OVERVIEW:
MACROECONOMIC POLICIES 
FOR SUSTAINABILITY 

ALEJANDRO NADAL
INTRODUCTION

The world is caught in the deepest financial and economic crisis since the Great Depression. The extraordinary expansion of the financial sector over the past three decades has given way to a crippled financial system, with wealth destruction going into the trillions. Astronomical financial rescue packages (bailouts) will leave an ugly scar that will mark fiscal policies well into the next decade. The fate of the once-powerful US dollar is even at stake as a result of this gigantic crisis. And the frenzy of deregulated markets, so characteristic of neoliberalism and globalization, has put millions of people worldwide in poverty.

At the same time, the world is trapped in a vicious environmental predicament. We are not only threatened by stagnation, deflation, unemployment and poverty. Our world is also menaced by climate change, deforestation, soil erosion, polluted aquifers, over-exploited fisheries and a man-made event of mass extinction. The severity of this environmental crisis is a threat to the survival of human-kind.

These two crises are intimately related to each other. Both point to a series of critical flaws in economic thought and policy-making. The economic crisis is not the result of what could be called a rare probability event (“a perfect storm”) but rather the unavoidable outcome of an economic paradigm that dominated policy-making since the early eighties. The policy package behind this was able to sustain growth only through the formation of a series of bubbles in different classes of assets. In this process, financial markets took control over manufacturing corporations, and they sacrificed long term investments for short term profitability. Not only were wages put under pressure, but under the logic of finance, the environment simply became another asset. It is clear that if we want to advance towards long term environmental sustainability we need to change this state of affairs.

That this model was also unable to promote growth with rational environmental stewardship is an understatement. To put it another way, the same macroeconomic policies that generated the worst crisis since the 1930’s affect the rate at which we cut trees, catch living marine resources, emit greenhouse gases, deplete aquifers or exploit open pit mines. The reason is that activities related to these phenomena are conditioned by interest rates and inflation, exchange rates, credits, securities’ performance, subsidies, taxes, depletion allowances, etc. It is no coincidence that some of the speculative bubbles that mark the latest crises were based on commodities that are, by definition, close to the natural resource base (for example, grains and foodstuffs).

There is no doubt that inter-capitalist competition is the determinant
force behind the exploitation of the
natural resource base. But the eco-
nomic forces behind environmental
exploitation (and the current financial
crisis) are shaped by macroeconomic
policies. The corollary of this is that
macroeconomic policies will be a
critical frame of reference as we move
away from a wasteful economy and
shift course towards sustainability.
These policies will have to be rede-
defined in order to direct investment
flows towards renewable energy
sources, energy efficient manufac-
turing, retrofitting of infrastructure,
sustainable agriculture, etc. Macro-
economic policies can be a potent
driving force behind our efforts to
consolidate good environmental
stewardship, or they can be a mighty
obstacle in our effort to shift to a sus-
tainable economy.

Macroeconomic policies are based on
relations between economy-wide
variables.¹ They are powerful engines
that can be used for stability or change.
They include monetary and fiscal
policies. They also cover financial,
banking and capital account regula-
tions, as well as the determination of
some key economy-wide prices (prices
for energy inputs, basic food com-
modities and wages). Finally, because
macroeconomic policies cover balance
of payments management, they are
key determinants of the world’s trade
and investment regime, as well as to
the international financial architecture.
Because they affect the way in which
economies relate to environmental
change, it’s time to redirect mac-
roeconomic policies and to harness
their potential for sustainability.

Macroeconomic policies affect the rate
of economic activity and, therefore,
the usage rates of our natural resource
base. Through their impacts on
economy-wide prices, macroeco-
nomic policies also condition output
composition and technology choice,
influencing production and marketing
strategies of every economic agent,
from the largest and most powerful
industrial corporations, to the smallest
agricultural units. They also affect
asset composition of any investment
portfolio, bringing about important
changes in the way in which financial
instruments interact with productive
activities in the real sectors of the econ-
omy. In view of the relation between
financial variables and commodities
prices in the world’s mercantile ex-
changes and futures markets, this is a
very important dimension that needs
to be taken into account. It may
just be the tip of the iceberg when
it comes to the relations between the
financial sector and the environment.

When framed in these terms, the rela-
tion between macroeconomic policies
and sustainability becomes self-evident.
However, this has not been recognized by

¹ A macroeconomic policy package is made of a set of paramount policy objectives that are pursued
in a coherent manner by a group of economy-wide policy instruments. Thus, macroeconomic
policy instruments do not act in isolation (although issues of inconsistency frequently arise). The
policy objectives are defined in accordance to a particular view of how prices and distribution
interact with output determination, employment and inflation.

John Maynard Keynes
(1946), founder of
modern macroeconomics.
either the academic and policy-making communities. This is a very serious omission and may very well be the most dangerous blunder in international policy making. This project is a contribution towards filling this gap with rigorous analysis. This report concentrates on how the macroeconomic policy package works and tries to identify its impacts on the environment. Readers should be aware of the fact that lengthy sections of this report (as well as the country level studies) are devoted to a detailed discussion of macroeconomic policies. This should not be interpreted as the result of an academic bias for economic discussion and/or disregard for the other theme in the title of this project. On the contrary, the project concentrates on macroeconomic policies precisely because they carry deep implications for the environment’s health and resilience. Conservationists and communities must learn to deal with these themes which were until recently the privileged hunting grounds of simple-minded economists interested in how economic aggregates interact with each other. The stakes are indeed very high and it is unwise to leave this realm of economic policy for the exclusive manipulation of a discipline that still counts environmental destruction as “growth”. We hope that this report will help establish the foundations for closer cooperation between communities, the constituency of the various IUCN commissions and the world of policy makers.

One final clarification is important. Many years have gone by since Herman Daly (1991) called for the development of an environmental macroeconomics. Since then very little progress has been made in this field. Although many publications do address this problem, their approach has systematically avoided dealing explicitly with macroeconomic policy. Thus, a substantial amount of work on environmental stewardship and conservation has ignored the importance of monetary and financial relations, or of fiscal policy objectives, or the distributional and employment problems and their role in shaping the economic forces that so deeply affect the real sectors of the economy. In a way, Daly’s call is responsible for this lack of progress. His appeal was essentially concerned with the problem of scale and the reality of finite resources. For him, the market took care of the efficient allocation of resources, but was incapable of dealing with the problem of scale. This is inaccurate: one key result of general equilibrium theory (by far the most refined and sophisticated theory of interdependent markets) is that there is no proof that markets allocate resources efficiently. Thus, Daly’s reference was based on an erroneous assessment of how markets operate and on the health of received economic theory. On the other hand, the problem of scale, which Daly described as the most important of our time, is something that cannot be addressed without taking into consideration the macroeconomic
Policy framework that shapes the economic forces. It could be argued, for instance, that the importance of the financial sector, for example, is at least as important as the issue of finite resources. However, macroeconomic policy has remained outside of the radar screen, even for the followers of Herman Daly.²

Perhaps the disarray in which macroeconomic theory finds itself discouraged Daly and his followers in engaging a meaningful dialogue with the community of theoretical macroeconomists. The fact remains that very little work has been published on macroeconomic policy and the environment. In fact, what has been published (see for example the work of Heyes (2000), Lawn (2003), Thampapillai (1995) and Munasinghe (2002)) continues to be based on standard textbook IS-LM models and simply ignores the evolution of macroeconomic theory during the past five decades. This ignores the debates amongst academics and policymakers concerning the effectiveness of monetary and fiscal policies, or the role that each one of these should have in a world of interdependent open economies. What little work has been published on macroeconomic policies and the environment pays no attention to the discussion concerning disequilibrium, the nature of financial crises and the role of regulatory agencies. In fact, these analyses pay no heed to the admonition of Friedman (1968) concerning the limited role of monetary policy, a view that has caused great damage and should have been totally discredited by now. Ignoring the evolution of macroeconomics also leads to overlooking the contributions of post-keynesians to the debates about demand management and unemployment in today’s world. There is no doubt that the chasm that separates macroeconomics from environmental concerns continues to be a deep one.

Part of our analysis in this special issue is the result of the project on “The Macroeconomic Connection: Monetary and Fiscal Policies for Sustainability in Latin America”. The last two essays, by Aseem Shrivastava and Ashish Kothari, focus on a similar analysis for the case of India and they highlight the similarities that exist in the relation between macroeconomic policies and sustainability even across continents. The project on Latin America was carried out with the financial support of the 3IC Fund of the International Union for the Conservation of Nature. The project covered case studies in five Latin American countries. This project examines the impacts of macroeconomic policies on the environment. It focuses on five Latin American countries: Argentina, Brazil, Costa Rica, Ecuador and Mexico. The main objectives of the

² Perhaps the disarray in which macroeconomic theory finds itself discouraged Daly and his followers in engaging a meaningful dialogue with the community of theoretical macroeconomists. The fact remains that very.
project are the following. First, to identify and analyze the effects of macroeconomic policies on various environmental dimensions such as biodiversity, forests, aquifers, soils, genetic resources, atmospheric pollution, solid waste and toxic waste management, etc. The scope of this project covers monetary, fiscal, credit, exchange rate policies, as well as current account liberalization and financial deregulation. A second objective is to examine how macroeconomic policies constrain or strengthen environmental policies. This will be done in relation to policies that relate to the different environmental dimensions mentioned in the previous point (particularly important will be the analysis of effects on policies related to natural protected areas and biosphere reserves). The third objective is to contribute to strategy formulation and to identify viable policy options.

The individual consultants responsible for the Latin American country level studies are Alan Cibils (Argentina), Sergio Schlesinger (Brazil), Carlos Murillo (Costa Rica), Pablo Samaniego (Ecuador) and Marcos Chávez (Brazil). The project was designed by Alejandro Nadal, Co-chair of TEMTI, who also monitored the study and prepared this synthesis report. In this introduction, the first, second and third sections contain an overview of the Latin American economy as it evolved in the past sixty years. The fourth and fifth sections focus on how the neoliberal open economy model works and on the expansion of the financial sector. The sixth section presents a synthesis and a re-interpretation of the country level studies.

SECTION I
THE LATIN AMERICAN EXPERIENCE
During the 1980’s, most of Latin America underwent a radical transformation in its policies for economic development. Until then the majority of Latin American economies had

Credit: Miguel B. Sanchez
Wikimedia Commons
followed a development strategy based on import substitution. But in the context of the financial and economic crisis detonated by the violent rise in interest rates and the collapse in oil prices in 1981-1982, this strategy was abandoned. By the mid-nineties, most economies in the region were implementing an open economy model, complete with financial liberalization and a macroeconomic policy posture aimed at reducing State intervention in economic life.³ With variations in timing and in the use of policy instruments, Latin America adopted the so-called neo-liberal economic strategy.

At the country level, the new macroeconomic model had two critical objectives: growth and equilibrium. The growth component was important because in 1990 the region was emerging from a decade of practically zero growth. After the performance of the period 1945-1978, with average annual growth rates of 6.5%, this was a dismal accomplishment and people referred to the eighties as the “lost decade”. This stagnation had exacerbated unemployment, inequality and poverty in most countries. The promise of economic growth suggested the possibility of permanent, good quality jobs. This would abate poverty and inequality.

On the other hand, the equilibrium component had three dimensions. The first two were related to domestic economic aggregates. The general price level had to be stabilized, while fiscal accounts had to be balanced. The third dimension was related to each country’s external accounts. The current account crises of the recent past had to be controlled if the region was to attain adequate sustained growth rates.

Twenty years later the promises of the neoliberal policy package remain essentially unfulfilled. Growth rates in Latin America were lower for the period 1980-2008 than in the years 1945-1978. On the other hand, equilibrium in domestic macroeconomic variables was not easily established, and the region remained prone to current account crises. In addition, the region was affected by a new type of crisis, as the reversal of capital

³ There were differences in timing. Some countries started introducing neo-liberal reforms as part of the stabilization packages negotiated with the IMF, while others took those steps as part of structural reforms. The history of the Chilean economy is different and worth considering. After the coup in 1973, a radical model of an open economy was imposed by the military dictatorship. The tenets of that model were shaped by the doctrine of the New classical macroeconomics school (created under Milton Friedman’s theoretical work). This model combined a very radical approach towards trade liberalization with an uncompromising view on financial deregulation. But the Chilean economy continued to rely on exports of primary goods to survive. By the end of the eighties, the Chilean economy was showing the signs of a looming crisis. A typical current account crisis was detonated in the early eighties and the military authorities were forced to introduce important changes in the policy package. These included controls over capital flows. Ironically, because of the measures introduced by the military dictatorship, especially capital controls and other measures (a return to higher import tariffs), Chile was spared some of the worse consequences of the financial crises that affected Latin America in the nineties. Still, Chile continues to rely heavily on exports of raw materials (copper, agricultural products, forest and wood products, fisheries).
flows hit several countries causing severe damages and bringing about negative growth rates. These crises left a heavy legacy of public debt in several countries as bailouts of banks and large corporations were implemented.

The region is also perceived as being generously endowed in natural resources. Although it only has 8% of the world’s population, it possesses 23% of the world’s potentially arable land, 10% of cultivated land, 17% of pastures, 22% of forests (and 52% of tropical forests) and 31% of permanently usable water (Chi-Chilnisky and Gallopin, 2001). Although the region is associated with severe atmospheric pollution in its large cities (Sao Paulo, Mexico City or Santiago, for example), its environment is also considered to embrace pristine regions and ecosystems. Eight of the eighteen countries classified as mega-diverse by UNEP are in the Latin American region (Bolivia, Brazil, Costa Rica, Colombia, Ecuador, Mexico, Peru and Venezuela). Together, these countries have a very high percentage of the world’s species of reptiles, amphibians, mammals, birds and vascular plants. Endemism is very high and several of the most important biodiversity hotspots are found in the region, including the Amazon tropical rain forest, the Tropical Andes and the Meso-American corridor. Most of these ecosystems are threatened and in some cases, severely affected by human activities.

Latin America is also marked by some common patterns in its development strategies. During the period following World War II most of the region’s economies embarked in an industrialization process based on an import substitution strategy. The strategy was accompanied by strong leadership from State agencies. This scheme met with some success, until the seventies, when internal and external tensions slowed down growth rates. The debt crisis that exploded in the early eighties (due to high interest rates and falling commodity prices) spelled the demise of the import substitution strategy, and in some cases, of the aspiration to industrialization. This led to significant changes in the development strategies of the most important Latin American countries.

Eventually, the old inward looking model of import substitution gave way to the establishment of an open economy model along the lines of the Washington Consensus. The economic performance of the Latin American economies under this new strategic approach presents a rather mixed picture, but in general, average growth rates were slower than in the post-war years. In addition, the old contradictions and tensions that marked the Latin American economies did not cease to exist (in fact, new problems appeared). Finally, during the nineties, several financial crises struck in most of the region and this also caused important changes to be introduced in the policy outlook of countries like Argentina, Brazil and Ecuador.

Efforts to carry out the economic integration of the Latin American economies have come and gone.
Probably the most important ones were the Latin American Free Trade Association (ALALC) and at the regional level, the Andean Pact and the Central American Free Trade Region. These efforts were not successful and when the time came to open the economies to international trade and financial flows, most countries went their own way. Mexico took the lead, becoming a member of GATT in 1987 and then signing the North American Free Trade Agreement (NAFTA), which sealed the subordination of its economy to the U.S. Most of the countries in South America took different paths, each trying to gain from its individual advantages in its articulation with the world economy.

Throughout these different phases of economic activity, the environmental integrity in the region has been endangered. The degree of deterioration justifies posing the question concerning the effects of this process on the region’s future prospects for development. It has been continuously affected by the expansion of the agricultural frontier, deforestation, urban development, irresponsible activities by extractive industries (by both private and public enterprises), as well as various forms of pollution sources. Although most countries in the region established ministries for the environment, the fact remains that none of the countries in the region has been able to establish a policy framework that duly integrates environmental stewardship with economic development.

One word of caution is required at this stage. To speak of the “Latin American economy” is a risky venture. After all, this is a set of highly heterogeneous economies in a vast continent. It includes very small countries in Central America (and now the Caribbean), as well as the large economies of Brazil, Mexico and Argentina. The differences between the countries in the region have intensified in the past fifteen years. Today, discrepancies in economic policy (almost at all levels) are quite visible. Clearly, the aggregation of the LAC countries in one unit really lacks analytical value (Urquidi 2005).

SECTION II
IMPORT SUBSTITUTION AS A DEVELOPMENT STRATEGY

After World War II, most of the countries in the region embarked in industrialization strategies based on a set of policies to substitute imports.⁴ The new Latin American perspective was inspired by the work of a group of economists at ECLAC who maintained that development and growth would not come simply from capital accumulation and comparative advantages. The new perspective had analyzed trends of in international terms of trade and concluded that they were moving against traditional primary product exports. Thus, domestic production would have to substitute for non-essential imports through a set of protectionist policies. This called for a

⁴ In some cases, especially in the smallest countries, the development strategy relied on the old model based on exports of primary products.
stronger role for the public sector. The consequence here was that development would be more the effect of policy, than of market forces.

This import-substitution industrialization (ISI) strategy met with mixed success in the various economies and lasted for over forty years in some cases. However, the ISI strategy did not proceed according to a well defined plan or program for industrial investments, internal competitive structures, technological development or export promotion schemes. This led to several important problems, starting with high costs and poor results in the trade balance.

In general, the ISI pattern of growth was accompanied by good GDP growth rates in the period 1950–1973. Sustained growth rates of the order of 6% were not rare in the region. But in 1973 international oil markets were severely disturbed by the oil embargo imposed in the aftermath of the Yom Kippur war, and things started to change. The rate of growth of per capita income is a good indicator of the evolution of the region’s most important economies. For a sample of twelve Latin American countries, annual growth rates in the period 1950–1973 averaged 2.12%. During the period 1973–2000, this average rate dropped to 0.79%. The disparities between these countries can be readily seen in Table V.1.

During a twenty year period, between 1950 and 1970, the ISI strategy successfully brought about the expansion of the manufacturing sector and of employment. Between 1960 and 1965, the manufacturing sector in the region grew at a yearly rate of 7%, with Argentina, Brazil and Mexico leading the way.⁵ In most

---

**Table V.1**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>2.05</td>
<td>-1.24</td>
<td>2.87</td>
<td>0.26</td>
</tr>
<tr>
<td>Bolivia</td>
<td>0.90</td>
<td>-0.41</td>
<td>1.60</td>
<td>0.33</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.73</td>
<td>1.41</td>
<td>1.22</td>
<td>1.34</td>
</tr>
<tr>
<td>Chile</td>
<td>1.26</td>
<td>1.35</td>
<td>4.39</td>
<td>2.47</td>
</tr>
<tr>
<td>Colombia</td>
<td>2.13</td>
<td>1.93</td>
<td>0.52</td>
<td>1.40</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>3.49</td>
<td>0.56</td>
<td>2.66</td>
<td>1.33</td>
</tr>
<tr>
<td>Ecuador</td>
<td>2.50</td>
<td>1.01</td>
<td>-2.27</td>
<td>-0.22</td>
</tr>
<tr>
<td>El Salvador</td>
<td>1.99</td>
<td>-0.59</td>
<td>2.51</td>
<td>0.55</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.17</td>
<td>1.38</td>
<td>1.67</td>
<td>1.49</td>
</tr>
<tr>
<td>Peru</td>
<td>2.45</td>
<td>-1.70</td>
<td>2.24</td>
<td>-0.26</td>
</tr>
<tr>
<td>Uruguay</td>
<td>0.28</td>
<td>1.56</td>
<td>1.96</td>
<td>1.71</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1.55</td>
<td>-1.43</td>
<td>0.12</td>
<td>-0.86</td>
</tr>
</tbody>
</table>


⁵ According to Fajnzylber (1983: 246) the industrial sector of the Latin American region expanded at an average annual rate of 6.5%.
cases, the industrialization process took place without a definite plan or investment policy. This is why manufacturing industries in all types of branches were developed almost at the same time. The central idea behind this strategy was that industrialization would provide the needed dynamic impulses for economic growth and development.

The ISI strategy ignored several important aspects of economic change. First, it neglected the assimilation of technological capabilities. The crucial difference with the protectionist policies of Japan and South East Asian countries that were also rapidly industrializing is that in Latin America technological development was never a part of the equation. Investing in R&D lagged behind in all countries in the region. The acquisition of disembodied technology was done through contracts involving licensing agreements on patents and trademarks, and these contracts frequently contained restrictive clauses on exports. Embodied technology was obtained through imports of capital goods and intermediate inputs. As an incentive for investment by the private sector, tariffs for capital goods were very low. A short term perspective was promoted, with almost no attention for the heavy industries that needed a longer time horizon to mature.

Second, protectionism in the Latin American experience was unconditional. This has been aptly described as “frivolous protectionism” by Fajnzylber (1983). The very high tariffs that provided a closed market regime generated perverse incentives that rewarded inefficiencies. In addition, tariff schedules had no time limitations and no performance requirements. This provides a very strong contrast with Japan, Korea and Taiwan, where protectionism and finance were subject to technology, employment and technology performance requirements (Amsden 1989). All of this led to high prices and lack of competitiveness in the international market, which in turn aggravated the deterioration of the trade balance.

These two features reveal that the ISI strategy really took place without a coherent scheme of industrial policy. There were no priorities and no performance requirements, and nothing to ensure that the acquisition of technological capabilities could lead to further waves of innovation and efficiency gains. In a way, the ISI strategy was not what many of its critics say it was: an interventionist, State-dominated process.

Third, the distortions of the industrialization process in Latin America intensified the vulnerability of the external accounts of the economies in the region. In contrast with the role of the manufacturing sector in highly industrialized countries, where it plays a key role in maintaining a surplus in the trade balance, in Latin America it helps

---

6 For a rigorous and insightful analysis of the experience in South Korea, see Amsden (1989).
explain the chronic external deficit (and of the currency gap). In fact, the trade deficit of the industrial sector in most countries in the region was of the same order of magnitude as the trade surplus for the rest of the economy. Between 1955 and 1975 the trade deficit the industrial deficit increased from 5 to 28 billion dollars. Nevertheless, it is also important to take into account that during the period 1955–1975, industrial exports were growing at a higher rate than imports.

Most of the deficit in industrial goods is due to the high imports of capital goods. This is an important feature of the entire process because capital goods are critical for the dissemination of productivity gains in all branches of industrial activity. The fact that the industrialization process bypassed them meant that it could not be the engine for growth that most analysts had hoped it would become.

Fourth, the size of the domestic market was a serious problem. This is intimately related to the issue of production scales allowing for low costs. Because the domestic market for manufactured goods was relatively small and limited to the urban centres, an important question was if the manufacturing sector could contribute to increase the size of the internal market permanently (Urquidi 2005: 164). The truth of the matter is that although real wages in the manufacturing sector increased and were higher than in other sectors, the absolute size of this purchasing power was not enough to allow for investments in more efficient scales of production. In addition, wages in the agricultural and services sectors did not increase at a sufficiently rapid pace. This is related to the issue of the macroeconomic policy package that characterized those years. We return to this point below.

Finally, the highly unequal income distribution structures in most Latin American countries also contributed to limit the size of the domestic market. The Gini coefficients for most of the Latin American countries remained at high levels during the ISI strategy (Ibid.: 486). Most countries had Gini coefficients of the order of 0.500 in the period 1960-1970. The exceptions were Argentina, Costa Rica and Uruguay, where the Gini coefficient was 0.400.⁷ These high levels of inequality did not disappear during the next few decades. Once again, this is related to the macroeconomic posture, a theme to which we now turn our attention.

Macroeconomic stability played an important role during the heyday of the import substitution strategy. Exchange rate volatility was not a crucial problem, although some countries did experience balance of payments difficulties that required

---

⁷ The Gini coefficient measures inequality in the distribution of income. It measures the surface between the line of equal distribution (a 45° diagonal) and the curve of actual observed distribution. If the coefficient is very small, it indicates that actual income distribution is closer to the line of equal distribution. In the largest European countries, the Gini coefficient is typically of the order of 0.300.
adjustments. On the other hand, fiscal policy allowed for the building of infrastructure and social expenditures at adequate levels. Finally, monetary policy relied on banking regulations that maintained credit flows towards productive activities. This placid scenario was to change abruptly during the seventies and with the debt crisis in the eighties.

Much of the industrial structure in Latin America suffered great losses as a result of the macroeconomic crises that exploded in the eighties. Latin America’s industrial performance has declined since the 1980s, and the region has been constantly losing ground in industrial competitiveness (especially in manufactures) to East Asia. Argentina, Brazil and Mexico, the most industrialized countries in the region were unable to trigger enough momentum to transform its productive structures and become truly industrialized economies. In spite of its success in several manufacturing branches (automobiles, electronics and aircraft) and its diversified markets, Brazil’s manufactured exports per capita are USD 382 (2004), still below Latin America’s average. The share of manufactures in Brazil’s GDP was only 10.7% in 2004. Mexico, for its part, can boast an impressive share of manufactures in its exports of 84%, out of which more than 60% comes from medium and high-technology intensive branches. However, this oft-quoted figure can be misleading because almost all of this comes from its in bond (maquiladora) industrial sector which has very little linkages with the rest of the economy. This explains why the locomotive of the export sector can take off swiftly and still leave the rest of the economy in the tracks at the station. The engine is disconnected from the economy and this means that Mexico is, in fact, exporting cheap labour.

Towards the last years of the nineties, it was thought that Latin America could regain some of its competitiveness in manufactures. This is important because it would signal a structural transformation that could lead to greater efficiency, less dependency on the natural resource base and better environmental stewardship. However, a succession of severe macroeconomic crises (Mexico 1995, Brazil 1997–98, Ecuador 1999 and Argentina 2001) had very negative consequences. The share of manufactures in regional GDP shrank from 17.2% to 16.6%, while manufacturing value added in the region declined from USD 316 to USD 285 billion between 2000 and 2004. In the arena of international trade, Latin American exports of manufactures expanded by 5% yearly, well below the world average of 8.8%. This explains why Latin America’s share in global trade of manufactures dropped from 4% to 3.5% during the years 2000–2004. Medium and high technology exports also declined during that period. To summarize, manufactures’ share in total exports from the region dropped from 49.2% to 48.2%, showing
the signs of a trend to rely more on low-value added and resource-intensive commodities as Latin American moves towards “reprimarization”.

SECTION III
MACROECONOMIC POLICIES, ISI AND THE ENVIRONMENT: THE LONG LOOK

The import substitution strategy implemented after World War II brought about deep changes in the structure of the Latin American economies. But it did not generate permanent dynamic impulses and thus, the growth process associated with this strategy came to an end in the 1980s. It also failed to provide the foundations for sound environmental stewardship and healthy natural resource management practices.

Data on environmental deterioration in Latin America for the period 1950–1980 is in short supply. However, during the three decades (1945–1975) that make up the core years of the ISI strategy, Latin American economies did not give adequate attention to environmental objectives. In retrospect, this may appear understandable for at least two reasons. One is the lack of awareness that this was a crucial element of any development strategy. The second is that it can be argued that policy-makers and the power elite were too preoccupied with the issues of fiscal accounts and the balance of payments. Nevertheless, the truth is that during these decades the natural resource base was heavily taxed and very little in the form of investment went into what we now call environmental expenditures. Natural resource management practices, cleaning-up, reforestation, good practices for soil conservation, water management, urban planning and pollution abatement, as well as other aspects of environmental sustainability were almost entirely neglected by governments in the region during this period. In fact, in many instances, measures that implied heavy environmental degradation were adopted, leading to soil erosion, deforestation, aquifer depletion and pervasive pollution. Cumulative damages suffered by the environment compromises the prospects for future development and sustainability.

The rate of genuine savings (defined as the rate of savings after due account is taken of the depletion of natural resources and damages caused by pollution, but adding investments in so-called human capital) was very low in the region. This is a clear indicator that the natural resource base and the environment have been undergoing a continuous process of degradation without any visible trend to revert this process. This is a reference from a World Bank study mentioned in Lopez (2003).

Lopez (2003) relies on an analytical framework that concentrates on market failures and property rights inefficiencies. For example, a capital market failure would prevent the population from investing in natural capital, or inadequate definition of
property rights would cause distortions that inhibit investments in natural assets. In addition, the lack of robust regulatory regimes allows for polluting externalities to further degrade the environment (Ibid.). Imperfections in the credit market imply that only the larger corporations (solely concerned with profitability and accumulation) have access to finance for their investments. “Due to credit market imperfections, there is no flow of savings from the income-generating sectors to the household sector to finance investments in human capital and the environment”. Typically, the smaller agents are left out because they lack collateral or connections to the world of formal financial systems.

But this was not the result of market failures, imperfections or negative externalities. It was the consequence of macroeconomic policies that favoured growth through the accumulation of physical capital. The most visible aspects of these macroeconomic policies are in the field of credit markets and monetary policy, as well as in fiscal policy (taxation and subsidies). In addition, a low wage rate has contributed to greater inequality and the persistence of poverty.

At the macroeconomic level, two big problems persisted. The first was the fiscal deficit which remained an intractable problem for most Latin American countries. This was partly due to the need to increase public investment in order to maintain growth rates at their historic levels. The deficit came along from this increased responsibility for the public sector and the unwillingness to implement a redistributive fiscal reform that could have generated the required resources without frightening away investors.

Fiscal policy in the region during the heyday of the ISI strategy opted for low tax rates on capital gains and profits. In addition, all types of tax credits and rebates were implemented to foster private investment. Typically, fiscal revenues came from a regressive tax system and the prices of goods and services supplied by public sector enterprises. In addition, subsidies for the accumulation of physical capital were generously granted whenever possible. These resources were insufficient to keep pace with the growing demands of health, education, housing, transportation, infrastructure, and of course, environmental stewardship. In many instances (examples abound) public enterprises were hard pressed to maximize these non-tax fiscal revenues and they were able to achieve this through irrational exploitation of the natural resources at their disposal.

Monetary policy in Latin America during the same period had the overarching objective of full employment. This did not mean that price and exchange rate stability was not considered important. In fact, manipulating exchange rates within the limits tolerated by the Bretton
Woods arrangements was common in order to redress trade balances and to put a brake on inflationary pressures. In fact, all along this period there were moderate price hikes (things changed in the seventies with the transmission effects of increments in oil prices). For the ISI strategy, the accommodating monetary policy focused on its main objective: growth and employment generation. For this, most countries in the region did not rely on a free market for credit and instead established strong regulatory regimes for credit allocation. However, these credit regulations lacked priorities and did not incorporate industrial (and technology) policy criteria. In addition, the vast majority of loans went to consumption and some working capital in industry. Productive investments in industry were the object of self-finance by corporations (up to 60% of financial requirements were satisfied by the companies themselves). One reason for this is that the time horizons contemplated in loans from commercial banks were simply not long enough to allow for these investments to flourish.

In addition to these problems, as commented above, there was a chronic deficit in the trade balance of most countries in the region. In the context of an ISI strategy this may seem ironical, but the fact is that import substitution led to overvalued exchange rates and this was a strong incentive for increased imports. Crawling peg exchange rates implemented in the sixties led to more inflationary pressures (as imported goods became more expensive) rather to a correction of the trade balance.

Inflationary pressures have been explained by both monetarist and structuralist perspectives (Cardoso and Fishlow 1989). The monetarist view insists that inflation came about basically by large budget deficits financed by money creation: thus, inflation is the direct result from overspending by the public sector. On the other hand, structuralists maintain that budget deficits are not at the heart of the matter. The roots of inflation are to be found in bottlenecks, supply shortages and, in some cases, “inconsistent claims of different groups in society trying to get a larger share of the pie” (Ibid.: 19). The irony here is that this led to stabilization policies in which controls over the wage norm became one of the central components. This pattern of wage determination aggravated income mal-distribution and further constrained the size of the domestic market.

In the end, the internal tensions, together with the negative transformations in the international economy (recession and inflation in the US during the seventies, the high interest rates implemented by Volcker’s Fed and the drop in commodity and oil prices) brought about the demise of the ISI.

The international debt crisis of the 1980s was detonated in Latin America.
(starting with the Mexican default in 1982). It led to the effective interruption of the import substitution approach to growth, industrialization and development. After that decade, in which per capita growth stagnated (“the lost decade”), none of the Latin American countries returned to the ISI model. Instead a new approach was undertaken, based on trade and financial liberalization, following in the nineties, the tenets of the Washington Consensus.

SECTION IV
NEOLIBERALISM IN LATIN AMERICA: THE OPEN ECONOMY MODEL

By the end of the 1980s most Latin American countries were setting the foundations for the adoption of a different development strategy. The new approach was very different from the ISI strategy. It was based on the idea that the development process had to be left in the hands of markets operating with as little intervention as possible. Although the notion that markets allocate resources efficiently lacked any scientific demonstration (Box 1), the ideological triumph of this belief had been consolidated since the 1970s, especially under the political hubris of Mrs. Thatcher and Ronald Reagan.

During the 1980s, the main international financial organizations, the IMF and the World Bank, had used the international debt crisis and the stabilization plans to further promote the policy agenda that became known as the Washington Consensus (Williamson 1990). The five crucial operational components of the policy package were the following:

a) the main objective of monetary policy is price stability.
b) fiscal policy is to be based on the principle of balanced budgets.
c) the capital account is to be deregulated.
d) international trade liberalization.
e) State intervention in economic life has to be reduced to a minimum.

Inflation had remained a negative feature during the eighties, mostly spurred by the abrupt adjustment in exchange rates. This adjustment was indispensable as the crisis had been detonated precisely by the collapse of the region’s external accounts, but inflation needed to be controlled. In order to do this, domestic aggregate demand was severely constrained. The policy instruments to do this were first, domestic credit became scarce and very expensive (high interest rates played a double role and helped attract foreign capital). The second instrument was found in the curtailment of public expenditures so that fiscal policies acted as a pro-recession instrument. If in the past fiscal deficits had been considered the source of all evils (monetization, indebtedness and crowding out), in the new scheme of things, fiscal policy had to be subordinated to the mantra of a balanced budget. Finally, real wages were systematically driven downwards as their determination was usually carried out through their being pegged to expected inflation,
The structural components of the open economy model applied in many Latin American countries bear a close resemblance with the Mundell-Fleming model, the widely cited standard for macroeconomic analysis of open economies (Fleming 1962, Mundell 1963). That model was one of the principal accomplishments that led to the award of the Nobel Prize in economics to Robert Mundell in 1999. The Mundell-Fleming model does not have strict microeconomic foundations, but its analytical structure is closely linked to the notions that markets always clear, and that trade liberalization is the best way to organize production and consumption. In fact, the close association between the Mundell-Fleming open economy model and general equilibrium theory was acknowledged by its authors (Mundell 1968), and this close relationship has also been recognized in more recent work (Geanakoplos and Tsomocos 2001). From this perspective, it’s just another member of the family of dynamic stochastic general equilibrium models.

This model is an extension of the IS–LM model which incorporates an equilibrium curve for the balance of payments and can also assimilate different assumptions concerning fixed or floating exchange rates, as well as perfect mobility of capital. With a flexible exchange rate regime, there is no room for an independent monetary policy. In the Mundell–Fleming model the adjustment of the money supply is automatic, and is tied to the surplus or deficit of the balance of payments (when the monetary approach to the balance of payments prevails). A surplus in the balance of payments implies monetary expansion, while a deficit involves an adjustment due to the contraction of the monetary supply.

The critical detonator of the crisis in 1982 had been the unsustainable debt. Efforts to save the international financial system and restructure the debt of the main debtor countries failed. But in 1988 the U.S. Treasury developed a new plan to restructure debt and restore liquidity to the sovereign debt market. This plan was implemented with some success.

Overview: Macroeconomic Policies for Sustainability

not to effective or real inflation. This led to a loss of purchasing power and to a contraction of aggregate demand. By the early nineties, inflation rates had gone down in most of the economies in the region.

8 The critical detonator of the crisis in 1982 had been the unsustainable debt. Efforts to save the international financial system and restructure the debt of the main debtor countries failed. But in 1988 the U.S. Treasury developed a new plan to restructure debt and restore liquidity to the sovereign debt market. This plan was implemented with some success.
Initially, the new open economy model that was established in most of the Latin American region led to strong positive expectations about investment and growth. The generalized dominance of the Washington Consensus ideology also provided a sense of stability, as if a new prolonged era of policy making and development was being introduced. Growth rates improved in the early nineties as inflationary expectations diminished and foreign direct investment started to recover.

However, very soon economic growth started to weaken and in 1994 a new crisis exploded in the region. The detonator was a reversal of capital flows that were going into Mexico, and the shock wave affected all of Latin America. This crisis was erroneously interpreted as a foreign exchange crisis and described as a financial crisis.

In fact, it demonstrated how the main contradictions of the model would inexorably lead to financial crises. Very soon, other Latin American economies were suffering similar crises, with the same pattern of causation links and the similar aftershocks: Brazil (1997), Ecuador (1999), Argentina (2000) and other countries suffered deep contractions and the destruction of capital as the crises multiplied. The stabilization programs that were implemented led to painful adjustments, increased poverty and inequality and probably had deep environmental effects.

These crises typically unfolded through several stages. First, financial liberalization and other reforms attracted foreign capitals, not only as FDI, but also as portfolio (short term) investments. At a certain stage, investors started to doubt the recipient country’s ability to maintain exchange rate stability, which is the centrepiece of the model, and lead for the exit. And although there was talk about the fact that perhaps there were mistakes and/or negligence in the way in which the model was
being implemented and/or handled, there is an alternative line of analysis that points in a different direction.

In order to understand how macroeconomic policies affect the environment and to follow the country-level studies, it is essential to analyze how the open economy model functions. In the rest of this section we examine its main features through what we call the internal contradictions of the model. Internal contradictions arise when structural elements that are essential to a model simultaneously act as obstacles for the model’s performance. In other words, a model contains internal contradictions if components that are necessary to its inner workings also hinder the functioning of the model. The resulting tension leads to a distorted process in which the model’s policy mix cannot accomplish the goals that were originally established.

The open economy model as dictated by the International Monetary Fund and the World Bank has several essential contradictions which can be summarized as follows.⁹ The first and most important contradiction is related to the role of the exchange rate which is expected to float freely, maintaining equilibrium in the trade balance. The open economy model rests on the fundamental premise that international trade is so advantageous that any attempt at regulating and restricting it does more harm than good. That’s why when there is a deficit in the trade balance it must not be corrected with restrictions on the flow of goods and services, but by adjusting relative prices. Thus, within a flexible exchange rate framework, the adjustment through variations in the exchange rate should follow automatically.¹⁰

---

⁹ The reference here is the Mundell-Fleming macroeconomic model. This model is an extension of the IS-LM model which incorporates an equilibrium curve for the balance of payments and can also assimilate different assumptions concerning fixed or floating exchange rates, as well as perfect mobility of capital. With a flexible exchange rate regime, there is no room for an independent monetary policy. In the Mundell-Fleming model without sterilization the adjustment of the money supply is automatic. It is also tied to the surplus or deficit of the balance of payments (when the monetary approach to the balance of payments prevails). A surplus in the balance of payments implies monetary expansion, while a deficit involves an adjustment due to the contraction of the monetary supply.

¹⁰ The General Agreement on Tariffs and Trade (GATT) prevented signatory parties from surrendering to the temptation of routinely resorting to controls on trade flows in order to tackle external deficits. GATT Article XII established the possibility of exceptionally resorting to measures such as quantitative restrictions and tariff surcharges to reestablish equilibrium in the balance of payments. It was thought that it was better to regulate exceptional measures and impose disciplinary measures to avoid abuses, than to leave GATT members at total liberty in this matter. Interestingly, the North American Free Trade Agreement (NAFTA) cancelled the possibility of resorting to exceptional measures. NAFTA Article 2104 establishes that fees, tariff surcharges, import permits, or other similar measures cannot be exceptional measures, and, in effect, it cancels the possibility of applying any such measures. Under these conditions, if there is a deficit in the balance of trade, the adjustment must be made only and exclusively using the relative price system (i.e., the exchange rate). For a detailed account of these provisions in the context of the Mexican 1994 crisis, see Nadal (1996).
That inflation must necessarily be reduced to the level of a country’s most important trade partners is another key policy objective that prevails in the open economy model. The idea has led to a veritable obsession with reaching and maintaining one-digit inflation rates. In terms of growth, the cost of attaining this objective has been significant. One of the main policy instruments on this front has been the use of the exchange rate as the nominal anchor of the relative price system. But this approach to controlling inflationary pressures entails a significant rigidity in the exchange rate, contradicting the use of a fluctuating exchange rate to adjust the trade balance. In the end, the exchange rate ends up being overvalued, further deteriorating the trade balance.

There is another force that hampers the ability of the exchange rate to act as the key variable in the adjustment of the trade balance. The open economy model incorporates perfect capital mobility as one of its central components. Capital mobility is seen as a useful instrument to direct productive investment to economies with insufficient domestic savings. The demand for assets denominated in the currency of the recipient country naturally leads to currency appreciation, also contributing to further deteriorating the trade balance.

In addition, because capital that flows into a given economy is invested in assets denominated in the local currency, pressure builds up to maintain exchange rate stability. In general, in the world of deregulated capital accounts and interdependent financial markets, countries make efforts to guarantee exchange rate stability; this can be done through a literally fixed rate, or through a “dirty” float of the exchange rate. Once foreign capital is invested in a given country, investors expect the exchange rate to remain stable; in the face of devaluation risks, a risk premium is requested by investors.

If a country wants to remain attractive to these capital flows, it must try not to betray their confidence by maintaining exchange rate stability. When capital flows are reversed, the exchange rate is depreciated as investors flee assets denominated in the local currency, and the inflation rate increases rapidly. To prevent this, the central bank offers a higher interest rate as an incentive to keep assets in the country. The effects on the interest rates are examined in the next section. The point here is that a devaluation of the exchange rate is deemed unacceptable to economic authorities and this further degrades competitiveness. Typically, the adjustment is postponed; the adjustment is finally made when it’s too late and it is implemented in a disorderly fashion, in an environment characterized by chaos, volatility, and economic collapse.

Abrupt devaluation makes local assets cheaper for foreign investors, stimulating incoming capital flows.
Once again, these capital flows are placed in assets denominated in the local currency and tend to raise the exchange rate anew. This exchange rate appreciation cancels the effects of the initial devaluation and once again, contributes to deteriorate the country’s trade balance. The external deficit generates a greater need for external finance and the process becomes a vicious circle as capital flows seriously increase external vulnerability.

Thus, these three elements (using the exchange rate to stem inflation, exchange rate appreciation caused by incoming capital flows and maintaining a low exchange rate convertibility risk) bring about an important contradiction in the model. A central feature of the model is the adjustment in foreign accounts via changing relative prices, that is, with a flexible exchange rate regime, but other elements in the model impose a high degree of rigidity on the exchange rate.¹¹

How is this contradiction resolved in practice? The adjustment through exchange rate movements is delayed as much as possible, with the resulting deterioration of the country’s foreign accounts. When the adjustment in the exchange rate is finally carried out, this takes place under conditions of great volatility and unrest in the financial markets. The adjustment and its effects then become disproportionate. In addition to the unrest in financial markets, the inflation rate rapidly rises and past achievements in this area are wiped out. Although the crisis is said to be an exchange rate crisis, it really is a structural crisis of the open economy model.

The second contradiction is related to the interest rate. The open economy model is based not only on trade liberalization, but on financial deregulation as well. The capital account is deregulated in order to attract and use foreign savings to increase productive investments and promote growth. Financial deregulation implies eliminating barriers to the free flow of capital, a policy measure that has profound implications for the role played by several macroeconomic policy instruments. The exchange rate is no longer the key variable that regulates contact between two relative price systems (domestic and foreign) in the goods and services market; instead, as we have seen, it becomes a variable that is more closely linked to the needs of the short term capital flows.

¹¹ Examples of the above contradiction, where exchange rate adjustment becomes necessary but difficult, abound in recent financial crises. The conflict between the goal of using the exchange rate as an adjustment variable for any external disequilibrium and the need to keep the exchange rate stable in order to benefit short-term foreign investment was clearly manifested in Mexico in 1994. Throughout that year, the overvaluation of the exchange rate had reached exaggerated levels and the deterioration of foreign accounts demanded an important adjustment in the exchange rate. However, even after capital flight had begun, the pressure exerted by foreign investors to keep the exchange rate stable prevailed. This pressure forced economic authorities to adopt the unusual measure of indexing government bonds — held by several foreign pension funds and brokerage firms — to the exchange rate. Effectively this meant that the risk of devaluation fell on the Mexican government. This case is an extreme example of conflicting goals for the same macroeconomic variable in the open economy model.
In the Mundell Fleming model a current account deficit is financed by capital inflows. Under fully flexible exchange rate regimes, this variable adjusts so that the sum of the current and the capital accounts is zero. The adjustment process is automatic. For example, consider the case of an open economy with a fixed supply of money, flexible exchange rates and fixed prices. In this economy a current account deficit causes capital inflows, which lead to an increase in the supply of real balances and a reduction in interest rates. This reduction generates capital outflows, which provoke a depreciation of the exchange rate, making the domestic productive system more competitive and leading to an expansion of demand for exports. Total output now expands until a new equilibrium is reached for the money and the goods markets, as well as for the balance of payments.

But now consider the case of an economy that is the recipient of incoming capital flows for other reasons, perhaps because its domestic interest rate becomes higher than the prevailing international rate. In the absence of any intervention, the domestic money supply expands as demand for assets denominated in the domestic currency increases. This leads to an expansion of the money supply. At this stage, the capital account displays a surplus, the exchange rate appreciates and the domestic interest rate is forced downwards. The drop in the domestic interest rate gradually reduces the flow of incoming capital and equilibrium is restored in the balance of payments. The drop in the interest rate and the exchange rate appreciation may or may not lead to a new equilibrium involving a greater level of output, depending on the elasticity of imports and exports vis-à-vis exchange rate variations, and of the investment schedule with respect to changes in the interest rate.

The expansion in the money supply resulting from foreign capital inflows can be an important source of inflationary pressures, but it can be curtailed by sterilizing the effects of the influx of capital. This can be done through open market operations in which the central bank sells bonds or securities and withdraws money from circulation in an amount equivalent to the incoming capital flows. In doing this, the central bank increases its domestic indebtedness. To put it in other terms, sterilization takes place when the central bank trades foreign exchange for domestic currency but reverses the expansion of the money supply through open market operations. This permits the economy to operate with a constant money supply and to keep inflation under control. The problem, however, is that although limiting the expansion of the money supply may be a worthwhile objective, the central bank’s intervention with sterilization interrupts the adjustment process. The automatic regulation outlined above relies critically on interest rate variations as capital flows take place. But, by maintaining a constant money supply, sterilization keeps the interest rate at an artificial level that is higher than
the international rate. Capital inflows continue, reserves grow (but at an additional cost), and domestic investment continues to be confronted with a high interest rate.¹²

The contradiction is defined in terms of two processes in the model. On one hand, the model requires the interest rate to fall in order to restore equilibrium in the money market in the face of incoming capital flows. On the other, a basic tenet of the model is that because an expansion of the money supply leads to increased inflation, the money supply must remain constant; this keeps the interest rate artificially high. In practice, the contradiction is resolved through intervention with sterilization, a higher interest rate and an overvalued currency.

The third contradiction is related to the role of financial liberalization. As is well known, a country can access foreign savings to finance its purchases of capital goods and intermediate products, and thereby increase productive investment. But capital flows also allow a country to finance a deficit in its trade balance. From the point of view of the model’s rationale, this is a desirable outcome, as imports of capital goods can be used to increase exports. However, if the trade deficit is basically due to imports of consumer goods, the trade deficit cannot be financed by capital inflows for a long period of time. Foreign capital flows may increase the final capacity to import at a faster pace than the build-up of the productive capacity to export.

Incoming capital flows can artificially maintain a country’s capacity to import goods, without any clear relationship to the country’s capacity to export (and to generate badly needed hard currency flows). From this point of view, capital flows are analogous to foreign aid, which can also artificially support a high level of imports. Some economists have noted that the use of capital inflows to maintain imports may have a contractionary effect on the domestic market and the level of aggregate activity (Bhaduri, 1998, and Bhaduri and Skarstein, 1996).

These authors analyze the problem in a simplified manner, starting with the basic formula of national accounts in an open economy:

\[ I - S = I - sY = (M - X) = A \]

where I is investment; S, savings; Y, income; s, the (constant) fraction of income assigned to savings; M, imports; X, exports, and A, foreign

¹² In the case of Mexico, intervention with sterilization has been taking place since the crisis in 1994. This has allowed authorities to maintain an overvalued exchange rate, bringing inflation under control but further reducing competitiveness and deteriorating the trade balance. As international reserves have increased to historical levels, the central bank has continued to pursue a restrictive monetary policy, maintaining interest rates at even higher levels. This limits the economy’s capacity to attain adequate growth rates, while, at the same time, maintaining high rewards for foreign capital. The capital flows that result from this further contribute to the appreciation of the exchange rate and the deterioration of the country’s external accounts.
capital flow. According to this formula, the level of national income, determined by the size of the domestic market or aggregate demand is derived from the following formula:

\[ Y = \frac{1}{s}(I - A) \]

This second equation indicates that as capital inflows take place (A increases), for any level of investment, national income is reduced by the multiplier effect. These imports may lead to a reduction in aggregate income through a perverse effect of the well-known Kahn-Keynes multiplier: the initial impulse towards contraction is provided by the substitution effect that replaces domestic production with imports in certain branches of industry; the multiplier process leads to successive rounds of additional induced reductions in aggregate demand for domestic production, in the familiar, converging geometric series.

At the beginning of the process the substitution effect leads to a reduction in profits, wages, and jobs as the some branches affected by increased imports are eliminated. But in successive phases, this initial reduction of domestic production creates additional cutbacks in aggregate demand. The overall, final reduction in profits, wages, and jobs can be significantly greater than the original drop caused by the direct impact of imports. The contraction of demand and domestic production in successive stages does not imply new or greater substitution effects directly caused by trade liberalization or by the capacity to finance imports that capital flows bring about. That is, the induced impact does not come from the lack of competitiveness of local industry. Perfectly healthy domestic industries are weakened and put out of action by this indirect effect.

These perverse consequences are even more intense when capital inflows take place in the framework of rapid and indiscriminate trade liberalization, as was the case in Mexico in 1989–95. The contractionary effect is more pronounced when, as in Mexico at that time, fiscal policy emphasizes generating a primary surplus and when restrictive monetary policy is attempting to control inflation. The primary surplus is determined by the difference between tax and non-tax fiscal revenues and expenditures excluding interests and financial charges. Thus, a measure of the sustainable debt to GDP ratio is given by a primary surplus that is enough to cover interest payments. Formally, in order to maintain a constant (or declining) ratio of debt to GDP ratio, a government is supposed to comply with the following condition:

\[ pst = (rt - gt)dt - 1 \]

where \( pst \) = primary surplus, \( r \) = real interest rate, \( g \) = GDP real growth rate and \( d \) = ratio of public debt to GDP.\(^{13}\)

\(^{13}\) This is the expression widely used in models for optimal taxation and debt management. See Croce and Juan-Ramón (2003).
In a recession, as g falls, sp must increase in order to meet the terms of this condition. Besides, the primary surplus will have to increase even more if r is raised (for example, to attract more foreign capital or to control inflationary pressures). But this view of the relation between fiscal and monetary policies implies the impossibility of resorting to countercyclical macroeconomic policies. In the midst of a recession, fiscal policy will adopt a posture that will aggravate the recession, seeking to increase sp. Typically, sp will be increased through cuts in public spending, something that affects investment in social programs, as well as environmental programs. We return to this point below.

In this adverse environment, the combined effect of foreign capital flows and government policy amounts to a veritable attack on domestic productive capacity. And this scenario becomes still more complex because of its interaction with the first contradiction: the overvaluation of the exchange rate encourages an increase in imports, while the need to encourage and maintain foreign capital inflows requires exchange rate stability and strengthens trends leading to greater overvaluation. Capital inflows do not necessarily reflect a healthy state of the economy. In fact, they turn the capacity to import into an exogenous variable. The liberalization of the financial sector and of the capital account opens the possibility of increased private sector indebtedness. As a result, a country’s capacity to import becomes disconnected from its ability to generate foreign currency through exports. In this context, higher levels of investment and capital flow make aggregate demand and income grow. But this expansion in aggregate demand translates into greater imports, which have a contractionary effect on domestic production. As Bhaduri points out (1989:155), this perverse effect will appear even when a higher level of capital flow leads to greater investment and exports, as long as the marginal propensity to import associated with capital flows is larger than the corresponding marginal propensity to invest and export.

Under a floating exchange rate regime, like the one implemented in Mexico since 1995, the above conclusions are not reversed; in fact, they may even be strengthened. Despite the trade imbalance, the exchange rate appreciates as a result of capital flows; this normally means that the trade deficit becomes even worse. Thus, as a result of capital inflows and increases in imports, domestic production and demand contract (Ibid.). In a framework of financial and trade liberalization, capital flows that can finance the capacity to import without generating foreign currency through exports may lead to a perverse process of cumulative causation — using the terminology from Hirschmann’s theory of development economics. The disequilibria in a country’s foreign accounts can be financed by capital inflows, but these resources only help deepen the
external imbalance and, through the effects on aggregate domestic demand, contribute to further dismantling of the domestic productive apparatus.

This contradiction is resolved by maintaining financial deregulation, and by hoping that it will somehow lead to enough investment to escape from the import trap. The problem of artificial promotion of imports is conventionally ignored; the free flow of capital is simply presented as the ideal manner for a country to access foreign savings, increase productive investment and enter a path of sustained growth.

These three contradictions act not only as a powerful brake on the entire economy, slowing down growth and job creation. They also entail the ingredients of instability, as the balance of several critical macroeconomic accounts are driven farther away from equilibrium. In addition, all of these contradictions are aggravated by the fact that financial markets are inherently unstable and that they are driven by expectations in the context of uncertainty. The combination is truly explosive and leads to various manifestations of financial and economic crises. In Latin America, the stabilization programs that followed involved draconian measures that cut public expenditures, restricted monetary policy and reduced real wages in order to curtail effective demand and control inflationary pressures.

The fourth contradiction of the open economy model arises when an economy attempts to increase domestic savings – in the hopes of leading to higher rates of productive investment – through deregulation of the bank and non-bank financial sector. It is assumed that the deregulation of the financial and banking sectors can lead to an increase in domestic savings because economic agents have greater opportunities for profitable investments. In addition, it was thought that domestic financial deregulation provides more powerful risk management instruments. However, it is difficult to ascertain that the rewards to financial savings generally bring about greater productive investment. Because of deregulation, a growing part of domestic savings can be directed instead towards financial or speculative investments such as the stock market, various financial instruments, and even currency markets. Returns to speculative investments in currency markets, for instance, can be a powerful attractor and shift resources away from new productive investments.

The process of international financial deregulation is usually implemented at the same time as an almost complete deregulation of the domestic banking sector. When this takes place, domestic restrictions on cross-market access for financial institutions are eliminated, blurring the traditional distinctions between the operations of banks, investment firms, mutual and pension funds, insurance companies, and stock exchange brokerage firms. Also, quantitative
controls on various forms of loan allocation schemes are scrapped, as well as requirements for the provision of credit to specific sectors such as agriculture or housing. Perhaps even more important are the elimination of preferential interest rates for favoured sectors and the slackening of cash reserve requirements for financial institutions. In theory, competition among banks would lead to better service, greater options for investors in terms of financial products and credit operations, and, above all, lower interest rates. These goals were not attained. Domestic savings did not increase significantly and the rate of investment remained stagnant or declined.

Here the contradiction is expressed as follows: on the one hand, domestic savings must be increased in order to promote productive investment, but on the other hand, the deregulation of the financial sector opens new possibilities of speculative investment for the domestic saver. These new possibilities can be more attractive than those offered by investments in the real economy, and thus the incentives for productive investment are distorted. In addition, the rate of return that comes from placing funds in financial instruments, within a framework of deregulated capital accounts and interdependent financial markets, connects resources from domestic savings with the sphere of international financial speculation.

We must also consider that to the extent that currencies from other economies become more attractive assets, especially if we consider arbitraging opportunities and the possibility of moving from one economic space to another in response to disparities in exchange and interest rates, agents may prefer to speculate on the foreign currency market.¹⁴ As volatility and uncertainty intensify, agents feel increasing pressure to engage in these operations. The need to seek protection from foreign competition, which becomes more intense as a result of simultaneous trade and financial deregulation, compels investors to prefer short-term rates of return. One might guess that this contradiction, i.e., deregulation designed to stimulate savings and productive investment leads to speculative investment instead, was linked to the size or level of development of the national economy. However, exactly the same phenomenon can be seen in the U.S., in the mounting evidence of speculative and questionably legal investment during the boom of the 1990s – a time of rapidly expanding deregulation of financial and other markets. The crisis that exploded in the Summer of 2008 is the best conformation of this.

The context in which all of these contradictions are deployed is based on the idea that State intervention needs to be minimized. This is of course related to the notion that markets allocate resources efficiently.

¹⁴ A formal treatment of this is presented in Nadal (2005).
and any State intervention leads to price distortions and inefficiencies. The standard open economy model also reveals an important contradiction between the goal of achieving an effective insertion in the global economy and that of reducing, as much as possible, both the size of the state and the degree to which it intervenes in the economy. The latter goal is tied to the notion that it is crucial to maintain healthy public finances in order to limit public indebtedness, avoid putting pressure on interest rates and prevent a crowding out of private investment. This warning of the dangers of active fiscal policy is itself the subject of longstanding macroeconomic controversy. However, another dimension of public policy is of more immediate relevance to the path of export-led growth that is endorsed by the open economy model: reducing the role of state intervention can hinder the ability of a country’s industrial apparatus to overcome the barriers to entry that exist in the international arena.

A country implementing an open economy model ultimately must rely on a strong export sector capable of generating enough resources to finance imports (or at least to keep trade deficits under control). In many industrial branches, exporting may require overcoming the barriers to entry that exist in the world market; this has historically been attained only through a strategy involving active state intervention. In fact, this has been the path followed by newly industrialized economies such as Japan, the Republic of Korea and Taiwan. The style of this public intervention varies, but in most cases it has involved adequate allocation of public resources to activities such as research and development, and some level of strategic planning or institutional support for leading export sectors. Often this has resulted in a very successful pattern of insertion in the international economy.

During the past twenty years, the ideology of reduced state intervention has been championed by organizations such as the IMF and the World Bank. It is based on the belief that market forces alone can achieve a more efficient allocation of resources and that, therefore, no amount of industrial or technology policy can improve on that outcome. While it has the apparent support of a narrow interpretation of conventional economic theory, it has no significant record of historical success to point to. Many studies have shown that “hands-off,” laissez-faire public policy was not the path followed by successful countries embarking in late industrialization (Chang 2002, Amsden 1989). When state intervention is ruled out as a means to generate competitive advantages, the possibility of developing dynamic, successful export-led growth may be lost, and an open economy may become heavily dependent on foreign capital flows in order to finance its chronic trade deficit.
This contradiction is “resolved” in practice by forgetting one side of the problem, and hoping for the best: what if all previous historical experience was only prologue, and the true success of laissez-faire is only now about to appear on the world stage? If so, then the IMF and the World Bank are right, and the less government, the better. Some readers may prefer, as we do, more historically grounded hopes. To summarize, one of the main features of the open economy model is that it unleashes the energy of the financial sector and sets the stage for its preponderance in the economy. The role of the State and the structure of the economy are organized around the requirements of the financial sphere and this has important implications.

SECTION V
THE EXPANSION OF THE FINANCIAL SECTOR: IMPLICATIONS FOR SUSTAINABILITY
During the past thirty years the world’s economic system has experienced the extraordinary expansion of the financial sector. This can be expressed through several indicators, from the growth of currency transactions, to the markets for bonds and all sorts of financial assets. A significant proportion of exchanges in the world's financial markets are clearly related to arbitrage operations and speculation. Today, for example, transactions in currency markets are more than one hundred times the value of actual trade flows in all types of merchandise.

This expansion of the world’s financial sector has left a deep mark on the world economy. The financial crisis of 2008–2009 is the best proof of this, with long term implications for global development. This coincides with a multi-dimensional environmental and resource management crisis in which massive loss of biodiversity, soil erosion, overexploitation of aquifers, deforestation, climate change and pollution from emissions, effluents and solid waste are leaving a terrible heritage for future generations. Yet, there are very few analyses trying to make the connection between the structure of the world economy and this combination of environmental catastrophes. One of the main objectives in this project was to start exploring the linkages between the expansion of the financial sector and the pattern of environmental deterioration that we are experiencing today.

The expansion of the financial sector has been traced back to the years before the collapse of the Bretton Woods system. This system was set up after WWII in order to organize international financial and monetary relations. It was based on an array of fixed exchange rates (minimum adjustments were accepted), controls on transboundary capital flows and the creation of the International Monetary Fund to help stabilize currencies and assist countries experiencing balance...
Before the seventies and as a result of the so-called Neo-classical synthesis, it was thought that unemployment could be reduced through various demand-management schemes. A consensus was developing around the Phillips curve (identified by economist A. W. Phillips), a construct that identified a trade off between unemployment and inflation. But during the seventies a combination of stagnation and inflation (“stagflation”) shook macroeconomists as it contradicted the idea that a trade off existed. Many believed the stage was set for a new theoretical approach: Milton Friedman and Edmund Phelps launched the concept of the “natural rate of unemployment” which was supposed to correspond to a situation in which labour market rigidities prevented adjustments and efforts to further reduce unemployment would simply end up accelerating inflation. The NRU served as a platform to launch an all-out attack on the pattern of macroeconomic policymaking as it had evolved from the adaptation (and distortion) of Keynesian analysis in the Neoclassical synthesis. Under the new approach to policy making, the role of automatic adjustment in markets was once again restored as the centrepiece of resource allocation.¹⁵ This was followed closely by the rational expectations line of thought developed by Lucas and

---

¹⁵ Friedman defined the natural rate of unemployment as “the level that would be ground out by the Walrasian system of general equilibrium equations, provided there is imbedded in them the actual structural characteristics of the labour and commodity markets, including market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labour availabilities, the costs of mobility and so on” (Friedman 1968: 8).
Sargent. The Dynamic Stochastic General Equilibrium Model was to rule the field of macroeconomic theory and the age of neoliberalism was about to get going. For policy, the consequence of this was that the only goal for central banks was to maintain price stability or, in other words, to control inflation. As for fiscal policy, it was considered an inefficient tool and an obstacle for private investment due to crowding out effects.

The shock of the collapse of the Bretton Woods system, together with the change in the approach to macroeconomic policy, brought about enormous pressure for financial deregulation. The abandonment of fixed or stable exchange rates introduced the private sector to exchange rate risks, something that had been previously absorbed by the State. This “privatization of risk” (Eatwell and Taylor 2000) associated with exchange rate variations had to be compensated through hedging and this required free capital mobility. In order to reduce these new risks, market participants had to diversify their portfolios with flexibility, modifying the currencies’ combination and of other financial assets in accordance with the perceptions of risks. Thus, deregulating the capital account of national economies became a priority in the agenda of the rich countries and the international financial institutions. The opportunity to do push forward this agenda came in the eighties, as the IMF was called to play a critical role in stabilization and adjustment programs in developing countries that had been badly hit by the international debt crisis. As a result of this process of deregulation, the volume of international capital flows began to grow at exponential rates. New instruments, such as derivatives and structured investment vehicles, were designed and redesigned to be used as tools to take advantage of the new opportunities for arbitraging and speculation.

Macroeconomic policies could only aspire to perform an accessory role in this new world of interdependent and deregulated financial markets. In most Latin American countries, the central bank was given a sole mission, to maintain price stability, and fiscal policy became obsessed with the objective of generating a primary surplus. Finally, because part of the adjustment in the eighties had forced most countries in the region to dismantle their systems for industrial and other sector level policies, the path was open for full trade liberalization. Neoliberalism was the name given to this combination of passive or pro-cyclical macroeconomic policies, full financial deregulation, a reduced role for the State and the notion that efficient markets could take care of the development process.

What was the effect of all of this on the environment? In general terms,
the industrialization project was, if not entirely abandoned, at least pushed backward in a very decisive manner, as we have seen in previous pages. The manufacturing sector in Latin America lost importance in its share of GDP, as well as in total exports from the region. Commodities that are closer to the natural resource base have been called to play a new role in the process of economic growth in the region. There are several important implications of this process in the realm of social welfare and in the environmental dimension. In the rest of this paragraph we examine one crucial aspect of the relation between the expansion of the financial sector and the environment: the financial domination of markets of primary commodities.

The current global financial crisis was preceded by a few months by a series of abrupt hikes in prices of several basic commodities. Starting in 2002, there were significant price increases for several commodities that play an important role in international trade. These price increments meant a great deal of stress and, in fact, food crises, in many developing countries in 2006–2007. As the financial crisis started to unfold, these price movements were reversed and there were substantial and equally abrupt reductions. This was one of the transmission mechanisms through which the effects of the crisis were passed on to developing countries.

These price dynamics in commodity markets during the period 2002–2008 was accompanied by the growing presence of financial investors on commodity futures exchanges (UNCTAD 2009, ITUC 2009). This phenomenon has been described as a process of financialization of commodity markets and it implies that these price dynamics are caused by the action of financial agents that use primary commodities as simply another class of assets that is included in their portfolio as an investment. In other terms, this disturbing development is due to the fact that an asset intended primarily for use becomes increasingly treated as an investment vehicle. The result of this has been a series of speculative bubbles that have deleterious effects on a great number of people, as witnessed by riots and turmoil in countries as diverse as Egypt, Bangladesh, Mexico and the Philippines, to mention a few.¹⁷

Together with the macroeconomic package we have been describing (i.e., a passive monetary policy, financial and banking deregulation, primary surplus as the dominant objective in fiscal policy, etc.) and contract agriculture, this financialization of certain key commodity markets is also associated to a deep transformation of agricultural production in vast territories, with a very high cost when capital flows are reversed.

This process of financial domination in the recent evolution of commodity

¹⁷ For a detailed account of the effects of these price changes on hunger and availability of food, see the IUTC report A Recipe for Hunger: How the World is Failing on Food (ITUC 2009).
prices is the object of intense debate. Most mainstream economists have attributed these price movements to fundamental changes in supply and demand. For example, the change in diet in China as per capita GDP increases has been considered one of the main causes behind these price dynamics.¹⁸ But one crucial item here that points in a different direction is that price reductions took place at a point in time when fundamentals did not justify this variation. In addition, trading volumes in commodity exchanges experienced sharp increases during the period of price hikes. For example, futures and options contracts on commodity exchanges rose from an average of 13 million contracts between 2000-2005 to more than 35 million contracts on average in 2006-2008. The peak was reached in 2007 with 45 million contracts according to data from the Bank of International Settlements. During that period the value of over the counter contracts in commodities increased by 1,300 percent, surpassing USD 13 trillion. These and other indicators suggest that different factors are playing a role here. As pointed out above, one of these factors is the increased presence in commodity futures exchanges of financial investors for whom commodities appear as another class of assets that can be used to diversify portfolios in profit maximization strategies. Some of these financial investors that act as traders in commodity markets command a huge amount of resources and their operations are susceptible of having important effects on prices.

Commodity exchange and futures markets have existed for a very long time and they have been used to iron out the spikes in price variations, providing stable market signals to producers and helping them to meet the uncertainties of agricultural activities. Futures markets allow for price discovery and therefore reduce price volatility. These markets allow producers to hedge against price fluctuations that may have negative effects on production (thus ensuring activity levels close to capacity utilization).

In these specialized markets, participants have been limited to producers, farm processing agents and traders. Until recently, other agents were prevented by law from entering into these markets in order to prevent speculation. In the United States, for example, where the largest mercantile exchanges function, restrictions to trading in maize, soybean, wheat and other crops prevented speculation and price manipulation since the beginning of the XXth century. But these restrictions were relaxed as part of the drive to financial deregulation. In 2000 the US Commodity Futures Trading Commission deepened this deregulation process (with the Commodity Futures Modernization Act) and increased the ceiling for trading in

¹⁸ This view has been contradicted by Daryll Ray (Director of the Agricultural Policy Analysis Center of the University of Tennessee). According to Ray’s analysis, China is self sufficient in many of the commodities that experienced the type of price behaviour that we have discussed here.
maize, oats, wheat and soybeans.¹⁹ The end result was increased trading and price hikes.

The issue of how increased activities in the mercantile commodity exchanges affect spot commodity prices has been the object of intense debate. Some observers argue that speculation in futures, options and derivative markets cannot affect spot prices. The reasoning here is that these short run effective prices will be impacted by speculative trading only when traders take delivery of commodities and hold physical inventories. Perhaps one of the most relevant analyses here is Frankfurter and Accomazzo (2007) who identify important shortcomings in models dealing with returns to speculators in commodities futures markets.

In the past there was some speculation in commodity exchanges and futures markets, but it was based on how agents perceive the evolution of supply and demand. In this sense, speculation in futures and mercantile exchange markets was simply the action of taking advantage of a system of relative prices. Carrying costs, delivery dates and inventories were critical in deciding how much to buy and when to sell. But all of this changed with financialization: financial investors respond to risks that arise in currency markets, as well as in other financial assets, and they have to diversify their portfolio structures continuously in order to search for optimal investment structures. For these agents, commodities become the physical support of a new investment that is not different (from the viewpoint of portfolio structures) from other financial assets. As futures contracts involving commodities became more common and were the object of complex securitization (Frankfurter and Accomazzo 2007), the normal price-inventory relationship was altered. The price dynamics have been altered because securitized commodity-linked instruments are now considered an investment rather than a risk-management tool. This may lead to self-fulfilling prophecies that can engender higher prices until markets break down.

Commodities have certain properties that make them attractive as assets in an investment portfolio: their returns are negatively correlated with those of other assets over the business cycle and they are less volatile.

¹⁹ The CFTC controls potential market manipulation and excessive speculation through the Commitment of Traders (COT) report. But this was severely downgraded and rendered useless by the Commodity Futures Modernization Act enacted under the Clinton administration in 2000. In addition, the regulatory and monitoring capacity of the CFTC was further eroded when it allowed the Intercontinental Exchange (ICE) to use its trading terminals in the United States for trading of U.S. commodity futures contracts on the ICE futures exchange in London. Later, ICE Futures allowed traders in the United States to use ICE terminals in the United States to trade its synthetic futures contracts on the ICE Futures London exchange. This not only allowed unregistered funds to effectively bypass registration, it also contributed to distribute the effects of these operations worldwide.
Besides, because many commodities are an important component of the basket of goods that is used to measure price changes, these commodities are a good protection against inflation because their returns are positively correlated with price increases. Investment returns become the objective function and replace hedging against price fluctuations.

Financialization of commodity exchanges is not a problem confined to price dynamics and financial risk management. It goes well beyond the walls of the mercantile exchange and has direct impacts in the field, in output mix, technology choice and resource management practices. When they enter into a commodity market and start pushing price upwards, financial operators may pull agricultural production chains into the space of financial transactions, risk management and speculation. Because of the size of the resources at their disposal, their transactions in futures markets have direct effects on market (spot) prices. But more than that, these effects are relayed through the workings of contracts that link agribusiness (with their own credit and marketing facilities) to direct producers in the field. Banking deregulation, tight monetary policies (with scarce and costly credit), recessive fiscal policies and the withdrawal of support for small scale agriculture, all combine to leave this space for large agri-business.

---

20 Futures markets involve contracts in which traders pledge to buy or sell a commodity in the future at a pre-set price. The contract can be traded so that the agent does not have to actually take delivery of the commodity when the date expires. In the case of option, traders have the right but not the obligation to purchase or sell a commodity at a pre-set price in a future date and they pay a premium to the agents who make the opposite pledge.
REFERENCES

Amsden, Alice (1989)
Asia’s Next Giant. South Korea and Late Industrialization. Oxford University Press.

Banco Central de Costa Rica (2007)

Bhaduri, Amit (1998)

Chang, Ha-Joon (2002)

Chichilniski, Graciela and Gilberto Gallopín (2001)

CONABIO (2007)

Croce, Enzo and V. Hugo Juan-Ramón (2003)

Daly, Herman (1991)

Eatwell, John and Lance Taylor (2000)

Engel, Stefanie, Tobias Wünscher and Sven Wunder (2009)
“Increasing the Efficiency of Forest Conservation. The Case of Payments for Environmental Services in Costa Rica”, in Palmer and Engel (2009).

Falconi Benitez, Fander (2005)

Fajnzylber, Fernando (1983)

Fleming, M. (1962)

Friedman, Milton (1968)
“The Role of Monetary Policy”, American Economic Review, 58 (March) [1-17].
Frankfurter, Michael Mack and Davide Accomazzo (2007)

Heyes, A. (2000)

ITUC (2009)
A Recipe for Hunger: How the World is Failing on Food. International Trade Union Confederation, Brussels.


Nadal, Alejandro (1996)

--- (2000)
The Environmental and Social Impacts of Economic Liberalization on Corn Production in Mexico. WWWF and Oxfam.

--- (2005)

Munasinghe, Mohan Ed. (2002)

Moreno-Brid, Juan Carlos and Carlos Rozo (2xxx)

Palmer, Charles and Stephanie Engel (editors) (2009)

Mundell, R. (1963)

Oilwatch (2007)
“Conservar el crudo en el subsuelo, por el país, por el Yasuní, por su gente”, available in http://www.amazoniaporvida.org/es/files/guardar_el_crudo_en_el_subsu.png.


Urquidi, Víctor L. (2005)