

## *Effective Demand and Income Distribution in the Recent Evolution of the Mexican Economy*

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### **Preliminary note**

This article, which we finished before his much-lamented, premature passing, was the last written by our dear friend and colleague Emilio Caballero.

May serve as a modest homage to his memory.

J.L.G.

### **Abstract**

During the past three decades Mexico's economic performance has been disappointing, and the objective of this paper is to study Mexico's economic evolution empirically, from the mid-1980s onwards, basing the analysis on the principle of effective demand as a theoretical framework. The authors use modern econometric procedures to test hypotheses regarding the role macroeconomic policies —especially fiscal and monetary policies— and income distribution have in shaping output and employment. Our study shows that Mexico's poor growth performance was mainly due to restrictive fiscal and monetary policy, coupled with the deterioration of the wage share. While capital accumulation and supply conditions evolved at a rather slow pace, the growth of effective demand was also slow, such that demand, not supply, was the real constraint in the period under consideration.

**Key words:** effective demand, wage shares, monetary policy, fiscal policy, model evaluation.

**JEL Classification:** C52, E12, E25, E52, E63.

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## INTRODUCTION

During the past three decades Mexico's per capita output has stagnated, and its per-capita-income ranking among countries fell several places (Tello, 2007; Moreno-Brid and Ros, 2009; Ros, 2008). The economy's dismal evolution is associated with recurrent and severe crises. The first crisis took place at the end of 1982 and the second, which erupted in 1986, led the government to opt resolutely for an entirely new development approach. But macroeconomic performance did not improve. After a brief episode of mild growth acceleration, the country suffered a deep crisis in the mid-nineties, even as the North American Free Trade Agreement (NAFTA) treaty was launched. A new short-lived recovery followed, but economic growth stopped almost completely in 2001, resuming at a modest pace after 2003. When the world crisis erupted, Mexico's economy was the most affected within Latin America, with a drop in output of about 6.5% in 2009 (Ros, 2010).

Mexico's poor economic performance has sparked a wide-ranging debate, and the objective of this paper is to contribute to this debate by studying the country's development empirically. We shall draw on the principle of effective demand as a theoretical framework, and make use of modern econometric procedures to test some hypotheses, regarding particularly the role of fiscal and monetary policies, and the role of income distribution in shaping output and employment.

Understanding the significance of the monetary situation and policies is obviously important in studying Mexico's recent development. The country's financial regulations and institutions have changed dramatically, and deregulation has proceeded rapidly. Yet this has taken place concurrently with a conservative monetary policy, conducted by an independent central bank (Banco de México) committed to inflation targeting.

Fiscal policy also deserves greater attention. Mexico's tax load and government expenditure are very low as a share of Gross Domestic Product (GDP), ranking much below the Latin American average. As noted, economic authorities have followed a conservative fiscal policy, which may have had an effect on demand and output levels.

Finally, although income distribution is itself an important subject, it also has macroeconomic implications. In Mexico, income distribution is extremely uneven, with a Gini coefficient that has declined slightly but still remains at

around .50. Moreover, the wage share has fallen persistently since the early 1980s, and is currently (since the start of 2013) about 30 percent below what it was in 1981. It is important to study the effect of this fall on the evolution of effective demand.

### SOME BASIC FACTS

Beginning in the 1980's, Mexico underwent an important process of structural reform. Specifically, this involved reducing the State's direct economic intervention as well as its influence on aggregate demand, coupled with an almost total opening of the trade and finance sectors. Although Mexico has had governments headed by two different political parties during these years, both parties share a common vision in which growth depends essentially on the benefits the country can achieve from becoming fully integrated into the world economy.

Arguably, Mexico's openness to international trade has brought positive results. In particular, the country's exports—especially those from manufacturing—have shown outstanding performance. Between 1985 and 2010 Mexico's share of world manufacturing exports rose 2.5 times (it is currently about 2%), a performance second only to Chile's among Latin American semi-industrialized countries. Notably, in 2010 Mexico's manufacturing exports were 25 times greater than Chile's, 10.1 times greater than Argentina's, and 3.2 times greater than Brazil's. Yet, this exceptional export achievement was unaccompanied by an overall sufficiently dynamic output in manufacturing. Indeed, between 1985 and 2010, Mexico's share of world manufacturing output fell about 40% (it is currently below 1%).

As in many parts of the world, the particular strategy underlying Mexico's macroeconomic policies has led to a shift in focus, as monetary policy predominates to the detriment of fiscal policy. Monetary policy was successful in attaining its anti-inflation objective: inflation dropped from an annual average rate of almost 20% between 1998 and 2000 to a bit over 4% between 2001 and 2011. Nevertheless, economic authorities reached this goal not by controlling private demand, which, in any event, tended to grow slowly, but rather by reducing factor and input costs that set the baseline on which companies establish their prices. The tendency to overvalue the peso furthers this purpose since it reduces the price of imported inputs, *i.e.*, a significant part of production costs.

In the context of a floating exchange rate, such as the one that exists in Mexico since 1994, the government can influence the value of the peso indirectly by

pushing for an increase in the interest rate and sustaining it above the rate in the United States (U.S.). Due to the differential between these rates, Mexico attracts capital inflows in search of greater profit. The inflow of foreign direct investment complemented the entry of foreign exchange to Mexico, thus encouraging a tendency for the peso to appreciate by increasing the supply of dollars in the country.

From 1988 to 2011, interest rates in Mexico were consistently higher than in the United States; during 2000 to 2011 alone, there was an average difference of 5.4 percentage points.<sup>1</sup> Unsurprisingly, the Bank of Mexico's international reserves grew persistently throughout this period, from approximately 6 billion dollars in 1998, to a little over 41 billion by 2001 and close to 160 billion dollars in 2012.

The peso's appreciation, however, implies a loss of competitiveness of national production, leading to an acceleration in imports of goods, and a tendency of the trade deficit to increase. Thus, for example, from 2003 to 2011, the share of imports in the GDP rose from 26% to 34%; whereas the trade deficit, excluding oil exports, grew from 3.5% of the GDP in 2001 to 5% in 2011, in a context of a downturn in economic growth during this entire period.

The current account deficit can reach a point where it is untenable: if it grows beyond a certain limit, speculators withdraw capital from the country making it impossible to finance, which leads to a drastic devaluation of the peso, an acceleration in inflation and a slowdown in economic activity.<sup>2</sup> This may be the main inherent contradiction of an inflation control policy that is based on sustaining high interest rates.

In order to address this contradiction, Mexico followed a restrictive fiscal policy, and achieved a primary fiscal surplus starting in the mid-1980s up to the onset of the crisis in 2008, in an effort to moderate both the growth of demand and the need to import goods. Thus, the objective of stabilization was privileged to the detriment of economic growth and employment (Caballero and López, 2011).

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<sup>1</sup> From 1988 to 2011, the average difference between the interest rate in Mexico and the rate in the United States reached 15 percentage points.

<sup>2</sup> For example, this is precisely what occurred at the end of 1994 and the beginning of 1995 as a result of the increase in the current account deficit to 7% of the GDP and the devaluation of the peso from 3.9 pesos per dollar (in December 1994) to 7.6 pesos per dollar (in March 1995), in an episode known in Mexico as the "December Mistake" (*error de diciembre*).

The height of the federal government's restrictive fiscal policy came in 2006 when the Federal Budget and Fiscal Responsibility Law (*Ley Federal de Presupuesto y Responsabilidad Hacendaria*) was approved, banning the public deficit in principle. The law was designed not only to moderate growth of internal demand but also to impede indebtedness by the public sector to finance the deficit. The government holds that the deficit displaces private spending through an increase in the interest rate, whereas the intention is exactly the opposite, *i.e.*, the public sector should withdraw to give way to an increasingly important role for the private sector in the economy. If the public deficit were to be financed by the printing of currency, then, according to the predominant, traditional paradigm, it would create inflation.

As previously noted, in the period under study, economic growth in Mexico has been slow. In turn, slow economic growth has implied that employment has also grown slowly. Thus, large parts of the working-age population have no alternative other than to migrate to the U.S., or seek even a precarious source of revenue within the country's borders. Migration to the U.S. seems to have tapered off, due to the greater control of the U.S. border as well as other factors, but, until recently, about half a million Mexicans crossed the Northern border annually, facing extremely harsh conditions. In any event, this did not stop the growth of informal employment, which currently can absorb from 40 to 60 percent of the Economically Active Population.<sup>3</sup> Further, the increase of informal employment negatively affects labor productivity.

Poor growth and lack of employment opportunities prevent important reductions of poverty and any sustained improvement in income distribution, which remains extremely unequal (Cortés, 2008). Income inequality in Mexico has, to a large extent, resulted from slow employment growth and limited growth of the minimum wage. The latter dropped to almost a third of its real value between 1981 and 2001, stagnated between 2001 and 2006, and continued its descent during 2007-2012. Real wages in the manufacturing sector fell between 2001 and 2012, reversing the previous recovery between 1995 and 2000. Furthermore, a sustained and significant reduction in the share of wages in manufacturing value added occurred during 1995-2012, which probably helped to increase company profit margins. Lastly, we observe a continued increase in poverty in our country (see Tables 1 and 2).

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<sup>3</sup> The figures vary according to the source. Fujii and Cervantes (2010) put the figure at 40%, but recent Instituto Nacional de Estadística y Geografía (INEGI) figures estimate 60 percent.

In contrast, policies that set a relatively high interest rate —above the inflation rate— together with a nominal exchange rate without significant fluctuations, resulted in an increase in stock market investment and in high rates of financial return. The rise in the Mexican Stock Exchange Price and Quotations Index, which is closely tied to reference rates, stood at 15% from 1995 to 2000, climbed to 33% during 2001-2006 and fell to 4.6% between 2007 and 2011; this last decline was a consequence of the one-year drop in 2008, due to the international financial crisis (see Table 1).

TABLE 1  
*Indicators of income distribution in Mexico:  
average annual growth rates*

<i>Category</i>	<i>1995-2000</i>	<i>2001-2006</i>	<i>2007-2012</i>
Real minimum wage	-4.5	0.22	-0.07
Total manufacturing wage	4.06	-3.45	-2.38
Share of wages in income	-0.02	-4.97	-1.44
Mexican Stock Exchange Price and Quotations Index	15.26	32.93	4.65

Sources: Comisión Nacional de Salarios Mínimos and INEGI.

TABLE 2  
*Evolution of poverty in Mexico:  
average annual growth rates*

<i>Category</i>	<i>1992-2000</i>	<i>2002-2010</i>
Food poverty	3.10	0.65
Earning capacity poverty	2.42	1.30
Asset poverty	1.68	1.71

Source: estimates developed by the Consejo Nacional de Evaluación de la Política de Desarrollo Social (CONEVAL).

We now turn to one final aspect of Mexico's recent development: the evolution of productive capacities and their degree of utilization. In the period considered in this study, total investment grew at a relatively modest pace, more or less in line with GDP. However, capacity utilization was persistently low. In the manufacturing sector, the only one for which we have statistics, managers reported a degree of utilization ranging between 77 and 83 percent. Further, this figure does not consider that the number of plant shifts was in most cases below the technically feasible maximum.

In sum, Mexico's economic strategy and policy over the past 30 years achieved relative price stability, coupled with unstable growth of economic activity and, for the poorest segments of the population, the deterioration of their wellbeing and quality of life. In particular, over the last decade, per-capita GDP growth rates were disappointing, generally falling below the rates attained over the same period in other countries with similar levels of development, such as Argentina, Brazil and Chile. Table 3 below compares the growth rates in these countries, during the periods of presidential terms of office in Mexico.

TABLE 3  
*Per capita GDP average annual growth rate, 1982-2011*  
(percentages)

	<i>De la Madrid</i> 1982-1988	<i>Salinas</i> 1989-1994	<i>Zedillo</i> 1995-2000	<i>Fox</i> 2001-2006	<i>Calderón</i> 2007-2011
Mexico	-0.95	1.95	3.78	1.63	-0.25
Argentina	-1.06	5.23	1.40	3.66	5.43
Brazil	2.78	-0.33	0.50	2.07	2.82
Chile	5.15	5.38	2.75	3.29	2.58

Source: World Bank Group. *Databank, World Development Indicators & Global Development. Finance.* GDP per capita (constant US\$ 2000).

### THEORETICAL STARTING POINT

In this section, we carry out an econometric study of Mexico's recent evolution. For modeling purposes, the main variable of interest here is Mexico's GDP, and we want to study if and how fiscal, monetary and distribution variables affect GDP. Since the basic theoretical assumption is that aggregate demand is the immediate determinant of output, we can begin our theoretical discussion with the demand equation. Let  $Y$  stand for output,  $C$  private consumption,  $I$  private investment, and  $J$  the trade balance (*i.e.* net exports), and  $G$  is government expenditure on goods and services.

$$Y = C + I + J + G \quad [1]$$

To specify the most basic factors determining the right-hand side variables, we assume the trade balance  $J$  depends on domestic output  $Y$ , on external output ( $Y^*$ ), and on the wage share ( $WS$ ). Usually, the argument in the trade balance equation is the real exchange rate rather than the wage share. However, we take

the latter because, under rather plausible assumptions, the real exchange rate depends on (and moves opposite to) the share of wages in value added for a given nominal exchange rate.<sup>4</sup>

Regarding private consumption and private investment, we assume they depend on income  $Y$ , on the share of wages in the value added  $WS$ , on credit availability or the degree of liquidity in the economy, ( $L$ ), on the interest rate ( $R$ ), and on taxes ( $TX$ ). The inclusion of the wage share as an argument in both private consumption and private investment is based on two notions. First, the consumption propensity of wages may be assumed to be higher than of profits. Second, since a rise of the wage share implies a fall in the profit margin, it may discourage private investment.

Finally, we include government spending ( $GS$ ) as a determinant of demand and output. It would have been interesting to disaggregate government primary spending according to its source of financing. However, the required figures are not available. Therefore, we can rewrite equation [1] as follows:

$$Y = C(WS, Y, R, TX, L) + I(WS, Y, R, TX, L) + J(Y, Y^*, WS) + GS \quad [2]$$

Simplifying again, the model can be specified as:

$$Y = Y(WS, Y^*, L, R, TX, GS) \quad [3]$$

## ECONOMETRIC MODELING

We follow here a “probabilistic” approach to econometrics (Spanos, 1999 and 2009; Juselius, 2006), because in our view all statistical inferences will be misleading unless the probability and the statistical assumptions of the estimated model are valid. This makes it essential to ensure the statistical adequacy of the model and the reliability of the inferences based on it. Accordingly, testing for misspecification plays a key role.

To analyze the hypotheses explored in this paper, we estimated a Vector Autoregression (VAR) specification and also used system-based cointegration

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<sup>4</sup> We define the real exchange rate  $\theta$  as  $\theta = \eta(p^*/p)$ , where  $\eta$  is the nominal exchange rate,  $p^*$  the index of foreign prices and  $p$  the index of domestic prices. In any short period, if the productivity of labor and the mark-up are given, a higher real exchange rate necessarily entails a lower real wage and a lower wage share.

methods (Johansen, 1988). Using a VAR model as the basis, we then estimated an Error Correction Model (ECM).

To guarantee substantive adequacy of the model, we must consider all the variables that are likely to affect GDP, as well as their interactions. Thus, we need a general specification, within which to nest the fiscal-policy, monetary and factor share variables. Unfortunately, however, the range of choice is limited because sufficient degrees of freedom must be saved to carry out the estimation and misspecification tests. Besides, lack of adequate information makes it necessary to use variables that are only imperfect proxies for the theoretical variables of interest.

We now explain how we deal with this latter point. First, we use U.S. GDP as a proxy for world output, because about 80 percent of Mexico's international trade is carried out with the U.S. Since we do not have adequate quarterly data for credit to the private sector, we shall use broad money M2 as a proxy. Further, we disaggregate taxes between Income Tax and Value Added Tax. Finally, since we have no quarterly figures for the wage share at a global scale, we use the wage share of the manufacturing sector as a proxy.

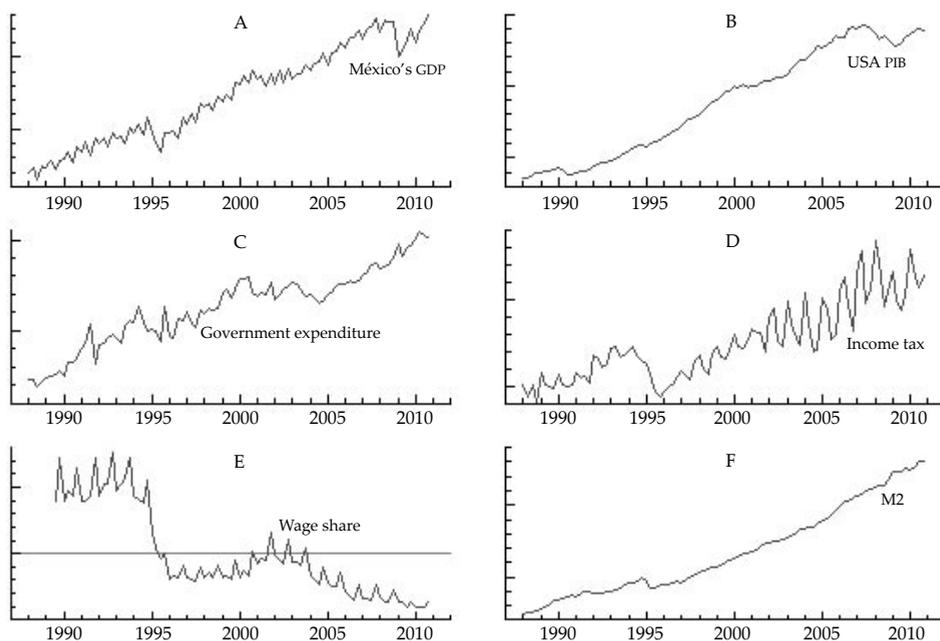
We begin the modeling exercise with a brief description of the data.<sup>5</sup> The sample is on a quarterly basis, and all nominal variables have been converted to real values using the GDP deflator. Graph 1 below plots each variable, where all variables are in logarithms except for the wage share.

Many long-run economic changes took place in the variables of the model, but here we call attention to only two of them. First, the wage share fell considerably (E panel) between 1995 and 1996. This episode coincides with large increases in the real exchange rate, and the wage share never recovers the level it attained before its fall. The second noteworthy change is the stall or fall in government expenditure that occurred between 1993 and 1997, and then again between 2000 and 2004. After that year, government expenditure grew in parallel with GDP. Furthermore, regarding the co-movement of the variables with GDP, a first important feature is the close synchronization of the behavior of Mexico's GDP and the U.S.'s GDP after 1994. A second feature is that the GDP cycle behaves in a manner similar to the wage-share and government primary expenditure (after 1995) cycles.

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<sup>5</sup> All variables come from INEGI (Mexico's Statistical Office) or Banco de México (Mexico's Central Bank).

GRAPH 1  
*Variables of the model*



Source: own elaboration.

From a statistical point of view, graphs of the variables suggest that all of them are non-stationary, *i.e.* they have a trending mean; also, their underlying density function seems to be non-normal.<sup>6</sup> Unit root analysis of the series (not shown here) suggests that all series used in the model have the same order of integration (all are  $I(1)$ ). Provided we have a well-specified model, we can test for cointegration via the Johansen procedure (Johansen, 1988).

We estimated a VAR with quarterly data for the period 1988.1 to 2010.4. We chose this period because of availability of information. But apart from this practical reason, this choice is useful because this was the period when the liberalization of the domestic market had been completed, the share of public investment on total investment had already fallen to about its present level, and the prevailing economic strategy was more closely implemented.

<sup>6</sup> We checked this with normality tests, which rejected normality for all the variables. Non-normality may be due to the presence of outliers.

In the VAR, we included Mexico's GDP ( $y$ ), U.S. GDP ( $y^*$ ), Income Tax ( $tx$ ), Value Added Tax ( $tva$ ), government primary spending ( $gs$ ), broad money ( $m2$ ), and the wage share ( $WS$ ), where variables in logarithms are denoted with lower-case letters. We found a statistically well-specified equation in a model including three lags and seven dummy variables.<sup>7</sup> Incidentally, we tried many models, with different information sets. We selected the model we present below because it was the best one from a statistical point of view. That is, it was subjected to, and was not rejected by, a large battery of misspecification tests.<sup>8</sup>

After estimation and testing for misspecification, we checked for a long-run association between the chosen set of variables with Johansen's cointegration test. The test suggests that one, or maybe even two cointegration vectors can exist, and we take the first one as implying the long-run association between Mexico's GDP and its determinants.<sup>9</sup> This long-run vector is as follows:

$$y = 1.09y^* + 1.01WS + 0.31gs + 0.14m2 - 0.1tva - 0.05tx \quad [4]$$

In other words, the cointegration analysis demonstrates that a stable, long-term relationship exists between output and the variables on the right hand-side of equation [4]. More precisely, higher output is associated with higher U.S. GDP, with a higher share of wages in value added, higher government primary expenditure and value of money, while higher taxes are associated with lower output.

Now, the equilibrium relation is useful, but does not explain the dynamic pattern of association between the chosen set of variables, nor how the long-run equilibrium is restored when it is disrupted. Besides, since correlation does not imply causation, it is still necessary to study whether output is indeed determined by the right-hand side of equation [4]. To answer these two questions we estimated an ECM. In Table 4 below we report the results of the ECM, where  $D$  before the variable denotes its first difference, and  $VC$  denotes the long-term (equilibrium) cointegration vector. Note that, in a multivariate context, Granger causality of variable  $X$  on variable  $\mathfrak{S}$  is obtained when  $X$  is contained among the regressors in the equation for  $\mathfrak{S}$ , or in the cointegration vector, or both.

<sup>7</sup> See Appendix at the end of this paper for details.

<sup>8</sup> Some misspecification tests for the selected models are included in the Appendix, while other tests are available from the authors upon request.

<sup>9</sup> This was not an *a priori* distinction between endogenous and exogenous variables; we estimated a valid Vector Error Correction Model (VECM) and then tested the validity of the restriction of the existence of an output equation.

TABLE 4  
*Modeling Dy by Ordinary Least Squares (OLS)*

<i>Coefficient</i>		<i>Standard error</i>	<i>t-value</i>	<i>t-probability</i>	<i>R</i> <sup>2</sup>
<i>Dy</i> *	0.602220	0.2259	2.67	0.0095	0.0898
<i>Dy</i> _3	-0.191086	0.04901	-3.90	0.0002	0.1743
<i>Dy</i> _4	0.468355	0.05508	8.50	0.0000	0.5011
<i>Dgs</i> _2	0.125533	0.05583	2.25	0.0276	0.0656
<i>Dgs</i> _4	0.143912	0.05676	2.54	0.0134	0.0820
<i>DWS</i> _3	-0.630400	0.1830	-3.44	0.0010	0.1414
<i>DWS</i> _4	0.743195	0.1520	4.89	0.0000	0.2494
<i>Dtx</i> _3	-0.0496256	0.01251	-3.97	0.0002	0.1795
<i>Dtva</i> _4	-0.0487627	0.01951	-2.50	0.0147	0.0798
<i>VC</i> _1	-0.0919091	0.03409	-2.70	0.0087	0.0917
<i>d</i> 95(2)	-0.104141	0.01427	-7.30	0.0000	0.4251
<i>d</i> 03(2)	-0.0349249	0.01468	-2.38	0.0200	0.0729
<i>d</i> 09(3)	0.0394536	0.01431	2.76	0.0074	0.0955
<i>d</i> 09(1)	-0.0636339	0.01452	-4.38	0.0000	0.2105

Note:  $X_{t,q}$  denotes that the  $X$  variable enters with a  $q$  lag, and  $d$  is a dummy variable..

The results from the Error Correction Model seem rather complicated at first sight, but a closer look allows us to make important inferences. First, the results show that variables on the right-hand side of equation [4] Granger cause output,<sup>10</sup> and that the sign of the variables in the ECM and in the long-run equation are coincident.

Second, the response of output with respect to changes of the right-hand-side variables usually occurs with a certain delay. This may be associated with the fact that the autonomous components of effective demand tend to be given in the short run, and react to stimuli only after a time lag. Thus, for example, if private income rises, a rise in savings will occur in the current period, and only later will a rise in spending take place. This is particularly the case regarding private investment, because investment orders follow, with a lag, investment decisions, which react, also with a lag, to an improvement in profitability and in its other determinants. However, higher U.S. GDP brings about a concurrent increase in Mexico's GDP, probably because it is associated with greater U.S. import demand and hence stimulates Mexico's exports and output.

<sup>10</sup> Of course, bi-causality among the set of variables cannot be excluded. For example, higher output may also cause a higher wage-share or higher government expenditure.

Third, we infer that output growth is path dependent: output growth causes, with a certain delay, output growth. Thus, for example, if the government implements restrictive policies that affect growth in the current period, then future growth will be compromised. Similarly, if a fall of the wage share brings about an aggregate demand decline that contracts current output, then unless expansionary policies are undertaken, future output growth will be also negatively affected.

Fourth, the long-run relationship equation [4] is error correction equilibrium in the following sense: when output grows above or below its long-run equilibrium value, the “excessive” or “insufficient” growth tends to be corrected. That is, economic forces come into play, which tend to restore said equilibrium. Hence the minus sign for the parameter related to  $VC\_1$  in the Error Correction Model.

### **ECONOMIC INFERENCES FROM THE ECONOMETRIC MODEL**

In general terms, our most important result is that economic regularities in Mexico seem to be important enough to allow us to find a statistically valid model to explain the behavior of GDP. Moreover, that behavior is shaped by a few demand-side related variables, thus confirming the validity of the effective demand theory as an analytical tool and an instrument to understand Mexico’s economic evolution.

Summarizing, we can say that Mexico’s GDP is positively dependent on the evolution of the world economy, and especially the U.S.’, on the wage share, and on fiscal and monetary policies, while the influence of the latter comes from the level taken by broad money M2, which is likely to reflect greater availability of credit to the private sector.

These findings can be easily rationalized by the theory of effective demand. First, fast growth in the U.S. economy implies fast growth of Mexico’s exports, with the well-known multiplier effects. Further, greater availability of foreign exchange gives room for more expansionary economic policy. Second, a shift from profits to wages stimulates consumption, given the above-average consumption propensity of workers. Third, government expenditure, financed by taxing private income that would be saved rather than spent, adds to effective demand and brings about output expansion. In other words, if the government taxes income and simultaneously raises primary expenditure, a net expansionary effect on economic activity will take place. Finally, when monetary policy

becomes more accommodating and credit, as well as M2, are allowed to grow, effective demand can also expand.

Returning to our statement that effective demand is the immediate determinant of output, it may be objected that, even though evidence regarding the demand-side determination of output is valid, what the statistical analysis has established is a purely short-term effect. In other words, it might be argued that in any particular moment demand determines output, but not in the long run, where output cannot grow unless productive capacity is higher. For example, the neoclassical synthesis admits that, in the short run, demand rules the roost, but it goes on to argue that, in the long run, it is supply conditions that have the upper hand.

This objection does not take into account, however, two fundamental and interrelated, facts. The first is path-dependency of the rate of growth. The second is endogeneity of supply conditions with respect to demand.

The notion that evolution is path-dependent (*e.g.*, if the economy is adversely affected by a shock that causes a temporary downswing, this will affect its long-run route), is central to most growth and business cycle theories. For example, in one of his frequently cited statements, Kalecki (1968) argued: “the long run trend is but a slowly changing component of a chain of short-period situations: it has no independent existence”.

The analytical argument supporting the notion of path dependency, which explains why the short- and the long run are closely associated, can be discussed by considering private investment, *i.e.*, the demand component that determines the long run evolution of demand. Since investment also determines capital accumulation, the following example is useful in understanding why supply is largely endogenous to the evolution of demand.<sup>11</sup>

Let us assume a simple investment function, where investment depends positively on only two arguments: profits and capacity utilization, and suppose that a negative shock affects demand, or profits, or both. Then, in the next period, investment will decline due to the fall in profits or in capacity utilization.<sup>12</sup> This fall will, once again, depress aggregate demand, capacity utilization and profits. As a result, investment will be growing at a lower rate, bringing about lower growth of effective demand and a lower rate of capital accumulation in

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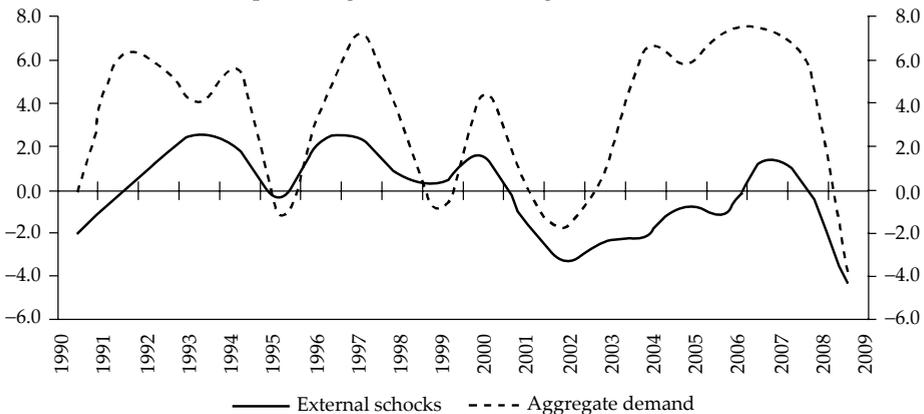
<sup>11</sup> We say that supply is *largely* endogenous to the evolution of demand, not that it is *entirely* determined by demand. More on this below.

<sup>12</sup> Capacity utilization will decline if aggregate demand falls. This may also bring about a fall in profits.

the long run. Of course, the argument can be generalized to other demand components. Further, this analytical reasoning is strongly supported by our statistical result, and this is the reason why in the Error Correction Model that we estimated, we found that output has a positive dependence, *inter alia*, on its own lagged values.

To conclude this point, it may be useful to contrast the results of our econometric analysis with the main hypotheses of the Latin American Structuralist Economic School. Some readers may recall that its founder, Raul Prebisch, put forward since his early writings the notion that the economic evolution of peripheral economies depends on, and follows, the cycle of advanced economies. More recently, two Latin American economists associated with the school (Ffrench-Davis, 2010; Ocampo, 2011) have reclaimed this idea to analyze Latin American economies during recent decades. Ffrench-Davis (2010) has a beautiful graph worth a thousand words, reproduced below.

**GRAPH 2**  
***Latin America (19 countries):***  
***external shocks and aggregate demand growth, 1990-2009***  
(percentages of GDP, annual growth rates)



The graph shows the close association between external shocks and aggregate demand.<sup>13</sup> Now, the model we estimated allows us to give an analytical explana-

<sup>13</sup> External shocks include net transfers of resources from abroad plus the terms-of-trade effect, both measured as a percentage of gross domestic product. Net resource transfers include net capital flows (including errors and omission), plus the net factor income balance, plus the net current transfers balance, excluding emigrants' remittances.

tion for the close statistical association just mentioned. Suppose, for example, that a boom takes place in the U.S. economy, Mexico's main trade partner. This will push up Mexico's exports, raising effective demand by a multiple of the export rise. Furthermore, oil prices rise, increasing government revenues and stimulating government expenditure, because oil production belongs to the State and a large part (about 40 percent) of government revenues come from oil. In addition, the multiplier of government expenditure will be augmented because domestic incomes are not taxed away when government expenditure is financed with oil revenues. Thirdly, remittances from Mexican workers in the U.S. will also rise, boosting domestic incomes and spending, especially among the poor. Furthermore, greater availability of foreign currency will tend to appreciate the real exchange. This is likely to bring about a rise in the share of wages in value added, which will stimulate workers' demand. Appreciation of the domestic currency will be magnified if the U.S. boom also stimulates capital flows to Mexico. By the same token, a downswing in the U.S. economy will provoke exactly the opposite series of events.

Thus, Mexico's economic evolution is to a certain extent dependent on what takes place in the U.S. economy. However, our model shows that this evolution is also determined by national economic policies, especially fiscal policy, and by the evolution of income distribution. Therefore, Mexico's economic authorities are not powerless to confront the external economic environment. They have many instruments they can, and should, use.

## **FINAL REMARKS.**

### **RECONSIDERING THE CURRENT ECONOMIC DEBATE**

From the predominant paradigm's perspective, Mexico's slow economic growth since the mid-1980s has been at once a consequence of external shocks to the country, and the incomplete application of reforms recommended under the Washington Consensus that meant low productivity and competitiveness for the Mexican economy. Further, the paradigm holds that Mexico's process of structural reform, begun in the mid-1980s, was insufficient and a second generation of reforms was necessary, including labor, energy, fiscal reforms, among others. Since these additional reforms were not implemented, the economy was unable to incorporate new technology to the productive process quickly, leading to a relatively low increase in productivity and competitiveness and, as a result, to low economic growth.

Our response to this paradigm is that it is not supported by the facts. Even though the country did suffer adverse external shocks, other economies that also experienced such shocks have grown much more than Mexico. Besides, during the period considered herein, U.S. demand for imports, and thus for Mexico's exports, grew relatively quickly. It is difficult to see why a new set of policies, embedded into the same strategy, would now prove successful.

In fact, just the opposite seems true: we have been able to prove statistically the position to which we hereby subscribe. We hold that slow growth is associated with the weak expansion of aggregate demand. Let us make our argument more comprehensive. Mexico's *potential* output grew slowly to a large extent because demand stagnated. This brought about a vicious circle whereby *effective* output was always below potential output,<sup>14</sup> which discouraged capital accumulation and modernization, and negatively affected the rate of labor-productivity growth because a growing proportion of the labor force did not find employment in modern sectors of the economy. Slow growth of demand, in turn, was the result of a government decision not to implement expansionary fiscal and monetary policies, even as wages were prevented from rising quickly due to high unemployment and, consequently, workers' lack of bargaining power.

As is true of all policy decisions, this was the outcome of a certain theoretical, even ideological, outlook. This outlook understands economic growth as largely, if not mainly, dependent upon how the country can position itself into the international economy. Industrial policy, and especially support for selected strategic sectors, is also unnecessary, because under liberalized markets, new investments will be automatically directed according to comparative advantages (Viner, 1953; Aspe, 1993). This view also forbids unconventional measures, such as tariffs and subsidies, multiple exchange rates, import and exchange controls, expansionary selective credit, and the like.

Since Mexico's economy is endowed with a large reserve of unemployed labor, its low wages will attract foreign savings and investment, to complement the domestic saving rate and enhance the rate of accumulation essential for modernizing the economy. Low wages also entail high competitiveness and ensure ample access to foreign markets, which will expand demand and provide the requisite foreign exchange to pay for necessary imports.

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<sup>14</sup> We define potential output as that which would be achieved if used in full productive capacities that are available.

Fiscal and monetary policies are not required to ensure that demand is sufficient to guarantee full utilization of resources. In the canonical model, if actual output declines below potential output and thus raises unemployment, wages will fall. In turn, that fall will stimulate higher production and employment, together with higher effective demand. The reason was clearly put forward by Keynes (1936) in chapter 19 of *The General Theory*: the drop in wages entails lower prices which, with a given money supply, lowers the interest rate thus stimulating investment. Under current conditions, where downward wage flexibility is prevented because of institutional “rigidities”, it is rather the fine-tuning of the real exchange rate that fulfills the adjustment role. More concretely, when actual output falls below potential output, the economic authorities must depreciate, or let the exchange rate depreciate, such that net external demand rises, and the output gap, together with unemployment, are eliminated.

It is precisely the view we have just put forward, and which underpins Mexico’s economic policies during recent decades, that explains the quandary in which economic authorities find themselves. In fact, Mexico must grow faster than the U.S., its main trading partner, both because its working-age population grows faster and because of inherited economic and social problems. But if Mexico wants to keep its external balance at or near equilibrium, its international competitiveness must also grow faster than that of the U.S., and its export mix must upgrade persistently, so that exports grow enough to provide the foreign exchange required to pay for its imports. This can be achieved under two alternative, not mutually exclusive approaches. Both demand a competitive exchange rate, but while the first one relies almost exclusively on this mechanism, the second one uses a variety of instruments. The instruments include industrial and monetary policies geared to stimulate and direct new investments towards the tradable goods sector, coupled with non-traditional measures such as exchange controls, subsidies and tariffs, and the like.

The theoretical (and ideological) framework underpinning national economic policies in Mexico’s recent experience prevents the use of bold industrial policies, especially when government resources are severely limited, and forbids all unconventional measures. As anticipated, that leaves exchange rate management as the only instrument available to gain competitiveness. Now, to maintain external balance under conditions of fast growth, the peso would have to depreciate, not only once but persistently. But currency depreciation clashes with the objective

of price stability because higher import prices are transferred to higher domestic prices. Furthermore, persistent currency depreciation entails a continuous decline in the wage share, and brings about social discontent. Also, the fall in wages induced by currency depreciation will not stimulate unemployment, only aggravate it (see López, Sánchez and Spanos, 2011). Under these constraints, Mexico's economic performance is practically doomed to be sluggish, or at most will follow a pace strictly dictated by international conditions.

To conclude this study, we should stress that it does not follow from our analysis that if demand had only grown faster, Mexico would have also grown more rapidly. This conclusion would be erroneous, or at least incomplete.

We would rather uphold that if economic authorities had momentarily put aside their ideological blinders and tried to expand demand faster, or allowed wages to rise, while leaving the remaining aspects of their economic strategy unchanged, then the economy would have encountered supply-side obstacles, and especially an external equilibrium barrier. Indeed, while it is the case that demand stimulates investment, from this it does not follow that the type of productive capacities, and the competitiveness of domestic production, necessary to sustain high growth rates, will be automatically created because demand and investment are quickly increasing. To ensure that fast demand growth is sustainable in the long run, industrial policies and the willingness to use unconventional tools to maintain external and internal balance when disruptions appear are indispensable. Incidentally, this goes a long way towards explaining why the principle of effective demand—a very powerful analytical instrument to enlighten the evolution of economies under conditions of low growth or stagnation—is insufficient to make clear why and how economies can achieve fast and sustainable growth during long periods of time. However, to discuss this point would take us beyond the objectives of this paper.

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**APPENDIX**

Our VAR has seven dummies. Two of them for the year 1990 (second and third quarter), when *GS*, *M2* and *WS* showed anomalous behavior; one for the year 1991 (Q4) when variables *Y\**, *W* and *GS* had erratic behavior; three for the year 1995 when the Mexican economy suffered a deep crisis; and one for 1997 (Q4), when interest rates dropped considerably and a massive inflow of foreign capital took place.

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**Statistic test**


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*Vector misspecification tests for the VAR*


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Vector Portmanteau (10): 474.611

Vector autoregression 1-5 test:  $F(245,129) = 1.1422$  [0.2002]

Vector normality test:  $\text{Chi}^2(14) = 11.995$  [0.6067]

Vector heteroscedasticity test:  $\text{Chi}^2(1176) = 1245.3$  [0.0784]

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*Misspecification tests for the ECM*


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Autoregression 1-5 test:  $F(5,67) = 2.1254$  [0.0730]

ARCH 1-4 test:  $F(4,64) = 0.65123$  [0.6281]

Normality test:  $\text{Chi}^2(2) = 4.5957$  [0.1005]

Heteroscedasticity test:  $F(24,47) = 0.52001$  [0.9570]

Reset test:  $F(1,71) = 2.7424$  [0.1021]

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