

Graduate Student Session - Paper prepared for the 13th Conference on "The World Economy in Crisis - The Return of Keynesianism?" organized by the Research Network Macroeconomics and Macroeconomic Policies (IMK) at the Hans Böckler Foundation in Berlin (Germany), October 30-31, 2009.

WHY DOES THE MEXICAN GOVERNMENT HAVE ITS HANDS TIED? THE PRO-CYCLICAL COMPONENT OF FISCAL POLICY IN MEXICO¹.

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Abstract: This paper discusses two elements making fiscal policy pro-cyclical: the Federal Act of Budget and Fiscal Accountability (LFPRH) and the public income dependence on oil revenues. First, the paper reviews the arguments against the use of fiscal policy: the possibility of crowding-out effects and, presumably the most important for Latin America, the adjustment policy after the debt crisis in 1980's. Later, the paper analyzes the implication of the recent fiscal policy in Mexico: in the one hand, the LFPRH limits the capacity of response of Mexican government in front of declining business cycle, forcing to maintain an annual balanced budget; in the other hand, the dependency of oil income has diminished public finance due the falls in oil production and prices. The pro-cyclical components in fiscal policy have been more evident in the current crisis, which is leading a contraction close to 7% in Mexican GDP. Finally, the paper argues in favor of a law reform including in it the possibility of a large deficit, granting fiscal policy the appropriate role as well as reducing the dependence of public finances on oil revenues with the aim of untie the hands of the Mexican government.

Keywords: Fiscal Policy, Federal Act of Budget and Fiscal Accountability, Pro-cyclical Policy, Mexico.

JEL: H50, H27, H60, N46

¹ This unfinished paper is part of an ongoing research project about "Institutional Change and Macroeconomic Policy in Mexico", which includes the study of monetary policy -mainly inflation targeting-, fiscal policy and financialisation. I thank Josu Ferreiro and Begoña Eguia for their helpful comments. The usual disclaimer applies.

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1. Introduction.

The beginning of 1980's in Latin America was characterized by the shock of the debt crisis, caused by rising debt services, limited access to credit and deteriorating terms of trade (Moreno-Brid et al., 2004-5:346). In this line, the International Financial Institutions (IFI), settled in Washington, conditioned their help to Latin American countries (LA) by setting a series of "recommendations" best known as 'Washington Consensus'. Williamson (2004-5:196) described these recommendation in a Decalogue:

1. Budget deficits [...] financed without recourse to the inflation tax.
2. Public expenditure should be redirected from politically sensitive areas [...] toward neglected fields with high economic returns and the potential to improve income distribution, such as primary education and health, and infrastructure.
3. Tax reform [...] to broaden the tax base and cut marginal tax rates.
4. Financial liberalization.
5. A unified exchange rate at a level sufficiently competitive to induce a rapid growth in nontraditional exports.
6. Quantitative trade restrictions to be rapidly replaced by tariffs, which would be progressively reduced until a uniform low rate in the range of 10 to 20 percent was achieved.
7. Abolition of barriers impeding the entry of FDI (foreign direct investment).
8. Privatization of state enterprises.
9. Abolition of regulations that impede the entry of new firms or restrict competition.
10. The provision of secure property rights.

Fiscal adjustment, as pointed out in the recommendations 1, 2, 3, 4 and 8, was accomplished by change in public expenditure, tax reforms and state enterprise privatization process. Mexico was not exception: the privatization of state

enterprises was justified looking for strengthen public finances, redirecting public resources to primordial social areas, increasing productivity in Mexican economy and improving public sector efficiency (Sacristán Roy, 2006:62). So, between 1984 and 2000, most of public enterprises were privatized including steel industry, commercial banks, sugar industry, fertilizer industry, TELMEX³, railways, airport and airlines. Results were not the expected. Beside the privatization process and the decrease in public sector size, public investment was affected, but also, the GDP via aggregate demand.

Most recently, in the period of high commodity prices, the public revenues of federal government in Mexico were sustained in oil exports. In this period, most exactly in 2006, Mexican parliament enacts the Federal Act of Budget and Fiscal Accountability (LFPRH). The LFPRH requires maintaining annual public deficit close to zero, limiting responses in front of economic crisis.

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This paper analyzes the downgrading role of fiscal policy in recent years in Mexico, mainly after the enactment of the Federal Act of Budget and Fiscal Accountability (LFPRH). Also, it discusses some of the emerged problems of the public finance's dependence of oil exports in Mexican economy. In the actual crisis, the LFPRH has limited the response of government: with a poor stimulus package, Mexican economy is expecting a fall in GDP close to 7%. Because the importance of fiscal policy in the aggregate demand and in the short-run economic growth, this paper argues for a change in the LFPRH, implying the possibility of getting a bigger deficit and catching resources in expansion time. The paper is developed as follow: in section 2, it presents some of the theoretical background of the downgrading fiscal policy and the response in

³ During the privatization process, TELMEX (*Telefonos de México*) was acquired by Carlos Slim Helú. Almost twenty years later, Carlos Slim is one of the richest people in the world. According to Kroll et al. (2009) Slim is placed in 3rd after Bill Gates and Warren Buffett. Paradoxically, food poverty in Mexico was increased from 13.8% in 2006 to 18.2% in 2008 (CONEVAL, 2009). Real competition in telecommunication in Mexico does not exist (casually policymakers forgot the 9 point of Washington Consensus Decalogue).

empirical literature, mostly, it discusses two arguments: the adjustment policy after debt crisis in Latin America, and the “crowding-out” effects of public investment over private investment. Section 3 shows the effects of LFPRH on Mexican economy and the public revenues dependency of oil. Finally, section 4 makes some conclusions.

2. Fiscal Policy in Economic Policy: The Ugly Duckling.

At the beginning of 1970's -with the first oil crisis- was produced a change in the conception of economic policy. Stagflation caused a shock in academia. In monetary policy, according to Kydland/Prescott (1977), who retook partially the *bullionist*⁴, the economic policy selected by policymakers does not result in maximizing the social objective function. This is, as they argue, because the actions taken by agents are modified by their expectations about the future actions of politicians. Their main conclusion takes the idea that policymakers should follow rules in their decisions in order to anchor expectations. The idea is based on the Lucas supply curve $[y_t = \bar{y}_t + (\pi_t - \pi_t^e)]$, where deviations of product $[y_t]$ respect their trends $[\bar{y}_t]$ are positive function of the difference between inflation $[\pi_t]$ and inflationary expectations $[\pi_t^e]$, i.e., it is possible in the short-run 'surprise' with a higher level of inflation, and thus obtain a higher income but in the long term expectations of the agents are such that the income level is equal to the long-run trend with a higher level of inflation (vertical Phillips curve). This upgrade in monetary policy was accompanied by a downgrade of fiscal policy. According to mainstream view, monetary policy is better than fiscal policy because it has less negative effects on overall economy. The leading role that has acquired monetary policy and the relegation of fiscal policy is well noted in the New Macroeconomics Consensus (NMC), also known as New Neoclassical Synthesis, which includes the contributions of real business

⁴ David Ricardo led the group known as *bullionists*, whose line of thought argued that existing inflation was caused by over-issue of banknotes by the Bank of England. They also suggest the idea, taken back by Kydland and Prescott, of rules rather than discretion in the conduct of monetary policy. In the other hand, the *anti-bullionists* argued that inflation is caused by cost-pushing, and that the stock of money is endogenous (demand-determined). See Humphrey (1991).

cycle and New Keynesians. The NMC has as one of their main failures the absence of public sector and fiscal policy. Fontana (2009) denotes that fiscal policy has, in the NMC framework, a role at least as important as monetary policy in the mechanism that influences aggregate demand, output and unemployment. Sawyer (2009) argues in favor of the use of fiscal policy as a better way to influence demand inflation and economic activity by the use of a combination of fiscal stabilizers, discretionary fiscal policy (which can take the form of a Fiscal Policy Committee, influencing value-added tax and social security contributions) and interest rate variations (but limiting the setting power of Central Banks to avoid high interest rates). Recently, Angeriz/Arestis (2009) use different studies (about United States, the European Monetary Union and England) to conclude that the effect of interest rate policy on inflation rate is weak; however, it has a relative large effect on GDP. In the case of fiscal policy, there is evidence of its positive effects on output, supporting the idea that there are no reasons for the downgrading of fiscal policy.

The relegation of fiscal policy was partially sustained in the idea of the *crowding-out* effect of public investment over private investment, in the possibility to be used in political purposes, in the lags existing between fiscal policy requirement and applications, and in the unfeasibility of take “optimal” decisions because the uncertain in economic environment. Regarding crowding-out, four effects are mainly discussed (Arestis/Sawyer, 2004): the 1st crowding-out effect comes after a fiscal expansion via increase in interest rates, reducing private inversion; the 2nd crowding-out effect arrives by the absorption of savings made by government limiting access to credit to private sector; the 3rd crowding-out effect comes by the distortion in the supply-side equilibrium caused by increase in aggregate demand; and finally, the 4th crowding-out effect is induced by the Ricardian Equivalence Theorem, which assumes equivalence between debt and taxes. This theorem indicates that a rise in taxes has no effects over aggregate demand. It is possible to aggregate other crowding-out dilemma, and it is presented when public deficit finances public enterprises producing similar kind of goods and/or

services competing with private sector. Empirical literature has tried to prove the effects of public investment over private investment. For the case of developing countries, Lächler/Aschauer (1998) use a cross-country analysis to study 46 developing countries (including Mexico) in the period 1970-1990 and they find that an increase in public capital stock financed by reduction in government consumption expenditure lead to a higher economic growth. More recently, Erden/Holcombe (2006) use an error correction model and evaluate 19 developing countries (including Mexico) in a panel data with a sample since 1980 to 1997 and find that private investment is co-integrated with public investment, GDP, real interest rates and uncertainty. Public investment and GDP have a positive long-run effect on private investment while real interest rate and uncertainty have a negative impact. In the short-run, error correction model shows that private investment have a positive relation with public investment and credit availability, where public investment is complementary to private investment. Atukeren (2005) study the interaction between public and private investment in 25 developing countries (including Mexico) in the period 1970-2000 (for most of the countries) with a methodology including co-integration, Granger causality and a probit model. His results indicate both, crowding-in and crowding-out, effects on developing countries. Countries where public investment has a crowding-out effect on private investment have higher government involvement in economy, lower trade openness, more restrictions on the use of foreign currencies and more stable and developed macroeconomic environment. Ahmed/Miller (2000) examine the effects of different fiscal variables on domestic investment (which includes government capital investment), and using a government budget constrain they distinguish between tax- and debt- financed expenditure. They study 39 countries (1975-1984) dividing the sample into developed and developing economies. The empirical results supports both approaches crowding-in and crowding-out: expenditure on transportations and communications crowding-in only in developing countries while government expenditure in social security and welfare crowd-out investment in developed as well as in developing economies.

The particular case of Mexico has been analyzed. Lächler/Aschauer (1998) use OLS in the period 1970-1996 looking for crowding-out and crowding-in effects of public expenditure on private investment and their results indicate that public investment has a negative effect on private investment. Later, Lächler/Aschauer make some regressions to prove if public investment has any effect over total factor productivity indicating that an increase public capital stock exerts positive externalities for private capital. Recently, Noriega/Fontanela (2007) employ a theoretical model where public investment in infrastructure has a crowding-in effect on private investment. Using data of Mexico (1950-2003), they study the long-run effect of public investment in infrastructure (electricity, roads, and telephone lines) and they look for optimal levels of infrastructure, finding that shocks of public investment in roads and electricity are not neutrals in long-run, with positive effects on output, while investment in telephone lines is neutral but not super neutral, what implies that shocks in the trend of investment in telephone lines have a permanent effect on real output. Finally, they point out that actual levels of investment in infrastructure are not optimal, i.e., actual levels do not maximize economic growth. Fonseca Hernández (2009) studies the impact of public investment, in different areas, over private investment to test complementarity hypothesis in the period 1925-2006. He finds a crowding-out effect of public investment in communications and transports, as well as in industrial promotion but at the same time, public investment in agriculture, public administration and social sector has a crowding-in effect⁵. Castillo Ponce/García Meneses (2007) study the short-run and long-run relation between external public debt and private investment in Mexico in the period 1993-2004. Using an error correction model they try to find the dynamics of both variables. According to Castillo Ponce/García Meneses, long-run elasticity of investment respect to public debt is positive and close to 1, while, in short-run there is a

⁵ Fonseca Hernández (2009) includes in industrial promotion: agriculture, livestock, forestry, fisheries, rural development in general, energy, trade and tourism; in social expenditure: health, education, public services and social programs; and in public administration: justice, security, federal power and autonomous organizations.

negative relation between public debt and private investment, i.e., there is a crowding-out effect of external public debt over private investment in short-run but in long-run the relation crowds-in. In other recent paper, Castillo Ponce/Herrera Hernández (2005) study, in the case of Mexico (1980-2002), the relation between private and public consumption as well as private and public investment. Their results indicate a negative sign in the elasticity of private consumption respect public consumption. In the case of private and public investment, the long-run relation is positive, which means a crowding-in effect of public investment on private investment in a long period of time. The explanation of the crowding-out effects, in the short-run, and the crowding-in effects, in the long-run, comes through the spillovers observed when public investment in infrastructure has been finished, encouraging private investment.

There is not a clear consensus on the effects of overall public expenditure on private investment. However, most of the empirical papers highlight the importance of public “basic” investment on economic growth in developing countries. For public “basic” investment is referred investment in infrastructure, with spillover effects on private sector via increase in total factor productivity. Moreover, it is possible that public expenditure in social welfare has not the same impact on productivity as public investment in “basic” infrastructure. However, one of the basic functions of the State is to provide help to people in condition of vulnerability. People in condition of vulnerability, and the emerged inequality are factors that deteriorate economic growth. In this sense, De Gregorio (2008), using World Bank data, analyzes the effect of public expenditure on the decrease of inequality. De Gregorio shows that Gini coefficient decline as result of social spending, highlighting the importance of fiscal policy in the decrease of inequality.

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Other fact helping to downgrade fiscal policy in Latin America, and conceivably the most important for this region, is the adjustment policy followed after the debt crisis in beginning of the 1980's.

Recent Mexican economic history can be classified into two periods according to the growth strategy⁶: first, "imports substitution industrialization", which started in the period of Lázaro Cárdenas (1936) and ended at the beginning of the 1980's, with the debt crisis and the private bank expropriation; this strategy put the State in the center of the economy, serving as engineer of economic development. In this whole period (1934-1982), tax revenues served to finance economic development and income distribution. The exhaustion of the model, increased borrowing, coupled with falling international oil prices led to the debt crisis, which was widespread in Latin America. At the end of this period, debt services in Mexico was close to 65%, as shows Graph 1⁷. Mexican debt services start in 1979 with a level close to 65% and have been reduced to 12.53% in 2007⁸. Forced by the crisis and the contraction of the credit, Mexico got into a new exports-led growth strategy emerged from a series of "recommendation" of the

⁶ This periodization is an over simplification but for the aim of this paper is enough to distinguish "import substitution industrialization", where domestic market was the motor of economy, respect to the new strategy, where economic growth is led by exports. Other classification can placed recent Mexican economic history into four periods: "growth with inflation" (1934-1956), "stabilizing development" (1956/1958-1970), "populism" (1970-1982) and "neo-liberalism" (1982-actual). In a recent paper, Cárdenas (2008) argues against the myth created about the period "growth with inflation". This period, as Cárdenas shows, was characterized by a relative strong economic growth without take advantage of inflationary taxes but with a coordination of fiscal and monetary policies, while the inflation observed was consequence of the international environment previous, during and after the II World War. The next period, "stabilizing development" has as characteristic high economic growth without inflation; it was benefited for the absence of external inflationary shocks. After "stabilizing development" came "populism", which is mainly characterized for the growth sustained in debt and high oil prices. "Populism" ends with the debt crisis and the private bank expropriation in 1982. The three previously mentioned periods are part of the strategy knows as "import substitution industrialization" which tried to consolidate the national industry in order to improve economic growth and equality.

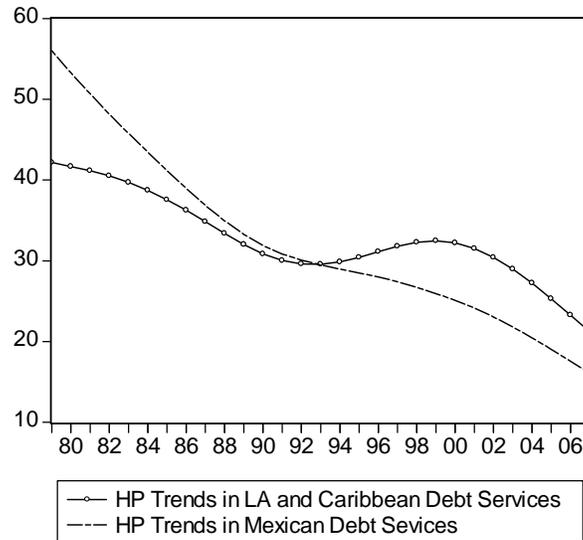
⁷ The trends are obtained by the Hodrick-Prescott Filter (HP). According to Hodrick/Prescott (1997) a series y_t is composed of a trend g_t and a cyclical component c_t (deviations from the trend). λ is a positive number that controls the smoothness of g_t . Here is used $\lambda=100$ for annual data.

⁸ In this part is important to realize that Mexico has strengthened its domestic market for public debt and in recent period is capable to place long-run debt.

International Financial Institutions (IFI) as was pointed out above. The recommendations of IFI suggesting public deficits financed without inflation tax (which implies that inflation is a monetary phenomenon), redirection of public expenditure, a tax reform and the privatization of public enterprises. Since that moment, in Mexico has been observed an abandonment of fiscal policy, mainly regarding to public investment.

What has happened to Mexican economy performance? As show Table 1, Mexican economy has been almost stagnated since beginning of 1980's. The mean of the rate of economic growth of the real GDP per capita in the period 1951-1980 was 3.38%, while in the "lost decade" was -0.50%⁹. Most recently in the "neo-liberal" period, real GDP per capita is stagnated with 0.31% in 1982-2004. There are many causes of this problem. In the monetary policy, Galindo/Ros (2006, 2008) have observed asymmetric responses in front of inflationary shocks what has lead to a bias to real exchange rate appreciation. Other problem regarding the strategy of export-led growth is pointed out by De la Cruz/Núñez Mora (2006), who observe that, even when exports have increased rapidly and sustainably, the bias of Foreign Direct Investment (FDI) in favor of *maquila* has limited its impact on economic growth. This is related to the increased integration with the U.S. business cycle, which functions as an exogenous factor to the system, dragging the Mexican economy in crisis and limiting its growth in the expansions due to the strong dependence on imported intermediate inputs (De la Cruz and Núñez Mora, 2006; Cuevas Ahumada, 2008; Ros, 2008; Esquivel, 2009). These problems are accomplished by institutional and structural factors. The analysis of all of these factors is out of this paper but it is important to mention.

⁹ Lost decade is referred to the 1980's in Latin America (LA). After de Debt Crisis most of the LA economies were contracted or stagnated as is showed in Table 1.



Graph 1. Total Debt Services 1979-2007.
(% of exports of goods, services and income).
Source: World Development Indicators, World Bank.

Growth Rate of Real GDP per capita in Selected LA Countries and China (% in 2000's Constant Prices)						
	1951-1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-2004
Argentina	1.37	2.38	1.12	-2.71	3.41	-0.58
Bolivia	-1.45	0.63	1.92	-1.70	1.31	0.87
Brazil	3.93	4.34	5.38	0.21	0.53	0.08
Chile	1.80	1.96	1.09	0.89	4.89	2.63
China	4.11	1.45	4.18	8.43	9.15	7.44
Colombia	1.29	2.14	3.35	1.21	1.13	0.08
Ecuador	2.41	1.23	6.54	-1.13	-0.28	1.16
Mexico	3.27	3.30	3.58	-0.50	1.71	0.27
Paraguay	0.23	1.69	5.17	0.49	-0.30	-1.68
Peru	2.61	3.94	0.88	-3.11	1.90	1.16
Uruguay	1.31	0.36	3.18	-0.63	3.16	-1.63
Venezuela	2.51	2.80	1.27	-1.68	-0.06	-0.50

Source: Heston/Summers/Aten, 2006.

Data for Chile, Ecuador and Paraguay starts in 1952; data for China starts in 1953, otherwise in 1951.

Data for Bolivia, Brazil, Colombia, Paraguay and Peru ends in 2003, otherwise 2004.

Table 1. Growth Rate of Real GDP per capita in Selected LA Countries and China (% in 2000's Constant Prices).
Source: Heston/Summers/Aten, 2006.

Recently, Ros (2008) discusses four possible factors behind Mexican economy stagnation. First, trade expansion without growth: low added value in Mexican exports with high requirements of imported inputs, Chinese competition in the U.S market, real exchange rate appreciation and the lack of industrial policy are part of the explanation of the decrease in the rate of growth of GDP per capita. Second, the performance of productivity: the inability of the Mexican economy to absorb the new workers into the high productivity activities has led to an increase in the informal tertiary sector. Third, human capital accumulation: in the studied period has been observed an improvement in health and education indicators, which indicates that this is not the cause of low growth. Fourth, low investment leading low growth: the rate of capital accumulation fell in the studied period even when FDI has increase significantly. Ros argues that the relatively reduction in investment is related with the fall in public investment, the appreciated real exchange rate since 1990, the lack of industrial policy and the problems with the access to credit. In the next section of this paper is analyzed the 1st factor pointed out by Ros (2008) but mainly after the enactment of the LFPRH.

3. Current Fiscal Policy in Mexico: LFPRH and oil dependence.

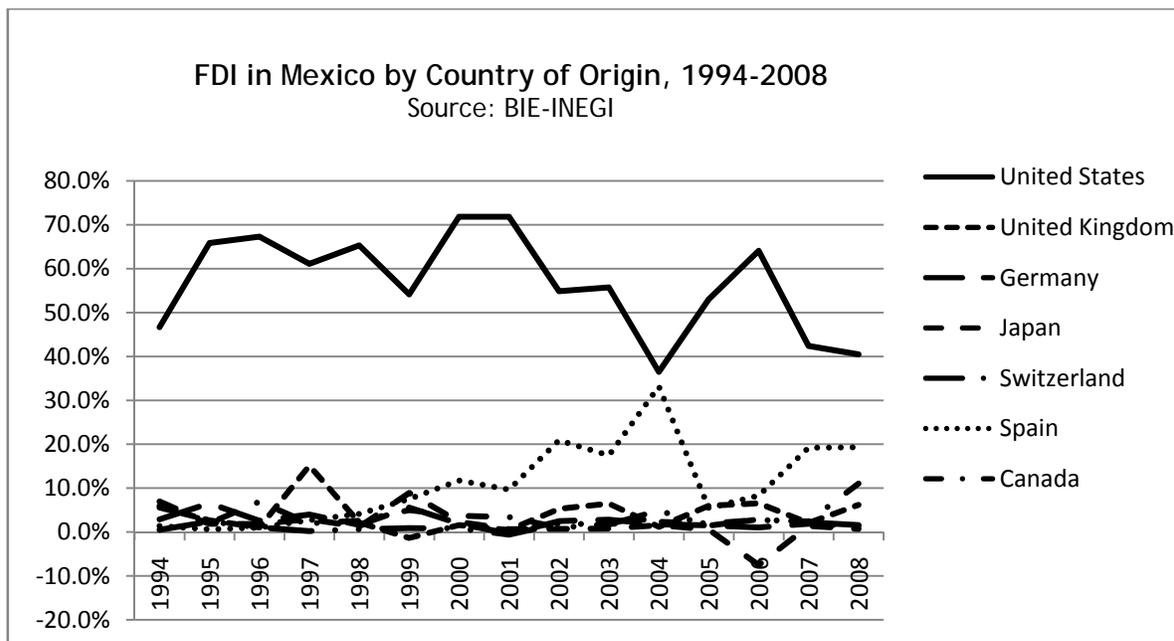
Mexican Economy in Current Crisis.

With the break of international financial markets, supported in bubbles and perverse incentives, and their contagion to real economy, the world economy is going through the deepest crisis since the Great Depression. This crisis, in difference with the other recent ones, has begun in United States (U.S.) but with effects in the entire world. In the case of Mexico, the main transmission channel came by the synchrony with U.S. economy. Since the signature of NAFTA¹⁰ (North America Free Trade Agreement) Mexican economy has increased its dependence on trade to U.S. market, FDI inflows and family remittances from Mexican

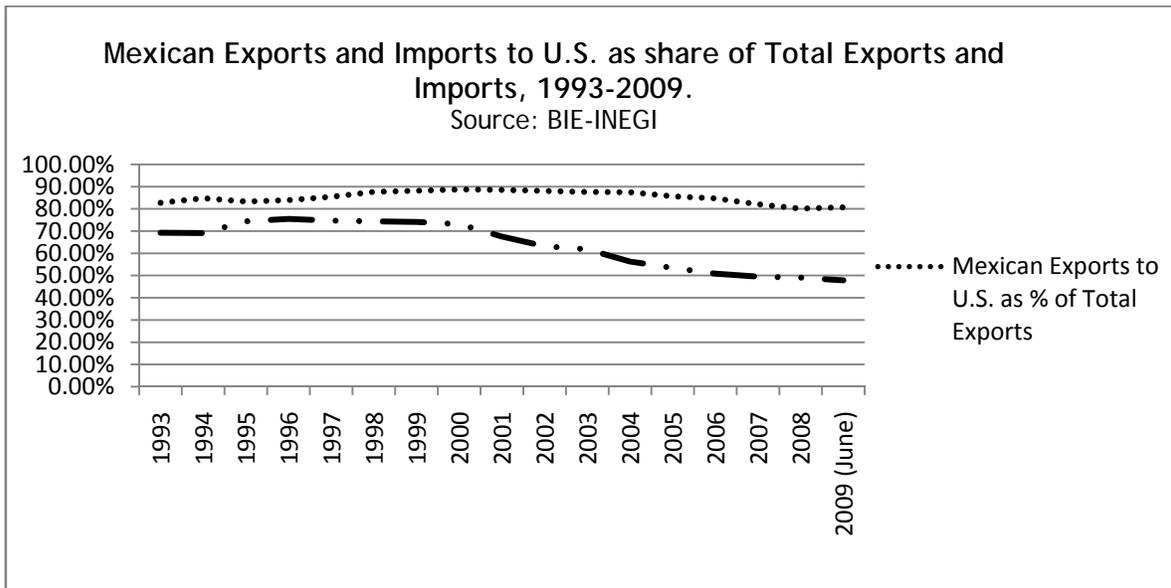
¹⁰ Even before NAFTA, U.S. market was the main destination of Mexican exports. U.S. is considered as a natural trade partner due the complementarity of the structure of both economies.

workers. Graph 2 shows FDI inflows in Mexico by country of origin. As it is possible to see, share of FDI inflows from U.S. are higher than 40% in the entire sample (1994-2008) and in 2000 and 2001 are close to 70%. Graph 3 shows the share of exports and imports to U.S. market in total. More than 80% of Mexican exports have U.S. destination. This strong Mexico-U.S. relationship is analyzed by Ramos-Francia/Chiquiar (2004), who show that, in the long-run, non-oil exports (without *maquila*) depend on the industrial activity in U.S., the level of trade protection in Mexico, tariff preferences, the real exchange rate and in a trend variable, while the *maquila* exports depend, in long-run, on the U.S. activity as well as in a trend variable. As was pointed out, performance of non-oil exports is related to the industrial activity of U.S. mostly after the signature of NAFTA. In this line, Esquivel (2009) uses co-integration to study the long-run relation between manufacture business cycle in Mexico and U.S. for the period 1980-2008. For the whole sample and the sub-sample before NAFTA there are no evidence of co-integration but in the sub-sample post-NAFTA does not reject the null hypothesis of co-integration. This close relationship is important in the presence of disturbances like the current global crisis. The private sector, as shows Table 2, has been affected via tourism receipts (tourists from U.S and developed countries), FDI and family remittances. International tourism receipts fell, in 2008 and in the first half of 2009, 8.8 and 29.7%, respectively. These falls in tourism receipts were exacerbated by the A-H1N1 flu epidemic, with the closure of shows and entertainment centers in April and May. Foreign Total Investment has fallen between June 2008 and June 2009 -34.9% while family remittances fell -9.5 in 2008 and -15.07% in June 2008-June 2009. Foreign demand deceleration, with a fall in exports, weak domestic demand, decrease in credit to consumption and lower level of family remittances have led Mexican economy into a crisis harder than '*tequila crisis*': in 1995 the recuperation came from the increase in the foreign demand, mainly from U.S., but now U.S market is in a slow recuperation. Mexican GDP growth rate estimations for 2009 according to ECLAC (Economic Commission for Latin America and Caribbean) are between -6 and -7% (CEPAL, 2008-2009), the official authorities expect -6%

(SHCP, 2009), while economic specialists in private sector (consulted in a monthly survey made by Banco de México) estimate -7.2% (Banxico, September 2009). With a weak domestic demand, in households and in business, as well as feeble foreign demand, the government actions have a strong role to play in the recuperation process. In this line, Federal Government announced in past months different packages: the first and the second in March and October 2008, giving support to businesses and families through discounts on social security contributions, income tax, unique rate corporate tax and electricity tariffs. At the beginning of 2009, there was an announcement of the third, with 25 actions to preserve employment (some of those action were already announced in the 1st and 2nd packages) to help household economies, to protect small and medium companies and to invest in infrastructure (CEPAL, 2009). And finally, as response to AH1N1 epidemic Mexican federal Government gave an especial economic support to tourism industry (including restaurants, hotel, transport, etc.) (SHCP, 2009 May). The responses of Federal Government are not enough in front of the current crisis. Two factors helping to restrict Government actions are public revenues dependency of oil and LFPRH. These factors are discussed below.



Graph 2. FDI Inflows in Mexico by Country of Origin, 1994-2008.
Source: BIE-INEGI.



Graph 3. Mexican Exports and Imports to U.S. as share of Total Exports and Imports, 1993-2009.
Source: BIE-INEGI.

Annual Rate of Growth, 2000-2009 (Dec-Dec)			
	International tourism receipts	Family remittances, total	Total Foreign Investment
2000	22.5987	13.46	46.9
2001	-4.1335	13.82	-16
2002	18.0123	21.13	32.1
2003	12.5944	45.86	-32.6
2004	19.1214	16.71	72.4
2005	-7.37	23.45	-35.9
2006	30.1844	0.34	-8.5
2007	0.633	1.21	44.1
2008	-8.8471	-9.5	-13.2
2009 (June)	-29.7562	-15.07	-34.9

Source: Banco de México

Table 2. Growth Rate of Selected External Indicators for Mexican Economy, 2000-2009 (Dec-Dec).
Source: Banco de México.

Dependence of Public Finance in Oil Revenues.

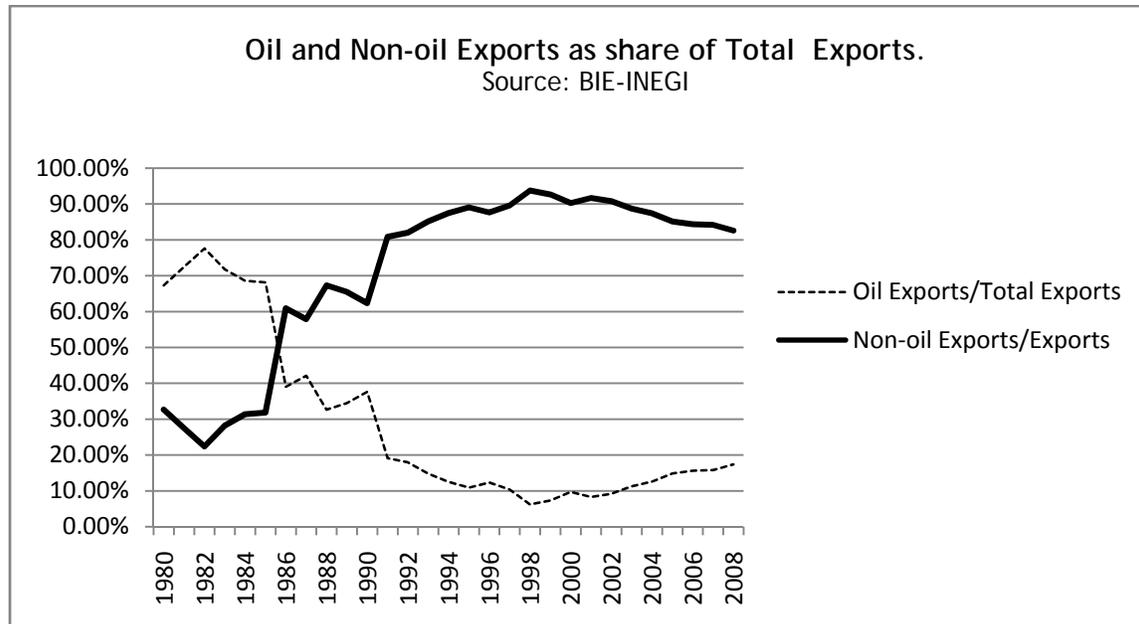
The first lock of public finance in Mexico is the increased dependence in oil revenues. The year of the debt crisis (1982), share of oil exports represented 77.61% of total exports (see Graph 4); Mexico was a “petrolized economy”. In the adjustment process, and mostly after unilateral opening with the entrance in GATT, it was observed a change in the structure of exports in favor of other sectors. The share of non-oil exports continued increasing until beginning of 2000’s, with a share upper than 80% in the post-NAFTA age. Most of the exports now are manufactures with U.S. market as destination (with low added value in their production what also represented a problem as pointed out above).

The raise of oil prices, due to the growing demand in developing countries like China and India, stimulated production of oil in Mexico, from 3,012 barrels per day in 2000 to 3,334 in 2005 (see Table 4). This raise in production accompanied by higher prices led the Mexican government to increase its dependence on oil revenues. So, oil income as share of public sector income of Federal Government went from 22.53% in 2001 to 45.62% in 2008 (see Table 3). This change can be described in few words: from “Petrolized economy” in 1980’s to “petrolized public finance” in current time; 40 cents of each peso spent by Mexican Federal Government has origin in oil revenues.

With the global financial crisis and the contraction in world economy, price of oil barrels fell from 84.35 dollars per barrel in 2008 to 53.9 in 2010 (SHCP estimation for the 2010 budget proposal). In 2009, even when the price has been close to 64 dollars per barrel, the insurance made by Mexican government assure a price of 70. However, the insurance ends in 2009: lower prices and gradual decrease in oil production lead to reduce the income of public sector (oil production: 3,334 barrels per day in 2005; 3,256 in 2006; 3,077 in 2007; 2,792 in 2008; 2,685 in June 2009; and the expected 2,500 for 2010 according to the budget proposal). It means lower resource in public finance, lower government expenditure and lower aggregate demand when it is most required. One hand is tied.

Non-oil and oil Income as Share of Public Sector Income, 1990-2009		
	Share of Non-oil Income on Public Income (Federal Government)	Share of Oil Income on Public Sector Income (Federal Government)
1990	71.42%	28.58%
1991	69.87%	30.13%
1992	71.57%	28.43%
1993	72.80%	27.20%
1994	73.31%	26.69%
1995	63.17%	36.83%
1996	61.10%	38.90%
1997	61.40%	38.60%
1998	67.25%	32.75%
1999	70.18%	29.82%
2000	75.69%	24.32%
2001	77.47%	22.53%
2002	87.42%	12.58%
2003	76.80%	23.20%
2004	71.70%	28.30%
2005	65.43%	34.57%
2006	61.36%	38.64%
2007	68.24%	31.76%
2008	54.38%	45.62%
2009 (March)	55.77%	44.23%
Source: BIE-INEGI		

Table 3. Non-oil and oil Income as Share of Public Sector Income, 1990-2009.
Source: BIE-INEGI.



Graph 4. Mexican Oil and Non-oil Exports as share of Total Exports, 1980-2009.
Source: BIE-INEGI.

Crude Oil Production and Prices in México		
	Average Crude Oil Production*	Average Price of Crude Oil Exports**
2000	3,012	
2001	3,127	
2002	3,177	
2003	3,370	
2004	3,383	31.05
2005	3,334	42.71
2006	3,256	53.04
2007	3,077	61.64
2008	2,792	84.35
2009 (June)	2,685	64.36
*Thousand barrels per day		
*Dollars per barrel		
Source: BIE-INEGI with data from Petróleos Mexicanos (PEMEX)* and Pretóleos Mexicanos**.		

Table 4. Non-oil and oil Income as Share of Public Sector Income, 1990-2009.
Source: BIE-INEGI.

The Federal Act of Budget and Fiscal Accountability (LFPRH).

In March 30 of 2006, was published in the Diario Oficial de la Federación, the Federal Act of Budget and Fiscal Accountability (*Ley Federal de Presupuesto y Responsabilidad Hacendaria, LFPRH*). This Act is the regulatory law of the 74°, 75°, 126°, 127° and 134° articles of the Mexican Constitution¹¹.

The LFPRH have like priority the maintenance of balanced annual budget. According to the 17° article of the Act:

“Net total expenditure proposed for the Federal Executive Government in the project of Expense Budget... must contribute to balanced budget... Circumstantially, and because some economic and social condition in the country, the initiatives of Income and Expense Budget could foresee a budget deficit...”

This balanced budget target and the required advance undermine the possibility of government response when time is not favorable. Moreover, 18° article of the LFPRH puts a pro-cyclical component of the public expenditure:

Any proposal to increase public expenditure... must be accompanied by an appropriate initiative to increase income, different to funding or it has to be compensated by a decrease in expenditure.

With the aim of analyze the pro-cyclical components of the LFPRH, in this part are used different techniques. The first step consists in the extraction of the unobserved components of the next time series: total budgeted public income (TBPI) and total budgeted public expenditure (GPE).

The observed series are discomposed into 3 unobserved components:

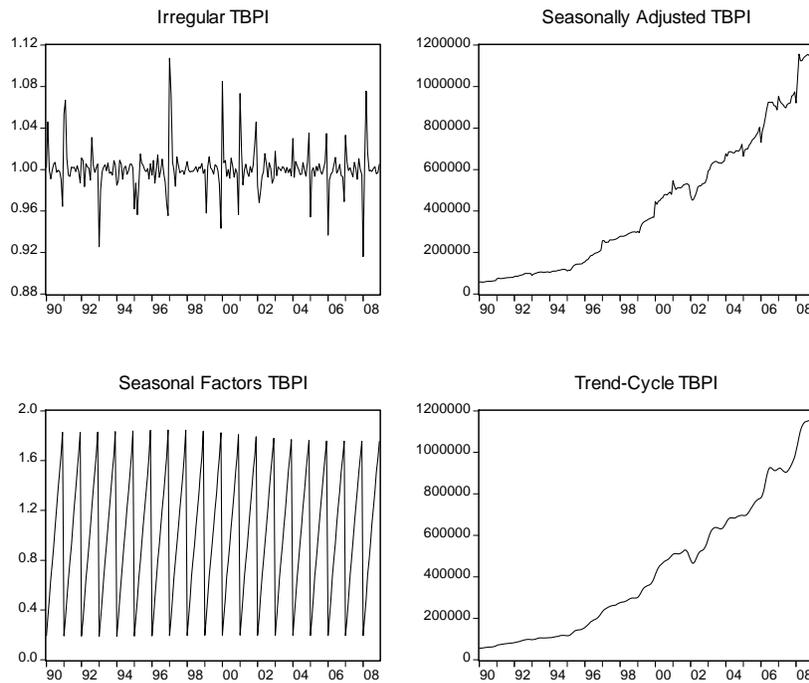
¹¹ Article 74° refers to Annual Federal Expenditure Budget; Article 75° gives to Deputy Chamber the obligation of setting their own wage; Article 126° limits the access of politician to Federal Budget; Article 127° points out some consideration for the setting of wages in public administration; and Article 134° refers to limitation on the use of federal budget as well as some elements of accountability and transparency.

$$(1) \quad Y_t = f(CT_t, S_t, I_t)$$

Where Y_t is a series composed by a cycle-trend (CT_t), seasonal factors (S_t) and an irregular component (I_t).

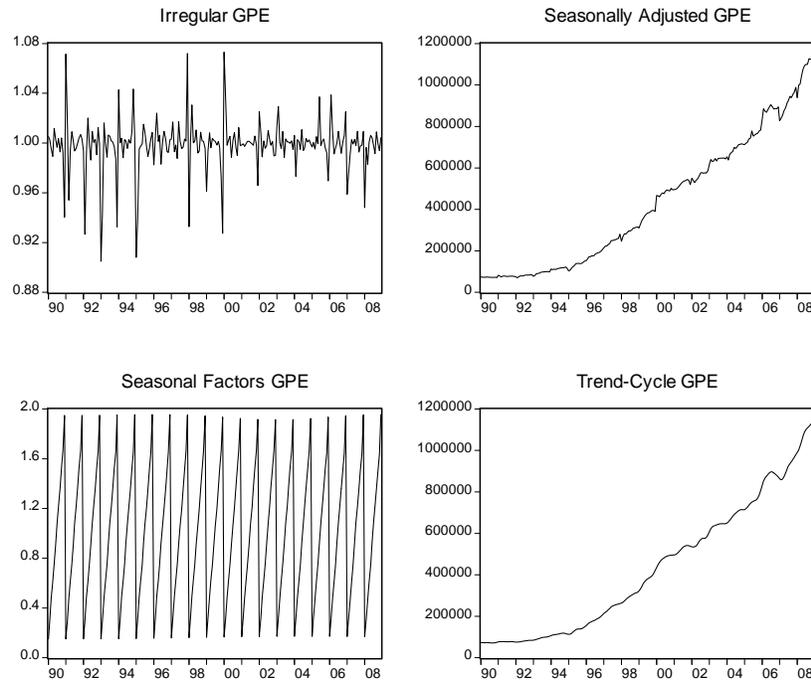
For this first step is used X-12-ARIMA¹². Graph 5 and 6 show the unobserved components of the series TBPI and GPE, respectively. Data is sourced by BIE-INEGI, 228 observations (1990:01-2008:12).

Once it has been extracted the series seasonally adjusted, the second step is to compare both series. It is used mean and variance comparison tests. First, it considered the period since the enactment of the LFPRH, i.e., 2006:03-2008:12.



Graph 5. Unobserved Components of Total Budgeted Public Income, 1990-2008.
Source: BIE-INEGI.

¹² X-12-ARIMA is produced, maintained and used by the Census Bureau in U.S. The estimation of the unobserved components was made using multiplicative method.



Graph 6. Unobserved Components of Total Budgeted Public Expenditure, 1990-2008.
Source: BIE-INEGI.

Table 5 shows ANOVA and F comparison test, which null hypothesis, are equality of mean and variance respectively. In Table 5 is showed that in the period of the LFPRH does not reject the null hypothesis of equality of mean and variance of both series. The LFPRH postulates an annual balanced budget, to assess if this has been followed in Mexican economy, it is applied the tests presented before but in an annual way with monthly data, i.e., in 2006, 2007 and 2008 like separated years. Table 6 presents results, which do not reject, for any assessed year, the null hypothesis of equality of mean, implying an annual balanced budget. After this, it is applied the same test to the period 1990:01-2008:12. Table 7 shows results. For the period 1990:01-2008:12 does not reject the null hypothesis of mean and variance equality for both series, which implies that the balanced budget policy has been observed at least since beginning of 1990's. Long/medium-run balanced budget is considered a sound practice but "efficiency" of short-run balanced budget is questioned.

Mean and Variance Comparison, 2006:03-2008:12.				
	ANOVA F-statistic	Prob.	F-Test	Prob.
TBPI Seasonally Adjusted VS GPE Seasonally Adjusted	1.007010	0.3193	1.293266	0.4641
Source: Data from BIE-INEGI with Seasonal Adjustment using X-12-ARIMA				

Table 5. Mean and Variance Comparison of TBPI and GPE seasonally Adjusted, 2006:01-2008:12.

Source: BIE-INEGI with seasonal adjustment using X-12-ARIMA.

Mean and Variance Comparison, 1990:01-2008:12.				
TBPI Seasonally Adjusted VS GPE Seasonally Adjusted				
	ANOVA F-statistic	Prob.	F-Test	Prob.
2006:03-2006:12	0.448699	0.5115	11.64175	0.0012
2007:01-2007:12	1.412085	0.2474	4.532038	0.0188
2008:01-2008:12	2.770738	0.1102	1.212704	0.7547
Source: Data from BIE-INEGI with Seasonal Adjustment using X-12-ARIMA				

Table 6. Mean and Variance Comparison of TBPI and GPE seasonally Adjusted, in the years 2006, 2007 and 2008.

Source: BIE-INEGI with seasonal adjustment using X-12-ARIMA.

Mean and Variance Comparison, 1990:01-2008:12.				
	ANOVA F-statistic	Prob.	F-Test	Prob.
TBPI Seasonally Adjusted VS GPE Seasonally Adjusted	0.006416	0.9362	1.017680	0.8951
Source: Data from BIE-INEGI with Seasonal Adjustment using X-12-ARIMA				

Table 7. Mean and Variance Comparison of TBPI and GPE seasonally Adjusted, 2006:01-2008:12.

Source: BIE-INEGI with seasonal adjustment using X-12-ARIMA.

The results indicating equality of mean and variance can support the idea that, when public income increase as result of a boom in economic cycle, there is also an increase in public expenditure, while if the cycle is declining then public expenditure declines as result of the fall in public income. This association of public income and public expenditure affects pro-cyclically the economic cycle. This other government hand is also tied.

In the actual crisis, this short-run balanced budget target is evident when federal government is more worried about maintaining a balanced budget than to avoid unemployment, inequality and poverty. The idea of maintaining a balanced

budget in the medium/long term is necessary especially for countries with weak informal institutions that promote corruption as it is for Mexico, however, is necessary in the short term that government has the possibility to react in front of falls in the cycle.

4. Conclusions.

In the preceding pages it has been discussed the reduced role of fiscal policy in recent times. This downward role matches with the analytical framework of the New Macroeconomic Consensus. One of the main arguments for it, has been the crowding-out effect of public expenditure on private investment and consumption. However, empirical literature has show the importance of fiscal policy as an adjunct to private sector. In addition, fiscal policy plays a key role against inequality and poverty. The other reason of the downward of fiscal policy, and perhaps the most important in Latin America, is the adjustment policy after the crisis of the debt at the beginning of the 1980's. Both factors have led to an abandonment of fiscal policy. It has been even most evident in Mexico with the enactment of the Federal Act of Budget and Fiscal Accountability (LFPRH), which restricts the capacity of response of the Mexican Government in time of crisis, like the current one. Current crisis has affected Mexican economy via foreign demand, decreasing exports, lowering FDI inflows as well as declining family remittance, what coupled to weak domestic demand have show the fragility of Mexican economic structure. In time like this, Government actions play a fundamental role. Nevertheless, the oil dependence of public finances and the restriction imposed by the LFPRH have limited the possibility of action.

According to different estimations, in 2009 the contraction of Mexican GDP is going to be close to 7%. The errors in economic policy have consequences: increase in poverty, inequality and unemployment. This is the main reason for a demanded change in the LFPRH, including in it the possibility of a large deficit, granting fiscal policy the appropriate role as well as reducing the dependence of

public finances on oil revenues what implies a fiscal reform, with the aim of unties the hands of the Mexican government.

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