Trade and financial liberalization revisited.

Mexico’s experience

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In the middle of two crises, the first one in 1982 and a second one in 1986, Mexico initiated a new economic strategy, inaugurated with two important reforms: trade liberalization, and financial liberalization and deregulation. With the first reform the economic wanted to reposition Mexico in the international division of labor. With the second one they aimed at attracting capital inflows and modernize the banking sector.

Resolute commitment to drastic trade and to financial liberalization brought praise from a large part of the press and from international organizations, especially during the years going from the mid 1980s to the mid-1990s when these two reforms were implemented in full strength. The objective of this work is to study this period, and to show that the results of those reforms do not deserve such an enthusiastic praise.

I believe that Mexico’s experience is important in itself, and also because we can learn a lot from its positive results as well as its shortcomings. This is why an analytical reflection on the reasons for their failure to achieve the expected benefits is still important today.

Trade liberalization: booming exports without growth

The story of trade liberalization is rather simple to tell. Between 1984 and 1987 Mexico’s average import tariffs fell from 41 to 14% and the percentage of

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imports requiring a permit had dropped to about 10% in 1992. Graph 1 below displays the above-mentioned variables, as well as the evolution of the real exchange rate\(^2\) since this is also part of the story.

\(^2\) Figures for import permits do not extend beyond 1992, but at about that date trade liberalization had been completed. Note also, in this work I follow the Latin American convention and define the real exchange rate \(\Theta\) as \(N.(p^x/p)\), where \(N\) is the nominal exchange rate (pesos per unit of foreign exchange), \(p^x\) is the index of foreign prices, and \(p\) is the index of domestic prices. Thus currency appreciation implies a falling real exchange rate.
From a certain perspective, Mexico’s openness to international trade brought with it positive results. In 1980, exports plus imports accounted for about 20% of gross domestic output, and in 1985 to 18%. But in 1996 the figure had risen to 48% and in 2012 to 65%. On the other hand, the share of manufacturing in total exports rose from 31% in 1980 to 38%, in 1985, then to an astounding 83% in 1996 and it stood at about 82% in 2012. Moreover, between 1985 and 2010 Mexico’s share of world manufacturing exports rose 2.5 times. To assess this impressive achievement, it is as well to note that this country’s manufacturing exports are about 25 times greater than Chile’s, 10.1 times greater than Argentina’s, and 3.2 times greater than Brazil’s.

Different studies have shown that trade liberalization significantly contributed to this phenomenal growth of exports (for example, Ten Kate 1993). Intermediate inputs and raw materials, which comprised over 80% of imports, were heavily taxed due to trade protection, which raised the cost of potentially exportable commodities, and especially of manufacturing goods. Therefore

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3 By the way, note that most of those changes took place before the NAFTA treaty came into effect, which was in January 1994.
Mexico, which had already a relatively important industrial sector by the mid-1960s, could trade very little of its manufactured goods in international markets. When this bias against exports was eliminated many of the same firms that had been considered uncompetitive and inefficient in the past became stupendous exporters. More important perhaps, availability of intermediate inputs and raw materials at international prices, in a context where labor costs were extremely low by international standards, where infrastructure was sufficiently developed, where abundant and trained workforce was easily available, and where the government became more and more open toward foreign capital, brought to the country huge amounts of foreign investment to take advantage of the export possibilities that it had opened.

It appeared as if the East-Asian growth model had finally landed in Latin America. However, export success did not come along with a high growth rate of output. Indeed, between 1985 and 2010, **Mexico’s share of world manufacturing output fell about 40%** (it is currently below 1%). Concurrently, the overall rate of economic growth has been disappointing. Thus, while in 1980 its GDP represented 2.1% of World GDP, 9.9% of the GDP of Developing Countries, and 32.8% of Latin American GDP, in 2012 the respective percentages were: 1.7% of World GDP, 4.8% of the Developing Countries’ GDP, and 22% of Latin America’s GDP.

Of course, many processes besides trade liberalization explain why the export success failed to drag with it the rest of the economy. But, as I argue below, liberalization also played a role.

As a preliminary step to study the point I will put forward a theoretical framework inspired by M. Kalecki’s (1991 [1954]) formulation of the principle of
effective demand. This theory can be specified with the following equations, where \( P \) stands for profits, \( I \) for private investment, \( C^k \) for capitalist consumption, \( T \) for the trade balance, \( B \) the budget deficit and \( Y \) for total output. On the other hand, \( \omega \) is the relative share of wages in the value added (the share of profits in value added is \((1-\omega)\), under simplifying assumptions); \( \lambda \) is the average profit margin\(^4\), which depends directly on the ratio of aggregate proceeds to aggregate prime costs, which is also equal to the ratio of average prices to average prime costs; \( j \) is the ratio of aggregate cost of materials to the wage bill; and \( \chi \) is the proportion of industries with a high wage-share in value added in the total output.

\[
P = I + C^k + T + B \tag{1}
\]

\[
\omega = \omega(\lambda, j, \chi), \quad \omega \lambda < 0, \omega j < 0, \omega \chi > 0 \tag{2}
\]

\[
Y = \frac{P}{1-\omega} = \frac{I + C^k + T + B}{1-\omega} \tag{3}
\]

Equation (1) is Kalecki’s equation for total profits in an open economy (where I abstract from workers’ savings to simplify). Equation (2), which comes from Kalecki’s theory of distribution shows that the relative share of wages in value added is determined by the average profit margin, by the ratio of the materials bill to the wage bill, and by the proportion of industries with a high wage-share in value added over the total gross output. Finally, equation (3)

\(^4\) Kalecki specified the wage share equation using the concept of “degree of monopoly” rather than the profit margin. Since the two concepts are directly related, I prefer to use the latter, which has become more common in the contemporary literature.
encapsulates Kalecki’s theory. This last equation shows that autonomous expenditure and income distribution completely determine effective demand.

Let us now discuss the demand-effects of trade liberalization. First of all, let us note that liberalization stimulates both exports thanks to the reduction of production costs it entails, and also imports, whose prices in the domestic market diminish. But it may have also encouraged both domestic and foreign direct investment, inasmuch as it turned Mexico into a strategic export platform towards the US market.

Besides that, it can be shown that trade liberalization also affects the distribution of income (the denominator of 3). In the Stolper-Samuelson theorem, in low- and middle-income countries liberalization should favor labor-intensive industries, where the wage share is higher than average. I argue below that this not seems to have been the Mexican experience.

Coming back to the previous model, let us assume that investment and capitalist consumption also depend on profits and on the degree of protection of the domestic market, which I label $z$, and that imports also depend on domestic permits $z$ (sub-indices denote lags of the variables). The results were (variables are in logarithms):

$$i = 3.57 y^-2 - 2.54 y^-3 - 0.43 \Theta^-3 - 0.17 z^-1$$

Thus is appears that in the 1980-1992 period import permits had a negative effect on investment, which were therefore favored by liberalization.

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5 This hypothesis needs further study, but as a preliminary step I estimated a simple uniequational econometric model for private investment, where I included private investment $I$, GDP $Y$, the real exchange rate $\Theta$ and import permits $z$ (sub-indices denote lags of the variables). The results were (variables are in logarithms):

$$i = 3.57 y^-2 - 2.54 y^-3 - 0.43 \Theta^-3 - 0.17 z^-1$$

Thus is appears that in the 1980-1992 period import permits had a negative effect on investment, which were therefore favored by liberalization.

6 The sign of the influence of $z$ on $I$ and on $C^K$ may be different.
output. Let us further assume that the trade balance depends on domestic and on world output $Y^*$, on the degree of protection, and on the real exchange rate $\Theta$. We can further assume that the wage share also depends on the real exchange rate $\Theta^7$, and on the degree of protection $z$. I will thus re-specify equations (1) and (3) as follows, where $A$ denotes investment plus capitalist consumption ($A = I + C^K$):

$$P = A(P, z) + T(Y, Y^*, z, \Theta) + B \quad (1a)$$

$$Y = \frac{A[P(z), z] + T(Y, Y^*, z, \Theta) + B}{1 - w(z, \Theta)} \quad (3a)$$

We must now move one step forward in order to gauge another important implication of trade liberalization. To this extent we need to distinguish two output concepts. The first is effective output, specified in equation (3a); the second, denoted here by $Y^X$, is what I will call output at external equilibrium. This is the level of output that would be compatible with balance of payment

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$^7$ The association between the wage share and $z$ and $\Theta$ can be analyzed as follows. Consider equation (2) $\omega = \omega(\lambda, j, \chi)$. The $j$ variable, namely the ratio of aggregate cost of materials to the wage bill, will grow with a higher rate of protection because this raises the cost of foreign inputs. This is also the case when the exchange rate is high. Besides, we can assume that $\lambda$, the average profit margin, also depends on the level of protection and on the level of the exchange rate: when either protection or the exchange rate are low, the domestic price of imported goods diminishes, and the pressure of foreign competition in the domestic market is correspondingly made stronger.
equilibrium\(^8\). Since no country can maintain a persistent trade deficit, to simplify I assume away capital movements, and assume also that trade is balanced in the initial period. Denoting by \( m \) the ratio of imports to GDP, which I suppose depends on \( z \) and on \( \Theta \), output at external equilibrium can be specified as:

\[
m = \frac{M}{Y} \Rightarrow Y = \frac{M(z, Y)}{m(z, Z)} \frac{under \text{ balancedtrade}}{Y^*} = \frac{X(z, Y^*)}{m(z, Z)} \tag{4}
\]

It follows from (4) that the effect of trade liberalization on output at external equilibrium depends on how it affects exports on the one hand, and how it affects the import coefficient (\( m \)) on the other\(^9\).

It is easy to see that trade liberalization will normally have a different impact on effective output on the one hand and on output at external equilibrium on the other. It may, for example, expand effective output even as it contracts output at external equilibrium. Anyway, if liberalization of imports brings about deterioration of the level of output compatible with external balance, the situation would not be sustainable in the medium- or long-term and eventually measures would have to be taken to contract import demand. Otherwise, the result will be an external crisis, which will provoke a fall of domestic demand and through this mechanism would re-establish the external balance.

\(^8\) Note, the concept of output at external equilibrium is simply the short-term version of Thirlwall’s rate of growth of domestic real income compatible with external equilibrium (Thirlwall 1979).

\(^9\) As shown, besides its short-term impact on exports and on the import coefficient, a change in the rate of protection has a long-run impact, because it affects investment and (probably also) the share of new investment channeled to the tradable goods sector.
As the previous analysis shows, the final outcome of trade liberalization will depend on many variables, and we cannot ascertain the most likely result on purely theoretical considerations. Thus, taking stock of the previous analytical framework, I show the results of two econometric estimates aimed at assessing the effects of trade liberalization in Mexico. One considers its effects on demand and effective output, and the other its effects on output at external equilibrium.

The first model assesses the effect of trade liberalization on GDP with an equation similar to (3a), estimated in a VAR with a sample going from 1980.3 to 2000.1. The authors (López and Sanchez, 2008) assumed that private autonomous spending depends on income (as a proxy for profits), credit availability, which they proxy with M2, and the share of wages in the value added (ω) which they assume depends on the degree of protection z and on the real exchange rate Θ. The trade balance T depends on domestic and external output, the real exchange rate and the degree of liberalization. The budget deficit is a policy variable depending on government expenditure and on GDP.

Accordingly, the estimated model was specified as:

$$Y = \frac{\Lambda(\omega(z, \Theta), Y, M2) + T(Y, Y^*, \Theta, z) + B(G, Y)}{1 - \omega(z, \Theta)}$$  

(5)

The authors include GDP (y), in constant pesos; the real exchange rate index (Θ); an index of the wage share w, government expenditure (g) in constant pesos; the US GDP (y*) in constant dollars; m2 in constant pesos and the average import tariff index z; all variables in logarithms except for the wage share. They found one cointegration vector, which they took as the long-run equilibrium relation for GDP and which can be expressed as:
\[ y = 1.67y^* + 0.0009g + 0.066z + 0.005m2 + 0.0004w - 0.093\Theta \quad (6) \]

The results from the econometric estimate suggest that liberalization of the domestic market reducing tariffs and import permits (z) had unfavorable effects on demand and output.

I discuss below the association found between protection and GDP. Before that, however, I point out two other quite unconventional and important results following from estimated equation (6). On the one hand, the wage share has a positive effect on demand and output. This is mostly the consequence of the relatively high consumption propensity of workers, such that a shift from profits to wages expands demand and output. On the other hand, the real exchange rate Θ is negatively associated with GDP. The reason is that a higher exchange rate entails a lower share of wages in GDP, and a higher degree of indebtedness for firms with debt in foreign currency. The former depresses consumption demand, and the latter depresses investment demand.

On the other hand, I estimated a VAR for output at external equilibrium \( Y^X \). As arguments I included, besides \( Y^X \), the following variables: US GDP, the real exchange rate index (Θ); and the average import tariff index z; all variables in logarithms. I included also the investment ratio \( \varsigma \) and the share of non-oil exports in total exports \( \psi \). With a statistically well-specified VAR model,

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10 See for example López, Sánchez and Spanos (2011), and Caballero and López (2011).

11 See Ibarra and Blecker (2014) for a justification for the inclusion of the two latter variables.
estimated for the period 1980.1-2004.4, with quarterly data I could also estimate a long-run cointegration vector, which can be expressed as:

\[ y^x = 3.34y^* + 0.76\theta + 27z + 14\zeta - 13\psi \]  

(7)

As can be seen, trade protection (the \( z \) index) has a positive sign, meaning that in Mexico’s experience, opening up the previously protected market (reduction of \( z \)), even though favorable for exports, stimulated even more imports\(^{12}\).

In sum, trade liberalization had a negative impact on both effective output and on output at external equilibrium. How can we explain these results? There were surely many causes involved, and I single out the most important below.

The first cause has to do with the type of the new exports that became prominent in Mexico as a consequence of trade liberalization. In the past the country had two main exporting sectors. One comprised industries that due to certain specific advantages could compete abroad even though they had to pay for some of their inputs at prices well above the international ones. The second sector, located mostly in the Northern part of the country, the so-called maquila (in-bond) industry, was a tightly regulated sector which had been created with the exclusive purpose of exporting to the US under special advantages from

\(^{12}\) The 3.34 value of the parameter associated with foreign output \( y^* \) may appear incredibly high. Note however that this parameter does not pertain to effective output \( y \), but to output at external equilibrium \( y^* \). In equation (7) the parameter for the former is estimated at 1.67. Besides, it should be taken into account that US GDP is several times larger than Mexico’s GDP so that a small growth of US imports implies a very large rise in potential demand for Mexico’s exports.
that country, but could not sell in the Mexican market. Since in such sector firms were allowed to purchase inputs (predominantly of US origin) at international prices their average import coefficient was much higher than for the first one, reaching in many cases above 90% of the gross value of production. Due to this reason, and due also to high productivity of the workforce coupled with low wages, the share of value added in the maquila industry was also considerably low.

Now, when trade liberalization took place, most new exporting firms came to resemble this second sector’s. Accordingly, even though the average import coefficient of maquila exports remained more or less constant at about 78%, it rose dramatically for non-maquila exports: between 1983 and 1994 it went from a bit less than 10% to over 60% (Vazquez Tercero, 2000)\textsuperscript{13}.

However, with trade liberalization not only export industries came to rely increasingly on imported inputs. The coefficient rose too in the whole manufacturing sector, including its segment selling to the domestic market. Besides, final demand of imports also rose.

All in all, trade liberalization brought about a drastic reconfiguration of this sector that can be briefly explained as follows.

For firms using imported inputs, and for final users of those goods, their price fall ensuing with trade liberalization that was a boon. In the case of the former profit margins could rise even if firms reduced selling prices, and in the case of the latter their purchasing power rose and their consumption could

\textsuperscript{13} See also, for more in-depth analysis using Mexico’s input-output matrix, Aroche and Marquez (2012), Cardero and Aroche (2008), Ruiz Nápoles (2001 and 2007).
increase. Thus for many domestic firms lower prices cum higher profitability stimulated output and sales, and in many cases encouraged exports.

But countless other firms did not benefit from this price fall, either because they did not use or used only few imported inputs, or because due to the pressure of foreign competition they had to lower prices significantly even though their production costs fell but little, or because demand for their output had fallen. In either case part of their previous sales were siphoned off in favor of foreign suppliers, they had to curtail output, and some of their machinery and equipment suddenly became totally non-profitable and uncompetitive and was scrapped before completion of their expected lifetime, which led to reduction of payroll.

Now, curtailment in production, employment and payroll in firms and sectors negatively affected from foreign competition induced a demand fall to the rest of the economy. Whether this fall was or was not offset by the rise in output and demand induced by the rapidly developing exporting sector is hard to tell, because there was an additional factor constraining aggregate demand: the shift against wages in the distribution of income brought about by the industrial reconfiguration (see equation 3). Les us briefly consider this point.

Between 1984 and 1990 the wage-share in manufacturing fell about 3 percentage points, i.e. from about 32% to about 29% (Samaniego, 2014). Since these were precisely the years when trade liberalization intensified, it is tempting to conjecture that the two phenomena were related. How could that have been? To get an answer let us consider again equation (2):

\[ \omega = \omega(\lambda, j, \chi), \quad \omega(\lambda) < 0, \quad \omega(j) < 0, \quad \omega(\chi) > 0 \]
Now, we can assume that in those years variables $\lambda$, the average profit margin, and $j$, the ratio of aggregate cost of materials to the wage bill, both fell. This is a sensible guess because they are both positively associated with the real exchange rate, and with the rate of protection. The decline in the latter two variables in those years diminished the domestic price of imported goods, which intensified the pressure of competition of imports forcing firms to reduce profit margins, and decreased the average price of inputs and of the ratio of material costs to labor costs $j$.

Since both the profit margin and the ratio of material costs to labor costs probably fell due to trade liberalization, we may conjecture that the drop in the wage share was mainly caused by a change of composition of the industry. Why could have this been the case? I would surmise that this came about because benefits from liberalization were the greater for firms or sectors for which the ratio of material costs to labor costs were the highest, which are also normally those firms of sectors where the wage share was the lowest. Thus, a change in the composition of output in favor of those firms or sectors probably took place, which may have caused a fall in the average wage share in manufacturing as a whole, and thus may have constrained demand. As previously anticipated, contrary to expectations relying on the Stolper-Samuelson hypothesis, liberalization in Mexico probably contributed to a decline in the wage share.

I will add one final remark about the two previously shown econometric estimates. It is important to stress that these estimates refer to the long-run equilibrium relation between output, or output at external equilibrium, and their determinants in the right side of (6) and (7) respectively. I emphasize this latter
point because supporters of trade liberalization sometimes accept that it may bring about a decline in output, or a larger rise in imports than in exports, due to some less efficient domestic firms being unable to withstand foreign competition. But, so the argument goes, that fall will be short-lived. Expansion of efficient industries will sooner or later drag with them domestic and aggregate demand, employ more efficiently and which greater productivity the resources released from less capable firms, and stimulate new and more productive investment, thus contributing also to lifting the external constraint.

However, this was not the case in Mexico’s experience, and I suggest the following rationalization for this outcome. Demand and output fell as a result of trade liberalization, and thus the degree of utilization of the productive capacity fell. But due precisely to this, firms were not stimulated to enlarge their productive capacity with new investments and no recovery, least of all a strong one, took place. In other words, the short-term impact of trade liberalization carried over to the long run.

Aggregate demand failure was one of the causes underlying another important phenomenon we observe in Mexico’s experience. The massive rise in imported inputs for both the new exporting industries and for those industries supplying the domestic market surely opened up profitable investment opportunities for their domestic production. It is therefore remarkable that the import coefficient has remained stubbornly high, which suggests that those opportunities do not appear to have attracted potential investors. This contrasts dramatically with Mexico’s pre-liberalization experience, and especially with what was fittingly called the import-substituting stage of its industrial
development process. It contrasts also with other countries’ experiences, and most notably with what took place in East Asian countries.

As said, the failure of the Mexican industry to defend, or recapture, its domestic market was partly caused by the collapse of aggregate demand, since this discouraged investment. But another very important reason was the following: both in Mexico’s past as well as in the East Asian countries’ experience, a developmental state ensured that demand collapses did not occur, even as it put in place a comprehensive industrial policy that fostered import substitution. However, nowadays in Mexico the very notion of industrial policy has been dismissed. So much so that the Trade and Industry Minister of the period when trade liberalization reached its climax is reputed to have uttered: “The best industrial policy is no industrial policy at all”\textsuperscript{14}.

In sum, trade liberalization, on the one hand contributed to stimulating exports and thus was one factor underpinning the large rise in Mexico’s share of world manufacturing exports. But on the other hand, it had a negative impact on output at external equilibrium $Y^X$, and on effective output $Y$. Therefore, the contradiction mentioned at the beginning of the paper, namely strong manufacturing export growth cum poor manufacturing and overall economic performance, owed a lot to the way the strategy of trade liberalization was implemented in the country.

As previously suggested, trade liberalization was not the only factor behind this unfortunate result. Currency appreciation was also a key factor in this development (see graph 1) because it reduced the domestic price of

\textsuperscript{14} A third factor that has conspired against substitution of imported inputs has to do with recurrent overvaluation of the domestic currency (see below).
imports thus exposing national firms to excessive competitive pressure even as it penalized exports\textsuperscript{15}. Currency appreciation, in turn, was a direct consequence of financial liberalization, as will be shown shortly.

**Financial liberalization and financial exuberance**

Financial deregulation and liberalization was the second important reform that came along with the introduction of the new strategy in Mexico. In the following I will analyze its macroeconomic implications, but previously I will briefly describe its main characteristics and then recollect an important and pioneering view on this issue that has been almost completely forgotten.

During the whole postwar period and until the beginning of the 1980s Mexico’s financial sector was tightly regulated, the central bank set the deposit interest rates that financial institutions were allowed to pay to depositors, and credit was allocated according to a complex system of reserve coefficients and preferential lending rates for specific sectors or activities. In the mid- and late 1980s deregulation, re-privatization and liberalization of the financial system took place (Mantey, 2010; Tello, 2007). By the end of the 1980s, non-residents were allowed to invest in domestic financial assets with practically no limitation. Finally, the banking system, which had been nationalized in the early 1980s started to be re-privatized in 1990 and banks were permitted to borrow abroad.

\textsuperscript{15} Note, however, that while a higher exchange rate would have favored both exports and import substitution, it but would have also depressed aggregate demand and output (see equation 6). Certainly a competitive exchange rate, which is indispensable in any sustainable growth strategy, is not a cure-all measure.
Many decades before the events we are now discussing Raul Prebisch, the founding father of the Latin American Structuralist School of economics and the leading figure of the Economic Commission for Latin America and the Caribbean (ECLAC) during its early stages, had anticipated the dangers of deregulated capital account for what he called the “peripheral economies”. On the basis of his experience on the Central Bank in his native Argentina during the 1930s, he had come to the conclusion that business cycles in the “center” and those in the “periphery” are entirely different. The reason is easy to understand: in the latter the external sector has a much greater influence on the whole economy than in the former. Owing to this, peripheral economies lack the degree of self-sufficiency that would allow the upswing to endogenously engender the conditions for the downswing and conversely. Accordingly in them the cycle is mostly induced, rather than autonomous.\(^{16}\)

In this context, he argued that either capital abundance in advanced economies, or improved expectations in any peripheral economy, or both, tend to bring huge capital inflows into the latter. Domestic banks become awash with liquid resources, therefore they ease lending requirements, credit swells and this brings about demand expansion. As is normal when domestic demand expands imports also grow, but under the prevailing conditions import growth is magnified because capital inflows cause currency appreciation so that imports become cheaper. Therefore, external imbalance develops and, since growth of demand and profitability per se does not ensure that new production capacities

\(^{16}\) See especially Prebisch (1939 and 1944). See also Perez and Vernengo (2012), and Mallorquín, 2006.
will be developed in the tradable goods sector, the imbalance tends to swell\textsuperscript{17}. Thus, financial fragility develops\textsuperscript{18}. More precisely, any event either in the central economies or in the peripheral one, that causes interruption of the capital inflows, will bring about a recession, and possibly even an economic collapse.

We will see now that Mexico’s experience follows though with some variants, the pattern anticipated by Prebisch. Before that, however, it may be useful to specify a very simple model to organize the discussion\textsuperscript{19}.

\begin{enumerate}
\item \( B = B(\Theta, Y) \); \( B_\Theta < 0, B_Y > 0 \)
\item \( F = F( Q, i)\); \( \forall \frac{B}{Y} < \psi^*, Q < Q^*; \ F_Q, F_i > 0 \)
\item \( F \ll 0, \forall \frac{B}{Y} > \psi^* \) or \( Q > Q^* \)
\item \( q = q(C, F, Y); \ q_C, q_F, q_Y > 0 \)
\item \( Q = \frac{q}{\Theta} \)
\item \( Y = Y(\Theta, C, Q); \ Y_\Theta < 0, Y_C, Y_Q > 0 \)
\item \( C = C(Y, i, \Sigma); \ C_Y > 0, C_i < 0 \)
\end{enumerate}

\textsuperscript{17} In any case, Prebisch was considering the case of an agrarian economy.

\textsuperscript{18} Prebisch did not use the term “financial fragility”, which is usually associated to the name of Minsky (1982, 1986).

\textsuperscript{19} This model is somewhat similar to the one proposed by López, Moreno-Brid and Puchet (2006). I have omitted all variables of secondary importance, and \( B_\Theta \) denotes the partial derivative of \( B \) with respect to \( \Theta \), etc.
Equation (I) specifies the current account deficit $B$, which depends on the real exchange rate $\Theta$, and the level of output $Y$.

Equations (IIa) and (IIb) show how capital flows $F$ ($F$ are dollar denominated and net from remittances abroad) are determined under two alternative regimes. In regime (a) capital flows respond on the one hand to the difference $i$ between the domestic and the foreign interest rates (where the latter is assumed constant). On the other hand, they depend on an index of the dollar value of domestic assets $Q$; such that capital gains brought about for example by greater demand for those assets, stimulate capital inflows. However, this regime is only valid for as long as the share of the current account deficit over GDP, a share denoted here as $\psi$ and called “external financial fragility coefficient”, is below a certain value $\psi^*$, and when the price of domestic assets is below their international price $Q^*$. A new regime (b) comes into force, when $\psi$ exceeds $\psi^*$, or when the dollar value of domestic assets exceeds the price of similar assets in international markets $Q^*$. When regime (b) rules capital outflows at a very fast rate take place. Both the $Q^*$ value and the $\psi^*$ value (and especially the latter one) are determined by what Keynes called “conventions”. In particular, the $\psi$ value depends on the value of $\psi$ that foreign exchange dealers consider adequate, or safe, for a given country; thus, $\psi^*$ is not a target set by the economic authorities or an “objective” value, and it can vary endogenously. As Keynes emphasized, conventions need not be univocally related to fundamentals, and they can abruptly change.
Equation (III) states that the price (in pesos) of domestic assets $q$ depends on credit availability, on capital inflows, and on GDP, since the latter determines private income. According to (IV) the index of the dollar value of domestic assets $Q$ depends on its peso value, and has an inverse association with the real exchange rate $\Theta$.

In equation (V) output $Y$ depends on the dollar value of domestic assets $Q$, which influences consumption of the wealthy strata of the population, on credit availability $C$, and on the real exchange rate, which is supposed to have a negative impact on GDP, as per estimated equation (6) above.

In equation (VI) I assume that the only factors affecting domestic credit $C$ are aggregate demand $Y$, the interest rate (differential) $I$, and what following Minsky (1982, 1986) may be called “the state of euphoria”, denoted by $\Sigma$. Bank lending rises when GDP growth brings about higher credit demand from the public, and it declines when the interest rate rises and credit demand falls. But if a “state of euphoria” develops, banks will intensify lending.

Finally, the dynamics of the model is made explicit in equations (VII) and (VIII), where I take $R$ and $\Theta$ as the state variables. Reserves grow when (net) capital inflows $F$ exceed the current account balance $B$. The currency tends to appreciate (the value of $\Theta$ falls) whenever the ratio of reserves to GDP rises and when the interest rate rises.

\footnote{In Prebisch’s story bank lending is also stimulated when international reserves rise swells the monetary base. Mexico’s experience was different because the government sterilized a large parte of capital inflows. This is why international reserves $R$ are not included as an argument in the $C$ function. I owe this observation to Guadalupe Mántey.}
It can be seen that any economy endowed with properties like those underpinning the previously specified model may run into trouble, especially if financial regulation is lax such that banks are not prevented from getting into a “state of euphoria”. Indeed, assume that the interest rate exceeds the international one, so that in equation (IIa) has a positive value, and suppose also that the dollar value of domestic assets is below its international value \(Q^*\). This will attract capital inflows, so that reserves grow and the currency appreciates. Currency appreciation stimulates demand, and private incomes grow. Furthermore, imports swell and the current account balance deteriorates; but provided capital inflows exceed the current account balance international reserves keep on growing. Moreover, currency appreciation brings about capital gains that attract more capital inflows, and the cycle recommences. The upswing proceeds until the upper values of either \(\psi^*\) or \(Q^*\) are reached; then capital inflows stop, and a downward spiral, which may well turn into a full-fledged crisis, starts to develop\(^{21}\).

We will see now that an analogous process developed in Mexico. The main features of its evolution under financial liberalization and deregulation, and its most relevant macroeconomic consequences are displayed in Graph 2, with panels A through E\(^{22}\).

\(^{21}\) This type of development is beautifully analyzed in French-Davis (2010), and in Ocampo (2011). No wonder, the two authors have been prominent members of ECLAC, an institution that fortunately still carries the seal of Raúl Prebisch.

\(^{22}\) In this graph all variables have been adjusted to match mean and ranges. Therefore the vertical axes have no precise meaning and have been omitted.
The process of liberalization and deregulation in Mexico coincided with three important circumstances abroad: i) the recession of the US economy in the early 1990s; ii) the regulatory changes introduced by the US Securities Exchange Commission that enabled US investment funds to hold foreign securities in their portfolios, and the recognition of Mexico’s stock market as an offshore designated securities market; and iii) a falling trend in international interest rates (Ros and Lustig, 1999).

At such a time the interest rate in Mexico was higher than the external one, and the price of real and financial domestic assets was lower than similar assets in international markets. In these circumstances, capital market opening pulled towards the country an extremely large amount of international financial resources, amounting to 101 935 million dollars between 1989 and 1994 (see equation IIa and Graph 3 panel D).
This huge inflow brought about a series of consequences, both in financial and in real variables. Let us first look at how financial variables, always the fastest to respond, played out.

The initial consequence was a rise in the amount of international reserves (equation VII and panel D), in the price of domestic assets (equation III and panel B) and in personal wealth. In turn, the growth in international reserves led to an increase in the ratio of said reserves-to-product. To the extent that this ratio is an important indicator used by currency market brokers to judge a country’s international solvency, a rise in the ratio stimulated further capital inflows and led to an appreciation of the currency (equations IIa and VIII and panel A). Unfortunately, currency appreciation coincided with trade liberalization, so that domestic producers had to suffer the double effect of losing former administrative protection from foreign competitors even as they also lost most of the exchange rate protection they had benefited from before.

The real effects on the domestic economy were expansionary. One reason was the increase in the price of both assets and personal wealth (panel B), leading to a rise in investment and possibly also in consumption by the country’s wealthy segments of the population (equation V). Another reason was the greater willingness of the Central Bank and commercial banks to grant credit\textsuperscript{23} as a result of the increased demand, the deregulation of Mexican banking activities and last, though not least, the development of a “state of euphoria” (Cruz, 2004, 2006), clearly seen in panel C. A final reason was the

\textsuperscript{23} From 1989 to 1994, domestic banking credit climbed from 27 per cent of GDP to 52 per cent. Concurrently, the share of households in total outstanding loans rose from 14 percent to 55 percent.
appreciation of the Mexican peso (panel A), which reduced the debt ratio of companies holding dollar-denominated debt, and so possibly encouraged private investment (equation V).

Thus, all components of domestic demand grew. However, this did not lead to outstanding growth or fast capital accumulation: the growth rate of output was not very significant and, in any event, was well below the growth in domestic demand. Part of the reason leading to this result, was the fact that a significant portion of the latter leaked abroad due to a rapid rate of increase in imports.

Another real effect with important financial implications was the increase in the current account deficit. A deficit normally appears during business upswings, but in this particular experience it went much beyond normal due to the huge rise in the import coefficient (equation I and panel E). Anyway, the increase in capital inflows more than compensated for the deterioration of the current account, so that international reserves, and the ratio of the latter to GDP, continued to increase (equation VII and panel D) with the impact, already alluded to, on both financial and real variables. Specifically, this situation reinforced the tendency of the peso to appreciate and the current account deficit of the balance of payments to increase (equation VIII and I and panel A and E).

The counterpart of the above was growing domestic and external financial fragility.

The development of internal financial fragility followed the pattern so well described by Minsky (1982, 1986). Firms (especially large firms) were taking more and more debt, stimulated by financial capital gains. But the speed of the
latter exceeded that of real profits because the positive profit components were not growing very fast\textsuperscript{24}. Thus, since profits were growing at a slower rate than new debt, the ratio of debt servicing to current profits and to real capital steadily grew. In parallel the ratio of debt to incomes of households was also increasing, due to greater willingness of banks to grant credit in a context where current household incomes were rising at moderate pace.

On the other hand, greater external financial fragility came about owing to current account deficit and external debt growth. At a micro level, big Mexican firms were more and more indebting themselves in foreign currency. Besides, banks also increased their exposure in foreign currency (panel E), given that domestic lending rates were nearly five times larger than interbank lending rates in eurodollar markets: between the first quarterly 1990 and the last quarterly 1994 their exposure rose about 10 times.

Last, but not least, the aforementioned cycle had its own feedback loop. The reason for this was already mentioned: the rise in asset prices brought capital gains to buyers of those assets. These gains then attracted new foreign and domestic purchases of participating assets, further pushing up their price. In one sense we could say that as this process went on, it apparently created unstoppable growth of a financial pyramid throughout the entire economy (equations III, IV, VIII).

\textsuperscript{24} Let us recall here Kalecki’s formulation (equation 1 above) in which profits are equal to the sum of capitalist expenditure in investment and consumption, plus the budget deficit, plus the foreign-trade surplus.
We know, however, that sooner or later pyramids collapse, unfailingly buckling at their weakest point. In this case, the weakest point was the external imbalance.

Throughout this entire process we saw an increasingly large rise in the ratio of the current balance deficit-to-GDP. As mentioned, this is an indicator whose upper-limit (or acceptable) value lacks precision and, in any event, greatly depends on the international agencies’ practices and evaluations of whichever economy they may be analyzing. It is also true that during the period we are reviewing, Mexico was implementing precisely those policies recommended by international financial institutions, and exports and the whole economy were growing. All this contributed to raise the “acceptable” value of the current balance deficit-to-GDP ratio (equation IIa).

Expectations of domestic entrepreneurs remained optimistic until the outbreak of the crisis at the end of 1994 (Cruz, 2004, 2006). However, at the beginning of that year the US FED had launched a change in US monetary policy, which initiated an upward trend in international interest rates. This brought about a sudden decline in the flow of foreign capital to Mexico (equation IIb). Domestic banks faced difficulties to sustain their credit lines in foreign banks; non-financial enterprises were unable to roll over their foreign loans; and the government was compelled to substitute dollar denominated securities for the peso denominated bonds hitherto held by foreign institutional investors, and to shorten the terms to maturity.

The capital account balance and the reserve position deteriorated in the course of 1994 and even though the former remained positive, and reserves remained at a relatively high level for some months (panel D), in the course of
that year misgivings about a possible incapacity of Mexico to service its debt began to appear. Furthermore, dramatic political events also occurred: the Zapatista uprising in January of 1994, the assassinations in May of the presidential candidate of the ruling party, and two months later of its secretary general. Bonanza turned into a crisis.

The evolution of the crisis was analogous to the boom, even though the former played out much faster and with greater turbulence. Capital inflow rapidly reversed course as investors realized that the deterioration in the current account had gone too far and the “financial fragility coefficient” $\psi$ had (greatly) surpassed its acceptable limit $\psi^*$. Consequently, the peso’s depreciation was substantial: between December 21, 1994 and January 3, 1995, the nominal exchange rate plummeted from 4 pesos to 5.5 pesos per dollar (equations IIb, VII and VIII). The impact of the devaluation on prices, on real wages, on expectations and on the debt ratio of companies with dollar-denominated loans, were such that private investment and consumption plunged in just a few weeks (equation V). Making matters worse, the government’s decision to cut its expenditures in order to correct the foreign-trade deficit, and to drastically raising the interest rate, added to and worsened the drop in domestic demand. The result was a GNP contraction of 6.5% in 1995.

Since banks were in a situation of financial fragility, both because they had borrowed heavily abroad (panel E) and because they had lent to firms indebted in dollars, their situation became dramatic and the government was forced to bail them out; later, as a means to re-capitalize those institutions, it passed a law that enabled foreign investors to hold up to 100 per cent of domestic banks equity, without limiting their share in the local market. The
market share of foreign capital controlled banks increased from 1 per cent in 1994, to 40 per cent in 1999, 53 per cent in 2000, and 90 per cent in 2004, the highest ratio among OECD countries (Macedo 2000, Correa and Maya 2002, Berumen 2004).25

Final Remarks

History has shown that developing countries integrating more forcefully in the international economy can reap important benefits. But history also shows that results from greater integration can be mediocre, and can even bring about crisis. Mexico’s experience illustrates how the latter may occur. Probably East Asian countries’ achievements stimulated Mexican economic authorities to embark on their internalization spree, but if so they misunderstood that experience. Instead of carefully graduating the trade opening process, selecting branches and activities to benefit from it and granting temporary support and protection to those that had to reconstruct themselves, they opened the domestic market indiscriminately to foreign competition without taking any other measure. Instead of devising and implementing measures and policies to encourage new investments towards priority sectors and branches, they failed to devise an adequate industrial strategy.

One can probably fancy that a different approach to trade opening could have put Mexico into a renewed development path, with both exports and selective import substitution lifting the external barrier, allowing expansionary policies geared to ensure fast growth of demand compatible with growth of capacity and with external balance. It is difficult to imagine, however, that any policy could be successful with the capital account totally open and the financial

25 It is as well to recall here Keynes’s dictum “Let finance be primarily national”.

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sector completely deregulated. Under these conditions, speculative capital movements set the price of the currency, domestic banks can easily embark on a lending spree, and the current account swells thus setting the stage for a foreign exchange crisis.

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