Independence of Banco de México

by

Guillermo Eduardo Peschard Mijares

Submitted to the Department of Mechanical Engineering

and

Department of Economics
in partial fulfillment of the requirements for the degrees of

Bachelor of Science in Mechanical Engineering

and

Bachelor of Science in Economics

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

May 1994

Author .....
Department of Mechanical Engineering

and

Department of Economics
May 6, 1994

Certified by .....
Rudiger Dornbusch
Ford International Professor of Economics
Thesis Supervisor

Accepted by .....
Professor Peter Griffith
Chairman, Undergraduate Thesis Committee

Independence of Banco de México

by

Guillermo Eduardo Peschard Mijares

Submitted to the Department of Mechanical Engineering
and
Department of Economics
on May 6, 1994, in partial fulfillment of the
requirements for the degrees of
Bachelor of Science in Mechanical Engineering
and
Bachelor of Science in Economics

Abstract

On April 1, 1994, the new Law of the Banco de México came into effect, making this institution independent from the federal government. The objective of this thesis is to justify how this reform will contribute to long-term stability in Mexico. Historical background is presented to help understand the role B de M has had in the economy. The stabilizing development period (1954-1976) provides evidence that economic growth and stability can be achieved through fiscal and monetary discipline. Review of the period from 1972-1994 shows that inflation crises in Mexico have been largely due to the central bank financing the budget deficit incurred by expansionary administrations. Game theory is used to support the case in favor of an autonomous monetary authority devoted to long term stability. Theoretical models predict that an optimal balance in the trade-off between maintaining credibility of commitment to low inflation and retaining flexibility to use monetary policy to alleviate the effects of external shocks can be obtained through such an autonomous authority. The new institutional arrangements of the B de M are reviewed in light of the historical and theoretical evidence presented. The new law is presented as a consolidation of the series of reforms tending towards stabilization and modernization of the Mexican economy. Finally, the challenges that the B de M will have to face in light of the current economic situation are discussed. We conclude that the reform will effectively separate fiscal and monetary authority to contribute to maintaining long term economic stability.

Thesis Supervisor: Rudiger Dornbusch
Title: Ford International Professor of Economics

Acknowledgments

Four years as an undergraduate student at M.I.T. have given me the chance to discover many new interests. For example, I became fascinated by the economic and political development of Mexico, which has culminated in this thesis on the Independence of Banco de México.

I would like to thank Professor Rudiger Dornbusch for the opportunity to have worked with him and for his guidance throughout this thesis.

In addition, I would like to acknowledge the people who helped me getting information and providing me with valuable comments: Lorin Theiss, Guy Debelle, Augie Lee, Alejandro Hernández, Nathalie Abaunza, Nicole Sherry, and Alex Ernst.

One of the best things about M.I.T. is the people that you get to meet. From my M.I.T. experience I will stongly remember the friends that I made and the time that I spent with the crew team.

I've been waiting to get a chance to thank Roberto Ordorica for the friendship and support he has given me througout my time at M.I.T.

I would like to express my admiration for Luis Téllez K., Manuel Rodríguez, Claudio González, and Jose Octavio López Presa; and I appreciate having had the opportunity to work with them.

I would also like to express my gratitude to my friends back in Mexico, to my grandparents for their example, and to my brother Hector and my sister Beatriz.

Finally, I dedicate this thesis to my parents. I hope I will be able to make good use of all they have given me, which is the best way to thank them.

Contents

List of Figures

List of Tables

Introduction

Recent economic history of Mexico is characterized by attempts to stabilize the economy. In fact, during the Salinas administration, many steps have been taken towards recovering from the crisis of the 80's, which is known as the "lost decade" for the lack of growth of the economy and the severe deterioration of wages and the standard of living.

The stabilization program undertaken under Salinas was accompanied by a series of structural changes to the economy, including a reform that came into effect on April 1, 1994, which makes the Banco de México, the central bank, independent from the government. The objective of this thesis is to show how this reform will contribute to long term stability by effectively separating the monetary and fiscal authorities. In fact, such a separation will facilitate the continuation of a policy tending towards long term stability and the prevention of new episodes of high inflation.

Two main factors are presented that support the case for independence of Banco de México: historical evidence on the role of the Banco de México in the economy and predictions from theoretical models.

First, in chapter 1, a review of the development of the Mexican financial system helps understand the role of the B de M in the economy. Despite the fact that this institution has continuously been used by the federal government as an instrument to promote economic growth, Mexico's economic experience during the stabilizing development period (1954-1976) shows that it is possible to achieve economic growth under stability as long as disciplined monetary and fiscal policies are maintained.

On the other hand, when the government pursues an expansionary fiscal expansion and finances its budget deficit with credit from the central bank, the result is

inevitably inflation. Mexico's experience with such expansionary policies during the period from 1972 to the 1980's is presented in chapter 2.

Historical evidence thus provides a lesson that inflation crises in Mexico have repeatedly been caused by inflationary financing of the budget deficit during expansionary fiscal policies. This clearly suggests that in order to avoid the repetition of such episodes, it was necessary to cut the link between monetary and fiscal authorities and to assign a clear mandate for the Banco de México to follow in order to pursue stability.

Theory of monetary policy and central banking also provide support for independence of B de M. As explained in chapter 3 various theoretical models imply that in order to maximize the welfare of society, monetary policy should be geared towards reaching an optimal balance between its conflicting objectives of inflation and economic growth. Such a task can best be accomplished by an autonomous monetary authority.

The theoretical model of a game between the central bank and society shows that, even when the former tries to maximize social welfare, if the public is aware that the central bank is interested in promoting economic growth then people will anticipate the institution's incentive to allow for some inflation, which will result in inflation being higher than optimal. This problem of an inflationary bias is a typical example of dynamic inconsistency.

Moreover, this problem of dynamic inconsistency could be eliminated if the central bank could credibly commit to a certain level of monetary growth. However, the gain in terms of inflation comes at the cost of losing flexibility in using monetary policy to alleviate external shocks to the economy. Therefore, the optimal central bank is one which recognizes the trade-off between flexibility to alleviate shocks and credibility to keep inflation low. A proposed solution is the creation of an institution which balances inflation and level of economic activity, but puts a lot more emphasis on keeping inflation low.

In light of the historical and theoretical evidence for independence of B de M, the changes in institutional arrangements of this institution are analyzed in chapter 4.

Unlike the former law, the new Ley del B de M which came into effect on April 1, 1994, assigns a clear mandate to the B de M to pursue stability as its main objective, and enables it to operate autonomously from the government by providing the necessary conditions in terms of appointments and removals of members of the board of governors, limit to government financing, and level of accountability for monetary policy.

The reform to the B de M plays an important role within the series of reforms undertaken under Salinas. In fact, as shown in chapter 5, it consolidates the current policy direction towards a more liberalized economy. In addition, by institutionalizing a clear separation in the objectives and the power of monetary and fiscal authorities, it makes it much more costly for a future administration to reverse the policy direction back to fiscal and monetary indiscipline.

Despite the recent success of economic policy in reducing inflation, the cost of the stabilization in terms of economic growth has been high. The current conditions of high unemployment, sluggish growth of the economy, large current account deficit, and a growing pressure for devaluation of the peso, place the economy in a position of high uncertainty, which is exacerbated by the political uncertainty that precedes the presidential elections due August 21. In such a scenario, having an independent central bank is essential to be able to shift the government's focus towards growth while the B de M remains devoted to keeping inflation low.

We conclude that granting autonomy to the Banco de México was a logical and necessary step in the series of reforms that have been undertaken recently, and that it will contribute to maintaining stability in the long term.

Chapter 1

The Banco de México and the Stabilizing Development Period

This chapter reviews the experience of the Banco de México during the period known as the stabilizing development period (1954-1976). Section 1.1 presents an overview of the development of the financial system in Mexico from the creation of the first modern financial institutions in the 1860's, through the establishment of the Banco de México in 1925, to the consolidation of the institution as a central bank during the 1940's and the early 50's.

Section 1.2 analyzes the monetary policy undertaken by the Banco de México, the characteristics of the institution, and the instruments of monetary policy during the stabilizing development period. Section 1.3 concludes with some lessons from this period.

1.1 Background - The Evolution of the Financial System in Mexico until 1954

Mexico's Financial System Before the Banco de México

The origins of Mexico's modern financial system[1] can be traced back to 1864, under the empire of Maximilian, when the Banco de Londres, México y Sudamérica was founded. This British institution was the first to issue bank notes in Mexico. This was followed by the establishment, in 1881, of Banco Nacional Mexicano, a French bank, which obtained the exclusive privilege of issuing notes which would be accepted by government agencies.

The financial crisis of 1884 prompted the debate between plurality versus monopoly of emission, which fueled a large conflict of interests between the Banco Nacional de México and the Banco de Londres y Mexico[2].

A proposal was prepared to grant the Banco Nacional de México with the monopoly of emission, which would have put this institution very close to becoming a central bank[3]. However, given that the Constitution of 1857 prohibited all monopolies, plurality of emission was maintained until the revolution.

During the era of Porfirio Díaz, one of the main deficiencies of the financial system was that credit was not reaching many sectors of the economy, mainly because only a few people were able to demonstrate solvency to be granted credit. This concern was held by the "constitucionalistas", who expressed their intent of creating a single bank of issue which would distribute credit in a more "democratic" way. This idea was incorporated in article 28 of the Constitution of 1917, which prohibited monopolies, except for

> ...those relative to the coining of money, the mail, the telegraph, [and]

[1]This section is based mostly on Brothers and Solís (1966), Cavazos (1976), Moore (1963), Pérez Gea (1993), and Subdirección de Investigación Económica y Bancaria, Banco de México (1976)

[2]Banco Nacional Mexicano merged with Banco Mercantil to create Banco Nacional de México, and Banco de Londres, México y Sudamérica merged with Banco de Empleados and became Banco de Londres y México

[3]The transformation of private banks into central banks in other countries is discussed in Goodhart (1985).

to the issue of notes through the medium of a single bank, which the Government will control, ...[4].

Establishment of the Banco de México

The establishment of the Banco de México (B de M) had to wait until 1925, when the federal government was finally able to put together the resources necessary to capitalize the bank. The stock of the B de M was divided into two types: 51% of series "A" shares which could only be held by the federal government, and 49% of series "B" shares which could be acquired by the public or the government. The Organic Law of the B de M, published on August 28, 1925, gave this institution the following duties:

- to regulate the monetary circulation, the exchange rate and the interest rate; and
- to provide banking services to the treasury of the federal government.

In order to achieve this, it would monopolize the issue of paper money and manage the *Fondo Regulador*, which determined the coining of money; it would rediscount commercial documents; and it would be authorized to operate as a commercial bank. This law also decreed that the B de M would be independent from the federal government and limited the credit granted to the government.

During the first six years after its creation, the B de M operated mainly as a commercial bank with special privileges. It did not obtain the power necessary to regulate the circulation of money for a number of reasons.

First, given that the B de M was operating as a commercial bank, most other banks perceived it as a privileged competitor. As a result, only two banks decided to associate, which made discount policy ineffective as a tool to affect the money supply.

Besides, paper money had very little credibility (in fact, only 0.3% of the money supply consisted of bank notes). Coins were still the main component of the money

[4]From Pérez Gea, 1993

supply (76% in 1925), and since the coining of silver was still under the control of the federal government, the B de M had very limited power to affect the level of money supply.

A new monetary reform was introduced in 1931 known as the *Ley Calles.* Under this law, the authority to regulate the money supply was given to the *Junta Central Bancaria* headed by the Secretary of Finance (*Secretario de Hacienda y Crédito Público).* Gold was demonetized, and the coining of silver was limited to the current level as a way to control the supply of money. This limitation on the amount of silver coins in circulation, together with the global contraction of liquidity that occurred during the great depression caused a large contraction in the money supply (60.2% decrease from December 1930 to December 1931), which was followed by a 14.9% collapse in GDP from 1931 to 1932.

In March 1932, Alberto Pani replaced Luis Montes de Oca as Secretary of Finance and reformed the Ley Calles in an attempt to "stop deflation without falling in inflation" [5]. The money supply increased by 31% and output grew 11.3% in 1933.

The new Constitutive Law of the B de M of April 1932 was intended to reinforce the role of the institution as a central bank. Its operations as a commercial bank were ceased. Also, the *Junta Central Bancaria* was dissolved and its regulatory authority was passed to the B de M which would now be in charge of leading monetary policy independent of the government, by regulating the discount policy, the reserve requirement and the coining of money. This law was soon followed by a decree that mandated that all other commercial banks had to associate with the B de M. Bank notes started to gain acceptance that year, increasing their share in total money supply from 0.4% in 1931 to 10.5% in 1932 to 34.8% in 1935. As a result, the instruments of the B de M became much more effective for monetary control.

After a period of high economic growth, exchange rate stability and an increase in international reserves, a new Constitutive Law for the B de M was decreed, aimed at leading the institution into its final stage of development. This law set limits on the growth rate of the money supply and on the credit to the government. It

[5] A. Pani as quoted in Cavazos (1976), p 73.

also authorized the B de M to purchase and sell government securities, limiting this indirect borrowing to 10% of the average revenue of the federal government during the previous three years. However, the credit limits established by this law were never respected. The government's borrowing from the B de M increased sharply in order to finance the large budget deficits incurred by the Cárdenas administration, leading to an open conflict between the B de M and the federal government[6]. After unsuccessfully trying to deter the president from the expansionary fiscal and monetary policy, Palacios Macedo and Montes de Oca quit as members of the Board of Directors of the B de M, which eliminated all the opposition of the B de M with the Federal Government.

The Organic Law of the B de M was reformed in 1938. It established tight limits to direct credit from the B de M to the government, but it removed the limit on borrowing through government securities. As a result, this type of borrowing increased sharply in 1938 and 1939.

The deterioration of the balance of payments forced the B de M to let the peso fluctuate again in March 1938. The floating exchange regime was kept until October 1940 when it was fixed at 4.85 pesos per dollar. Once again, the peso was fixed at an undervalued rate in order to provide "a base for the development of businesses" [7].

Consolidation of the Banco de México as a Central Bank

Having acquired power to affect the level of the money supply in the economy, the B de M experimented with the following instruments during the early 1940's in an attempt to compensate for the large inflows of capital due to the war :

- Open market operations with government securities, which were not very effective because their secondary market was underdeveloped. Most of the government issues had to be held by the B de M which resulted in an increase in the monetary base.

[6]This conflict is illustrated in a memorandum written by Miguel Palacios Macedo and reproduced in " Dos Documentos de Política Hacendaria Mexicana", in *Revista del Instituto Técnológico Autónomo de México, num. 7, verano de 1975.*

[7]Informe Anual, Banco de México, 1938, p.19, as cited in Cavazos (1976)

- Open market operations with gold and silver, which permitted the B de M to retire from circulation between 1941 and 1945 377.9 million pesos from the sale of gold and 260 million pesos from the sale of silver.

- Reserve requirements, which until 1936 had been fixed at 7% of deposits with the sole purpose of guaranteeing the liquidity of the banks, were introduced as an instrument of monetary control in the Organic law of 1936, which authorized the B de M to adjust the percentage of required reserves anywhere in the range from 3% to 15%. It was not until 1940 when the requirement was raised to its upper limit of 15% that the reserve requirement started to be used as an instrument of monetary policy. The range was widened to 5% - 20% by the new Constitutive Law of 1941 and the upper limit was raised to 50% by a decree in December of the same year. In a further effort to reduce the supply of money, the B de M decided to raise the marginal reserve requirement, applicable to any deposits above their level as of October 31, 1942. In addition, this requirement was selective by geographical area and by economic activity, which presented one of the initial attempts of the B de M to influence the allocation of resources towards certain areas and industries.

In summary, during the years '41 to '45, large inflows of capital forced the B de M to try to contract the money supply. Given the lack of a developed market for government securities, the reserve requirement became the main instrument of monetary policy.

Besides, during these years, the B de M became increasingly involved in the promotion of industrial development through selective credit programs. The development of the institution during those years represented the consolidation of the B de M as a central bank capable to lead monetary policy, and shaped some of the characteristics that make it different from other central banks: it was a pioneer in the use of reserve requirements as the main instrument of monetary control, and it made strong efforts to improve the allocation of resources through selective credit programs[8].

[8]The efforts of the B de M to affect the allocation of resources are reviewed in section 1.2.2.

During the years following the end of the war, Mexico started suffering a deterioration in its balance of payments. The peso was overvalued, and, once again, it was left to float from 1948 until June 1949. The exchange rate was fixed at 8.65 pesos per dollar, which meant that the peso was once again undervalued in order to restore the equilibrium in the balance of payments and in order to provide the industrial producers with more room to compete with foreign companies.

The period between 1950 and 1954 could be divided into two phases. During the first one, 1950 and 1951, Mexico enjoyed a moment of prosperity due in part to the large inflow of capital resulting from the Korean war. During these two years, the B de M had to make an effort to reduce the size of the money supply through sales of gold, silver, and government securities, and through increases in the reserve requirement (the marginal reserve requirement was raised to 100% on all deposits beyond their level as of June 15, 1951). This period of economic growth and monetary contraction was followed by a recession induced by the end of the Korean war. As exports fell, the balance of payments deteriorated. The 100% marginal reserve requirement was lifted in 1953 in an attempt to boost the economy. The level of international reserves of the B de M fell sharply, and the government announced a surprise devaluation on April 17 1954. The exchange rate was fixed at 12.50 pesos per dollar, which left the peso undervalued for the years to follow and set the basis for a period of economic growth under stability.

1.2 The Stabilizing Development Period

1.2.1 Monetary Policy and Evolution of the Economy

The 50's and 60's are considered to be the economic "golden age" of this century due to the high rates of growth that were achieved globally. It can be argued that one of the bases for this prosperity was the Bretton Woods monetary treaty, which established a system of fixed exchange rates based on the dollar. The later deterioration in the level of growth after 1973 has been associated with the breakdown of this monetary

system.

In Mexico, the period from 1954 to 1976 could be divided into three[9]:

- 1955 - 1964: Expansionary monetary policy, taking advantage of the peso being undervalued after the 1954 devaluation. A high level of growth was achieved, but inflation was significantly higher than that in the U.S.
- 1965 - 1971: More conservative monetary policy given that the peso was no longer undervalued due to the inflation differential between the U.S. and Mexico over the previous ten years. Inflation was lowered and a high level of growth was sustained.
- 1972 - 1976: Breakdown of monetary and fiscal discipline. Economic growth continues but inflation accelerates.

1955 - 1964

Monetary policy during this period was characterized by the attempts of the B de M to adjust for the constant fluctuations in external pressure. The adjustment to these fluctuations was complicated because of the lag between the adjustments and its effects in the economy, which made monetary policy instruments inefficient to adjust for short-lived fluctuations.

From 1955 to 1957 a period of prosperity forced the B de M to try to reduce the money supply through various means. The reserve requirement was adjusted and banks were required not only to hold cash reserves in the central bank but also to hold a certain amount of government securities and to grant a certain share of credit to specific activities [10]. Late in 1957 the situation reversed and attempts were made to compensate for the contraction of the monetary supply. A similar cycle followed from 1959 to 1961, prompting a similar response by the B de M.

The years from 1962 to 1964 are known globally as a period of remarkably high growth. In Mexico, a high level of growth was also experienced (GDP increased 4.7%

[9]Table 1 at the end of this chapter contains the main macroeconomic indicators from 1925 to 1975.

[10]The selective control of credit programs will be further explained later in section 1.2.2.

in 1962, 8% in 1963, and 11.3% in 1964), the level of international reserves of the B de M also experienced an increase. However, inflation started to become a concern.

In sum, the period from 1955 to 1964 presented an average GDP growth rate of 6.9% under a stable environment. However, the rise of the price level was 48.1% compared to 8.1% in the U.S., which eroded the margin of undervaluation that the peso had held since the devaluation of 1954.

1965 - 1971

Given that the peso was no longer undervalued, the B de M was forced to match international levels of inflation by slowing down the rate of growth of the money supply. Despite the tighter monetary policy (money supply increased an average 9.3% per year), the economy kept its momentum of growth. GDP grew at an average annual rate of 6.3% while the price level increased 2.9% in average during these years. The level of international reserves also increased while efforts were being made to compensate for the large flows of capital into Mexico.

This period demonstrated how it was possible to achieve high levels of growth in an environment of low inflation.

1972 - 1976

During these years, the Echeverría administration decided to undertake a more expansionary fiscal policy. The increase in government expenditure was financed mainly from primary credit from the B de M and from foreign borrowing.

High economic growth continued during these years, but as the budget deficit increased, the rate of growth of the money supply and the rate of inflation accelerated and the balance of payments started to deteriorate. This period marked the end of an era of monetary and fiscal discipline which had been the basis for economic growth during the previous twenty years. A new era followed with less positive results[11].

[11] Chapter 2 analyzes in more detail the shift in policy that took place in 1972 and its consequences.

1.2.2 Banco de México under Don Rodrigo G'omez

In this subsection, we will examine some of the characteristics of the B de M under the leadership of Don Rodrigo Gómez. After having joined the institution in 1933, he headed the B de M for 18 years, from 1952 to 1970, during the administrations of Presidents Ruiz Cortines, López Mateos, and Díaz Ordaz. Two main characteristics shaped the B de M during these years:

- Focus on stability.
- Role of B de M as a promotion institution.

Stability

The major concern of the central bank under Don Rodrigo Gómez was to attain stability in the price level and in the exchange rate.

> It is necessary to follow a policy tending to pursue monetary stability, conceived not as an end in itself but as an instrument that strengthens confidence and encourages the formation of voluntary domestic savings and its corresponding investment, stimulating the balanced growth of the country within a frame of social justice and not in an atmosphere propitious to large speculations[12].

Don Rodrigo Gómez believed that growth could not be promoted in the long run through expansionary monetary policy. Any growth achieved in such way would be only transitory and it would come at the cost of high inflation.

What this implies is that the B de M has to lead a disciplined monetary policy and limit the supply of money. Although this policy can be considered to be socially optimal, the central bank would have to confront pressure, from both the public and the private sectors, for a more lax policy.

[12]Don Rodrigo Gómez, as quoted in Miguel Mancera (1991), p 101. Translated from Spanish.

As Rodrigo Gómez explained at a conference at the Per Jacobson Foundation in 1964[13], the strongest pressure on the central bank comes from the government. The government officials, having incentives to promote economic growth in the short run will be interested in doing so through an expansion in public spending and investment. As a result, the budget deficit will tend to increase, and it will have to be financed by the central bank. If it is not possible to compensate for this credit with open market operations or by increasing the reserve requirement in order to avoid an expansion in the monetary base, the budget deficit will produce inflationary pressure.

The B de M also receives pressure from the private sector. The main argument is that in order to foster economic activity, the B de M should facilitate the expansion of cheap credit by reducing the level of required reserves on banks, which would increase the money multiplier (or the ability of the financial system to extend credit, given a certain monetary base), and by creating more banks devoted to granting subsidized credit to specific areas and increasing the volume of rediscount operations aimed at specific economic activities, which would increase the monetary base. This pressure, based on the belief that "credit to production is not inflationary" and that "stabilization policy slows down the progress of the economy"[14], has been in many occasions the main reason for monetary expansionism. However, Rodrigo Gómez maintained monetary discipline, considering that in order to increase the availability of credit for growth, it was not necessary to create more banks but to promote a higher level of voluntary savings.

Role of the B de M as a promotion institution

During the stabilizing development period, a strong emphasis was put on the role of the B de M in channeling credit to certain priority activities. The case for this channeling of resources is discussed in Petricioli (1976). There were reasons to believe that financial institutions, if left to operate according to market incentives, would fail to allocate resources in a way which is socially optimal. Petricioli explains the

[13]This speech is included in Banco de México, *Rodrigo Gómez: Vida y Obra*, pp221-234, 1991.
[14]Rodrigo Gómez (1964), p.229.

following reasons:

- The financial institutions grant credit based on the solvency of the client instead of the rentability of the project, which leaves out projects which could have been very productive in the long term. Thus new small clients face a large obstacle to obtain credit due to their lack of demonstrated solvency.

- External economies. A project could produce large benefits which are not accounted for when evaluating a project.

- Lack of technology to prepare projects which could be very profitable and to present the financial needs to credit institutions.

As a result, it was necessary for the central bank to intervene to

> steer the scarce financial resources available towards the ends that most contribute to the economic development of the country, and also to increase the volume of savings captured by the financial system[15].

In order to increase credit in certain geographical areas or economic activities, resources had to be taken away from other areas or activities. Otherwise, if primary credit were used, the monetary base would have increased, which would create inflationary pressure. Therefore, the strategy of the B de M was to steer resources from voluntary savings to these areas by means of two main instruments: the reserve requirement and the creation of development trust funds devoted to specific sectors of the economy. 200z

- Selective control of credit through required reserves. Credit institutions were required to hold a certain percentage of their deposits as reserves at the B de M, which could then channel these resources to the public sector to be invested in priority sectors. In addition, another percentage of their deposits was required to be directed into credit or purchase of certain securities according to indications of the B de M.

[15]Translated from Rodrigo Gómez (1969), p. 268.

- Selective control of credit through development trust funds. These trust funds operated as development banks: they channeled their funds through commercial banks, rediscounting their loans to the targeted sectors at preferential rates of interest. Another important task of these trust funds was the technical assistance that they provided. They helped in areas like developing and evaluating projects for individual producers or small firms; or at a regional level, they made studies on the possibility to export, demand for certain products, etc.

1.2.3 Instruments of Monetary Policy

Since its establishment in 1925, the Banco de México has used various instruments to control the money supply. This control can be achieved either by affecting the monetary base (through open market operations or primary credit) or by inducing variations in the money multiplier (through changes in the reserve requirements mainly).

At the early stages of the B de M, the main instruments of control were meant to be open market operations and discount rates like most central banks in developed countries. However, these instruments failed given that the capital market and the money market were underdeveloped. Likewise, very large fluctuations in the discount rate would be needed to obtain a small variation in the money supply. As a result, since the 1940's, reserve requirements became the main instrument of control.

Reserve requirement

Originally, the reserve requirement was meant to guarantee the liquidity of financial institutions. The Organic Law of 1936 gave the B de M the authorization to adjust the reserve requirement within a certain range which was widened under the Constitutive Law of 1941. Later that year, a decree raised the upper bound to 50%, and the reserve requirement became the B de M's most effective tool for monetary control.

In 1942, a different version of reserve requirements was introduced: the marginal reserve requirement, which consisted of holding up to 100% of the amount of deposits above the level of a certain date. This instrument was used repeatedly in order to

stop the expansion of credit during the 50's and 60's.

Another characteristic of the reserve requirement is that it was used for selective control of credit. As explained in section 1.2.2, banks were required to hold a percentage of their deposits at the central bank, and to channel another fraction of their deposits to credit to certain sectors as indicated by the B de M.

The amount that was deposited at the central bank was devoted to three different uses[16]:

- Resources that provided the B de M with funds to regulate the liquidity of the economy and international reserves.
- Resources that were used to finance the government.
- Resources that were channeled to development trust funds.

Other instruments

Other instruments used by the B de M included: discount rates, control on growth of liabilities of banks, persuasion, control on lending rates, and open market operations with government securities, currencies, and metals (gold and silver). However, these were less important than the reserve requirement.

1.3 Lessons from the Past

The stabilizing development period represented a long period of prosperity for Mexico. Although the conditions, both internal and external, were very different during those years from what they are today, it can be valuable to learn from the policies that were undertaken and their results. The following is a set of lessons that can be learned from the behavior of the Banco de México under Don Rodrigo Gómez.

1. In order to attain the objective of stability, the B de M must be able to operate without the influence of the federal government. As explained earlier, a central

[16]Sánchez Lugo (1976)

bank will go under pressure to finance the budget deficit of the government. The incentive of the government to achieve short-term growth through expansionary fiscal or monetary policy clashes with the objective of the central bank to maintain long-term stability. If the monetary authority is not autonomous from the government, the latter may force the central bank to finance their deficit either through primary credit or by purchasing government securities[17].

During the time of Don Rodrigo Gómez, the autonomy of the Banco de México was respected, however, this was only the result of the agreement between this institution and the federal government. The relationship between the Secretary of Finance, Antonio Ortiz Mena, and Rodrigo Gómez was one where their ideas on monetary policy coincided. They agreed that the role of the Secretary of Finance should be to maintain a balanced budget, while the B de M should be in charge of maintaining monetary stability[18].

However, there have also been periods when the autonomy was not respected. During the Cárdenas years, the members of the Board of Directors of the B de M who disagreed with the government's lax fiscal and monetary policy had to resign after attempting in vain to operate independent of the government's policies. Therefore, it seems necessary to make the relationship between the B de M and the government less malleable.

2. The B de M can help promote economic development by making resources available to certain priority sectors and to long term investments. However, it is important to ensure that these resources are channelled from voluntary savings and do not come from primary credit, which would increase the monetary base and create inflationary pressure.

3. The reserve requirement can be used as an effective tool for selective control of credit and to adjust the money multiplier. However, there seems to be a lag between the moment when an adjustment is implemented and that when

[17]Chapter 2 provides historical evidence of this argument.
[18]Ortiz Mena (1991), p. 119

results are obtained. This is particularly important when attempting to use this instrument to alleviate the effects of short business cycles induced from international conditions.

Therefore, it is important to develop a capital market and a money market where government securities can be placed in order to make open market operations more effective.

4. The Mexican financial system during the stabilizing development period was very heavily regulated. Lending and borrowing rates for banks were determined by the B de M, a large portion of the resources had to be deposited in the central bank as required reserves, and another portion of the resources had to be channeled as credit to certain sectors under the selective control of credit programs established by the B de M. Despite these regulations, the financial system operated well during the fifties and sixties when inflation was low and the government did not rely on primary credit to finance itself. However as international conditions changed and an era of higher inflation and government deficits arrived, such a rigid system may not have been the most appropriate.

Table 1.1: Macroeconomic Indicators 1925-1975

Year	Exchange Rate Year average (Pesos/dollar)	GDP Growth rate (%)	Inflation (%)	Money supply Growth rate (%)	International Reserves Level (US $ millions)
1925	2.03				27.4
1926	2.07	6	-2.3	16	17.7
1927	2.12	-4.3	-2.4	-8.7	16.2
1928	2.08	0.6	-3.4	28.4	19.8
1929	2.15	-3.8	0	4.5	25
1930	2.26	-6.2	0	4.3	13.6
1931	2.65	3.3	-12.9	-60.1	9.7
1932	3.16	-14.8	-6.5	31.1	31.2
1933	3.5	11.3	7.1	15.4	36.8
1934	3.6	6.7	5.4	13.8	52.9
1935	3.6	7.4	0	10	93.2
1936	3.6	8.1	6.2	21.7	89
1937	3.6	3.2	18.7	5.9	55.4
1938	4.52	1.6	6.3	10.8	43.2
1939	5.19	5.4	-1.2	19.8	41.4
1940	5.4	1.4	2.6	20.2	63.4
1941	4.85	9.7	6.7	19.7	62.3
1942	4.85	5.6	10.2	37.8	108.3
1943	4.85	3.7	20.6	52.7	242.5
1944	4.85	8.2	22.7	23.8	279.5
1945	4.85	3.1	11.3	6.9	372.7
1946	4.85	6.6	15.1	-2.1	273.7
1947	4.85	3.4	5.8	-0.5	162.9
1948	5.74	4.1	7.3	13.8	122.6
1949	8.01	5.5	9.6	11.2	164
1950	8.65	9.9	9.4	37.6	335.9

Table 1.1: Macroeconomic Indicators 1925-1975 (cont.)

Year	Exchange Rate Year average (Pesos/dollar)	GDP Growth rate (%)	Inflation (%)	Money supply Growth rate (%)	International Reserves Level (US $ millions)
1951	8.65	7.7	24	13.6	328.4
1952	8.65	4	3.7	4.1	307.8
1953	8.65	0.3	-1.8	8.1	266
1954	11.34	10	9.4	14	240
1955	12.5	8.5	13.6	20.6	441.6
1956	12.5	6.8	4.7	11.2	502.8
1957	12.5	7.6	4.3	6.9	489.3
1958	12.5	5.3	4.4	7.2	4121
1959	12.5	3	1.2	15.3	468
1960	12.5	8.1	5	9.4	459.4
1961	12.5	4.9	0.9	6.6	437.9
1962	12.5	4.7	1.8	12.6	454.8
1963	12.5	8	0.6	16.8	564.5
1964	12.5	11.7	4.2	16.7	596.1
1965	12.5	6.5	1.9	6.8	575.2
1966	12.5	6.9	1.3	11	581.2
1967	12.5	6.3	2.9	8	621
1968	12.5	8.1	1.9	13	670
1969	12.5	6.3	2.6	10.9	718
1970	12.5	6.9	6	10.5	820
1971	12.5	3.4	3.7	8.3	1020
1972	12.5	7.3	2.8	21.2	1248.7
1973	12.5	7.6	15.7	24.2	1406.9
1974	12.5	5.9	22.5	22	1443.9
1975	12.5	4.2	10.5	21.3	1608.9

Source: Subdirección de Investigación Económica y Bancaria, Banco de México (1976).

Chapter 2

1976 - 1994: Evidence for Independence of Banco de México.

During the stabilizing development period, Mexico witnessed a period of economic growth together with price stability and a fixed exchange rate. However, the fiscal and monetary discipline that prevailed during the 50's and 60's came to an end during the Echeverría administration, leading into a period of high inflation which culminated with the crisis of 1982, and later with the peak of inflation at rates of 15% per month in 1987. This chapter reviews, in section 2.1, the economic developments that led the Mexican economy from a period of growth and stability into one of worsening living conditions and high levels of inflation[1]. Section 2.2 analyzes the change in monetary tools used by the Banco de México and the development of a money market which enables the Banco de México to use open market operations for monetary control. Finally, in section 2.3, based on the lessons from 1976 to 1994, we conclude that the independence of Banco de México was necessary to ensure economic development under stability in the future.

[1]Table 2.1 includes the main macroeconomic indicators.

2.1 1976 - 1994: Economic Development in Mexico

2.1.1 From Stabilizing Development to Shared Development

The 50's and 60's are generally remembered as an era of economic prosperity and stability. Despite the fact that policies implemented during this period are usually praised for their positive achievements[2], towards the later 60's, the stabilization approach pursued by Rodrigo Gómez and Antonio Ortiz Mena started to be questioned. The student movement of 1968 shows that despite the good performance of the economy as a whole, there was some discontent about the distribution of income. In the early 70's, this concern augmented, and led to a change in policy direction in 1972.

The main criticism on the stabilizing development period is that it failed to improve the distribution of wealth in the economy. It was claimed that the policymakers had been putting too much emphasis on private capital accumulation. As a result, the Echeverría administration decided to change the course of action from stabililizing development to shared development. There was a sharp increase in public expenditure in social areas, and the policy of supporting agricultural prices and keeping energy and other services provided by the government underpriced, which was one of the main elements of the stabilizing development period, was maintained. The size of the public sector increased drastically, and the number of state-owned enterprises went up from 86 to 783 during the six years[3].

Even though economic growth was maintained during the 1970-76 period, inflation started to increase, and the economy started to show signs of weakness. Fiscal deficit increased from 1.8% in 1971 to 7.6% in 1976[4]. The fiscal indiscipline conducted by the federal government led inevitably to a monetary expansion. In fact, the financing to the government was done through primary credit which expanded the monetary base,

[2]Reynoso (1989) argues that most of the positive results achieved during this period are the consequence of propitious external conditions rather than just the policies undertaken during this period.

[3]Bailey and Cohen, 1987.

[4]Gil Díaz (1984),Table A-4, p. 72.

instead of using funds from voluntary savings as it was done during the stabilizing development period. Thus, the money supply increased more than 20% annually from 1972 to 1976. Besides, the share of government claims held by the Banco de México increased from 47% of total assets in 1971 to 83% in 1975, in addition to the increase in total assets of B de M from 6.37% of GDP in 1971 to 13.95% in 1975[5].

As inflation increased above international levels while the exchange rate remained fixed, the peso became overvalued, which created a strong pressure to devalue. This pressure was strengthened by the debt repayment problem which the government started to face. In order to maintain its level of public expenditures, more international borrowing was needed; however, debt was already too high, and the international creditors started having doubts about Mexico's ability to repay. This led to a strong flight of capital in 1976, which together with the current account deficit forced the authorities to devalue the peso for the first time in 22 years, on September 1st, 1976.

2.1.2 1976-1982: The Path to Overindebtedness

The beginning of the Lopez Portillo administration brought optimism to the international community. Negotiations with the IMF resulted in more support being given to Mexico under the condition that an orthodox adjustment program be followed. Such a program included a reduction in the budget deficit and in monetary expansion. Initially, this program was followed closely, with satisfactory results in reducing the deficit and inflation, until 1978 when the finding of new oil fields was announced which marked the beginning of an oil boom for Mexico.

Oil production increased dramatically at the same time that oil prices were rising. Access to foreign capital at low real interest rates was made available to both the public and the private sector. As revenues from oil exports increased from $10 billion to $16 billion from '76 to '82, the economy grew at an average rate of 8.4% from 1978 to 1981[6].

[5]From Pérez Gea (1993).

[6]Informe Anual 1982 , Banco de México, p. 22.

This spectacular growth was headed by a strong increase in public and private investment. However, this increase in investment was financed by a sharp increase in credit from the B de M and borrowing from abroad. The private sector had a strong participation in foreign borrowings and is blamed for not having taken into consideration the exchange rate risk when acquiring foreign loans. In fact, most of the private sector did not benefit from the exchange rate risk coverage that the B de M offered[7].

As a result, the public deficit increased to 14.5% in 1982, foreign debt increased from $33.9 billion in 1978 to $87.6 billion in 1982. Domestic debt also increased sharply, which resulted in a deep structural problem of overindebtedness that struck Mexico in 1982.

Two factors contributed to triggering the crisis which had already turned inevitable. First, as U.S. interest rates increased, the service of Mexico's foreign debt became much more expensive, especially because a large portion of the debt was tied to floating interest rates[8]. This increase in interest rates also made further borrowing from external sources more difficult. Second, the international recession had caused a reduction in the demand for oil, which, together with the increase in world production of the commodity, drove the price of oil down, causing a collapse in Mexico's export revenues.

While inflation continued to increase (reaching 98.8% in 1982[9]), the public deficit and the current account deficit rose, leading to pressure for a devaluation. Besides, the international creditors, once again, started to doubt Mexico's ability to repay, which strengthened the degree of uncertainty that was already causing large capital flight and a loss of international reserves by the B de M.

As the economic situation deteriorated, López Portillo had to seek political support from the "old guard" of the government (Bailey and Cohen, 1987). As a result,

[7]The Banco de México was running a program, known as "Reporto de Divisas" under which, firms which wanted to invest in pesos with liabilities in foreign currency, could cover the exchange rate risk (Informe Anual 1982, B de M, p. 24).

[8]This can be observed in Table 2.2 in Bailey and Cohen (1987).

[9]Informe Anual 1982, Banco de México.

he yielded to the pressure to confront the IMF, and allowed for repeated devaluations in 1982 (which added up to a six-fold decrease in the value of the peso). Payments of foreign debt service were suspended, and commercial banks were nationalized on September 1, 1982. According to Bailey and Cohen (1987), the move to this nationalization was prepared without informing the more conservative cabinet, which led to the resignation of the Minister of Finance, Jesus Silva Herzog (although his resignation was not accepted by the President), and the Director of B de M, Miguel Mancera, who was replaced by Carlos Tello. This rupture showed how the Lopez Portillo administration fell to the pressure exerted to lead an expansionary fiscal policy instead of pursuing an adjustment program and complying with the IMF recommendations.

It is also important to note the changes to the exchange rate regime which occurred during 1982. Given the structural problems in the balance of payments, the crawling peg exchange rate regime was abandoned on February 18, 1982 and was replaced by a floating rate regime. On August 6, a two-tier exchange rate regime was introduced. One week later, dollar denominated accounts in Mexico were made payable only in pesos, in order to avoid a continued flight of capital. In September, for the first time in Mexican history, a system of exchange controls was established.

In summary, the period from 1977 to 1982 contained two main phases. First, from 1977 to 1978, the government followed the agreements with the IMF and pursued disciplined monetary and fiscal policy. Second, from 1978 to 1981, the public and private sectors in Mexico became too optimistic about Mexico's future and produced a problem of structural overindebtedness which resulted in the financial crisis of 1982.

2.1.3 1983-1987: Inflation Crisis

When the de la Madrid administration took power in December 1982, optimism resumed about the plans to recover stability. In fact, the new administration started by avoiding more confrontation with the IMF, resulting in the implementation of an adjustment program[10]. Budget deficit was reduced from 16.9% of GDP in 1982 to

[10]Programa Inmediato de Reordenación Económica (PIRE). The contents of this program and other adjustment programs undertaken under the de la Madrid administration are discussed in

8.5% in 1984. Inflation was lowered from 98.8% to 59.2% over the same period[11]. However, this adjustment program came at a very high cost in terms of economic growth: in 1983, real GDP fell by 5.3%[12].

As a result of the strong recession in 1983 and beginning of 1984, the de la Madrid administration had to change the course of action and broke off the agreement with the IMF. The money supply increased 63.1% in 1984 compared to 41.4% in 1983[13]. The second half of 1984 marked the return to reflationary policies, fiscal deficit exceeded the targets, and borrowing from abroad continued. Given the abandonment of the adjustment program recommended by the IMF, foreign creditors threatened to stop the flow of resources into Mexico.

Two elements greatly affected the economic development of Mexico in 1985 and 1986. First, the earthquake of September 1985 forced a large increase in government expenditures. Second, the collapse of oil prices in 1986 reduced the export revenues. These factors pushed the government into a deeper public deficit and a larger need for financing from the Banco de México and from foreign sources. Besides, given that the government had failed to comply with the IMF stabilization program, foreign creditors were increasingly resistant to provide funds. These circumstances prepared the way for the deepening of the crisis in 1986-87. Inflation reached levels of 160-200% in 1987, while GDP fell by 3.5% in 1986 and increased only by 1.7% in 1987.

The deteriorated economic situation called for a new change in policy, centered on an heterodox stabilization program known as the *Pacto de Solidaridad Económica* (PSE), which was announced in December 1987.

2.1.4 1988-1994: Stabilization

During the last year of the de la Madrid administration, and through that of Salinas, there has been a strong emphasis on lowering the rate of inflation to international levels. The PSE was renewed under different names during the past six years (Pacto de

Pazos (1988).

[11] Aspe (1993).

[12] Informe Anual 1984, B de M, p.18.

[13] Rate of growth of M1 monetary aggregate, as reported in Informe Anual 1984, B de M, p. 27.

Table 2.1: Macroeconomic Indicators 1976-1991

Year	GDP growth (%)	Inflation (%)	M1 growth (%)	Budget deficit (% of GDP)	BM credit to government (% of GDP)
1976	4.23	27.1		4.8	1.8
1977	3.45	20.7		3.5	12.8
1978	8.25	16.2	31.42	3	3.7
1979	9.16	20	33.69	3.1	5.1
1980	8.33	29.8	33.33	3	6
1981	7.95	28.7	33.33	6.7	5.9
1982	-0.55	98.8	54.11	16.9	17.5
1983	-5.28	80.8	41.44	8.6	11.3
1984	3.68	59.2	62.30	8.5	8.8
1985	2.78	63.7	53.81	9.6	9.9
1986	-3.53	105.7	72.12	15.9	13.6
1987	1.7	159.2	129.75	16	11.3
1988	1.3	51.6	58.06	12.4	6.1
1989	3.1	19.7	40.69	5.5	1
1990	4.4	29.9	62.61	4	2.9
1991	3.6	18.8	118.59	1.5	0

Estabilidad y Crecimiento Econmico, and Pacto para la Estabilidad, la Competividad, y el Empleo), and the main objective of the program continued. It consisted of a heterodox stabilization plan which succeeded because it was conducted together with other structural changes to the economy: a sharp reduction in the size of the government by privatizing the majority of state-owned firms, the budget deficit was controlled and turned into a surplus, and the foreign debt was renegotiated in order to reduce the cost of its service[14].

As a result of these changes, inflation fell below 10% in 1993 and continues to decrease, and economic growth was achieved during the first four years of the Salinas administration (although in 1993 GDP remained stagnant).

[14]The stabilization program undertaken since 1987 is analyzed in Chapter 5.

2.2 Changes in Instruments of Monetary Policy

As the external conditions became more volatile and inflation rates increased, the tools of monetary control used during the stabilizing development period became less effective. The financial system as a whole proved to be too rigid and overregulated, which made a reform necessary. This reform process consisted of five main elements[15].

- Financial liberalization: Removal of regulations on amount of credit and interest rates. Establishment of a system with market-determined interest rates and with open market operations as the main instrument of monetary control.
- Financial innovation: Creation of new instruments that promote the expansion of voluntary savings and coverage from inflation or exchange rate risk.
- Strengthening of financial intermediaries.
- Privatization of commercial banks.
- Non-inflationary financing of the government: Development of more efficient capital and money markets, which can provide with a source of funding for the government. The creation of this source of funding helped reduce the primary credit to the government which is a source of inflationary pressure.

Development of instruments for open market operations.

The development of the money market started in 1978 with the introduction of CETES in 1978 (Certificados de la Tesorería de la Federación, sold on discount at weekly public biddings, and with maturities of 28, 91, 182 and 364 days). These securities started to gain acceptance after the last quarter of 1982, when the public was allowed to bid for amounts and prices. The evolution in the volume of circulation of CETES and other government securities is shown in Table 2.2.

[15] As described in Aspe (1993), chapter 2.

Table 2.2: Evolution of Government Securities

Year	Financial depth (% GDP)	CETES (% of GDP)	PAGAFES (% of GDP)	BONDES (% of GDP)	AJUSTABONOS (% of GDP)
1976	28.84				
1977	22.04				
1978	24.86	0.09			
1979	26	0.65			
1980	32.72	1.26			
1981	35.34	1.64			
1982	38.75	3.39			
1983	35.56	3.60			
1984	1.87	0.14			
1985	32.84	4.90			
1986	39.16	9.77	0.116		
1987	42.39	14.04	0.058	0.18	
1988	34.2	10.69	0.582	5.14	
1989	39.53	10.53	0.112	10.87	0.63
1990	44.3	10.76	0.228	9.64	2.14
1991	45.49	8.55	0.005	6.85	4.61

Source: B de M, Informe Anual 1991 & 1993.
Note: Financial depth is measured as M4 (the broadest measure of money) as a fraction of GDP.

In August 1986, the government introduced PAGAFES (Pagarés de la Federación, with maturities of 28, 180 and 364 days), which are dollar denominated notes that allowed the government to provide a means of coverage from exchange rate fluctuation.

In October 1987, BONDES (Bonos de desarrollo, with maturities of one to two years) were introduced with a variable interest rate, which allowed the holder to obtain coverage from inflation rate fluctuations. BONDES and PAGAFES played a major role in the government's attempts to recover credibility about the seriousness of the government in stabilizing the economy. As discussed in Pérez Gea (1993, chapter 2), these securities proved to be very expensive to the federal government, but they did help achieve a higher degree of credibility.

As a result of the creation of these new instruments, the financial system was deepened (as seen in the proportion of M4[16] to GDP), and the money market became more active. The increase in the activity of the money market has also been enhanced by the creation of other instruments issued by private companies or by financial institutions.

Another important development is that the share of holdings of government securities by the private sector increased since 1978 (as shown in Table 2.3), which enabled transactions with such securities to become an instrument to affect the level of the money supply in the economy.

In summary, the development of these markets allowed a shift of the instrumentation of monetary policy from reserve requirements to open market operations. Other instruments of monetary policy were slowly removed from use. Selective control of credit programs came to an end in 1988. By the end of 1989, the reserve requirement was replaced with a liquidity requisite, which forced financial institutions to hold 30% of their deposits in government securities. The liquidity requisite was soon lifted and monetary control passed to be executed exclusively through open market operations. In addition, a 10 year negotiable bond was created, which would enable private enterprises to hold their voluntary reserves in such interest bearing securities.

[16]M4 is the the name given in Mexico to the broadest aggregate measure of money supply.

Table 2.3: Holding of Government Securities

Year	Banco de México (%)	Private Sector (%)
1977	99.3	0.6
1978	98.1	1.4
1979	94.3	3.4
1980	91.5	6.6
1981	89.9	5.9
1982	85.4	10.0
1983	81.4	13.5
1984	80.0	16.5
1985	70.9	24.3
1986	59.1	35.3
1987	41.5	45.7
1988	30.3	47.8
1989	28.9	46.4
1990	24.8	51.0
1991	12.5	43.1

Source: Pérez Gea (1993).

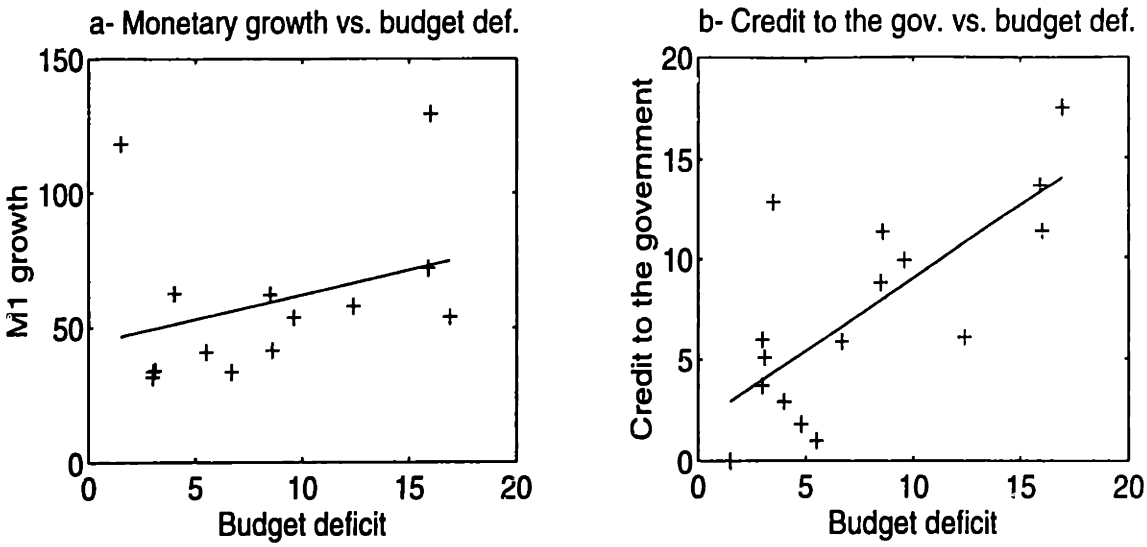

Figure 2-1: Monetary growth, budget deficit, and credit to the government, 1978 - 1991.

2.3 Lessons from the Crisis and Stabilization Periods

1. Reason for monetary expansion is fiscal expansion.

   The experience of Mexico during the 70's and 80's shows that expansionary fiscal policies have been generally financed by a monetary expansion. As a result, there is a direct link between the public deficit and the rate of growth of the money supply. Figure 2.1 displays on panel (a) the relationship between budget deficit and monetary growth. We can observe that there is a strong positive correlation between the two, which comes from the fact that budget deficits have typically been financed through primary credit from the Banco de México, as shown on panel (b) in Figure 2.1.

2. Reason for fiscal expansion is, in many cases, political pressure.

   Mexican economic policy has long been influenced by the notion that the government should play an important role in promoting economic growth. This ideology is based on article 25 of the constitution, which establishes that the

economy is to be planned and directed by the state. This has lead to periods where the public sector has conducted policies of low prices in energy, agricultural products, and state-provided services; support to agricultural producers; and in general, an increase in the size of the public sector. In many occasions, public investment has crowded out private investment, forcing private producers to borrow from abroad. In general, the tendency towards state control of the economy has put pressure on the government to lead expansionary fiscal policies, which have inevitably brought about inflation.

From looking at Mexico's experience in the 70's and 80's, we can observe that although in some cases, the periods of high fiscal expansion have responded to external shocks (drop in oil prices in 1986, or the earthquake in 1985), in many cases they have responded mainly to political pressure. In 1983 and 1984, for example, the PRI started losing votes in various local elections all around the country. As a result, the political system exerted enough pressure on de la Madrid to make him deviate from the adjustment program that had been followed, and to undertake a reflationary policy to promote growth. Similarly, during the López Portillo administration, the initial attempts to maintain a stable budget were abandoned when the oil euphoria appeared.

3. Attempts to promote economic growth through fiscal expansion have been ineffective.

   Despite the efforts of the government to promote economic growth through expansionary fiscal policies, monetary expansion has repeatedly led to inflation, which has resulted in lower levels of economic growth. As we can see in Table 2.2, there has been a negative correlation between inflation and economic growth, which strengthens the idea that in order to achieve economic growth in the long run, it is necessary to maintain price stability.

As we have seen, given the characteristics of the Mexican political system, there tends to be strong pressure on the federal government to try to promote growth through fiscal expansion, which results in higher levels of monetary growth. This

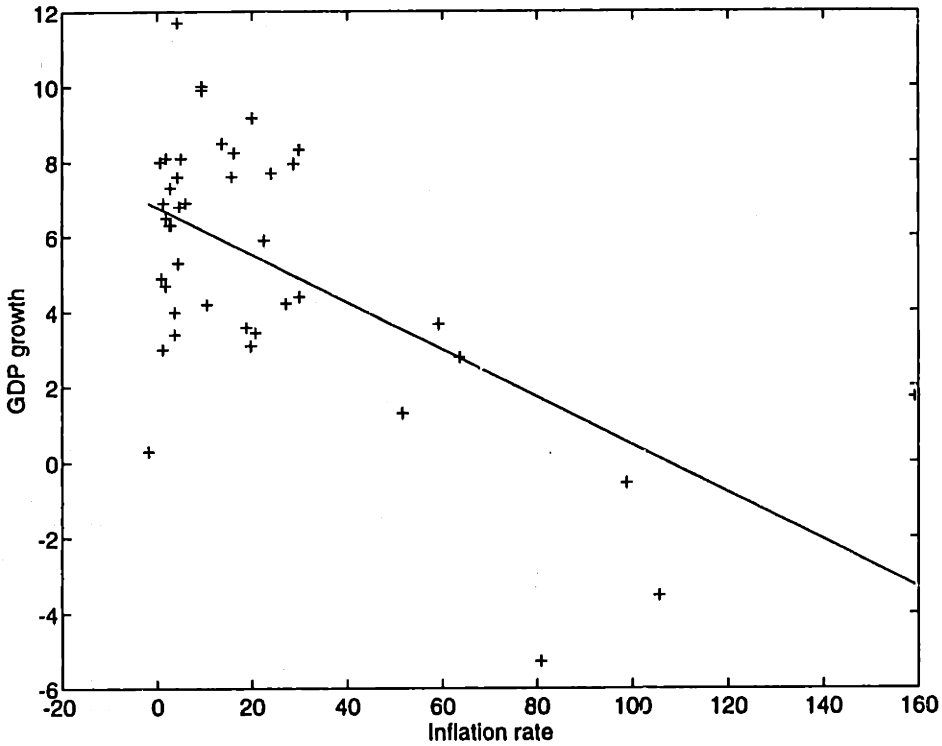

Figure 2-2: Growth vs. Inflation, 1950 - 1991.

suggests that in order to prevent new episodes of inflationary fiscal deficits, it is necessary to preclude the government to finance its deficit through primary credit from the Banco de México. There have been various attempts to achieve this by fixing a limit to such credit. However, these limits have been repeatedly violated, given that the government could decide whether or not to respect them. This suggests that the only way to have these limits enforced is by having an independent central bank.

Besides, if it is known that the government does not hold direct control over the monetary authority, there will be less pressure on the government to lead a fiscal expansion. Assuming that the administration of an independent central bank is more conservative than the government[17], the pressure to conduct an expansionary monetary policy will have less effect on the actual rate of monetary growth, and more emphasis can be placed on keeping inflation low.

[17]This assumption seems logical if we believe that a government will tend to be more short-term oriented than the central bank.

Chapter 3

Theory of Central Bank Independence

This chapter reviews the theory and empirical evidence on central bank independence. Section 3.1 discusses the motives of monetary growth and the appearance of an inflationary bias when the public is aware that the central bank may have incentives to allow for higher monetary growth than the announced level. This problem of dynamic inconsistency is one of the bases for central bank independence. Section 3.2 presents some empirical evidence on central bank independence (CBI) which confirm that, in general, more CBI is related to better economic performance. Finally, section 3.3 presents two alternatives to solve the problem of inflationary bias: monetary rule and monetary discretion under a conservative central banker. The model introduced in section 3.1 is extended to derive the optimal level of independence that a central bank should have.

3.1 Motives of Monetary Growth

This section introduces the two main motives that a central bank can have to select a level of monetary growth higher than necessary to maintain low and stable inflation. The employment motive and the revenue motive are discussed through the use of game theory models.

3.1.1 Employment Motive

The employment motive for monetary expansion relies on the assumption that monetary policy is implemented by a benevolent social planner that tries to maximize the welfare of society by avoiding inflation and promoting economic growth. The trouble arises when there is a conflict between these two objectives. This conflict derives from the existence of a trade-off between higher rates of growth and lower inflation which can be expressed in the form of a short-run Philips curve.

Another important feature of the model is that nominal wages are negotiated at the beginning of a period, under the expectation of a certain level of inflation. As a result, the nominal contract wage will be set such that it will attain the real wage w_n, which is the real wage that clears the labor market:

$$W_c = w_n P^e = w_n P_{t-1}(1 + \pi^e) \tag{3.1}$$

We also assume that the natural level of employment, N_n, which results when $\pi = \pi^e$, will be lower than the desired level of employment, N^*, due to distortionary taxes in the labor market.

Model

The assumption[1] that the policymaker tries to maximize social welfare can be translated into a social utility function, which depends on inflation and the level of employment. That is,

$$U_s = -[\frac{A}{2}(N^* - N)^2 + \frac{\pi^2}{2}], \qquad N^* - N >= 0 \tag{3.2}$$

where A is the weight that society puts on the level of employment compared to the level of inflation. Thus, this weight A is inversely related to the level of inflation aversion of society, and it is frequently used as a measure of CBI.

The existence of the short-run Philips curve can be captured in the following

[1]This model is based on Cukierman (1992).

equation,

$$N - N_n = \alpha(\pi - \pi^e), \qquad \alpha > 0 \tag{3.3}$$

where the coefficient, α, depends on the characteristics of the economy.

Assuming that the growth of the money supply, m, translates directly into inflation[2], we can establish the following equality,

$$\pi = m. \tag{3.4}$$

As a result, the employment-inflation relation becomes,

$$N - N_n = \alpha(m - m^e). \tag{3.5}$$

By combining the previous equations, we can restate the objective of the central bank as a maximization problem where the adjustable variable is m,

$$max[U = -\frac{A}{2}(N^* - N_n - \alpha(m - m^e))^2 + \frac{m^2}{2}]. \tag{3.6}$$

Maximization with respect to m will yield the following first order condition, which determines the reaction function,$\phi(m^e)$, of the policymaker:

$$\phi(m^e) = m = \frac{\alpha A}{1 + \alpha^2 A}(N^* - N_n) + \frac{\alpha^2 A}{1 + \alpha^2 A} m^e \tag{3.7}$$

If we assume rational expectations and perfect information about the objectives of the central bank, then people's expectations would be correct in the equilibrium, which yields the reaction function of society,

$$m = m^e. \tag{3.8}$$

The combination of the reaction functions of the policymaker and society will

[2]From the equation $m = y + \pi$, with a rate of growth of output, $y = 0$.

result in the following equilibrium rate of monetary growth:

$$m_{eq} = A\alpha(N^* - N_n) \tag{3.9}$$

This implies that the equilibrium level of monetary growth will be positive. Thus, the equilibrium level of inflation will be positive, which is higher than the socially optimal level of inflation, which in this model is assumed to be zero.

This equilibrium can also be illustrated graphically. Figure 3.1 shows the optimization of the utility function of the policy-maker. The curves labeled U_0, U_1, U_2 represent indifference curves of the policy-maker. Utility is higher for curves closer to the point with $m = 0$, and $N = N^*$. Lines labeled $P(m^e = m_i)$ represent the short-run Philips curves for each value of m^e. As we can see in the figure, for any value of m^e below m_{eq}, the policy-maker can maximize utility by choosing a value of m higher than m^e. This means that even if the central bank announced a certain level of monetary growth lower than m_{eq}, people would be aware that the monetary authority has an incentive to set m higher than $m^{announced}$ once expectations have been set. Thus, the public will adjust their expectations to $m^e = m_{eq}$, such that the policy-maker will not have an incentive to deviate from the expected m.

We can notice that the level of social utility obtained in such equilibrium, U_2, is lower than U_0, which would be obtained if the policy-maker were able to commit to $m = 0$, such that $m^e = 0$ and $N = N_n$.

This can also be represented through the reaction curves of the policy-maker, $m = \phi(m^e)$, and society, $m = m^e$, as displayed in Figure 3-2. As we can observe, the equilibrium level of monetary growth will be $m_{eq} > 0$.

In summary, when people are aware that the policymaker is interested in promoting a level of growth which is higher than its natural level, the result will be a level of inflation that will be higher than optimal with no improvement in the level of growth. This result of higher inflation is known as an inflationary bias, and it relies on the fact that the level of monetary growth is determined by the central bank after expectations have been set. This problem is a typical example of dynamic inconsistency,

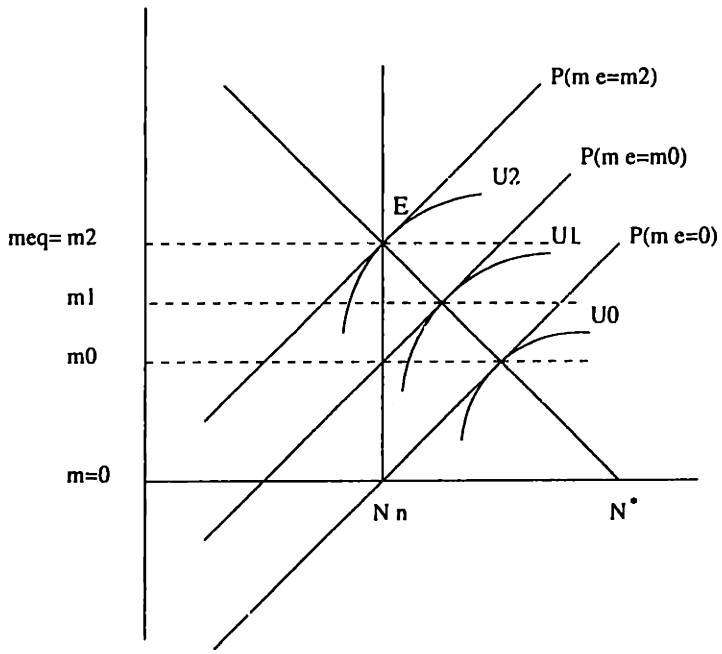

Figure 3-1: Equilibrium rate of monetary growth through utility maximization.

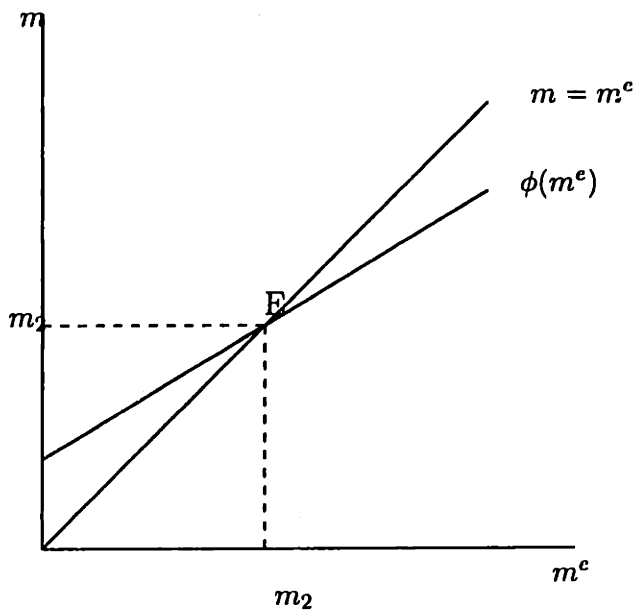

Figure 3-2: Equilibrium rate of monetary growth through reaction curves.

which

> arises when the plan currently made for some future period by one of the players in a dynamic game is no longer optimal from that player's point of view when that period arrives[3].

In this case, the dynamic inconsistency problem comes from the fact that the optimal level of monetary growth is different before and after expectations have been determined.

The size of this inflationary bias depends on the relative weight that the central bank gives to its output and inflation objectives. It is generally assumed that a central bank which is more independent from the central government will tend to place a much higher weight on its inflation objective (which translates into a low value for A), and will be more likely to produce inflationary bias.

3.1.2 Revenue Motive for Monetary Growth

[4]In countries where the tax system is not well developed, the government might have difficulties in collecting enough revenues to satisfy its budgetary needs. This situation is likely to happen in countries which do not possess an effective capital market which could allow the government to place its securities. As a result, the government in such countries is likely to rely on monetary policy as a way to satisfy its revenue requirements through seigniorage.

Revenue from seigniorage is generally defined as follows,

$$S = \frac{\dot{M}}{P} = \frac{\dot{M}}{M}\frac{M}{P} = mL(\pi^e), \tag{3.10}$$

where $L(\pi^e)$ is the demand for real base money balances corresponding to an expected level of inflation, π^e.

By combining this equation with the equilibrium condition $m = \pi = \pi^e$, we obtain

[3]From Cukierman (1992), p.31

[4]This subsection is based mostly on Cukierman (1992), chapter 4.

the following relation:

$$S = mL(m) \tag{3.11}$$

Given that demand of real balances will be a decreasing function of inflation and thus a decreasing function of m, this equation predicts that seigniorage will be maximized at some positive value of m.

In order to solve for this seigniorage maximizing level of monetary growth, Cagan (1956) assumed that $L(m^e)$, takes the form:

$$L(m^e) = e^{-\alpha\pi^e}, \tag{3.12}$$

which, under the equilibrium condition yields:

$$S = me^{-\alpha m} \tag{3.13}$$

This equation is optimized at $m_{opt} = \frac{1}{\alpha}$.

We can observe that the function $S(m)$ seems to have the form of a Laffer curve. In fact, seigniorage is often referred to as an inflation tax with tax rate m and tax base $L(.)$, which justifies the existence of a Laffer curve which determines an optimal tax rate that maximizes tax revenue.

Evidence from many countries seems to indicate that the level of monetary growth is often higher than this optimal tax rate $1/\alpha$. This seems to be irrational if we assume that the government has a utility function of the form,

$$U = U(S, m), \qquad U_S > 0 \ \ and \ \ U_m < 0, \tag{3.14}$$

which would imply that any value of m above $\frac{1}{\alpha}$ is not optimal since the government can reduce m and at the same time increase S. However, this seemingly irrational behavior seems to be explained through another example of dynamic inconsistency.

Dynamic inconsistency and the revenue motive for monetary expansion

We assume that the utility function of the government has the form,

$$U = \delta S - \phi(\pi, \pi^e) = \delta m L(\pi^e) - \phi(m, \pi^e) \tag{3.15}$$

This equation is maximized when the following first order condition is achieved:

$$\delta L(\pi^e) - \phi_\pi(m, \pi^e) = 0 \tag{3.16}$$

Assuming that the demand for money balances takes the same form as in equation 3.12, and that ϕ takes the following form,

$$\phi(\pi, \pi^e) = \exp(\gamma 1\pi + \gamma 2\pi^e), \tag{3.17}$$

utility will be maximized at m_{eq}, such that

$$m = \frac{\ln[\delta/\gamma]}{\alpha + \gamma 1 + \gamma 2} \tag{3.18}$$

This value can be higher than $1/\alpha$ if δ/γ is large, which would explain why monetary growth will be higher than optimal for the government.

On the other hand, if the government had the ability to commit, the optimization problem would be:

$$max[\delta m L(m) - \phi(m, m)], \tag{3.19}$$

which would imply that,

$$\delta \frac{\partial}{\partial m}[mL(m)] = \phi_\pi + \phi_{\pi^e}. \tag{3.20}$$

Thus,

$$\frac{\partial}{\partial m}[mL(m)] \geq 0, \tag{3.21}$$

which means that m would be located on the efficient side (the upward sloping side) of the Laffer curve.

As we can see, the revenue motive for monetary growth raises another problem of

dynamic inconsistency which comes from the fact that the incentives of the government to increase m are different before and after $L(\pi^e)$ has been determined.

It is important to note that as δ increases, m will be more likely to be higher than $1/\alpha$. One possible interpretation of these results is that when the public is aware that the central bank gives more importance to financing the government with increases in the money supply (either through primary credit, by purchasing government securities, or by seigniorage), monetary growth and inflation will be higher than optimal for the government, and therefore much higher than optimal for society.

As a result, when the central bank finances the government, not only will there be inflationary pressure due to the expansion of the monetary base, but there will also be a problem of inflationary bias which strengthens this pressure. Thus, a central bank which is credibly committed not to finance the government is desirable.

3.2 Empirical Evidence of Central Bank Independence.

The motives of monetary expansion and the problem of inflationary bias indicate that it may be desirable that the central bank be independent. In this section, we will review some empirical evidence which confirms that in most cases, a more independent central bank is associated with better economic performance, which could imply that central bank independence is like a "free lunch"[5].

One of the most commonly cited empirical studies is presented in Alesina and Summers (1993). They use data from 16 industrialized countries and relate it to the degree of independence of the central bank of each country. The measures of independence come from a combination of indices of independence prepared by Bade and Parkin (1982); and Grilli, Masciandaro, and Tabellini (1991); which reflect the level of political and economic independence of the central bank.

The results of their study indicate that CBI is negatively related to the level and

[5]Debelle and Fischer(1994).

the variation of inflation. However, there does not seem to be any strong correlation with other indicators such as GNP growth and unemployment. These results seem to indicate that central bank independence may have positive effects on inflation without sacrificing economic growth.

3.3 The Optimal Level of Central Bank Independence

Sections 3.1 and 3.2 seem to indicate that it is desirable to have a monetary authority that will operate independently of the government, will not finance the government's deficits, and will be devoted to maintaining a low level of inflation. However, it remains to be discussed the level of independence that the central bank should have in order to maximize social welfare.

Two types of independence can be distinguished[6]: *goal* independence and *instrument* independence[7]. Goal independence relates to the ability of the central bank to determine its objectives of monetary growth and price level. Instrument independence is associated with the ability of the central bank to choose the instruments it will use to achieve its goals.

Central banks which are usually considered to be independent have different types of mandates which result in different levels of goal and instrument independence. The Bundesbank, for example, is considered to have complete instrument and goal independence, since it does not respond to political pressure to try to alleviate the effects of recessions. The Fed, on the other hand, is considered to have less goal independence, since it is subject to strong pressure to participate in the promotion of economic growth. In New Zealand, the Reserve Bank has to pursue the objectives which are set under a contract with the government[8], so it does not have goal independence. However, since it is free to choose the means to achieve these goals, it has instrument

[6]Debelle and Fischer (1994).

[7]Grilli et al.(1991) distinguish the same types of independence and refer to them as political and economic independence.

[8]Pérez Gea (1993).

independence. A central bank which is forced to increase monetary growth at a fixed rate would be considered to have no goal or instrument independence[9].

As we can see, the level of independence depends largely on the type of mandate that the central bank follows. Thus, we will examine two types of such mandates which have been largely discussed in recent economic literature.

3.3.1 Rules Rather Than Discretion

One way that has been proposed to eliminate the problem of inflationary bias is to lead monetary policy through a set of fixed rules, which will allow the central bank to make credible commitments to a certain level of monetary growth. This view was presented as the solution to inflationary bias (as presented in Section 3.1) by Kydland and Prescott (1977), and was later supported by Barro and Gordon (1983).

The main argument is that if the public knows that the central bank follows a fixed set of rules when selecting the level of monetary growth, the incentive to deviate from the announced level of monetary growth will not be relevant since the central bank has to abide to the rules. Thus, the equilibrium where inflation is low and employment is at the natural level can be reached.

This can be illustrated using the model introduced in section 3.1 (see Figure 3-3). When the notion of inflationary bias was introduced, it was explained that the situation where $N = N_n$ and $m = 0$ could not be reached in equilibrium because the central bank lacked the ability to commit to $m = 0$. The equilibrium in that case was located at $N = N_n$, $m = m_{eq}$, which is notoriously inferior in terms of social utility. If monetary rules are implemented, the central bank acquires the ability to commit to $m = 0$; therefore, the new equilibrium will be at $N = N_n$ and $m = 0$.

Although monetary rule allows the central bank to achieve a lower level of inflation, this solution has been criticized because it removes all flexibility of the central bank to alleviate output variations. If the central bank does not participate in filtering out economic shocks, the variance of output will be higher (as will be shown in the next

[9]Debelle and Fischer (1994).

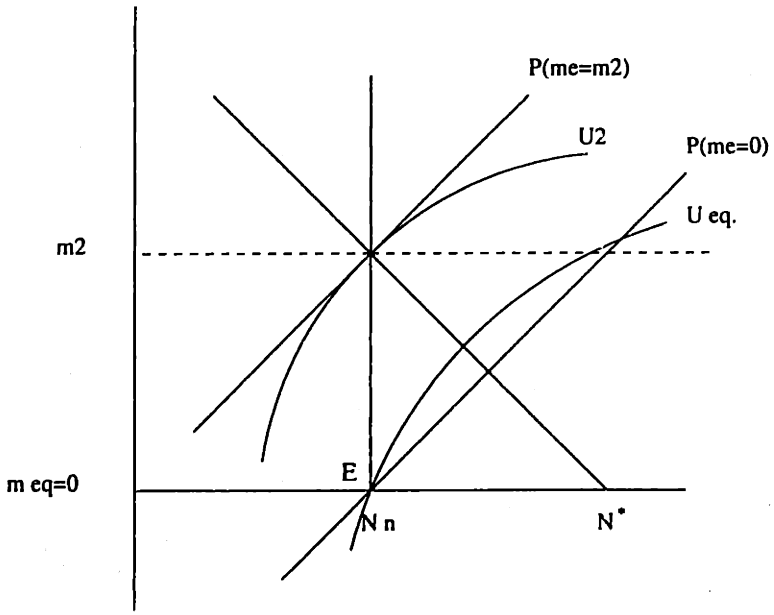

Figure 3-3: Equilibrium under monetary rules.

section). Therefore social utility is not necessarily maximized by focusing exclusively on lowering inflation.

3.3.2 Discretion Under a Conservative Central Banker and the Optimal Level of Inflation Aversion

An alternative to monetary rule is monetary discretion. Rogoff (1985) proposed the solution of appointing a central banker which would be more conservative, or more inflation averse, than society. This can be achieved by giving the central bank the mandate to maximize a utility function which gives a relative weight to inflation higher (in absolute value) than society does. This alternative may be desirable because it allows to reach a better balance between maintaining credibility of commitment to low inflation and keeping flexibility to use monetary policy to respond to external shocks. This proposition can be analyzed under the following model which is an extension of the one presented in section 3.1.

The social utility function remains the same as in section 3.1. However, the utility function that the central bank tries to maximize will now be:

$$U_{CB} = -[\frac{A_{CB}}{2}(N^* - N)^2 + \frac{\pi^2}{2}] \tag{3.22}$$

where A_{CB} is the inverse of the level of inflation aversion of the central banker, which in this case may be different the inverse of society's level of inflation aversion, A.

The other change in the model comes from the introduction of a stochastic component, ϵ_t, to the employment-monetary growth equation[10]:

$$N - N_n = \alpha(m - m^e) + \epsilon_t \tag{3.23}$$

By maximizing its utility function, the central bank will have the following reaction

[10]This stochastic component can account for external shocks to the economy.

function,

$$\phi(m^e) = m^t = \frac{\alpha A_{CB}}{1+\alpha^2 A_{CB}}(N^* - N_n) + \frac{\alpha^2 A_{CB}}{1+\alpha^2 A_{CB}} m^e - \epsilon_t \frac{\alpha A_{CB}}{1+\alpha^2 A_{CB}}, \tag{3.24}$$

where m^t is the target for monetary growth selected by the central bank.

By introducing the equilibrium condition $m^t = m^e$, we can get to the equilibrium level of monetary growth and the corresponding level of employment:

$$m = \alpha A_{CB}(N^* - N_n) - \alpha A_{CB}\epsilon_t \tag{3.25}$$

$$N = N_n + (1 - \alpha^2 A_{CB})\epsilon_t \tag{3.26}$$

Assuming that the stochastic variable ϵ_t has a variance ${\sigma_{\epsilon_t}}^2$, we can derive the variances of m, and N,

$$\sigma_m = \alpha^2 {A_{CB}}^2 {\sigma_{\epsilon_t}}^2 \tag{3.27}$$

$$\sigma_N = (1 - \alpha^2 A_{CB})^2 {\sigma_{\epsilon_t}}^2 \tag{3.28}$$

We can use these equations to derive the expected level of social utility,

$$E[U] = -[\frac{A}{2}(1 - \alpha^2 A_{CB})^2 + \frac{1}{2}\alpha^2 {A_{CB}}^2]{\sigma_{\epsilon_t}}^2 \tag{3.29}$$

In order to determine the optimal level of inflation aversion of the central bank, we can find the value of A_{CB} which maximizes the expected social utility. From the equation above, we can derive that expected social utility will be maximized for

$$A_{CB} = \frac{A}{A\alpha^2 + 1} \tag{3.30}$$

From the above result, we can make the following observations:

- The optimal level of inflation aversion of the central bank is higher than that

for society ($A_{CB} < A$).

- The optimal level of the inverse of inflation aversion, A_{CB}, will be lower (meaning that the central bank is more inflation averse) when society as a whole is more inflation averse.

- The optimal level of A_{CB} is also lower when the coefficient, α, is higher, meaning that there is a stronger trade-off between inflation and employment. At the limit $\alpha = 0$, there is no short-run trade-off between monetary growth and employment, which eliminates the problem of inflationary bias. As a result, there is no longer the need to have a central bank which is more conservative than society. Thus $A_{CB} = A$.

In summary, theory predicts that in the presence of a short-run Philips curve, the optimal level of inflation aversion of the central bank is such that it reduces the inflationary bias, and that it copes with the trade-off for social welfare between variations in inflation and variations in employment.

In order to implement a mandate like the one we derived in this section, where monetary policy is conducted by a conservative (but not "too" conservative) central banker, the monetary authority may need the following characteristics.

- The mandate of the central bank should clearly establish that the main goal of the institution is to maintain stability.

- The central bank has to be headed by a person (or a group of persons) who is known by the public to be more inflation averse than society.

- In order to limit how conservative the central bank is going to be, it should have some degree of accountability for its policies. This will have the effect of increasing the pressure on the central bank to cooperate in promoting the stability of output as well as that of inflation.

An alternative chosen in some countries, however, is the establishment of a contract in which the central bank commits to a certain level of inflation. This corre-

sponds more closely to the case of monetary policy under rules, as described in section 3.3.1.

Chapter 4

The New Law of the Banco de México

The historical and theoretical evidence presented in the previous chapters points out the necessity of having a central bank which operates independently from the government. Such need was recognized by the Salinas administration, which decreed on December 23, 1993 that the B de M would become independent from the federal government. The new Ley del Banco de México, which replaces the Organic Law of the Banco de México decreed in December 1984, became effective on April 1, 1994.

This chapter analyzes the new institutional arrangements the way they are set under this new law. The Constitutional changes that were necessary to enact the independence of B de M are presented in section 4.1. Section 4.2 describes the changes regarding to the appointment and removal of the members of the board of governors. In section 4.3 the new objectives of the B de M as defined under the new law are reviewed. Section 4.4 analyzes the functions and operations of the B de M and the authority over monetary policy. The elements of the new law that prevent the B de M from financing the government's budget deficit are discussed in section 4.5. Next, section 4.6 reviews the level of accountability of the B de M. Finally, we conclude in section 4.7 on the result of the new legislation on the performance of B de M.

4.1 Constitutional Mandate of the B de M

The control of the B de M by the federal government has been rooted in the Constitution. In fact, Article 28 used to specify that the monopoly of issue of currency was to be controlled by the federal government through a single bank. In order to procure the autonomy of the B de M, this Article had to be amended. Article 28 now specifies:

> ...The central bank, ..., will regulate the exchanges, as well as financial intermediation and services, ... The leadership of the bank will be charged to persons whose appointment will be made by the President of the Republic with the ratification of the House of Senators or the Permanent Commission; they will hold their posts for terms which will be staggered and the duration of which will provide the autonomous exercise of their functions; they will only be removable for severe causes and will not be able to hold any other employment, charge, or commission, ...

4.2 Appointment and Removal of the Members of the Board of Governors

As the new Article 28 of the Constitution suggests, the norms for the appointments and removals of the members of the board of governors play an important role in procuring the autonomy of the central bank.

In fact, as historical evidence shows, one factor that can prevent the head of a central bank to act autonomously from the federal government is the fact that the members of the governing board could be removed from their positions by the president in case of disagreement. The freedom of the president to replace members of the board enabled previous administrations to engage in radical changes in policy direction without much trouble. In 1937 for example[1], the disagreement between

[1] As explained in Chapter 1.

Miguel Palacios Macedo and Luis Montes de Oca, members of the governing board of the B de M, and President Cárdenas led to their leaving the B de M, which eliminated all resistance of this institution to the expansionary policies of the federal government. Similarly, in September 1982, the decision by López Portillo to nationalize commercial banks led to the replacement of Miguel Mancera as Director of the B de M. Pérez Gea (1993) observes that while during the stabilizing development period, the B de M was headed by one person during eighteen years, between 1970 and 1982, four people occupied the position of Director. This evidence suggests that a higher turnover rate may be correlated to the degree of independence of a central bank.

According to the previous law, the governing board of the B de M was composed of eleven members, including members of the cabinet of the president, and other individuals appointed by the president. Moreover, the Secretary of Finance would preside the board. In addition, the Director of the B de M was designated by the president and could be replaced at any time. As a result of these regulations, the federal government had direct control over the governing board of the B de M.

The new law, however, allows for significant political independence of the central bank[2]. In fact, the new Board of Governors will consist of five members. One of them will be designated governor and will preside over the board, the other four will be subgovernors.

The term of the governor will have a duration of six years, and will start in January of the fourth year of the presidential administration in turn[3].

The terms of the subgovernors will be staggered and will have a duration of eight years. Their terms will start successively every two years, in January of the first, third, and fifth years in office of the president in turn[4].

As stated in Article 28 of the Constitution, the members of the board will not have any other employment, especially not in the federal government. Besides, they

[2]The notion of political independence is developed in Grilli et al. (1991) as a measure which takes into consideration the appointments of the board, the relationship with the government, among other legal characteristics of central banks.

[3]The term of the President in Mexico has a duration of six years.

[4]From Article 40 of the Ley del B de M 1993.

will be mandated not to participate with the representation of the bank in events related to any political party[5].

Moreover, the members can only be removed for physical or mental incapability or for severe violations of the regulations of the B de M.

Finally, the federal government, through the Secretary of Finance will only be allowed to participate in the meetings of the board with voice but without vote.

In summary, the new law enables the Board of Governors to implement their policies with complete political independence from the federal government. In addition, it makes it harder for a future administration to make sudden shifts in the direction of economic policy, which should promote the pursuit of disciplined monetary policy.

4.3 Objectives of the B de M

The Organic law of the B de M of 1984 specified that the objective of the B de M was:

> ...to issue currency, to put in circulation the monetary signs and to promote credit and exchange conditions favorable to the stability of the purchasing power of the currency, to the development of the financial system, and in general, to the healthy growth of the national economy[6].

As Bábatz (1993) observes, this law does not put special emphasis on the objective of stability, and it is unclear on the role that B de M should play in order to promote "healthy" economic growth.

According to the new law, the Banco de México, which is now an autonomous central bank, is in charge of:

> ...providing the economy with currency. In doing so, its main objective will be to procure the stability of the purchasing power of said currency.

[5]From Article 42 of the Ley del B de M 1993.

[6]Article 1 of the Ley Orgánica del Banco de México as published in Diario Oficial de la Federación on December 31, 1984, referred to as Ley del B de M 1984 hereafter.

> Other objectives of the B de M will be to promote the healthy development of the financial system and the good functioning of the payments system[7].

As we can see, the new law puts more emphasis on stability and no longer mentions economic growth as one of the objectives. This corresponds to the need to have a clear mandate for the B de M to focus primarily on stability, as expressed in the exposition of motives of the new law[8]. In terms of the notions that we presented in chapter 3, the goal of B de M could be interpreted as an objective function which depends primarily on inflation (which has a very low value of A_{CB}).

4.4 Functions and Operations of the B de M

Under the new law, B de M is given the following functions[9]:

I. To regulate the issue and circulation of the currency, the exchanges, financial intermediation and services, as well as the payments system;

II. To operate with credit institutions as a reserve bank and lender of last resort;

III. To provide treasury services to the federal government and to act as its financial agent;

IV. To give advisory service to the federal government on economic and financial issues;

V. To participate in the International Monetary Fund and in other organizations of international financial cooperation or which gathers central banks; and

VI. To operate with the organizations referred to in item V above, with central banks and with other foreign institutions which exert authority in financial issues.

[7]Articles 1 & 2 of Ley del Banco de México, as published in Diario Oficial de la Federación on December 23 1993, referred to as Ley del B de M 1993 hereafter.

[8]From Salinas (1993).

[9]From Article 3 of the Ley del B de M 1993.

These functions are very similar to the ones specified in the previous law, except that it now excludes the regulation of credit from the list.

In order to fulfill such functions, the B de M has access to the following operations[10]:

- To perform transactions with currencies, gold, silver, securities issued by the federal government, financial institutions, or B de M, and with highly liquid, short term foreign securities;
- To grant credit to the federal government, to financial institutions, and to international financial organizations and monetary authorities;
- To receive credit from international institutions and organizations, exclusively for exchange regulation purposes;
- To hold deposits in domestic and foreign financial institutions; and
- To receive deposits in money or in securities from the federal government and domestic financial institutions, and in money from foreign institutions.

These operations are also very similar to the ones included in the previous law. However, there is a major difference in terms of the authority over monetary policy for two main reasons.

First, Article 7 of the previous law established that the B de M had to determine the maximum amount of internal credit according to factors set by the federal government:

> [...The upper limit for internal credit] will be determined according to the priorities and objectives of the National Development Plan and with the information, and projections considered to approve the law of revenues and the budget of expenditures of the federation, particularly in relation to gross domestic product, internal and external debt, balance of payments, reserves of international assets of the B de M, general level of prices,

[10]Summarized from Article 7 of Ley del B de M 1993.

financing needs of the national economy, monetary aggregates, money and capital markets; as well as considering the limit for internal financing determined during the previous year and the observed level of internal financing ...

As Bábatz (1993) suggests, this article made the determination of such a limit very ambiguous, given that it was supposed to be set based on a series of objectives which may not be compatible with each other. He argues that monetary policy is simply an instrument which should be assigned a unique and unambiguous objective.

Besides, this article suggests the subordination of the decisions made by the B de M to those made by the government, which may force the central bank to finance a predetermined budget deficit. This may be interpreted in terms of game theory as a Stackelberg equilibrium where the fiscal authority leads. As illustrated in Debelle and Fischer (1994) such a situation will always be less preferable[11] than a Nash equilibrium where the monetary authority and the fiscal authority make their decisions simultaneously. Moreover, they suggest that it is better for society to have a Stackelberg equilibrium where the monetary authority leads. This would mean that the federal government has to accommodate its expenditures according to its financing availability after the central bank has committed to a certain inflation and financing level.

Second, the Ley del B de M of 1984 established the existence of a Commission for Credit and Exchanges (Comisión de crédito y cambios), which was formed by three members of the Ministry of Finance and three members of the governing board of the B de M. The decisions of this commission were dominated by the representatives of the federal government given that the Secretary of Finance would lead the sessions, which gave him the power to decide in case of a split vote decision. Besides, at least one of the representatives of the federal government had to be in favor of the decision in order to have it implemented. The functions of this commission used to be the

[11] This assumes, as a sufficient condition, that the monetary authority is more inflation averse than the fiscal authority (Debelle and Fischer 1994).

following[12]:

I. To determine the criteria according to which the B de M would implement its open market operations aimed at exchange rate and credit regulation;

II. To determine the amounts, maturities, returns, placement conditions and other characteristics of monetary regulation bonds;

III. To establish the requirement investment regime ...

VI. To establish norms for the determination of the exchange rate ...

VII. To denote guidelines with respect to the amount, composition and valuation of the reserve ...

As a result of this article, the federal government not only had the leadership in the decision making process, but it had the control over the daily decisions made by the B de M through the Commission for Credit and Exchanges. As Bábatz (1993) points out, the previous regulatory framework resulted in monetary policy being conducted by the Federal Government and not by the B de M.

These two problems were corrected under the new law. First, the Commission for Credit and Exchanges was changed to Commission for Exchanges (Comisión de Cambios), and was given the following duties[13]:

I. To authorize obtaining credit from [foreign financial institutions or organizations];

II. To set the criteria by which the B de M has to abide when exerting the functions related to [regulating the exchange rate regime and transactions];

III. To denote the guidelines for the management and valuation of the reserve ...

[12]From Article 27 of the Ley Orgánica del B de M 1984.
[13]From Article 22 of Ley del B de M 1993.

The federal government will keep control over this commission[14]. However, the commission will only keep the control over the exchange rate regime and transactions, while the authority to control monetary policy will be shifted from the Commission for Credit and Exchanges to the Board of Governors.

The new board of governors will have the following responsibilities in addition to the ones it already had[15]:

V. To resolve the granting of credit to the federal government;

VI. To set the policies and criteria according to which the B de M will implement its operations ...

VII. To authorize the issue of monetary regulation bonds ...

VIII. To determine the characteristics of the securities issued in the name of the federal government ...

IX. To establish the policies and criteria according to which [the financial system will be regulated on issues related to monetary control ...]

In summary, the reforms to the objective and functions of the B de M will grant this institution goal independence, as defined in Debelle and Fischer (1994). This type of independence consists in the ability of the central bank to commit to certain monetary targets without having to accommodate the predetermined financing needs of the federal government.

In fact, given that the restrictions that were established by Article 7 of the previous law (which established that the B de M had to set its policies based on the needs of the federal government) were lifted, the leadership of the fiscal authority as described earlier in this section does not hold anymore. In the game theory model presented by Debelle and Fischer (1993), this situation could be interpreted as shifting from a Stackelberg equilibrium with fiscal authority leadership to a Nash equilibrium or maybe even a Stackelberg equilibrium led by the monetary authority.

[14]The federal government controls this commission in the same way that it controlled the Commission for Credit and Exchanges.

[15]From Article 26 of the new law.

4.5 Control to Government Financing

One of the main elements of central bank independence is to ensure that it cuts the link that allows the federal government to finance its budget deficit through credit of the central bank. This is particularly important in the case of Mexico, as historical evidence in chapter two suggests, since inflationary experience has been caused mainly by monetary expansion following an increase in primary credit to the government.

The new law addresses this issue by establishing an account for the treasury of the federation. This account will record all credit to the government and will have a limit set at 1.5% of government expenditures as determined on the budget of expenditures of the federation (Presupuesto de Egresos de la Federación) for the current year.

This account will not include the government securities held by B de M. However, given that the B de M can only acquire such securities through the auction mechanism, its holding of them will be used only for monetary regulation purposes and not to finance the government.

Another factor that reduces the financing of the government is that the obligation to set the limits on internal credit according to a series of variables out of control of the central bank (as explained in section 4.2) has been lifted. The new law specifies in Item XI of Article 46 that one of the functions of the board of governors is to determine the budget of the B de M such that it remains congruent with the budget of expenditures of the federal government. However, as opposed to the previous law, under the new regulations this budget will be determined in order to achieve its objectives as the monetary authority instead of being imposed by the federal government.

As a result of the new regulations, the B de M has acquired economic independence as defined by Grilli et al. (1991), who measured an index of such independence by considering mainly the level of monetary financing of the budget deficit. Their study, which analyzed the relationship between such independence and economic performance in eighteen developed countries, concluded that a higher level of economic independence was significantly related to a lower level of inflation.

It is important to note that previous regulations of the B de M included similar attempts to limit the financing of the government, but they were not respected. However, the new law establishes a more clear restriction, which together with less intervention of the government in the B de M internal affairs, should make it easier for these limits to be enforced.

4.6 Accountability

One additional characteristic that is important in terms of the degree of independence of a central bank is the degree of accountability that it has in terms of the implementation of monetary policy and the fulfillment of its objectives.

Under the previous law, the B de M had very limited level of accountability as Bábatz (1993) observes. Article 10 of the law of 1984 required the B de M to report to the executive branch of the federal government and to the congress the evolution of the levels of internal financing and the account for the treasury of the federation. The B de M was also required (under Article 35) to publish its monthly account statements and a yearly balance. However, given that the annual report had to be approved by the governing board which was dominated by the federal government, the B de M did not have a mechanism to assess the results of the monetary policy undertaken or the economic policy followed by the government.

As a consequence,

> [the previous] law does not allow an appropriate follow-up of monetary policy by the public... This problem derives from the fact that the responsibility of the management of monetary policy falls upon the federal government[16].

As explained in section 4.3, under the new law, the monetary authority will now be carried out by the B de M. As a result, it was necessary to make this institution more accountable for its actions.

[16] Bábatz (1993), p. 160.

The annual report will continue to be a responsibility of the board of governors, but this board does not depend on the federal government anymore, so it allows the B de M to express its views on the results of the monetary policy it implemented and of the economic policy that the government pursued.

Moreover, Article 51 of the new Ley del B de M specifies the following:

> The bank will send to the executive branch of the federal government and to the congress... the following:
>
> I. In January of each year, an exposition of the monetary policy to be followed by the institution in the corresponding year, as well as a report on the current spending and physical investment of the institution for the corresponding year;
>
> II. In September of each year, a report on the execution of the monetary policy during the first semester of the corresponding year; and
>
> III. In April of each year, a report on the execution of the monetary policy during the second semester of the previous year, and in general on the activities of the bank during the year in the context of the current domestic and international economic situation.

In addition, the new law establishes (in Article 52) that the congress can cite the governor to provide a report on the policies and activities of the institution.

As a result, the new legal framework makes the B de M more accountable for its actions as the monetary authority.

Chapter 5

Banco de México in 1994

Economic policy during the Salinas administration has been characterized by a series of radical reforms leading towards the stabilization and liberalization of the economy. Such reforms have reached all sectors of the economy and have required the amendment of the Constitution in various occasions.

This chapter reviews these reforms in section 5.1 and examines how the Independence of B de M was an essential element to consolidate the policy direction undertaken by the current administration. Section 5.2 evaluates the current situation of the Mexican economy in the middle of political uncertainty, recession, and strong pressure for devaluation, and discusses the challenges that B de M will have to confront in order to maintain stability.

5.1 Recent Economic Reforms and B de M Independence

The central focus of economic policy during Salinas' administration has been the stabilization and modernization of the economy. This stabilization has been pursued since December 1987 through an heterodox program which included measures to fix the nominal exchange rate as an anchor, as well as price and wage controls. This type of program has been followed in various countries including Israel, Bolivia, Brazil, and

Argentina with mixed results. The ingredient that seems to have made the Mexican program successful is that it was accompanied by structural changes including the reduction of the budget deficit and the liberalization of the economy.

5.1.1 Reduction of Government Budget Deficit

Given that the budget deficit is one of the main sources of inflationary pressure, the government has put a lot of emphasis on reducing it from 17% in 1982 to a budget surplus of 1.6% in 1992 and 0.7% in 1993. This has been achieved primarily by increasing the revenues from tax collection, by reducing the subsidies to losses incurred by state-owned firms through privatization, and by reducing the expenditure on external debt service by renegotiating with foreign creditors.

Fiscal Reform

Fiscal reform under the current administration has consisted of two main elements.

- Reduction of tax rates

  The maximum income tax rate for individuals was lowered from 50% to 35%, while that on enterprises was cut from 42% to 35%. Similarly, value added tax rates were reduced from 15-20% to 10%.

- Broadening of the tax base

  In order to broaden the base of taxpayers, the fiscal reform included a stronger enforcement of prosecution of tax evasion, the inclusion of sectors like agriculture and mining that had been exempted from tax obligations, and a simplification of the tax laws for small enterprises.

These changes recognized that tax revenues could only be increased by making tax payment more enforceable and easier rather than increasing tax rates[1]. As a result of these reforms, tax revenues increased from 11% of GDP in the mid 80's to 12.5% in 1993.

[1]Which implies tax collection has been moved from a location on the downward-sloped side of the Laffer curve towards a higher level of tax revenues with lower tax rates.

Privatization

One of the main characteristics of the Mexican economy throughout this century is the strong role of the state, as established in Article 25 of the constitution. This has led to the government attempting to lead the economy through increased public investment and by increasing its share of total output by acquiring enterprises in financial trouble. As a result, in 1982-1983, state-owned enterprises, which numbered 1155, accounted for more than 24% of GDP and 10% of total employment[2].

These state-owned enterprises proved to be highly inefficient, and played a large role in the path to overindebtedness during the late 70's. Therefore, a process of privatization started in 1983, and accelerated during the Salinas administration. By the end of 1991, more than 900 state-owned enterprises had been privatized, with the effect of reducing government subsidies to such enterprises from 12% of GDP in 1982 to 2% in 1990[3].

Debt Renegotiation

During the 1980's, the external debt was one of the largest obstacles to economic growth. The overindebtedness that started affecting Mexico since 1982 forced the public sector to devote a large fraction of its budget to servicing the debt. In order to be able to balance the government budget, it was necessary to renegotiate the external debt. Such negotiations were completed in 1989, with the result of alleviating the servicing cost of the debt, while more credit was granted to Mexico to support the stabilization program.

As a result, the cost of servicing the foreign debt had fallen from 43.6% of the value of exports in 1982 to 18.5% in 1991[4].

In summary, the government has been able to balance its budget through a series of actions that promote a more efficient and progressive tax collection, a reduction in capital outflows to service the external debt, and the reduction of subsidies and

[2]Aspe (1993), p.158, and p. 184, Figure 4-2.
[3]Ibid, p.186.
[4]Ibid, p. 130.

Table 5.1: Social expenditure as a percentage of total government expenditure

Year	Social Expenditure (% of total gov. expenditure)
1980	31.0
1981	31.2
1982	33.8
1983	28.0
1984	27.6
1985	22.6
1986	30.7
1987	30.6
1988	32.0
1989	35.5
1990	37.9
1991	43.7
1992	47.2
1993	50.8

Source: Aspe (1993), and B de M, Informe Anual 1993
Note: Social expenditure includes spending in education, health, regional development, and *Solidaridad*

transfers to inefficient state-owned enterprises. These actions have also allowed the government to increase its spending in other areas, especially its social expenditures. In fact, such expenditures have increased as a share of total programmable expenditures from 33.8% in 1982 to 50.8% in 1993[5], as shown in Table 5-1.

5.1.2 Liberalization

As we mentioned earlier, the stabilization program was accompanied by a process of liberalization of the economy which included:

- Deregulation of the economy: many restrictions were lifted on foreign investment, many laws were simplified, resulting in a more efficient economy.

[5]Aspe (1993), p. 106; and B de M, Informe Anual 1993.

- Privatization of many state-owned enterprises including commercial banks, airlines, Telmex, etc.

- Liberalization of the financial system: removal of restrictions on interest rates, required reserves, selective control of credit, and in general both quantitative and qualitative restrictions on interest rates and amounts of credit.

- Trade liberalization: The process of opening of the Mexican economy started during the de la Madrid administration, shifting from a closed economy with import substitution programs and a high level of protection to domestic industry, to an open economy. This process started with the entrance of Mexico to the GATT. This was followed by a gradual decrease of import barriers and the establishment of a trade agreement with Chile. Most recently, the trade liberalization trend was consolidated by the ratification of NAFTA.

- Changes in regulation in agricultural sector: Changes were made to the legal framework of land property in order to make agriculture more productive. Land distribution came to an end. In addition, the mechanism to provide support to producers was changed from a system of subsidies to certain products, to a system of direct income support which will eliminate distortions created by subsidies.

5.1.3 Role of B de M Independence

The recent reforms indicate a clear tendency towards a more liberalized and market-oriented economy. The stabilization program undertaken during the current administration has also been successful relying on measures that reduce the role of the government in the economy. However, until 1993, there had not been anything that ensured that the current trend of policies will continue. In fact, as seen in chapters 1 and 2, there have been many occasions in Mexico's economic history during this century when the economic policy has abruptly shifted directions.

One of the factors that has made such changes in direction possible is Article 25 of the Constitution, which establishes that:

> ...The State will plan, conduct, coordinate, and orient national economic activity[6], ...

This article has left space for ambiguity as far as how it should be interpreted. As a consequence, some previous administrations have been able to use this article as a justification for an expansion of the size of the government and its involvement in the economy.

In this context, in order to ensure that the current policy direction with regards to monetary and fiscal discipline is maintained, it was necessary for the Salinas administration to consolidate these measures. As President Salinas explained:

> The measures must go beyond individuals and transform into institutions. In this way we will procure for the nation a permanent protection against inflationary economic policies. Thus, we will safeguard the population of new inflationary episodes and of the sacrifices necessary to overcome them, and we can guarantee growth with job creation...
>
> ...if we are to have a permanent policy of fighting against inflationary forces, it is clearly convenient to separate the function of creating money, from other tasks of the State, which continuously confront demands to increase spending. But this separation is only feasible now, when the balancing of public finances has been achieved[7]...

For these reasons, it was necessary to amend the Constitution and the Law of Banco de México in order to assign to it the clear mandate of procuring the stability of the economy as the main objective.

The independence of B de M will therefore make monetary policy more predictable, which is favorable to stability because it reduces the level of uncertainty, and it will guarantee the existence of an institution committed to the long term goal of stability. Such long term commitment is extremely important in Mexico given that, due to

[6]Constitution of Mexico (as of October 1993), Article 25, second paragraph.

[7]Carlos Salinas de Gortari (1993), Exposition of motives for the initiative of constitutional amendment to grant autonomy to Banco de México, in B de M, Informe Anual 1993, pp. 291-302.

the malleability in the interpretation of the role of the state in economic guidance, economic policy can be easily affected by political cycles. This idea was recognized by President Plutarco Elias Calles in 1925 in the exposition of motives of the law that created the B de M:

> There is indeed, in a bank controlled by the government, the very severe danger that political interest may predominate over public interest[8].

5.2 Current Economic Situation and Challenges for B de M

The first few years of the Salinas administration were characterized by a continuous decrease in inflation rates, accompanied by economic growth which surpassed population growth. Expectations for the economy were very positive from 1989 to 1992, the liberalization policies and the stabilization success were attracting large inflows of foreign capital. However, during 1993 and 1994, the Mexican economy started running into the following difficulties:

- Current account deficit increased dramatically to close to $25 billion at the end of 1992.
- Unemployment had been rising and economic growth slowed down to 0.4% in 1993.
- Social problems and political uncertainty have slowed down or even reversed the flow of capital into Mexico. Short-term interest rates have thus increased sharply over the course of 1994[9], which has also been accompanied by a high degree of volatility in the Mexican Stock Market.

These economic difficulties have put a lot of pressure on the set of economic reforms undertaken by the current administration. In fact, the "Salinista" project, which had

[8]Plutarco Elias Calles, as quoted in Salinas (1993).
[9]Interest rate on CETES went from close to 10% in early 1994 to 18% in April.

been praised in Mexico and abroad since 1989, has been under severe attack during the course of 1994.

In this context, in order to keep stability in the economy and to ensure a smooth political transition, the government will have to confront pressure to promote stronger economic growth and a higher level of social expenditure to fight poverty and to alleviate the problems of wealth distribution, as well as pressure to keep the value of the peso. The autonomy of the central bank plays a key role in the ability of the government to handle this pressure, given that much of the responsibility will be put on this institution. B de M will thus face a difficult situation to ensure the stability of the economy.

5.2.1 Pressure for Growth and Social Expenditures

Current economic contraction

Despite the success in bringing inflation down, the stabilization program is recently being blamed for the current recession. The argument is that the government was "too tough" in its fight against inflation. In its effort to reduce inflation below 10%, real interest rates were kept high, and monetary growth was kept tight, which has resulted in an economic slowdown.

An important factor in the economic contraction of 1993 is that the economic agents expected a level of inflation higher than the level observed[10], which contributed to a higher level of ex-post real interest rates[11]. As a result, the goal of reducing the level of inflation was achieved, but at a very high cost in terms of economic growth.

In terms of the model presented in section 3.1.1, the situation can be presented graphically as shown in Figure 5-1. The government announced the goal to reach an inflation level of 7%, which corresponded to a level of monetary growth of m^*, which would have resulted in equilibrium at point A if the public had believed such a goal which would have placed the short-term Philips curve at $P(m = m^*)$. However, the

[10]This is confirmed in B de M, Informe Anual 1993, p. 7.

[11]This is because nominal interest rates are determined according to expected inflation so as to obtain an expected real interest rate.

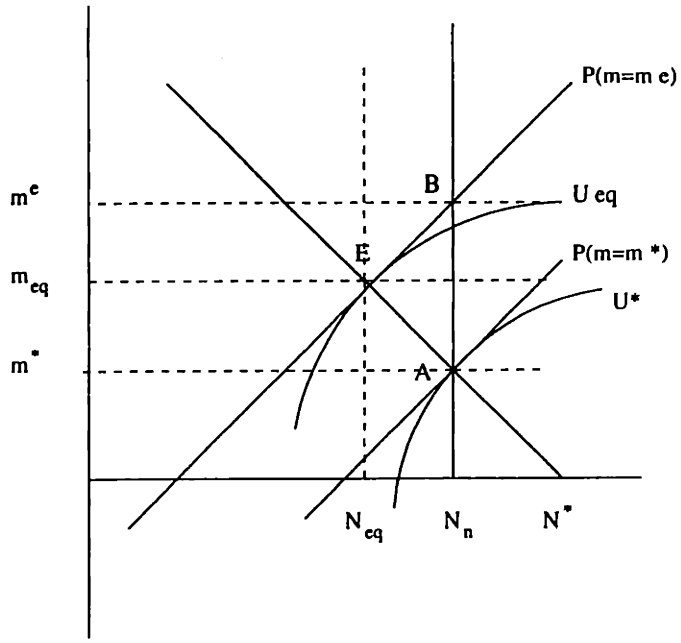

Figure 5-1: Short-term Philips curve interpretation of recession in 1993.

public did not believe this goal and expected inflation to be higher, corresponding to m^e higher than m^* and thus equilibrium at point B[12]. As a result, the short-term Philips curve was set at $P(m = m^e)$. Consequently, the equilibrium was reached at point E, that is at a level of inflation between that announced as a goal and the one that the public expected, and a level of employment, N_{eq}, below the natural level N_n, which corresponded to a contraction in the economy.

Wealth distribution

One of the main criticisms that has been made to the Salinas' administration is the claim that the recent reforms have benefited large enterprises without any real positive effects on the poor. It is argued that while economic policy was successful in reaching

[12]It can be assumed that the public expected a level of inflation similar to that in 1992, that is 11.9%.

stability, it did little to alleviate poverty in Mexico.

During 1994, the issue of poverty and wealth distribution has gained much more attention than in the preceding years, specially because of the social problems which have been rising in Mexico since the uprising in Chiapas in January.

It can be predicted that the central focus of economic policy for the next administration will have to shift away from stability and into poverty alleviation, which implies an increase in the government's social expenditures.

5.2.2 Pressure for devaluation

One of the central topics about the Mexican economy has been the fluctuations of the exchange rate. In various occasions, the federal government has surprised the public with sudden devaluations, which has resulted in a deeply rooted permanent fear of subsequent devaluations.

The stabilization program, which has the form of a pact between the federal government and various sectors of the economy, includes a commitment from the part of the government to hold the exchange rate within a certain range. One of the key factors to make this program work was to maintain the credibility level in order to ensure that each part of the pact followed their agreement. As a result, the federal government has had a very strong incentive to maintain its commitment in terms of the exchange rate. However, there has been increasing pressure on the peso to devalue, which is visible in the balance of payments, and which has become very critical during the course of 1994 due to the political uncertainty.

Balance of Payments

As discussed in Dornbusch (1993), one of the main current problems of the Mexican economy is the large current account deficit. Until 1993, this deficit has been financed by a large surplus in the capital account (as shown in Table 5-2), which reflects a high level of foreign investment.

However, most of this foreign capital has been channelled to portfolio investment (as shown in Table 5-3), given the high real interest rates that have prevailed in Mexico

Table 5.2: Balance of Payments 1980-1993

Year	Current Account	Capital Account	Errors and Omissions	Change in Reserves
1980	-10,739	11,442	98	1,018
1981	-16,052	26,357	-9,030	1,012
1982	-6,221	9,753	-6,832	-3,185
1983	5,418	-1,416	-884	3,101
1984	4,238	39	-924	3,201
1985	1,236	-1,526	-2,133	-2,328
1986	-1,672	1,837	438	985
1987	3,966	-576	2,709	6,924
1988	-2,422	-1,448	-2,842	-7,127
1989	-6,004	3,037	3,362	271
1990	-6,349	9,706	-125	3,414
1991	-13,789	24,134	-2,208	7,821
1992	-24,804	26,542	-546	1,161
1993	-23,392	30,882	-1,448	6,083

Source: Aspe (1993), and B de M, Informe Anual 1991 & 1993
Note: All figures in US $ billions.

Table 5.3: Composition of the capital account 1990-1993

Year	1990	1991	1992	1993
Capital Account	8,163	20,179	26,542	30,882
Foreign Investment	4,627	12,301	22,403	33,331
Direct Investment	2,633	4,761	4,392	4,900
Portfolio Investment	1,994	7,540	18,010	28,430

Source: B de M, Informe Anual 1993
Note: All figures in US $ billions.

recently. The concentration of foreign capital inflows into portfolio investment makes the capital account very volatile.

The danger of such volatile inflows of capital is that the resources can be easily withdrawn. In fact, during the course of 1994, due to the political uncertainty, large flows of foreign capital have fled away from Mexican securities, resulting in a collapse of the Mexican Stock Exchange (Bolsa Mexicana de Valores) and strong speculation against the peso. In order to sustain the peso, the B de M has already needed to intervene so as to keep the exchange rate within the required range. This effort has also been supported by the provision of a line of credit with the U.S. Federal Reserve for $6 billion, which had initially been prepared prior to the ratification of NAFTA by the U.S. congress, and which was announced publicly in March 1994, the day after the assassination of presidential candidate Luis Donaldo Colosio, in order to help keep the market under control. In April, the backing of the Fed was confirmed through the approval of a treaty between the central banks of Mexico, Canada and the U.S., to support each other's currencies.

Overvaluation of the Peso

In addition to the deterioration of the balance of payments, other evidence seems to indicate that the peso is overvalued. The slow depreciation of the exchange rate has

been outpaced by the inflation difference between Mexico and the U.S. As a result, (as observed in Dornbusch, 1993), relative wholesale prices have increased 50% from their lowest level in 1986. Past experience in Mexico's economic history show that previous occasions when relative prices have been as high have preceded strong devaluations in 1954, 1976, and 1982.

5.2.3 Challenges for B de M

Current economic and political conditions in Mexico have created an enormous challenge which will be shared by the federal government and the B de M. As explained above, the main issues will be to deal with pressure for fiscal expansion and pressure for devaluation.

In terms of the pressure for fiscal expansion, the focus of the federal government will have to shift from inflation to growth and poverty alleviation. Such a shift would be similar to the one made in 1972 when economic policy changed from "stabilizing development" to "shared development". During the Echeverría administration, this shift in policy direction was accompanied by fiscal and monetary indiscipline, whose consequences are still resented now. In order to avoid a repetition of such events, it is necessary to sustain stability, which can be achieved by having an autonomous central bank. In fact, given the separation between monetary and fiscal authorities, B de M can devote itself to stability and monetary discipline while the federal government focuses on the development of the economy within the limits of expenditure created by its financing limitations.

Another advantage of such a framework will be encountered as the B de M acquires credibility in terms of its inflation objectives. Once this institution gains the ability to credibly commit to a predetermined level of inflation, economic agents can set their expectations closer to the announced level, which will reduce the cost of stabilization in terms of economic growth. In this way, the repetition of the situation of economic contraction due to the public expecting a higher level of inflation than that observed, as occurred in 1993, can be avoided.

In addition, having a monetary authority which is independent from the federal

government, implies that there can be a decoupling between monetary policy and political cycles. In this way, monetary policy will be conducted according to longer term objectives, which is favorable for long-term growth under stability.

In terms of exchange rate control, the responsibility will still be carried by the federal government. However, an independent central bank will make this task easier. In fact, it can improve confidence in long term stability of the economy, which will help reduce the uncertainty that is reversing the flows of foreign capital into Mexico. As a result, this will help alleviate pressure for devaluation. Besides, the autonomy of the central bank will also make it easier for the government to allow an adjustment in the exchange rate and blame it on the fall in the level of reserves of B de M. Thus, the political cost of making small gradual adjustments will be reduced, which will be important in the near future given the strong evidence that indicates that the currency is overvalued.

5.3 Conclusions

- By institutionalizing a more clear separation between the objectives of monetary and fiscal authorities, the independence of B de M will ensure that long-term stability is maintained while the government promotes economic development.

- Such independence will increase the credibility of stability objectives which will reduce the level of uncertainty, resulting in a reduction of the cost of stability in terms of economic growth.

- The timing for the autonomy of B de M is appropriate because it comes at a moment when the government finances are balanced, and just in time to assist the federal government in the biggest challenge of the current administration: to get through the election year without losing stability.

Bibliography

Alesina, Alberto; and Summers, Lawrence (1993). "Central Bank Independence and Macroeconomic Performance', *Journal of Money, Credit, and Banking*, Vol. 25, pp151-162.

Aspe, Pedro (1993). *El Camino Mexicano de la Transformación Económica*, Fonde de Cultura Económica, Mexico.

Bábatz, Guillermo (1993). *La Independencia del Banco Central: Consideraciones Teóricas y Propuesta para el Caso Mexicano*, Tésis de Licenciatura en Economía, ITAM, Mexico.

Bade, Robin; and Parkin, Michael (1982). "Central Bank Laws and Monetary Policy", mimeo, University of Western Ontario.

Bailey, Norman; and Cohen, Richard (1987). *The Mexican Time Bomb*, A Twentieth Century Fund Paper, Priority Press Publications, New York.

Banco de México, *Cincuenta Anos de Banca Central*, Fondo de Cultura Económica, 1976.

Banco de México, "Indicadores Económicos", various issues.

Banco de México, *Informe Anual*, various issues.

Banco de México (1984). "Ley Orgánica del Banco de México", in *Legislación de Banca, Crédito y Actividades Conexas*, Ediciones Delma, 1993, Mexico.

Banco de México (1993). "Ley del Banco de México", in *Diario Oficial de la Federación*, December 23, 1993.

Banco de México, Subdirección de Investigación Económica y Bancaria (1976). "Medio siglo de estadísticas económicas seleccionadas", in Banco de México, *Cincuenta Anos de Banca Central*, Fondo de Cultura Económica, 1976.

Barro, Robert; and Gordon, David (1983). "Rules, discretion and reputation in a model of monetary policy", *Journal of Monetary Economics 12*, pp. 101-122.

Brothers, Dwight; and Solís, Leopoldo (1966). *Mexican Financial Development*, University of Texas Press.

Cagan, Phillip (1956). "The monetary dynamics of hyperinflation", in Milton Friedman (ed.), *Studies in the Quanity Theory of Money*, University of Chicago Press, Chicago.

Cavazos Lerma, Manuel (1976). "Cincuenta Anos de Politica Monetaria", in Banco de México, *Cincuenta Anos de Banca Central*, Fondo de Cultura Económica, 1976.

Cukierman, Alex (1992). *Central Bank Strategy, Credibility, and Independence*, MIT Press, Cambridge, MA.

Debelle, Guy; and Fischer, Stanley (1994). "How Independent Should a Central Bank Be?", preliminary, MIT.

Dornbusch, Rudiger (1993). "Mexico: How to recover stability and growth". MIT.

Gil Diaz, Francisco (1984). "Mexico's Path from Stability to Inflation", in Harberger, Arnold (ed.), *World Economic Growth*, Institute for Contemp[orary Studies, San Francisco, CA..

Gómez, Rodrigo (1969). "Los problemas del financiamiento del desarrollo", in *Rodrigo Gómez: Vida y Obra*, Fondo de Cultura Económica, 1991.

Gómez, Rodrigo (1964). "La banca central y la defensa de la estabilidad", in *Rodrigo Gómez: Vida y Obra*, Fondo de Cultura Económica, 1991.

Goodhart, Charles (1985). *The Evolution of Central Banks*, London School of Economics and Political Science, October 1985.

Grilli, Vittorio; Masciandaro, Donato; and Tabellini, Guido (1991). "Political and monetary institutions and public financial policies in the industrial countries", *Economic Policy 13*, pp341-392.

Kydland, Finn; and Prescott, Edward C. (1977). "Rules Rather than Discretion: The inconsistency of optimal plans", *Journal of Political Economy 85*, pp. 473-492.

Mancera, Miguel (1991). "En el XX aniversario de su fallecimiento", in *Rodrigo Gómez: Vida y Obra*, Fondo de Cultura Económica, 1991.

Moore, Ernest (1963). *Evoluci'on de las Instituciones Financieras en México*,

Centro de Estudios Monetarios Latinoamericanos, México, 1963.

Ortiz Mena, Antonio (1991). "La relación entre el gobierno federal y el Banco de México", in *Rodrigo Gómez: Vida y Obra*, Fondo de Cultura Económica, 1991.

Palacios Macedo, Miguel (1975). "Dos documentos de política hacendaria Mexicana", in Revista del Instituto Tecnológico Autónomo de México, num. 7, verano de 1975.

Pazos, Luis (1988). *El Pacto*, Editorial Diana, Mexico.

Perez Gea, Armando (1993). "Mexico's Central Bank Autonomy: Some Scope for Reform", Doctoral Thesis, UCLA.

Petricioli, Gustavo (1976). "Política e instrumentos de orientación selectiva del crédito en México", in Banco de México, *Cincuenta Anos de Banca Central*, Fondo de Cultura Económica, 1976.

Reynoso, Alejandro (1989). "Essays on the macroeconomic effects of monetary reforms, price controls and financial repression", MIT Dept. of Economics, Ph. D. Thesis.

Rogoff, Kenneth (1985). "The Optimal Degree of Commitment to an intermediate monetary target", *Quarterly Journal of Economics 100*, pp 1169-1190.

Sánchez Lugo, Luis (1976). "Instrumentos de política monetaria y crediticia", in Banco de México, *Cincuenta Anos de Banca Central*, Fondo de Cultura Económica, 1976.

Silva Herzog, Jesús (1988). "Some Problems in Implementing Economic Policy", International Center for Economic Growth, Occasional Papers, Number 7.