Contradictions of the Open Economy Model As Applied in Mexico[1]

Alejandro Nadal
Center for Economic Studies
El Colegio de México

INTRODUCTION

This paper presents a critique of the open economy model implemented in Mexico since 1987. The criticism presented here does not dwell on the deficient performance of the Mexican economy during the period in which this model was implemented; instead, it centers on the internal contradictions of the model which have prevented the policy mix applied in Mexico from delivering on its promises.[2] The model we examine here is the Mundell-Fleming model, the widely cited standard for macroeconomic analysis of open economies; that model was one of the principal accomplishments that led to the award of the Nobel Prize in economics to Robert Mundell in 1999.

Although the model applied in Mexico has not been explicitly identified with the Mundell-Fleming model, its structural components bear a close resemblance with it – and no other formal theoretical model has been proposed to explain Mexico's economic development strategy. 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 (see for example, Mundell 1968), and this close relationship has also been recognized in more recent work (see for example, Geanakoplos and Tsomocos 2001). The linchpin of the connection between the Mundell-Fleming and general equilibrium models is the market clearing assumption, which in turn depends on the postulates of perfect competition and flexible prices.

When the open economy model was first implemented in Mexico in the late 1980s, the radical change in economic policy was justified by stating that the import substitution strategy had run its course. That former strategy, it was argued, was inadequate for

Mexico's economy: it no longer provided satisfactory growth rates, did not create sufficient jobs, and could not maintain balance in foreign accounts. But during the fifteen years in which it has been implemented, the new model has not delivered adequate growth rates, nor has it created sufficient jobs or maintained balanced foreign accounts. Further, it has not been able to maintain stability in the main domestic macroeconomic variables, such as the general level of prices or interest rates. When inflation rates have been controlled, this has been achieved at the cost of a stagnant economy and an overvalued currency. Summing up, the results of implementing the open economy model applied in Mexico are unimpressive.

However, verification of the mediocre performance of Mexico's economy is insufficient to prove the need for a significant change in economic strategy. Supporters of the open economy model maintain that it needs more time, partly because the reforms that are required for its full deployment have not been implemented. In addition, it is argued that the vestiges of the populist and interventionist regime that defined the direction of the Mexican economy from 1955 to 1982 have not been completely dismantled. For example, these supporters argue that the energy sector still needs to be privatized and that a deep-reaching labor reform is also necessary.

The corollary to this reasoning is that if the open economy model is given enough time, it will eventually lead to the desired results. The same line of reasoning maintains that the structural reforms needed by the model must be put in place: more privatizations, more deregulation, less state intervention, and less public expenditure are required in order to have healthier public finances. Only then, according to its advocates, will the model be able to deliver sustainable growth and prosperity.

CONTRADICTIONS AND THE MODEL: DEFINITIONS

How do we know if the open economy model applied in Mexico simply needs more time? Acknowledging the poor results of its application to date is not enough. The only way to evaluate the plea to stay the course is with a detailed analysis of the model's inner logic. If (as argued in this paper) there are internal contradictions in the way the model functions, then we can hardly expect it to turn in a good performance, no matter how much time it is granted. Thus an analysis of the essential features of the model is required.

This point is particularly relevant because of the common belief that the problems that afflict the Mexican economy today are not the result of the deficiencies of a given model or theory, but merely reflect a series of mistakes in policy implementation. These mistakes may stem from an erroneous sequence in policy implementation or from an excessive reliance on specific instruments. It has also been argued that the mistakes arise from a deficient "early warning" system that has prevented the timely adoption of adequate corrective measures.

No doubt there have been cases of negligence, even irresponsibility, in the management of recent economic policy in Mexico. But it is also possible that some of the "mistakes" are nothing more than logical responses to an inconsistent policy package. For example, the delay in exchange rate adjustment could be nothing more than the normal outcome of a tension that arises from applying instruments that seek contradictory goals. In fact, as we will see, the model places several incompatible constraints on exchange rates.

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 analysis presented here takes the Mundell-Fleming macroeconomic model as a reference.[3] 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.[4] 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.

A review of recent Mexican experience, from the perspective of the Mundell-Fleming model, highlights five areas of internal contradiction in the model:

1. The exchange rate is expected to float freely to maintain equilibrium in the balance of trade, but it also must be changed as little as possible in order combat inflation and to guarantee risk-free currency conversion to foreign investors.
2. The domestic interest rate is expected to fluctuate to maintain equilibrium in capital markets, but is also used to regulate the money supply, the rate of inflation, and the level of economic activity.
3. Liberalization of capital markets often leads to foreign capital inflows – but these inflows may increase the financial capacity to import more rapidly than they build up the productive capacity to export.
4. Deregulation of financial institutions is said to be necessary to increase domestic savings and investment, but deregulation increases opportunities for speculative investment and flight of domestic capital to overseas markets.
5. Development under the open economy model requires the promotion of successful export sectors, a process that has historically required the active participation of the state. But the logic of the open economy model leads to reducing and weakening the state's capacity to intervene in the market.

THE FIRST CONTRADICTION: THE EXCHANGE RATE

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.

Precisely to keep the countries that signed the General Agreement on Tariffs and Trade (GATT) from surrendering to the temptation of routinely resorting to controls on trade flows in order to tackle external disequilibria, 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 open a door just a crack, to regulate exceptional measures and impose weighty

disciplinary measures to avoid abuses, than to leave GATT members at total liberty in this matter.[5]

However, the North American Free Trade Agreement (NAFTA) slammed the door shut, canceling 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.[6] 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, and this means that the key variable is the exchange rate.[7]

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 (although this is not always made explicit in discussions of the model). In the case of Mexico, this idea has led to a veritable obsession with reaching and maintaining one-digit inflation rates. 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. Using the exchange rate as an instrument to fight inflation irremediably leads to an overvaluation of the exchange rate.[8] But this approach to controlling inflationary pressures entails a significant rigidity in the exchange rate, contradicting the use of a fluctuating exchange rate to maintain equilibrium in the trade balance. To the extent that exchange rate adjustments are postponed in order to keep inflation at bay, the trade balance deteriorates.

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.[9] But these capital flows have many other effects besides allowing a country to finance its external deficit.

In the first place, these capital flows lead to an appreciation of the exchange rate. The demand for assets denominated in the currency of the recipient country naturally leads to this result with the companion effect of further deteriorating the trade balance as imports become cheaper and exports more expensive. 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 (very slow variation) 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.

These three elements (using the exchange rate to stem inflation, maintaining a low exchange rate risk, and exchange rate appreciation caused by incoming capital flows) 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. The central bank is forced to intervene in the market, at times directly under the pretext of establishing order in the exchange rate market and providing liquidity,

at times through other institutions with indirect investments. The goal is always the same, to keep the exchange rate stable.

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 of Treasury bonds with interest payments essentially fixed in U.S. dollars, not Mexican pesos (*Tesobonos*) is an extreme example of conflicting goals for the same macroeconomic variable in the open economy model.

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 canceled.[10] 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: 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.

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.[11] 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.[12] 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, threatening to bring about an even greater deterioration of the trade balance. The expansion of the money supply 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.

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.

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.

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: CAPITAL FLOWS AND ARTIFICIAL FINANCING OF IMPORTS

One of the anticipated benefits of financial liberalization is that 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.

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:

$$I - S = I - s(Y) = (M - X) = A$$

where I is investment; S, savings; Y, income; s, the (constant) fraction of income assigned to savings; M, imports; X, exports, and A, foreign capital flow.[13] 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:

$$Y = (1/s)(I - A)$$

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 for any level of investment.

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.

These perverse effects 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 limiting public spending in order to achieve a primary (government budget) surplus, and when restrictive monetary policy is attempting to throttle inflation. In this adverse environment, the combined effect of foreign capital flows and government policy amounts to a veritable attack on domestic productive capacity.[14] And this scenario becomes still more complex because of its interaction with the first contradiction, discussed above: the overvaluation of the exchange rate encourages an increase in imports, while the need to encourage and continue foreign capital inflows requires exchange rate stability and strengthens trends leading to more 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.[15] 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.

THE FOURTH CONTRADICTION: DOMESTIC SAVINGS AND FINANCIAL DEREGULATION

The model also reveals a contradiction between events taking place in the financial sphere and processes that are present in the real economy. This contradiction 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 is assumed 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, even though risks do exist, they may appear to be less of an obstacle than the hazardous path of 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.[16] 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 is the elimination of preferential interest rates for favored sectors and the slackening of cash reserve requirements for financial institutions.

In Mexico, deregulation of the financial sector coincided with the privatization of banks (1989-92); the explicit goal was to offer more efficient conditions to users of bank services. 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; instead, during the first years after the reforms were introduced, most banks started to suffer from a growing volume of non-performing loans. In 1994-95, the financial crisis brought about the collapse of the banking system and the government stepped in with a costly and inefficient rescue scheme.

As a percentage of GDP, domestic savings fell from 20 to 15 percent between 1988 and 1994. Even in the context of the low inflation that prevailed during those years, the measures that were adopted failed to increase domestic savings. It is true that domestic savings began to increase once again between 1995 and 1998, and that by 1999 they had surpassed the levels of 1994. But this later increase in domestic savings is not related to the deregulation of the banking sector. Domestic savings increased during the 1995 crisis because of a spectacular fall in domestic consumption. Not surprisingly, this boost in savings was confined to the three highest-income deciles of the Mexican economy and was even more apparent in the highest decile. The rate of investment, however, remained stagnant and started to drop, even as this modest recovery of savings was taking place.

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. 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. Deregulation of electricity markets in California led to little if any productive investment, but allowed Enron and others to “earn” billions by fraudulent manipulation of the unfamiliar rules of newly deregulated markets.

THE FIFTH CONTRADICTION: THE ROLE OF THE STATE AND COMPETITIVE ADVANTAGES

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 (see Ackerman, "An Offer You Can't Refuse," in this volume). 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 (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.

Again, the 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.

CONCLUSIONS

A critical appraisal of the open economy model that underlies current economic policy in Mexico needs to go beyond the analysis of the empirical data normally used for policy evaluation. Although this type of analysis is important, it is not enough. A deeper analysis of the model's structure and the dynamics of its adjustment processes is required to justify changes in economic strategy. Our investigation shows that the standard open economy model does not offer a blueprint for a viable development strategy – not only because it has failed, so far, to deliver adequate results in terms of growth and welfare, but also because it contains internal contradictions that prevent it from performing adequately in general.

In Mexico, all of the contradictions examined in this chapter coexisted during the 1990s, and they continue to affect economic performance today. The combined effect of these contradictions is a stagnant economy with a vulnerable balance of payments, crippled public finances and increased poverty. While an economic elite has prospered under the open economy model and foreign capital has found it profitable to enter Mexico, there is no evidence of a development strategy that will raise the standard of living and welfare of the great majority of Mexicans. Unless changes are implemented in macroeconomic policy, including the introduction of some kind of capital controls, Mexico cannot hope to embark on a path toward equitable, sustainable development.

In designing an alternative economic strategy, there is no need for a dogmatic rejection of every aspect of current policy. Some aspects of the open economy model can be recovered and may become part of a very different, more robust strategy. For example, maintaining a healthy balance in public finance is not an unreasonable goal. And policies for public intervention should be based on the recognition that prices and markets also have an important role to play.

On the other hand, many aspects of the open economy model need major surgery. Monetary policy needs to be redefined. The obsession with inflation needs to be re-examined in view of the colossal social cost entailed by this policy. Although rapid or unpredictable inflation is not good news, restraining growth in order to achieve inflation rates that are comparable to those that exist in highly industrialized countries does not always make sense for a country like Mexico. The monetary approach to the balance of payments and the linkages between monetary policy and the capital account also need to be reworked. The delicate subject of re-regulating the capital account needs to be approached with a fresh outlook, especially after the experience of the financial crises of the past decade.

Fiscal policy is another critical element in an alternative strategy. The easy slogans concerning the need to reduce the fiscal deficit must be abandoned. In their place, more robust and well-grounded policy objectives, both for the short and long term, need to be established. From the viewpoint of tax revenues, a new progressive taxation scheme is needed; the well known recipes of relying more on value added taxes need to be questioned, especially in the context of high income inequality. And on the side of expenditures, it is of vital importance to restructure the colossal liabilities (more than eighty nine billion dollars) that resulted from the bailout of the banking system in the aftermath of the 1994 crisis. Unless this restructuring takes place, servicing these liabilities will continue to impose a straightjacket on fiscal policy.

And finally, the notion of a state that is not the main actor in the development process is one that needs critical evaluation, because economic history – even for Western free-market societies – teaches a very different lesson. While markets are important, markets alone are not enough to generate economic success or to redress competitive decline.[17]

The open economy model, like other conventional macroeconomic models, ultimately rests on a foundation of assumed microeconomic equilibrium. Usually the connection remains implicit, although there have been occasional (not entirely successful) attempts to spell out explicit microfoundations for macroeconomics. The Mundell-Fleming model, like other macro models, emphasizes the advantages of free-market allocation of resources because it accepts the notion that the goods and services market assigns resources

efficiently. Unfortunately, nothing in contemporary theory of markets and price formation provides a solid foundation for this belief.

Since Adam Smith, the goal of economic theory has been to develop a theory of the process through which the market efficiently assigns resources. In the early nineteenth century, classical economic theory was oriented around a technical model that is very different from the one developed by the neoclassical school. Still, the organizing principle was the same: the task was to prove that if left to operate freely, market forces would lead a society of greedy individuals to a point in which all agents' plans would be compatible. Twentieth-century work on general equilibrium theory continued to maintain that the greatest contribution of economics to the understanding of social dynamics is precisely this idea of the invisible hand (Arrow and Hahn 1971). Unfortunately, in spite of the deep continuity of this research program, economic theory has not been able to furnish free market ideologues with the results they expected.

The idea that markets allocate resources efficiently is valid only at equilibrium. Outside of equilibrium the world is not Pareto-optimal, and we simply cannot make a judgment about efficiency. Microeconomic theory often contrasts different states of the world in terms of comparative statics, examining portraits of different equilibrium positions. Yet the real world does not jump suddenly from one equilibrium point to another. The Mundell-Fleming model, and particularly the Mexican reality that we have examined in terms of that model, tells a story of chronic, or at least recurring, microeconomic disequilibrium. Optimality and equilibrium do not characterize the financial arrangements, nor the access to and use of technology, nor, above all, the employment of labor and natural resources, in the economy we have been describing.

The problem of disequilibrium would be a minor one if markets, in general, converged quickly to stable equilibrium points. However, general equilibrium theory has been able to prove that disequilibrium prices converge to equilibrium only under extremely restrictive and arbitrary conditions.[18] In other words, we still lack a general theory that reveals how market forces lead to equilibrium. And since efficiency is a property of equilibrium, we conclude that, in general, we cannot affirm that market forces, when left alone, allocate resources efficiently. The open economy macroeconomic model appears to

rely on a postulate that cannot find any justification, even in the most abstract model of a market economy.

ENDNOTES

[1] This essay is the result of research carried out on the project "Designing an Alternative Economic Strategy for Sustainable Development in Mexico" which received generous support from the John D. and Catherine T. MacArthur Foundation.

[2] For a critical appraisal of Mexico's economic performance see Nadal (2003).

[3] See Fleming (1962) and Mundell (1963). For a description of the essential aspects of the Mundell-Fleming model, see Blanchard and Fischer (1989).

[4] Perfect capital mobility implies that small changes in interest rates lead to very large capital flows. As a result, autonomy in monetary policy is lost. If the central bank wants to increase interest rates, it restricts the monetary supply and that increases interest rates. But foreign investors flock to the economy. These capitals are placed in bonds in local currency, and the exchange rate appreciates. The monetary supply increases because the central bank has to change foreign currency into local currency. The contraction of the initial monetary supply is reverted.

[5] The validity of these measures was ratified (and their reach was defined) during the Uruguay Round of trade negotiations (GATT 1994). For a discussion of these measures and the cases in which they were applied, see Nadal (1996).

[6] The contents of the article on exceptions may be summarized as follows: "There will be no exceptions." It is important to point out that while the 1994 Memorandum carefully explains the rules that must be followed to avoid abuses when the exceptional measures are applied, it does not eliminate them, while NAFTA does. For a detailed analysis of this NAFTA article and its implications in the context of the 1994 crisis, see Nadal (1996).

[7] According to this article the adjustment of a balance of trade deficit is not only carried out through exchange rate variations. It must also be accompanied by a package of economic measures that must be established after good faith consultations with International Monetary Fund (IMF) authorities. Much has been written about the contractionary effects of the measures recommended by the IMF when there is a balance of payments crisis (see for example Stiglitz 2002). It is important to point out that originally, the exceptional measures allowed in the GATT were not required to be tied to any particular macroeconomic policy package.

[8] In the Mexican case, anti-inflation objectives have also been pursued through a restrictive monetary policy and containment of real wages.

[9] If the components of the capital account are deregulated, capital flows can move freely in and out of a country.

[10] By the end of 1994, the overvaluation in Mexico had reached 16 percent; the peso-dollar exchange rate should have been adjusted from 3.5 to 4.10 pesos per dollar, but in the chaos that ensued the December devaluation, the exchange rate was established at 7 pesos per dollar. Interest rates skyrocketed and this, in turn, led to a deeper crisis for the entire banking system as the volume of non-performing loans exploded. Inflation, which had attained a one-digit level in 1993, also exploded and reached 58% in 1995, while GDP dropped by 6%.

[11] When trade and financial liberalization are implemented simultaneously, capital flows can finance a deficit in the trade balance. From this point of view, the disequilibria in the balance of trade are no longer a matter of concern. If the economy is able to finance its imports with these flows, it is assumed that a persistent (or even a growing) deficit is not a serious problem. This view is close to the so-called "Lawson approach" (named after Margaret Thatcher's Chancellor of the Exchequer), which considers that a current account deficit is not a macroeconomic problem as long as it is caused by the indebtedness of private agents.

[12] In the standard Mundell Fleming model when the money supply grows and the level of income remains constant, the interest rate falls, reducing the cost of holding money and this re-establishes equilibrium in the money market.

[13] Bhaduri uses A for this flow because it is similar to a foreign aid flow.

[14] Mexico's interindustrial forward and backward linkages have been badly severed as a result of the combination of rapid and non selective trade liberalization, capital account deregulation and exchange rate appreciation. Together with the contractionary posture in monetary policy, this process has not received sufficient attention. An indicator of the relevance of this analysis is that during the first quarter of 2000, the Mexican economy's GDP grew more than 7 percent, and the demand for domestic goods also grew 7 percent, while the demand for imported goods grew 43 percent. The balance of trade deficit experienced a 12% increase when compared with the corresponding quarter in 1999. During this period, exchange rate

appreciation remained at approximately 25 percent.

[15] Strictly speaking, the trade balance will deteriorate when the domestic currency becomes overvalued if the Marshall-Lerner conditions are met, i.e. if the absolute value of the sum of the exchange-rate elasticities of imports and exports is greater than one.

[16] There are four ways to meet the need for hard currencies: a) resorting to foreign direct investment (FDI); b) attracting portfolio investments; c) borrowing abroad and increasing foreign indebtedness; and d) generating foreign currency by exporting goods and services. To the extent that the latter is not sufficient, the other three possibilities need to be considered. In general terms, FDI is preferred over the other two, but it is not always enough. To incur in public debt through loans has lost relevance for several reasons, while portfolio investments are more and more common. But flows of portfolio investments can be reversed quickly with dire consequences. In order to maintain a steady flow, adequate real rates of return are required. Thus, short-term portfolio investments pressure the leading interest rates and the whole rate structure upwards.

[17] For a lucid account, see Lazonick (1991).

[18] These results were originally presented in the classic articles written by Arrow and Hurwicz (1958) and by Arrow, Block, and Hurwicz (1959). The property of stability was demonstrated only for cases where all goods are gross substitutes or those where the weak axiom of revealed preferences at the aggregate level prevails. Based on these results, these authors surmised that, in general, in a Arrow-Debreu economy, stability would be a property of equilibrium. Herbert Scarf (1960), in an equally classic work, proved that this was not so. Finally, in the 1970's, Sonnenschein (1972), Mantel (1974), and Debreu (1974) demonstrated that it was not possible to achieve any positive, general results regarding stability. See Ackerman, "Still Dead After All These Years," in this volume.