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The problem of measuring the fiscal deficit in México *Evolution, concepts and magnitudes*

El problema de la medición del déficit fiscal en México *Evolución, conceptos y magnitudes*

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Abstract

The measure of budget deficit has experienced very important semantic transformations as new economic phenomenon have been presented in economic life in México. In this way, we have gone –since origins of the Independent State of New Spain- from the concept of budget deficit to the concepts of economic deficit, operational deficit and financial deficit in the seventies and eighties decades, to get to the concepts of primary economic deficit, financial requirements of public sector and its historics balances nowadays. Searching for a measure indicating the financial position of the government and the public sector is a job that has required to get up to the new economic phenomenon. The empirical evidence documented here shows that depending on the aspects that you wish to highlight in relation to the financial position of the Mexican public sector, will be the selected indicator.

Budget deficit, Operational deficit, Financial deficit, Financial requirements of public sector

Resumen

El concepto de déficit presupuestal ha experimentado importantes transformaciones conforme se han presentado nuevos fenómenos en la vida económica del país. Así pasamos -desde los orígenes del Estado Independiente de la Nueva España- del concepto de déficit presupuestal, a los conceptos de déficit financiero, operacional y económico, en la segunda mitad del siglo XX, para llegar a los conceptos de requerimientos financieros del sector público y sus saldos históricos más recientemente. La búsqueda de una medida única que indique la posición financiera del gobierno y del sector público es un trabajo que ha demandado adecuar el indicador al surgimiento de los nuevos fenómenos económicos. La evidencia empírica aquí documentada muestra que dependiendo de los aspectos que se deseen resaltar en relación con la posición financiera del gobierno, será el indicador seleccionado.

Déficit presupuestal, Déficit operacional, Financial déficit, Requerimientos financieros del sector público.

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Introductión

Economic indicators, Zemelman (1989) tells us, “are more than just records. They constitute a rational appropriation insofar as what matters is the connection with the empirical real that it establishes; understanding this connection as a condition for the subsequent theoretical development” (p. 39). The fiscal deficit is one of those concepts whose nomenclature has experienced a significantly dynamic behavior over time in order to try to better express the reality it is trying to describe.

In this way, this work identifies an evolution in the conceptualization of the public deficit that responds to the dynamics itself resulting from the income-expenditure relationship of public finances and the economic cycle, to the growing diversification of economic life, of the financial system and the appearance of new economic phenomena that have forced institutions and scholars of the subject to develop criteria and new methodological refinements that lead them to a better understanding of reality. It is also one of those concepts whose connection with the empirical reality implies, in addition to the challenges of the accounting record, defiances in theoretical-conceptual field.

The study of the fiscal deficit involves different problems and different dimensions of analysis. As it represents the result of the interaction between government income and expenditures, it constitutes a public finance phenomenon resulting from the difficulties inherent in budgeting income-expenditure in advance and from its interaction with the economic cycle and the internal and external shocks that arise which are not possible to predict in its entirety.

Likewise, the problem of financing the public deficit and its effects on economic activity constitutes a study dimension that has strongly attracted attention in the macroeconomic literature from David Ricardo and the classics of Economics, to the present day. At another level of analysis, the volume and composition of government expenditures and revenues constitute the mechanism through which those responsible for fiscal policy try to influence the behavior of the economic cycle and express to some extent the objectives of reallocation of resources and of social distributive justice.

However, when the student of public finance or fiscal policy is faced with the objective of trying to understand the phenomenon of fiscal deficit, it turns out that, as Blejer and Cheasty (1993) argue, “there is no such thing as the fiscal deficit, but rather a series of alternative measures, each with advantages and disadvantages” (p. 3). Each of them with specificities and particularities that make it possible to emphasize certain aspects of public finances in the public sector, financing the deficit or fiscal policy.

In this way, those interested in studying the behavior of the fiscal deficit in our country will face a variety of concepts, including the following: fiscal budgeted deficit, budget exercised deficit, economic deficit, financial deficit, operational deficit, primary deficit, oil and non-oil balance sheets, budget and non-budget balance sheets, public sector financial requirements (RFSP), historical balance of public sector financial requirements (SHRFSP), quasi-fiscal deficit, structural deficit, full employment deficit, deficit cyclically adjusted, etc.

In Mexico, as established in the document of the Ministry of Finance and Public Credit entitled Fiscal Balance in Mexico. Definition and Methodology (2021) "the concepts of public balance, economic balance, budget balance, financial balance and financial requirements of the public sector (RFSP) correspond to the concept of fiscal balance and are different due to aspects of institutional coverage and operations" (p . 3). In the same sense, this explanation can be extended in the case of oil, non-oil, budgetary and non-budgetary balances: differences in institutional and operational coverage. To the above concepts must be added those of the primary, operational and structural balance, among others that are not explained by "institutional coverage aspects" and that allow us to observe the diversity of existing concepts in relation to the central concept of fiscal deficit despite the efforts facts done regarding accounting harmonization by the International Monetary Fund since 2001.

This research documents the concepts and the historical context in which arose the ideas of approved budget deficit, exercised budget deficit, economic deficit, financial deficit, operational deficit, financial requirements of the public sector and historical balances of the financial requirements of the public sector arose.

The present work constitutes an effort to elucidate the circumstances in which some relevant denominations of the fiscal deficit in Mexico arise, as well as to measure their magnitudes. Contributing to clarify the limitations and scope of the concepts related to the public balance is the fundamental objective of this work in order to establish the differences and relevance of each of them.

II. Work hypothesis

The fiscal deficit and its different expressions (budget deficit, economic, primary, operational, financial deficit, financial requirements of the public sector, etc.) are the result of a set of diverse factors and a combination of circumstances that are articulated and superimposed on each other and which are the following:

1. Those that derive from the very existence of the State and its financing needs for the payment of the emoluments of the servants in the government administration, the army, the public security forces and more recently the exercise of social spending. That is, the functioning of the State, its reason for being.

2. The interaction of the income-expenditure relationship of public finances with the economic cycle and the development of the economy in the long term in which economic phenomena such as public debt crises and inflation have occurred; the growth and growing diversification of the financial sector which has given place to important public and private institutions of national and international financial intermediation.

In the axis that links and overlaps the analytical dimensions proposed as causal elements that allow explaining the need to conceptually reformulate the fiscal deficit over time, we can find the explanatory framework of such need, of such dynamics.

III. Objectives

With the statement of the problem and the proposed hypothesis, the following general and specific objectives are postulated:

III.I General objective: Identify the historical and economic context from which the diversity of existing concepts about the fiscal deficit in Mexico evolve.

III.II Specific objective: Present, based on existing official statistics, the empirical dimension of the proposed fiscal deficit measures.

IV. Literature review

There are two editorial projects of notable importance, as they arrange the will of important personalities (the first of them officials such as Pedro Aspe Armella, Miguel de la Madrid Hurtado and Antonio Ortiz mena), related to the recovery of the history of the Public Treasury in our country: 1) the one referring to the “Historia de las Américas Trust”, Hacienda series, promoted by the Colegio de México together with the Fondo de Cultura Económica and 2) the major research project entitled *Los secretarios de Hacienda y sus Proyectos (1821-1933)*, carried out by the National Autonomous University of Mexico. The first of them includes the following titles: *State and market: The public economy of Mexican liberalism, 1850–1911* written by Marcello Carmagnani; *Bankers and Revolutionaries: The Financial Sovereignty of Mexico, 1914-1929* written by Emilio Zebadúa; *Public Finance and Economic Policy, 1929-1958* written by Enrique Cárdenas; *Fiscal policy of stabilizing development 1958-1970* written by Rafael Izquierdo, *Economic policy in Mexico, 1950-1994* written by Enrique Cárdenas and *Stabilizing Development: reflections on a time* written by Antonio Ortiz Mena. As documented in Cárdenas (1994), this series had the objective of historically illustrating the elaboration, implementation and links of fiscal and budget policies, as well as their capacity and limits to promote growth, social promotion and the economic functions of the mexican State between 1850 and 1993 (p. 9).

In the introduction to Cárdenas's work (1994), Alicia Hernández makes a historical judgment in relation to the performance of those responsible for the Mexican public finances: “it has been generally satisfactory”. This series deals with the economic history of the Mexican public finances and it is possible to extensively document the national and international economic context in which the fiscal policy and public finance instruments of this long historical period operated: 1850-1993.

It is a mandatory reference for those who study public finance in our country. Regarding the second major research project called *Los secretarios de Hacienda y sus Proyectos (1821-1933),* it was coordinated by Leonor Ludlow and Nicole Girón, both members of the Historical Research Institute of the National Autonomous University of Mexico and was published in 2002. This work is made up of two volumes, the first of them covers the period 1821-1861 and the second from 1861 to 1933.

The works gathered in this opus are the result of a research seminar that held monthly meetings since mid-1997 and throughout 1998, in which most of the collaborating authors participated. More than 25 researchers participated in the seminar and each one analyzed the tax policy of a Secretary. The research work was guided by the following questions: l) What was the political-administrative training in finance of the secretary at the time of taking office? 2) What conditions or qualities help to explain his arrival at the Ministry of Finance and what situation the treasury was going through at that time? 3) From the foregoing, the proposed solution can be derived through various measures, such as those of an administrative nature, or the arrangement of a new loan, or even the presentation of a broader and far-reaching reform project. 4) In manner of conclusion, it was necessary to acknowledge the impact that these actions had at the time, if they could be carried out, or where appropriate explain the reasons why they were stopped. This point is very important, since it allowed us to recognize the reasons for arrival or the difficulties that successive secretaries faced.

As can be read in the fourth cover of the first volume, such publication aimed to recognize the weight of political instability and commercial deterioration in the fiscal and monetary disintegration that the country suffered for nearly a century, a fact that limited the maneuverability of the approximately one hundred people who held the portfolio of the Public Treasury. A work extraordinarily rich in content due to the recovery of sources of documentary information of valuable historical content that allow to reconstruct the complexity of the process of construction of the Mexican nation-state, its internal and external contradictions, the personality of the characters, the political groups and the weakness of national public institutions.

These two works allow us to recreate the context in which the fundamental determinants of the fiscal deficit took shape: income and spending during the 19th century and most of the 20th and 21st centuries.

How to measure the fiscal deficit? analytical and methodological issues coordinated by Mario I. Blejer and Adrienne Cheasty is a collection of essays edited by the International Monetary Fund (IMF) and published in 1993 that properly emphasizes the existing measurement problems surrounding the fiscal deficit. According to the aforementioned authors, "although fiscal policies could fail due to an inappropriate design, in practice the desired objectives could not be achieved because conventional measures of the budget deficit erroneously calculate the true preferential right to purchase resources by the public sector. Correct measurement of the net use of public sector resources is therefore an important prerequisite for managing the macroeconomy" (p. 3).

They then propose what could be considered the starting point of this work:

Although the deficit measure is relevant in principle as an indicator of the macroeconomic consequences of fiscal policy, the set of consequences that policy makers wish to establish could itself determine the correct measure of the deficit. In other words, there is no such thing as a fiscal deficit, instead what we have is a series of alternative measures, each with advantages and disadvantages (Blejer and Cheasty, 1993, p. 3).

It is precisely on this premise previously exposed, that this research work has been inspired to try to document some of the most relevant measures of the fiscal deficit existing in Mexico.

Debt, inflation and deficit. A macroeconomic perspective of fiscal policy (1997) written by Alcides José Lasa in his chapter 6 sets up the problem of measuring the public deficit. In this chapter, Lasa addresses the concepts of full employment deficit and operational deficit with a degree of detail. Regarding the first, he states that:

This corrected measure of the result of public finances consists of evaluating the budget result based on the hypothesis that the level of economic activity is in a situation of full employment. Thus it could happen that a deficit situation is not the consequence of excessive public spending or a low tax rate, but rather of the fact that the level of economic activity is below its maximum potential level. In this case, when evaluating what the balance of the public budget would be under the full employment hypothesis, it could be found that the full employment deficit is zero or negative (pp. 128-129).

Despite the advantage of measuring the full employment deficit, Lasa identifies some drawbacks to its calculation: "in developing countries like Mexico, the concept of full employment of resources is much more ambiguous, and it is almost impossible to obtain a measure operative of him; thus, the idea of a full employment deficit lacks applicability in these economies, so we will not insist on the issue" (Lasa, 1997, p. 129).

Likewise, the aforementioned author dedicates an important part of the cited chapter to elucidating the importance of the operational deficit, of the deficit corrected for inflation. Regarding the latter, he maintains that:

Although with some delay, the government's economic authorities also recognized the need to make a correction to the nominal accounting records of public finances to take into account the effects of inflation. Along with the traditional nominal measures of the financial deficit and the economic deficit of the public sector, other measures that correct various effects that are considered induced by the inflationary process appear for the first time in the Bank of Mexico's annual report in 1986. These new measures are the "operational deficit", the "adjusted operational deficit" and the "total adjusted operational deficit" (Lasa, 1997, p. 131).

Lasa's work demonstrates, in different ways, the importance of differentiating the effects that inflation has on the measure of the fiscal deficit.

The Measurement of Public Finance Balances (2003) written by Jorge A. Chávez Presa analyzes the quantification of fiscal balances. For this purpose, he exposes the methodology for calculating fiscal balances in Mexico from the perspective of fiscal sustainability. It also includes a comparison of methodologies between the SHCP, the Bank of Mexico and the IMF and presents a new calculation proposal.

For Chávez (2003), among the essential foundations for carrying out a reform of public finances is, in the first place, the current and expected quantification of the gap between income and recurring expenses, that is, the measurement of fiscal balances. Regarding this first element, he affirms that it is essential to know the accumulation or decumulation in time of the State's obligations that positively or negatively affect its assets and, consequently, determine the intergenerational distribution of the tax burden. If the current generation is not able to cover its expenses with recurring income, the patrimony of the Federation is being affected in such a way that it will force future generations to carry out strong fiscal adjustments.

Presa's work, like the previous ones referenced here, show the importance of the issue of measuring the fiscal deficit and the need to clarify its different concepts and magnitudes, as well as the contexts that gave place to them.

V. Methodology

It is an exploratory documentary investigation of a descriptive historical nature. Sources from official institutions that have historically been defining the accounting and measurement methodologies of public finances in our country are used, such as: the Ministry of Finance and Public Credit, the Bank of Mexico and the National Institute of Statistics and Geography (INEGI).

VI. Results: evolution of the concept of the budget deficit in Mexico

VI.I A bit of History: the government budget in the 19th and 20th centuries in the light of National Institute of Statistics and Geography (INEGI) Mexico´s Historical Statistics, 1823-1970.

Even though it is possible to locate the historical antecedents of the Ministry of Finance and Public Credit of our country in the 18th century, as proposed by Ludlow (2002):

It is not until independence is declared consummated, (that) the first regency of the Sovereign Provisional Board of the Mexican Empire ordered, on October 4, 1821, the first governmental structure of the Mexican nation, for which it established the foundation of the the first four Secretaries of State, among which was the Ministry of Finance and Public Credit, which, since then, has retained the name of Secretariat, and the secretaries of state responsible for its management and direction (pp. 13-14) .

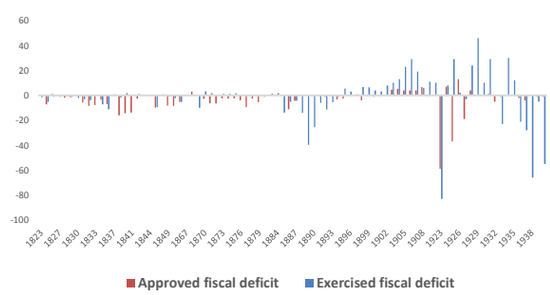
With the creation of the Ministry of Finance in the government of Iturbide we can locate the starting point of the public finances of the Nation-State that Mexico represents. The confrontation between federalists and centralists, political instability and the French and American invasions constitute the scene of the first half of the 19th century in which a weak institutional framework was operating and trying to give shape to the Mexican State. In the same way, “the creation of the Ministry of Finance did not mean the immediate formation of the financial institution given the lack of cohesion of the tax authority, whose attributions and powers were disseminated in a multiplicity of local, civil, religious and military authorities, the which limited the definition of the fiscal and territorial scope of the federation, despite its early legal specification” (Ludlow, 2002, p. 14).

Ludlow (2002) accounts that:

Between 1821 and 1850, the portfolio of the Public Treasury was entrusted to more than seventy personages, including secretaries of the branch, officials or those in charge of the office, several of whom occupied the ministry on more than one occasion.

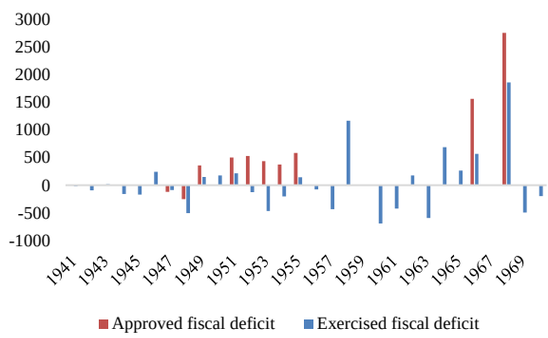
The weakness weighed more on those who held office during the centralist regime than on the period of the first federalism. Rarely this task, especially between 1835 and 1860, reach the necessary durability to achieve a balance between expenses and income; there was also no clarity about the use of public funds in economic development, for which a more precise budgeting technique will be required later. Hence the difficulty in considering that the secretaries could develop a medium-range project (p. 18).

Notwithstanding the context described, the document entitled "Historical Statistics of Mexico" of the INEGI in its volume II presents a chapter on public finances for most of the years for the period 1823-1979. Such chapter “includes information on the Federal Government's income and expenditure budgets, both approved and exercised budgets, and income by sources and expenditures according to administrative branches” (p. 746). From the existing bibliography on the subject, it is possible to recover historical accounting to a large extent from 1823. There are very powerful reasons for this to be the case: the Government Budget is the essence of the functioning of the State, the realization of tax powers, the sign of the strength or financial weakness of a nation. The functioning of the Public Administration and the payment of the army's payroll require the timely payment of their emoluments to give rise to the functioning of the State. In relation to the approved and exercised budgets, figures 1 and 2 show the evolution of the approved fiscal deficit and the exercised, respectively. It is the most elementary measure of the balance of the government budget in Mexico.



Millions of pesos
Note: Values below zero indicate the existence of a deficit, above zero a surplus

Figure 1 Evolution of approved and exercised deficits in Mexico, 1823-1940
Source: Historical Statistics of Mexico, Volume II, INEGI, 1994.



Millions of pesos
Note: Values below zero indicate the existence of a deficit, above zero a surplus.

Figure 2 Evolution of approved and exercised fiscal deficits in Mexico, 1841-1970
Source: Historical Statistics of Mexico, Volume II, INEGI, 1994

As can be seen in figures 1 and 2, which have been segmented in order to clearly visualize the behavior of the approved budget deficit and the exercised budget deficit in the period 1823-1970, it is accounted in relation to the approved budget deficit: 57 years with deficits, 34 years with surpluses and 11 years with fiscal equilibriums; and in relation to the exercised budget deficit: 54 years with deficits, 57 years with surpluses and 2 years with fiscal equilibriums. Differences in data availability explain the differences in the historical accounting record. It can be affirmed that, based on the available information, there is a tendency to propose deficit budgets that are fulfilled to a lesser extent than the surpluses, which are proposed less than what are realized. There would therefore be a historical tendency to underestimate income in relation to expenses.

There are different explanations for the above fact. The first is related to the difficulties to anticipate the internal and external shocks of the economic activity, which determines the level of government income and the second to the incentive that the government has to underestimate the income to, if necessary, use the excess of income real over those budgeted with a certain degree of discretion. In this last perspective and for a recent study period, but which illustrates the issue of incentives in the exposed matter, Núñez (2017) in a comparative analysis on the differences between the approved budgets and those exercised, maintains that:

... if we add the real spending that the Public Account indicates, it turns out that in the last 16 years we did not spend the planned 58.6 billion pesos, but that the real spending was 62.7 billion. This means that 4.1 billion pesos (4.1 millions of millions) were spent more than originally planned and approved by legislators. (...) How much are 4.1 billion pesos? In an abstract way, this equates to 19.9 points of GDP. Almost 20 points of GDP spent off budget in 16 years! However, putting it that way can still be difficult to size up. We could compare it to something more representative; for example, with the budget of the National Autonomous University of Mexico (UNAM), which in 2016 had 41 thousand millions pesos. In this case, the 4.1 billion pesos that the government spent in addition to what we believed, are equivalent to 99.9 times the UNAM budget. Shocking, huh? (pp. 16 and 17).

VI.II Fiscal deficit: from the Economic Deficit to the Financial Deficit 1970-1990.

The set of economic and financial transformations that occurred in Mexico in the seventies and eighties will force the tax authorities to recognize these new realities and to create new concepts related to the fiscal deficit. In particular, there are three outstanding new circumstances in the country for the aforementioned decades that will end up impacting and showing the limitations of the budget deficit concept: 1) the growth in the number of government-owned companies, which went from 84 in 1970 to 845 in 1976 to peak with 1155 in 1982; 2) the presence of inflation, which would go from 5.01% in January 1970 to 179.83% in february 1988 and 3) the extraordinary increase in the volume of internal and external public debt; in the case of the former, it would go from 277 thousand millions pesos in 1977 to 9,838.7 thousand millions pesos in December 1986; in the case of the second, it would go from 5 thousand million dollars in 1972 to 85 thousand million dollars in 1982. According to Sánchez (2021):

Although the public deficit increased consistently, in various periods, they were not built the necessary bases to generate sustained growth in the medium and long deadlines. In fact, our exposure to financial crises only increased, as levels of debt were greater than 40 percent of GDP, which increased the possibility of a greater unsustainability of the public deficit.

Thus, Mexico squandered the opportunity to sustain a growing deficit spending in some periods, because spending was not directed to the sectors strategic and there was no correction in productive imbalances, which undermined the future possibilities to grow in the long term (p. 8).

There is a new reality in the country, new economic phenomena that are not accounted for by the traditional concept of fiscal deficit or budget deficit.

In particular, the recognition of the importance of the payment of interest on internal and external public debt and its impact on the levels of public spending led to the creation of a new concept: the concept of financial deficit. In this way, the impact of the cost of financial intermediation on public spending and thus on the budget deficit is recognized. From now on, the specialized literature on public finance in our country will differentiate between economic deficit and financial deficit. The economic deficit according to the Bank of Mexico glossary:

It is the shortfall incurred by the State when intervening, through public spending, in economic activity directly. Represents the negative result of the difference between income and expenses, both of the Federal Government and of the parastatal entities of direct or indirect budget control. The economic deficit is obtained by adding the non-budgetary deficit to the budget deficit. The budget deficit results from the negative difference between oil and non-oil revenues with the budget expenditures of the Federal Government and the parastatal sector under direct control. The non-budgetary deficit is the negative result of the difference between the income and expenses of the DDF and the indirect budgetary control organizations and companies (p. 14).

Likewise, according to the aforementioned document, a financial deficit is understood to be:

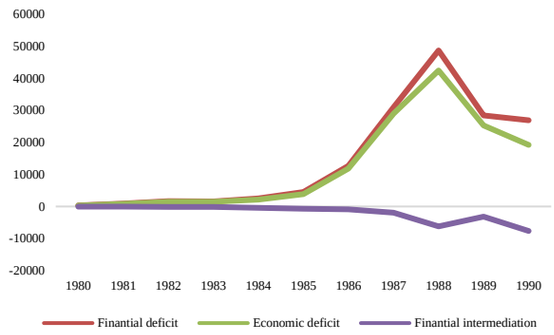
... The negative difference resulting from the comparison between current account savings or deficits and capital account deficits or surpluses; expresses the net credit requirements of the entities involved. It shows the total shortfall incurred by the State when intervening in the national economic activity.

It results from adding the economic deficit with the net figure for financial intermediation (Banxico, 2021, p. 14).

Financial intermediation is defined as the payment to national credit institutions, auxiliary organizations, national insurance and surety institutions and other institutions or entities legally authorized to establish themselves as means of link, between the creditor of a financing and the borrower, by concept commission for his work in arranging credits in the national and international money markets (Banxico, 2021, p. 27).

Unlike the economic deficit, the financial deficit will incorporate the costs of financial intermediation caused by the stock of internal and external public debt that allowed the fiscal deficit to be sustained. The use of public debt as an instrument to finance the public deficit implied a cost for financial intermediation which was necessary to estimate to account for its importance and the impact it has on the budgeted annual financial flow. Even though public debt has been used to finance the deficit since the first years of the constitution of the Mexican State in the 19th century, it is not until the eighties that there is a record that accounts for the cost of financial intermediation. In this way, it was possible to know the effect that financial intermediation has on the economic deficit, giving rise to what would be called a financial deficit.

Figure 3 shows the difference between economic and financial deficits, as well as the cost of financial intermediation. The economic-financial crisis in Mexico in 1982 was triggered by the inability of the Mexican State to meet the capital and interest payment commitments on the foreign debt. The importance of having a measure of the government's financial position that accounts for its financial commitments explains the gap between the aforementioned concepts.



Millions of pesos

Figure 3 Evolution of economic, finantial deficit and finantial intermediation of Governmental Balance in Mexico, 1980-1990
Source: SHCP. General Direction of Tax Planning

It is not possible to chain the series of the economic deficit and the financial deficit of the public sector to that of the deficit of the government budget, the former incorporates, in addition to federal government spending, the spending generated by federal public sector companies under direct and indirect control, reflecting thus the growing importance of state-owned companies in Mexican society.

VI.III The Primary Economic and Operational Balances of the Public Sector 1965-2012

The 1970s and 1980s witnessed in Mexico and Latin America the existence of important inflationary episodes, as well as their effects on nominal economic variables, such as the public sector deficit. The effect of price growth made it necessary to review the effect they have on the interest rate and financial intermediation costs. Thus arose a new concept: the Operational Balance of the Public Sector. Additionally, the concept of primary economic balance was also incorporated in the perspective of evaluating the government effort made to adjust public finances during a determined period.

Below are some formal definitions of the concepts reviewed in this section, as well as a measure of them.

VI.III.I Primary economic balance

According to the SHCP glossary, the primary economic balance is defined "as the difference between the total income of the Public Sector and its total expenses, excluding interest.

Since most of the interest payment for a fiscal year is determined by the accumulation of debt from previous years, the primary balance measures the effort made in the current period to adjust public finances" (p. 53).

From the definition of primary economic balance given, the presence of two more indicators is observed: budget balance and extra-budget balance. The first in turn gives rise to two more indicators: the oil balance and the non-oil balance. All four integrated into the primary economic balance indicator, which makes it an extremely rich indicator in terms of its analytical potential. Oil and non-oil balances are calculated in order to assess the impact that resources from oil exports have on public finances. According to Cabrera (2005), "the oil balance is defined as "PEMEX's own income, plus hydrocarbon rights and the use of excess yields, minus Pemex's total expenditure. Meanwhile, the non-oil balance is the result of subtracting the oil balance from the traditional public balance" (p. 57).

VI.III.II Operational balance of the public sector

According to the Ministry of Finance and Public Credit (2002)

…the operational balance is the relevant fiscal indicator for evaluating the real effect of public finances on the demand for goods and services in the economy, especially in periods with significant inflationary processes, all once the inflationary component of the domestic debt denominated in national currency is eliminated from the financial cost. Such amount is the part of the income from financial products of the creditors of the non-financial federal public sector, which allows them to maintain the value of their financial assets in real terms (p. 4).

Lasa (1997) states that "one of the first calculations of Mexico's operational deficit was the one provided by Banco de México in its Annual Report for the year 1986 (see Banco de México, 1987, p. 127), who calculated it for the years 1965 to 1986 under the following definition: operational deficit = economic deficit of the public sector, less the inflationary component over/ the economic debt in national money" (p. 153). In the current work, the series presented by the SHCP are being used for the two indicators that are addressed in this section and that are presented in Figure 4.

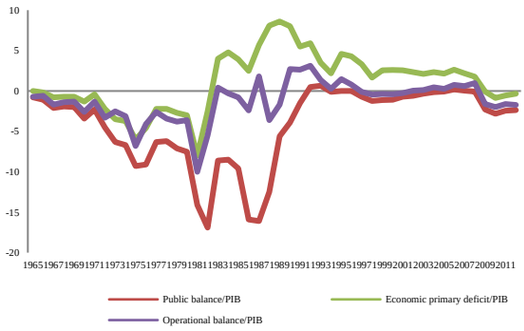


Figure 4 Evolution of public, primary economic and operational Governmental Balance in Mexico as percentage of PIB, 1965-2012
Source: SHCP

Figure 4 shows the behavior of the time series of the public financial, primary economic and operational balance sheets of the public sector in Mexico from 1965 to 2012 prepared by the SHCP. In the graph you can see how the financial public balance is the most in depth, the above by virtue of incorporating the costs of financial intermediation in its accounting.

Taking this indicator as the basis of the analysis of the financial position of the public sector shows us the deficit position of the same for most of the time series with the exception of the years 1991, 1992, 1993, 1994, 2006 and 2007 in which it was surplus. Next, the operational balance is seen in purple, which is lower than the financial balance because it excludes the inflationary amortization that, due to internal debt, implies the financial economic deficit.

This time series incorporates more years in a surplus situation in relation to the public balance or financial deficit; an expected situation. Inflation impacts the values of the financial economic deficit, making them larger; By removing the inflationary component, many of the deficits turn into surpluses.

Finally, in green color the primary economic balance which excludes the costs of financial intermediation and from the year 1982 to 2008 was in a surplus situation, becoming a deficit again from 2009 to 2012.

VI.IV. Alternative indicators: the requirements and historical financial balances of the public sector

The nineties began with the creation of the bank savings protection fund (FOBAPROA) which, as a result of the economic-financial crisis of 1994-1995, would be put into operation and would become gigantic with a cost converted into public debt which, according to Huerta (1998), was around the order of 65 thousand million dollars, which has been affecting the real dimension of the public deficit. In the same way, the presence of Investment Projects of Productive Infrastructure with Deferred Registration in Public Expenditure (PIDIREGAS) as well as the debtor program of the bank made it necessary to consider their payments in a registry that would give special account of the existence of these liabilities. This account was made up of the requirements and historical financial balances of the public sector. The following section gives an account of this.

VI.IV.I Financial requirements of the public sector.

According to the document entitled *Fiscal Balance in Mexico: Definition and Methodology* (2002) published by the SHCP as of the first quarter of 2001, a new concept was presented that aims to express more broadly the financing needs of the federal public sector: financial requirements of the public sector (RFSP).

This indicator, according to the methodological document entitled Financial requirements of the public sector and its historical balances from the SHCP (2013):

*...Aims to provide the public in a summarized and timely manner with the financial results of the activities that the public sector performs to fulfill the set of functions entrusted to it. (...) RFSPs group, among others, the traditional public balance sheet, the financial requirements of the Institute for the Protection of Bank Savings (IPAB) once the transfers from the Federal Government have been discounted, to public investment projects financed by the private sector (PIDIREGAS) and the financial requirements of the National Infrastructure Fund (FONADIN) * and the expected loss or gain of the credit granted from development banks and development funds (p. 1)*

To facilitate understanding of the indicator, the calculation for fiscal year 2013 is explained below.

Finantial requirements of Mexican Public Sector, 2013 (% PIB)	
1. Traditional balance	2.3
2. Finantial requirements by PIDIREGAS	0.0
3. IPAB Finantial requirements	0.1
4. Budget accountant adecuations	0.6
5. FONADIN finantial requirements	0.0
6. Debtors program	0.0
7. Expected profit or loss of development banks and development funds	-0.1
8. RFSP (1+2+3+4+5+6+7)	3.0
9. Non-recurring income	-1.0
10. RFSP without considering non-recurring income (8-9)	4.0

Table 1 Finantial requirements of public sector in Mexico, 2013
Source: Finantial requirements of public sector, SHCP

As can be seen in table 1, even though the financial requirements of the public sector are a broader measure of the set of needs of the federal government and the public sector, they do not incorporate the existence of a large number of contingent liabilities such as those that constitute the funds of pensions of the state and municipal bureaucracy of some federative entities and municipalities of our country (many of them very close to living critical conditions of implosion), the educational systems with state places and of some Autonomous Public Universities, among others.

VI.IV.II The historical financial balances of the public sector

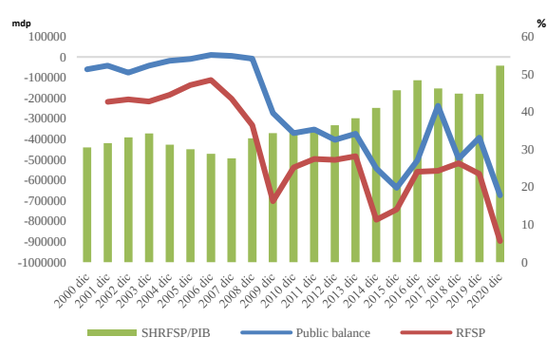
According to the document entitled *Fiscal Balance in Mexico. Definition and Methodology* (2021) the historical balances of the financial requirements of the public sector:

...represent the net stock of the obligations contracted to achieve the objectives of public policies, both of the entities attached to the public sector and of the private entities that act on behalf of the Federal Government. That is, liabilities minus available financial assets, for granting loans and funds for repaying the debt, as a reflection of the annual trajectory observed over time of the RFSPs.

The SHRFSP now groups the net debt of the budgetary public sector and the net obligations of IPAB, FONADIN, those associated with PIDIREGAS and the Debtor Support Programs, as well as the expected loss of development banks and development funds. (p. 38).

It constitutes the broadest measure of public debt and is made up of the historical liabilities that constitute both the internal and external public debt. According to the quarterly report of the SHCP corresponding to the second quarter of 2021, these balances were located at 12 billion 402 thousand 930.1 million pesos. There was no upward variation of the latter compared to the end of 2020, due to the exchange rate. 34.7% of the debt is denominated in foreign currency. Thus, the internal component was located at 8 billion 104 thousand 658.4 million pesos and the external component was 217 thousand 54.8 million dollars (p.58).

As can be seen in graph 5, in blue line the behavior of the traditional public balance and in red the financial requirements of the public sector deficit for the period 2000-2020, the latter greater than the former as it integrates the liabilities related to the IPAB, PIDIREGAS, FONADIN, the program for debtors and the losses of development banks and development funds. On the right axis of graph 5 the percentages that represent the internal and external public debt (historical balances of the financial requirements of the public sector) in relation to the gross domestic product (GDP). A growing trend is observed in these balances, going from 30.5% in 2000 to 52.2% in 2020.



Note: The public balance and RFSP in million pesos and SHRFSP in % of PIB

Figure 5 Evolution of public balance, finantial requirements of public sector (RFSP) and historical balances of the finantial requirements of public sector in Mexico, 2000-2020
Source: Quarterly reports on the economic situation, public finances and public debt, 2000-2020, SHCP

Despite being a broader measure of the financial commitments of the public sector, as already mentioned, it does not include contingent pension liabilities related to government and municipal entities in some states or organizations such as public universities.

VI.V Critical observations

Nevertheless the obvious effort to update and account for the new emerging realities in public finances and specifically the fiscal deficit, some weaknesses remain in the accounting records, some of the most notable being those related to the concept of deficit structural and that resulting from the exchange rate effect on public debt. The following section accounts for these observations.

VI.V.I The structural deficit

According to Pastor and Villagómez, 2005, "it is important to construct indicators that allow the authority to be offered more information regarding the discretionary or structural characteristics of the fiscal components" (p. 2). The indicator proposed by the aforementioned authors is that of Structural Deficit. Citing Budnevich (2002) the authors define the structural deficit as the difference between the observed deficit and the cyclical one. That is, "the structural deficit is the government deficit adjusted for economic cycles measured by the ratio of potential and observed output" (Pastor y Villagómez, 2005, pp. 2-3).

Among the advantages of using this measure, the aforementioned authors affirm that, "by eliminating the effects of the cycle on public finances, if the deficit increases in a period, in the absence of other major shocks, we can detect that this increase reflects a conscious decision by part of the government to have an expansive fiscal policy" (Pastor and Villagónez, 2005, p.3). In this same sense Coremberg et al (2021) set up that "a good alternative to correct the procyclicality of fiscal policy is to define the rule on the structural balance or cyclically adjusted balance sheet. A rule based on structural balance allows the existence of nominal deficits in recessive times and forces the generation of surpluses in phases expansive" (p. 19).

That is, such indicator would allow to know the degree of government discretion in the use of public spending, the fiscal responsibility of the fiscal authorities and would allow private sector investors to detect the quality of fiscal policy.

Other advantages of calculating the structural deficit, the authors claim, result from

…its relative simplicity and clarity as an indicator of the state and direction of public finances. This helps the government to see more clearly if a change in fiscal policy is necessary to achieve medium and long-term objectives: on the one hand, maintain a responsible and sustainable fiscal policy, and on the other stabilize the economy. Also, this contributes to maintaining the confidence of international organizations, capital markets and national and foreign investors, reducing the country risk premium and increasing the vital flow of direct and indirect foreign investment. This increase in confidence allows for greater lines of credit to be able to apply counter-cyclical policies, even during recessions. A second great virtue arises when this indicator is used to establish a rule that limits the structural balance and therefore functions as a powerful stabilizer of the economy (Pastor and Villagómez, 2005, p. 3).

Despite the multiple advantages of using this indicator for the aforementioned purposes indicated by the cited authors among many others, the governmental institutions of our country do not calculate the measure mentioned here nor do they use it as an indicator of the public balance. The government's incentive to use this indicator as a measure of the public sector balance for the purposes described would derive from the associated gains in terms of access to international resources and credibility gained in international markets, a situation that has been taking place without the need to impose this shirt of force that reduces the discretion to the use of fiscal policy in Mexico, a situation for which this possibility still seems far away.

VI.V.II Effects of the exchange rate on the deficit

One of the deficiencies pointed out by Lasa (1997), in relation to the concept of operational deficit is the existence of external public debt. The author tells us that:

…"this is due to the fact that, on the one hand, with the external public debt denominated in dollars, the changes in the valuation in pesos due to changes in the exchange rate and the real depreciation in national currency as a result of inflation, it may have purely accounting effects, without operational relevance on public finances" (p. 150).

At the same time is very important:

…to bear in mind, however, that the real appreciation or depreciation of the peso (given by the difference between the exchange rate and the price level) can be very relevant in regard to interest payments on the external public debt and to the primary deficit when the government imports and/or exports goods and services. For these reasons, some countries in which there are strong fluctuations in their real exchange rate in relatively short periods, and which also have considerable external indebtedness, have preferred to use another measure of the deficit that ignores changes in the real valuation in currency national stock of foreign debt, produced by the combined effect of devaluation and inflation. This measure is the so-called operational deficit (Lasa, 1997, p. 151).

He finally argues: "nominal devaluations will have an effect on the operating deficit by affecting both the primary result and external interests; however, the operational deficit does not take into account the combined effect of devaluation and inflation on the real valuation in pesos of the stock of foreign debt" (Id.Ibid.).

Conclusions

1. The concept of Budget Deficit accompanies the birth of the Independent State of New Spain in 1823 as well as the efforts to integrate the resources that made possible the functioning of the Established Powers and the Public Administration. During the period from 1823 to the 1970s, the most relevant economic literature on the subject in our country records the concept of budget deficit and surplus to refer to excess spending or income to qualify the situation that keep national public finances as the case may be. It is possible to stablish on this time period that there is a trend to propose deficit budget more frecuentley than they occurred being explained this by the incentive of using public resources in a discretional way.

2. From the origin of the Independent State, the use of internal and external debt to finance the budget deficit has been a recurring government resource. The recognition of the existence of a significant financial cost for the financial intermediation of the management of the internal and external debt led to the differentiation between economic deficit and financial deficit. In this way, the first accounted for the excess of spending over the income generated during the year and the second added to the first the accumulated cost of financial intermediation of the public debt.

3. The reoccurring experience of inflationary episodes experienced by the Mexican economy in the seventies and eighties led to the need to generate a new indicator of the real accounting position of the public sector that would make it possible to amortize the effect of inflation on interest of the internal public debt. Thus, the concept of the operational balance of the public sector arose, this concept allows to eliminate from the accounting of the public balance, the inflationary amortization of the internal public debt denominated in national currency.

4. In order to make the formation of financial liabilities of the federal government transparent, the Ministry of Finance and Public Credit incorporated in the first quarter of 2001 the methodology for calculating the concept called "Financial Requirements of the Public Sector" which, even when it incorporates a significant amount of public sector liabilities does not account for the contingent liabilities existing in some state and municipal governments and organizations such as Autonomous Public Universities.

5. Despite the multiple benefits that would derive from the use of the concept of structural deficit for both the government and the private sector, the governmental institutions of our country do not calculate the aforementioned measure or use it as an indicator of the accounting position of the public balance sheet.

The incentive to use this indicator as a measure of the public sector balance for the purposes described would derive from the associated gains in terms of access to international resources and credibility gained in international markets, a situation that has been occurring without the need for the government to impose itself this straitjacket which would reduce the discretion in the use of fiscal policy in Mexico, a situation for which this possibility still seems remote.

6. The search for a single and perfect measure that indicates the financial position of the government and the public sector is not very fruitful work. The empirical evidence documented here shows that depending on the aspects to be highlighted in relation to the financial position of the Mexican public sector, it will be the selected indicator.

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