasted until the end of 2005. On the first day of January 2006, CBRT started a monetary policy of inflation targeting. Accordingly, the Monetary Policy Committee is now the official decision maker and executive body of monetary policy. The new monetary policy must specify a three year target plan for the end of the year inflation rate. The target plan for the first three years is 5% for 2006, 4% for 2007 and 4% for 2008.

Along with its new status, the Monetary Policy Committee has now acquired the obligation to meet every month to consider whether the inflation rate is within a four percentage band centered around the yearly target. If the inflation rate is outside of the band, the committee must provide an explanation, specify the actions the central bank must take and a deadline to bring the inflation rate back inside the band, and publish the following day the inflation report. The inflation report must contain the explanation of the inflation rate movements, the deadline and the actions to be taken to bring it back within the band. The governor of CBRT must submit one report in April and one in October to the Council of Ministers about the monetary policy followed by CBRT and the policy it is planning to follow in the future. In case CBRT fails to achieve its inflation targets at the pre-specified dates, CBRT must disclose to the public the reasons for the failure and the remedial actions it is planning to take.

Another significant change that was a corollary of the shift to an inflation targeting policy is the jettisoning of the fixed exchange rate of the Turkish Lira and the adoption of a flexible exchange rate. This change removed from CBRT the burden of maintaining an

adequate stock of foreign exchange reserves and required CBRT to justify its actions on the foreign exchange market to convince the public that those actions are not meant to enforce any particular level of the exchange rate.

Analysis

Clearly, unlike the case for BCT and BM, there is now a serious attempt by CBRT in collaboration with the government to promote transparency of its monetary policy and its accountability in terms of achieving its assigned objective of inflation control.⁹ In contrast, there is a lack of commitment in Tunisia to the transparency of the monetary policy and to the accountability of the central bank of Tunisia. To make up for this lack, the government does not allow free capital mobility and maintains control over the exchange rate.

Implications for transparency and independence

The Moroccan and Tunisian monetary authorities in charge of monetary policy report to the government not to the parliament about the progress of monetary policy. They do not have to explain to the public their successes or failures to achieve their targets. In contrast, the Turkish monetary authority reports to the public as well. It must explain its successes and failures and the actions that it intends to take to correct failures. Another distinctive feature of the central bank of Turkey is that it is responsible for the management of its affairs to the general assembly of its shareholders. Although the government retains a controlling interest, it is clear that the management of the central bank of Turkey is more accountable than those of the central banks of Tunisia and Morocco. This makes the central bank of Turkey probably independent and under proper supervision. This sea change occurred after the Turkish government gave up its old approach to economic development and recognized officially that it is better to assign the central bank the unique objective of inflation control. Accordingly, after it had allowed earlier for free capital mobility, the Turkish government had to give up control of the exchange rate and allow its currency to float.

The tighter accountability framework of the Turkish central bank is now consistent with divesting itself of many other responsibilities allowing it to use short term interest rates to achieve its inflation control policy. It took a major economic crisis in 2001 to convince the government that a developing country needs a credible central bank with a single objective of inflation control. In contrast, the Moroccan and Tunisian central banks continue to have multiple objectives and they lack independence. The recently added restriction on the maximum rate at which the central banks of all three countries add to their holdings of government securities in a given year helps to keep inflation under control. However, it is not sufficient to insure the independence of the central banks or the credibility of their monetary policy as long as their statutes continue to assign them multiple objectives. Thus, it is not surprising that the central banks of Morocco and Tunisia continue to use quantitative controls on credit and its distribution; they have no clear performance indicator and they provide no serious justification of the setting of their “guiding rates”. These facts compromise the independence of BCT and its credibility and prevent the government of Morocco and Tunisia from lifting controls on capital flows and allowing their currencies to float.

Supervision of Banking Systems

The banking system is the backbone of the financial system in all three countries. Until recently, nationally owned banks dominated the banking system in all three countries. However, different reform programs, including efforts to privatize government owned banks, have produced differences in the structures and supervision of banking systems across the three countries. In particular, its desire to become a member of the European Union, forced the Turkish government to introduce and implement significant reforms of its banking law.

Organization and banking supervision

The lack of independence of central banks and the extensive government ownership and control of credit institutions should be enough to convince governments to allow an independent agency to exercise the functions of supervision and oversight. The central banks have unlimited instantaneous access to information about the financial parameters of any credit institutions and dispose of considerable power of oversight. The trouble is that this awesome power is of little use when the judge is related to the defendant. These powers in Morocco and Tunisia violate certain core principles of the Basle Committee on Banking Supervision. The situation is different in Turkey after the government learned the hard way the importance of an independent central bank and an independent agency responsible for supervision and oversight.

Tunisian Banking system

In 2005, there were fourteen commercial banks and eight development banks in Tunisia. In July 2001, the government introduced a new banking law, Law 2001-65. The law was probably intended to strengthen bank supervision and help banks deal with the new economic and regulatory environment. Since 1958, BCT and the ministry of finance in Tunisia have controlled on behalf of the government almost every aspect of bank credit and management. Prior to 1995, banks needed BCT's approval for all their loans that are larger than a certain threshold amount. BCT also fixed all interest rates. In addition, the old bank law used to require banks to invest various proportions of their deposits in support of economic activity in various sectors that the government designated priority sectors. The old banking law required also banks to hold also a certain proportion of deposits in long term government bonds. Finally, the government held majority interest in most banks and controlled entry into the banking sector. The gradual liberalization of economic activity since 1985 imposed the necessity for the government to free banks from such requirements. The new law removed most of those restrictions and replaced them by new ones but the government maintained a controlling interest in many banks and BCT still controls the distribution of credit, IMF (2006).

One of the goals from imposing the new restrictions was to improve the quality of management of banks and to insure that the balance sheets of banks satisfy some of the core principles of the Basle Committee on Banking Supervision. Article 12 of the Tunisian banking law 2001-65 maintained the requirement that every bank must be a joint stock company. It requires a bank to have a paid in capital of no less than TND 10 millions or the equivalent of approximately US\$ 7.6 millions. The Basle Committee on Banking Supervision suggests that the minimum adequate paid in capital may be larger depending on the degree of risk of a bank's assets. The same article of the Tunisian banking law allows the minister of finance the discretion to require larger paid in capital

than this absolute minimum depending on the type of activity pursued by the bank. The Basle Committee on Banking Supervision invests an independent agency with the supervisory or licensing powers. However, Tunisian Law 2001-65 invests the minister of finance with the decision of fixing the minimum capital requirement. Since government in Tunisia has a vested interest in banks, the discretionary decision is arbitrary and allows the minister of finance the right to bloc new entry, stifle competition and cause an inefficient allocation of resources.

Tunisian Law 2001-65 requires also the management of every bank to maintain the value of its assets after deflating them by appropriate risk factors higher than the total value of its liabilities by an amount greater or equal to its minimum paid in capital. Article 21 of the law prohibits a bank from investing more than 10% of own funds to acquire interest in the same non financial business. It prohibits a bank from owning directly and/or indirectly more than a 30% share of the capital of a non financial institution and of engaging in businesses other than banking. However, Article 21 allows a bank to own any share of the capital of another financial institution. Clearly, the goal of these restrictions is to enhance transparency, prudential management while allowing room for mergers among banks and other financial institutions, possibly at the expense of stifling competition. According to principle 5 of the Basle Committee on Banking Supervision, a merger or acquisition of any kind should be subject to approval by an independent supervisory body. Therefore, article 21 is not consistent with this principle and does not go far enough to insure transparency.

Article 21 of Law 2001-65 allows a bank's shareholders, its board of directors, and its managers to obtain credit from that bank subject to limitations that article 23 of the same law mandates BCT to set. Similarly to the Basle Committee on Banking Supervision, Law 2001-65 calls these individuals or institutions *connected individuals*. Article 29 seems to subject agreements between a bank and one or more of its connected individuals to approval by the general assembly of the bank. However, it is not clear whether the term agreement (convention) covers credit relationships. At any rate, the effects of such agreements may pull the bank down before the general assembly had a chance to discuss them let alone approve them. Principle 5 of the Basle Committee on Banking Supervision suggests that a bank's management should obtain clearance from the board of directors and an independent supervisory body before such agreements become effective. Again, Tunisian regulations of the financial sector fall short of reasonable, Basle type, transparency enhancing rules.

Currently (2005), BCT fixes the limit of three times of a bank's "own funds"¹⁰ on the total credit that the bank can grant to its shareholders, managers, administrators and their direct ascendants and descendants. BCT also sets the limit of five times of a bank's "own funds" on the total credit that the bank can grant to those of its borrowers the loans to each one of whom separately exceed in total five percent of the bank's own funds, Banque Centrale de Tunisie (2005.a). Furthermore, BCT requires that the ratio of a bank's "own funds" to a certain risk weighted average of its assets (solvency ratio) must be greater than or equal to eight per cent. In contrast, the Basle Committee on Banking Supervision suggests that 25% of its capital is the maximum that a bank can lend to a single borrowers or closely related borrowers without the prior approval of an independent supervisory body, Basle (1997). Undoubtedly, these regulations represent significant enhancements to the transparency and prudential management of banks

compared to the situation before 3001. However, the Tunisian economy could benefit more from bringing the regulations of the financial system in line with the recommendations of the Basle Committee.

Suppose that the credit granted by a bank to the business of one of those connected individuals represents three times the banks own funds and the business is teetering on insolvency. Clearly, that individual's business could pull the bank into bankruptcy and could have enough clout to convince the bank to continue rolling the loans to its business without creating adequate provision. Such is not an improbable realization since government is a majority owner in many large banks and there is a lack of transparency in the affairs of all financial and non financial institutions, World Bank (2003). This is probably the *raison d'être* of the much more stringent limits on borrowing suggested by the Basle agreement. This general lack of transparency was the cause of major financial crises in developing Japan prior to 1930, Moussa and Obata (2005). It is precisely for this reason that although BCT claims that the interest rates on all credit granted by banks is determined freely by banks, it continues to control credit indirectly and links all interest rates to the "Guiding rate", i.e. the rate that BCT enforces in the money market. It avoids changing the "Guiding rate" in order to get around the problem of lack of transparency and its consequences,.

Tunisian law 2001-65 invests BCT with the power to obtain all information about all aspects of the financial situation of any credit institution. BCT can request any credit institution to provide it with information on any of its activities or financial position. It can also demand to examine the books of any credit institution on the spot. It has the power to require an audit of a bank's books by an outside auditing firm. Furthermore, every credit institution must set up an internal auditing committee and a government auditor must certify the truthfulness of its accounts. The latter must inform BCT of any financial problems. If the financial situation of a bank is not satisfactory, BCT may require its board of governors to increase capital, stop paying dividends and/or build up provisions. Under pressure from the IMF, BCT forced some banks to stop paying dividends in 2004 to build up their provisions for non-performing loans, IMF (2006). These extraordinary powers granted to BCT should have insured that every credit institution is perfectly transparent and well managed. The percentage of non-performing loans of any bank should be negligible and/or that every bank has built up adequate provisions. As the following table shows, this is not the case for the largest government controlled bank, *Societe Tunisienne de Banques* and a privately controlled bank, Amen Bank. The problem is that the central bank is not independent of government and the government has controlling interest in many of the banks.

Bank	Non-performing loans in percentage of total loans	
	2003	2004
Societe Tunisienne de Banques	41.1	43
Banque Nationale Agricole	18	na
Banque de l'Habitat	15.53	14.9
Banque Internationale Arabe de Tunisie	16.7	16
Amen Bank	25	26.1

Source: Fitch Report 2005 and 2006

Moroccan Banking system

Three conglomerate banks dominate the privately owned component of the financial system. Thus, there is very little competition and transparency in the system, IMF, (2003). Private commercial banks are but three state controlled banks are not healthy. Demand deposits are not remunerated.

In Morocco, all credit institutions, including banks, must be joint stock companies. Banks are subject to oversight by the minister of finance and Bank Al Maghrib (BM). The minister of finance fixes the interest rate on loans and their duration in view of encouraging economic development and protecting depositors and borrowers. The government created the committee of credit establishments, which include banks. The minister of finance decides with the help of this committee the minimum required capital for each credit institution. The Moroccan banking law requires that a bank's balance sheet must also satisfy various other ratios between certain kinds of liabilities and assets. For example, the value of every bank's assets must exceed at every moment the value of its total liabilities by an amount greater or equal to its minimum paid in capital. The law also requires that a bank's balance sheet must satisfy other prudential rules. Contributions by management of shareowners to remedy a shortfall must not be offset by increases in the bank's liabilities. To avoid conflict of interest and improve transparency no executive member of a credit institution can also have management duties in any non-financial institution.

When BM discovers anomalies that might cause serious damage to the solvency of a bank, it must request the management to take appropriate actions and elaborate and implement a rescue plan to fix the problems. If the bank's problems do not get resolved within a reasonable period of time, BM may demand from shareholders who own more than 5% of the bank shares and all members of the board of directors of the bank to contribute the necessary financial support. If this is still insufficient to solve the bank's problems, BM has the power to appoint an external administrator to whom it will transfer all executive and management powers of the bank. In case the bank becomes insolvent, BM would initiate the bankruptcy procedures. All credit institutions must submit to a yearly independent outside auditing and publish their balance sheets. However, the external auditors are not liable for negligence.¹¹ The law requires BM to make spot checks on banks to protect depositors and the reputation of the banking industry. BM is the supervisory agency of banks in Morocco.

Like in Tunisia, the central bank of Morocco has an awesome power to prevent corruption but it can't operate at arms length since it is not independent, the government maintains a controlling interest in at least three large national banks and it determines interest rates. Furthermore, the Moroccan banking law vests the ministry of finance with the authority to make prudential rules and fix prudential ratios for banks. Although the intent of these rules is similar to that of the Basel core principles, they may not be effective as effective since it is the minister of finance an/or the central bank, which is not itself independent, that make the rules and enforce them.

Turkish banking system

In 2004, there were 58 banks in Turkey, twenty six of them are small private banks. There are three large state owned banks with total assets of each greater than €10 billion. All other banks are private. Four of the privately owned banks are large in the sense that each one has total assets greater than €10 billion.

During the last fifty years, Turkey's banking law has changed many times. The latest version of Turkey's banking law, Law 5411, was adopted on November 1, 2001. At least two institutions regulate and supervise the banking system: the Banking Regulation and Supervision Board, the Banking Regulation and Supervision Agency. In addition, banks must insure their deposits with the Savings deposit Insurance fund Board.

Entry into the banking system requires the approval of the Banking Regulation and Supervision Board, which is managed by a board of directors. A permission to set a new bank requires the affirmative votes of at least five of them and the new bank must satisfy a certain number of conditions.

A new bank must be a joint stock company and have a minimum paid in capital of 30 million new Turkish Lira. The founders and the members of its board must satisfy certain professional criteria specified in the law. The founder of a new bank could not have been the manager or owner of a bankrupt bank and must be competent and honest. The bank should have a clear organizational structure that does not hinder transparency. In addition of obtaining a permission to establish a bank, the founders of a new bank must also obtain a permission to operate.

To obtain the permission to operate, the founders must pay one quarter of the system admission fee, equivalent to ten percent of the minimum capital requirement to the Savings and deposit insurance Fund. The founders must pay the remainder within a period thereafter specified by the Board. The activity of the new bank must comply with corporate governance guidelines set by the Board from time to time. In order to promote good governance, the law requires that the number of shareholders cannot be less than five persons and the acquisition by any one moral or physical person that results in the person owning more than 10% of the shares of a bank must receive the approval of the board.¹² Furthermore, any transaction of shares that results in a decrease in the number of shareholders below five will not be recorded in the 'official' book of shares and is null and void. (Article 18)

Similarly, bank mergers must also receive the approval of the Board. Furthermore, the creation of new shares and their assignments to the members of the board of directors of a bank must receive the approval of the board. We note that the Tunisian and Moroccan banking laws don't impose such conditions, making them deficient compared to Turkey's banking law, Law 5411.

Turkey's banking law 5411 also specifies in article 23 a list of requirements that the general manager and board members of a bank must satisfy. The board of every bank must consist of at least five members. The general managers and the majority (?) of board members must satisfy the list of requirements that bank founders must satisfy in addition to having at least ten years experience in the field of banking and finance. Clearly, the intent of this article is to promote good governance and prevent embezzlement and corruption in the management of banks. The law reinforces this emphasis on good corporate governance and protection of the savings of common people by requiring that every bank must have an audit committee composed of at least two board members that have no executive responsibility. The Banking Regulation and Supervision Board sets additional requirements that members of the audit committee must satisfy. The audit committee must submit a report to the management of the bank every six months.

Turkish law 5411 empowers the Banking Regulation and Supervision Board to authorize auditing, valuation, and rating of any bank by an outside independent auditing firm. The

independent audit firm must inform the Banking Regulation and Supervision Agency of any irregularities in management and any conditions that could compromise the financial situation of the audited bank. The independent audit firms are responsible for damages caused by their oversight and must have an insurance policy to cover them in case they have to pay damages.

To insure a minimum of good corporate governance and protect depositors, the law empowers the Banking Regulation and Supervision Board to fix minimum financial ratios and other requirements that banks must observe. The Banking Regulation and Supervision Board has also the power to fix individual minimum financial ratios for individual banks when needed to deal with special problems encountered by that bank. Banks must inform promptly the Banking Regulation and Supervision Board whenever their financial ratios drop below the minimum values specified by the latter. The law fixes an 8% minimum capital adequacy ratio. The capital adequacy ratio is the ratio of own capital to possible losses from related to non-performing loans (?). The Turkish banking law is vague about a second ratio called the liquidity level that every bank must maintain.

The law acknowledges the right of the board of directors of a bank to extend loans but with certain restrictions. The board of directors of a bank has the responsibility to make good quality loans and monitor continuously their performances and the financial conditions of the borrowers. The Turkish banking law requires borrowers to provide the information about their own financial position as requested by their lender banks. A bank's total outstanding loans to a single moral or physical person cannot exceed 25% of a bank's own funds. The total of a bank's loans to all its shareholders or their related people (risk group) cannot exceed fifty percent of own funds. The law defines a large loan as a loan that exceeds 15% of a bank's own funds. The total amount of a bank's large loans cannot exceed eight times its own funds. A bank cannot acquire shares of non-financial institutions in excess of 15% of its own funds and the total value of such shares cannot exceed 60% of its own funds.

Loan officers of a bank cannot participate in that bank's decision making process about granting loans to themselves or to people related to them (their risk group). The law empowers the Bank Regulation and Supervision Board to consider loans that violate this restriction as a liability of the bank and deduct it from a bank's own funds. This enables the Board to require the bank owners to make additions to the bank's capital in case such deductions reduce the bank's capital adequacy ratio below its legally determined minimum level. Banks must make provisions for their non-performing loans. Banks cannot undertake trading in property or commodities for commercial purposes except for financing mortgages.

Turkish law 5411 empowers the Banking Regulation and Supervision Agency to supervise banks and credit institutions. It may send a representative to attend the general assembly meeting of any bank or credit institution and request a bank to take certain corrective measures when it determines that the financial position of the bank is not satisfactory.¹³ The Agency may demand that the bank owners increase their own funds, or suspend distribution of profits temporarily to build up reserves or provisions, or to stop making long term investments and loans to shareholders, or sell assets to improve liquidity, and/or stop making risky transactions.¹⁴

If a bank's financial condition is not satisfactory and its management fails to take the appropriate measures requested by the Agency or its situation deteriorates further, the Agency may convene a special meeting of the general assembly of shareholders to change the composition of the board of directors. (Articles 68 and 69 of Turkish law 5411). The Agency may impose certain restrictions on the bank's activity, dismiss managers and replace them with new managers, impose restrictions on loans or require that the bank merges with other banks and/or deduct losses from capital. If the agency determines that the deterioration of the financial situation of a bank is serious enough,¹⁵ it can revoke the bank's license and transfer its deposits along with its obligations to the Savings Deposits Insurance Fund.

Implications

Presumably, the Turkish Banking Regulation and Supervision Agency is independent of the Turkish government and central bank. If this is case, the new Turkish supervision apparatus is closer to the one recommended by the Basle Committee on Banking Supervision. This is important for transparency and good governance, since, in all three countries, the government still retains a controlling interest in some if not all banks. An independent agency has a better chance to enforce rules of good governance, to detect non performing loans earlier, and to force the creation of provisions whenever necessary. Enforcement of prudential rules and other rules of governance and management that embody the core principles of Basle Committee on Banking Supervision might uncover some insolvent banks. However, an appropriate deposit insurance program, the empowerment of the central bank to be the lender of last resort, and an adequate program to reorganize the failed banks would protect depositors and prevent the economy from falling into chronic crises. The new Turkish banking law has created these institutions, a fact that could explain why the Turkish economy was able to recover quickly from the 2001 financial crisis. The creation of these institutions could explain also the success of the CBRT in bringing the inflation rate down from more than 80% in 1997 to 5% in 2005 without much cost to the Turkish economy. As the following sections show the new Turkish banking law provides a more efficient mechanism of protection of depositors.

Protection of Depositors

For a long time in Japan, it was a basic principle that proper protection of depositors was necessary to encourage savings and make them available for entrepreneurs to invest in new technology and stimulate economic development. The government of every one of our three countries was aware of the need to protect depositors in a system that is not subject to independent supervision. From 1960 to 1990, there were no significant differences in the approaches of the three governments. Starting in 1990, especially after the 2001 economic crisis, the significant reforms undertaken by the Turkish government set apart the Turkish approach to the protection of depositors. The reforms in Turkey were necessary to stem the rising dollarization of the Turkish economy after the government allowed free mobility of capital. The Tunisian government remained attached to what Japanese economists call the principle of the convoy system. The Moroccan government remained attached to the same principle but introduced some modification that encourages individual banks to be partly responsible in their lending practices. In 2001, the Turkish government abandoned the principle of the convoy system and introduced a full deposit insurance financed by risk based fees.

Tunisia's approach

Article 31 of Tunisian Law 2001-65 forces all credit institutions, including banks, to form an association called Association Professionnelle Tunisienne des Banques et des Établissements financiers (APTBEF). The article requires government approval of the association's statute. For all practical purposes, the government instituted a monopoly in the banking sector and controls it. We know that a monopoly is inimical to competition and transparency. It has deleterious effects on bank performance. It is also a mechanism meant to enable BCT to control credit and interest rates indirectly while it can claim at the same time that competition reigns supreme in the banking system. Article 41 of Tunisian law 2001-65 imposes on all banks to be guarantors in solidarity of all deposits of any one or more of them that may become insolvent for any reason. BCT is responsible for organizing the mechanism of guaranty in case one of the member banks of APTBEF fails. It has a discretionary power to decide the maximum paid to each depositor. In addition, it may draft the support of all non bank credit institutions to protect deposits in case it suspects an impending bank failure. This is equivalent to free deposit insurance.

Although there were cases of banks teetering on insolvency, there were no actual bank failures between 1958 and 2005. This is probably due to the fact that until the reform that brought about Law 2001-65 in 2001, all banks were required to obtain BCT approval of loans greater than a certain amount and they were required to invest certain proportions of their deposits in loans to certain priority sectors and to government. The solidarity imposed by Law 2001-65 on banks and the requirement that BCT manages credit to support government economic policy insured no more bankruptcies after 2001. Law 2001-65 established effectively what in Japan is called the convoy system. All ships in a military convoy must support each other.

The convoy system presaged in Law 2001-65 destroys the beneficial effects of various measures introduced by the same law to encourage transparency and good management. BCT's supervision and control of the convoy system perpetuates the previous direct control system with its high propensity of mismanagement and abuse. Thus, it is not surprising that in government owned banks ('privately' held banks) the ratio of non performing loans was 24.3 (18%) in 2002. World Bank (2003) states "Despite considerable improvement, commercial banks continue to be burdened with large non performing loans". The Economist Intelligence Unit concurs: "The banking system (in Tunisia) remains inefficient, state-dominated and burdened by nonperforming loans (NPLs),"¹⁶ It is also not surprising that according to World Bank (2003), the provisions for non performing loans remain low at 44% in 2002. World Bank (2003) attributes this under-provisioning to the fact that most loans have real estate collateral. This could be a factor, nevertheless, another possible culprit is the convoy system implicitly led by BCT. The system insures that depositors are covered. Thus, a bank would not waste its tiny profits on provisioning. In case of a failure, its capital is (possibly) lost anyway, but its depositors would not withdraw deposits since all banks float or sink together. Furthermore, together all banks form a monopoly, and BCT controls interest rates and provide the necessary support. This operating framework is similar to that of the Japanese banking system with the added complication that the Tunisian government retains majority control of many banks.

Morocco's Approach

The Moroccan minister of finance manages with the help of the committee of credit establishments the deposit insurance program and makes the rules relative to the conditions of investment by credit institutions in non-financial institutions.

To protect depositors, the 1993 Moroccan Banking Law, created a deposit insurance called Fonds Collectif de Garantie des Dépôts. The main purpose of the fund is to provide loans and when a bank is placed under external administrator to provide indemnity to depositors in case their bank ceases payments. All credit institutions including banks must contribute to the fund at a rate not exceeding 0.25% of deposits. In case of insolvency and liquidation of a bank, the fund pays to each depositor a maximum of MAD 50000 or the equivalent of US\$ 5500 depending on the resources available to the fund at the time of liquidation. This is an interesting feature that we don't find in Tunisia's bank laws. If the funds loaned by the fund to the liquidated bank prove be insufficient, the governor of BM may ask the collective of Moroccan banks to make loans to the ailing bank. This feature makes the system partially similar to the convoy system type. The loan may not be recoverable and may involve the re-capitalization of the ailing bank by the collective of banks.

Turkey's Approach

Banks must insure the savings deposits of real persons with the Savings Deposits Insurance Fund. The board of this fund shall decide from time to time the maximum amount of insurable savings deposits of real persons. Banks pay a risk-weighted premium, which should not exceed 2% per annum of the value of the deposits. (Article 63 of Turkish law 5411). The Saving Deposit Insurance Fund Board shall set the coverage and maximum insurable deposits subject to the approval of the CBRT, the Banking Regulation and Supervision Board, and the Treasury Undersecretary.

Implication

The 2001 Turkish banking law avoids the convoy system trap. It encourages each bank to be careful in its lending since nonperforming loans increase the unit fee of deposit insurance. The convoy system requires the lender of last resort, the central bank, to pay for the mismanagement of banks. A risk weighted deposit insurance premium lowers the incidence of moral hazard and it creates the incentive for bank management to be transparent and reduce the risk of non-performing loans. This is important for the conduct of a monetary policy with the single goal of inflation control. Higher short term interest rates to reduce inflationary pressures hurt most banks that have a high proportion of nonperforming loans since they have to keep borrowing to keep those loans alive.

Relative performance of Tunisian banks

How valid is the assertion that the banking system in Tunisia is inefficient? Although the profit rate is not a good indicator of the degree of inefficiency, certainly inefficient banks should have a lousy or negative profit rate. Banks that are more profitable are better able to withstand liberalization, competition and fluctuations in interest rates once the central bank severs its lifeline support to all banks. I demonstrate in this section that many Tunisian banks are inefficient and a few are relatively efficient Define the following variables

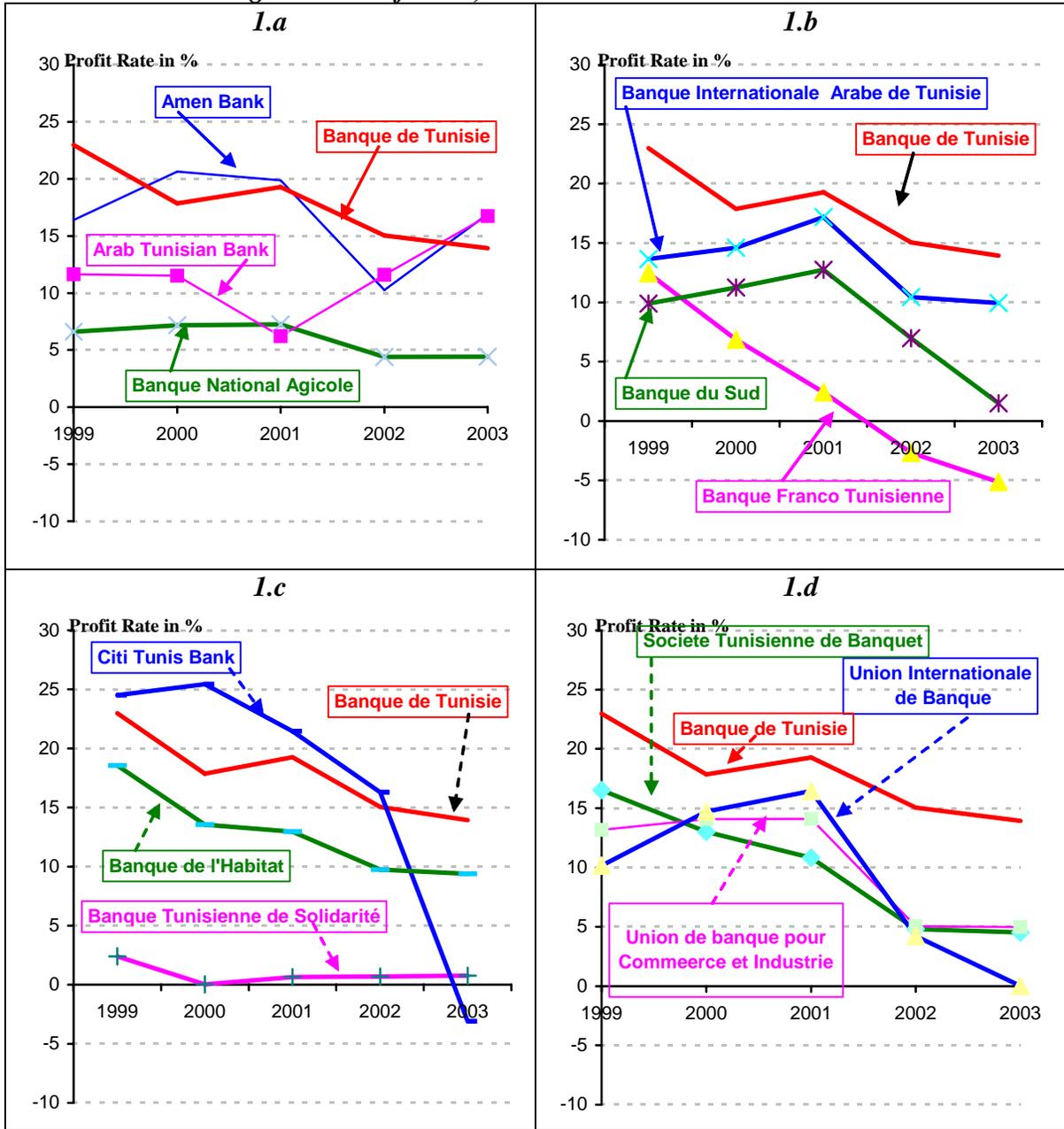
- Profit rate = ratio of profits to the sum of paid in capital and retained earnings and other capital.
- Rate of return on loans as the ratio of total interest income of a bank to its total loans
- Interest Cost ratio = ratio of interest and other borrowing costs paid by a bank to total income (Total produits d'exploitation bancaire)
- Concentration ratio = ratio of total interest income to total income of a bank.
- Non interest costs ratio = ratio of labor costs and other administration costs to total income of a bank.
- Provision costs ratio = ratio of provisions for non performing loans to total income of a bank.

The ratios provide information about the relative effectiveness of management in controlling costs.

I used the published data on the balance sheets of Tunisian banks found on the website of APTBEF to calculate their rates of profit.¹⁷ Figure 1 describes the Profit rates for each one of the largest thirteen commercial banks over the period 1999-2003. It shows that some banks are profitable (Banque de Tunisie, Amen Bank, Arab Tunisian Bank and Banque Internationale Arabe de Tunisie), others are struggling to remain profitable, and still others are making losses. Except for a few banks, profits and profit rates declined substantially over the period 1999-2003.

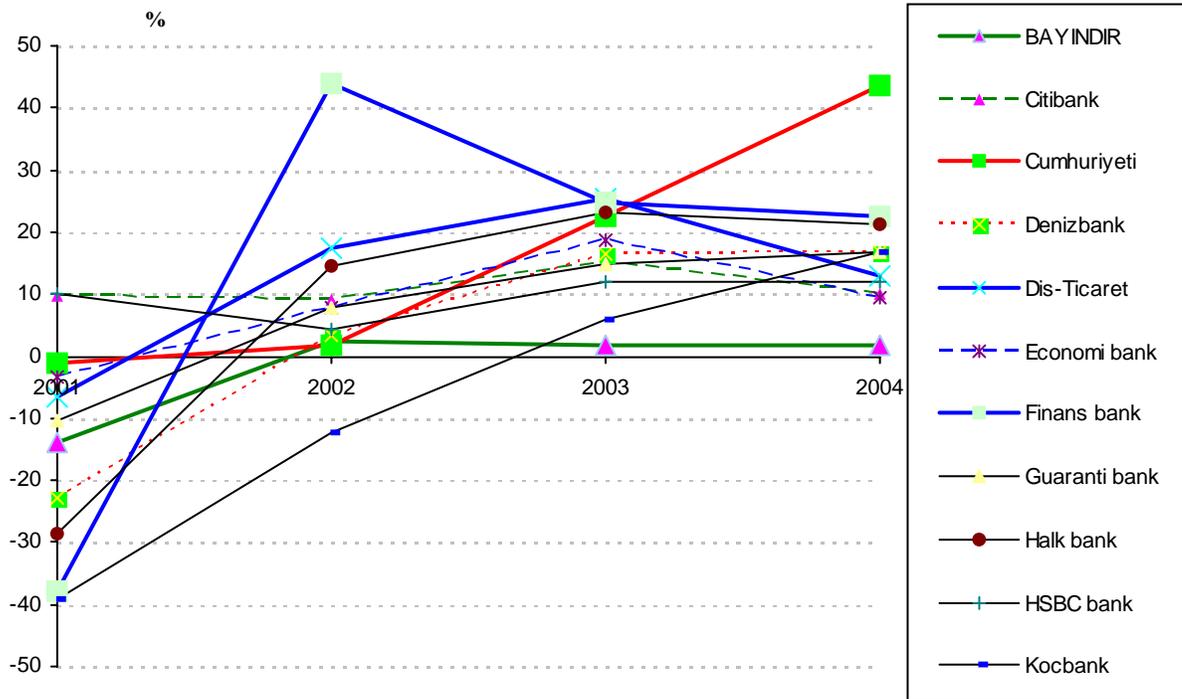
The two largest banks by deposits, where government maintains controlling interests (Banque Nationale Agricole, Societ  Tunisienne de Banques), are struggling. The third largest and private bank, Banque Internationale Arabe de Tunisie, succeeded in maintaining its Profit rate higher than 10%. The medium sized bank, Banque de Tunisie, saw a substantial fall in its profit rate but it succeeded in maintaining its profit rate higher than that of most other banks. Two private small banks, Arab Tunisian Bank and Amen Bank seemed to have maintained their profits at a rate similar to that of Banque de Tunisie. One reason for the poor performance of many banks is the new policy of the government that forces banks to create provisions for non performing loans or to write them off. Because the provision of the "average" bank covers only 40% of non performing loans, it is clear that the large banks where government holds a controlling interest (Banque Nationale Agricole, Societ  Tunisienne de Banque, and Banque Franco Tunisienne) would show a loss if they were forced to make appropriate provisions immediately. That loss would be a one time loss and they probably would recover if the government creates an appropriate independent supervisory body that would force a change of bank management and exercise supervision powers similar to those suggested by the Basle Committee. The proof is the existence of profitable banks (Amen Bank, Arab Tunisian Bank, Banque de Tunisie). These would probably remain profitable even if they make appropriate provisions for their non-performing loans. The rest of the banks are not profitable. They must reorganize, restructure or merge with others or disappear after selling their deposits and their non performing loans.

Figure 1 - Profit rate, Tunisian Commercial Banks



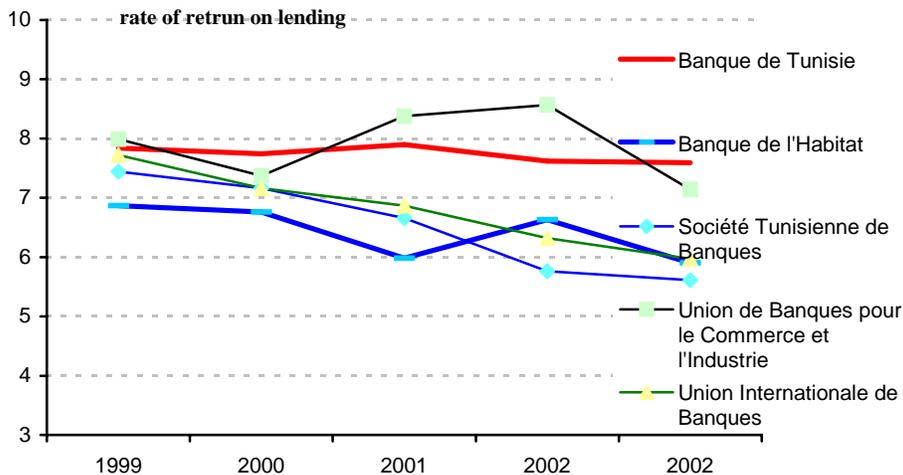
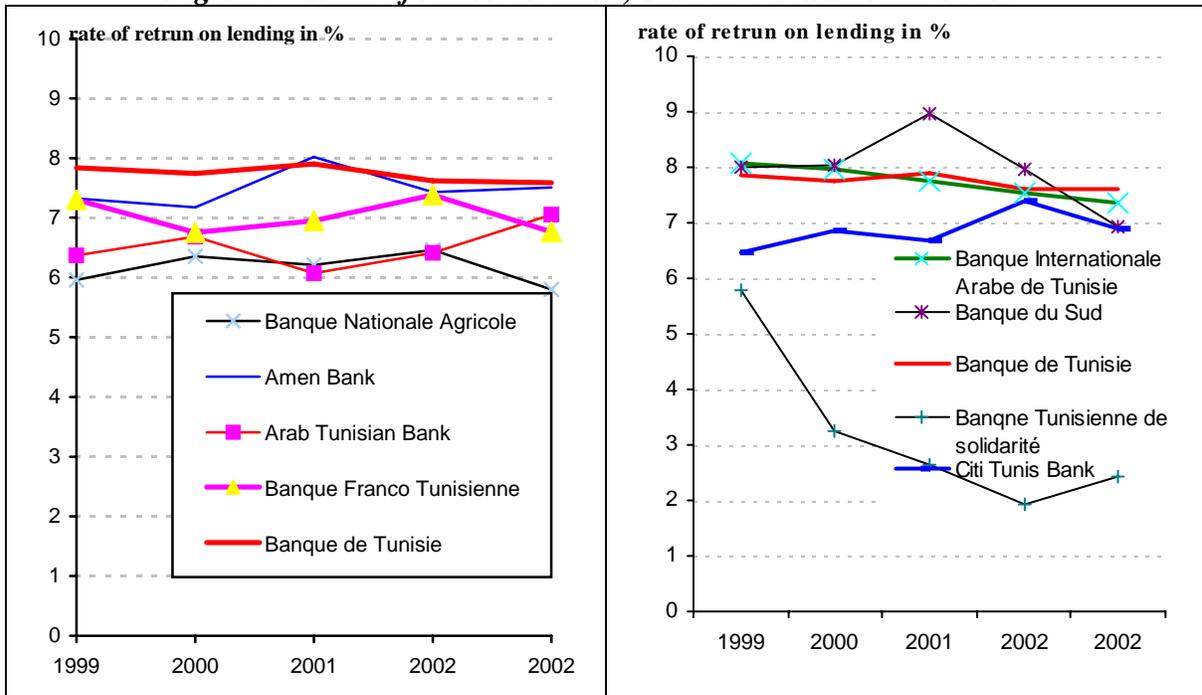
Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

Figure 2 - Profit rate of some large Turkish banks



By comparison, the profit rates of Turkish banks experienced a great amount of variability as figure 2 shows, ranging from heavy losses in 2001 to profit rates that are much higher afterwards than those achieved by the best performing Tunisian banks.. The excessive volatility is due partly to the fact that many banks engage in the trade of securities and foreign exchange. If we exclude the 2001 crisis year, the volatility is much lower for many Turkish banks.

Figure 3 - Rates of return on loans, Tunisian Commercial Banks



Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

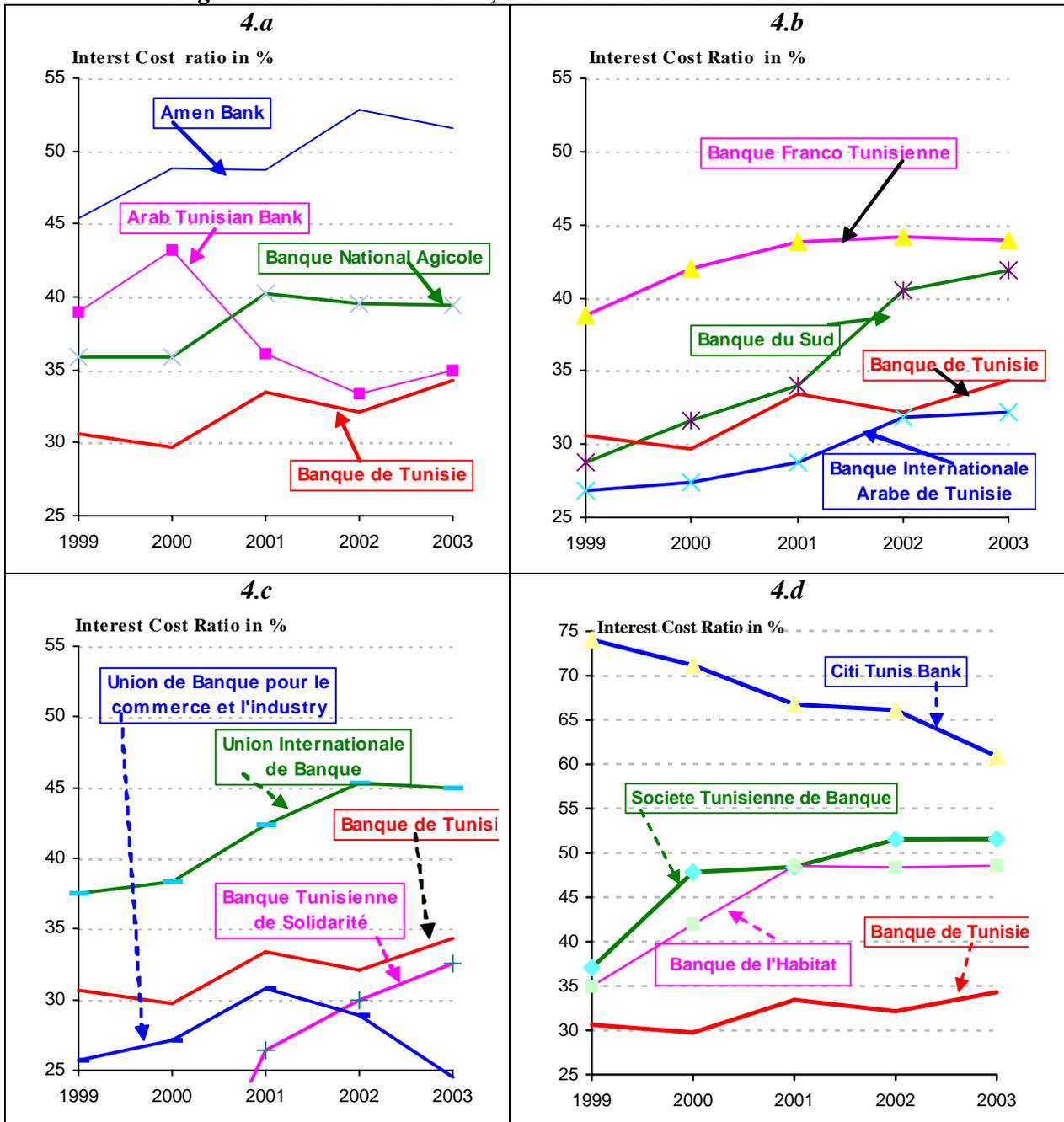
This volatility requires deposit insurance and independent oversight of banks. The 2001 Turkish law provides for both of these conditions. In addition, the Turkish banks and economy could benefit from taking advantage of simple derivatives such as swaps, given the fact that the volatility in profits is partly due to trading in foreign currency. Rates of returns on trading activities in securities and foreign exchange are highly volatile, accounting for some of the volatility. The Turkish banks have achieved much higher rate of profitability relative to Tunisian banks but at the expense of higher volatility.

We can detect an effort by Tunisian banks to build up provisions. For example, in 2004, many banks posted exactly zero profit. The necessity to make appropriate provisions is not the only reason for the decline in the Profit rate. The nonperforming loans must have reduced in different proportions the rates of return on loans of banks with different proportions of non performing loans. If the incidence of non performing loans is uniform, one would expect similar rates of return across banks that freely choose their loan portfolio and make loans to similar sectors because BCT controls the rates of interest and there is no competition among banks. On the other hand, everything else equal, we expect the rate of return for all banks to fall from one year to the next by roughly the same amount because of the success of BCT in lowering the inflation rate from 8% to 3% during the period 1990-2003.

Figure 3 shows that the rates of return of some banks, especially the large Société Tunisiene de Banques, are significantly lower than those of Banque de Tunisie. Figure 3 also shows that among all banks, Banque de Tunisie maintained a relatively constant rate of return that varied between 7.9% and 7.59%. Its rate of return decreased by a total of 3% between 1999 and 2003 possibly because of the general decline of nominal interest rates due to the decline in the expected inflation rate and/or an increase in the proportion of non performing loans.

On the cost side, the performance of Tunisian banks with a higher profit rate was better than those with a lower profit rate. As figure 4 shows, the small bank, Union de Banques pour le Commerce et l'Industrie, has consistently achieved the lowest Interest Cost ratio, followed by the same two middle size private banks, Banque de Tunisie and Banque Internatinoale Arabe de Tunisie. The large banks in which the government has a majority controlling interest, Société Tunisiene de Banque, Banque Nationale Agricole, trailed behind. Figure 5 shows that the small private bank, Amen Bank and a medium private bank, Banque de Tunisie, achieved the lowest non interest cost ratio. Both banks had consistently achieved a significantly higher profit rates as figure 1 shows.

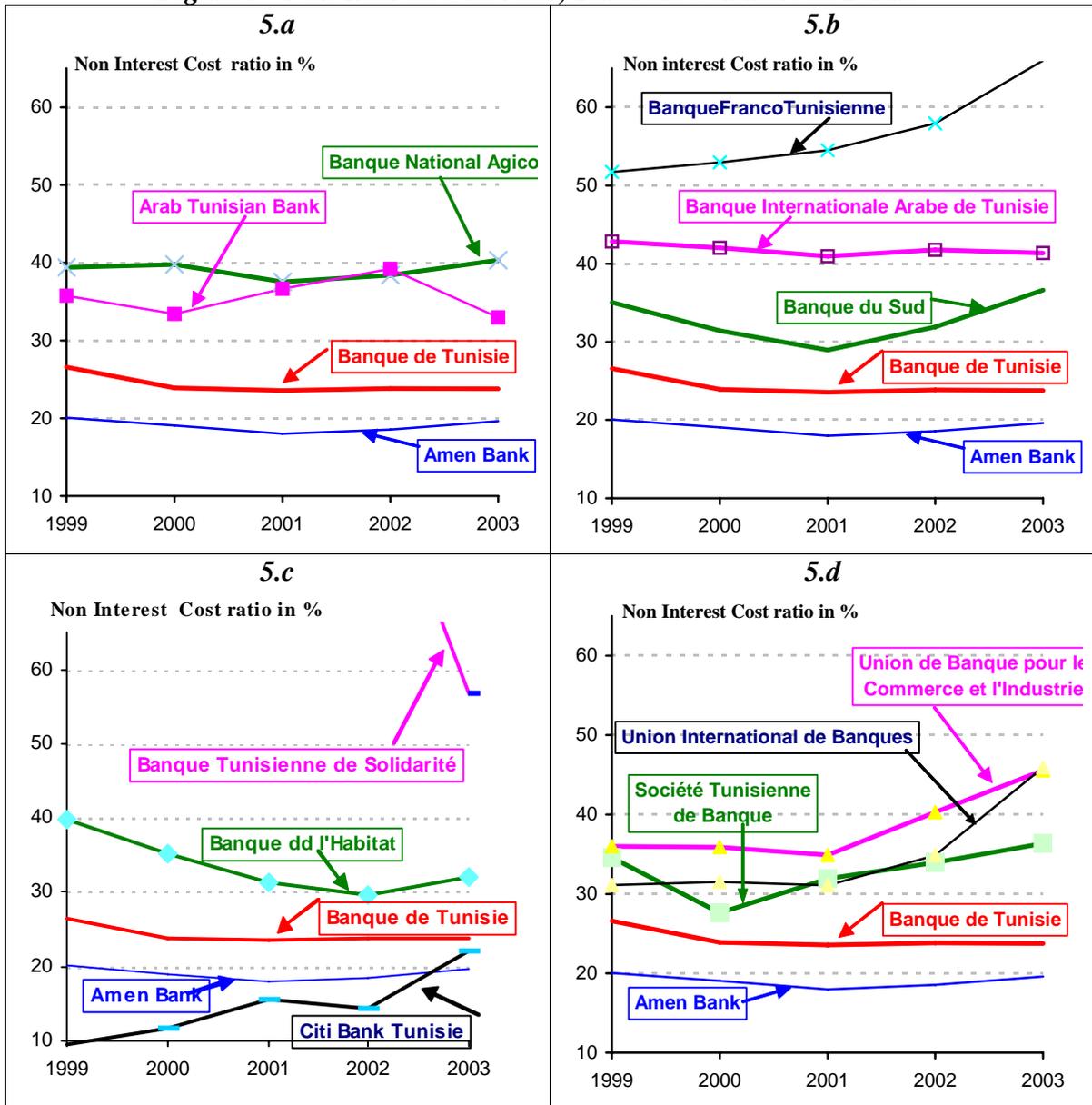
Figure 4 - Interest Cost ratio, Tunisian Commercial Banks



Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

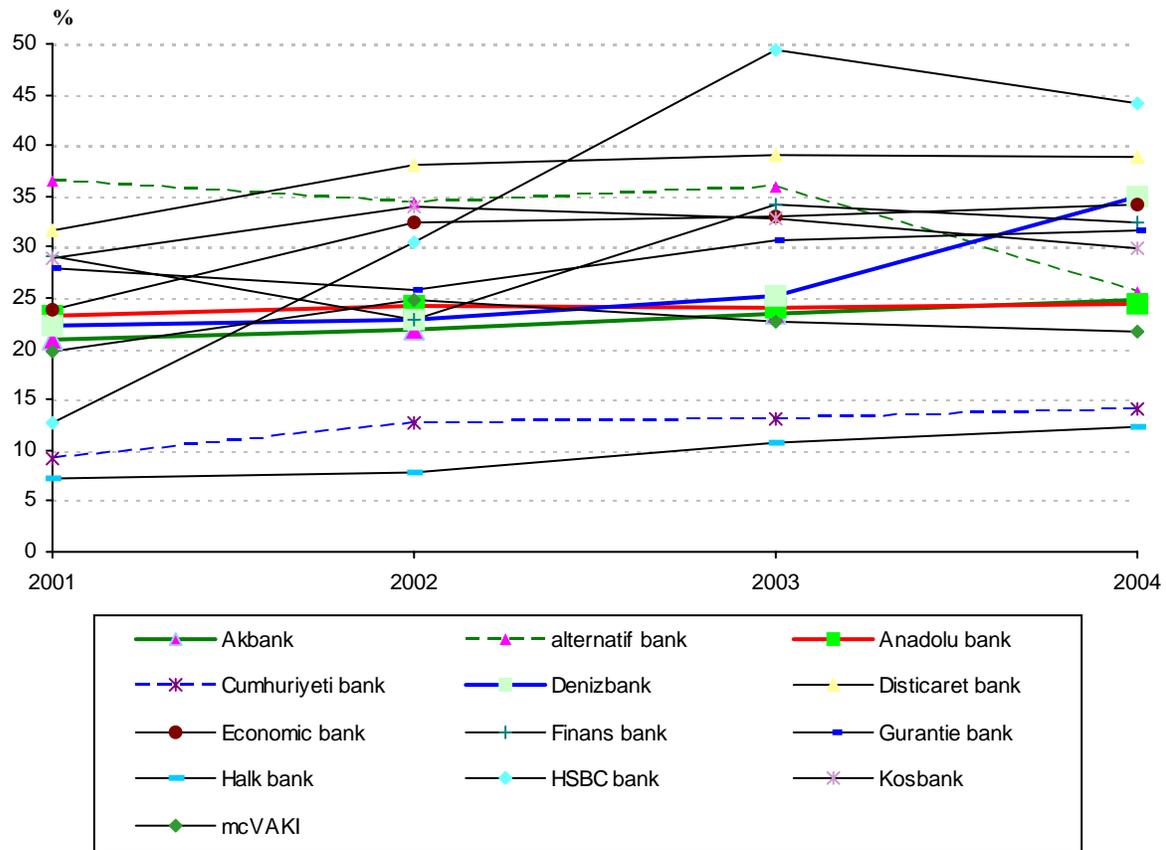
Three other banks, besides Banque Tunisienne de Solidarité, earned significantly lower rates of return. Their rates of return eventually decreased at a significantly greater rate between 1999 and 2000. Four other banks, Amen Bank, Arab Tunisian Bank, Banque Internationale Arabe de Tunisie, and Union de Banques pour le Commerce et l'Industrie seem to have performed relatively well.

Figure 5 - Non Interest Cost ratio, Tunisian Commercial Banks



Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

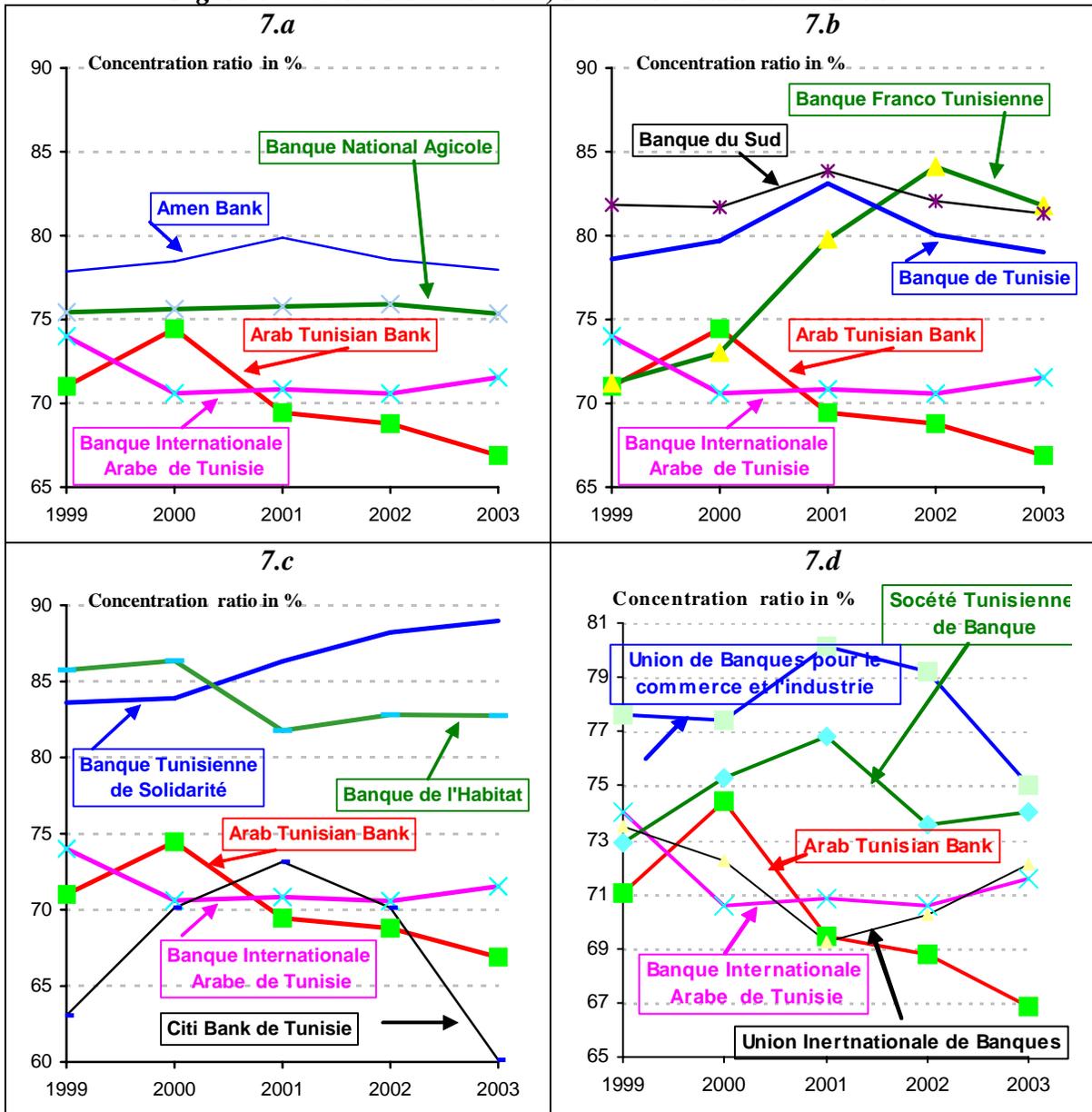
Figure 6 illustrates the diversity among banks of non interest costs per dollar of total income. Clearly, the non interest cost of a dollar of total income varies considerably among banks. The most efficient banks in terms of this indicator are two large state owned banks, Turkish Cumhuriyeti Zirati Bank and Turkish Halk bank. Like in Tunisia some banks are relatively efficient. However, in contrast to Tunisia, the two relatively efficient banks are state owned. Consistently with the core principles of the Basle Committee on Banking Supervision, supervision by and accountability to agencies independent of government and owners or management of banks may induce bureaucrats to achieve lower unit costs.

Figure 6 - Non interest cost Turkish Banks

Comparing the non interest cost per dollar of income between Tunisia and Turkey, figures 4 and 5 show that, everything else equal, Tunisian banks need to lower these unit costs further. The lesson is clear for the Tunisian and Moroccan governments and their monetary authorities. With more cost efficient banks and once the 2001 Turkish financial crisis convinced the government to abide by fiscal discipline, the central bank of Turkey was able to switch, without seriously disturbing the Turkish economy, from a monetary policy moved by government budget deficits to an inflation targeting monetary policy in a few years after the implementation of Turkey's newest banking law(Law 5411).

Finally, most Tunisian banks have a high concentration ratio in the sense that their interest income represented more than 70% of their total income. Figure 7 shows that all banks have a concentration ratio less than 70 except for Citi bank de Tunisie, one small private bank, the Arab Tunisian Bank, and one medium size bank, Banque Internationale Arabe de Tunisie. Citi Bank de Tunisie is an offshore subsidiary of a foreign bank. Its activities are not independent of its main foreign bank. Therefore, it is not surprising that its concentration ratio is the lowest. The two private banks, Arab Tunisian Bank and Banque Internationale Arabe de Tunisie, have often achieved higher profit rates than most other banks except for the medium size, Banque de Tunisie. As figure 7 shows, the latter bank has consistently maintained a higher concentration rate and a relatively higher profit rate.

Figure 7 - Concentration ratio, Tunisian Commercial Banks



Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

Other aspects of mismanagement of national banks in Tunisia

Obviously, profits need not correlate with relative size. Table 1 ranks Tunisian commercial banks according to assets and deposits each one of them holds as a proportion of respectively total assets and deposits held by the commercial banking system. In 2004, the four largest banks held together respectively forty eight and sixty per cent of total assets and total deposits of the whole commercial banking system. Only one of the four largest banks, Banque Internationale Arabe de Tunisie, is totally privately owned. Its profit rate is three times the profit rate of the largest bank, Société Tunisienne

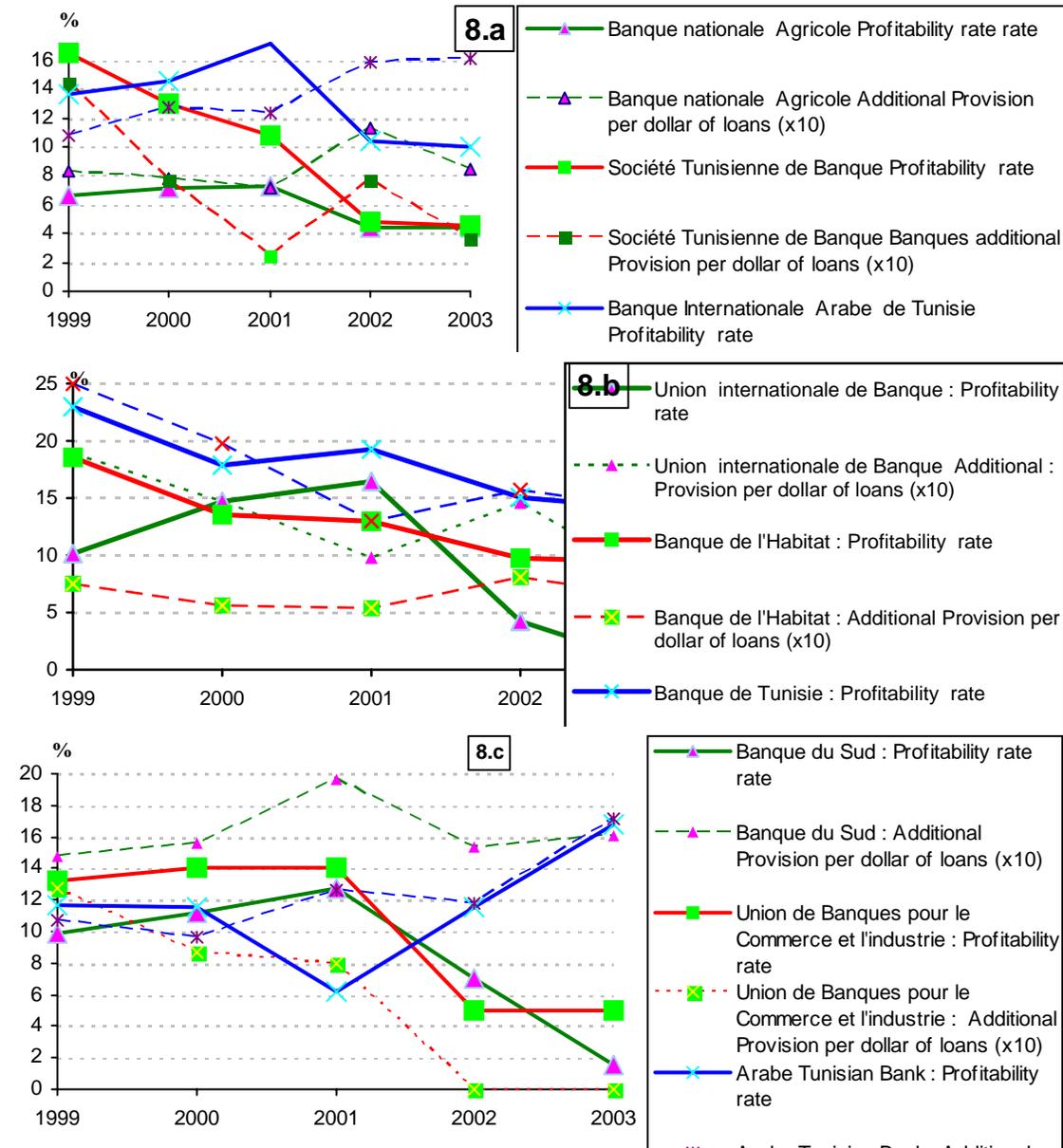
de Banque, a government controlled bank. Banque de Tunisie, another private midsized bank held slightly more than the third of the assets of the largest bank and its profit was six times that of the latter.

Table 1 Relative sizes of Commercial Banks in Tunisia(2004)

Bank	Assets		Deposits		Profit
	Million Dinars	%	Million Dinars	%	Million Dinars
Societe Tunisienne de Banque`	4288	17.0	2686	15.9	5.3
Banque Nationale Agricole	3926	15.6	2866	16.9	3.1
Banque Internatinoale Arabe de Tunisie	3333	13.2	2789	16.5	16
Banque de l'Habitat	3046	12.1	1894	11.2	0
Amen Bank	2033	8.1	148	0.9	18
Banque du Sud	1952	7.7	1621	9.6	0
Union Internationale de Banque	1681	6.7	1352	8.0	0
Banque de Tunisie	1610	6.4	1035	6.1	31
Arab Tunisian Bank	1523	6.0	1366	8.1	15
Union de Banques pour le Commerce et l'Industrie	1091	4.3	806	4.8	10
Banque de Sollidarité de Tunisie	314	1.2	6	0.0	0.3
fArab Banking Corporation	168	0.7	140	0.8	-2.5
Citibank de Tunis	163	0.6	139	0.8	-6.8
Banque Franco Tunisienne	106	0.4	93	0.5	-0.6

Figures 8.a and 8.b contrast three large government controlled banks, (Banque Nationale Agricole, Société Tunisienne de Banques, and Banque de l'Habitat) with a large private bank (Banque Internationale Arabe de Tunisie) and one medium privately owned bank (Banque de Tunisie). The two privately owned banks have outperformed larger government controlled banks in terms of profit rate. Yet, they have been consistently building up their provisions against non performing loans at a higher rate than government controlled banks, although, like the latter, their respective profit rates have suffered. For all banks, except the Arab Tunisian Bank, an increase in the rate of building provisions is associated with a reduction in the profit rate. Banque de l'Habitat, a government controlled bank, has a captive housing market, yet its profit rate has decreased despite the low rate of building up its provisions against non performing loans.

Figure 8- Profit rate and additional provisions per dollar of loans, Tunisian Commercial Banks

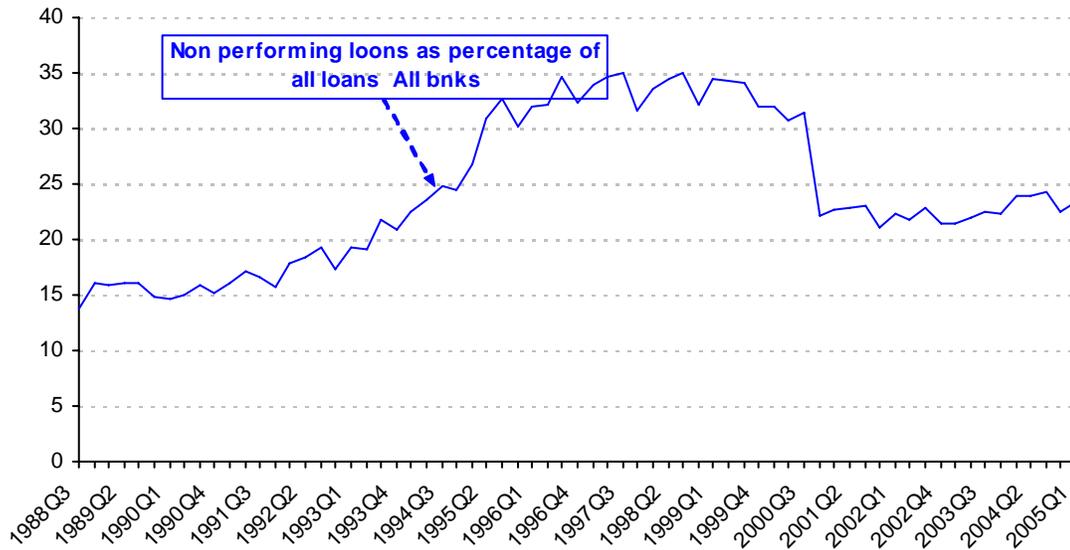


Source: Association Professionnelle Tunisienne des Banques et des Etablissements Financiers.

Another government controlled bank, Banque du Sud, that the government has been preparing for privatization, fared better in terms of effort to build up its provisions against non performing loans than the three large government controlled banks. The buildup of its provision was at the expense of a fall in its profit rate.

The remainder of the banks is composed of small banks that are struggling to keep afloat. The government has forced many banks to use all their profits to build up their provisions against non performing loans. Table 1 shows that four banks had zero or almost zero profit in 2004 and three small banks had a negative profit rate.

Figure 9 - Non performing loans as percentage of all loans, All Tunisian banks



Source: Statistiques Financières, Banque de Tunisie, various issues

Figure 9 shows that the ratio of non performing loans to total bank loans took a turn for the worse in 1990, to reach a peak of 35%. It looks that by a stroke of luck it fell to 25% in 2000 and remained there thereafter. To appreciate the degree of mismanagement in Tunisian banks, we compare their performance in terms of non performing loans to the performance of Turkish banks. Nineteen of the twenty largest banks in terms of total assets have been able to reduce the proportion of nonperforming loans significantly after 2001. As of 2004, the proportion of nonperforming loans of any one of these banks is less than 2% of their total loans. One relatively large bank saw a significant increase of the proportion of its nonperforming loans from 4% in 2001 to 58%.

These facts illustrate again the need for better bank management in certain Tunisian financial institutions. A bank that has a higher a profit rate has more resources to build up its provisions. Furthermore, banks that have experienced a deteriorating profitability, due to other reasons than building up provisions, could ill afford to build up their provisions against non performing loans. A bank that is currently experiencing a decline in its profitability rate would probably perform worse in the future.

Quality of management and profit rate

To explain quantitatively the relationship between good management, as expressed by the success of bank in controlling own costs and securing higher rates of returns on its assets, on the one hand and better performance in terms of their profit rate on the other, I postulate the following relationship.

Profit rate is an increasing function of the Rate of Return on loans and a decreasing (1) function of the Concentration Ratio, Non interest costs ratio, Interest Cost ratio, and Provision costs ratio.

I estimated equation (1) for Tunisia and Turkey. First, I discuss the estimation results for Tunisia.

Tunisia's equation

I estimated (1) using pooled cross section time series annual data covering the period 1999-2003. Table 2 reports estimation results using the pool of eleven commercial banks (excluding the Arab Banking Corporation de Tunisie, Citibank Tunis Branch, and Banque Tunisienne de Solitarité) and the five largest development banks to which I added Citibank Tunis Branch, and Banque Tunisienne de Solitarité. The Arab Banking Corporation de Tunisie is a small bank and has only three years of data and I did not include it. The portfolio of loans of the Citibank Tunis Branch shifted considerably during the period. Banque Tunisienne de Solitarité is a non profit bank and behaves more like a development bank. Its main purpose is to lend to risky small businesses that are likely to fail to service their loans.

In estimating the equation, I allowed for differences of intercepts across banks using the technique of fixed effects cross section weighted covariance of residuals. I allowed also for differences in the coefficients of the five explanatory variables across the two groups (commercial and development) of banks.

The estimation results show that the coefficients of all five explanatory variables for commercial banks are significantly different from zero and have the expected sign. This is not the case for development banks. The coefficient of the rate of return on their financial investments has the right sign but it is significantly different from zero only at the 13% level. Furthermore, the coefficient of the concentration ratio has the wrong sign and is not significantly different from zero. The chi-square statistics for the null hypothesis that they are the same is 146.82 with a p-value of zero. Thus, we can reject the null hypothesis at the 1% level of significance. Obviously, the estimates of the coefficients of the five explanatory variables are different across the two groups of banks.

Table 2
Dependent Variable: Profit rate

Thirteen Tunisian commercial and five development Banks
1999-2003, Pooled cross section time series fixed effects cross section weighted

Variable		Coefficient	Std. Error	t-Statistic	p-values
Rate of Return on Loans	Commercial Banks	2.425	0.581	4.17	0.00
	Development Banks	0.648	0.425	1.52	0.13
Concentration Ratio	Commercial Banks	-0.470	0.087	-5.43	0.00
	Development Banks	0.096	0.095	1.01	0.32
Non interest costs ratio	Commercial Banks	-0.479	0.067	-7.16	0.00
	Development Banks	-0.200	0.094	-2.12	0.038
Interest Cost ratio	Commercial Banks	-0.607	0.069	-8.74	0.00
	Development Banks	-0.208	0.077	-2.71	0.01
Provision costs ratio	Commercial Banks	-0.461	0.048	-9.71	0.00
	Development Banks	-0.106	0.003	-33.51	0.00
R-squared	0.992	Weighted mean of dependent variable		21.54	
Adjusted R-squared	0.989	S.D. of dependent variable		44.75	
S.E. of regression	4.636	Sum squared residuals		1332.97	
F-statistic	914.318	Durbin-Watson statistics		2.295	

The banks that experienced a deterioration of their profit ratio absolutely and relatively to the best four commercial banks failed to control interest and non interest costs in addition to the lower quality of their loans. Their financial products are concentrated in lending. The failures could be due to the strong quantitative control that BCT continues to wield on credit distribution and interest rates, the lack of accountability, and the policy of implicit insurance of deposits regardless of the management performance. The lack of accountability itself is due to the fact that the government retains a controlling interest in most of the banks that are performing poorly and it has a conflict of interest in the exercise of its supervision authority,

Turkey's equation

I have also estimated equation (1) for Turkey over the three year period 2002-2004 using data from the largest banks. The data for Turkey are richer since banks investments included trades in securities and foreign exchange. Thus, I added a few more explanatory variables to (1). These are:

- Nonperforming loan ratio = ratio of Nonperforming loans and total loans of a bank.
- Real profit rate on trading of securities = average profit rate on trading securities – inflation rate
- Real profit rate on trading of foreign exchange = average profit rate on trading foreign exchange – inflation rate

In addition, due to the tremendous decline in the inflation rate between 2001 and 2004, I have replaced in equation 1 the profit rate by the real profit rate and the rate of return on loans by the real rate of return on loans. The real rates are equal to the nominal rates minus the inflation rate. Table 3 presents the estimation results.

Table 3 - Dependent Variable: Real Profit rate

Twenty largest Turkish commercial Banks

2001-2004, Pooled cross section time series fixed effects cross section weighted

Variable	Coefficient	Std. Error	t-Statistic	p-values
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Concentration Ratio	0.24	0.07	3.19	0.003
Real Rate of Return on Loans	1.69	0.12	13.58	0.000
Non interest costs ratio	-0.25	0.12	-2.03	0.051
Real Interest cost ratio	-0.60	0.16	-3.75	0.001
Provision costs ratio	-1.36	0.19	-7.06	0.000
Nonperforming loan ratio	-0.73	0.14	-5.36	0.000
Real profit rate on trading of securities	0.17	0.06	2.86	0.008
Real profit rate on trading of foreign exchange	0.002	0.001	3.074	0.004
R-squared	0.99	Mean of dependent variable	-25.40	
Adjusted R-squared	0.97	S.D. of dependent variable	51.25	
S.E. of regression	8.50	Sum squared residuals	2313.35	
F-statistic	301.66	Durbin-Watson statistics	2.74	
	0.00			

All the explanatory variables have the expected sign. They also have coefficients different from zero at the five percent level. We note the significance of the coefficient of the nonperforming loans variables. Nonperforming loans are a drag on profits. They are also a drag on efficiency if the bank regulating agency could maintain a competitive environment. Trading in securities and or foreign exchange help diversify banks investment but they are also risky and contribute to an undue increase in the fragility of the banking system. Better real profit rates from these activities and lower risk would enhance the strength of banks and the credibility of an inflation control based monetary policy. The evidence from Turkey, as Table 3 shows, confirms the results obtained for Tunisia. Better management, i.e. lower unit costs, yields higher profit rates. Before 2001, the supervisory framework and the central bank in Turkey were not independent or transparent. Turkish raked in losses. After the adoption of the newest banking law (Law 5411) and the newest central bank law (Law 1211) in Turkey at the end of 2001, which provided for an independent and transparent central bank and supervisory framework, profit rates of many Turkish banks improved considerably as figure 2 shows. There is now a premium associated with better management. I conclude that the evidence from Tunisia and Turkey shows that the Tunisian government must forsake the present arrangement which allows it to be a judge and a defendant at the same time. For the government to exercise supervisory powers effectively, it must divest itself of its investment in most banks and delegate the supervision and oversight to independent agencies.

Conclusion: Implications for monetary policy

Of course, central banks whose monetary policy is dedicated to inflation control do lower interest rates when there is a threat of deflation (Bernanke & al., 2001). The behavior of the central Bank of Canada and that of the USA during the period 2001-2003 and 2001 and 2006 respectively amply demonstrates this fact. The US central bank has lowered its rate of discount (= the Federal Funds rate) from about 6% in December 2000 to 1.5% in December 2004 in order to remove the threat of a deflation following the start of the latest of recession in March 2000. However, when the economies of the two countries started to recover, the central banks of Canada and the US reversed themselves in January 2004 and January 2005 respectively because of the appearance of upward pressures on the inflation rate and the return of their respective real GDP to the neighborhood of full employment. They used only their own perception of the threats of deflation or inflation and reliable estimates of the gap between current real GDP and its full employment level to guide their monetary policy. Equally important was the fact that they did not solicit or take into consideration the opinions of other government agencies. They were free to set the interest rates on their lending to financial institutions because they were responsible for achieving a single clear objective, inflation control. Yet their monetary policy automatically contributed to stabilize economic activity. Although this policy meant that interest rates are not any more constant and low, yet this freedom to set the interest rate on their lending allowed them to support their economies during recessions and restrain them during expansion and to anchor the expected inflation rate.

A monetary policy dedicated to inflation control does produce fluctuations in the interest rate. These fluctuations are counter cyclical and therefore desirable. Normally, they

should also help banks to weather economic fluctuations by making it cheap for them to build up their liquidity when they need it most and by reducing their liquidity when they are awash with it during the early approach of the economy to full employment. Of course, as the economy crosses over full employment, banks liquidity comes under stress from excessive demand of borrowing and the higher interest rates caused by inflation control. If banks are well managed they would reduce their borrowing and help check excessive demand when real GDP exceeds full employment. They know the central bank is serious and would not rescue them by giving them a break on interest rates. Similarly, when the economy enters into a recession, bank borrowers are under stress and lowering the bank rates allows banks to lower their own interest rates to their borrowers thereby reducing their costs. The increased cheaper liquidity made available to the banks allows them to lend to new customers and increase aggregate demand reducing the deflationary pressures on existing borrowers from banks. Therefore, if banks are well managed, the policy helps to reduce the incidence of non-performing loans and helps banks whither recessions. However, if banks are badly managed, inflation control would drive them to the wall during a threat of an increase in the inflation rate and reduce their revenues during a recession. If some large banks are badly managed, they will lobby the government for relief through any possible open channels, in particular through agencies that the central bank must consult about its monetary policy, as required for example by the statute of central bank of Morocco. In this case, the central bank must maintain control over credit in order to achieve control over the inflation rate.

The current banking policy in Tunisia holds monetary policy hostage to the mismanagement of certain banks and requires that BCT must control the distribution of credit and refrain from raising interest rates to control inflation. Clearly, some Tunisian banks are capable of standing on their feet while others cannot. The new banking Law 2001-65 needs an overhaul to free up monetary policy.

The overhaul would create institutional changes. It would provide for an independent competent supervisory body with clear and transparent rules. It would provide for total disengagement of government from ownership of banks, except possibly for one model bank to correct for lack of access to credit by small businesses. It would provide for the creation of deposit insurance with risk weighted premiums and clearly specified limits on benefits to depositors. Then, it would be possible for monetary policy to control inflation openly without fear that it would drive some financial institutions into insolvency and wreck havoc on the economy. Open inflation control would anchor expectations. Appropriate supervision with appropriate risk weighted premiums of deposit insurance, transparent banks and non-financial institutions would make out of banks one of the watchdogs that would insure that non financial institutions would also operate efficiently.

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Notes:

¹ Agence France Press Tunis October 24 2004

² Articles 19 and 20 of Turkish law 1211.

³ The member must be an academic professor of economics with experience in monetary policy

⁴ See Articles 41-44 of Tunisian Law 58-90

⁵ IMF (2006) p. 7

⁶ The same law requires also the minister of finance to appoint an auditor general of BCT. In addition, the President of the republic may nominate a committee of enquiry into the affairs of BCT.

⁷ The Moroccan law 59-233 provides for two auditors, one of them is appointed by the Ministry of Finance. Their responsibility is limited to pure accounting issues of BM.

⁸ The last report relates to the third quarter of 2005.

⁹ There is an auditing committee composed of four members (article 23 of Turkish law 1211). The committee’s mandate is to verify the accounts of the bank and to evaluate the management of the affairs of the bank.

¹⁰ In the terminology of the law these are “Fonds propres ».

¹¹ IMF Rating or Morocco’s financial system.

¹² The board might approve if the acquirer satisfies the conditions of a founder, probably a loophole that weakens the intent of the article.

¹³ This is the case if the probability that the bank's assets will cover its obligations is too low, or the bank cannot maintain its minimum capital adequacy ratio, or the quality of its assets deteriorates resulting in a weakening of its financial structure, and/or the bank cannot establish adequate internal monitoring, supervision and control.

¹⁴ The Agency may ask the bank to take other measures as well.

¹⁵ By serious deterioration, I mean one of the conditions spelled out in Article 71. For example, not being able to fulfill its obligations when they come due is one such condition. The total liabilities of the bank exceeds the total value of its assets is another such condition.

¹⁶ As quoted in 2005 index of economic freedom,
<http://www.heritage.org/research/features/index/index.cfm>

¹⁷ Association Professionnelle Tunisienne de Banques et Etablissements Financiers

Optimal Risk-Sharing in a Monetary Union

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Abstract. It is argued that a monetary union is a more efficient way to organize an insurance system to cope with asymmetric shocks than a monetary arrangement based on the existence of national currencies. This is due to the fact that in a monetary union the exchange rate risk and uncertainty are removed, and this favours the diversification of assets, improving thus the allocation of risk among economic agents. By exploiting the results from the theory of general economic equilibrium, we argue in this paper that the formation of a monetary union is a necessary condition for the organization of such an insurance system, but it is not sufficient. Sufficiency requires markets to be complete. In fact, the ability of the markets to smooth consumption, and thus to offer a (complete) insurance to consumers against asymmetric shocks, is possible only in the case in which these markets are complete. With incomplete markets this is no longer true. In this last case either consumers have to save more in order to self-insure themselves against the randomness of their consumption patterns, and/or monetary unions have to be vested with a fiscal system providing automatic transfers from regions in prosperity to regions in distress in order to soften the negative effects of asymmetric shocks on regional consumption.

JEL Classification: E42, E33, F42

Keywords: Monetary unions, asymmetric shocks, risk-sharing, complete and incomplete markets

1. Introduction

It is argued (De Grauwe, 2005) that a monetary union is a more efficient way to organize an insurance system to cope with asymmetric shocks, than a monetary system based on the existence of national currencies. This is due to the fact that in a monetary union the exchange rate risk and uncertainty are removed, and this favours the diversification of assets, improving thus the allocation of risk among economic agents. This is the essence of the so called Mundell II argument (Mundell, 1973). By exploiting the results from the theory of general economic equilibrium, we argue in this paper that the formation of a monetary union is a necessary condition for the organization of such an insurance system, but it is not sufficient. Sufficiency requires markets to be complete. Only in this case the allocation of risk is Pareto efficient (although not necessarily socially efficient), and markets offer complete insurance to economic agents, against the negative effects of

asymmetric shocks. With incomplete markets this is no longer true. In this last case, either consumers have to save more in order to self insure themselves against the randomness of their consumption patterns, and/or monetary unions have to be vested with a fiscal mechanism providing automatic transfers from regions in prosperity to regions in distress.

The paper is organized as follows. In the next section, we present a short review of the literature on the theory of monetary unions, asymmetric shocks and risk sharing. In Section 3, we discuss the importance of complete and incomplete markets for monetary unions, the conditions under which consumption patterns are smoothed in these markets and their corresponding implications for consumer's relative insurance against asymmetric shocks. Section 4 summarizes the findings.

2. Monetary unions , asymmetric shocks and risk sharing.

The traditional theory of monetary unions argues that the cost of sacrificing the tool of monetary policy by a member country depends, in part, on (i) the extent to which member countries are likely to suffer from asymmetric shocks, and (ii) the availability of alternative (other than national monetary policies) asymmetric shock absorbers. The first condition is fulfilled if the members of a monetary union are countries that are similar in their economic structure (similar in tastes, factor endowments and technology), and therefore they do not specialize by trade. Non-specialization reduces the likelihood of appearance of asymmetric shocks. In the case, however, in which asymmetric shocks are present (because the member countries are different in their economic structure and therefore specialize by trade), alternative asymmetric shock absorbers (price and wage flexibility, factor mobility, fiscal policy) are needed.

More recent contributions to the debate emphasize that asymmetric shocks (stemming from the specialization of economic activity) do not constitute a problem for monetary unions, provided that mechanisms, for achieving an intra-union income insurance are present, (Kalemli-Ozcan, Sorensen and Yosha, 2004)² These mechanisms (channels for risk sharing) are two: fiscal policy, and market institutions. Fiscal policy may be conducted either at the union level (fiscal federalism) or at the national level (decentralized fiscal policy). In the first case, the union has a centralized budget and a federal income tax. In the case of an asymmetric shock the region in distress has to pay less income tax, while federal employment benefits increase. The opposite is true for the regions in prosperity. Thus, there is an automatic transfer of wealth from regions in prosperity to regions in distress that soften the negative effects of asymmetric shocks; risk sharing takes place between regions. In the second case (decentralized fiscal policy), the region in distress has to borrow from the region in prosperity. Since debts have to be serviced in the future, the risk is shared between generations of the same region and not between regions (De Grauwe, 2005). Market institutions insure economic agents through trade in assets. The gains from this trade is the risk sharing among the agents involved, which is achieved by the diversification of assets. Recent contributions (Krugman, 1991) have shown that more capital market integration may lead to more trade specialization (Krugman's view) in a different context, but the negative effects of asymmetric shocks are softened by the increased risk sharing (Acemoglu and Zilibotti, 1997; Kalemli-Ozcan, Sorensen and Yosha, 2003; Melitz, 2004).

A factor that reduces the ability of capital markets to insure consumers is the “home bias puzzle” (French and Poterba, 1991; Tesar and Werner, 1995). In a world with no trade costs, perfect information, and the same risk aversion across countries, agents prefer to hold assets of their own geographical region. The “home bias puzzle” is attributed to the exchange rate risk and uncertainty and to the costs involved in converting one currency into another. Some researchers (Coval and Moskowitz, 1999) have found “home bias at home”. For example, US institutional investors, while holding assets from all over USA, still hold a more than proportional amount of assets issued in their own geographical area. But this “home bias at home” is less severe than the “home bias” observed in international markets. It is argued (De Grauwe, 2005; Mundell, 1973; McKinnon, 2004) that in a monetary union the “home bias” phenomenon is removed (at least to the extent that this phenomenon is attributed to exchange risk and uncertainty, and to transaction costs involved in converting one national currency into another), and from this point of view it offers a more effective mechanism for insurance against asymmetric shocks than a monetary system based on national currencies.

3. Risk-sharing in a monetary union with complete and incomplete markets.

The fact that a monetary union offers a more effective mechanism for insurance in comparison to monetary systems based on national currencies, does not necessarily imply (i) that markets can smooth consumption patterns, and (ii) that risk allocations obtained by the market are Pareto efficient. To see this, consider a monetary union as an Arrow-Debreu economy described by³:

(i) A set S of states of nature, corresponding to future events (asymmetric shocks), that may affect consumption. The meaning of uncertainty is that agents do not know the state of nature which finally will materialize, although they may assign a (subjective) probability on it. The information structure of the model is presented by a decision tree.

(ii) A single consumption good. Since we are interested in consumption smoothing, we assume that there is one consumption good called “consumption”, contingent on the states of nature. Therefore, there are S contingent commodities, i.e., the possible levels of consumption are equal to the number of the states of nature.

(iii) A set of consumers. They are the representative citizens of the member countries of the monetary union. Consumers are risk averse. They are endowed with Arrow-Debreu securities, that enable them to consume a contingent commodity if and only if a particular state of nature is revealed. It is assumed that they are identical in every respect except in asset endowments. Therefore, there is a motive for trading assets leading to portfolio diversification (Obstfeld, 1995; Svensson, 1988).

Production is omitted for simplicity.

Assume now that markets are complete. This means that there is a market for every contingent level of consumption, i.e., for every state of nature. Completeness also implies that information is symmetric, i.e., all agents recognize the occurrence of $s \in S$. These markets open before the resolution of uncertainty (for trading the assets available), and then close down again.

It can be proved that the allocation of risk attained in these markets is Pareto efficient (by the First Theorem of Welfare Economics). Consumption depends of course on the state of nature, but since agents are active in all states of nature (by the assumption

of completeness) they manage to insure completely. This implies a smooth consumption pattern. Therefore, countries can exploit the benefits derived from specialization (greater efficiency and higher economic growth), without the welfare loss stemming from uninsured asymmetric shocks.

However the Pareto efficiency allocation chosen by the market may not maximize social welfare. In fact, the Pareto efficient allocation selected by the market is one of the Pareto efficient allocations belonging to the $n-1$ dimensional manifold, where n is the number of agents. In the Edgeworth box case of two agents, this manifold is the Edgeworth contract curve, every point of which is Pareto efficient. And since by the Second Theorem of Welfare Economics, every Pareto efficient point can be supported by the market, given the appropriate distribution of wealth, a socially acceptable allocation of risk presupposes a redistribution of wealth.

The above discussion may be summarized in the following propositions:

PROPOSITION 1. In complete markets : (i) Allocations of risk are Pareto efficient, although not, necessarily, socially acceptable, (ii) Consumption patterns are smoothed by the markets (insurance is complete), (iii) asymmetric shocks do not constitute a problem for a monetary union since their negative effects are completely insured by the markets.

Completeness is an idealization of reality. Transaction and informational costs limit the number of the markets that can function in an economy. Thus the number of the markets that function in the economy is less than the number of the states of nature. More specifically, the model of incomplete markets assumes a system of sequential markets, i.e., a system of reopening markets which implies that the assumption that markets open only once (as in the case of complete markets) is removed. These markets are linked by a system of financial markets, the role of which is to transfer wealth across spot markets, and hence to provide insurance opportunities. The model further assumes that there are not enough financial markets to transfer wealth across all spot markets; in other words, markets are incomplete. The question now is how incompleteness modifies Proposition 1.

Pareto optimality is considered first. Since some markets are missing, marginal rates of substitution cannot be equalized across all states of nature, and therefore Pareto efficiency (as it is usually defined) is bound to fail. A more interesting question is whether *existing* markets can work efficiently. This leads to the concept of constrained Pareto efficiency. A feasible allocation is constrained Pareto efficient, if there is no other feasible allocation which is superior to it. It can be proved that incomplete markets with a single good (which is the case usually considered in finance) is constrained Pareto efficient. However in the more general case of more than one consumption goods, even constrained Pareto efficiency fails (Geanakoplos and Polemarchakis, 1986). This is due to the fact that reallocations of portfolio (that take place during the first period) may lead to changes in relative prices. The consensus emerging in the literature seems to be that in incomplete markets, failures of Pareto efficiency are not only possible but even typical (Mas Colell et. al. 1995, p.712)

We now turn to the question of whether incomplete markets can smooth consumption patterns, and thus offer complete insurance to economic agents. We have already seen that in complete markets, the variability of consumption across the states of nature is reduced, and thus agents manage to insure completely. This does not hold true in incomplete markets, which are characterized by stochastic consumption patterns

(Heaton and Lucas ,1996). Therefore, agents cannot be insured completely against the negative effects of asymmetric shocks. This is due to the fact that in incomplete markets agents cannot transfer wealth across all states of nature. To see this, consider the extreme case in which only spot markets exist. Then, if agents respect their budget constraints, irregular consumption patterns necessarily follow.

The above discussion is summarized in the following proposition.

PROPOSITION 2: In incomplete markets: (i) Risk allocations are constrained Pareto efficient, in the particular case of one consumption good. (ii) Markets cannot smooth consumption patterns implying that consumers cannot be insured completely against asymmetric shocks.

This means that either consumers have to save more in order to self-insure themselves against the randomness of their consumption patterns, or / and monetary unions have to be vested with fiscal systems providing automatic transfers from regions in prosperity to regions in distress in order to soften the negative effects of asymmetric shocks on regional consumption (von Hagen 1998, von Hagen and Hepp, 2000).

4. Concluding remarks.

We found that markets can allocate risk efficiently and smooth consumption patterns only in the case in which they are complete. In reality markets are incomplete. In this case, Pareto optima, if they exist, are constrained Pareto optima, and the markets cannot smooth consumption patterns. Thus, a policy aiming at the integration of financial markets, for example by allowing the cross-border mergers of financial institutions, and by removing the barriers affecting the ability of mutual funds and pension funds to diversify within the union, may improve matters, but the problems with inefficiency, and stochastic consumption patterns still remain.

Notes

1. George D. Demopoulos is Professor of Economics and European Chair Jean Monnet, Athens University of Economics and Business, Greece. Nicholas A. Yannacopoulos is Professor of Economics, University of Pireaus. Stanton A. Warren is Professor of Economics, Niagara University, Niagara, N.Y. The paper is substantially revised version of *Athens University of Economics and Business*, Discussion Paper No, 135, October 2004. We have benefited from comments by members of a Faculty Seminar held at the Department of Economics, University of Giessen, Germany. Professor Demopoulos acknowledges financial support from the Jean Monnet Project 97/0243 of the European Commission. Corresponding Author: George D. Demopoulos, 76 Patision Str., 104 34 Athens Greece. Phone: +30 210 820 3281, 8226107, Fax: +30 210 8203301, e-mail: Demopoulos@aub.gr
2. This argument is similar to that expressed (within the context of the theory of international trade) by Helpman and Razin (1978) who argued that the benefits from specialization will emerge only if production risk can be insured through trade in assets.
3. For a similar approach, see Obsfeld, 1995.

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Equity and Currency Premia in Complete and Incomplete Markets

(Not to be quoted or cited without permission, Incomplete)

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1. Introduction

There are several puzzles which are of concern to financial economists. First is the *real exchange rate puzzle* which is also known as the *purchasing power parity puzzle*. The puzzle originates from the failure of the law of one price to hold internationally. In an ideal textbook world, with no impediments to international trade, prices of goods will equalize internationally except for some margin of transportation costs. In practice, the real exchange rate or the international relative price deviates from unity and is remarkably volatile.

The second puzzle is the *risk sharing/home bias puzzle*. International financial markets fail to share risks in the way a textbook model suggests. In a world of full financial integration, country consumption growth rates will move in unison. However, this hardly happens. Consumption growth rates are not correlated much across countries. There is not enough international *risk sharing*. In fact, there is significant bias in the holding of home assets. Home residents tend to buy a lot of their own assets and do not trade assets in international financial markets to diversify portfolio. Why there is such a *home bias* in asset holding is an active area of research in international finance.

The third puzzle connects to the domestic financial markets. Since the home equity returns are more risky and volatile than the return on riskfree government bonds, the financial market rewards the equity holders an equity premium for risk bearing. Although the profession is deeply divided on the issue whether the average return on equity is too high relative to bond return, there is near unanimity that the equity premium is very volatile to be understood in terms of textbook finance models and the risk free rate is too low (low riskfree rate puzzle). Being consistent with the literature we call this third puzzle the *equity premium puzzle*.

The final puzzle is the currency premium puzzle which is also known as the Fama puzzle. A simple version of the unbiased forward rate hypothesis tells us that the forward rate should be the unbiased predictor of the future spot rate. This hypothesis is rejected by exchange rate data. In fact, a simple OLS regression of spot on the forward rate gives rise to a negative slope coefficient which apparently suggests that unexploited profit opportunity exists in the foreign exchange market. Fama (...) points out that this basically means that the foreign exchange risk premium or currency premium is too volatile compared to the real exchange rates. The issue arises what drives the volatility of the

currency premium.¹ Sarkissian (...) addresses this currency premium puzzle in an incomplete market setting.

The resolution of these puzzles must come from common economic fundamentals. The question is the following. Can we find an economic environment where the same economic fundamentals can reproduce volatile domestic equity premium, low cross-country consumption growth correlations, variable real exchange rates and also variable currency premia? Brandt, Cochrane and Santa Clara (2006) is the first paper that points out the key difficulty in reconciling the first three puzzles. Solution to one financial puzzle deepens the other two puzzles.² Basu and Wada (2006) suggest a partial resolution of this puzzle using a stochastic discount factor à la Constantinides and Duffie (1996). However, their framework treats the real exchange rate as exogenous. Moreover, their framework leaves out the currency premium puzzle.

In this project, we aim to address these extant puzzles in an integrated general equilibrium framework. Our project is inspired by a recent paper of Kocherlakota and Pistaferri (2006). They suggest two frameworks: (i) domestically incomplete markets but internationally complete markets, (ii) both domestically and internationally complete markets. However, they basically address the real exchange rate puzzle and do not address the other three puzzles.

Two features are novel in our framework. First, we have an integrated framework which can address both the domestic and international financial puzzles in terms of common fundamentals. Second, our framework can test the empirical plausibility of two stochastic discount factors invented by Kocherlakota and Pistaferri (2006): (i) the discount factor which is relevant in a domestically incomplete market but internationally complete market environment, (ii) the discount factor for an environment where domestic and international markets are complete.

2. Model

Consider a world economy with a large number of investors indexed by i and with two countries indexed by j . Let c_t denote the world consumption at date t . We follow Sarkissian (2002) to represent the *post-trade allocation* of consumption as follows. The i th investor's consumption in country j is:

$$c_{ij,t} = \delta_{ij,t} \cdot \delta_{j,t} \cdot c_t \quad (1)$$

where $\delta_{ij,t}$ is the i th investor's share in country j 's consumption and $\delta_{j,t}$ is the country j 's share in world consumption, c_t . We assume the following processes for $\delta_{ij,t}$ and $\delta_{j,t}$:

$$\delta_{ij,t} = \exp(u_{ij,t} \sqrt{x_{j,t}^w} - \frac{x_{j,t}^w}{2}) \quad \text{and} \quad \delta_{j,t} = \exp(u_{j,t} \sqrt{x_t} - \frac{x_t}{2}) \quad (2)$$

where $u_{ij,t}$ and $u_{j,t}$ are standard normal shocks which are i.i.d across countries, individuals and time, $x_{j,t}^w$ is the within-country variance of country j 's *log consumption level* and x_t is the between-country variance of *log consumption level* of country j and the rest of the world.

The sth raw moment of the cross sectional distribution of consumption is given by:

$$E_i(c_{ij,t}^s) = c_t^s \exp\left(\frac{s^2 - s}{2}(x_{j,t}^w + x_t)\right) \quad (3)$$

2.1 Two Discount Factors

Kocherlakota-Pistaferri Incomplete Market Discount Factor

Recall the first order condition for any jth country's asset return (R_{t+1}^j)

$$\beta E_t \left[c_{ij,t+1}^{-\gamma} R_{kt+1}^j \right] = c_{ij,t}^{-\gamma} \quad (4)$$

Integrating with respect to the cross sectional distribution of households and using Fubini's theorem one gets:

$$E_i c_{ij,t}^{-\gamma} = \beta E_t \left[E_i(c_{ij,t+1}^{-\gamma}) R_{kt+1}^j \right] \quad (5)$$

Applying (3) to (5) (which means we evaluate the raw sth moment at $s = -\gamma$,

$$c_t^{-\gamma} \exp\left(\frac{\gamma^2 + \gamma}{2}(x_{j,t}^w + x_t)\right) = \beta E_t \left[c_{t+1}^{-\gamma} \exp\left(\frac{\gamma^2 + \gamma}{2}(x_{j,t+1}^w + x_{t+1})\right) R_{kt+1}^j \right] \quad (6)$$

Define the discount factor:

$$m_{t+1}^{koch, Inc} = \beta \left(\frac{c_{t+1}}{c_t} \right)^{-\gamma} \exp\left(\frac{(\gamma^2 + \gamma)}{2}(x_{jt+1}^w + x_{t+1} - x_{jt}^w - x_t)\right) \quad (7)$$

which means (6) can be compactly written as:

$$1 = E_t(m_{t+1}^{Inc} R_{kt+1}^j) \quad (8)$$

We call this domestically incomplete market stochastic discount factor $K1$.

Kocherlakota PIPO Discount Factor

Note that Kocherlakota PIPO discount factor is based on an entirely different first order condition which takes into account agent's incentive constraint. For details see the other paper of Kocherlakota (Asset Pricing Implications of PIPO etc., page 13) available on his website.

The first order condition can be rewritten as:

$$1 = \beta E_t \left[\frac{E_i c_{ij,t}^\gamma}{E_i c_{ij,t+1}^\gamma} \cdot R_{kt+1}^j \right] \quad (9)$$

$$1 = \beta E_t \left[\frac{c_t^\gamma \exp\left(\frac{\gamma^2 - \gamma}{2} (x_{j,t}^w + x_t)\right)}{c_{t+1}^\gamma \exp\left(\frac{\gamma^2 - \gamma}{2} (x_{j,t+1}^w + x_{t+1})\right)} \cdot R_{kt+1}^j \right] \quad (10)$$

which after rewritten in a compact form gives us:

$$1 = E_t (m_{t+1}^{PIPO} R_{kt+1}^j) \quad (11)$$

where

$$m_{t+1}^{PIPO} = \beta \left(\frac{c_{t+1}}{c_t} \right)^{-\gamma} \exp\left(\frac{(\gamma^2 - \gamma)}{2} (x_{jt}^w + x_t - x_{jt+1}^w - x_{t+1})\right) \quad (12)$$

We call this complete market stochastic discount factor $K2$.

2.3. Expressions for the real exchange rates

Real exchange rate in two discounting environments

The change in the real exchange rate is the difference between domestic and foreign intertemporal marginal rate of substitution. Using the post trade allocation of consumption in (1) one gets the following expressions for the real exchange rates in the two environments:

$$\ln \frac{q_{t+1}^{Inc}}{q_t} = \frac{\gamma^2 + \gamma}{2} \left[x_{ft+1}^w - x_{ft}^w - x_{ht+1}^w + x_{ht}^w \right] \quad (14)$$

$$\ln \frac{q_{t+1}^{PIPO}}{q_t} = \frac{\gamma^2 - \gamma}{2} \left[x_{ft}^w - x_{ft+1}^w - x_{ht}^w + x_{ht+1}^w \right] \quad (15)$$

The immediate implication is that the real exchange rate is independent of the cross-country variance of consumption. Real exchange rate depreciates (appreciates) in response to increase in foreign (home) within country variance in an INC environment. The implication is exactly reverse in a PIPO model.

2.4 Raw Domestic Returns in two discounting environments

Using the stochastic discount factors $K1$ and $K2$ we write the Euler equations for raw returns for equity and the riskfree assets as follows.

$$E_t \left[m_{t+1}^i (R_{mt+1}^{US}) \right] = 1 \quad (16)$$

$$E_t \left[m_{t+1}^{ic} (R_{ft+1}^{US}) \right] = 1 \quad (17)$$

for $i=INC, PIPO$.

Alternatively one may write the first order conditions in as follows:

$$E_t \left[m_{t+1}^i (R_{mt+1}^{US} - R_{ft+1}^{US}) \right] = 0 \quad (18)$$

$$E_t \left[m_{t+1}^i R_{ft+1}^{US} \right] = 1 \quad (19)$$

for $i=INC, PIPO$

In order to address the domestic premium puzzles, two alternative estimation strategies lend themselves: (i) either estimate the raw returns (16) and (17) together or estimate the excess return equation (18) with the riskfree return equation (19) together for alternative discounting environments. Both approaches are equivalent. We resort to the former.

2.5 Currency Premium in two discounting environments

The currency premium is an excess return from two trading strategies: (i) holding foreign currency as an asset using a forward market, (ii) holding foreign currency as an asset using the spot market.

The relevant excess return is the difference between the forward rate and the expected spot rate. For the two discounting environments the arbitrage conditions for the currency premium can be written as follows:

$$E_t \left[m_{t+1}^{Inc} (F_t - S_{t+1}) P_t / S_t P_{t+1} \right] = 0 \quad \text{K1} \quad (20)$$

$$\text{K2} \quad E_t \left[m_{t+1}^{PIPO} (F_t - S_{t+1}) P_t / S_t P_{t+1} \right] = 0 \quad (21)$$

where F_t is the forward rate for date $t+1$ contracted at date t and S_t is the spot rate at date $t+1$. In the appendix we outline a structural model which generates these equity and currency premia.

3. Addressing four puzzles

We follow the same principle as in Basu and Wada (2006) to address all four puzzles. Both these discount factors K1 and K2 incorporate incomplete consumption risk sharing by default. In the K1 discounting environment, agents cannot at all insure consumption using the domestic financial market. In the K2 discounting environment, agents can insure consumption using the domestic financial markets but due to hidden work effort, financial intermediaries strike incentive compatible constraint which prevents full risk sharing. The issue is which of these two discounting environments reconciles the observed variability of the real exchange rate, equity premium and currency premium better. If we get a decisive answer to this question, we have made a dent on the extant four puzzles.

3.1 Estimation Strategy

We basically estimate four equations jointly for alternative discounting environments. These four equations are (i) real exchange rate equation, (ii) raw domestic return for the equity, (iii) raw domestic riskfree rate equation, and finally (iv) the currency premium equation. Based on (14) through (21) the estimable equations for the two discounting environments are as follows:

K1 Discounting

$$\ln \frac{q_{t+1}^{Inc}}{q_t} = \frac{\gamma^2 + \gamma}{2} \left[x_{ft+1}^w - x_{ft}^w - x_{ht+1}^w + x_{ht}^w \right] \quad (19)$$

$$E_t \left[m_{t+1}^{Inc} (R_{mt+1}^{US}) \right] = 1 \quad (20)$$

$$E_t \left[m_{t+1}^{Inc} (R_{ft+1}^{US}) \right] = 1 \quad (21)$$

$$E_t \left[m_{t+1}^{Inc} (F_t - S_{t+1}) P_t / S_t P_{t+1} \right] = 0 \quad (22)$$

K2 Discounting

$$\ln \frac{q_{t+1}^{PIPO}}{q_t} = \frac{\gamma^2 - \gamma}{2} \left[x_{ft}^w - x_{ft+1}^w - x_{ht}^w + x_{ht+1}^w \right] \quad (23)$$

$$E_t \left[m_{t+1}^{PIPO} (R_{mt+1}^{US}) \right] = 1 \quad (24)$$

$$E_t \left[m_{t+1}^{PIPO} (R_{ft+1}^{US}) \right] = 1 \quad (25)$$

$$E_t \left[m_{t+1}^{PIPO} (F_t - S_{t+1}) P_t / S_t P_{t+1} \right] = 0 \quad (26)$$

Expression for aggregate consumption

In order to estimate these excess return equation we need an expression for aggregate consumption, c_t . Since US is the home country, hereafter I use $h=US$ and $f=UK$. The real exchange rate is defined US goods per unit of UK good. The aggregate consumption (c_t) is defined as

$$c_t = c_t^{US} + q_t c_t^{UK} \quad (19)$$

where c_t^{US} = constant dollar US GDP and c_t^{UK} = constant pound UK GDP. The base year has to be the same. Define the spot nominal exchange rate s_t as dollars/sterling. Then the real exchange rate is

$$q_t = \frac{s_t * UKCPI_t}{USCPI_t} = \text{price of one unit of UK good in terms of US goods.}$$

4. Estimation Results

We estimate (19) through (26). The details of the data, instrumentation and the estimation procedures are relegated to the appendix. The results are summarized below.

K1 Model Estimation

Parameter	Estimate	Error	t-statistic	P-value
β	.928095	.052522	17.6706	[.000]
γ	-1.33497	.256789	-5.19871	[.000]
Test of overidentifying restrictions =	17.7889	[.007]		

K2 Model Estimation

Standard				
Parameter	Estimate	Error	t-statistic	P-value
β	.997814	.063741	15.6541	[.000]
γ	1.09276	.399741	2.73367	[.006]
Test of overidentifying restrictions =	12.3037	[.056]		

Note that the K1 model is rejected while K2 model is not rejected according the chi square statistic at 5% level of significance. The estimates of the preference parameters, β and γ are reasonable and significant for K2. These results are consistent with Koehlerlakota and Pistefærri (2006) who also find that PIPO model is supported by the data.

Notes:

¹ For an excellent exposition of the currency puzzle see Obstfeld and Rogoff (...).

² Brandt et al. (2006) do not address the currency premium puzzle.

The Impact on SFAS 158 on U.S. Balance Sheets and Asymmetries in International Reporting of Post-Employment Benefits

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Abstract. British and international accounting standards for reporting post-employment benefits either require or permit the reporting of the funded status of these plans directly in the balance sheet. U.S. accounting standards will require this treatment for fiscal years ending after December 15, 2006. Thus, global accounting standards for post-employment benefits appear to be converging. This paper estimates that application of SFAS 158 to the Fortune 250 companies would cause a pretax decrease in net assets of nearly \$400 billion. Having estimated the U.S. impact, the paper then evaluates the remaining asymmetries in applying U.S. and international standards.

JEL Classification: M41

Keywords: Post-employment benefits, Pension benefits, IAS 19, SFAS 158

1. Introduction

In September, 2006, the Financial Accounting Standards Board issued SFAS 158, which requires that the funded status of defined benefit pensions and other postretirement plans be reported in the balance sheet for fiscal years ending after December 31, 2006. Under the previous standard, U.S. firms disclosed the funded status of post-employment plans in footnotes, but did not report it in the balance sheet. Rather, the balance sheet contained the assorted assets and/or liabilities that resulted from recording the post-employment expense and funding entries.

The deferral of actuarial gains and losses ensured that the post-employment net assets on the balance sheet differed considerably from the plan's funded status.² Consequently, an additional requirement was imposed upon defined benefit pension plans whose accumulated benefit obligation exceeded the fair market value of their pension fund assets. That requirement—the additional minimum liability—stated that the balance sheet must report a liability that is “at least equal to the unfunded accumulated benefit obligation.” An intangible asset or accumulated other comprehensive loss (an equity account) are the offsets to this adjustment (SFAS 87, paragraphs 36 and 37).

For fiscal years ending after December 15, 2006, all this will change for publicly-traded companies. The minimum liability rule of SFAS 87 will no longer apply since the balance sheet will have to reflect a net asset position for plans whose assets exceed the benefit obligation, and a net liability position for plans whose benefit obligations exceed assets. Although the requirement of SFAS 87 and 106 to delay income statement recognition of actuarial gains and losses is presently retained, balance sheet recognition is accomplished through a decrease or increase to the other comprehensive income section of stockholders' equity.

2. The Data

Footnote information from the Form 10-K annual report or the corporate annual report was used to gather post-employment disclosure information for the defined benefit pension plans and other post-retirement plans of the Fortune 250 companies for 2005. In particular, we extracted from the notes the funded status of the plans as well as the amounts reported in the balance sheet for prepaid benefit cost, accrued benefit cost, intangible assets, and accumulated other comprehensive income.

Examination and sorting of the raw data revealed several interesting facts:

- Nearly eighty percent (194 out of 250) of the companies had defined benefit plans.
- Despite tax incentives for advance funding of U.S. pension plan benefits, only 19 companies reported an overfunded status.
- Only 3 of the 45 companies with pension plans outside the U.S. reported an overfunded status for the non-U.S. plans.

- Of the 177 companies sponsoring other post-retirement plans, only one reported an overfunded status.
- The overwhelming majority (191 out of 197) of companies reported unrecognized actuarial losses, indicating that the balance sheets of these companies report more net assets than will be the case under SFAS 158.
- This predominance of net actuarial losses also calls the conservatism of the actuarial estimates into question.

3. Analysis

SFAS 132R requires footnote disclosure detailing the asset, liability, and equity amounts reported in the balance sheet for both pension and other post-retirement plans, as well as the funded status of each type of plan. Such disclosure is illustrated using the annual report 10-K information for General Motors, which is presented in Figure 1. Focusing on General Motor's U.S. Pension Plans, we can see the balance sheet included an asset (prepaid benefit cost) of \$37,280 and a liability (accrued benefit liability) of \$1,177. Thus, General Motors reported a net asset position for its U.S. Pension Plans of \$36,103—the difference of the two amounts.

Under SFAS 158, the balance sheet will report a net asset equal to the funded status of overfunded plans and a net liability equal to the funded status of underfunded plans. For General Motors U.S. Pension Plans, the funded status is seen to be \$6,117 in Figure 1. The existing net asset or liability before application of SFAS 158 requirements is computed using the asset and liability information. Lastly, the amount required to adjust the net asset/liability amounts to the funded status amount are computed. For example, the net assets reported for U.S. pension plans would have to be adjusted downward by \$29,876 billion. Similar adjustment would be required for the Non-U.S. pension plans and the other post-employment plans. These adjustments are also shown in Figure 1.

The total balance sheet adjustment required for General Motors would be the sum of the four columns of adjustments, or a decrease in net assets of \$62,276 billion. According to SFAS 158, the adjustment should be charged to Accumulated Other Comprehensive Income, net of tax. Therefore, the decrease to equity can be approximated, using a 35% tax rate, as 65% of \$62,276 billion or \$40,479 billion. A deferred tax asset of \$21,797 billion would result.

Figure 1: Excerpt from General Motors 2005 Annual Report, Note 18 Pensions and Other Postretirement Benefits (Dollars in millions) and Estimated Pretax Adjustments from Applying SFAS 158 Requirements Retroactively

	U.S. Plans	Non-U.S.	U.S.	Non-U.S.
	Pension	Plans	Other	Other
	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>
Funded status	\$6,117	\$(10,716)	\$(60,899)	\$(3,760)
Net asset (liability):				
Prepaid benefit cost	\$37,280	\$ 296	\$ -----	\$ -----
Accrued benefit liability	(1,177)	(10,127)	(31,351)	(2,646)
Intangible asset	-----	743	-----	-----
Net asset(liability)	<u>\$36,103</u>	<u>\$ (9,088)</u>	<u>\$(31,351)</u>	<u>\$(2,646)</u>
Adjustment required by SFAS 158 [Funded status - Net asset(liability)]	<u>\$ (29,986)</u>	<u>\$ (1,628)</u>	<u>\$ (29,548)</u>	<u>\$ (1,114)</u>

Applying the methodology to all the Fortune 250 companies, we find that a pretax adjustment of \$(371,992) billion would be required under SFAS 158. Grouping the companies into five groups of fifty, the total unrecognized net loss for each group is as follows:

- Fortune 1 to 50—pretax unrecognized net loss of \$215 billion
- Fortune 51 to 100—pretax unrecognized net loss of \$91 billion

- Fortune 101 to 150—pretax unrecognized net loss of \$33 billion
- Fortune 151 to 200—pretax unrecognized net loss of \$24 billion
- Fortune 201 to 250—pretax unrecognized net loss of \$18 billion

As can be seen from the groupings, most of the adjustment occurs in the top 100 firms and the amount of adjustment diminishes with each grouping.

The 250 companies in the aggregate have a negative funded status for pension plans of (\$176) billion and a negative funded status for other post-retirement plans of (\$363) billion. The estimated pretax balance sheet adjustment for pension plans was (\$253) billion and for other post-retirement plans was (\$127) billion. Thus, although the pension plans are generally better funded, they require the greater adjustment to bring the balance sheet into compliance with SFAS 158.

4. Asymmetries in International Reporting

Having seen the impact on U.S. firms of adopting SFAS 158, we now turn our attention to asymmetries in the application of the U.S. and the international accounting standards for post-employment benefits plans. We will consider differences in the application of actuarial estimates across countries as well as differences in the standards.

4.1 The Balance Sheet

As of January 1, 2005, publicly-traded companies in the member-states of the European Union were required to adopt International Financial Reporting Standards (IFRS). Additionally, the Accounting Standards Board of Japan has announced its intention to converge with IFRS, the Institute of Chartered Accountants of India has created a task force to study the idea of replacing Indian standards with IFRS, and China's Ministry of Finance has been laboring to create and harmonize Chinese standards with IFRS. According to the International Accounting Standards Board (IASB), over 75 countries outside of Europe are in the process of converging their accounting standards with IFRS.

In part, the impetus for SFAS 158 was to harmonize U.S. standards with the international accounting standard IAS 19 *Employee Benefits*. Ironically, IAS 19 allows companies a choice of recognizing actuarial gains and losses immediately in income, immediately in equity (the SFAS 158 rule), or deferring and amortizing the gains and losses (the previous U.S. rule). No doubt the standard allows several choices to accommodate previously existing rules in the U.K. and the U.S.

A major actuarial firm, Lane Clark & Peacock (LC&P), recently published their annual survey of the accounting for pensions in the U.K. and Europe. LC&P reported that two-thirds of the surveyed companies reporting under IAS 19 chose to defer actuarial gains and losses. One of main findings of that study is that "it is still not possible to compare pension deficits easily between companies without analysis. This is a result of the different accounting standards still being used, and the options within IAS 19 as to how deficits are spread" (LC&P, 2006, 3.). Perhaps the IASB will reduce the number of options allowed under IAS 19, now that the U.S. standard requires immediate recognition of actuarial gains and losses.

A study by Ernst & Young (E&Y) of multinational firms using IFRS in 2005 found that 55% of sampled companies chose to defer actuarial gains and losses (E&Y, 2006, 70). Interestingly, this result was country-specific: French and Italian companies deferred the gains and losses, while U.K. and Dutch companies recognized them immediately to equity. The E&Y study also reported that only three of the 65 companies in the sample chose to recognize actuarial gains and losses on the income statement. Thus, there is still considerable disparity in the post-employment assets and liabilities reported in balance sheets across countries.

4.2 Discount Rates

Both IAS 19 and SFAS 158 require that the post-employment liability be discounted using a rate based on market yields for high quality corporate bonds. Obviously, the use of a higher (lower) rate will cause the liability to be calculated as a smaller (larger) present value. One might expect that the discount rates used by companies would be similar within countries and, indeed, that is what various surveys have shown.

For example, the LC&P study of U.K. and European firms found that the range of discount rates used by the firms in its study had narrowed in 2005 compared to 2004 to .25%. Clearly the firms in this study chose similar discount rates. The E&Y study corroborated that U.K. and European firms chose similar discount rates, though the observed range was somewhat larger. The E&Y study additionally shed light on the considerable differences in rates across countries as seen in Figure 2.

Figure 2: Discount Rates Reported across Countries by Companies in E&Y 2006 IFRS Implementation Study, p. 71.

Country	Number of Disclosures	Discount Rate %		Mean	Standard Deviation
		High	Low		
France	16	4.70	3.80	4.23	0.24
Germany	12	5.00	3.80	4.23	0.19
Eurozone (including France and Germany)	58	5.75	3.13	4.23	0.30
U.K.	22	5.40	4.70	4.85	0.13
U.S.	21	6.75	5.00	5.63	0.23

Individual countries had small standard deviations of 24 basis points or less, with the U.K. being smallest. Note that the range in the Eurozone was considerably bigger than within France, Germany, or the U.K. And finally, note that the mean discount rate for the U.S. multinationals was almost 1% higher than for U.K. firms and 1.4% higher than the Eurozone firms.

The Milliman 2006 Pension Study confirms that discount rates applied to defined benefit pension plans in the U.S. were significantly higher than those used for U.K. and European firms in the E&Y study. The Milliman study further noted that "Discount rates dropped for the fifth consecutive year to a median of 5.50% at the end of 2005..." (p. 4).

For further insight into comparing the effect of lowering the discount rate, we analyzed the disclosures of the ten firms in the Fortune 250 with the largest pension obligations. SFAS 132R requires disclosures of the sensitivity of a firm's pension obligations to a change in discount rates. Given that U.S. firms seem to choose higher discount rates than European firms, we focused on the impact of a decrease in the discount rate. See Figure 3 below.

Figure 3: Fortune 250 Companies with the Largest Pension Plan Liabilities (Dollars in millions) and Sensitivity Disclosures from their 10-K Annual Report

	Projected Benefit Obligation (PBO)	Increase in PBO due to 1% Rate Decrease	% Increase in PBO due to 1% Rate Decrease
General Motors	\$109,777	\$9,200	8.38%
IBM	83,089	5,088	6.12%
Ford	74,595	8,970	12.02%
AT&T	46,176	2,436	5.28%
Boeing	45,183	6,280	13.90%
Verizon	35,561	5,165	14.52%
Lucent Technologies	31,311	2,800	8.94%
Lockheed Martin	23,421	3,720	13.09%
	\$454,110	\$43,659	
General Electric	\$51,428	Not disclosed	N/A
DuPont	22,935	Not disclosed	N/A

Eight of the ten firms provided information about the sensitivity of the projected benefit obligation to a decrease in the discount rate. Firms described the change in the obligation in terms of rate decreases ranging from 0.125% to 1.00%. Extrapolating the data to a 1.00% decrease in the discount rate, we find that the eight firms would experience a combined increase in their projected benefit obligations of \$43.7 billion,

a 9.6% increase overall. Computing the expected increase in obligation for each firm individually provides an average increase in each individual firm's obligation of 10.3 %.

Given the observed differences in the chosen discount rates, it is apparent that some firms may be underestimating their pension obligation unless there is justification for the use of different rates. U.S. firms routinely used higher discount rates, causing the obligation to be valued at a lower amount. Although European companies employed lower discount rates overall, considerable variation in rates was observed. This study suggests that U.S. pension liabilities may be ten percent lower than would be the case using lower European discount rates.

4.3 Mortality Assumptions

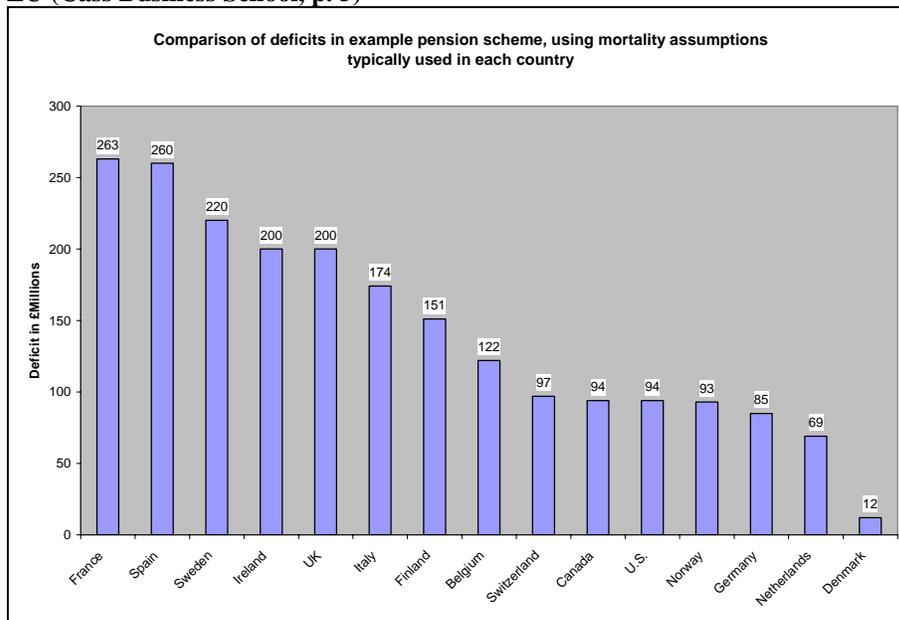
U.S. firms either do not mention mortality rates or only give passing mention that mortality is among the primary assumptions used to estimate the projected benefit obligation. For example, General Motors in its 2005 Annual Report 10-K includes this bullet point: "Mortality rates are based on actual and expected plan experience" (p. II-40). Other companies simply say that mortality is among the estimates used, without indicating how mortality rates are determined.

When firms make a quantitative statement associated with mortality, it may take the form used by Pfizer in its 2005 annual report: "The decline in the 2005 U.S. qualified pension plans projected benefit obligations (PBO) funded status was primarily the result of the 0.2 percentage-point decline in the discount rate and the adoption of updated mortality assumptions (p. 57)." Thus, there is little information available about the specific effect of mortality rates on the size of the post-employment obligation.

Under ISA 19, an entity must disclose the "material actuarial assumptions used" in calculating the obligation. The LC&P Annual Survey 2006 observed an increased disclosure of mortality assumptions under IAS 19. LC&P estimated "that the difference between the adoption of the most prudent and the most optimistic assessments of future life expectancy (as disclosed by companies in their accounts) is equivalent to more than 10% of the accounting liabilities (p. 13).

The LC&P survey also referenced a study done by the Cass Business School, which compared mortality assumptions across the European Union, Canada, and the U.S. To help visualize the differences, the Cass study valued a hypothetical defined benefit plan under the mortality assumptions typically used in the countries under consideration. The chart in Figure 4 illustrates how the funded status of the plan would vary using the country-specific mortality assumptions.

Figure 4: From Mortality Assumptions used in the Calculation of Company Pension Liabilities in the EU (Cass Business School, p. 5)



The differences in funded status depicted in Figure 5 are due to changes in the pension obligation caused by applying different mortality rates. The simulation used the U.K. as the benchmark country reporting a funded deficit of £200 million. As can be seen, the plan's deficit would have only been £94 million using U.S. mortality rates and it would have been £263 million using French mortality rates. The LC&P study goes on to note that "the assumptions commonly adopted in some European countries are very different from those used in other countries, with no obvious reason for the difference" (p. 33).

4.4 Definitions of Defined Benefit and Defined Contribution Plans

U.S. generally accepted accounting principles (GAAP) states that a "defined contribution pension plan ... provides an individual account for each participant, and has terms that specify how contributions to the individual's account are to be determined rather than the amount of pension benefits the individual is to receive." (SFAS 87, paragraph 63) Under IFRS, a defined contribution plan is one where "an entity pays fixed contributions into a separate entity (a fund) and will have no legal or constructive obligation to pay further contributions... All other post-employment benefit plans are defined benefit plans" (IAS 19, IN5 and IN6).

Thus, a U.S. plan that does not have an individual account for each participant would be considered a defined benefit plan, whereas the IFRS definition does not require individual accounts. Thus, "it is possible that a plan that would be accounted for as a defined benefit plan under U.S. GAAP could be accounted for as a defined contribution plan under IAS 19 (See IASC-U.S. Comparison Project, 1999). The same plan might report a funded status asset or liability under U.S. accounting but not under IFRS. There is apparently no available measure of how great this disparity might be.

4.5 Multiemployer Plans

"...A multiemployer plan is a pension plan to which two or more unrelated employers contribute, usually pursuant to one or more collective-bargaining agreements (SFAS 87, paragraph 67)." The definition provided in IAS 19 is similar. However, U.S. GAAP requires defined contribution accounting for multiemployer plans, while IAS 19 requires defined benefit accounting unless there is insufficient information to do so (see Similarities and Differences, p. 40). Thus there is a tendency for fewer liabilities to be recognized under GAAP for similar plans. Again there is apparently no available measure of how big a difference exists.

4.6 Anticipated Changes in State Support of Benefits

Post-employment benefits under IFRS should reflect "estimated future changes in the level of any state benefits that affect the benefits payable under a defined benefit plan, if past history, or other reliable evidence, indicates that those state benefits will change in some predictable manner..." (IAS 19, paragraph 83). The opposite is true under U.S. GAAP. Thus, an obligation that may be state supported will be recorded at a higher amount in the U.S. than under IFRS.

5. Conclusion

This paper has estimated that net assets and equity of the Fortune 250 companies would decline by over \$400 billion before tax under SFAS 158. In addition, several ongoing asymmetries between U.S. and international reporting practices have been detailed. We have estimated that U.S. pension liabilities may be understated by as much as 10% due to using higher discount in comparison to European companies. Similarly, it has been shown that the array of mortality assumptions across countries may cause an underestimation of the pension liability by as much as 10%. Other asymmetries such as differences in definitions and standards were identified but it was not possible to quantify their effects. Despite a global convergence of accounting standards, this study has demonstrated that amounts reported for post-employment benefits continue to differ considerably on a country-by-country basis.

Notes

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² Both SFAS 87 *Employers' Accounting for Pensions* (December 1985) and SFAS 106 *Employers' Accounting for Postretirement Benefits Other Than Pensions* (December, 1990) prescribe how to measure the respective expense amount. A recurring theme throughout these standards is the delayed recognition of actuarial gains and losses and prior service amounts. Funding in excess of expense is required to be reported as a prepaid asset and expense in excess of funding is required to be required as an accrued liability.

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Prospects for the Euro: Will Reserve Holdings Shift in Its Favour?

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Abstract

The determinants of Central Bank reserve holdings of major hard currencies are analyzed for the pre-Euro and the post-Euro periods. Real economic variables, financial variables, and developments in key Asian markets which are likely to possess greater clout in the future are used in the estimation process. Developments in oil markets are also considered while evaluating the future global importance of the Euro. Simulations are undertaken to trace possible future scenarios for the Euro and the Dollar. The simulations indicate that a rise in Asian emerging market share of world output will work towards preserving Dollar dominance.

JEL Classification: F02, F36, F37.

Keywords: Euro Dollar reserve holdings simulations

1. Introduction

One would be amazed at the interest which a casual mention of the ascendancy of the Euro to a status at par with the dollar raises, in any social or academic circle, let alone in your hairdresser. It cannot be that everyone is weighing alternative investments in these currencies. A deeper meaning is probably read into these words, in vague contours of the shifting international power centres, the marching of armies etc. But is such speculation and discussion too premature, or outright nonsense?

It is easy to answer this question, since there have been some serious academic attempts to evaluate the strength of the euro and speculate on its probable rise to greater strength relative to the dollar. The attempt is not a wild goose chase, considering the fact that less than a century ago a phenomenon similar to that being evaluated did occur, when the U.S dollar rose to absolute supremacy, bypassing the British pound.

In this paper, a historical analysis of the development of the shares of major currencies in central bank reserve holdings, for the last three decades, is undertaken. Using the determinants of currency holdings thus distilled out, simulations are undertaken to trace possible future scenarios for the euro (and the dollar). Real economic variables representing macroeconomic policy targets such as GDP growth and inflation differentials, trade shares, and variables capturing competitiveness in international

markets and depth in financial markets will be used as inputs in the estimation process. In addition, plausible developments in key Asian markets, which are likely to possess a greater clout in the world economy in the next decade, and the implications of different pricing strategies for oil by major oil exporters are also taken into account while evaluating future global importance of the euro.

The next section takes the reader through a brief review of related literature and the background for the study. Section 3 and 4 present the models used for estimation, while section 5 and 6 present the empirical results and simulation. There is a final, concluding section.

2. Determinants of currency holdings: views and results in the literature.

The *volume of transactions* in the foreign exchange markets, which lead to the so-called *invoicing demand* for currencies, depends on trade flows as well as capital transactions:

$$V_t = T_d + E_d + B_d \quad (1)$$

where V_t is the total transactions demand for a currency, T_d is the demand arising from trade flows, E_d is the currency demand arising from transactions in equity markets, and B_d is the demand from bond markets.

However, this is not the end of the story. To get the total currency holdings demand, we will have to add demands arising due to other motives as well. The demand for the dollar has been also in large measure due to its use as a *vehicle currency*. The dollar has been recently used in close to 80% of all currency exchange transactions (BIS, 1998). The euro's share is considerably less. The dollar's role is particularly pronounced in forward and swap markets.

The use of a currency as a vehicle currency is, of course, dependent on the depth of exchange markets in that currency, which is in turn closely related to its use in international trade and capital flow transactions. When a currency is widely used in international transactions, the transaction costs of its usage as a vehicle currency will be less, and it will be opted for when exchange between two non-vehicle currencies is involved.

The use of the dollar as a *substitute currency* has been wide spread in some periods of hyperinflation in Latin America, and even in some European nations. However, the mark has also played this role in some Eastern European countries. The choice of a currency as a substitute currency stems, again, from its wide use in international transactions - and also from its function as a vehicle currency.

In general, the demand for a currency from these types of usage can be categorized as that due to real economic variables (which may be macroeconomic policy-dependent or exogenous shocks), that arising from financial markets, and that which may be explained by its easy convertibility and acceptance. These variables are, accordingly, stressed in empirical work (see, for instance, Chinn, 2005). But the nature of the exchange rate mechanism and the pattern of trade can also have a bearing on the demand for the respective currency reserve holdings. Heller et al. (1978) showed that under a fixed exchange rate system, currency reserves tend to be held in the currency to which the pegging is done. Since many countries with fixed exchange rates have traditionally opted the dollar as the peg or the anchor, this would have tended to favour increased dollar

holdings by central banks. It has also been shown by Dooley et al., (1989) that even under a flexible exchange rate regime, industrial economies have tended to have a large volume of dollar holdings relative to holdings of the mark or other currencies.

The significance of the volume of trade on currency demand - as the currency of invoice - seems to vary according to the nature of countries involved in trade. An early study by Grassman (1973), followed by Page (1981), Black (1990) etc., has shown that when industrial nations engage in trade in manufactured goods, the invoicing is done in the currency of the exporter. If that does not happen, then the next natural choice seems to have been invoicing in the currency of the importer. This has been the pattern in the case of trade in manufactured goods, but pricing of primary commodities has been always in dollars, even when industrial economies figure as one of the parties. Hence, the proposed move by some oil exporters to invoice oil in dollars assumes importance.

The growing importance of the developing economies, especially the so-called emerging market economies in international trade also has implications for the future. The studies referred to above have noted that when two developing countries are involved in trade, invoicing is usually in a third currency, most commonly the dollar. This preference for the dollar is also manifested in the demand for financial assets ensuing from the more advanced emerging market economies like China and India, and this willingness to absorb dollar-denominated bonds has facilitated the long string of U.S current account deficits over the years.

The real economic variables used as possible determinants in the earlier literature will figure in the present study also. See Eichengren and Mathieson (2000), Chinn and Frankel (2005), Krugman (1984), Matsuyama (1993), Mckinnon (1969, 1979), Portes and Rey (1995), Swoboda (1969), and Tavlas and Ozeki (1992) for earlier work featuring determinants of currency reserve holdings. The share of a country in world trade and output will naturally be a determinant of the extent of its currency holdings in the world. The importance of these factors can be seen in the historic pattern in which the U.S dollar gradually but surely rose to ascendancy over the British pound as the supreme currency. Other reasons advanced for this ascendancy are the loss of colonies by Britain, changing military power scenarios etc., but the basic driving force has been undoubtedly the relative growth patterns of output and trade.

In addition, we employ a few other (macroeconomic) variables representing changes in competitiveness and the structure of world trade. Inflation differentials, productivity differentials in competitive sectors, the share of emerging markets in world trade etc are specified as possible determinants of currency shares in total central bank reserve holdings. Increased oil imports in the world economy would tend to strengthen the position of the dollar under existing pricing scheme, and a change in pricing strategy could well work in favour of the euro.

The sophistication and depth of financial markets is also deemed to be a key input into shaping the importance of a currency in a portfolio of foreign exchange reserve holdings. The pound has been probably elevated into a relative position beyond a level dictated by real economic variables due to the key position held in international finance by the London financial markets, which surpasses the standing in this respect of the German and other European financial markets. The influence of financial markets on the demand for currency reserve holdings is captured by including stock market capitalization as an independent variable in the estimation process. Volatility impacts

from exchange rates and stock market indices could be also considered as possible determinants of currency demands.

These variables are defined and brought together in the models for estimation described in the next section.

3. Data and Models for estimation.

We use pooled data for total central bank currency reserve holdings of the dollar, pound, mark, yen, and the euro (for post-EMU formation periods only) for the period 1979 to 2005. The equations to be estimated take the forms

$$R_t = \alpha_0 + \alpha_1 Y_t + \alpha_2 T_t + \alpha_3 \pi_t + \alpha_4 Q_t + \varepsilon_t \quad (2)$$

$$R_t = \alpha_0 + \alpha_1 Y_t + \alpha_2 T_t + \alpha_3 \pi_t + \alpha_4 Q_t + \alpha_5 S_t + \varepsilon_t \quad (3)$$

$$RU_t = \alpha_0 + \alpha_1 YU_t + \alpha_2 TU_t + \alpha_3 AT_t + \alpha_4 OIL_t + \alpha_5 SU_t + \alpha_6 AY_t + \alpha_7 \pi U_t + \alpha_8 QU_t + \varepsilon_t \quad (4)$$

These equations are run first for the period 1979 – 1998, i.e., for the period when the Euro had not come into existence. The estimations are then repeated for the entire period 1979 – 2005, including data for the Euro currency and with macroeconomic variables applicable to the European Union as a whole.

The variables used in equations (1) to (3) are defined in Table 1.

Table 1. Definitions of variables

Variable	Definitions
R_t	Sum of central bank holdings of the country's currency <i>at time t</i> . As the <i>currency share</i> of total reserves.
Y_t	Ratio of country's GDP to World GDP (output)
T_t	Country's share of total world trade
S_t	Total equity market capitalization in the country
Π_t	Inflation differential in the country against common OECD inflation
Q_t	Productivity growth differential in the competitive sector in the country with OECD average.
AT_t	Share of Asia in world trade
AY_t	Share of emerging market nations (<i>China, India, Korea, Malaysia, Indonesia, Thailand, Singapore</i>) of Asia in world output
OIL_t	Oil Price, dollars
YU_t	Ratio of US GDP to other country (UK, Germany, Japan, EU) GDP.
RU_t	Difference between the percentage of dollar holdings in total reserves and the percentage of other currency (Pound, Mark, Yen, Euro) holdings.
YU_t	US ratio of world output – other country ratio of world output
TU_t	US ratio of world trade – other country ratio of world trade.
SU_t	US stock market capitalization – other country stock market capitalization (in 100 billion dollars)
πU_t	US inflation – other country inflation
QU_t	US productivity growth – other country productivity growth.

Data for GDP and trade ratios are obtained from IMF and World Bank sources. The GDP share is, in actual computation, taken as a ratio to OECD output instead of world output for consistency across countries. The trade figure is as a ratio to total world trade. Comparative inflation and productivity growth figures are available at the OECD website. The stock market capitalization data was available for all countries only from 1982 onwards, and the regressions involving stock markets are run for the period 1982 – 2004 only.

Equation (1) links currency reserve holdings (share) to the share of that particular country's output in world output, and to its share in world trade. An increase in these shares is expected to increase demand for holdings of its currency, from the transactions motive. Other determinants of currency holdings included in (1) are the inflation and productivity growth differentials with the OECD average, which can affect the volume of trade – through impacts on competitiveness - and therefore currency demand. Equation (2) adds a financial variable, total stock market capitalization, to capture the transactions demand for currencies arising from activities involving the particular country's financial markets.

While equations (1) and (2) are formulated in terms of the demand for individual currency holdings, the independent variable in (3) is the excess demand for the dollar over that for other individual currencies (variable RU_t). Thus, a pooled cross-section, time series set of data is obtained which represents the difference in the ratios of dollar and other currency holdings to total central bank currency holdings. This differential is sought to be explained by the ratio of US GDP to other country GDP (YU_t), the difference between the ratios to US trade and other country trade to world trade (TU_t), and the inflation and productivity growth differentials between the US and other countries (πU_t and QU_t).

Certain factors exogenous to developments in the US and the other major hard currency countries are also included as determinants of currency holdings differentials in (3). One such independent variable is AY_t , the sum of the national outputs of major Asian emerging market nations, China, India, Korea, Thailand, Indonesia and Malaysia. An increase in this Asian emerging bloc output is expected to increase the relative share of dollar currency holdings, since these countries have exhibited a preference for holding the dollar as the major foreign currency reserve in their recent, significant hike-up of total international reserve holdings. Another variable is the share of Asian trade in world trade, AT_t , which may affect relative shares of currency holdings. But a bonanza for the dollar as Asian trade increases is not a foregone conclusion. We have included the crude oil dollar price, OIL_t , as a determinant, since disturbances in the world oil market usually causes or accompanies a rush to the dollar. Finally, the difference between total stock market capitalization in the US and other countries (SU_t) is also tested as an independent variable.

All equations are first run for the period 1979 – 1998, excluding the Euro and EU-related variables. Subsequently, variables representing the Euro and the EU area are added to the pooled data set. The period for which the Euro has been functional is naturally far too short to be tested separately for the determinants of currency holdings.

Pegging arrangements using the currency as an anchor or a peg can also affect the share of currency holdings. Widespread usage of a currency as a peg in fixed exchange rate regimes will tend to increase total central bank reserve holdings of that currency. But

we have opted not to include this variable as determinant, since the Euro has not really come into use in this respect.

4. Simulation Models (*simulation into the future using estimated results*)

For the period 1998-2006, the euro is part of the estimated equations, and variables relevant to this EMU currency take the place of the German and the French variables. We also undertake simulations to look at possible future scenarios, based on alternate assumptions as follows:

- (a) Oil exports begin to be priced in the euro. This will be simulated as increasing the total trade share and trade transactions invoicing in the euro. The impact can be obtained using the estimated coefficients for the equations (1) – (3).
- (b) Greater growth and trade shares of developing economies, particularly for emerging market economies such as china and India. This will affect the variables ET_t and A_t . Simulation may proceed by hiking these shares by various percentages (perhaps up to increases of 30% in steps) according to different expected growth scenarios, and observing the impact on currency reserve holding demands for the dollar and the euro.
- (c) Varying growth rates in the U.S and in Europe, thus increasing the respective shares. Generally, growth rates are expected to be stronger in the U.S., but this may not necessarily hold after the expansion eastwards involving high growth – and growth-hungry – eastern European nations.

5. Empirical results of estimations

The results of the estimations are presented in tables 2 and 3. Table 2 gives the results for estimations with the share of currency holdings for all major currencies as the dependent variable, while Table 3 presents the results using the holdings of the dollar *relative* to other currencies as the dependent variable. The equations are estimated both with and without the euro, with the latter runs being carried out for the entire sample period, 1979 – 2005.

Table 2. Determinants of Individual Currency Holding Shares; with and without Euro

Equation description	Dependent variable	Constant	Y_t	T_t	Π_t	Q_t	S_t	R^2
1a) No Euro, 1979 – 1998	Reserves	-21.244	1.1523	3.2551	3.6584	-1.166		0.841
	Rt	(4.309***)	(7.073***)	(3.907**)	(6.475***)	(-1.3)		
1b) With Euro, 1979-2005	Reserves	-4.9047	1.6462	-0.3310	3.4490	-0.5618		0.706
	Rt	(3.876**)	(9.540***)	(-0.47)	(5.036***)	(-0.4861)		
1c) No Euro, 1982 - 1998	Reserves	-16.613	1.4126	2.2541	3.0969	-1.5919	-0.066	0.85
	Rt	(3.218**)	(6.769***)	(2.3**)	(5.162***)	(-1.72)	(-1.199)	

Table 3. Determinants of Dollar Holdings Relative to Other Currencies With and Without the Euro

Equation Description	Dep Variable	Constant	YU_t	TU_t	AT_t	AY_t	OIL_t	πU_t	QU_t	SU_t	R^2
3a) No Euro	RU_t	76.178	-.17	-.452	-1.885	0.3854	0.036	1.207	1.265		0.643
		(8.383***)	(-0.34)	(-.67)	(-5.18***)	(3.61**)	(0.57)	(3.17**)	(2.40**)		
3b) With Euro	RU_t	80.77	-.72	-.724	-1.694	2.164	0.03	1.118	1.651		0.58
		(9.153***)	(-1..54)	(-1.98**)	(4.78***)	(3.08**)	(0.41)	(3.54**)	(3.363**)		
3c) No Euro	RU_t	80.652	-.023	-.83	-1.69	0.982	0.09	1.005	0.742	0.024	0.707
		(6.0***)	(.036)	(-1.08)	(-3.83**)	(.73)	(1.39)	(2.594**)	(1.32)	(0.33)	

From Table 2, it can be seen that country GDP (as a share of OECD output) has a positive coefficient significant at 1% level (three stars indicate significance of the 't' statistic at 1% level, two stars that at 5% level and one star stands for 10% level significance). The trade ratio also has a positive impact, with significance at 5% level. Thus, increases in the relative GDP and trade volume shares for a country leads to an increase in reserve holdings of its currency world-wide, perhaps at the expense of some other hard currency. However, the trade ratio does not come out strongly significant in the run (1b) with Euro included.

While the productivity growth differential does not come out significant in the "share of reserves" regression (it is significant in the estimation with differences in reserve shares), inflation differentials are seen to be significant, with a positive impact. At first sight this looks counterintuitive, as higher inflation makes a country less competitive. But, the resulting current account deficits may be financed by issuing financial assets abroad, and the positive sign on reserves abroad may be capturing this effect. The level of stock market capitalization does not seem to be significant, judging from the results of the estimation of 1c) in Table 2.

Looking now at Table 3, giving the results for the estimations 3a) – 3c) with the difference between the share of reserve holdings of the dollar and other currencies (Mark, Pound, Yen and the Euro) as the dependent variable, a slightly different picture emerges. Some additional variables, which cannot be logically accommodated in the regressions with levels of reserves, are seen to have significant explanatory power. The variable, AY_t , which represents the ratio of the combined national outputs of China, India, Indonesia, Malaysia, Thailand and Singapore to OECD output, is seen to have a positive impact, raising the demand for dollar reserves relative to that of other currencies. AT_t , which is the ratio of total Asia trade to world trade, is seen to be significant, with a negative impact. Thus, increasing trade with diversification in Asia is seen to favour diversification of reserve holdings as well, away from the dollar. The increased GDP in emerging markets of Asia, in contrast, may be contributing towards filling the observed financial holding demand, and preference, for the dollar, which these nations have exhibited so clearly in the 1990s and in the current decade.

The productivity growth differential favouring the U.S is also seen to contribute to the increase in dollar reserves relative to that of other currencies, from equations estimation 3a) – 3c). This is not surprising, given that higher productivity constitutes the central element of a country's competitiveness, as evident from the works of Porter (1994) etc. The GDP and trade ratios in relative forms do not come out significant.

Combining the results of the estimations in Tables 2 and 3, the main factors determining the share of total hard currency reserves of a particular currency seem to be:

- 1) The shares of the GDP and the trade volume of a country in total world output and trade.
- 2) Inflation and productivity growth differentials relative to a country average, or the U.S levels.
- 3) The growing importance of Asia in world production and trade.

Oil price scenarios and relative financial (stock) market sizes do not come out significant in the estimations.

6. Simulations: Can the Euro catch up with the dollar?

We tried some simple simulations involving changes in country GDP, Asian emerging market output, Asia trade, and relative productivity growth figures, using the estimation results from Tables 2 and 3. The results are presented in Table 4.

The simulations are based on data for 2004. Then, for instance, U.S productivity growth exceeded EU area productivity growth by 1.88%, and the reserve holdings in dollar and EU were 65.9% and 24.9% respectively, of total world central bank hard currency holdings.

A catch-up of the Euro reserve holdings level to the dollar level would require some immense changes in the world economic scenario: increasing EU area output to some 55% of OECD output, or Asian trade to 34% of total world trade will be needed. Increased output in the emerging market nations of Asia would serve to maintain dollar dominance.

The simulations proposed initially using changes in the oil scenario were not conducted, as the oil price turned out to be insignificant. Obviously, the impacts of unrest in the oil market have to be modeled in a different way.

7. Concluding Remarks

The prospects for the Euro to become as important a reserve currency as the dollar were explored using estimated relationships between the level and relative size of currency reserve holdings with a number of postulated explanatory variables. It was seen that the GDP shares of countries in world output – and also their trade shares in world trade – and the development scenario in the all-important Asian markets play an important role in predicting the outcome of this query. Large increases in the EU area productivity levels can also help in the Euro chipping away at dollar dominance.

An increase in the EU share of OECD output to around 55% will be required for Euro holdings to match dollar reserve holdings. It may be noted that the current EU share lies only around 30% of OECD output. A very large increase in the share of Asia in world trade, to some 34% from a level of 11% currently could also do the trick. But an increase in the share of India, China and other key Asian countries in world output would only help the dollar to maintain its dominance, as these countries have a demonstrated proclivity for buying up dollar assets as an insurance against currency crises.

Table 4. Simulations for Euro catch-up to the Dollar

Change in Variable	Effect on Euro Reserve Holdings relative to Dollar reserve holding	Variable change needed for 50% share for Euro Reserves.	Variable change needed for Euro reserve share to equal Current Dollar share
Euro GDP share of OECD output: increase by 10% of OECD output	Rises by 16.4%	10%	Increase in share by 25% of OECD output.
Asian Emerging Market GDP: increase by 5% of OECD output	Falls by 10% (of total hard currency reserve holdings)		A fall in Asian Emerging market output by 20% of OECD output
Total Asia trade: Rises by 5% of world trade	Rises by 8.47%		A rise in Asia trade by 23.5% of world trade
EU productivity growth: reaches U.S level	Rises by 3%		EU productivity growth exceeding U.S growth by 5.7%

Some other factors, not considered in the present paper, would also have an important bearing on the development of Euro-Dollar parity. The EU and the Euro would be greatly strengthened by a – painful! - UK decision to part with the Pound. Though stock market capitalization did not come out as a significant variable in the current study, having the highly sophisticated and large (by European standards) London stock market in the Euro area would surely strengthen the position of the Euro relative to the dollar. A much larger EU area of the future with all East European aspirants included would enlarge the world output and trade shares of the Euro area, and contribute towards narrowing the gap to the dollar in terms of the demand for reserve currency holdings.

Notes

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Asymmetric Finance: Issues in Microfinance

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Abstract. This study surveys microfinance institutions (MFI) which are designed to provide loans and other financial services to the poor, particularly women. Although innovations have reduced loan defaults, most MFIs are losing money as they are not efficient in scale. The most profitable MFIs target the upper-end of the poor thereby raising concerns of mission drift. Because profitable MFIs tend to be the largest and most experienced, there is hope that growth over time will lead to self-sufficiency. Increasingly, MFIs are evolving into full-service entities which are raising increasing amounts of commercial funds.

JEL Classification: G21, O16.

Keywords: Microfinance; Microfinancial institutions, Group lending, Regulation

1. Introduction:

1.1. The problem of Poverty

Today, over one billion people live globally on less than \$1 a day. In the battle against poverty, from the 1950s to the 1980s, development planning among less developed countries included creating government-sponsored development banks to provide subsidized credit to strategic sectors. The results were highly disappointing as such loans had very sorry repayment rates, often below 50 percent, and additional subsidies were often required. For example, Morduch (1999, 1573) reported repayment rates in Bangladesh in 1980 of 51.6 percent and in 1988-89, a period of flooding, of 18.8 percent. He also cited India's Integrated Rural Development Program having loan repayment rates of 30 percent. Among the causes of such discouraging repayment rates for development banks were cronyism and corruption.

1.2 Finance as an Anti-Poverty Tool

Nonetheless, despite the discouraging history of development banks, there is evidence that development of financial institutions and markets can reduce poverty in two ways. First, while not conclusively determining causality, past studies show that financial development is a good predictor of economic growth, which usually raises overall incomes. Second, Beck et al (2004) find evidence that financial development also reduces income inequality. In fact the development of financial institutions, because of their expertise in managing problems of asymmetric information, such as adverse selection and moral hazard, can help provide credit to the small and opaque.

Nonetheless, for several reasons financial institutions have traditionally ignored the credit needs of the very poor. First, lenders face high default risk due to several factors. Asymmetric information risk in the forms of adverse selection and moral hazard are especially severe when lending to the poor and distantly located. In addition, the lack of collateral and weak creditor protection compounds the risk. Also, there is little diversification if loans are concentrated at a specific sector such as agriculture. Moreover, the high, but economically justified, loan rates burden borrowers with high fixed costs

that would be difficult to repay during a temporary downturn in economic activity. Furthermore, the sad repayment experience of state development banks, mentioned previously, could only discourage potential lenders.

Finally, governments sometimes discourage microcredit by requiring that loans be backed by collateral or by imposing loan rate ceilings that prevent lenders from charging adequate rates to compensate for the high risk and high transactions costs attributable both to the small loan denomination and to the scattered locations of the rural poor. Thus, microloans, as will be discussed later, are not always profitable, and mainstream banks, unlike microfinance institutions, normally have not been subsidized to encourage microfinance activities.

2. Grameen Bank

2.1 The Start of Something Big

Despite this discouraging history of lending to the poor, in 1983, in Bangladesh, Muhammad Yunus lent \$27 to a group of 42 women basket weavers, all of whom repaid their loans. This started the microcredit operations of the Grameen (which means rural or village) Bank and its emphasis on, small-denomination lending to the very poor. Yunus points out that Grameen has by now 6.6 million borrowers and by August, 2006, had lent some \$5.7 billion (Phillips 2006). The results, as are frequently reported and will later be examined, refer to a demonstration that such loans will be repaid, the bank boasts a repayment rate of 98.5 percent, and can be profitable. The success of the Grameen Bank started a movement towards microfinance that was soon emulated throughout the world as thousands of microfinance institutions (MFI) became operative.

Grameen's charging of interest and its focus on women borrowers has met resistance from Islamic extremists who have bombed branches of Grameen in Bangladesh and attacked loan officers in India. In addition, Maoists have attacked loan offices in Nepal, and others have murdered the head of the microfinance effort in Afghanistan. Fortunately, such incidents have been rare and, in general, the microfinance movement has been widely lauded.

In fact, politically, microfinance has appealed both to the left, for its attack on poverty from the bottom up and its empowering of women, and also to the right, for its emphasis on the poor gaining autonomy, independence and self-responsibility. The world's support was exemplified by the United Nation's naming 2005 as the Year of Microcredit and by the awarding of the Nobel Peace prize to Muhammad Yunus a year later.

2.2 Innovations in Lending – Joint Liability

Grameen Bank made a major contribution to microfinance growth by introducing several innovations that reduce various imperfections in the credit market and lower risk. Perhaps the best known is the concept of group lending or joint liability. Group lending is a procedure by which a lender makes a loan to an individual in a group of approximately five to ten applicants. All members of the group are then liable to repay the loan in case the borrower is unable to do so. In practice, when such defaults occur, lenders do not always demand payment from the other members of the group, but group members then face the possibility that they will hereafter be excluded from any future loans.

A downside to the joint liability procedure is that it may result in the future denial of credit to otherwise creditworthy loan applicants that had the misfortune to be in a group with someone who defaulted. Yet, if the lender decides to continue lending to the other group members, regardless of the default of one of their partners, group members would have less incentive to monitor and pre-select their peers. In practice, such a relaxation of the joint-liability rules is not uncommon.

Group lending significantly reduces the adverse selection problem because potential borrowers would likely be able to appraise the risk of their peers much better than could an outside lender. Moreover, the groups are self-selected, suggesting that group membership would be comprised of partners having similar risk and sense of responsibility. Thus, most likely some groups would have riskier memberships than others. Because the riskier groups could be expected to face more loan defaults, members of risky groups would face the higher costs of either having to repay on behalf of their defaulting group peers or being denied future credit.

Another form of risk, moral hazard, refers to borrowers, once they receive funding, engaging in riskier activities than they described when applying for the loan. This risk is exacerbated by the borrowers facing limited liability because they don't have any collateral at risk in case they default. Group lending can also help mitigate moral hazard risk by improved monitoring. Not only can group members keep a closer eye on their peers than a geographically distant lender, they can impose social sanctions on defaulting borrowers and damage their standing in their communities.

As Armendariz de Aghion and Morduch (2003) point out, there is yet another means by which group lending reduces moral hazard. Given asymmetric information and limited liability, some borrowers may feign low returns on a completed project and strategically default on a loan. Group members would be expected to have better knowledge than distant lenders regarding a project's true returns. Thus, by reducing both adverse selection risk and moral hazard risk, group lending could lead to lower lending rates.

2.3 Other Innovations in Lending

While group lending has attracted most of the attention, Grameen Bank has implemented other innovations that also have improved repayment rates such as the notion of loan progression. That is, at first loans are made in relatively small denominations and only after a borrower has successfully repaid a loan is she or he subsequently granted a larger loan.

Yet, another practice to establish borrower credibility is that of having frequent, often weekly, meetings between borrowers and lenders at which time, the borrower is expected to repay a portion of the loan. That is, for a 50-week loan, the borrower would be expected to repay one-fiftieth of the loan every week starting with the end of the first week. A downside to this approach is the cost to the lender of weekly attendance of such meetings, especially if borrowers are located in scattered and distant sites.

2.4 Lending to Women

Traditionally, lending institutions focused on farmers, mostly men. Yet, Muhammad Yunus set a goal, despite Bangladesh being a Muslim nation, that women comprise at least one-half of Grameen's clients. The goal was achieved within six years, and today

97 percent of Grameen's loans go to women. Also, according to Mody (2000), of the world's 34 largest microlenders, women comprise 80 percent of the clients. The Microcredit Summit Campaign has also estimated that women receive 79 percent of the loans (Daley-Harris, 2003). Women may be the dominant borrowers because they may have less borrowing alternatives especially if they face discrimination from other lenders including family and clan members.

Also, numerous studies have all demonstrated that lending to women has been shown to be good business as their repayment rate is considerably higher than that of men (Gibbons and Kasim 1991, Hossain 1988, Hulme 1991 and Khandker et al 1995). Several reasons have been given for lower default rates among women. First, women are less mobile and hence can not flee bad debts as well as men. Next, women may be more sensitive to social criticism and more concerned about protecting the family's name and reputation from social disapproval than men. They also may be more conservative investors than men. In addition, they are more likely to devote a greater share of their income on children's health and education than do husbands. (Armendariz de Aghion and Morduch, 2003) Yet, some critics, however, have suggested that microlending may encourage inter-family strife and may also result in situations where the husband uses the funds while the wife remains liable for the loan.

3. Microfinance Institutions (MFIs)

3.1 The Industry

Thus, Grameen Bank energized the microfinance movement, which focuses on small-denomination loans to the very poor but sometimes also provides financial services such as deposit taking and insurance. Microcredit ranges from \$50 and even lower to several thousand dollars for small businesses. Daley (2003, 3) and Armendariz de Aghion and Morduch (2003, 136) have each estimated over 2500 MFIs serving between 60 to 70 million clients across the globe.

Ingves (2005) has cited far higher estimates of tens of thousands of MFIs, but declares that generalization is difficult, both because of the lack of precision in their definition, and also because of serious data limitations. As he noted (p.6), "no systematic and comprehensive data on MFIs is collected and there are no authoritative figures on key characteristics of the microfinance industry, such as the number and size of MFIs, their financial situation or the population served. The generation of systematic data on the microfinance industry has been complicated by several factors, including the informality and dispersion of MFIs, lack of consensus on the data needed, and lack of universally accepted and clear-cut definitions of the products that qualify as microfinance or the boundaries of the industry." Further complicating any generalizations is that fact that many MFIs, such as in those in the Philippines, are highly heterogeneous, much more so than mainstream financial institutions, because they adapt to their environments which can vary significantly throughout the world.

The best known MFIs are those that specialize in providing microcredit. Table 1 presents characteristics of the major leading microfinance programs. The majority of MFIs do not offer depository services and depend on donor funding and assistance. The bulk of global assistance to MFIs is provided by the Consultative Group to Assist the Poorest (CGAP) which consists of 27 public and private donors including the World Bank, the U.S. Agency for International Development and several U.N. agencies. This

assistance takes various forms such as outright grants and also loans at preferential rates both to cover start-up costs and to provide on-going subsidies. Donors also provide equipment, staff training and technical assistance.

Table 1
Characteristics of Selected Leading Microfinance Programs

	Grameen Bank, Bangladesh	Banco- Sol, Bolivia	Bank Rakyat Indonesia <i>Unit Desa</i>	Badan Kredit Desa, Indonesia	FINCA Village banks
Typical loan term (months)	12	4-12	3-24	3	4
Percent female members	95%	61%	23%		95%
Mostly rural? Urban?	rural	urban	mostly rural	rural	mostly rural
Group-lending contracts?	yes	yes	no	no	no
Collateral required?	no	no	yes	no	no
Progressive lending?	yes	yes	yes	yes	yes
Regular repayment schedules	weekly	flexible	flexible	flexible	weekly
Target clients for lending	poor	largely non- poor	non-poor	poor	poor
Financially sustainable?	no	yes	yes	yes	no

Adapted from Morduch (1999)

MFIs have grown rapidly in the last quarter century and their microloans have increased from 9 million to 90 million in the last decade (Women's World Banking, 2006, 129). While MFIs are present in most developing countries, their industry is highly fragmented, and their development has been uneven. MFI activity is highly skewed with a few large MFIs making most of the microloans. Honohan (2004, 7) points out that "the 30 largest MFIs account for more than 90 percent of the clients served worldwide by the 234 top firms (and hence for more than three quarters of those served by all of the 2572 firms reporting to the Microcredit Summit)."

MFI are also skewed geographically with most activity occurring in a handful of countries. In fact, MFIs have been able to penetrate, or serve, less than one percent of the population in 35 of the 55 LDCs reporting to the Microcredit Summit Campaign. In only eight countries have the MFIs been able to penetrate over two percent of the total population with Bangladesh having the highest rate, 13.1 percent. See Table 2. Honohan (2004) suggests that there is an apparent threshold effect such that when a country achieves a penetration rate of over one percent of loans, or one percent of loans to national M2, it will be on its way to much higher penetration ratios. Yet, even in those countries with high penetration rates, the total assets of MFIs are a very small part of total financial assets.

Table 2			
MFI Penetration Rates-Top Countries			
(borrowing clients as % of population)			
Bangladesh	13.1	Senegal	1.6
Indonesia	6.7	Nepal	1.5
Thailand	6.5	Mali	1.5
Sri Lanka	4.3	Niger	1.4
Vietnam	4.3	Honduras	1.2
Cambodia	3.0	El Salvador	1.2
Malawi	2.6	Nicaragua	1.1
Togo	2.4	India	1.1
Gambia, The	1.7	Bolivia	1.1
Benin	1.7	Ethiopia	0.9

adapted from Honohan (2004)

Honohan (2004) undertook regression analysis of 234 of the largest MFIs from 55 countries, using Microcredit Summit report data, to find those factors that explain the variance in penetration rates among countries. He found that the greatest penetration, and so the best microfinance markets, occurred in countries with low GNP per capita, strong institutions and small populations.

Morduch (1999) found that the typical microloan balance is about \$430 for financially self-sufficient programs. In contrast, average loan balances for subsidized financial institutions with a greater focus on serving the poor were about \$100. Ingves (2005) in a sample of 124 MFIs found higher average balances; he found an average loan balance of \$621 for self-sufficient MFIs and \$532 for the entire sample of 124 MFIs. Typically microloans have a maturity of under a year, and do not require collateral. MFI loans often have flexible loan terms such that if a borrower were to encounter repayment problems through no fault of his or her own, such as poor weather for a farmer, then the repayment schedule would be eased. Microcredit is usually targeted at low-income borrowers such as entrepreneurs, small farmers, shopkeepers and artisans.

3.2 MFI Repayment Rates

Grameen Bank made a major contribution by demonstrating that most small loans to the very poor, if administered properly, could be repaid. As mentioned previously, Yunus (2006) has stated that Grameen's recent repayment rates approach 99 percent. Unfortunately, a closer look finds the situation considerably less sanguine.

To begin, in judging MFI repayment rates, there may be a survivorship bias, that is, those MFIs that failed due to repayment problems may not be accounted for in the statistics. Also, there is evidence that some MFIs, rather than classifying a loan as overdue, simply extend the maturity of the loan. In addition, Grameen classifies loans as overdue only if the loan is two years overdue. In contrast, CGAP recommends that their microlenders report "at risk" any loan more than 90 days overdue. Accion International, a US based network of MFIs, requires its affiliates in Africa and Latin America to list as "at risk" any loan overdue by 30 days or more. Yet, even under Grameen's lax guidelines, the Bank reported that in 2001, over 19 percent of their loans were overdue by

at least a year. In conclusion, Grameen's innovations may have given microloans a high repayment rate, but not as high as is often touted.

3.3 MFI Profitability

It has often been stated that Grameen Bank has demonstrated that lenders can do well by doing good, that is, that microcredit can be profitable. Yet, Grameen, itself, is able to report a profit only because it counts donor assistance as income. Several authors have investigated the issue of MFI profitability. Cull et al (2006) investigated this issue by examining the performance of 124 MFIs in 49 countries, which they estimated serviced over one-half of the world's microcredit clients. Profit-wise, they found that MFIs in Eastern Europe, Central Asia, and South Asia outperformed their brethren in Sub-Saharan Africa, East Asia and the Pacific, the Middle East and North Africa, and Latin America and the Caribbean.

They focused primarily on the institutional design of the MFIs. The MFIs were divided into three types of lenders. The first type consisted of 48 Solidarity Group lenders, which included institutions such as the Grameen Bank of Bangladesh and BancoSol in Bolivia. These MFIs had self-selected groups of three to ten members who have assumed joint liability for loan repayment. The second type had 20 Village Banks where each branch formed a single large group having a degree of self-governance. The third group had 56 Individual-Based lenders, which unlike the two-previous types of group-lenders, resembled traditional banking institutions by entering into bilateral, rather than group, relationships.

The profitability performance of MFIs can be divided into three classes: 1) those requiring subsidies to cover their costs, 2) those that are self-sufficient or self-sustainable enough to cover their costs and so are able to operate without assistance, and 3) those not only self-sustaining but also earning sufficient risk-adjusted returns to attract private equity capital. Other than BRI of Indonesia and a few other MFIs that are listed but rarely traded, there are very few MFIs in the third and most profitable group.

Thus, unfortunately, almost all MFIs fall into the first two classes, especially the first which is subsidy-dependent. As Ingves (2005) has pointed out, only one percent of existing MFIs worldwide are financially stable. The major problem appears to be not low repayment rates, but instead high operating and personnel costs. Labor tends to be the highest cost because of the labor – intensiveness of making and monitoring loans. He has estimated that the operational expenses of most MFIs amount to 15-20% of their loans compared to less than 5 % for mainstream banks operating in similar countries. The small scale of the institutions prevents costs from being spread over many customers. A similar lack of economies of scale also applies to the small-sized loans. Table 3 presents the data on 124 MFIs striving for financial sustainability of which 66 were successful. The table shows that the financially sustainable MFIs were much larger thereby better able to exploit scale economies, had more experience, and raised more funds through deposits and other commercial funding sources.

Table 3
Selected Indicators for a Sample of Microfinance Institutions
(In percent, unless otherwise indicated)

	All MFIs	Financial Self-Sustainable MFIs
Age (years)	8	10
Average Assets (million US\$)	7.9	14.5*
Institutions (number)	124	66
Capital/Asset Ratio	42.7	40.4
Commercial Funding Liabilities Ratio	44.1	76.0*
Deposits to Total Assets	12.3	16.4
Active borrowers (number)	15,553	22,841
Percent of Women borrowers	62.9	61.9
Average Loan Balance per Borrower (US\$)	532	621
Average Loan Balance per Borrower/GNP	54.3	66.4
Average Savings Balance per Saver (US\$)	269	258
Return on Assets	0.1	5.7*
Return on Equity	2.3	14.6*
Profit Margin	0.3	19.4*
Operating Expense/Loan Portfolio	29.4	22.2*

*The value of financially self-sustainable differs from the total sample at the 1 percent significant level.

adapted from Ingves (2005)

In their study, Cull et al (2006), found that institutional design and orientation mattered substantially to the self-sufficiency of MFIs, as both group-type lenders, lost money. They made the smallest sized loans, presumably serving the poorest clients. The Solidarity Group served the second poorest customers, as their average loan size was \$431, charged the lowest loan rates, had the lowest costs, and had a negative return on assets. The Village Banks served the poorest customers as measured by the average size of the loan, \$149, and had the largest share of women borrowers, 88 percent. Their costs were the highest; their return-on-assets was negative, and they had the lowest profits and the greatest subsidies (one-third of funding) of the three groups.

Only Individual-Based lenders, the most profitable of the three groups, earned a positive, though small, return-on-assets. Lacking the information and enforcement advantages of the two group-type borrowers, they invested more in labor presumably to assist in identifying creditworthy clients. Thus, higher labor costs were associated with greater profitability. They made substantially larger-sized loans, averaging \$1220, suggesting that they were aimed at the upper-end of the low-income borrowers and also had the lowest percentage of women borrowers, 46 percent. Hence, the most profitable type of MFIs appears to have the least outreach to the very poor.

Studies by Cull et al (2006), Hardy et al (2002) and Ingves (2005) found that financially self-sustainable MFIs were more than double the size of the average institution, which allowed them to spread their operating and personnel costs over a larger client base. Honohan (2004, 12) found that “a doubling of scale is associated with an increase in the self-sufficiency index (operating income as a percentage of expenses) between 7 and 10 percentage points and the effect is statistically significant.” Thus, most MFIs were losing money because they were operating below efficient scale.

Also, the more successful MFIs were more autonomous and suffered less political interference. They also targeted the upper-end of the poor, thereby raising questions of “mission drift;” that is, does attaining self-sufficiency require neglecting the poorest of the poor? The three studies, further found that self-sufficient institutions had more experience. In the sample of Cull et al (2006), self-sufficient MFIs had an average life of 11 years as compared to seven years for those not self-sufficient. The authors were encouraged that age and size improved profitability for all three types of MFIs thus suggesting that with time, perhaps more and more MFIs will become self-sufficient.

3.4 Below-Market Loan Rates

Given their relatively high operating costs, it’s necessary for MFIs to charge relatively high loan rates, but loan rate ceilings in some countries such as Brazil, Columbia and Venezuela, prevent them from doing so. Also, even in the absence of ceilings, loan rates are sometimes kept below their equilibrium levels for philanthropic reasons. For example, Honohan (2004) contends that Grameen could be self-sufficient if it abandoned its policy of lending at below-market rates.

Cull et al (2006) investigated the relationship between loan rates and profitability and found that for Individual-Based lenders, profits rose with an increase in real loan rates up to about 60 percent per annum. Higher rates, however, would reduce profitability both due to declining loan volume and falling repayment rates. Interestingly, higher rates led to less repayment only for Individual-Based lenders, perhaps because they lacked the superior informational and enforcement abilities of the group-type lenders.

3.5 MFIs’ Impact on Poverty

A shortage of data and follow-up studies has prevented a careful analysis of MFIs impact on global poverty, but it’s clear that MFIs have assisted millions of poor individuals and small businesses, and their contributions are expected to grow significantly. Furthermore, microcredit has encouraged self-reliance, empowered the poor and assisted them in attaining financial independence. It also has facilitated the entry of women in the financial and commercial marketplaces which, in turn, has increased the probability of children remaining in school as women spend more than men on their children’s educational and health expenses. Beegle et al (2003) noted that in Tanzania temporary income declines are buffered by child labor, but that access to credit can serve as a substitute thereby increasing school enrollments. Moreover, MFI informational advantages and high repayment rates suggest that they may be able to channel assistance more efficiently than other conduits of aid. Finally, and importantly, through their lending innovations and high repayment rates, MFIs have demonstrated to mainstream financial institutions that there are indeed profit opportunities in microfinance.

Yet, despite these contributions, the impact of MFIs on poverty reduction appears limited. For example, in Bangladesh, Muhammad Yunus (Phillips et al 2006) has stated that Grameen has made 6.6 million loans in its 23 years of existence. This averages to about 287,000 per year. The lowest quintile of Bangladesh's population of 142 million would contain 29 million. Thus, annual loans divided by the lowest quintile would suggest that annually loans would reach but one percent of the poorest individuals or about five percent of poor households. Ingves (2005) cites estimates of potential microfinance clients ranging from 400 to 500 million people with less than 10 percent being served by the end of 2002. Honohan (2004, 27-28) found that "Most researchers seem agreed that microfinance programs are not likely by themselves to lift participants out of poverty in any short time period." Hence, he concludes that any meaningful alleviation of poverty will require mainstream financial institutions to enter the microfinance market.

3.6 Subsidies versus Commercial Funding

As discussed previously, most MFIs are currently losing money and so are heavily reliant upon donor assistance. An ongoing debate is whether MFIs should continue to be subsidized. The arguments in favor are that MFIs are providing numerous benefits to the poor, and that many MFIs are still relatively new and small. Moreover, subsidies, such as in the case of the Grameen Bank, can encourage MFIs to lower their loan rates. In addition, it was observed that the financially most able MFIs, the Individual-Based lenders, focused on the high-end of the poor so that subsidies may be necessary to encourage MFIs to target lower-end borrowers.

Nonetheless, a strong case can be made against ongoing subsidization that may erode budget discipline and reduce incentives to become self-sufficient. Furthermore, a policy to support ongoing subsidization of MFIs requires showing that this usage of funds would have a greater impact on reducing poverty than would a similar amount spent on education, health, or other anti-poverty programs. Unfortunately, as mentioned previously, poor and inadequate data preclude a careful analysis of the cost efficiency of funding MFIs. Finally, not only is donor aid inadequate to fully fund needed MFI activity, it may be imprudent to expect such assistance in the long run.

A much better case can be made for one-time-only subsidies to cover start-up costs, which can be substantial, in line with the "infant industry" argument. As Hardy et al (2002) pointed out, virtually all MFIs, even the eventually profitable ones, suffer considerable losses at first. It is hoped that as MFIs develop, they will outgrow their subsidy-dependence. Aid could be granted for a finite, initial period, and low cost loans could be structured with long maturities and graduated repayment schedules that increased over time. Unfortunately, some infants never mature, and so a challenge would arise to make the one-time-only provisions credible. That is, if an MFI struggled even after it had received its initial and supposedly final subsidy, the donor would have to resist the temptation to come to its rescue.

For self-sufficient MFIs, commercial funding has been growing in importance. Table 3 shows, not surprisingly, that self-sustaining MFIs rely much more heavily on commercial funds, which are available at competitive market rates, than the rest of the MFI industry. A growing number of MFIs have converted themselves into licensed commercial banks in order to offer deposit services. Other sources of commercial funding

include borrowing from banks and public bond markets. To access these sources of credit, however, good financial record-keeping by MFIs is essential. A small but growing number of MFIs have substantially improved their access to commercial funding by obtaining credit ratings from one of the recently developed credit rating institutions such as Micro Rate, Microfinanza Rating and Micro Credit Ratings International, Limited. CGAP has at times subsidized the cost of such ratings, which averages about \$10,000.

3.7 Other MFI Services

In its first two decades, the microfinance movement focused primarily on granting credit rather than savings services. Christen et al (2004) point out that among the reasons were: 1) it was erroneously assumed that the poor had little money to save, 2) the Grameen Bank's success launched the movement with new innovations in making loans, not in providing savings, and 3) the majority of microfinance institutions were NGOs which lacked the authority of licenses to provide savings accounts.

Yet, contrary to opinions that the poor lack the means to save, they have been engaged in savings in the form of assets such as livestock, homes, other buildings and gold jewelry. Unfortunately, this form of savings is neither liquid nor always secure. The poor need savings to meet periodic expenses such as agricultural and educational needs, and also for unexpected expenditures such as illnesses, funerals and property damage. In fact, for the poor, savings services may be as, or even more, important than credit provision. Also, savings deposits provide financial institutions with a low cost source of funds. Therefore, a growing number of MFIs are converting into deposit-accepting commercial banks.

Some MFIs also provide other financial services such as transfer services and insurance. In fact, in 2005, emerging market insurance premiums grew almost three times the growth rates of developed countries (McDonald et al 2007). Global insurance colossus, American Internal Group, has roughly 2.25 million life-insurance policies in Uganda, Mexico, India and Brazil. BASIX, an Indian MFI offers not only life insurance but also insurance against drought or loss of livestock. Some of the micro insurance firms have been pairing with existing microcredit institutions to market their products. Once more, women's role is prominent in microfinance as they have been found to be the best agents because they tend to be highly knowledgeable about their communities.

4. Alternative Financial Institutions (AFIs)

Although this survey focuses on MFIs, it would be remiss to neglect mentioning AFIs which supplement their financial goals with social objectives such as providing financial services to lower-income clients normally neglected by mainstream financial institutions. Examples of such AFIs are postal savings banks, state development banks, credit unions and co-operatives. Christen et al (2004) estimate that these institutions, combined with MFIs, most likely have over 750 million in loans and / or savings accounts. While these accounts include both the poor and non-poor, the authors believe that a significant share belongs to the poor. AFIs' saving accounts are four times greater than loan balances suggesting that their greatest service to the poor is in providing deposit services.

Christen et al (2004) find that AFIs service twice as many loan accounts as MFIs. Like MFIs, the majority of AFIs lose money. As mentioned previously, default rates on state development bank loans are frequently alarmingly high. Honohan (2004) pointed

out that although AFIs have higher penetration rates of the population than MFIs, these rates still are relatively small with the highest being in Sri Lanka at 17.9 percent. See Table 4. Moreover, similar to MFIs, the credit penetration rate is highly concentrated as it exceeds six percent in but five of 119 countries. Geographically, Asia accounts for about five-sixths of worldwide savings accounts and loans.

Sri Lanka	17.9	Honduras	4.2
Indonesia	13.6	Bulgaria	4.2
Bangladesh	12.7	Ecuador	3.9
Vietnam	8.1	China	3.6
Guatemala	7.8	Benin	3.6
Bolivia	5.9	Gambia	3.6
Egypt	5.8	Nepal	3.6
Cambodia	4.6	Mali	3.6
Myanmar	4.3	Thailand	3.5
Nicaragua	4.2	Uruguay	3.2

adapted from Honohan (2004)

5. MFI Regulation

5.1 Prudential Regulation

In many countries, financial institutions are among the most heavily regulated and supervised industries. Regulations can be classified as either being prudential, which are designed to keep institutions solvent, or “other,” which deal with issues such as consumer protection, fairness in lending, and maintaining competition. Prudential regulations are especially important for very large institutions whose demise might trigger a panic that could roil financial markets and threaten the solvency of other financial institutions.

Prudential regulation normally is very costly, however, because it entails constant monitoring of financial institutions. Hardy (2002) points out that it is especially costly for MFIs because of their smallness and tendency to be scattered over rural areas. Also, the impact would be highly regressive as MFIs would most likely push regulatory costs onto their low-income clients. Moreover, monitoring MFIs could result in siphoning scarce supervisory resources away from larger financial institutions whose potential impact on systemic risk would be far greater. Given their smallness, the downfall of individual MFIs should cause few ripples in the financial markets. In short, prudential regulation and supervision of most MFIs would not be cost-effective. An exception could be made, however, to protect savers for that growing number of MFIs offering deposit services. Yet, even in this case, Christen et al (2003) have recommended that small-scale deposit-taking go unsupervised especially in cases where deposits are forced-savings components of loans, so that most depositors would be net borrowers from the MFI.

Hardy et al (2002) recommend requiring, at MFI inception, a credible business plan and a relatively high degree of capitalization. Regulators, however, should avoid risk-

adjusted capital requirements as even much larger, more sophisticated and experienced financial institutions have found these to be confusing. Moreover, there is an important need to ensure adequate record-keeping especially for, the biggest threat to solvency, troubled loans. Such loans should be recognized and reported in a timely manner, which often is not the case. Furthermore, good record-keeping is essential for MFIs wishing to borrow funds from commercial sources.

To prevent fraudulent loan terms that exploit unsophisticated borrowers, regulators should insist upon transparent and easy-to-understand loan terms and loan rates. It is also desirable to provide credit education and advisory assistance for potential borrowers. Discrimination on the basis of race, religion or ethnic background should be prohibited. In general, however, there is a consensus that regulation of MFIs should be light and flexible, given the heterogeneity of the industry. Excessive regulation could be costly and could stifle innovation, something critical for this still-developing industry.

5.2 Regulation: Loan Rate Ceilings

Governments should avoid imposing ceilings or caps on loan rates as they can be deleterious for the poor by retarding the growth of the MFIs. Ceilings contribute to the inadequate returns already plaguing most MFIs, thereby discouraging entry into the microfinance industry by both potential MFIs and mainstream financial institutions. Also, loan rate ceilings would reduce the quantity-supplied of microcredit thereby denying borrowers of needed funds. Moreover, small-denomination loans, typically made to the very poor, are the most expensive to administer and so require relatively high loan rates. Thus, ceilings could divert credit away from the very poor. Furthermore, for MFIs offering deposit services, loan rate ceilings have been found to cause lower, and at times even negative, real deposit rates.

In addition, Honohan (2004) suggests that removing subsidies and allowing loan rates to be market-determined would not dramatically reduce the quantity-demanded of loans. He also suggests that even at higher loan rates, borrowers of microloans may still profit as he estimated (2004, 26-27) that the monthly rate-of -return for borrowers in Ghana, was at least 7 ½ percent higher than the interest rate charged. Also, rates of even 50 or 60 percent would still be far lower than those charged by moneylenders, which, in some cases exceed 100 percent. The Economist (The Hidden Wealth 2005) has cited examples in the Philippines where the moneylenders charged over 1000 percent.

Furthermore, ceilings create an artificial scarcity of loanable funds that could foster an environment ripe for corruption, already a serious problem in many developing countries. Finally, loan rates may fall as the microfinance industry becomes more competitive and MFIs grow and exploit scale economies. For example, Bolivia's BancoSol, which in 1992 became a commercial, profit-oriented bank with the charge of serving the poor, initially charged 65 percent on its loans, but, as it has developed, it dropped its loan rates by two-thirds (The Hidden Wealth 2005, 9).

6. Conclusion

Grameen Bank's innovations in lending have shown that repayment of microloans, though lower than often reported, can nonetheless be managed effectively. MFIs have grown rapidly in the last two decades and have provided important loan and deposit services to millions of low-income clients, particularly women.

Most MFIs are losing money as they are operating below efficient scale and so are struggling with high operating and personnel costs. Thus, most are dependent upon donors' subsidies. The desirability of such ongoing subsidization is debatable, though there is much more consensus favoring start-up assistance as even successful MFIs have struggled initially. The most self-sufficient MFIs have been found to be the largest and most experienced. Hence, there is hope that, with time, more MFIs will become self-sufficient.

As some MFIs have matured and achieved self-sufficiency, they have evolved into entities offering a wide array of microfinancial services. They also have been raising increasing amounts of funding from commercial sources. Ultimately, it is hoped that as MFIs mature and prosper they will be able to tap into public equity markets. To foster MFI development, regulation should be kept low and flexible.

The most profitable MFIs have been found to target the high-end of the poor thus raising concerns of mission drift. Also, despite their significant contributions, so far MFIs have reached but a small proportion of the poor. Given their smallness, it is doubtful, that they can substantially reduce poverty by themselves. Instead, any major gains that microfinance can make in poverty alleviation will occur only with a much greater involvement by mainstream financial institutions.

Notes

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Stability and Welfare of an Enlarged Common Market: A Cooperative Game Approach

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Abstract The issue of the enlargement of a common market or more generally of a preferential trading area (pta), i.e., the addition of new members to an existing common market, which is high on the political agenda as recent events in Europe indicate, raises the following question: under what conditions an enlargement is beneficial to its members, and therefore desirable? We argue in this paper that this is possible, when the benefits derived from such a policy, are elements of the core, i.e., an outcome from which no deviations are profitable. We investigate the economic conditions of the existence of a core, in an enlarged common market, using the flexible approach of the theory of cooperative games, and find that a sufficient condition for this to happen, is when the average gains from trade, derived from the enlargement of a common market (or pta) exhibit non-decreasing returns relative to the size of the market.

JEL Classification: C62, C71, F15.

Keywords: Enlargement of a common market, currency areas, cooperative game theory, stability equilibrium conditions, economic welfare.

1. Introduction.

The issue of the enlargement of a common market, or more generally of a preferential trading area (pta), i.e. the addition of new members to an existing common market, which is high on the political agenda, as recent events in Europe indicate, raises the following question: under what conditions an enlargement is beneficial to its members, and therefore desirable? We argue in this paper that this is possible, when the benefits derived from such a policy, are elements of the core, i.e. an outcome from which no deviations are profitable. We investigate the economic conditions of the existence of a core, in an enlarged common market, using the flexible approach of the theory of n-person cooperative games, and find that a sufficient condition for this to happen, is when the average gains from trade, derived from the enlargement of a common market (or pta) exhibit non-decreasing returns relative to the size of the market. The reason for selecting the core as a solution concept for the enlargement is that the core is a generalization of the Edgeworth's contract curve, and this brings our analysis closer to the traditional theory of welfare economics²

The paper is organized as follows: In the next section, we offer a short survey of the relevant literature. In section three, we set out our model. In section four, we discuss the sufficient economic conditions for the existence of the core for the symmetric case, the only case discussed in this paper. And in the final section we conclude.

2. A short survey of the literature.

The question raised above is not posed for the first time. In a well known paper, Kemp and Wan (1976) have shown that under certain conditions, a customs union may be beneficial to its members and therefore desirable. The Kemp and Wan theorem is interesting because it implies that an incentive to form and enlarge a customs union persists, until the world adopts free trade, provided that the common external tariff is chosen so as to exclude trade diversion. The main objection against the Kemp and Wan theorem has to do with their assumptions on the common external tariff, which imply, that this tariff is not necessarily optimal. If it is optimal then, as Krugman (1991) has shown, the world will be fragmented into a number of trading blocks of the same size (i.e. coalitions of countries with internal free trade, and a common external optimal tariff), and will not end up to an enlarged customs union, including all countries of the world, as Kemp and Wan have suggested. Krugman works with a model of imperfect competition in which countries specialize in the production of a differentiated product, and assumes that transportation costs are negligible. The fragmentation of the world into trading blocks raises the question of whether the merging of coalitions (and by implication the enlargement of the markets) increases welfare. Krugman has shown that the relationship between the number of coalitions and welfare is U-shaped, reaching a minimum at the number of three. This means that if consolidation reduces the number of coalitions into three or more, the world welfare will decline. But if this consolidation reduces the number of coalitions into two or one (in this last case the world adopts free trade) welfare increases, reaching its maximum when the world as a whole forms a single coalition. However, as Krugman himself has emphasized, his conclusions relating to the relationship between economic welfare and the number of coalitions, are not robust, because they are based on very restrictive assumptions.

The enlargement of a market increases the domain for free trade, but in the presence of increasing returns, this may lead to losses, and this may be a factor that undermines an agreement for the enlargement (Krishna 1998; Levy 1994). Many years ago Graham (1923) argued that with increasing returns, an industry facing import competition may be forced to contract, leading to higher average costs, and this may be a reason for protection. Ethier (1982) has confirmed this result. He found that under certain conditions, a small country may experience losses from free trade due to the contraction of its increasing cost industry. Markusen (1981) found that the monopolistic firm in the large country might be forced to contract, due to trade. One may conclude, therefore, that a sufficient condition for gains from trade, under conditions of imperfect competition, is that the increasing returns industry does not contract with the enlargement of the market. Sufficient conditions to have all countries gain from trade, under conditions of monopolistic competition have been given by Helpman and Krugman (1985).

In this paper, we adopt a different, and more general, approach to the problem. Using a model of monopolistic competition, proposed by Krugman (1979), we argue that free trade (resulting from the enlargement of a market) is beneficial to all countries if the gains of trade resulting from the enlargement are feasible for all countries acting collectively, and no group of countries can improve upon on these gains. In other words, we argue that the enlargement is beneficial to all participants if the gains from trade are in the core.

3. Enlargement as a cooperative game.

In this section we consider the enlargement of a common market as an n-person cooperative game.³ This game consists of N players (countries), and a function u , that associates with every subcoalition of countries S of N , a real number $u(S)$ indicating the gains from trade. Utilities are assumed to be transferable. The outcome of this game is in the core if no deviations from it are profitable.

3.1. The players. Our economic universe consists of N countries (not necessarily all the countries of the world) that are similar in their economic structure (i.e. similar in tastes, factor endowments, and technology), each of which produces a range of differentiated products. These countries play a cooperative game, and it is assumed that utilities are transferable. There are no restrictions as to the number of the coalitions that these countries can form. Each coalition may consist either of a single country representing an isolated economy, or groups of countries representing ptas. Alternatively, we may think of every coalition (with at least two countries as members) as representing a fully integrated economy, as in Dixit and Norman (1980), where the member countries are engaged in intra-industry trade. Within this context, the enlargement of a pta corresponds to the formation of a grand coalition that includes all the countries that participate in this game.

(i) *Number of varieties produced under conditions of autarky (i.e. by coalitions consisting of a single country).* It will be assumed that in each country, labour is the only factor of production, and that each firm, located in a particular country, produces a particular variety i ($i = 1, 2, 3, \dots, Z$). Since every firm specializes in the production of a particular variety of a product, we use the same symbol i to denote the firm. For the production of the output y_i , of the variety i , the firm uses the following production function:

$$L_i = a + b y_i$$

where L_i denotes the labour supply used by the firm i , for the production of the variety i ; a is a factor denoting fixed labour supply, and b is the marginal labour input (Krugman 1979)

In order to determine the total number of varieties Z produced by a single country (under autarky), we assume (as in Krugman 1979), that labour is fully employed, and therefore:

$$L = \sum (a + b y) = Z(a + b L_c)$$

where $L_c = y$, i.e. the consumption of each variety c , multiplied by the labour force L , equals output y of an economy under isolation.

From the right hand side of the above expression, we obtain the number of varieties produced in a country under autarky, which is equal to:

$$Z = 1 / [(a/L) + bc] \quad (1)$$

(ii) *Number of varieties produced by integrated economies (i.e. by coalitions consisting of more than one countries).* Forming a two country coalition (i.e. having two identical

countries trading), is like doubling the population L . From the expression (1) above, it follows that an increase in L will increase, *ceteris paribus*, Z . In other words, the sum of varieties from both countries under free trade exceeds the number of varieties produced by any single country under autarky. Obviously, this holds true for any number of countries. This conclusion is summarized in the following proposition:

PROPOSITION 1: The number of varieties produced increases with the size of the coalition.

With this proposition is associated the view that the increase in the product varieties, following economic integration, is a source of gains of trade for consumers (Feenstra 2004). This view derives from the love for variety approach (Spence 1976; Dixit and Stiglitz 1977) according to which the welfare of a consumer is maximized with the number of varieties consumed. Therefore, Proposition 1 can be modified as follows:

PROPOSITION 2: The gains from trade increase with the size of the coalition.

These two propositions are summarized by the characteristic function of the enlarged game, which is treated in the next subsection.

3.2. Characteristic function. The characteristic function is a function v which assigns a real number $v(S)$ to every coalition indicating the gains of trade associated with it. The number $v(S)$ is called the worth of the coalition.

A characteristic function satisfies the superadditivity property. This property is written as:

$$v(S) + v(T) \leq v(S \cup T)$$

where S and T are two disjoint coalitions, i.e. two ptas having different members, and by implication different product varieties. It says that since the enlargement of a pta results from the merging of two separate ptas, the gains from trade resulting from this enlargement must be at least equal to the sum of the gains from trade of the two ptas acting independently. Otherwise, the enlargement is not profitable. The superadditivity property is satisfied in the Krugman's model. In fact, from expression (1) follows that the sum of varieties from both countries under free trade exceeds the number of any single country before trade (Feenstra 2004).

We introduce the following postulates

Postulate 1: A one country coalition has $v(S) = 0$. This is so because these coalitions represent isolated economies with no trade with the rest of the world (and therefore no gains from trade are present)

Postulate 2: Coalitions of the same size have the same worth (symmetry postulate). This may be justified by the assumption that all countries are similar in their economic structure. The symmetry postulate implies that the worth of every coalition is independent of the varieties traded. Thus the coalitions (12) and (23) have the same worth, despite the fact that their member countries produce different varieties.

3.3. Equilibrium. The question, however, is whether the superadditivity property (which summarizes Propositions 1 and 2) is sufficient to guarantee that the increase in the gains from trade is welfare improving for every one. The increase in the gains from trade will be welfare improving for everyone (and therefore the enlargement is desirable) if the

vector u , that gives the gains from trade derived from the enlarged common market, is feasible for the entire group of countries, and can be blocked by no coalition. In other words, vector u must be in the core. More formally, the vector u is in the core if the following two conditions are satisfied:

- (i) $\sum u_i \geq v(S) \quad S \subset N$ (condition for individual rationality)
- (ii) $\sum u_i = v(N)$ (condition for Pareto optimality)

Suppose that the condition for individual rationality failed to hold for some $S \subset N$. This means that these coalitions of countries will be better off by staying off the enlarged market. The condition for Pareto optimality says that the sum from the gains from trade of the countries participating in the enlarged market game must be equal to the gains from trade achievable within the enlarged market as a whole. Therefore, u is Pareto optimal in the sense that it is impossible for any member of the enlarged market to be better off without at the same time another member country being worse off. Thus, if the process of the enlargement leads to gains from trade that are elements of the core, then these gains are Pareto optimal (and therefore desirable), and at the same time *stable* because no deviation from them is profitable.

From the superadditivity property we cannot infer that the increase in the size of a coalition, and the associated increase in the gains of trade are welfare improving for every one, in the sense that the conditions (i) and (ii) above are satisfied. The following example illustrates.

Example 1. Consider the following characteristic function:

$$v(1)=v(2)=v(3) =0$$

$$v(12) =v(13) = v(23) =2.5$$

$$v(123) = 3.$$

The average benefits accruing to the members of the grand coalition (enlarged common market) (123), are $v(123) / 3 = 1$, and therefore less than the benefits going to the two country coalitions, which are $v(12) = v(13) = v(23) = 2,5 / 2 = 1,2$. It follows that the core is empty, implying that the welfare is not improving for everyone. The conclusion therefore is that the superadditivity property is not sufficient to guarantee the existence of a core.

4.Economic conditions for the existence of equilibrium.

From the above discussion one may conjecture that an enlarged game has a non empty core if the gains from trade accruing to the subcoalitions of N are not too large. This conjecture turns out to be correct, and can be formalized by introducing the concept of the *balanced* game (Bondareva 1963; Shapley 1967).

A game is balanced if:

$$\sum_{SEM} \lambda_s v(S) \leq v(N)$$

where M is the set of all coalitions and λ_S is a balanced collection of weights. A collection λ_S is a balanced collection of weights if for every country i the sum of all λ_S over all coalitions that contain i is unity. The weights λ_S may be interpreted (Osborn and Rubinstein 1994; Moulin 1995) as the fraction of the resources (say labour) that every country devotes to the coalition S in which it participates, and $\lambda_S v(S)$ as the average gains from trade obtained by the members of this coalition. Therefore, the definition of a balanced game says that a country pays to join a grand coalition (to participate in an enlarged market), as there is no way to achieve the same gains from trade by allocating its resources into a balanced set of coalitions.

A theorem by Bondareva and Shapley shows, that every balanced game has a core.

An example of a balanced game follows:

Example 2. The game described by the characteristic function:

$$v(1) = v(2) = v(3) = 0$$

$$v(12) = v(13) = v(23) = 1$$

$$v(123) = 3$$

has a core, because $v(123) = 3$ is sufficiently large, so that it cannot be blocked by any subcoalition.

From the definition of a balanced game, and the assumption of symmetry, one may derive the following proposition, which modifies Proposition 2.

PROPOSITION 3. The enlargement game is balanced, and therefore has a core, if the average gains of trade associated with every coalition are not decreasing with the size of the coalition.

If a core exists, then all countries participating in the enlarged common market are better off, and therefore no country has the intention to leave it. The enlarged market is stable. And since the condition of the individual rationality is satisfied (by the definition of the core), there are no losers to be compensated by the gainers. The gains from trade are actual not potential. But if the average gains from trade decrease with the enlargement, then a core does not exist, implying that some countries may gain by not participating in the enlarged market. The creation of an enlarged common market, in this last case, may be a source of conflicts over the distribution of a declining income, leading not only to economic, but also to political instability.

5. Conclusions.

Our analysis suggests that an enlargement will be beneficial to all participants if the gains from trade offered by the subcoalitions of the grand coalitions are not too large. This requirement, formalized by the concept of the balanced game, is appealing to our intuition. If a subcoalition of countries can provide higher utility levels to all its members than the enlarged market does, then it is not profitable to it to participate in the enlarged market. If it is forced to participate, then the average benefits of the member countries will decline with the enlargement and this may give rise to conflicts over the distribution of a declining income.

Of course, in a less symmetric situation, Proposition 3 may not be valid. However, the general rule concerning the size of the gains from trade going to the middle-sized coalitions seems to persist. In general, in any situation (symmetric or non-

symmetric) the cooperative game, corresponding to an economic situation, must be balanced for a solution a core to exist.

Notes

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- ² The paper discusses the welfare aspects of the enlargement of a common market under conditions of monopolistic competition. Other aspects of the enlargement process have been discussed by others (e.g. Buch 1999; Burda 1998; Waltz 1998; Prausello 2003).
- ³ This is a modified version of a formal model presented in Demopoulos and Yannacopoulos (1999, 2001).

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Competition Among Global Currencies

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Abstract. Since the collapse of the Bretton Woods Global International System in 1971, the world economy has experienced significant currency volatility. The major economies of the world have addressed such volatility differently. The EU has chosen to follow a monetary union and introduced successfully a new currency. The United States has paid less attention to the fluctuations of the dollar and has pursued an independent monetary policy to promote national economic stability. Japan has seen its currency appreciate significantly. This paper argues that while trade and growth across the globe are doing well, financial developments are intensifying the competition between the U.S. dollar and the euro. Three possible future scenarios are developed and discussed.

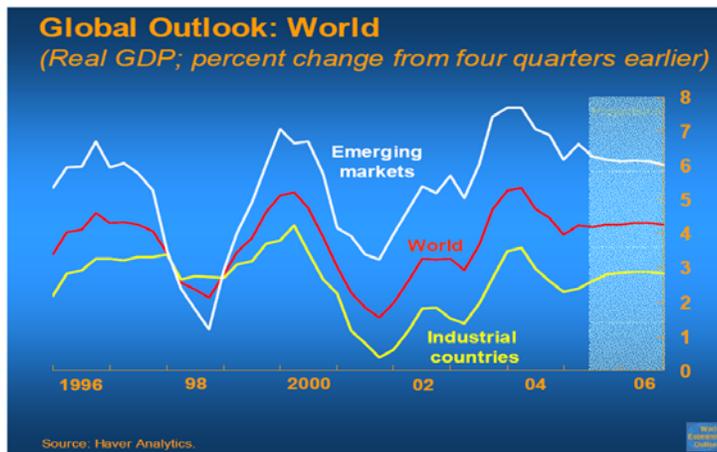
JEL Classification: F01, F31, F33

Keywords: International Monetary System, Global Currencies, Euro

1. Introduction

One of the best years in several decades for global GDP growth was 2004 when it rose slightly above 5 percent (see Figure 1). Most major parts of the world recorded improved growth performance. Similar growth continued during 2005, but at a slightly reduced pace. Despite surging energy prices, prospects for 2006 remain favorable. Such growth is projected to fall from about 4.5 percent in 2005 to about 4 percent in 2006, as shown in Figure 1.

Figure 1: Global Outlook (Real GDP; percent change from four quarters earlier)



Source: Haver Analytics (Helbling, 2005)

Global trade has also recovered strongly since the downturn in 2001 and continues to be an important engine of growth, as reported by the International Monetary Fund (2005). It is currently

expanding at something close to twice the rate of growth of world GDP, as illustrated in Figure 2. Reductions in inflation in many countries have greatly improved the prospects for sustained growth. The improvements in performance and, in many cases, economic policies have been substantial and significant. Japan recorded a stronger performance in 2005 than has been seen for some years. Among the industrial economies, the euro area was almost alone in continuing to grow at a lackluster pace.

In emerging and transition economies, there have been widespread improvements in economic growth. We have seen rapid growth not just in emerging Asia—including China and India—but in the transition economies of Europe, including Russia, the Ukraine and the new members of the EU where growth performance has, so far, been largely unaffected by sluggish euro area growth. In some emerging markets, real progress has been made in increasing the resilience of economies to withstand external shocks.

Figure 2: Global Trade (SDR Terms; 3-Month Moving Average)



Source: Haver Analytics (Helbling, 2005)

The U.S. economy continues to be the primary engine of global growth. In the global context, however, it is the American current account deficit that gives greater cause for concern. But the U.S. deficit is only one manifestation of the current global payments imbalance. As discussed in Krueger (2005), the persistently weak growth performance of the euro area is another factor contributing to the U.S. current account deficit. More rapid growth in Europe would ease pressure on the global imbalances. Europe's growth prospects depend crucially on structural reforms that would lead to more flexible and responsive economies.

A more buoyant Japan would also help ease global payments imbalances. After a year of rapid growth to the middle of 2005, the economy has slowed in recent quarters—a result, in part, of a correction in the IT sector. But economic activity should firm over the course of 2005, thanks to much improved fundamentals. Over the medium term, however, further structural reforms will be needed to boost growth prospects at a time of rapid demographic change.

Debt levels rose during the last recession as governments struggled to offset some of the effects of the downturn. A significant reduction in debt levels is essential if debt sustainability is to be achieved over the medium and longer term; and if governments are to have any room to maneuver with counter-cyclical policy and successfully to reduce vulnerability to outside shocks and changes in the economic cycle.

2. Global Financial Stability

The positive recent economic fundamentals have contributed to the financial stability of the global monetary system. We may also recall that the Bretton Woods system had proved to be remarkably durable, adaptable and successful. In the period up to 1971, the system of fixed but adjustable exchange rates established as part of the postwar settlement provided a stable framework that fostered growth. The International Monetary Fund's ability to provide its member countries with temporary financial support during balance of payments crises proved critical, on more than one occasion, to the maintenance of stability in the system as a whole.

Nevertheless, the Asian crisis, and others in Russia, Argentina, Brazil and Turkey, taught us some valuable lessons. With hindsight, of course, it should have been more evident to many of those involved—including the IMF—that trouble was brewing for some of those countries. The proximate cause of the crisis in Asia was the sudden sharp reversal of capital flows away from the region. Net inflows to the Asian crisis countries were roughly 6.3 percent of their GDP in 1995, and 5.8 percent in 1996. In 1997, net outflows were 2 percent of GDP, a figure that rose to 5.2 percent the following year.

Asia's experience in the late 1990s reminded us of things we already knew, but whose importance we perhaps underestimated. Fixed exchange rates and the poor regulation of the banking and financial sector in many countries had enabled banks to build up liabilities in one currency and assets in another. Government assurances that exchange rate pegs would be sustained left currency mismatches unrecognized. Devaluation then left financial institutions facing massive losses, or insolvency. Once the cushion of foreign capital was removed, the weaknesses of domestic banking systems were revealed, as was the impact on economic performance. The Asian crisis also underlined that the benefits of short-term exchange rate stability are greatly outweighed by the risks that pegged or tightly managed exchange rate regimes bring—not least from the danger of currency mismatches in the corporate and the banking sectors. Fixed exchange rates can result in very large—and sudden—changes in the rate, thus creating great volatility and lost output over the longer term. The move to flexible exchange rates in most countries has reduced vulnerabilities. An overview of exchange rates is given in Fischer (2001) and a discussion of global instabilities can be found in Malliaris (2002) and Salvatore (2005).

To achieve a strong, well-regulated financial sector means addressing issues such as non-performing loans, capital adequacy, and effective supervision. Financial institutions need the appropriate incentives to develop the skills required to assess and manage credit risk and returns. Effective bankruptcy laws that strike the right balance between creditors' and debtors' rights need to be in place.

3. Role of IMF

The growth of integration of economies has been accompanied by a number of challenges and issues. To resolve these issues and to harness globalization for the betterment of the entire world, an intervention of an international organization such as the IMF is essential.

A key part of the IMF's mandate today is the promotion and maintenance of monetary and financial stability, both in individual countries and at the international level. Stability is the foundation for sustained economic growth, and crisis prevention and resolution.

The biggest challenge to world stability is the global imbalance issue. With the world's richest country, United States with its huge deficits continuing to consume the accumulating surpluses in the emerging economies like China, the global imbalance will soon become unsustainable.

Delays in addressing the global imbalance issue through adjustments in domestic policies or any serious doubts about the willingness of central banks to accumulate dollars could spark strong incentives for investors, private and public, to reduce future dollar purchases. This could trigger decline of the dollar and an increase in U.S. interest rates that will have a massive negative impact on the rest of the world.

Unfortunately, neither the developed countries under U.S. leadership nor the emerging economies are ready to change their domestic policies. The political costs incurred in the process, along with the absence of immediate benefits, prevent most economies from undertaking measures to tackle the issue. Moreover, such changes can promote the growth of other economies.

Multilateral dialogue and action are essential to solve such issues, and the IMF can play a very important role in encouraging the same. It can persuade economies to take necessary combined actions by pointing out its benefits on the economies involved. The IMF can also request its members collectively to persuade an economy into taking actions on occasions when IMF itself fails to do so.

However, the IMF itself has to evolve into a more transparent and impartial organization to regain the trust of the emerging and developing economies. The uncertainty in the amount of Fund support and the fear of the imposition of severe conditions in times of crisis has led to attempts by these countries to refrain from depending on the IMF. This in turn has led to the accumulation of large reserves.

To reduce the current surpluses in the emerging countries, the IMF has to change its lending policy to one based on ex-ante conditionality where the countries know in advance the amount that they can expect from the Fund during a crisis.

Another area of priority is the governance of the IMF. An increased representation of the emerging and developing economies together with a transparent management-election process, will help reassure that the measures undertaken by the Fund are in their best interests.

Clearly, these changes in the IMF are inevitable for it to retain its prominence in the world and further take up the role of creating a more stable global financial market. This is discussed in detail in Rajan (2006).

4. The U.S. Trade Deficit

In recent years, exports have grown faster than imports in China, resulting in an overall trade surplus. In other countries, including the United States, imports have grown faster than exports, resulting in an overall trade deficit. A large and continual trade deficit may also be troublesome to the extent that it increases U.S. reliance on international borrowing, that is, the sale abroad of U.S. bonds and other securities. Also, China has emerged as a major source of U.S. imports, leading to a widespread view that the record overall U.S. trade deficits of recent years are “made in China.” In reality, China is the major player, but other player also do affect U.S. trade deficit.

The U.S. merchandise trade deficit with China alone accounted for about \$162 billion in 2004 or nearly one-quarter of the total U.S. trade deficit, up from a minor share in the mid-1980s. Figure 3 highlights the growing contribution of China to the overall deficit and the declining contribution of Japan over the same period. Coming at the same time as record overall trade deficits, the rapidly growing bilateral trade deficit with China has prompted calls for new barriers to the United States.

China currently has the largest bilateral trade surplus with the United States; relative to the size of China’s economy, the surplus is even larger. Analysts estimate that the U.S. current account deficit, now 6 percent of GDP, would need to drop to 2–3 percent of GDP in order to achieve long-run sustainability (Kouparitsas, 2005; Roubini and Setser, 2004). Thus, without reductions in other bilateral imbalances, sustainability could not be achieved even if the U.S.–China trade deficit dropped to zero.

Chinese exports of textile and apparel products to the United States have continued to grow as a share of total U.S. imports at the industry level and as a share of U.S. domestic consumption.

Despite the recent emphasis on textiles and apparel, where U.S. imports from China soared in early 2005 following the elimination of U.S. quotas on these products, Chinese competition in other manufacturing industries has been growing even more rapidly.

As with textiles and apparel, to a large extent these Chinese gains have come at the cost of traditional exporters. The depreciation of the U.S. dollar relative to the euro and the Canadian dollar has reinforced this trend by redirecting U.S. import demand toward China, Japan, and other East Asian exporters.

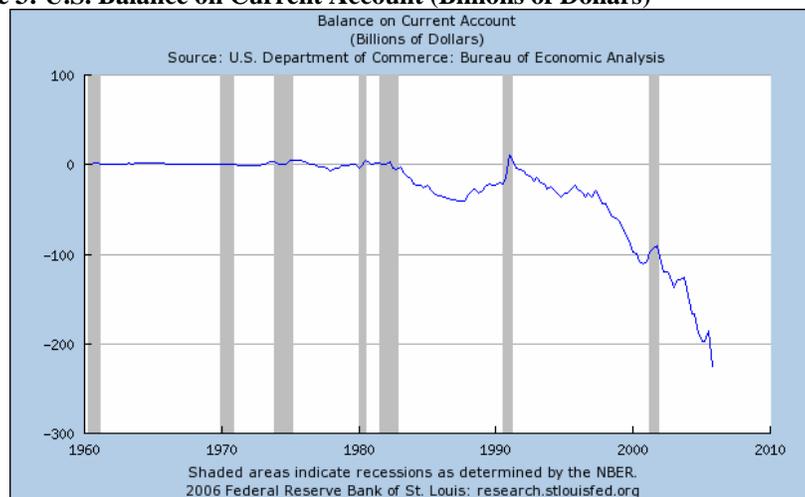
Now, Chinese producers have proved to be experts at producing increasingly sophisticated products. Chinese auto parts are already entering the U.S. market in substantial quantities; imports of Chinese-built vehicles are expected as early as 2007.

Restrictions on imports from China impose higher costs on U.S. consumers, who now have to pay more for products. With the United States and other trading partners (for example, the European Union and Brazil) imposing or threatening to impose safeguards on Chinese apparel imports, in May 2005 the Chinese government responded by proposing export restrictions on the same products, thus “voluntarily” limiting their exports.

The current state of global imbalance is unsustainable and calls for immediate actions to prevent the fall of the dollar which could drastically affect not only the U.S., but the rest of the world as well. Moreover, the surge in oil prices and threats of terrorism and the ongoing war with Iraq are major challenges faced by the United States as it struggles to fiscally re-establish itself.

Large drops in national savings with consequent drops in federal budget balance in recent years account for the increasing current account trade deficits. Tax cuts that have been introduced by the U.S. government in order to counter the problem have led to a significant increase in private consumption and decrease in savings. This, together with the rapidly increasing government expenditures mainly for defense purposes, has led to a record fiscal deficit.

The effects of fiscal policy on the current account balance remains unclear. Studies suggest that fiscal policy changes are a poor and costly (both internally and globally) way of reducing the current account deficits. The effects of an increase in government savings on the current account balance during a year of high productivity could be more than offset by increased consumption and a drop of savings. Moreover, an inappropriate monetary policy can nullify the effects of a modified fiscal policy (Barth and Patricia, 2006).

Figure 3: U.S. Balance on Current Account (Billions of Dollars)

Source: U.S. Department of Commerce: Bureau of Economic Analysis

Although there is an uncertainty regarding the appropriate fiscal policy that the government should adopt, the current fiscal state is unanimously considered to be a cause of concern (Barth and Patricia, 2006). Analysts predict that rigorous changes in fiscal policy by way of decreased government expenditure will indeed decrease the current account balance. But this will come at very high economic costs not only within the United States, but in other parts of the world as well. Therefore, in the absence of policy changes to boost consumption in the emerging economies, the fiscal tightening will make little or no difference in bringing down the current account balance.

With the baby boomers approaching retirement, the government expenditure on their social security and medical care will further deteriorate the financial situation. The refusal of the White House to increase taxes in the face of soaring costs in various sectors has made the government's aim of cutting the budget deficit by half by 2009 an unrealistic dream.

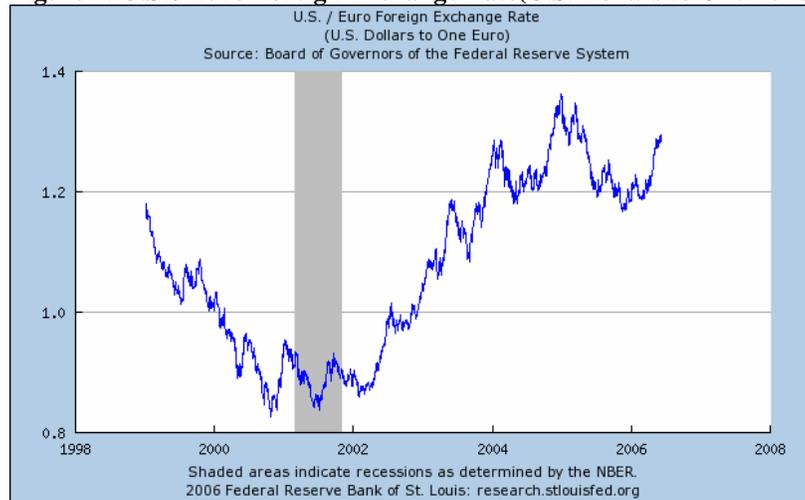
The long-term interest rates have been kept from increasing this far mainly due to the easy monetary policy, lack of complete understanding of the fiscal stance in the United States by foreign investors and continuing support from foreign central banks. But if Japan and Europe continue to grow as expected and the foreign investors begin to lose confidence in the heavily indebted United States, the era of American supremacy may soon come to an end with the possibility of the euro replacing the dollar as the international currency.

5. Impact of Euro

Following the introduction of the euro in January, 1999, there has been an increase in co-movements in financial asset returns as a result of greater integration and economic interdependence between the economies of the European Union. According to the assessments of Cappiello, Hordahl, Kadareja and Manganelli, (2006), although the increase in co-movements has been more pronounced in the bond market, there has been a reasonable increase in the equity market as well.

While most of the increase in co-movements in the equity market is due to the large member states of the euro area, both the large and small member economies in the euro area encountered a significant increase in integration in the bond market. Moreover, the presence of "cross-Atlantic factors" is more pronounced in the equity market; that is, there has been an increase in co-movements between the larger euro area economies and countries like the U.K. and U.S. after the introduction of the single currency. However, the degree of integration with other non-euro countries like Japan continues to be low in both the equity and bond markets.

With regard to the impact of the introduction of euro on asset pricing, a change in the term structure risk premia was observed. This change is a result of changes in the dynamic behavior of macroeconomic variables after the introduction of the euro and the changes in the market price of risk factors. While, the average premia has remained the same as before, there has been a reduction in its variability because of smaller macroeconomic shocks after the launch of euro. However, the macroeconomic factors that best explained the variability of the premia continue to be important even after the introduction of the euro.

Figure 4: U.S. / Euro Foreign Exchange Rate (U.S. Dollars to One Euro)

Source: Board of Governors of the Federal Reserve System

6. The EU and the Role of the Euro

The European Union has recently expanded from fifteen to twenty-five members. Bulgaria and Romania are expected to join in 2007. Those which joined on May 2004 are: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Croatia and Turkey have recently started negotiations. In December, 2005, the European Council decided to grant candidate country status also to the Former Yugoslav Republic of Macedonia, with whom accession negotiations have not yet started. In order to join the Union, these countries need to fulfill the economic and political conditions known as the 'Copenhagen criteria', according to which a prospective member:

- a. Must be a stable democracy, respecting human rights, the rule of law, and the protection of minorities;
- b. Must have a functioning market economy; adopt the common rules, standards and policies that make up the body of EU law.

The euro is the official currency of the EU. It was introduced to world financial markets in 1999 and launched as a currency in 2002. The euro is strongly advancing both economic and political integration between the participating EU member states. All EU member states are eligible to join if they comply with certain monetary requirements. The euro is managed and administered by the European Central Bank.

Outside Europe, the euro has been a success as well. Economists have studied the data from the euro's first few years in operation and found more of an increase in the supply of euro-denominated assets outside of Europe than within the European Monetary Union.

About half of euro land trade with non-euro area residents is invoiced in the new currency. The euro's share in international debt securities has risen to above 30 percent. The euro's share of foreign exchange transactions reached one quarter in Continuous Linked Settlement data. Including forwards and swaps, the dollar was involved in 89 percent of all transactions and the euro in 37 percent. In short, the euro is the second international currency, after the dollar.

A high euro scenario would have many European countries joining EMU by the end of this decade. Most eager to join are the ten countries that joined EU in May, 2004. Possibly Denmark, Sweden and U.K. will join the euro. In this case euro land exceeds the U.S. in income and trade. The key question is whether U.K. joins, because it would bring with it the London financial markets. By mid-decade it did not look likely that Britain would join in the next ten years. Real growth has been slower in Europe than United States for some years due to lower population growth. U.S. monetary policy in the first part of the current decade was looser than ECB monetary policy.

All of the above developments are challenging the future leadership of the U.S. dollar as a global currency. In what follows we evaluate the intensity of the competition between the euro and the dollar.

7. Economic Outlook for the Euro Area

Papademos (2006) points out that recent surveys on the economic situation in the euro area indicate a growth in economic activity which is expected to continue further with the increase in domestic and global demand. The world economy, which continues to grow at a healthy pace, will have a positive impact on the euro area economy, as it will contribute to its exports as well as to sustaining strong investment activity. With regard to domestic developments, private consumption growth is expected to gradually pick up with the increase in consumer confidence. Moreover, recent structural reforms in the euro area are expected to improve the national labor market performance in the coming years.

However, there exist two external risks to this outlook, namely global imbalances and the high oil prices. The latter poses a threat to consumer prices, although over the medium term, no upward pressures on inflation are expected. Hence, ECB through its monetary policy has to continue to keep inflation under check in the long run.

8. Euro Area and China

There has been a tremendous increase in the euro area's imports from China with the latter's growth into a major trading nation as a result of the increase in globalization. Along with global trading, there has been an increase in capital flows and foreign direct investment. All this has led to a growing interdependence between the euro area and China.

Despite the many advantages in terms of lower costs for consumers and firms, the euro area is faced with challenges due to the outsourcing of manufacturing activities and the resulting effects on the labour market. Besides, China's share of euro-area imports has seen a downward trend in the last ten years. These challenges are being met through the introduction of labour policies to make euro-area economies more flexible, innovative, and competitive. For instance, the "Lisbon strategy", a set of policy initiatives which emphasize education and research for the long-term growth and development of the euro area, has already been put forward (Papademos, 2006).

The current global imbalance is the biggest challenge faced by the global economy. In order to find a solution to this problem, the euro area, along with the rest of the deficit countries, should introduce reforms aimed at increasing productivity through competition and innovation. On the contrary, China, along with all the surplus countries, has to adopt measures such as exchange rate flexibility, interest-rate adjustments, higher returns on financial investments and banking loan requirements which will encourage investments on financial assets. Together this will help solve the global, as well as local, economic imbalances (Papademos, 2006).

9. Possible Future Scenarios

Table 1 gives an account of the changes in the shares of the various major currencies in the total foreign currency reserves held over the years.

The dollar, which replaced the pound sterling after World War II to become the hegemonic currency, continues to grow with a share of about 63.5% of the world's currency reserves. The substantial growth shown by the Japanese yen came to an end with the recession of the late 1990s. The Deutsche mark was doing exceptionally well until it was replaced by the euro. Immediately after its introduction in 1999, the euro became the second major global currency with around 19.3 percent of the world's currency reserves held in euros by 2002.

As seen from Table 1, the three major global reserve currencies are the U.S. dollar, euro and the Japanese yen. In addition, all the key characteristics mentioned in Table 2 are quite favorable for these three economies. The unsustainable growing deficits of the U.S. on one hand and the recovery of the Japanese and euro area economies on the other are posing a threat to the future prospects of the dollar as the international currency. With the recession in Japan hindering the growth of the yen, the real competition has now been reduced to one between the other two currencies namely the dollar and the euro.

How will the world economy take shape in the future? Three possible scenarios are discussed below:

Scenario 1: If the current trend of the dollar's decline and euro's appreciation continues, by 2020 the euro will equal the dollar and will further overtake it as the international currency. This is illustrated in Figure 5.

Table 1: Reserve Currency Holdings (Original IMF Data)

Share of National Currencies in Total Identified Official Holdings of Foreign Exchange, End of Year (in percent)								
	1965	1973	1977	1982	1987	1992	1997	2002
All countries								
U.S. dollar	56.1	64.5	76.2	57.9	53.9	48.9	59.1	63.5
Japanese yen	0.0	0.1	1.2	4.1	6.8	7.4	5.1	5.2
Pound sterling	20.0	4.2	1.5	1.8	1.9	2.6	3.3	4.4
Swiss franc	0.0	1.1	0.8	2.3	1.7	0.8	0.5	0.6
Euro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3
Deutsche mark	0.1	5.5	6.4	11.6	13.8	14.0	13.7	0.0
French franc	0.9	0.7	1.0	1.0	0.9	2.6	1.5	0.0
Netherlands guilder	0.0	0.5	0.4	1.0	1.2	0.7	0.5	0.0
ECUs	0.0	0.0	0.0	13.8	13.6	9.7	5.0	0.0
Unspecified currencies	22.9	23.6	12.3	6.5	6.4	13.3	11.3	7.1

Table 2: EU, U.S. and Japan

Key Statistics for 2004				
Characteristics	Unit	Euro Area	U.S.	Japan
Population	Millions	309.7	294.0	127.6
Gross GDP	\$ trillions	9.07	12.24	3.96
GDP (share of world GDP)	%	15.3	20.9	6.9
GDP per capita	\$	29.28	41.64	31.08
Unemployment Rate	%	8.8	5.5	4.7
Government Surplus (+) /Deficit (-)	% of GDP	-2.7	-4.4	-7.0
Gross Debt	% of GDP	70.6	48.7	149.2
Exports of Goods and Services	% of GDP	19.5	9.8	13.6
Imports of Goods and Services	% of GDP	17.8	15.0	11.6
Current Account Balance	% of GDP	0.6	-5.7	3.7

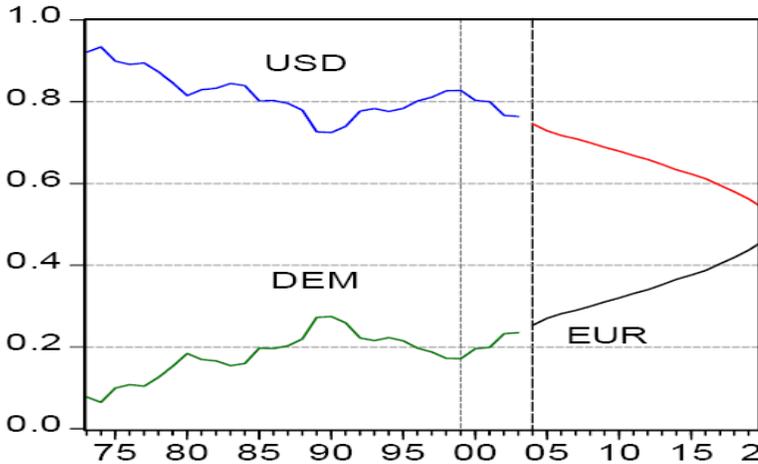
Source: www.worldbank.com

Table 3: Key Potential Economic Partners (2004)

Countries	Population in millions	Total GDP		Imports		Surplus(+)/Deficits(-) as %GDP
		in billion of USD	Exports as % GDP	in % GDP		
Mexico	103.8	676.5	30.1	31.9	-1.8	
Canada	32	978	34.4	30.4	4	
U.K.	59.9	2124.4	24.7	28	-3.3	

Source: www.worldbank.com

Figure 5: Disciplined Decline in the Dollar and Appreciation of the Euro at 10 percent annual rate

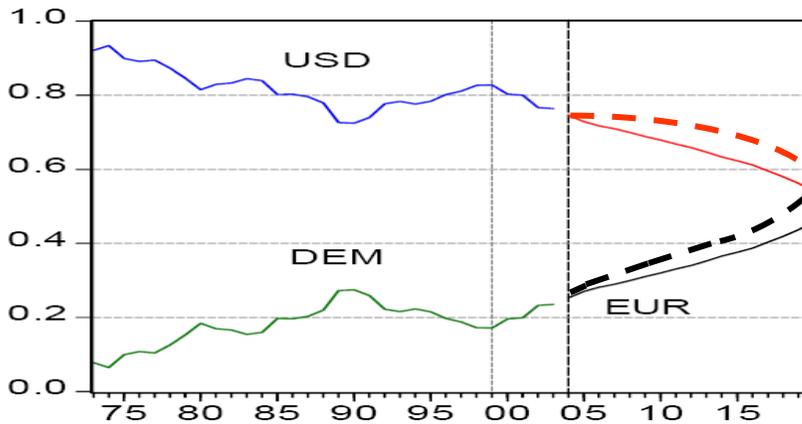


Source: Frankel and Chinn (2005) and modified by the authors

With the growth of the world economy, the existence of a single successful hegemonic currency, without eventually leading to global instability, is highly unlikely. Scenarios 2 and 3 discuss the consequences of more than one nation adopting a currency.

Scenario 2: If the United States incorporates the United Kingdom and perhaps NAFTA, Canada and Mexico, then the rate of decline of the dollar may slow down or may even reverse. The upper dotted curve in Figure 6 illustrates this.

Figure 6: Euro and Partners versus U.S. and Partners (various scenarios)



Source: Frankel and Chinn (2005) and Modified by the Authors

Scenario 3: On the other hand, if U.K. and perhaps the 10 new members of the EU adopts the euro as their currency, there could be an even faster overtaking of the dollar by the euro as compared to Scenario 1. (lower dotted curve in Figure 6)

9. Summary

This paper argues that global economic development has progressed at a rapid rate during the last few years with the U.S. economy acting as the engine of growth since its brief recession in 2002. In contrast to global trade stability and growth, currency markets have experienced substantial volatility. The EU has chosen to overcome such volatility by establishing the European Monetary Union and introducing a common

currency in 1999. The euro has been thus far a great monetary success and has continued and actually expanded the international significance of the German mark. The currently unsustainable balance of payments deficits in the United States have diminished the strength of the dollar, and analysts are concerned about the future leadership of the dollar. We argue in this paper that at least three possible scenarios may develop. First, without any new membership in the EMU, one may expect a disciplined decline of the dollar and a further strengthening of the euro. A second scenario involves the expansion of the United States to include the United Kingdom and also the NAFTA in a new Pan-American Monetary Union. Such a development might stop the decline of the dollar or might actually reverse its current course and lead to its strengthening. The third scenario envisions the United Kingdom actually joining the EMU, a step which will result in a further increase in importance of the euro as a global currency. In addition, if the ten new member states of the EU satisfy the convergence criteria and join, the euro could be strengthened further.

Notes

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Globalization and the Contagion Effects of External Shocks on Emerging Market Economies

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1. Introduction

The increased integration of global capital markets during the last decade has created substantial benefits for the emerging market countries. As economies progress from being developing to becoming developed, the last hurdle of this transition typically involves the establishment of well functioning capital markets. A mature capital market is an essential part of the development process since it represents the most efficient platform for allocating scarce capital resources. As international capital markets become more interlinked, emerging markets undergo a transformation whereby instead of relying only on local capital, local firms and governments can access capital from global investors to finance their growth opportunities. Needless to say, reliance on local capital alone typically is not sufficient for these countries to fully exploit their high growth prospects.

However, access to larger amounts of capital does not come without a cost. Reliance on global capital makes emerging economies vulnerable to macroeconomic shocks affecting both developed and developing countries, as well as to reversals in the confidence of global investors. Additionally, due to the much smaller size of emerging markets relative to the developed country capital markets, external macroeconomic disturbances become magnified when they are transmitted to the emerging markets. The fragile nature of developing country economies also contributes towards relatively small external shocks having disproportionately large ripple effects in these countries. Furthermore, changes in monetary and exchange rate policies in developed countries may also create turmoil conditions in emerging markets. For example, an IMF study found that tightening of U.S. monetary policy in 1994 caused developing country spreads to widen. Similarly, the easing of U.S. monetary policy in response to the Long Term Capital Management episode and fears of Russian default in 1998 created conditions where emerging market bond spreads narrowed. The same study conducted a simulation analysis and found that a 1 percent increase in the U.S. federal funds rate would likely cause a reduction of ½ percent annually over the medium term in the GNP of debtor developing countries.¹ The effect of the same increase in U.S. Federal Funds rate on creditor developing countries, on the other hand, was found to be in the order of a positive ½ percent per year increase in their GNPs over the same time period.²

The events of February 27, 2007 showed that the global contagion of macroeconomic disturbances is not unidirectional--originating in developed economies and spreading to developing markets. On the date in question the Shanghai index plunged 8.8 percent (wiping out more than \$100 billion of market capitalization of Chinese stocks), due to concerns that the government may take some measures to cool the red hot Chinese economy. The impact of this plunge was felt in developing markets, e.g., Istanbul Stock Exchange was down 4.5 percent, Russia and Brazil plunged 6.6 percent, and 3.3 percent, respectively. More importantly, developed economies found out that shocks that originate at emerging market economies have the potential to reach their shores as well: France and Germany fell 3 percent each, Britain fell 2.3 percent, and U.S. was down 3.9 percent.³

The general point is that the increasingly global nature of capital markets provides benefits to emerging economies by enabling them to raise additional capital that they would otherwise not have been able to access. But at the same time, the ability to access capital beyond their local markets comes at a cost, in the sense that it exposes them to external real sector shocks as well as disturbances in the forms of policy changes and changes in investor confidence in global markets. It appears that these forces were at play during the adverse stock, bond, and currency market movements in developing countries' financial markets during the spring of 2006. In this article, I will use this episode and the conditions that prevailed in the Turkish markets at the time as an example to illustrate what went wrong during this time period, and also to discuss what emerging market governments can do to minimize the possibility of experiencing similarly painful experiences in the future.

2. The Episode of Spring 2006

It is difficult to pinpoint the exact date and the particular event that triggered the dramatic downturn in emerging markets. However, in retrospect it appears that the tightening of monetary policy by Bank of Japan is the most likely candidate. In March 2006, the Japanese monetary authorities drained liquidity from the banking system. The size of the action was staggering—4 percent of the GDP. A monetary policy action of such a magnitude naturally caused the Japanese stock market to drop precipitously. However, the action was not just confined to the Japanese markets. Hedge funds have been borrowing money denominated in Japanese Yen at almost zero percent interest rate, and channeling these funds to risky investments, including emerging market securities that are denominated in local currencies. This increase in the cost of “carry-trade” made global investors reconsider their appetite for risk and led them to retreat from high yield emerging markets such as Iceland, New Zealand, and the Gulf states. In the meantime, the U.S. had been continuing to increase short-term interest rates. In fact, on June 29th the Federal Reserve nudged up the Federal funds rate for the 17th consecutive time to 5.25 percent. Bank of England and the European Central Bank have also been following policies aimed at increasing interest rates. As the cost of borrowing in developed country currencies increased, the emerging markets turmoil spread in May and June to countries such as Turkey, Brazil, South Africa, Hungary, and Mexico. As the hedge funds liquidated their equity and bond portfolios and converted their proceeds to dollars (and yens and euros), emerging market interest rates skyrocketed and the value of their local currencies vis-à-vis developed country currencies plunged.

The fact that between May 8th and June 13th emerging countries’ stock markets lost a quarter of their value was surprising, especially since the developing countries in question had experienced major success in putting their economic houses in order. Prior to Spring 2006, they had been paying their foreign and domestic debt for years and have shown remarkable fiscal discipline. Furthermore, they have been engaged in extensive privatization programs and had implemented major structural reforms such as strengthening their banking sectors, as well as waging a largely successful war to curtail the ravaging inflationary forces that they had suffered from for decades. Additionally, some of the countries in question were able to generate remarkable growth in spite of the tight monetary and fiscal policies they have adopted to battle their chronic structural problems. Thus, in spring 2006 the degree of vulnerability, shown by emerging markets, to an external event such as relatively small interest rate changes in developed economies, caught almost everyone by surprise. However, apparently the structural reforms these countries have been implementing must have paid off to some extent, since unlike the Asian turmoil of 1997 and the Russian default turbulence of 1998 nobody used that dirty word “crisis” in describing the events of spring 2006. This suggests that the financial infrastructure of emerging market economies now appear to have stronger foundations compared to the late 90s. Nevertheless, the declines in stock prices in these countries were dramatic in magnitude and took place over a very short time period. What went wrong? Why did investors penalize the emerging stock markets so severely? In fact, the damage was not just confined to their stock markets, but the financial turbulence in question was also felt in their bond and foreign exchange markets as well.⁴ I think the answers to these important questions fall into two categories: First, due to integration of the global markets, the parameters of the exogenous environment these economies face have changed dramatically in the direction of greater vulnerability to global disturbances. Second, the episode in question proved that these economies still have a ways to go in implementing the full menu of structural reforms to significantly reduce the fragility of their economies.

As discussed above, one factor in this increased vulnerability is the size disparity between emerging market and developed country economies. As barriers to trade and capital movements are dismantled, small changes in developed economies acquire the potential to have a significantly larger impact on smaller economies. Furthermore, in recent years, as returns between emerging and developed economies tilted in favor of emerging markets, global investors developed an increased appetite for taking higher risks in their pursuit of higher returns in spite of the relative illiquidity of these markets.⁵ While in the past global institutional investors were willing to invest in emerging markets only via securities that are denominated in Dollars or Euros, a new breed of global institutional investors – hedge funds – did not shy away from exposing their emerging market portfolios to the foreign exchange rate risk. These funds showed their willingness to bear additional risk by buying emerging market securities denominated in local currencies to harness the high real returns available from these investments. However, because of the lightning speed at which these funds move globally when financial market conditions in one country vis-à-vis another country change, or even when there is a *perception* that risk-return relationships have changed, disturbances in the

financial and/or real sectors of developed and developing economies are now transmitted to emerging markets in a more dramatic manner and at a much faster pace than before.

Why are emerging market economies still vulnerable to external shocks even though they have achieved significant progress in addressing their structural problems? First, while many developing countries have implemented significant structural reforms to tackle some of their chronic ills-- such as reducing inflation, proceeding with aggressive privatization programs, and attracting direct and financial investments-- some of their other chronic problems have yet to be addressed. Second, these countries have become afflicted with some new problems during the recent past. Ironically, some of the new problems in question came about as a by-product of their attempts to fight their old problems. I will address both sets of problems using Turkey as a case study. Table 1 provides selective macro economic data about the Turkish economy during 2002-2005.

3. Vulnerability to External Shocks: Unsolved Old Problems

For the Turkish economy, the major unsolved stubborn macroeconomic issues include tax policy, unregistered economy, unemployment problem, and the undeveloped nature of capital markets.

Turkey continues to be one of the top countries where the tax rates of the lowest earners are the highest, and the tax rate of the highest earners are the lowest. Additionally, tax evasion is rampant: a study conducted by the government estimated that for every TL 100 of declared taxable income, in 2004 TL 84.6 and in 2006 TL 119 in 2006 was not declared. In Istanbul, which is the commercial and financial center of the country, 50 percent of the firms did not declare any taxable income in 2006.

The statistics on the unemployment problem are equally pessimistic: while the "official" unemployment rate for 2006 is 8.8 percent, the "real" figure is estimated to be in the 18.6 percent, representing over 5 million workers. Additionally, 40 percent of those who gave up looking for work, and thus, are not included in the unemployment statistics are between the ages of 17-25, raising the possibility of severe socio-economic problems in the future. The financial dimension of the unemployment problem is substantial. Due to the relatively high birth rate, currently 750,000 workers enter the work force every year. Based on an estimate that \$120,000 is needed to create one job, to find jobs for the annual entries to the work force requires a staggering \$90 billion of investment. Of course, the amount in question is needed just to keep the unemployment rate from increasing. The required investment to actually reduce the unemployment rate by a meaningful amount is obviously substantially higher.

Unregistered economy continues to be a major problem. Estimates put the size of the underground economy at 55-65 percent of the GNP. The annual tax loss implication of this figure for the Treasury is estimated to be around \$15 billion.

The relatively undeveloped capital markets in Turkey impose some adverse conditions on the real sector. The high growth rate that the economy has experienced during the last decade has been accomplished in spite of weak capital markets. The shortcomings of the Turkish capital markets are numerous. First, private sector has been crowded out from public debt markets due to the large financing needs of the government. Given that private sector projects are more likely to have positive net present values compared to public sector investments, the "crowding-out" phenomena creates inflation inducing and growth curtailing macro economic conditions. Inability to raise long-term funds in the domestic markets forces firms to either rely on short-term bank debt, or in the case of firms that have access to foreign currency denominated funds, to rely on external debt. This creates a maturity risk exposure since long-term projects are financed with short-term funds, or exchange rate risk exposure, or both. Furthermore, the private sector's ability to hedge either type of exposure is very limited due to the fact that TL denominated interest rate derivatives and foreign exchange derivatives involving TL are essentially non existent.⁶

Another negative factor about the capital markets is related to economic volatility and firm leverage. High volatility of the economic environment combined with high leverage ratios that Turkish firms operate with results in high costs of both equity and debt capital. The higher cost of capital in turn puts Turkish (and other developing country firms) at a comparative disadvantage when competing against developed country firms in global markets.⁷

The negative factors created by undeveloped capital markets cannot be exaggerated. Using a sample of 47 countries, a World Bank study shows that higher stock market capitalizations and market liquidity is positively correlated with economic growth. Another study (Levine, 1997) finds that a well-developed financial sector leads to high growth rates. Furthermore, Johnson, et al., (2000) conclude that

markets inhabited by firms with weak corporate governance conditions, which is typical of emerging market country firms, create a more conducive environment for economic crises to occur.

4. Vulnerability to External Shocks: Emergence of New Problems

New problems of the Turkish economy that emerged during the recent past consist of the ever widening current account deficit, the explosion in the foreign currency denominated private sector debt, over-valued Turkish Lira, and the dominant role of hedge funds in Turkish capital markets.

Why did these problems emerge during the recent past? One possibility is that at least some of these problems may have been the unintended by-product of the policies that the government followed in order to solve the economy's decades-long chronic problems, in particular the inflation problem. In other words, perhaps the policies of emerging market economies during recent years were, in some sense, designed to fight the old wars. In their single-minded commitment to solving old chronic problems such as inflation, policy makers may have lost sight of the fact that, as global financial markets became more integrated, this introduced new problems. To put it differently, it may be the case that due to the forces of globalization, the economic problems that countries face in today's world are no longer static but are dynamic in nature. In such a world, policies that governments follow also need to be dynamic. Thus, perhaps governments can no longer design a set of policies to fight economic ills and wait for their actions to bear fruit. Instead, they may need to continuously monitor local and global macroeconomic developments and revise the design and the focus of the policies in question when conditions warrant it. For example, as discussed below, the single-minded determination to fight inflation by well-intentioned tight monetary policy may have led to an over-valued currency which in turn may be responsible for the explosion in the current account deficit. Similarly, over-valuation of the domestic currency, combined with the crowding-out phenomena may have triggered the dramatic increase in private sector's external debt.

Could Turkey and other emerging market countries have predicted that their economies could have been adversely affected by external shocks? I think the answer to this question is a resounding "yes." It is unrealistic to think that anyone could have predicted the timing of the events that took place. However, policy makers of emerging market economies should have been aware of the fact that such an episode was likely to happen at some point. There are various reasons for this. I will again use the conditions that prevailed in the Turkish economy prior to spring 2006 episode to illustrate that the warning signs were in place. One of the basic principles of corporate finance is that growth generates financing needs for firms. In fact, a firm with very rich growth opportunities could become distressed and even go bankrupt if it is unable to finance its growth. The same principle holds for macro economic growth as well. While growth is desirable, depending on how it is financed, growth may create some structural problems. In fact, the current account deficit, which represents one of the new problems of the Turkish economy, came about because the growth in question was financed via the current account deficit. Turkey has been one of the fastest-growing economies among the OECD countries during the last decade. While such a high growth rate is desirable, partially due to the low savings rate, this growth has been financed by increasingly alarming current account deficits. One of the root causes of the current account deficit is that tight monetary policy that was used to fight inflation generated high real returns which in turn attracted hedge funds and resulted in increased the demand for the TL and caused it to become over-valued. Since over-valued currencies encourage imports and discouraged exports, it creates increasingly larger trade and current account deficits.

Table 2 shows Turkey's current account deficit during the last two decades. As of 2006, at around 7.6 percent of the GDP, the current account deficit of Turkey is one of the highest among emerging market economies.⁸ Turkey's current account deficit in dollar terms is approximately equal to Italy's. However, Italy's GDP is seven times larger than Turkey's. The following additional data highlights the increasingly severe nature of this problem: In 2002 to finance \$100 of growth current account deficit of \$0.05 was needed. This figure was \$14 in 2003, \$37 in 2005, and \$91 during the first half of 2006. Financing growth by ever increasing current account deficits is not a sustainable preposition.

It is ironic that another new problem was also caused by the successful fight waged against the last 30 years' chronically high inflation.⁹ The problem in question is the dominant role played by hedge funds in Turkish capital markets. High real returns in financial markets combined with over-valued but seemingly stable local currency attracted global investors to the Turkish financial markets. Table 3 shows the ownership distribution of stocks and treasury bonds in Turkey. Other things being equal, entry of foreign capital to the economy would normally be viewed favorably since it provides additional funds to Turkish firms (and to the government) to finance their real sector investments.¹⁰ However, high concentration of

hedge fund investments could prove to be destabilizing. When “hot money” owns 66 percent of the stocks and 32 percent of the Government bonds in small markets that lack depth, such as the Istanbul Stock Exchange (ISE), the alarm sirens should have been on. Because, as we know from the 1997 Asian crisis and other crises, the major drawback of “hot money” is that it tends to move at lightening speed at the first sign of a real or a perceived problem. Such an adverse scenario materialized in Turkey when March and April 2006 inflation figures exceeded expectations.¹¹ Given their dominant position, the attempt of hedge funds to liquidate their positions in a small and illiquid market such as the ISE is analogous to someone shouting “fire” in a small theater with one exit: the number of casualties is likely to be very high. Between May 8 and July 18, stock prices registered a 25 percent decline in dollar terms, the 1-year Treasury interest rate increased by 6.4 percent to 20.1 percent, and the Turkish Lira lost 17.3 percent and 15 percent of its value against the dollar and the Euro, respectively.

Similar developments took place in other emerging markets during the same time period. For example, declines in some of the other emerging stock markets were as follows: India 17.9 percent, Hungary 17.3 percent, Brazil 15.2 percent, South Korea 15.1 percent, Mexico 14 percent, and Argentine 13.9 percent.

The third macroeconomic problem that emerged in Turkey in recent years is related to both the over-valued local currency and to the crowding-out of the private sector from public debt markets: Firms in the private sector turned to external markets to satisfy their financing needs. Long-term public debt markets have never existed in Turkey. Thus, historically the private sector funded their fixed asset investments by rolling over short-term bank debt. However, as the domestic currency became over-valued, and as a large number of Turkish firms became attractive to foreign currency denominated debt markets, the private sector started to rely heavily on external debt. As shown in Table 4, external debt of the private sector has been increasing at an accelerated pace starting in 2003. As of the second quarter of 2006, the foreign currency denominated external debt of the private sector doubled from its 2003 size and stood at \$111 billion (\$41 billion of it is short-term debt), exceeding by a substantial margin the government’s external debt (\$67 billion).

The external debt of the private sector represents 28 percent of the GDP. The rapidly increasing size of the external debt contributes towards economic fragility by introducing substantial risks both to the borrowing firms and to the economy. First, adverse movements in the exchange rate may cause systemic defaults on external debt since local firms would face difficulties in servicing their debt (especially in paying the principal amount) in such a scenario. Furthermore, difficulties in servicing debt would not only be confined to external lenders, but would also involve the domestic banking sector since the firms with foreign debt also have domestic banking relationships. If foreign currencies increase in value vis-à-vis the Turkish currency, external debt servicing problems would spill over to the servicing of domestic debt, perhaps creating a financial crisis in the Turkish banking system. Second, as discussed in the next section, adverse exchange rate movements affect not only the financial sector but are also likely to have negative consequences for the real sectors of the emerging markets economies.

In sum, while the Turkish economy has experienced the highest growth rate amongst the OECD countries during that last decade, financing this growth with current account deficits, foreign currency denominated debt, and hedge fund investments in local capital markets poses substantial risks for the future.

5. The Fallout from the Emerging-Markets Turmoil

While there are some indications that in selective countries a modest recovery has already started, it is not clear that the emerging markets will fully recover any time soon from the financial turbulence of spring 2006.¹² In fact, in certain segments of these economies not all of the adverse effects of the financial market shocks have been felt fully. For example, while the expected inflationary effects have been observed in some segments of emerging market economies, it is not clear that the inflationary forces implicit in the exchange rate and interest rate movements have been felt across industries.¹³

It will take even longer for the full effects of the financial turmoil to be felt in the real sectors of the emerging market economies. The impact of the financial markets turmoil on the real sectors of these economies is likely to be even more severe than the turmoil experience in their financial sectors. There are several reasons for this. The key factor is to recognize that financial sector disturbances influence the real sector through their effects on investment decisions. The spring 2006 episode is likely to adversely impact investment decisions through two channels: cost of capital increases and declines in cashflow projections. First, higher interest rates combined with the higher risk premium required by lenders in the post-episode

environment means that firms' cost of debt becomes significantly higher when emerging markets experience turbulence similar to the one in spring 2006. In such a situation cost of domestic debt increases as hedge funds liquidate their local currency denominated Treasury bond positions (i.e., bond prices fall). Cost of external debt also increases due to higher credit risk implications of adverse exchange rate movements. Furthermore, since cost of equity is positively related to firm leverage measured in market value terms, declines in the value of TL increases the market value of external debt measured in TL terms. This, in turn results in higher equity betas and thus, higher costs of equity for these firms. In sum, due to the rise in both of its components, spring 2006 type external shocks increase the weighted average cost of capital of the private sector. This, of course, by itself discourages real sector investments.

Second, the events in question adversely affect investment-related cashflows, also making investments less desirable. There are two reasons why firms end up revising their projected cashflows of investments downwards. First, firms face higher interest expenditures in local currency terms both on their domestic debt (since they are short-term bank loans, they are renewed at higher interest rates), and foreign debt (due to adverse exchange rate movements) following an external shock.¹⁴ As interest expenditures increase, other things being equal, firms need to revise downwards their project-related cashflows. Additionally, through their effect on economic uncertainty, external shocks also affect aggregate demand negatively which also causes firms to revise their cashflow projections downwards. In sum, Spring 2006 type episodes affect the real sectors of developing economies adversely both because they imply higher cost of capital and also lower investment-related cashflows, resulting in lower investments, hence lower growth rates. Such developments further aggravate one of the old problems of these countries: unemployment rates become worse.

6. What Lies Ahead?

Even if emerging countries fully recover from the effects of financial turmoil created by episodic external shocks, for the sake of their long-term health, they will need to continue to be diligent in strengthening their economies by continuing to implement the necessary structural reforms. The events of February 27, 2007 show that global shocks may be here to stay. This recent episode also shows that as both financial and product markets become increasingly more global, the effects of external shocks are unlikely to be confined only to developing economies, but also are likely to be felt in developed economies. This suggests that policy makers in both developing and developed worlds need to address the weaknesses in their economies that are caused by structural imbalances. For example, in U.S., governments have to take measures against budget and current account deficits. For European countries, the necessary measures may include reforms involving their work force and also their social programs. China may need to seriously consider opening its markets, changing its managed exchange rate regime to a fully floating one, and addressing its glaring income distribution problem. In sum, since globalization has increased both the frequency of external shocks and the speed at which these shocks are felt across the world, policy makers need to take measures to mitigate the effects of these shocks by implementing the necessary structural reforms in order to reduce the vulnerability of their economies.

Emerging market economies need to be especially diligent in preparing their economies to external shocks since relative to developed countries the financial health of their economies is much weaker. Naturally, this makes them more vulnerable to external shocks. As discussed earlier, while emerging market economies have been relatively successful in fighting some of their deeply entrenched problems, such as inflation, they have been less successful in solving other stubborn problems such as unemployment. Furthermore, given their demographic profiles, the need for these countries to build a strong foundation for their social security and health care systems is urgent. Additionally, tax reform and transforming their large underground economies into fully registered economies one should gain priority on their economic agendas. The structural problems of developing countries handcuff these economies from reaching their potential. These reforms are very important because the stronger the domestic economy of a developing country, the more successfully it can withstand any adverse shocks that forces of global product and global capital markets may at times generate.

The emerging markets turmoil of 2006 contains many lessons for developing country-policy makers. Due to space limitations, I will refrain from discussing in detail the full menu of policy initiatives governments need to undertake. One thing that should be kept in mind regarding the events of 2006 is that the particular shock that was experienced was financial in nature: Interest rates in the developed economies increased. Additionally, there was a change in the appetite of global investors for risk. While governments need to study this episode and take the necessary steps to minimize the damages of similar global financial

disturbances, at the same time they should not lose sight of the fact that future global shocks could originate at the real sector of world economies rather than coming from the financial sector. Real economy-based shocks have the potential to affect the economies of developing countries more severely. For example, in many emerging market economies the export sector is much more important than it is in developed economies. For this reason, a slowdown in the economies of developed countries such as the United States, Japan, or the European Union countries is likely to have a devastating impact on the emerging market economies by curtailing the imports of developed countries. Because of the integrated nature of both global product and global capital markets, any negative impact felt by the real sectors of developing economies would, in turn, have further adverse effects upon developed economies. Not having experienced such a scenario on a large scale since the advent of globalization, it is difficult to predict how long this feedback loop may last and how much damage it may inflict on the global economy.

7. Conclusion

Given the likelihood of future financial and real economic shocks, measures that are designed to prepare emerging market economies to just financial shocks similar to the one experienced during spring 2006 may not be sufficient. Since the nature, timing, and the size of future global shocks cannot be predicted with any degree of accuracy, the only course to follow from the policy perspective is for both developed and developing countries to minimize global imbalances by strengthening the infrastructure of their economies.

Globalization of product and capital markets promises substantial benefits to emerging market economies. However, forces of globalization also have the potential to create turmoil in these countries. Given the presence of both costs and benefits, the attitude of emerging market countries towards globalization should not be to resist it on grounds that it poses some dangers, but rather to reap the full benefits that come from globally linked economies by embracing it, however, at the same time these countries need to put in place the necessary measures aimed at reducing the fragility of their economies against adverse external shocks. In setting the necessary specifications for building a stronger economic infrastructure that would withstand exogenous shocks, developing economies should not lose sight of the fact that the design of a particular infrastructure needs to withstand disequilibria that may originate in the financial as well as the real sectors of the global economy. Additionally, the economic infrastructure in question needs to have the flexibility to counter the dynamic nature of global shocks.

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Table 1
Macro Economic Aggregates (Million \$)

	2002	2003	2004	2005
GNP (Million \$)	180,892	239,235	299,475	360,876
Exports	36,059	47,253	63,167	73,275
Imports	51,554	69,340	97,540	116,352
Current Account Balance	-1,524	-8,035	-15,604	-23,007
International Reserves (Gross)	26,807	33,616	36,009	50,518
International Reserves (Net)	28,071	35,162	37,643	52,433
Credit Disbursement	28,125	16,325	22,800	33,574
External Debt Service	28,852	27,808	30,483	36,392
Principal	22,450	20,821	23,341	28,435
Interest	6,402	6,987	7,142	7,957

Table 2
Stock Market Holdings by Investor Category (12/31/05)

Year	Current Account Deficit (In \$Billions USD)
1984	1439
1985	1013
1986	1465
1987	806
1988	1596
1989	938
1990	2625
1991	250
1992	974
1993	6433
1994	2631
1995	2339
1996	2437
1997	2638
1998	1984
1999	1340
2000	9821
2001	3392
2002	1524
2003	8036
2004	15604
2005	23155

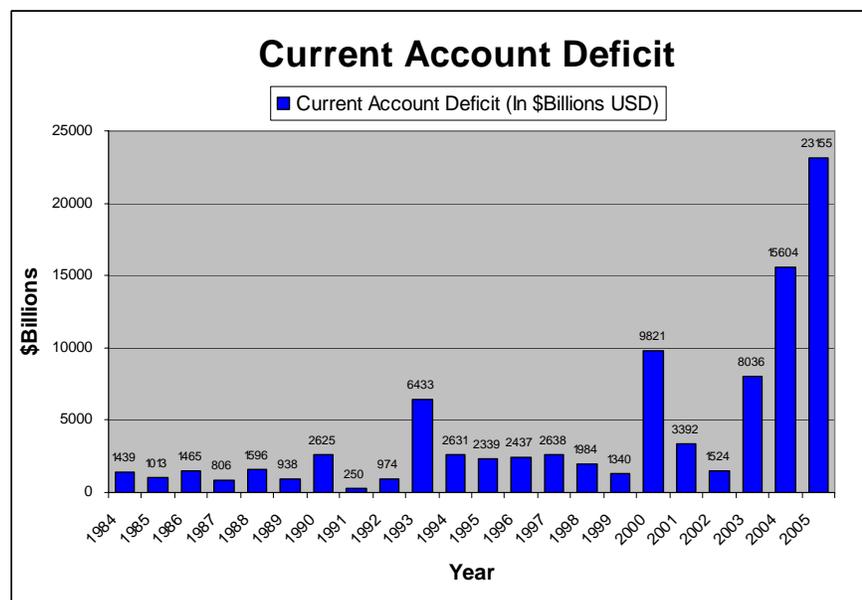
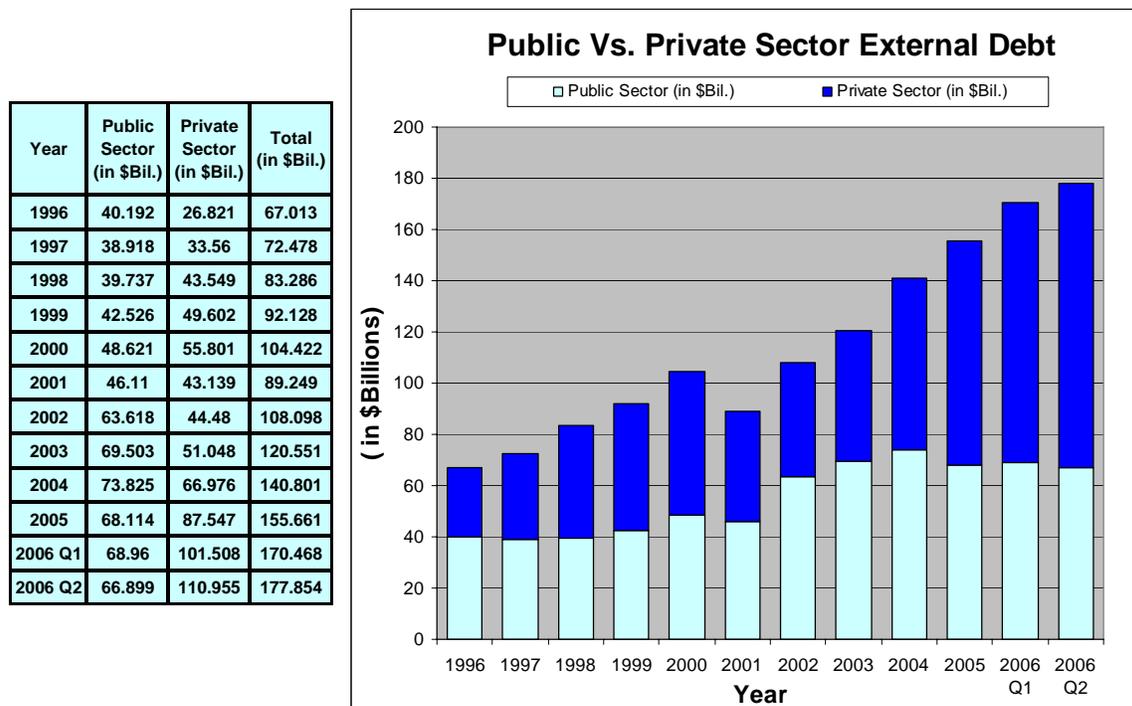


Table 3
Ownership Structure in Turkish Financial Markets

INVESTOR CATEGORY	SHARE IN TOTAL NUMBER OF STOCKS IN IDENTIFIED ACTIVE ACCOUNTS	PORTFOLIO SIZE OF IDENTIFIED ACTIVE ACCOUNTS (YTL)	SHARE IN TOTAL PORTFOLIO SIZE OF IDENTIFIED ACTIVE ACCOUNTS
Foreign/Fund	25.23%	22,307,403,963	31.7%
Foreign/Other	0.10%	68,395,336	0.1%
Foreign/Corporate	26.13%	23,080,841,533	32.8%
Foreign/Individual	0.4%	180,660,496	0.3%
Foreign/Total	51.8%	45,637,301,328	64.8%
Domestic/Fund	1.2%	876,439,958	1.2%
Domestic/Other	2.6%	2,297,973,475	3.3%
Domestic/Corporate	9.9%	5,810,872,528	8.3%
Domestic/Individual	34.5%	15,775,062,547	22.4%
Domestic/Total	48.2%	24,760,348,508	35.2%
TOTAL	100%	70,397,649,836	100%

Table 4
Foreign Currency Denominated External Debt



Notes

¹ Vivek Arora and Martin Cerisola “How Does U.S. Monetary Policy Influence Economic Conditions in Emerging Markets?” IMF Working Paper, August 2000.

² The forces of globalization naturally work in both directions. Many countries have substantial holdings of U.S. securities. Another IMF study finds that for every 10 percent decline in the dollar, U.S. equity markets, and U.S. bond markets, total wealth losses to foreigners could amount to 5 percent of the GDP of the foreign countries in question. See Francis E. Warnock “How might a Disorderly Resolution of Global Imbalances Affect Global Wealth?” July 2006.

³ However, developed country market economies were largely unaffected when the Shanghai index fell 4.5 percent on April 19, 2007 when the Chinese government announced higher than expected first quarter economic growth of 11.1 percent

⁴ In fact, the currencies of Turkey, Hungary, and South Africa fell to three-year lows.

⁵ For example, between October 2002 and February 2006 the Istanbul Stock Exchange rose 400 percent.

⁶ There is a very limited forward market in TL vis-à-vis U.S. dollar and Euro. However, its size is minuscule. Additionally, while a futures market has just been established, in addition to being very small market, it is more specialized in agricultural futures rather than financial futures.

⁷ However, this financial markets related disadvantage is mitigated by the fact that firms that operate in emerging market economies have a comparative advantage when it comes to labor costs.

⁸ At 9 percent of its GDP, Hungary has a higher current account deficit. Furthermore, unlike Turkey which has a healthy budget surplus (before interest payments) which stands at 6.4 percent of its GDP, Hungary suffers from a high level of budget deficit.

⁹ The inflation rate, which at times was in the 80 percent range during the 1980s and 1990s, stood at 8 percent at the beginning of 2006.

¹⁰ In addition to foreign financial investments, growth opportunities-related favorable macroeconomic conditions also attracted direct foreign investments. These investments increased 2.5-fold and reached \$10 billion in 2005. Because of its durable nature, such investments of course do not pose any dangers to financial markets and are very beneficial to the economy.

¹¹ Additional domestic political problems dominated the headlines at the same time. However, since such political problems are unique to individual countries and do not have any systematic relationship to the global emerging-markets episode of 2006, I will not discuss them.

¹² As of mid-July, Brazilian and Hungarian currencies were only 5 percent below their May 1st values. Furthermore, between June 23rd and July 27th, the Turkish Lira gained 12 percent against the dollar. During the same time period the ISE index increased 15 percent.

¹³ For example, the inflation data for the Turkish economy in July has climbed back to double digits at around 14 percent (it was at 8 percent prior to the financial market shocks), far in excess of the year-end target of 5 percent. It is now very unlikely that the inflation target will be met.

¹⁴ Mostly because in many developing economies the private sector has been “crowded out” from long-term credit markets by the massive borrowing needs of their governments, many firms have borrowed foreign currency denominated funds. In some countries foreign debt of the private sector exceeds even the foreign debt of the government. For example, as of the end of 2005, in Turkey the private sector foreign debt was \$87 billion, while government foreign debt stood at \$83 billion. This is a significant source of risk for both the shareholders of these firms and the creditors, since these countries typically have very thin (and in many cases non-existent) derivative markets to hedge their exchange rate exposure.