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Wagner's Law versus the Keynesian Theory: The case of Mexico, 1950-2009

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Abstract

This article examines Wagner's law and Keynesian theory for the case of Mexico from 1950 to 2009. Wagner's law stipulates that growth in public expenditures is explained as the result of economic activity, while the Keynesian hypothesis in this area puts forward the opposite view. To analyze these two positions, the authors use three different specifications proposed by: 1) Peacock and Wiseman (1961), 2) Musgrave (1969), and 3) Gupta (1967) and Michas (1975). The results reveal that the first two specifications show evidence in favor of Wagner's law, which tends to be reinforced by the direction of the causality tests done to estimated vector autoregression models.

Key words*:* Wagner's law, Keynesian theory, fiscal policy.
JEL Classification: C51, E52, E62.

Introduction

The current situation that most of the world's economies, whether developed or emerging, find themselves in as a result of the crisis that began in the United States in 2008, brings back to the center of the debate the issue of which measures might be the most appropriate not only to attenuate negative effects, but also to allow for a faster economic recovery.

One among all the economic measures that fiscal authorities have proposed as incentives to economic growth is to stimulate economic activity through

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increasing public expenditure. Its proponents argue that, to a great extent, this increase could contribute to reactivating domestic markets and thus counteracting contractive effects of external demand, particularly in export-dependent economies. The theoretical basis of this measure is the Keynesian hypothesis about public expenditure (Keynes, 1936).

Contrary to this above arguments, there are those who doubt fiscal policy's capacity to contribute to economic growth. The extreme version of this position is Wagner's law, which maintains that it is economic growth that influences public expenditure. In Mexico, this has been debated in recent years (see Galindo and Cordera, 2005 and Cuevas, 2009).

This study proposes to investigate the connection between different public expenditure indicators and economic growth in Mexico. To that end, the aim of the article is to: 1) review those variables' long-term trajectories or patterns; and 2) verify if there is a long-term cointegration relationship; and suggest their causal relationship by testing different versions of Wagner's law. With this, we are seeking to contribute empirical evidence to the current debate about fiscal policy and economic growth. There are three equally fundamental reasons for this: first, because the law has not been fully tested in Mexico with long, updated series; secondly, it is particularly important in developing countries; and third, this would make it possible to determine if fiscal policy through public expenditure can have an impact on economic activity, or if public expenditures are the result of economic activity.

The article is organized as follows: in the next section, we present the main theoretical tenets of Wagner's law, which question the capability of public expenditure to have an impact on economic growth. In addition, we briefly review the methodology and central results of the main empirical works on this topic, emphasizing the ones about Mexico. Following, we discuss the stylized facts around the evolution of the variables dealt with in this study. In contrast with the problematic use of the data by the Ministry of Finance, we use a more complex indicator for public sector expenditure originating in national accounts and that is more consistent for comparison with the Gross Domestic Product (GDP). In another section, we formulate the econometric methodology used to test the hypotheses and present the estimate results of the models. We end exposing the conclusions.

Theoretical bases

The notion that there is a long-term trend in which government expenditure increases as a result of economic growth was first proposed by Wagner in the late nineteenth century (see Wagner, 1890). According to Sideris (2007), Wagner postulates that during an economy's industrialization, in which per capita income increases, the share of public expenditures in total income also increases. In his estimation, three main arguments support this hypothesis: 1) during industrialization, the State's administrative and regulatory functions must replace private activities with public ones; 2) economic growth must lead to an increase in services for culture and well-being, which are assumed to be elastic *vis-à-vis* income, and 3) in its intervention, the State is obligated to provide the necessary capital to finance the large-scale projects required to satisfy the technological needs of an industrialized society that are not carried out by the private sector. In other words, Wagner's law stipulates that the growth of the government apparatus is due to an increasing demand for public goods and the control of externalities. Thus, it implies that causality extends from national income to public sector expenditure. Therefore, public expenditure is considered endogenous to the growth of national income. This contrasts with the Keynesian view that sees public expenditure as an instrument of exogenous policy that can have an impact on growth.

Modern versions of Wagner's law use the notion of maximization of utility as a necessary component of their explanations. Niskanen (1971) postulates that government expenditure can increase disproportionately with growth as a result of bureaucrats' behavior to maximize utility, since they are capable of expanding the size of the bureaucracy at the expense of its efficiency. Meltzer and Richard (1981) and Persson and Tabellini (1990) also look at the motivations involving public elections: assuming that government activity includes a redistributive element, they explain that this increase raises the number of low-income voters who press for greater and more re-distributive public expenditure.

It is crucial to underline the economic policy implications counter to the Keynesian hypothesis. If it is economic growth that influences public expenditure, the latter will be an endogenous factor in the economy, determined by purely economic factors in which political factors have little influence. To the contrary, the Keynesian hypothesis implies that the exogenous factor is public expenditure, which can influence the political factors to serve as an incentive

for economic growth. This last hypothesis is the one that to a greater or lesser extent has marked the path of economic policy for many countries, both developed and emerging, since the end of World War II.

Because of its important implications for economic policy, the relationship between government expenditure and economic growth put forward by Wagner has been widely researched by public sector economic theory in the last three decades. Equally, the validity of this law has been empirically demonstrated for a great number of countries, both developed and developing, using time series as cross-sectional data. These studies cover analyses of specific countries and groups of countries, mainly since the end of World War II.[1]

The empirical literature

The empirical work on Wagner's law can be classified in two groups, according to the econometric methodology utilized: *a*) those studies carried out until the mid-1990s, which assume that the data comes from stationary series and therefore apply ordinary least squares (OLS) regressions to test alternative versions of the law (see Ram, 1987; Courakis, Moura-Roque and Tridimas, 1993, and, for the case of Mexico, Mann, 1980); *b*) those that use multiple time-series techniques to test cointegration of public expenditure and national income or some variant of either of these two indicators. More recently, some studies use Granger's causality test to determine the causality among those variables (Henrekson, 1993; Murthy, 1993; Ahsan, Kwan and Sahni, 1996; Biswal, Dhawan and Lee, 1999; Kolluri, Panik and Wahab, 2000; Islam, 2001; Al-Faris, 2002; Halicioglu, 2003; Burney, 2002; Wahab, 2004, and Ziramba, 2008). However, the empirical studies have produced mixed –sometimes even contradictory– results. The latter have been attributed to the different methodologies utilized and the distinctive characteristics of the economies during alternate time periods.

Among the studies done for Mexico are those by Mann (1980), Murthy (1993), and Lin (1995). The last two authors present evidence in favor of Wagner's law, while Nagarajan and Spears (1990) reject it. However, in their article about the 1970-2004 period using mixed data from the Finance Ministry and national accounts, Galindo and Cordera (2005) argue that these contradictory

[1] A broad review of this literature can be found in Chang, Liu and Caudill (2004), while Peacock and Scott (2000) present a more critical discussion.

results can be ascribed to both the use of different econometric techniques and the omission of the existence of structural changes.[2] These arguments are opportune, and for that reason, our study seeks to cover the historic period from 1950 to 2009 using consistent data from national accounts. By situating the structural change from 1982, we seek to examine the law under the change in the type of fiscal policy (see section 3), avoiding biases that put a priority on either of them.

More or less general consensus exists that the law is valid in developing economies, since, according to Sideris (2007), Wagner's proposition was conceived as applicable to countries in their early stages of development. Thus, in a large number of studies, evidence of this hypothesis has been shown for emerging economies utilizing time series for recent periods, or in developing economies with relatively small public sectors (see Ansari, Gordon and Akuamoah, 1997; Iyare and Lorde, 2004; Oxley, 1994; Thornton, 1999, and Florio and Colautti, 2005). Using data from the British economy for the 1870-1913 period, Oxley (1994), in particular, finds evidence in favor of Wagner's law. Thornton (1999) also analyzes the experience of six industrialized economies (Denmark, Germany, Italy, Norway, Sweden, and the United Kingdom) for the period between the mid-nineteenth and the early twentieth centuries, and reports results favoring Wagner's law. Similarly, Florio and Colautti (2005) analyze the experience of five economies (the United States, the United Kingdom, France, Germany, and Italy) for the 1870-1990 period; they observe that the increase in the public expenditure/national income ratio is greater for the period that lasts until the mid-twentieth century, and they develop a model based on Wagner's law and the Pigou effect to analyze the growth of that ratio for the entire period.

Lachler and Aschauer (1998), on the other hand, examined the hypothesis that the reduction in Mexico's GDP growth rate beginning in 1981 was a consequence of the fall in public expenditures in infrastructure observed since then (see Caballero and López, 2012). But their results, based on time-series and

[2] According to Galindo and Cordera (2005), the two counterposed hypotheses that they attempt to evaluate are Wagner's, which implies the presence of a stable, long-run ratio between public expenditure and per capita income, supported by elasticity higher than one and a unidirectional causality of output toward public expenditure, on the one hand, and on the other, that of Keynes, which maintains that public expenditure is an exogenous variable and that, therefore, its increase generates greater economic growth by making aggregate demand more dynamic, with causality emanating from public expenditure toward output.

cross-sectional models provide limited empirical support for the argument, and they therefore conclude that increased public expenditure is not automatically transformed into faster growth either of output or of productivity. They attribute this to the crowding-out effect of public investment *vis-à-vis* private investment; they therefore analyze this hypothesis, using time-series regression analysis to find a significant coefficient, but less than unity. They comment that the displacement effect limits the impact of public investment growth, reducing its effect on capital accumulation. In their time-series analysis, they also suggest that the total productivity of the factors responds positively to increments in the ratio of public investment to private investment, but their Chow break tests indicate that the positive effect on productivity tended to wane significantly in the 1980s. With the cross-sectional regressions, they show evidence that an increase in the public capital stock has an impact on growth only if it is financed through savings generated by a reduction in public consumption expenditure and not through taking on greater public debt, thus leading to greater current and future taxation. With this, they maintain that it is more probable that a stable positive impact of increased public expenditure depends on its form of financing.

Ramírez (2004) returns to Lachler and Aschauer's hypothesis, with the same theoretical approach and the same period, to analyze the effect of public infrastructure expenditures on Mexico's economic growth. Nevertheless, they come to opposite conclusions. Ramírez uses a Cobb-Douglas-type production function that disaggregates capital (in infrastructure) into private and public. Based on a cointegration analysis, he estimates a vector error correction model using time series for the 1955-1999 period. He concludes, among other things, that both private investment and public expenditure have a significant positive effect on Mexico's growth rate and that private capital's response to public infrastructure expenditure is positive. In addition, he points out that increased output does not seem to induce greater levels of public infrastructure expenditure; that is, causality emanates from public investment toward output and not the inverse.

Galindo and Cordera (2005) carry out a multi-variant analysis in which they estimate a vector autoregression model (VAR) to analyze the cointegration relations among the following variables: per capita GDP, programmable public expenditure, and gross capital formation for the period 1970-2004. In their analysis, they identify the presence of structural change in the series through a Bai-Perron test (2003) for multiple structural changes. They conclude that there

is a stable, long-term, positive relationship between per capita income, private investment, and public expenditure, in the presence of important structural changes. In addition, the impact of both investment and public expenditure on per capita output is less than unity, which tends to disprove Wagner's hypothesis that the estimated public expenditure coefficient has to be larger than one; and they do not discard simultaneity among the variables. Thus, according to Galindo and Cordera (2005), a change in public expenditure will have effects on the per capita income trajectory only in the short run and, therefore these effects will be annulled over time, rejecting the Keynesian hypothesis that public expenditure is totally exogenous. The results of their causality tests tend to confirm this, given that they find a short-term bi-directional causality public expenditure/output per capita ratio. However, the causality tests under other specifications in their models do not allow them to reject the null hypothesis of no-Granger causality between the two variables. The mixed results found in the tests applied to their estimations leads them to argue that neither extreme case of Wagner's or Keynes's hypotheses constitute a good approximation to the Mexican economy.

Cuevas (2009), for his part, investigates the short-term effects of fiscal policy in Mexico using different vector autoregression techniques. His results provide evidence that fiscal expansion due to a reduction in public income increases the money supply, the interest rate, and prices, depreciates real exchange rates and increases interest payments to investors, strengthening economic activity and weakening the trade balance.

Another study that evaluates the effect of public expenditure on private expenditure is by Castillo and Herrera (2005) for the period between 1980 and 2002. Using cointegration analysis and the methodology proposed by Vahid and Engle (1993) for common cycles conditioned to cointegration testing,[3] they find that increased public consumption leads to a permanent decrease in private consumption and that the impact of short-term increases of public investment is a reductions in private investment, but that the long-term impact of public investment on private investment is positive.

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[3] It is said that a group of variables are cointegrated when there is at least a linear combination of a lesser order of integration than the variables that make it up. In Vahid and Engle (1993), in the case of common cycles, this is all about finding a linear combination of stationary variables that do not inherit the serial correlation present in each of them and that, in addition, are not predictable; in other words, a linear combination that is white noise.

With these antecedents and empirical results found for Mexico, we will study the effects of government expenditure on economic activity in Mexico in the years between 1950 and 2009. This is a fundamental issue for many economies, given the current recession. It is opportune to underline here that the advantage of our measurement of public expenditure is comprehensive: first, because it covers the public sector, composed of the overall government and publicly-owned companies; secondly, because it includes both an approximate component of government final consumption expenditure and a complete component of fixed public sector investment; and thirdly, because these components reflect both political and economic public decisions. Thus, we define total public expenditure (*PE*) as $PE = GC + GFFCpub$, in which, on the side of final demand, *GC* are the general government consumption and *GFFCpub* is the gross formation of fixed capital in the entire public sector. These flows come from the national accounts, which is why it is consistent to compare them with GDP. Our historical series thus provides a more trustworthy and complete indicator of the Mexican State's decisions.

Stylized facts: state intervention versus free market in Mexico, 1950-2009

In order to show the evolution of the variables used to examine Wagner's law in Mexico (or, on the other hand, the Keynesian hypothesis), table 1 presents the different specifications that have been used in the literature to prove the law.

Table **1**
Specifications used to test Wagner's law

Author	*Specification*
Peacock y Wiseman (1961), Musgrave (1969) and Goffman and Mahar (1971)	$PE = f(GDP)$
Pryor (1968)	$C = f(GDP)$
Goffman (1968)	$PE = f(GDP/POP)$
Musgrave (1969)	$PE/GDP = f(GDP/POP)$
Gupta (1967) and Michas (1975)	$PE/POP = f(GDP/POP)$
Peacock and Wiseman (1979)	$PE/GDP = f(GDP)$

Note: *PE* = public expenditure; *GDP* = Gross Domestic Public; *C* = government consumption; *POP* = population; *GDP/POP* = per capita GDP; *PE/GDP* = relative public expenditure; *PE/POP* = per capita public expenditure.
Source: Jaén (2004).

We have six specifications, of which we chose three to test Wagner's law for Mexico for the 1950-2009 period. The three specifications are those of 1) Peacock and Wiseman (1961), Musgrave (1969), and Goffman and Majar (1971); 2) Musgrave (1969), and 3) Gupta (1967) and Michas (1975). This choice was made based on an elementary criterion for dimensional consistency: the specification of the model must use either only levels (or functions of those levels) or only ratios on both sides of the equation.

In order to identify growth trajectories, the population's income, and public expenditure policies, we will divide the 59 years of the study into two sub-periods:[4] 1950-1981 and 1982-2009. This division closely follows the two post-war phases identified by Maddison (1986 and 2001) to explain the factors involved in world growth, but puts a priority on the stages of state intervention or free market in order to evaluate public expenditure policies implemented in Mexico.

The historical periods characterized as state interventionist or free market after World War II have also been called periods of stabilizing development and economic adjustment, respectively, based on performance until the end of the 1970s of Keynesian mixed economies and the implementation of orthodox economic policies based on neoclassical liberalism. The specialized literature argues that stabilization policies and the different structural reforms implemented under current liberalism are a response to the failure of Keynesianism that led to stagflation in the 1970s and the debt crisis in the early 1980s. In this dilemma, protectionism and trade openings characterized these same periods, respectively, as did industrialization by import substitution and export- and foreign-investment-led growth policies.

Undoubtedly, one of the most important indicators in any economy is its ability to produce "wealth" by unit of time. Given this, what was the productive performance of free market policies implemented from the first adjustments after the 1982 crisis? To respond, the right vertical axis of figure 1 shows Mexico's economic growth between 1950 and 2009, utilizing the annual GDP growth rate (*gGDP*) at constant 2003 prices. It also shows relevant historical events that changed the path of economic growth.

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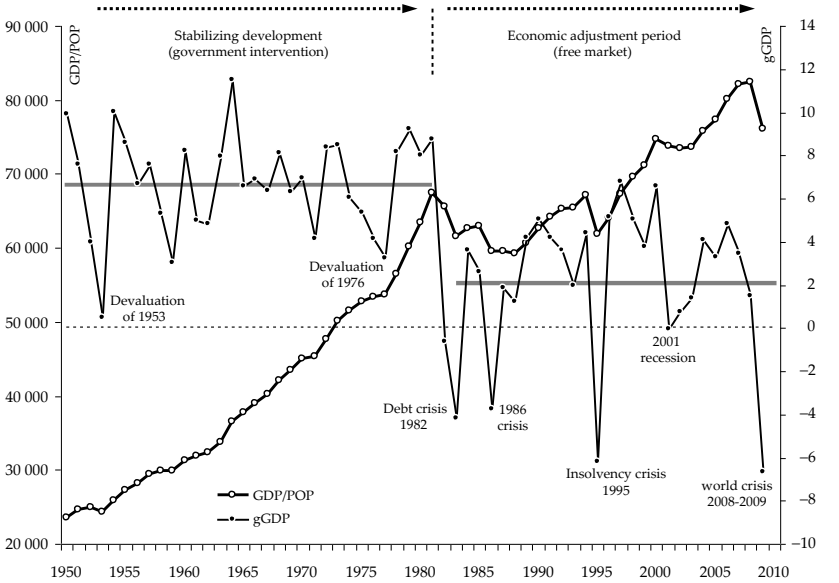
[4] It should be recognized that the average growth in both periods reflects the effects of macroeconomic disequilibrium and the constant external shocks experienced by Mexico and most emerging economies (Chiquiar and Ramos-Francia 2009).

Figure **1**
Per capita GDP and economic growth (gGDP) in Mexico, 1950-2009
(constant 2003 pesos per person and average annual growth rate)



Notes: per capita GDP *(GDP/POP)* in constant 2003 pesos per person. GDP in millions of pesos at constant 2003 prices. Rebasing and linking time series (Hexeberg, 2000) by the authors with series from Banco de México (Banxico) and Instituto Nacional de Estadística y Geografía (INEGI)national accounts. Arithmetic mean growth per period (*gGDP*, table 2): 6.6 and 2.1 percent. Total population (*POP*) in millions of people at mid-year. According to figures from the Economic Commission for Latin America and the Caribbean (ECLAC) Population Division Latin American and Caribbean Demographic Centre (CELADE), *CEPALSTAT*.

According to quarterly figures, the 2009 growth rate was negative, –6.7%. This was the most profound collapse experienced by Mexico in the last 60 years. It is –0.5 and –2.5 percentage points larger, respectively, than the 1983 and 1995 drops. The responsible authorities said that this was due, more than to inefficiencies in economic policy continuity, to external shocks caused by the 2008-2009 world real estate and financial crisis. Nevertheless, without these shocks, in the preceding decade, continual, sustained economic growth stopped from 2006 (the previous peak). Notably, that brief five-year upturn was preceded by the null-growth recession of 2001. It is worthwhile asking ourselves if these cyclical drops are a reflection of the external or if they are also the product of profound domestic problems. And this is because they are not the only de-

bacles experienced by the Mexican economy in the last 28 years of structural reforms. From this, we can derive several questions: To what extent can these upsets be attributed to external or internal factors?, What role do investment and domestic expenditure play?, and What is the impact of state intervention or exclusion?

For example, the –4.2% drop during the 1982 debt crisis is commonly attributed completely to imprudent state intervention, but what is forgotten is the international hike in interest rates was not decided in Mexico, nor were the drop in oil prices or the amount of indebtedness. The same can be said of the –3.8% drop in GDP in 1986. This was not completely attributable to the oil market or instability and the 1986-1987 stock market crash, without taking into consideration the ineffective stabilization policy that since 1985 had discouraged economic growth, reducing public expenditure, increasing interest rates, restricting credit, and devaluating the exchange rate. The same can be said of all the structural reforms implemented beginning in 1988 that led to the 1995 insolvency crisis with the –6.2% plunge of GDP (see Gil-Díaz and Carstens, 1995).

In summary, whether as a result of the capability or lack of skill in dealing with external impacts or in internally implementing macro-economic policy, the empirical evidence indicates that performance during the adjustment, free-market period gave rise to an average growth of only 2.1% a year from 1982 to 2009 (see figure 1 and table 2). This performance over 28 years seems healthy in principle. However, when examined historically, its success pales. By comparison, the "Mexican miracle" (1950-1970) or even "populism" (1970-1982) for the entire period of state intervention in the economy, the average growth rate was 6.6% a year. In those 31 years of development, output more than tripled for each percentage point of the structural reforms (3.2 = 6.6%/2.1%). The biggest drop came with the 1953 devaluation with a positive rate of 0.5%, and even during the 1973-1976 stagflation and devaluation crisis, the lowest growth rate was 3.3 in 1977.

The left vertical axis of figure 1 presents the evolution of per capita GDP (*GDP/POP*), a distributive or social welfare measurement. As can be observed, under liberalism, real per capita income between 1982 and 2009 grew only 16% at an average of 0.6% per year (going from Mex$65 614 to Mex$76 156 in constant pesos per person). By contrast, during the period of state intervention from 1950 to 1981, the *GDP/POP* ratio increased 180% at an average of 3.4% per year (rising from Mex$23 624 to Mex$67 443). That is, social well-being

during the period of state intervention increased more than six times as rapidly than during the free market period (6.2 = 3.4/0.6).

The growth in GDP and per capita GDP shown in figure 1 will be the independent variables in the specifications that we subject to econometric tests in section 4. For the first specification, in which the growth of absolute levels of public expenditure is a function of the growth of output levels (Peacock and Wiseman, 1961; Musgrave, 1969, and Goffman and Mahar, 1971), it is a good idea to compare their mutual growth here.

Table **2**
Average annual GDP and public expenditure growth rates, 1950-2009

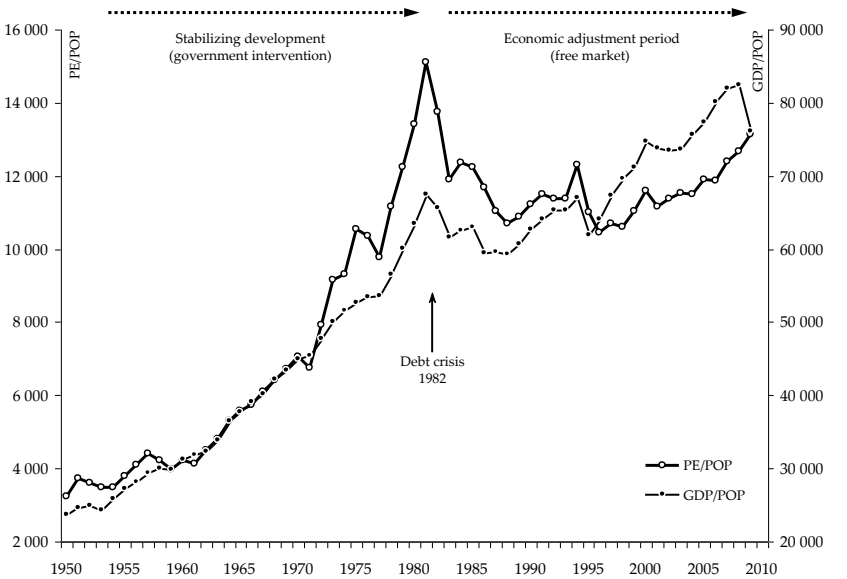
Period	Government intervention: 1950-1981			Free market: 1982-2009			Total period: 1950-2009		
	gGDP	*gPE*	*gPE/gGDP*	*gGDP*	*gPE*	*gPE/gGDP*	*gGDP*	*gPE*	*gPE/gGDP*
N	31	31		28	28		59	59	
Means (%)	6.6	8.5		2.1	1.2		4.5	5.0	
Standard error	0.416	1.249		0.672	0.933		0.487	0.922	
Median	6.9	9.3		3.4	2.3		4.8	4.5	
Standard deviation	2.3	7.0		3.6	4.9		3.7	7.1	
Variation coefficient (%)	34.9	81.3		171.7	421.6		83.5	140.3	
Output elasticity of public expenditure (%)			1.286			0.566			1.128

Notes: *gGDP* is the average annual growth of output; *gPE* is the average annual growth of public expenditure; *gPE*/*gGDP* is output elasticity of public expenditure. Average GDP and public expenditure growth rates (%) in pesos at constant 2003 prices.
Source: developed by the authors using data whose sources are indicated in figures 1 and 2. Statistics developed with *SPSS* v11.

Table 2 shows the average annual growth of output (*gGDP*) and of public expenditure (*gPE*). This evidence indicates that during state intervention from 1950 to 1981, the rapid 6.6% growth in output corresponds to a greater (8.5%) increase in public expenditure. To the contrary, under the free market from 1982 to 2009, the slower (2.1%) economic growth is linked to slower growth in public expenditure (1.2%). The variation coefficient reveals that this performance was more stable in the first period and persistently unstable in the second. It is also very noticeable that public expenditure grew during state intervention more than seven times as fast as in the liberalization period (7.3 = 8.5/1.2). The 1982 structural change marks the turning point in public expenditure policy:

it expanded during growth and constricted during crisis. This is confirmed by looking at the output elasticity of public expenditure (*gPE/gGDP*), which expresses variations in public expenditure as a response to changes in output. This was greater than unity during state intervention (1.286), as in the entire period under study (1.128), but not during market liberalization (0.566).

Figure **2**
Per capita public expenditure and GDP (PE/POP and GDP/POP) in Mexico, 1950-2009
(pesos at constant 2003 prices per person)



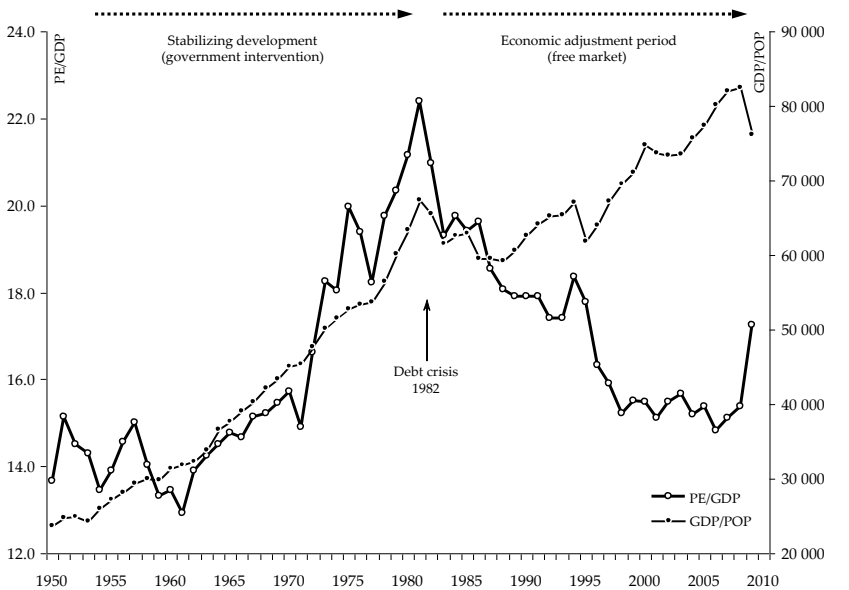
Notes: per capita public expenditure (*PE/POP*) in constant 2003 pesos per person. Total public expenditure (*PE = GC + GFFCpub*), on the side of final demand, in millions of pesos at constant 2003 prices and includes government consumption (*GC*) and gross formation of fixed capital in the public sector (*GFFCpub*). *GC* and *GFFCpub*, adjusted with their own indexes of specific prices.
Source: rebasing and linking time series (Hexeberg, 2000) by the authors with series from Banxico and INEGI national accounts.

With this information, we can evaluate figure 2, which associates the evolution of per capita public expenditure (*PE/POP*) and per capita output (*GDP/POP*). Figure 2 also illustrates the specification of Gupta (1967) and Michas (1975) that stipulates *PE/POP* as a function of *GDP/POP*. It can be observed that, with state intervention in which *GDP/POP* grows robustly (180%), per capita

public expenditure increases a notable 368% between 1950 and 1981 at an annual average rate of 5.1%, going from Mex$3 229 to Mex$15 098 per person at constant 2003 prices. We distinguished two sub-periods. In the first (1950-1970), *PE/POP* grew slightly above per capita GDP, while in the second period (1971-1981), it grew a great deal more than per capita GDP. Thus, the per capita expenditure that had been reached in two decades in 1970 doubled in only one by 1981. The greatest increase occurred between 1977 and 1981.

To the contrary, with the free market, when *GDP/POP* grew slightly, it is clear that per capita public expenditure dropped by –5% between 1982 and 2009 to an average of –0.2% (decreasing from Mex$13 760 to Mex$13 128 per person in constant 2003 pesos). Here, too, there are two sub-periods. The 1982-1996 period corresponds to the time when *PE/POP* drops continually. Beginning in 1996, the opposite happens: *PE/POP* grows steadily until 2009, but that recovery is situated 13% below the 1981 level.

Figure 3
Relative public expenditure (PE/GDP) and per capita GDP (GDP/POP), 1950-2009
(constant 2003 percentage and pesos per person)



Source: rebasing and linking time series (Hexeberg, 2000) by the authors with series from Banxico and INEGI national accounts.

Regarding Musgrave's specification (1969), which establishes *PE/GDP* as a function of *GDP/POP*, figure 3 examines relative public expenditure, the participation of current expenditure and public investment in output. It can be observed that *PE/GDP* increases 64% between 1950 and 1981 to an average annual growth rate of 1.6%, increasing from 13.7% to 22.4% participation. This large hike corresponds to the increase in per capita GDP under statism. As before, two sub-periods can be identified. Between 1950 and 1970, relative public expenditure grew modestly (rising from 13.7% to 15.7%, or two percentage points), which means there is no defined trajectory. In the 1950s, it drops; in the 1960s, it rises slightly; and, in general, it remains stable. In contrast, between 1971 and 1981, relative public expenditure increases greatly (7.5 percentage points, from 14.9% to 22.4%). This evidence suggests that calling the three decades of stabilizing development "imprudent" or "excessive" due to its state intervention policy is unwarranted. At most, this adjective can only be used for the 1970s.

But this upward trajectory of relative public expenditure reversed, turning downward. Between 1982 and 2009, *PE/GDP* dropped –18% (from 21 to 17.2 percent). Meanwhile, with the exception of the 2009 jump, between 1982 and 2008 it drops –27% to an average rate of –1.4%, passing from 21% participation to 15.4%. Another unusual bounce occurred in 1994. Notably, the proportion in 2006 and adjacent years was similar to that of the 1960s.

In conclusion, what stands out here is that during stabilizing development the State exercised an expansive interventionist expenditure policy. Inversely, in the adjustment and structural reform period, the liberal government promoted and applied a policy of absent, reductionist expenditure. The 1950-1981 and 1982-2009 periods (respectively called periods of state intervention and free market) show markedly contrasting patterns in terms of growth and public expenditure in Mexico. The period of state intervention is characterized by high, sustained economic growth linked to a vigorous increase in the population's income. This is linked to a greater increase in absolute, relative, and per capita public expenditure. Contrary to this, the free market adjustment period is distinguished by its low, turbulent economic growth, linked to a slow increase in the population's income. This corresponds to a slowing of absolute and per capital public expenditure and a decrease in relative public expenditure.

Having established these stylized facts, we will now study, first, if there is a long-run cointegration relationship among these variables, and, second, their causality with certain econometric specifications that evaluate the effect of output on expenditure.

Methodology and econometric results

Econometric methodology

The basic model the analysis starts from is a vector autoregression model with the dimension p and Gauss errors:

$$X_t = A_1 X_{t-1} + \cdots + A_k X_{t-K} + \Phi D_t + \varepsilon_t \qquad [1]$$

here $X_0,\ldots,X_{k-1}$ are fixed, $\varepsilon_1,\ldots,\varepsilon_T$ are *iid* $N_p(0,\Omega)$ and D_t is a vector of deterministic variables that that can be anything from a constant, a linear trend and intervention or stationary dummies; D_t can even contain stationary stochastic variables that are weakly exogenous or can be excluded from the space of cointegration.

On the other hand, the technique used to test cointegration among the series is the one proposed by Johansen (1988), which tests the range Γ_k, the matrix of parameters associated with the lag vector in the variable levels. This technique specifies the error correction model (ECM) of a VAR of m-variables for a time series vector X_t, such as:

$$\Delta X_t = \Gamma_1 \Delta X_{t-1} + \Gamma_2 \Delta X_{t-2} + \ldots + \Gamma_{k-1} \Delta X_{t-k+1} + \Pi X_{t-1} + \Phi D_t + \varepsilon_t \qquad [2]$$

where $\Pi = \sum_{i=1}^{k} A_i - I_p$ defines the long-run "solution in levels" in equation [2] and $\Gamma_i = -\sum_{i=i+1}^{k} A_i$ (see Cuthbertson, Hall and Taylor, 1992), and k is large enough to ensure that ν_t will be a Gaussian white noise vector distributed identically and independently with a zero median and a finite variance.

Results

Table 3 presents the augmented Dickey-Fuller test (ADF) applied to the series used in the different specifications.

Table 3
Augmented Dickey-Fuller (ADF) test for the series, 1950-2009

Variable	ADF					
	A		*B*		*C*	
pe_t	**3.1429**	**(1)**	–2.6581	(0)	**–8.0005**	**(0)**
Δpe_t	–1.4879	(0)	**–6.1549**	**(0)**	**–6.4474**	**(0)**
y_t	**2.9402**	**(1)**	**–3.1499**	**(0)**	–0.4676	(1)
Δy_t	**–2.8374**	**(1)**	**–4.4181**	**(0)**	**–5.5387**	**(0)**
$(pe/gdp)_t$	–0.4617	(0)	–1.3464	(0)	–1.3713	(0)
$\Delta(pe/gdp)_t$	**–7.2798**	**(0)**	**–7.2321**	**(0)**	**–7.0973**	**(0)**
$(gdp/pop)_t$	**4.3843**	**(0)**	–2.4254	(0)	–0.7598	(0)
$\Delta(gdp/pop)_t$	**–4.3962**	**(0)**	**–5.3402**	**(0)**	**–5.7726**	**(0)**
$(pe/pop)_t$	**3.0234**	**(1)**	–2.2229	(0)	–0.5764	(1)
$\Delta(pe/pop)_t$	–1.4879	(4)	**–6.1549**	**(0)**	**–6.4474**	**(0)**

Notes: the test statistics presented in bold indicate a rejection of the null hypothesis. The numbers in parentheses are the number of lags in the test. The critical values at the level of significance for the augmented Dickey-Fuller test are –1.94, without either a constant or a trend (model A); –2.86, including a constant (model B), and –3.41, including a trend and a constant (model C). Tests carried out using *J-Multi* 4.23.

Table 4
Kwiatkowski, Phillips, Schmidt, and Shin (KPSS) test for the series, 1950-2009

Variable	KPSS	
	η_μ	η_τ
pe_t	**1.9304**	**0.4827**
Δpe_t	**0.6110**	0.0962
y_t	**1.9763**	**0.4996**
Δy_t	**0.9789**	0.0698
$(pe/gdp)_t$	**0.6379**	**0.4156**
$\Delta(pe/gdp)_t$	0.1520	0.0910
$(gdp/pop)_t$	**1.9030**	**0.4610**
$\Delta(gdp/pop)_t$	**0.5098**	0.0549
$(pe/pop)_t$	**1.8848**	**0.4827**
$\Delta(ge/pop)_t$	**0.6110**	0.0962

Notes: test carried out with two lags. The statistics presented in bold indicate the rejection of the null hypothesis. η_μ and η_τ represents the statistics in the test in which the null hypothesis considers that the series is stationary in level or around a deterministic trend, respectively. Tests carried out using *J-Multi* 4.23.

Table 5
Phillips-Perron unit root tests for the series, 1950-2009

Variable	*Without intercept or trend*		*With intercept*		*Intercept and trend*	
pe_t	**4.0906**	**(4)**	–2.5027	(2)	–0.8751	(1)
Δpe_t	**–4.9001**	**(4)**	**–6.2188**	**(3)**	**–6.4501**	**(2)**
y_t	**5.9876**	**(4)**	**–3.7306**	**(1)**	–0.1083	(0)
Δy_t	**–2.5605**	**(2)**	**–4.3880**	**(2)**	**–5.4959**	**(2)**
$(pe/gdp)_t$	–0.7404	(1)	–1.6559	(0)	–1.5307	(0)
$\Delta(pe/gdp)_t$	**–7.2891**	**(1)**	**–7.2424**	**(1)**	**–7.1122**	**(1)**
$(gdp/pop)_t$	**4.0018**	**(2)**	–2.4339	(2)	–0.9125	(1)
$\Delta(gdp/pop)_t$	**–4.4121**	**(3)**	**–5.3402**	**(0)**	**–5.6806**	**(3)**
$(pe/pop)_t$	**3.9742**	**(4)**	–2.5027	(2)	–0.8751	(1)
$\Delta(pe/pop)_t$	**–4.9009**	**(4)**	**–6.2188**	**(3)**	**–6.4501**	**(2)**

Notes: text results in bold indicate the null hypothesis has been rejected. The critical values at the level of significance for the test are –1.94, without either constant or trend; –2.90, including an intercept; and –3.47, including intercept and trend. The numbers in parentheses correspond to the number of lags in the test. Testing done in *Eviews* 7.0.

Based on tables 3, 4, and 5, we can infer that the series examined in this study have an order of integration equal to 1, while the series are stationary at the level of their first differences.

Once it has been concluded that the series in question have a unit root, we proceeded to estimate the vector autoregression models incorporating the variables in the levels indicated for each specification. Of the specifications that have been used to test Wagner's law, we chose three that in our opinion are more consistent for testing the hypothesis.

The first specification tested is the one proposed by Peacock and Wiseman (1961), Musgrave (1969), and Goffman and Mahar (1971), which establishes that public expenditure is a function of income and, therefore, the model to be estimated is:

$$pe_t = \alpha + \beta y_t \qquad [3]$$

where pe_t is public expenditure and y_t is output, both variables in logarithms of levels. The second specification to be tested is the one used by Musgrave (1969). This specification establishes that public expenditure as a proportion

of output $(pe/y)_t$ is a function of per capita GDP $(y/pop)_t$. Thus, the model to estimate is:

$$(pe/y)_t = \gamma + \phi(y/pop)_t \quad [4]$$

The third specification we tested is the one used by Gupta (1967) and Michas (1975). It establishes that per capita public expenditure $(gp/pop)_t$ is a function of per capita GDP $(y/pop)_t$. The model to be estimated is the following:

$$(pe/pop)_t = \delta + \eta(y/pop)_t \quad [5]$$

Based on these specifications, three autoregressive vectors were estimated without restrictions for each pair of variables involved in each of them.

In each case the number of lags was chosen according to the Schwarz criterion, and in the three cases, the number of suggested lags was 1, in accordance with that criterion. In the three VAR models, both an unrestricted linear trend and a constant restricted to the space of cointegration were incorporated, in addition to the pulse dummy variables for the following years: 1971, 1982, 1983, 1986, 1995, and 2009 in models (3) and (4), while model (5) required an additional pulse dummy for the year 1977 to ensure that the models passed the incorrect specification tests. It should be noted that for adjustment purposes, the effective period for which the different models were specified was restricted to the years between 1954 and 2009, thus avoiding the incorporation of the dummies for 1951 and 1953. Thus, the majority of the dummy variables used coincide with the years when Mexico experienced a crisis. The specification error tests for each of the VAR(1) models estimated are presented in table 6.

As table 6 shows, the VAR(1) estimated for each specification passes the erroneous specification tests, and therefore, each model estimated can be considered a good approximation to the data generating process. Once the VAR models were adjusted to the different pairs of variables suggested for each specification, we performed the Johansen cointegration test for each pair of variables. The results are presented in table 7. Given the incorporation of dummy variables in the Johansen procedure (1988), it was necessary to simulate the critical test values; for that, we used the *Cats in Rats* program, version 2.0. Table 7 presents the trace test results with the new critical values, confirming the presence of a cointegration vector for each pair of variables in question.

Table 6
Mis-specification tests for the unrestricted VAR models

Test		pe_t		y_t	*Test*		(pe_t, y_t)
$F_{ar(1-5)}$ [5,41]	2.3	[p = 0.06]	2.3	[p = 0.06]	$F_{ar(1-5)}$ [20,70]	1.2	[p = 0.30]
F_{arch} [1,54]	0.7	[p = 0.41]	0.2	[p = 0.67]			
F_{het} [6,43]	2.3	[p = 0.05]	0.4	[p = 0.87]	F_{het} [18,116]	1.0	[p = 0.44]
χ^2_{norm} [2]	0.5	[p = 0.78]	0.0	[p = 0.99]	χ^2_{norm} [4]	1.1	[p = 0.90]
Test		$(pe/y)_t$		$(y/pop)_t$	*Test*		$[(pe/y)_t, (y/pop)_t]$
$F_{ar(1-5)}$ [5,41]	2.0	[p = 0.10]	2.4	[p = 0.05]	$F_{ar(1-5)}$ [20,70]	1.3	[p = 0.24]
F_{arch} [1,54]	3.2	[p = 0.08]	0.3	[p = 0.61]			
F_{het} [6,43]	1.9	[p = 0.10]	0.8	[p = 0.60]	F_{het} [18,116]	1.0	[p = 0.47]
χ^2_{norm} [2]	0.0	[p = 0.98]	0.0	[p = 0.99]	χ^2_{norm} [4]	1.1	[p = 0.90]
Test		$(pe/pop)_t$		$(y/pop)_t$	*Test*		$[(pe/pop)_t, (y/pop)_t]$
$F_{ar(1-5)}$ [5,40]	1.4	[p = 0.23]	2.2	[p = 0.07]	$F_{ar(1-5)}$ [20,68]	1.1	[p = 0.36]
F_{arch} [1,54]	0.5	[p = 0.49]	0.0	[p = 0.82]			
F_{het} [6,42]	1.0	[p = 0.41]	0.5	[p = 0.82]	F_{het} [18,113]	0.7	[p = 0.86]
χ^2_{norm} [2]	1.1	[p = 0.58]	0.0	[p = 0.98]	χ^2_{norm} [4]	0.5	[p = 0.97]

Notes: the numbers in brackets are the *p*-values. Tests carried out using *PcGive* 13.

Table 7
Results of the Johansen trace test

Variables	H_0: *rank* = *p*	*Eigenvalor*	*Trace*		*95%*	*p-value (simulated)*
pe_t and y_t	$p = 0$	0.892	123.555	**	18.621	[0.000]
	$p \leq 1$	0.017	0.948		8.495	[0.898]
$(pe/y)_t$ and $(y/pop)_t$	$p = 0$	0.714	68.447	**	18.309	[0.000]
	$p \leq 1$	0.013	0.737		8.211	[0.936]
$(pe/pop)_t$ and $(y/pop)_t$	$p = 0$	0.708	73.797	**	18.157	[0.001]
	$p \leq 1$	0.124	7.244		8.419	[0.087]

Notes: (*), (**) indicate the rejection of the null hypothesis at 5 and 1 percent significance, respectively. Test done in *Cats in Rats*, version 2.0, with a longitude of 60 for the random walks and with 10 000 repeats.

Table 8 presents the standardized cointegration vectors estimated with the Johansen procedure for the three specifications used. As we can see, in the three cases the slope parameter in each of them is less than unity, and it is closest to zero in the case of Gupta and Michas's specification (1975).

Table 8
Estimated cointegration vectors

Specification	*Model*	*Estimated parameters*	
Peacock and Wiseman (1961)	$pe_t = \alpha + \beta y_t$	α	β
		8.5782	0.6141
		(3.27)	(0.28)
Musgrave (1969)	$(pe/y)_t = \gamma + \phi(y/pop)_t$	γ	ϕ
		12.105	0.7107
		(0.59)	(0.30)
Gupta (1967) and Michas (1975)	$(pe/pop)_t = \delta + \eta(y/pop)_t$	δ	η
		7.6670	0.2817
		(0.32)	(0.04)

Notes: the numbers in parentheses are the standard errors. The estimates were made using *PcGive* 13.

In order to prove Wagner's hypothesis for each of the specifications used, table 9 reports the results of the log-likelihood ratio test statistic (logLR) applied to the slope of each of the specifications estimated. In each case, fulfilling Wagner's law requires that the slope parameter be equal to unity. Even though Wagner's law establishes no restriction on the intercept, we additionally tested the possibility that it was equal to zero.

Table 9
Restrictions on the cointegration vectors and tests for weak exogeneity

Specification	*Hypothesis*	*Statistical*	*p-value*
Peacock and Wiseman (1961)	H_0: $\beta = 1$	0.1052	[0.7457]
$pe_t = \alpha + \beta y_t$	H_0: $\alpha = 0$ and $\beta = 1$	5.4202	[0.0665]
	H_0: $\alpha_{pe} = 0$	25.2360	[0.0000]
	H_0: $\alpha_y = 0$	63.4270	[0.0000]
Musgrave (1969)	H_0: $\phi = 1$	0.3465	[0.5561]
$(pe/y)_t = \gamma + \phi(y/pop)_t$	H_0: $\gamma = 0$ and $\phi = 1$	0.8259	[0.6617]
	H_0: $\alpha_{(pe/y)} = 0$	0.1376	[0.7107]
	H_0: $\alpha_{(y/pop)} = 0$	13.922	[0.0002]
Gupta (1967) and Michas (1975)	H_0: $\delta = 0$	6.5135	[0.0107]
$(pe/pop)_t = \delta + \eta(y/pop)_t$	H_0: $\delta = 0$ and $\eta = 1$	12.296	[0.0021]
	H_0: $\alpha_{(pe/pop)} = 0$	30.206	[0.0000]
	H_0: $\alpha_{(y/pop)} = 0$	20.535	[0.0000]

Notes: the tests were carried out using PcGive 13.

The results of the logLR tests with Peacock and Wiseman's (1961) and Musgrave's (1969) specifications show evidence favoring the fulfillment of Wagner's hypothesis for Mexico in the period under consideration. That is, it is not possible to discard the null hypothesis that the estimated slope parameter in each of the specifications is equal to unity, whether individually or together with the test for intercept being equal to zero. To the contrary, the specification of Gupta (1967) and Michas (1975) resoundingly rejects the hypothesis of Wagner's law by rejecting the null hypothesis that the parameter for per capita GDP elasticity in per capita public expenditure is equal to unity.

With regard to the tests for weak exogeneity, the specifications of Peacock and Wiseman (1961) and Gupta (1967) and Michas (1975) suggest that there is feedback between both variables regarding the term of the cointegrated VAR error correction, while Musgrave's specification (1969) suggests that the public expenditure variable as a proportion of output is weakly exogenous.

Lastly, table 10 shows the Granger causality tests applied to non-restricted VAR models estimated for each of the specifications in the levels of the variables. In the three cases, the Granger causality tests revealed that the economic activity variables are what determine or cause, in this sense, the public expenditure variables, which tends to favor Wagner's hypothesis.

Table **10**
Tests for non-causality in the granger sense

Null hypothesis:	*F*(1,1,90)	*p-value*
Peacock and Wiseman (1961)		
pe_t does not cause y_t	0.9760	[0.3258]
y_t does not cause pe_t	17.5599	[0.0000]
Musgrave (1969)		
$(pe/y)_t$ does not cause $(y/pop)_t$	0.1714	[0.6798]
$(y/pop)_t$ does not cause $(pe/y)_t$	6.8621	[0.0088]
Gupta (1967) and Michas (1975)		
$(pe/pop)_t$ does not cause $(y/pop)_t$	0.0099	[0.9209]
$(y/pop)_t$ does not cause$(pe/pop)_t$	12.9161	[0.0005]

Note: tests carried out using *J-Multi* 4.24.

Thus, the foregoing results suggest the fulfillment of Wagner's law for Mexico in the period under study, and, in accordance with the Granger causality tests,

eliminate the possibility that it is public expenditure that determines economic activity, which counters the Keynesian hypothesis by bringing into doubt the possibility that public expenditure determines economic activity in the long run.

Conclusions

This study examined Wagner's law *versus* the Keynesian hypothesis for the case of Mexico between 1950 and 2009 using different specifications available in the literature on this topic. The theoretical debate about the viability or unviability of public expenditure having an effect on economic growth is central in today's period of recession. But so is empirical analysis. In section 2, the evidence from other authors showed contradictory results about the use of various econometric techniques, different measurements, and expenditure sources, as well as short or disparate time periods.

Given this, our study put different specifications to the test with recent techniques involving autoregression, cointegration, and Granger causality vectors, utilizing a larger more comprehensive public expenditure series. That series reflects both political and economic decisions by covering both current expenditure and fixed investment of the entire public sector for the long period between 1950 and 2009. Prior studies have used shorter, more incomplete series.

Section 3 demonstrated empirically and descriptively that this period includes two large stages of Mexico's economic development with definite patterns of government intervention or non-intervention in the economy. The first, from 1950 to 1981, involves stabilizing development, in which the State implemented an expansive interventionist expenditure policy. It was characterized by high, sustained economic growth correlated with the vigorous absolute, relative, and per capita increase in public expenditure. During the second stage, from 1982 to 2009, called the economic adjustment period, the liberal State promoted and applied a policy of absent, reductionist expenditure. Its low, turbulent growth correlates to the slow-down of absolute and per capita expenditure, as well as a decline in relative public expenditure.

About these stylized facts, section 4 subjected the existence of the following to econometric testing: 1) a cointegration relationship among these variables, and 2) a causal relationship between output and expenditure, using different specifications. In the first case, our results showed that the different indicators linking public expenditure with economic growth do, in fact, cointegrate. That

is to say, they have a long-run relationship through common trajectories. This conclusion should be underlined because it verifies section 3's secular correlation between economic growth (or non-growth) and increases (or decreases) in public expenditure.

The remainder of section 4 seeks to respond to the issue of the direction of causality among these variables. Our results showed evidence that tends to validate Wagner's law in Mexico. This is because, in addition to cointegration, two additional conditions were fulfilled that had been established by the theory: 1) In two of the three specifications, the estimated parameter of the slope between both variables did not allow the rejection of the null hypothesis that it is equal to unity, except for the specification of Gupta (1967) and Michas (1975), in which the estimated parameter of the slope retreated considerably from unity; and 2) The causality tests tend to validate compliance with Wagner's law in the sense that it is economic activity or growth indicators that cause public expenditure indicators. In addition, two of the three cases of weak exogeneity tests to the parameters of adjustment velocity of these models suggest that there is feedback among the public expenditure and economic activity variables considered, with the exception of Musgrave's specification (1969), which suggests that the weak exogenous variable is public expenditure as a proportion of GDP. Therefore, the empirical evidence is robust in validating fulfillment of Wagner's law, to the detriment of the Keynesian hypothesis.

Thus, the idea that public expenditure was able to have a favorable impact on economic activity in Mexico in the long period from 1950 to 2009 is provisionally disproven. This brings into question the capacity of public expenditure as an instrument to reactivate economic activity, particularly during recessions and crises as Keynes proposes (1936) with policies like increasing employment levels with public expenditure, applying an income-distributive fiscal policy, regulating speculative operations, and promoting a selective trade opening based on the domestic market.

With this causality in hand, section 3's regularities can be interpreted like this. First, the high economic growth from 1950 to 1981 caused greater growth in public expenditure. This is associated with 31 years of publicly regulated industrialization and investment, increasing per capita income, and, as supported in the economic literature, rising employment and less poverty. For that same reason, second, the low economic growth from 1982 to 2009 sparked decreasing public expenditure, which is framed in 28 years of liberalization without

state regulation, low per capita income, de-industrialization, unemployment, and greater poverty.

Finally, it is appropriate to underline the aspects that are still left to be dealt with in future research on this topic and the economic policy implications that can be deduced from this study. Regarding the former, as has already been pointed out, the evidence presented here suggests that total public expenditure cannot have an impact on long-run economic activity. However, greater research is required to determine: 1) the different impact that the various items in total public expenditure (current expenditure and fixed investment) can initially have on economic activity, whether with the specifications that we use in this study or using certain other alternatives, accompanied by a more detailed analysis of how the composition of total public expenditure has evolved over the long period of the study; 2) whether making estimations of the models by period, mainly before and after 1982, the year that expenditure policy changed, modifies the results; and 3) the pertinence of using public expenditure as a reactivating variable for the economy exclusively in periods of recession.

Regarding the second aspect, our results refer us to the theoretical problem of what factor or factors determine long-run economic growth itself and their implications for economic policy. This is because the study of econometrics is the validation of the causality proposed by the economic models of the different theories. In this framework, it would be desirable to strengthen much more the relevance of the Keynesian hypothesis on growth on the short-term temporal scale as the limit of its impact on the long term.

The pertinence of these answers is crucial because Mexico now needs to reactivate growth, not only after the short-term crisis, but to move past a period of 30 years of profound recurring crises. These facts (section 3) provide certain evidence about the nature of growth. Thus, in Mexico, different measures were presented both to stabilize short-term activity and to accelerate potential long-run growth from 1982, 1986, and the 1990s, respectively, through structural adjustments, the first Washington Consensus reforms, and then new-generation structural adjustments. But for some time, it has been clear (Hausmann, Rodrik, and Pritchetts 2004, and Ocampo, 2005) that some of these measures to free up market forces (exhaustive privatization, indiscriminate economic opening, extensive market deregulation, financial liberalization, etc.) either have no relationship to growth or are flawed. Some supporters of these measures have recently begun to ask themselves about the degree of their contribution to

making the world's economies more vulnerable (OECD, 2009). Their performance in Mexico is insufficient since it only represents 1/3 of the growth displayed by stabilizing development (2.1%/6.6%).

Therefore, with sensible regulation, industrial development strategies fostered with growing investment in infrastructure seem to be the central factor as shown in the high economic growth achieved between 1950 and 1981 (section 3). This makes it possible to achieve both real per capita income growth and greater absolute, relative, and per capita public expenditure that produced individual and collective well-being. But deeply-rooted prejudices continue to exist against these policies, particularly regarding a possible fiscal deficit or *vis-à-vis* trade, like a return to protectionism. Nevertheless, experience has shown that this kind of policy can now maintain fiscal equilibrium like preventing monetary shocks and oil shocks from abroad. And, if export-oriented growth is promoted, the evidence from successful experiences suggests achieving it through selective trade accompanied by extensive industrialization policies (Agosin and Tussie, 1993: 25; Rodrik, 2001: 29, and Shaikh, 2007: 64).

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