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# Money, Financial intermediation and the level of activity in 110 years of Argentine Economic History

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**MONEY, FINANCIAL INTERMEDIATION AND  
THE LEVEL OF ACTIVITY IN 110 YEARS  
OF ARGENTINE ECONOMIC HISTORY**

Gerardo della Paolera \* - Javier Ortiz \*

December 1995

**ABSTRACT:** This is a preliminary survey paper which could be the basis for a Project on the Monetary History of Argentina. The authors would appreciate comments. The authors express their appreciation for the financial support received from the Argentine Association of Banks (ADEBA) for the project, which permitted forming a research team composed of Marcela Harriague (UTDT) and Sandra Amuso (UTDT), who were responsible for statistical investigation and informatic support. We also thank Leticia Montiel, Daniela Ramos and Diego Bueno for their assistance in the construction of the time series.

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**Money, Financial Intermediation and the Level of Activity in 110 Years of Argentine  
Economic History**

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**"South Americans... are always in trouble about their currency. Either it is too good for home use, or as frequently happens, it is too bad for foreign exchange. Generally they have too much of it, but their own idea is that they never have enough...The Argentines alter their currency almost as frequently as they change their presidents...No people in the world take a keener interest in currency experiments than the Argentines..."<sup>1</sup>**

**"Does Money Matter? The first and most important lesson that history teaches about what monetary policy can do--and it is a lesson of most profound importance--is that monetary policy can prevent money itself from being a major source of economic disturbance."  
Milton Friedman, The Role of Monetary Policy, December 29, 1967.**

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<sup>1</sup>Taken from The Banker's Magazine (1899) by Alec G. Ford (1962) and quoted by all of us who have studied the idiosyncracies of money and banking in Argentina.

## I. INTRODUCTION

Graph I shows the comparative economic performance of Argentina vis-a-vis the United States and the United Kingdom in terms of the level of per capita real output from 1884 to 1994. The data has been standardized in terms of 1884 in order to be able to observe a century's performance of a developing country in relation to the "rest of the world", represented by the United States and the United Kingdom. Observations surpassing in value the unity indicate a better accumulated relative performance by Argentina ("the country is catching up"). We have also divided the graph in two parts using 1935, the year of the creation of the Central Bank (Banco Central), to trace a bisector which further divides the graph in four quadrants. It is not comforting to observe that, in spite of occasional short-lived catch-ups, Argentina does not demonstrate practically any periods of sustained accumulated growth, in particular during the post Central Bank period.

With regard to this disappointing performance, our goal is to investigate what role did money and institutional monetary and financial volatility have in this century-long depression in the relative living standard of the Argentines. We would like to investigate the influence, if any, of financial and monetary matters in economic growth. What we will try to convey in this paper is the idea that in a wide variety of circumstances, the country's policymakers have wielded the "need" for monetary reforms as the solution to any serious economic and financial crisis. As we will attempt to show in this paper, there were many crucial situations which the country's policymakers had to resolve; generally, the palliative chosen was a reform of the country's financial and monetary institutions.

In celebration of the 60th anniversary of the Central Bank of the Argentine Republic (1995), this paper presents the most pertinent events in Argentine monetary history, an area which has provided (and continues to provide) an exceptional research laboratory to understand the varied implications that institutional fragility—in relation to monetary and financial policy—has exercised on Argentina's macroeconomic behavior during a 110 year period.

In 1921, Raul Prebisch, the economist who was the most influential mind behind the creation of the Central Bank of the Argentine Republic, declared categorically:

"Monetary problems are so intimately related to the development of our economy that what has been written about the matter is extravagant. Fragmentary studies abound as do monographs of a circumstantial or historical character about special points or aspects of the question, but our economic literature still does not have a work which treats the topic with the necessary sense of synthesis to allow us to contemplate the development of the currency in circulation in Argentina in its totality from a dynamically objective point of view, and attempt to understand the relationships of causality and the interdependence of the events of the period in question..."<sup>1</sup>

With the creation of the Central Bank of the Argentine Republic in 1935, the foundations were set out for a radical change in the regulation of the country's financial and monetary affairs in relation to the methods employed since the creation of the Caja de Conversión (Currency Board) in 1891. The principal

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<sup>1</sup> in "Anotaciones sobre Nuestro Medio Circulante: A Propósito del Último Libro del Doctor Norberto Pi-cro", p. 93, Raul Prebisch-Obras Completas (Complete Works) 1919-1948.

objective and, we might say the only one, of the Caja de Conversión had been to guarantee the external value of Argentina's money. Under this system, Argentine monetary policy insisted on giving priority to the objective of maintaining the external value of its money as a mechanism which permitted the medium-run anchoring of domestic price levels while imposing a strict degree of discipline on fiscal matters. As we will see further along, even in periods when the currency was not convertible, previous to the creation of the Central Bank, a consensus existed to return to an external monetary standard, when the extreme negative shocks, which had provoked the abandonment of the monetary parity, disappeared. We should, on taking this into account, interpret the convertible monetary system as a body of contingent rules that also included escape clauses, by which the commitment to adhere to a fixed exchange rate could be suspended in extreme situations.

This system, whose most singular characteristic was a strict relationship between the money supply and the balance of payments, was especially criticized during the years of the Great Depression. With the erosion of the Gold Standard regimes in central countries, critics at that time, looking back in retrospect, made a negative evaluation of the country's financial and monetary systems stressing that: (1) the system employed by the Caja de Conversión gave priority to maintaining "order in the external sector", adapting an extremely rigid plan for adjusting the money supply to the needs of the domestic economy, and (2) the Caja did not have the monetary instruments nor the legal prerogatives at its disposal to neutralize the risks of financial collapses.<sup>2</sup>

In the midst of a highly charged atmosphere, resulting from the devastating effects of the Great Depression, the Argentine Central Bank was born with the basic financial and monetary characteristics common to modern central banking in the developed countries, such as: (1) maintaining a sufficient stock of international reserves to be able to moderate the consequences of the fluctuations in exports and the movements of capital on the currency's purchasing power; (2) regulating credit and adjusting the means of payment to the volume of business; (3) promoting liquidity and the fluidity of bank credit and to centralize the supervision and audits within the financial system; and (4) acting as the government's financial agent.

With the initiation of the Banco Central (BCRA)'s activities, a change in the monetary system was formalized. An institutional plan was approved that emphasized achieving stability in the domestic economy through an active monetary policy. This policy was to be managed in a countercyclical manner, first adjusting the money supply to the needs of the domestic economy and, second, making the money supply more elastic in order to facilitate the Bank's function as the lender of last resort of the financial system. This vision of the goals of the country's monetary policy, which emphasized the "needs" of domestic economic activity, was shared by one line of financial and monetary advisors, among which Prebisch himself could be found, along with Robert Triffin, of the Federal Reserve Bank of the United States, and representatives of the League of Nations, among others.<sup>3</sup>

The notion that a central bank could insulate the domestic economy from negative and inevitable external shocks, through the use of a monetary sterilization policy, was the predominant opinion of the experts. In Table I a summary of the evolution and volatility of a set of key macroeconomic variables has

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2 See the exceptional document by Raúl Prebisch, "La experiencia del Banco Central Argentino, en sus primeros años". (The experience of the Argentine Central Bank in its first years), in El Banco Central de la República Argentina en su 50 Aniversario, 1935-1985, pp. 31-50.

3 See Díaz Alejandro, Carlos (1987).

been included for the pre- and post-BCRA periods. In the period 1884-1935, moderate nominal variations in both monetary aggregates and in the evolution of prices and exchange rates can be observed. The inflation rate, nevertheless, as well as that rate's volatility measured by the standard deviation of logged first differences of the levels, are superior to those of the central countries represented by the United States and the United Kingdom during the same period. The real sector in Argentina grew at an average rate of nearly 4 per cent, well above the performance in the United States (2.7 per cent) and in Great Britain (1.6 per cent).

This period ranks higher than the macroeconomic performance achieved during the 60 years of the Central Bank, which has been characterized by an inflationary bias clearly divergent with international macroeconomic tendencies. The same Table shows that in the period of 1935-1994 there was a very high rate of expansion of monetary aggregates, price levels, and exchange rates, even when real monetary balances, which indicated the degree of real liquidity in the economy, were not modified. It is important to note that these increases in nominal variables accelerate from two to three digits as of 1972. Economic growth, in any case, was reduced to an average of 3.3 per cent, offering a particularly disappointing evolution in the second sub-period of 1972-1994, equivalent to 2.2 per cent. Even when a less cyclical variation in the level of activity is observed, this apparent feat of leveling out the economic cycle also begins to deteriorate as of 1972 (see Graph 1).

During these sixty years, the charter of the BCRA underwent seven major reforms, and the bank had 47 presidents (that is to say, each one had an average tenure of 16 months). We should not be surprised, therefore, by Argentina's macroeconomic instability. But perhaps the person who best recognizes the obvious and inborn inconsistencies in the macroeconomic objectives that are included in the original charter of the institution is Julio Olivera (1985):

"...these dispositions in the Charter imply a system with a double monetary standard, with an external element as well as a domestic element. The domestic and external goals, nevertheless, have alternated cyclically in Argentina's monetary policy, not as unique objectives but rather as its dominant criteria. In this sense it can be said that a cyclical monetary standard has existed in the Argentine Republic since 1935, and more precisely since the end of the Forties..."<sup>4</sup>

In this attempt to review more than 110 years of Argentine monetary history, we stress in this first preliminary draft, the financial and monetary experience of the 1884-1946 period. In a second stage, when the statistical research and the time series are prepared, covering the relevant macroeconomic variables, the study of the period of 1946-1994 will be presented. The final objective of this study is to analyze 110 years of Argentine economic history, concentrating on the role and the impact of the country's monetary institutions and their policies on Argentina's macroeconomic performance.

In the following section we incorporate the theoretical and conceptual framework, accompanied by the principal events representative of the entire period of 1884-1994. Here we present some salient monetary characteristics for the first preliminary homogeneous macrovariables we have constructed. In Section II we offer a succinct history of the evolution of the different institutional arrangements prior to the creation of the Central Bank and identify the different sub-periods. In Section III we analyze: (a) the process of inconvertibility and the experiment of national guaranteed banks from 1884 to 1889; (b) the inception of the

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<sup>4</sup> See Julio Olivera (1985).

Baring Crisis and the financial and monetary crash of 1889-1891; (c) the institutional, fiscal and monetary reforms implemented to stabilize the economy during the presidency of Carlos Pellegrini (1890-1892); and (d) the prolonged period of deflation needed to restore convertibility in 1899. In Section IV we study Argentina as a peripheral country under the Gold Exchange Standard regime including the foreign exchange rate and financial crisis of 1914. In Section V, we study the influence of the international events of the 1918-1935 period on the formulation of Argentine economic policies. Finally in Section VI the creation of the Central Bank is analyzed and the implementation of monetary sterilization policies until 1944 is studied.

## SECTION I. CONCEPTUAL & THEORETICAL FRAMEWORK AND SUMMARY OF PRINCIPAL EVENTS

### I.1. Money, Inflation and Monetary Aggregates

Money is any object that can serve as a medium of exchange to comply with the traditional function of being a generally accepted vehicle for the payment of economic transactions. Also money can also constitute a reserve of value in the degree to which economic agents permit. The history of different monetary systems teaches us the importance of the trustworthiness and the characteristic of durability of money so that a society can manage to move beyond the primitive technology of barter and can, with the introduction of money, increase the efficiency of current and long-term economic exchange.

The degree of monetary deepening and its interrelation with the economic development of nations has frequently been studied through the prism of the transitory evolution of certain analogous measures that represents money usually in terms of the level of prices, the level of economic activity, or in per capita terms. An economic system becomes "more monetary" when it increases the use of money in real terms, and this occurs if the economic agents think that the qualities of the money in question will be respected by the pertinent monetary authority.

In this relationship that economists make between money and prices and the level of activity, the quantity theory of money is brought into play. In analyzing Argentina's macroeconomic history, this theory constitutes a fundamental theoretical element that in its most simple form proposes that the real quantity of money that a community wants to maintain is proportional to the level of real income of that community. Academic discussion is concentrated on finding out if the coefficient of proportionality between income and real monetary balances, known as the velocity of money, is a reasonably stable figure or, on the other hand, demonstrates a persistent degree of volatility over a certain period of time. Velocity, used when determining nominal income, measures how many times money turns over in a year.

Supposing, in its classical version, that the velocity of circulation is a reasonable multiple over a period of time, the quantity theory of money indicates that any increase in the nominal money supply will be reflected in its totality in a proportional increase in the general level of prices prevalent in that economy. This simple proposition is called the neutrality of money and contains an extraordinary importance for the design and the potentiality of monetary policy in that it recognizes that the nominal money supply is a key variable in explaining inflation in prices. Thus, the Friedmanian declaration: "inflation is always and everywhere a monetary phenomenon", taking inflation, of course, as a steady increase in the general price level.

This robust association between money and inflation is one of the topics that must be treated in any macroeconomic history. In Graph 2.1 and 2.2 the clearcut relationship between the price level and the monetary base (using a logarithmic scale so that all of Argentina's monetary history can be shown in the same graph) can be seen. In a preliminary illustration of the quantity theory of money, in Graph 2.1, the correlation of the two indicators, inflation and monetary expansion, controlled by changes in the level of real activity with historical data for 1885-1994, is analyzed. The observations that have been plotted on the graph should fall, according to the quantity theory of money, along a 45-degree line. The line is drawn in such a way that it passes by the average of the sample of the two sets of data under observation, but the data does not adjust econometrically to it. It is interesting to note the extraordinary results of the testing of



this theory over a period of 110 years with experiments that are as varied as they are antagonistical, ranging from adopting orthodox monetary standards to economic policies that favored price, wage and foreign exchange controls.<sup>5</sup>

As Lucas affirms (1980, 1986), this interpretation of the quantity theory of money is in no way inconsistent with the idea of Friedmanian stability in the sense that it is necessary to obtain a function of the demand for money, defined more broadly, which is absolutely stable in relation to classical arguments, such as the nominal interest rates and the real level of activity. We can appreciate this in Graph 3 where the temporal evolution of the velocity of circulation of the monetary base and the velocity of money defined as M3 is shown.<sup>6</sup>

In the first place a decisive change in the behavior of the velocity of transactions can be observed, with more erratic variations since 1929. As of 1935/40 the "electro" behavior of the velocity reflects, without any doubt, the cyclical monetary model identified by Olivera. In second place, trends can be identified in the velocity of comprehensive money that are related to the deepening of the financial system. We can observe a temporal fall, with intracyclical oscillations, in the velocity of comprehensive money from a maximum value of 3.61 in 1891 to a value of 1.92 in 1930, when an acute process of demonetization begins in the economy as Graph 4 indicates.

Many economists have analyzed the interaction between financial intermediation through the relationship between monetary supply and the level of activity as a simpler indicator of financial depth.<sup>7</sup> During the period 1884-1994 an analogous preliminary estimate of the stock of money M3 composed of the currency in the hands of the public and sight deposits, term deposits and savings accounts can be calculated. In this definition we have decided to include the domestic "components" of the money supply. The clearest demonetization of the Argentine economy responds to various factors which we must analyze, such as: (a) periods of financial repression with controlled interest rates and with the phenomena of currency substitution; (b) periods of domestic financial innovation with "near-monies" not included in traditional definitions of money (this is perhaps a problem which could worry more the Federal Reserve in the United States than a Central bank in a small open economy) and (c) an intense process of substitution of monies by which the agents can select means of payment and reserves of value in a way that is not controlled by monetary authorities.

Recent financial crises have revived the study of the process of the formation of the money supply. Special consideration is given to the so-called fractional-reserve financial system. This has brought about a rebirth in the analysis of the components of the banking monetary multiplier and the difference between the so-called outside and inside money. These determinants of the money multiplier can be defined as the currency-money and banking reserves-deposit ratios. With these apparently simple relationships, we can begin to see the importance of understanding how interaction between the government and the economic agents is crucial in determining the supply of money in the economy. Graphs 5.1 and 5.2 show the evolution

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5 Even when one is considering a non-filtered indicator, the simple correlation between the twin factors, inflation and monetary base controlled by product, is 0.94.

6 To put it briefly: "An analysis of the behavior of velocity is an analysis of the demand for money..." in Friedman and Schwartz (1982), Monetary Trends in the United States and the United Kingdom, Chapter 6 Velocity and the Demand for Money, p. 205.

7 In simpler terms, we are talking about the inverse of the velocity of money.

of the monetary multiplier, and its potential volatility indicates the importance of the financial system as an additional factor which can, through the use of credit, exercise a significant influence on the level of activity in the economy.

## 1.2. Choosing a Monetary Standard

A premise which is implicit in the quantity theory of money proposes that a monetary standard can be defined as a set of transparent monetary rules designed to govern the evolution of key nominal variables such as price levels, nominal exchange rates and nominal interest rates. In a monetary economy, the capacity of the monetary authority to be able to anchor and stabilize the price level depends on the domestic demand for money and on the degree of consistency in the future sequence of the government's fiscal budgets, so that the rules chosen to govern monetary expansions provide a credible framework which guarantees a minimum of inflation.

It is now more clearly understood that monetary policy is not strictly independent of fiscal policy and that both should be coordinated in order to be consistent in macroeconomic terms. To achieve this, the monetary authority must be able to apply monetary rules consistent with price stability just as long as the fiscal situation does not require the process of creating money be significantly different from the evolution of the demand for money in the community. There is an historic discussion as to the convenience of maintaining an independent monetary authority as a guarantee against pro-inflationary policies. There is no doubt that the connection between the monetary authority and the Treasury is potentially a very strong one. In other words, the monetary authority also acts as the lender of last resort to its government.<sup>8</sup>

Until the eve of the First World War, the central countries adopted the gold standard. This standard required three basic policies to be able to function adequately: (1) the setting by a state monetary authority of a fixed value for the domestic currency in terms of gold; (2) free mobility of convertible foreign exchange or specie and (3) the establishment of rules that relate the quantity of money in circulation with the stock of specie. For a small country, open to movements of goods and capital as Argentina was at the beginning of this century, the adopting of a metallic monetary standard signified setting fixed exchange rates for the currencies of those central countries which operated under the international gold standard. In this situation, the monetary authority, on guaranteeing the exchange rate (fixing the price of its currency in relation to gold) "anchored" the domestic price level of internationally tradable goods. In order to give credibility to this convertible standard, the government had to back its debts (and not just the country's money) with specie or with a solvent fiscal position. In order to analyze convertible monetary standards, the key indicators that should be observed are the evolution of the exchange rate, the backing in specie and/or international reserves of the monetary base, and one of the indicators of fiscal performance, ideally the evolution of deficits and the stock of public debt.

Under an inconvertible monetary standard, bills and coins issued by the government or by authorized institutions have no intrinsic value, nor are they backed or guaranteed by any external "object". They are, however, legal tender and must be accepted by the public in economic transactions. Until the

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<sup>8</sup> This relationship between the Treasury and, for example, the Central Bank is described in M. Friedman (1959) A Program for Monetary Stability, Chapter 3: Debt Management and Banking Reform. For an analysis of the need to coordinate monetary and fiscal policies, see T. Sargent (1986) and for a study on the independence of central banks, see A. Cuckierman (1994).

period of the Great Depression in 1929-1933, these standards fell under the denomination of the Latin word "fiat", which means to make or to create, for example, standards of inconvertible money.

Under inconvertibility, the monetary authority had total discretionary powers over the nominal amount of money and the price or rate at which this money fluctuated in terms of gold and the currencies of the central countries. As of the Bretton Woods Agreement in 1944, all the member countries began to use fiduciary money within their borders. At that time, the financial community started to split into those countries that adopted a system of a fixed exchange rate in terms of a strong currency of one of the member countries and those nations that opted for a flexible or floating rate of exchange.

In Graphs 6.1 and 6.2 we show the evolution of the general price levels and the peso/dollar exchange rate from 1884 to 1994. We can identify the two longest and most successful sub-periods in terms of relative stability in nominal values, those with fixed exchange rates: (1) the period of 1899-1914 when the Gold Standard was in effect and (2) the period of the Convertibility Plan still in force today. In Graph 7 we include a preliminary proxy of the real exchange rate, measured as the ratio between the nominal exchange rate multiplied by GDP deflator in the United States and the general level of domestic prices. It is interesting to note that during the period 1884-1934 the average level of Argentina's real exchange rate is 108 (with an arbitrary base set at 100 in 1884), while during the post-Central Bank period the average level stood at 156. For this period, the volatility is three times greater than that in the period previous to 1935. The highest peaks come in 1951 and 1975, years that carried over the effects of price controls, and 1989, when hyperinflation also carried over a decade of depreciation in the money's purchasing power. The lowest peak characterizes the moment when the peso was most overvalued in terms of the dollar--the phenomenon referred to as the "tablita" (the so-called active crawling peg) from 1979 to 1981. We are going to see along that movements in real exchange rates always forced discussions on the design of monetary regimes; but let us turn next to an analysis of some of the institutional arrangements prior to the Creation of the Central Bank.

## SECTION II INSTITUTIONAL ARRANGEMENTS PRIOR TO THE CREATION OF THE CENTRAL BANK: 1884-1935

### II.1 Forerunners of the Central Bank and the financial system

Argentina's monetary system functioned until 1935 without a formal Central Bank. The modern conception of a central bank entails an official bank which retains the monopoly to issue money and which has the capacity to rediscount the financial system's portfolio or commercial obligations in order to perform the role of the system's lender of last resort, thus being able to influence the volume of bank money in the economy through an official policy governing the financial system's reserve requirements.

A general characteristic of Argentina's monetary history is the predominant role of its official banks, founded and patronized by both the federal government and the country's provinces. These banks usually acted as fiscal and financial agents for the corresponding administrations. This profile is especially pertinent to what occurred in the period from 1822 to 1881, when the erratic and equally ephemeral existence of the majority of the official banking institutions is illustrated by an exaggerated use of inflationary financing and an equally exaggerated easy access to cheap credit on the part of these same administrations.<sup>9</sup>

During the period of 1884 to 1934, the National Bank, liquidated during the Baring financial crisis in 1891 and refounded as the Banco de la Nación (BNA) in 1892, became the government's principal fiscal agent, while at the same time the institution was transformed into Argentina's most important commercial bank. After the catastrophic crisis in 1890-1891, the government instituted a strict policy governing bank reserves at its new Banco de la Nación, to the point of limiting its rediscounting capacity with the government itself and centralizing the capacity to issue money with the Caja de Conversión. The BNA fundamentally maintained the characteristics of a commercial bank until 1914 when, as a consequence of the international financial crisis, the Rediscount Law was enacted and the BNA was authorized to rediscount the commercial obligations of other private banks, which at the same time could be rediscounted at the Caja de Conversión for cash. In other words, as of 1914, the BNA had the faculty to act as the lender of last resort for the financial system. As we will see later on, this prerogative which, in addition, served to sterilize the result of the balance of payments, was only put into practice in 1931.<sup>10</sup>

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<sup>9</sup> The first private bank to be founded, the Banco de Descuentos (1822), for example, was obliged to offer funds to the Legislature of the Province of Buenos Aires, and was "provincialized" and merged with the (first) Banco Nacional in 1826. This bank, in turn, was dissolved in 1836 during the Rosas administration in order to create the Casa de Moneda (the Mint) which was then dissolved in 1852 so that the Bank of the Province of Buenos Aires could be created in 1854.

In 1872, the (second) Banco Nacional was founded as a mixed entity operating until 1891. In 1892 this bank was refounded as the (third) Banco de la Nación as a state-owned commercial bank. For an analysis of these different banks and their relationship to fiscal policies during the period 1822-1880 see Prebisch (1921), Miron Burguín (1969), Amaral (1989) and Cortés Conde (1989).

<sup>10</sup> The Banco de la Provincia de Buenos Aires also had certain central banking prerogatives in earlier years, especially from 1867 to 1876, with the existence of its Oficina de Cambios (Exchange Office). See della Paolera (1994).

On reviewing past data, it is hard to affirm that these different official institutions have permitted, if we apply the theory of Charles Goodhart (1988), a constant evolutionary process toward what we consider a central bank should be. There was no official policy, for example, until 1935 regarding the level of reserves (the relationship between cash and deposits) that should be maintained by the private banks in the financial system. Not a single institution, for example, acted as a Comptroller of the Currency, as can be found in the United States, to supervise banking institutions. It is interesting to point out that until 1900, the *Memorias de Hacienda* (Treasury Reports) did not systematically include any consolidated monetary and banking statistics which reflected the condition of the banking system. The idea of the Central Bank, any idea of even regulating and supervising the financial system, were foreign to the thinking of monetary authorities as well as the banking community itself, at least until the beginning of the First World War. In 1917, President Yrigoyen, through his Minister of Finance Eleandro Lobo, made a first attempt to establish a central bank and outlined a preliminary project, but the plan did not meet with the approval of Congress.

While a tacit spirit of *laissez-faire* appeared to be the policy guiding the financial system, animated debates sprung up over the need to choose an adequate monetary policy for the country. Selecting and implementing a credible monetary standard was a chronic problem in Argentina's economic history. In the period that we are to analyze next (1884-1935), Argentina alternated local hybrids of convertible monetary systems with fiduciary systems. "Pure" convertible systems with a fixed exchange rate were attempted in only 18 of the 50 years we have analyzed; and the most long-lived monetary authority was the *Caja de Conversión* which functioned from 1891 to 1935. In 1931 the Uriburu provisional government named a Commission to study a possible reorganization of the monetary system, including considering an eventual return to the gold standard. The Commission, headed by the Minister of Finance, Enrique Uriburu, prepared a project which included the possibility of creating a Central Bank by decree, without it having to be approved by Congress. In the years prior to 1929, the Research Office of the BNA had been requested to prepare a study on the Federal Reserve Bank of the United States and its possible application in Argentina. At the beginning of 1932, the Commission was dissolved by the new Finance Minister of the recently-elected Justo administration. The finance ministry differed on one key point of the Commission's final report, which recommended the creation of a Central Bank that centralized the diverse monetary powers of such institutions as the *Caja de Conversión*, the BNA and the Ministry of Finance. The difference was on the issue of devaluing the paper peso based on the revaluation of the gold reserves at the *Caja de Conversión*. Even though the proposal to create a Central Bank was not approved in 1932, as we will see further along, the government had already started to use the rediscount mechanism, permitting the BNA to discount commercial paper for cash at the *Caja de Conversión*. Minister Hueyo convinced Congress to pass a law that gave the government the power to place state bonds (an issue called the Patriotic Loan) at the *Caja de Conversión* in exchange for cash. In 1934, in the midst of a growing financial crisis, policymakers favored the creation of a Central Bank.

## II.2. Periodization and Empirical Evidence

We have identified different sub-periods in which changes are registered in the evolution of key macroeconomic variables, such as the money supply, price levels, and the level of economic activity. In Graphs 8 through 12 the evolution of significant variables between 1884 and 1934 can be observed: (a) in Graph 8 monetary base, banking money and the level of activity; (b) in Graph 9 the monetary base and the money supply; (c) in Graph 10 real money supply and level of real activity; (d) in Graph 11 the velocity of money; (e) in Graph 12 a definition of country risk. These graphs complement those presented in Section I. With this focus we have identified periods of marked economic expansion such as: (1) 1884-1889

characterized by the creation of the National Guaranteed Banks; (2) 1899-1913 when the Gold Standard was adopted as the country's monetary system; (3) 1918-1927 is a preview of the phenomenon of the Great Depression; and (4) 1927-1929 covers the reestablishment of the Gold Standard. As mentioned before, in Table 2 we include the evolution of key macroeconomic variables for the period 1884-1934, and in Table 3, the variables which explain the process of the creation of the money supply.

## SECTION III THE INCONVERTIBILITY PERIOD 1884-1899

### III.1. Monetary Reform and the National Guaranteed Banks: 1884-1899

Toward 1881 the administration of President Julio A. Roca (1880-1886) decided to establish a bimetallic monetary standard, giving the Nation the right to mint currency in gold pesos and silver pesos. This privilege did not include a monopoly over the emission of notes and paper bills that could be converted to gold or silver. The facility to issue paper pesos had been granted to numerous existing banks, which were supposed to guarantee the convertibility of their notes and paper money at par with the gold peso at all times.

The design of this decentralized system for issuing currency was a very fragile one because there was no comprehensive and transparent monetary regulations that defined the degree of metallic backing that the different banks which emitted banknotes should have on hand to guarantee the convertibility of these bills.<sup>11</sup> The bimetallic system initiated in 1883 lasted only until the beginning of 1885, when the federal government issued a decree, in reaction to a generalized run on the banks that emitted bills, which imposed the "obligatory circulation (Curso Forzoso)" of these bills and bank notes for a transitory period of a year, suspending the metallic convertibility of these instruments.

In 1887, the promise to reestablish the convertibility of these bank notes in gold pesos at par was not respected, and the government opted to establish a system of national guaranteed banks, which were authorized to issue paper money guaranteed by metallic backing. By 1890 the experiment provoked the famous financial collapse known as the Baring crisis, which led to the resignation of Argentina's president at that time, Miguel Juarez Celman (1886-1890), who was replaced by Carlos Pellegrini.

The years prior to the Baring financial collapse came to be known as the years of "heavy borrowing", adopting the terminology of John Williams (1920) for the magnitude of the flow of capital coming from Europe.<sup>12</sup> The country absorbed 11 per cent of the total of new portfolio issues of the financial markets of London during this period. This is a fantastic amount if we consider that North America, including both the United States and Canada, with a population 20 times greater than that of Argentina, absorbed 30 per cent of new emissions in London in the same period. A great part of these international loans were used to finance infrastructure investment projects such as improving agriculturally-apt lands and expanding the railway network.

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<sup>11</sup> See della Paolera (1988), pp. 4-6.

<sup>12</sup> See John Williams (1920), p. 3, who points out: "...The borrowing was maintained throughout the eighties, culminating in loans to such extent as have probably never been equaled by a country of so small a population as was that of Argentina..."

Toward the middle of the eighties, international investors felt especially attracted to Argentine bonds and shares at times when international interest rates were falling. These circumstances were capitalized on by both national and provincial governments, which were able to float foreign debt bond issues with great ease on the London financial market. During this period of expansion, the national government increased its debt level to 82.8 per cent in specie, which elevated the debt/output ratio from 64 per cent in 1884 to 101 per cent in 1890.<sup>13</sup> This access to international capital markets permitted an increase in the country's fiscal resources that far exceeded the Treasury's tax collections, which came basically from levies on foreign trade or by way of monetary expansion.

Regarding monetary policy, authorities announced insistently that the convertibility regime would be restored, with the paper peso quoted at par with the gold peso. The reestablishment of convertibility was seen as a necessary ingredient for maintaining and increasing the flow of international capital into the domestic economy, as the move would diminish exchange rate risk. At the end of 1887, the commitment to reestablish convertibility, nevertheless, was replaced by the proposal of a new banking and monetary experiment, the Law of the National Guaranteed Banks.

The architects of this law tried to create a national financial system based on the model of the system outlined in the United States National Currency Act of 1867, which established that any banking entity, with sufficient capital, could issue money with the backing of convertible public bonds. The mechanics of this system functioned in the following way: any bank could issue money as long as it invested its capital in the purchase of convertible public bonds in values equal to the nominal amount of money issued. These bonds had to be paid for with gold which was deposited in the National Bank. As long as the bank remained solvent, it would receive interest on the bonds, but if the bank had to be liquidated, the government would sell the bonds to pay the depositors.<sup>14</sup>

Toward December 1888, sixteen banks (in their majority the provincial and mixed banks which had taken on foreign loans to buy the bonds with specie) subscribed to a mechanism which authorized an issue of a maximum total of 39 million pesos with gold-bond backing. From a macroeconomic point of view, the mechanism acted as an implicit "one way" gold standard, since during the first year of its existence, all the monetary expansion was completely backed by gold reserves at the Banco Nacional. This equilibrium between the quantity of money guaranteed and the country's reserves in specie collapsed at the first sign of credit rationing in the international financial markets, which occurred in 1889, and impeded any further financing of a decidedly deficit-oriented fiscal policy.

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13 See della Paolera (1995), p. 12.

14 The Law of Guaranteed Banks had three fundamental differences with the above-mentioned system in the United States: (a) the United States was under a convertible monetary system which was not the case in Argentina; (b) in the United States the eligible public bonds floated in the secondary markets, while under the Argentine law of bank guarantees, the eligible bonds had to be created especially for the purpose of backing monetary emission, and, therefore, constituted an increase in the level of the public debt; (c) the National Currency Act also established an explicit reserve policy in relation to deposits in specie and in paper money. See della Paolera (1988), pp. 29-31 and Appendix A "Some Microeconomics Aspects of the Law of National Guaranteed Banks", pp. 135-143. For the United States, see Bordo, Redish and Rockoff (1995) "A Comparison of Stability and Efficiency of the Canadian and American Banking Systems 1870-1925".

We can characterize this period 1884-1889, just prior to the financial crisis in 1890, by an important expansion of monetary variables: the monetary base rose 78.7 per cent during the period, the equivalent of an annual rate of 17.1 per cent, while the money supply rose at an accumulated rate of 111 per cent (see Table 2). The level of activity also demonstrated an annual expansion of almost 9 per cent, probably one of the highest peaks in Argentine economic history. The feasibility of reestablishing the Gold Standard at par diminished, as the paper peso had depreciated almost 60 per cent in terms of the gold peso, and the accumulated inflation for the period was substantially positive in a scenario of international deflation.

In Table 3 the process of expansion of the money supply is analyzed, and it can clearly be seen that an additional injection of liquidity in the economy had occurred through the expansion of the monetary multiplier. The evolution of the monetary base explains the 70 per cent growth in the money supply, while the determinants of the monetary multiplier, such as the currency/money and bank reserves/deposits ratios grew 9 and 15 per cent respectively. The secondary expansion of the money supply played a very important role in the ascendent phase of this economic cycle, which corresponded to a process of accelerated deepening in the banking system. In 1884, the Banco Nacional together with the Banco de la Provincia de Buenos Aires possessed 78.9 per cent of the bank deposits in the country's financial system. By 1889, both banks held 59 per cent of the total deposits, which had grown by five times in the five year period.<sup>15</sup> As we will see next, this rapid financial expansion depended essentially on sustained access to international capital markets, a situation which depended on the credibility of Argentina's fiscal and monetary system.

### III.2 The Baring Crisis and the Financial & Monetary Crash (1889-1891)

The problems of the monetary system remained a pending problem for the Miguel Juárez Celman administration. In 1889, international investors were no longer willing to absorb any more Argentine public debt due to the instability in the country's foreign exchange markets. An additional aggravation was the erroneous decision on the government's part to service part of the foreign debt, which had been subscribed in hard currency, in paper pesos. This decision implied a change in the fiscal and monetary rules, which would make a return to a gold standard even more difficult, and in addition signified a partial repudiation on Argentina's part of its foreign obligations, which complicated the country's possibility for obtaining additional credit even more.<sup>16</sup>

In March 1889, a speculative attack on the guaranteed paper peso was launched, and the government was forced to intervene in the foreign exchange market to calm inflationary fears, using part of the gold reserves that backed the stock of guaranteed pesos [see Table 3.1]. During the same year, the government lost 85 per cent of its metallic reserves, as, in addition, it had to rediscount the guaranteed pesos that it had initially absorbed in order to cover fiscal needs. While in 1888 the metallic backing for the peso was equivalent to 45 per cent of the monetary base; by the end of 1889 this percentage had been reduced to just 6.4 per cent. In less than 12 months, Argentina passed from an almost-metallic monetary standard to a decidedly inconvertible monetary system. An intense process of currency substitution occurred, leading to the first great banking and monetary crisis in Argentina, known as the Baring crisis.

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15 See della Paolera (1988), p. 151.

16 The Economist stressed this change in the country's economic policy in May 1889, in an article titled: "Argentine Untrustworthiness", see della Paolera (1988), p. 85.



A simple inspection of the monetary arithmetic in the period 1889-1891 in Tables 2 and 3 allows us to infer that the financial crisis had a severe macroeconomic impact on the Argentine economy. A common characteristic of the country's various financial crises is the different evolution of the monetary base and the money supply. In 1889-1891 an increase of 46.8 per cent in the monetary base could not be balanced by a fall of 22.3 per cent in the quantity of money. In Graph 5.1 the sudden drop in the monetary multiplier could be seen clearly, due to the sustained run on banks by depositors: thus, the coefficient currency/money which in 1889 was 0.17 grew drastically to 0.43 in 1891, contributing significantly to the monetary contraction which occurred. In the second column of Table 3 we see that the increase of 86 per cent in the currency-money, between 1891 and 1889 neutralized the growth of the monetary base. The result of this run on deposits was a fall of 33 per cent in the deposits of the Banco Nacional, 43 per cent in the deposits of the Banco de la Provincia de Buenos Aires, and an aggregate fall in deposits of the financial system of 32 per cent in less than 14 months. A more conservative behavior on the part of the banks meant an increase of 22.3 per cent (Column 3, Table 3) in the level of voluntary reserves, just a moderate variation. Any effort to reestablish liquidity in the banking system was offset by the public's run on deposits.

Toward the end of 1891, when the government revealed the country's financial problems and announced the eventual liquidation of the Banco Nacional and the country's principal commercial banking institution, the Banco de la Provincia de Buenos Aires, the financial panic caused by this declaration intensified the crisis. The situation was typical of the financial crises that recurrently struck the Argentine economy, in which the domestic quantity of money was reduced by an increase in the currency-money and reserves deposit coefficients. The liquidation of certain financial institutions, moreover, had the additionally negative effect of destroying deposits. The accumulated fall in the stock of money by 22.3 per cent in nominal terms happened in a context that can be defined as hyperinflation, judging by the standards of that epoch. The period's accumulated inflation rate rose 78 per cent, which implied a fall in the real stock of money of 56.3 per cent, and of 17.7 per cent in the monetary base measured in real terms. The contraction in the level of activity was 16.1 per cent--an early experience in stagflation, which is the combination of high inflation combined with recession.

A crucial difference in this particular financial and monetary crisis with respect to other crises that occurred in the central countries was that even after the level of activity contracted significantly, the level of prices and of the velocity of money income increased. The index of velocity changed abruptly from an average of 1.84 in 1884-1889 to a value of 2.53 in 1890, reflecting a highly illiquid monetary situation. The instability in the velocity of paper money income during these two years of crisis is reflected in Graph 11, which shows a jump in the ratio of velocity until 1891, giving testimony to the behavior of a fiduciary monetary system in the presence of a profound phenomenon of currency substitution. In another study one of the authors show that the economic agents gradually substituted the guaranteed paper peso for other stronger monies as reserve values, encouraging the tendency to hoard specie. A divergent movement can be observed between the velocity of paper money, which rose, and the velocity of specie money which fell. This result shows us fundamentally that in a country that was wide open to the international markets in terms of both goods and capital, as was Argentina's situation at the time, an independent monetary policy can only be pursued in the short term. The sterilization policies practiced by the government in 1888-1889 had the "benign" effect of inflating the economy without registering an inflationary tendency in the short term. But when the specie backing of the guaranteed money ran out, the nominal variables changed quickly, no longer retaining their artificially repressed values, as can be seen in Graph 6.1.

Argentina's economic and financial collapse of 1890 had its origins in inconsistently designed fiscal and monetary policies. The fiscal deficits of 1886-1887, years during which the national administration's deficit, including payments for amortizations and interest on the debt, equalled only a third of genuine tax revenues, were not repeated in 1888. That year the national public expenditure rose 41 per cent, while tax income remained steady. These chronic deficits were financed by a combination of increasing the level of public debt and decreasing the level of specie reserves. By the end of 1889, reserves were exhausted and access to international capital markets was tight. There was nothing left to do but to use the inflation tax in order to cover the fiscal deficit.<sup>17</sup> It is interesting to point out here the presence of what is called the dynamics of inflationary taxes: the deficit of 1885 was equivalent in real terms to the deficit of 1891; the first, nevertheless, could be financed by generating an inflation of 24.7 per cent, while the second required a 63.2 rate of inflation to cover it. The process of substitution of monies had simply reduced the tax base, so that to achieve the same level of fiscal revenues in real terms, a significantly higher rate of inflation was necessary.<sup>18</sup>

### **III.3. Institutional, Fiscal & Monetary Reforms for Stabilizing the Economy during the Carlos Pellegrini Administration (1890-1892)**

In August 1890 Carlos Pellegrini replaced Miguel Juarez Celman as President of Argentina in the midst of a chaotic economic and political situation. In terms of the economy, the domestic financial system was menaced by frequent runs on deposits. The rate of inflation rose to unprecedented levels, while the provinces were in a generalized state of default on both domestic and foreign debt. On the political front, the Pellegrini administration had little leeway, because there were only two years left of the presidential term. It was necessary to form some sort of coalition with the parties of the opposition to achieve a consensus for resolving the crisis. Pellegrini made a coalition with the Union Civica, at that moment the most promising opposition party, and placed several of its most important members in key posts in the cabinet. Vicente Fidel Lopez was named Minister of Finance and Victorino de la Plaza the negotiator of the Argentine foreign debt. With a sufficient degree of consensus achieved on the political front, the government tried to rebuild the Argentine economy through a series of fiscal, monetary and financial reforms, while at the same time renegotiating the foreign debt.

#### **1. Fiscal Reform**

In 1890 duties on foreign trade represented 70 per cent of the government's fiscal revenues and there was not a clearly defined domestic tax system at the time. In January 1891 the government established (a) the indexation of foreign trade duties as a function of the evolution of the gold peso/paper peso exchange rate; (b) an ad-valorem tax of 4 per cent on all exports and (c) a tax on domestic consumption, which was an early antecedent of the federal value added tax. On the expenditure side, Pellegrini managed to reduce the rate of growth of the Public Expenditures of the national government from an average of 19 per cent in the period 1885-1889 to one of 2.7 per cent in 1891.

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<sup>17</sup> See della Paolera (1994), pp. 16-21.

<sup>18</sup> See della Paolera (1994), p. 21.

## 2. Monetary Reform

In the spring of 1890, Carlos Pellegrini, with the approval of the Congress, decided to "nationalize" and monopolize the issue of money, establishing the Caja de Conversión as the monetary authority. Its task was to centralise the stock of currency. "To carry out the gradual Conversión and amortization of the legal currency in circulation" was its principal objective. The Charter of the Caja de Conversión established, in Article 14, that the government must not only stimulate the stability of the country's paper money but also, and even more importantly, it must bring the value of the paper peso to par with the gold peso.<sup>19</sup>

Initially, the government tried to insist on reestablishing convertibility of the paper peso at par, but insufficient backing in specie and a lack of fiscal credibility meant that this plan was not feasible. The stock of specie represented just one per cent of the monetary base in 1890. In that same year, the government was obliged to increase the monetary base by 40.4 per cent in order to cover fiscal needs, which further undermined any possibility of achieving convertibility. It was only in 1891, with the restructuring of the payments on the foreign debt and with banking reforms, that monetary authorities managed to reduce the rate of growth of money to a 6.4 per cent annual rate.

## 3. The Restructuring of the Public Debt

In order to put a stop to hyperinflationary expectations, which in any case were reinforced by the fact that the government would rely on inflation tax to service the debt, in August 1890, the government seek consistency and tried to restructure payments on its foreign debt through a stand-by loan of 4 million pounds (20 million gold pesos). These initial negotiations, however, were interrupted in November with the announcement of the suspension of operations of the Baring Brothers in London. In January 1891, the Argentine representative, Victorino de la Plaza, signed an agreement with a syndicate of European investment banks, coordinated by the Bank of England, to grant Argentina a loan of 15 million pounds sterling to enable Argentina to avoid an all-across-the board default on its foreign debt for a period of three years.

One of the most annoying conditions of the syndicated loan affected the management of the domestic monetary policy. One of the articles in the Charter of the Caja de Conversión referred to the desirability of a contraction in money as a prerequisite prior to reestablishing convertibility. A clause included in the "General Contract" of the syndicated loan, taking the abovementioned article into account, called for an annual contraction of 15 per cent of the money supply during the three years covered by the agreement. This was the equivalent of reducing cash in circulation by 6.2 per cent annually. This implied a trade-off between the external value of the money and, in the event of a financial panic, the internal convertibility of deposits into cash.

## 4. Financial Reform

With an arrangement reached in the foreign debt sector, the impact on the financial system was instantaneous. The agreement meant that the Caja de Conversión could no longer act as lender of last resort for those banks that were in trouble. The agreement forced the Caja to work under a contractive monetary system (the contraction had been set at 6.2 per cent annually). The run on state banks reached

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<sup>19</sup> "Caja de Conversión-Law 2741, October 7, 1890" in Sabsay, Fernando (1975), pp. 615-16.

unprecedented levels, and the government decided to suspend the convertibility of cash deposits in April 1891 at its two largest banks: the Banco Nacional, which was intervened and later liquidated, and the Banco de la Provincia de Buenos Aires, at which operations were suspended. There were also a large number of private banks which suffered the consequences of the run, such as the Banco de Carabassa, which was absorbed by the Banco de Londres y Río de la Plata and the Anglo-Argentine Bank, which suspended its operations, among others.

In October 1891, Congress decided to create the Banco de la Nación Argentina as a mixed financial institution, but the share subscription was not successful, and the bank's capital had to be raised by a special issue of pesos from the Caja de Conversión. The Banco de la Nación Argentina was formed with the prerogatives of a commercial bank: (1) the bank could loan the government no more than 5 per cent of its capital; (2) a policy was put into effect setting the minimum amount of cash on hand at the equivalent to 75 per cent of the deposits and (3) long term projects could not be financed with private deposits.

By the middle of 1891 the package of economic measures had attacked all of the monetary and fiscal problems, but the reaction of the markets was, nevertheless, a negative one. Even after the drastic reduction in the rate of monetary expansion, inflation continued to increase, perhaps because the public had discounted the possibility of an economic policy based on such a harsh adjustment was unsustainable over the long term. Pellegrini was faced with the typical problem of a government that makes adequate technocratic reforms too late, and is, therefore, unable to regain credibility.

#### **III.4. Stabilization, Deflation & Convertibility: 1891-1899**

The appointment of Supreme Court Justice Luis Sáenz Peña as the new constitutional president of Argentina in October 1892 put an end to the nervous expectations of Argentina's economic agents as to the viability of the economic reform package. The confirmation of Juan José Romero, an unconditional defender of the convertibility system and the gold standard, as his finance minister produced a rapid appreciation in the value of the paper peso on the foreign exchange market. Juan José Romero favored the idea of appreciating the market value of the paper peso, but he opposed the policy of withdrawing paper pesos from circulation in order to accelerate deflation and push the paper peso toward par with the gold peso. In a report prepared for President Sáenz Peña in November 1892, Romero declared:

"...In spite of the quantity of money in circulation, an appreciation in its value is occurring with an unusual speed, and this, without doubt, is an encouraging sign for the country's economic future. But we should not forget that the higher the value of the paper currency in circulation, the greater the amount of gold that will be needed for its eventual convertibility. It seems to me that it is convenient to mention that the administration of Dr. Pellegrini had manifested the possibility of Conversión of cash at 250 per cent. The rate suggested by the government of Dr. Pellegrini is, I believe, a fair rate and a convenient one for the country, and it seems to me that prudence recommends rapid and serious consideration of this important suggestion..."<sup>20</sup>

The Caja de Conversión, nevertheless, did not possess sufficient reserves in specie to try to reinstall a system based on convertibility, nor was it in a position to negotiate a gold-based loan which could serve as

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20 See della Paolera (1988), pp. 107-08.

initial backing for the paper peso. Romero understood that the monetary policy, in this case an eventual return to the gold standard, could not be achieved without a prior coordination with fiscal policy. The Minister criticized the terms of the De la Plaza-Bank of England Agreement, sustaining that Argentina should pay its obligations in relation with its fiscal capacity. He proposed a new agreement, which came to be called the Romero Agreement, by which Argentina was permitted a reduction in interest payments and a delay in meeting the due dates of the loan itself. The repayment clauses of the foreign debt under the Romero Agreement had the following characteristics: (a) between 1893 and 1898 the federal government must pay half of the original foreign debt service that had been recognized in the De la Plaza-Bank of England Agreement; (b) as of 1898 it would pay the totality of the debt service; and (c) as of 1901 Argentina would start to make payments on the amortizations as well.

With this arrangement, the shock of the domestic fiscal adjustment was alleviated, permitting ample anticipation of the payments that had to be made in 1894 by the Loan Funding Agreement of 1891. Any possibility of the "Ponzi Effect" was also eliminated. This reaction occurs when debt payments must be made by issuing fresh debt obligations, but at ever-soaring interest rates, which eventually make the transference of resources to creditors insufficient or unsustainable.<sup>21</sup>

In Table 2 it can be observed that the period from 1891 to 1899 was characterized by a very moderate rate of monetary expansion, if we preclude the monetary expansion to finance the founding of the Banco de la Nación Argentina (an average of 1.1 per cent annually). Basically the monetary rule of thumb used by the Caja de Conversión consisted in declaring a fixed money supply policy. The result of this strategy was a fall in the exchange rate: from 3.75 paper pesos per gold peso in 1891 to 2.27 in 1899 under a system of pure floating exchange rates. The money supply expanded by 10.8 per cent, due to the expansion in the money multiplier. This situation halted the involution in the process of financial deepening and fundamentally improved the position of the official banks, after absorbing the negative consequences of the Baring crisis which resulted in a fall of 34.4 per cent in the monetary multiplier with respect to 1889-1891.

An important fiscal adjustment was achieved during the Romero ministry, permitting the Treasury to post fiscal surpluses during four consecutive years, starting with 1892. The government was practically forced to equilibrate the budget in each consecutive years after the debacle of 1891-1892, due to the tightening of credit in both the domestic and the international markets. In spite of contractive fiscal and monetary policies, which the country's economic agents had anticipated, an important recuperation in the real level of activity took place. An average annual real rate of growth of nearly 5 per cent was reached, a significant figure, although lower than the 8.5 per cent rate that prevailed in the pre-crash years, and only slightly inferior to the rates characteristic of the gold standard years.

It is interesting to point out that this increase in the level of activity produced during the deflationary period was experienced in the middle of an international recessive scenario. In 1892-1894 prices in terms of specie for goods and services were the lowest of any of the years of the so-called long

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21 It can be demonstrated that the Romero Agreement was a successful attempt to avoid a dynamically explosive situation. See della Paolera (1988), pp. 109-10.

phase of declining international prices which lasted from 1870 to 1895.<sup>22</sup> This international deflationary situation also affected the Argentine economy through the arbitrage in the market for goods; between 1891 and 1894, for example, the nominal rate of foreign exchange appreciated 3.1 per cent annually while domestic prices fell by an annual rate of 9.3 per cent annually.

The international macroeconomic scene changed radically in 1895 as a consequence of an accentuated increase in monetary liquidity in the central countries, caused by an increase in the world stock of gold. This increase was due to a combination of factors, among them a wave of new discoveries of gold deposits and a series of technological advances in the refining of the precious metal. As of 1894, international inflation had its effect on Argentina: in the sub-period of 1894-1899 domestic prices declined by 12.8 per cent in spite of an even greater appreciation of the paper peso by 37.1 per cent.

Argentina's monetary authorities were successful in fixing the quantity of money and in allowing the value of money to be freely determined by the exchange markets. As a result of this extraordinarily restrictive monetary policy, nevertheless, in 1897 a debate began as to whether a return to a convertible monetary system would be advisable or not. Once again, the debate over economic policy was centered on whether the paper peso should be convertible at par or at an exchange rate set by the markets. Urban sectors and commercial interests favored a convertibility plan where the exchange rate was fixed at par, while exporters and industrial sectors called for a high rate of exchange because they sustained that any further deflation of the economy would undermine the profitability of the real sector. The most solid argument, perhaps, and at the same time the most fascinating, demonstrating the damaging effects of deflation, was written by Silvio Gesell (1909). In an article called La Anemia Monetaria de 1898 (Monetary Anemia in 1898), Gesell anticipated the problem of "debt-deflation-depression", expressing:

"If money gets more expensive, debts increase in the exact proportion of that rise in the cost of money. Nominally nothing changes, but materially the debt load increases...With the perspective of having to pay triple what one received, who will dare to go into debt to start a new industry in the country..."<sup>23</sup>

In another work, one of the authors quantifies certain "pernicious" effects caused by deflation. In the first place, a calculation is made on the basis of a constructed index of profitability in the export sector, defined as the exchange rate multiplied by export prices divided by rural nominal wages. Analyzing the evolution of this indicator in the deflationary context of 1891-99, one finds that for the final years of this sub-period, especially, there is a slightly declining tendency in the rate of profitability in the export sector of nearly 8 per cent on the average between 1891 and 1898. Monetary forces had produced an appreciation of the paper peso, but this negative effect was neutralized by an exceptional increase in international prices for agricultural products as of 1895.

A more convincing argument for putting a stop to deflationary policies was the behavior of real interest rates, which held at an average rate of 10.4 per cent during the period under discussion. In this sense, a move toward a more expansive monetary policy (adopting convertibility at the prevailing high rate of exchange which was above par) seemed, in principle, to be the appropriate course of action to take. In

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22 In 1893 the most important financial crisis ever occurred in the United States because of expectations that the gold standard would be abandoned due to the pressures of the silver standard advocates. See Friedman and Schwartz (1963), pp. 89-134.

23 Gesell (1909)

defense of the rigid monetary policy which had been implemented as of 1893 and prevailed until 1899, we might ask, what were the options in terms of the government's monetary policy, given the economic and political restrictions at the time?

As we have already commented, a first option would have been to adopt convertibility in 1893, setting a high exchange rate for the paper peso as Carlos Pellegrini and J.J. Romero had suggested. To implement convertibility in a scenario of clearly unfavorable expectations, the government would need a foreign loan in specie to provide the necessary backing for the monetary base. It is very hard to imagine that the government at that time had the solvency and bargaining capacity to get a loan in the international market. This is especially true when one takes into account that at least 20 million pounds sterling was needed to achieve total backing for the country's monetary base.<sup>24</sup>

A second option could have been (under a convertibility system or one of a flexible exchange rate) the adoption of a higher rate of monetary expansion in order to accommodate more adequately the monetary needs of a growing economy, thus avoiding any further deflationary pressure. In accordance with modern monetary theory, this course of action would have represented an optimum monetary policy in the Gesell-Friedman sense, by promoting a scenario of stable prices, if only: (a) the government had had the relevant information and the technical and legal flexibility to know at what speed it should inject money into the economy and (b) that economic agents, just beginning to recover from the catastrophic crisis of 1891, could read correctly the government's intentions to neutralize deflationary pressures and not read an increase in the rate of monetary expansion as another return to an inflationary scenario. A monetary system of this kind was probably unthinkable in a period dominated by the conventional wisdom tied to the gold standard, a fixed exchange rate system, and to the economic doctrines of the moment, which prescribed a return to convertibility at par and not to a nominal exchange rate at a level higher than par.

## SECTION IV ARGENTINA UNDER THE GOLD EXCHANGE STANDARD: 1899-1914

### IV.1. The Adoption of Convertibility

Nine years of adjustments in the financial and real sector and a profound price deflation was needed to get Argentina back to external convertibility of its paper peso, now known as the *peso moneda nacional*. The experience was considered by scholars as a classical success story of a peripheral country being able to adopt a convertibility system for its money.<sup>25</sup>

In 1898, a heated political economy debate began as to which monetary system would be best in the light of the circumstances of the then-current international financial situation. Many voiced their ardent disapproval of the negative effects on the country's economy of the paper peso's appreciation since 1895.

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24 We should recall that the Stand-By Loan of 1891 had been granted to save Argentina from a default situation and not as a line of credit to increase the Treasury's specie reserves.

25 Earlier, Argentina had adopted the gold standard in 1867 when the Exchange Office of the Banco de la Provincia de Buenos Aires was established; that metallic system remained in effect until 1876. The automatic mechanism applied by the Exchange Office functioned until 1873 when a process to sterilize the deficits in the balance of payments began and an exchange crisis developed together with a financial crisis. See della Paolera (1994), pp. 1-5 and Graph 1.

Once again, Gesell reviewed the situation and characterized the monetary phenomenon at that time as the "monetary anemia of 1898", analyzing "the increase in the value of money as the common cause for all the country's economic troubles".<sup>26</sup> Carlos Pellegrini in his initiative to implement a convertibility plan pointed out that it would be necessary to eliminate "...that element of anarchy and destruction--inconvertible fiduciary money..."<sup>27</sup> A large sector of the intelligentsia in money and banking circles, which included highly respected ex-ministers of finance, defended a relatively sceptical position as to the possibility of imposing the convertibility of the *peso moneda nacional* on a system of fixed exchange rates with adequate backing in specie. The doctrinal discussion centered on two principal aspects of the question:

(a) There was no agreement regarding what exchange rate should be legally fixed in order to make convertibility applicable. The possibility of converting the *peso moneda nacional* at par, after a period of time during which a "sliding scale" of adjustments in the value of the gold premium would be applied to permit convergence, was also discussed.<sup>28</sup> Senator Carlos Pellegrini recommended adopting convertibility at the prevalent exchange rate of 2.27 paper pesos per gold peso.<sup>29</sup> (b) Reasonable doubts existed regarding the existence of adequate fiscal preconditions to assure the credibility of a Caja de Conversión that was to exchange paper pesos for specie at a fixed exchange rate. The level of specie reserves was once again low, and the mechanism, therefore, could not be maintained in the case of a speculative attack on the paper peso.

At the inauguration of Congress in 1899, President Julio A. Roca declared:

"To achieve that result (convertibility), we recommend the formation of a significant specie reserve. One of the causes that has most influenced the variation in the value of paper money is the lack of confidence in the direction the Government is taking. Convertibility obliges us to reorganize and 'moralize' the mechanisms of the administration, to introduce all the economies possible in the budget, avoiding exaggerated expenditures, reducing or eliminating certain taxes, and reestablishing equilibrium in the public finances. Also the provincial governments have to play their part in this project. It is a fact that the administrative personnel in every province is more than superior to the needs. The bulk of those employees who delay the progress of the public administration only represents useless and harmful expenses and a burden that must be subtracted from the productive work force..."<sup>30</sup>

The Law of Conversión (Law 3.871) was passed on October 31, 1899 by Argentina's Congress. The Finance Minister at the time was José María Rosa. As of that moment and during fifteen uninterrupted years, Argentina was to maintain an exchange rate set at 2.27 paper pesos per gold peso.

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26 See Silvio Gesell (1909), *La plétora monetaria de 1909 y la anemia monetaria de 1898* (Monetary Supcrabundance in 1909 and Monetary Anemia in 1898), pp. 20-23.

27 Quoted by Carlos Moyano Llerena (1935) in *La Ley de Conversión de 1899*, pp. 48-9.

28 The minority on the Finance Committee in the Cámara de Diputados presented a project by which a scale of gradual reductions in the gold premium would be applied, at a rate of 5 gold cents every six months until reaching par. It would take five and a half years to reach par under the proposed mechanism. See Moyano Llerena (1935), pp 62-3.

29 Carlos Moyano Llerena (1935) recognizes the intellectual and political influence of Senator Carlos Pellegrini in the adoption of convertibility in 1899.

30 Quoted from the paper by Manuel Fernández López "Convertibilidad: Ideas, Políticas y Reflexiones"(Convertibility: Ideas, Policies and Reflections), presented September 23, 1993 at the Colegio de Graduados de Ciencias Económicas.



The first article of the Law of Conversión of 1899 established a clear and simple monetary system: The Caja de Conversión would be obliged to buy and sell *pesos moneda nacional* (paper pesos) for specie at a rate of exchange fixed by law at 44 gold cents for each *peso moneda nacional*. That is to say, any expansion or contraction in the amount of cash in circulation would reflect the variations in the level of specie reserves on hand at the Caja de Conversión. With this inelastic relationship between variations in the stock of metallic reserves and variations in the stock of the monetary base, several other monetary policy functions were eliminated, such as operating on the open market with public bonds in order to influence the level of interest rates, rediscounts and, as well, any other type of guarantee, such as that of lender of last resort to the financial system.<sup>31</sup>

The most pressing problem facing the government was that of creating an initial reserve in specie that could guarantee, minimally at least, the paper pesos in circulation. This was vital in order to produce sufficient credibility to be able to defend the parity in the case that the general public decided to test the convertibility of its paper pesos into specie. The government's initial position was not very promising: Column 19 of Table 2 shows that the level of specie reserves at the Caja de Conversión, created in 1890, throughout the period of 1891-1899, was zero. Originally it was thought that the Caja de Conversión should have a reserve of approximately 30 million gold pesos, which initially could back almost 25 per cent of the monetary base. Article IV of the Law of Conversión established the need to generate fiscal revenue for this end, but time proved this to be impossible, and it was not until 1910 that this goal was achieved.<sup>32</sup> This restriction meant that in order to maintain convertibility in the early years of the law, it was necessary to generate positive flows of specie.

Another interesting aspect of the Law of 1899 was the degree of independence from political interference granted to the Caja. The Caja de Conversión was administered by a board of directors composed of five members named by the Executive Branch, subject to approval by the Senate, with a term in office of five years. Moyano Llerena (1935) expressed that: "the principal guarantee of the Caja is its separation from the Government and, in addition, that its administrators are personally responsible for any illegal application of the Caja's funds."<sup>33</sup>

The Caja de Conversión maintained strict independence from the Executive Branch, as it did from the Banco de la Nación Argentina, until August 1914, the date that external convertibility of the *peso moneda nacional* was suspended.

#### IV.2. Money, Prices and the Level of Activity under the Gold Standard: 1899-1914

During the period 1899-1914, the international economy was characterized by extreme financial and monetary liquidity in international markets due, to sustained increase in the world stock of gold. This expansion reached 3.5 per cent annually between 1890 and 1914, which was well above the 1.5 per cent annual average between 1866 and 1890.<sup>34</sup> Under the international system of the gold standard, these growth rates produced a generalized increase in the means of payment in the central countries, which brought about

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31 See Carlos Moyano Llerena (1935), *La Ley de Conversión de 1899*, p. 85.

32 See Carlos Moyano Llerena (1935), *op. cit.*, pp. 85 & 88-90.

33 Moyano Llerena (1935), *op. cit.*, p. 87.

34 Data formulated from Friedman and Schwartz (1963), p. 137.

an extraordinary increase in the level of activity and in prices. In Great Britain in the period 1899-1913, the real economy expanded at an accumulated rate of 16.8 per cent, while the price index grew at 12.3 per cent. In the United States, the accumulated expansion of the economy and of prices was 51.9 per cent and 28.4 per cent respectively. Argentina also underwent an important period of expansion in the real sector of the economy with the level of the domestic product increasing at an accumulated rate of 78.5 per cent, which was equal to an average annual rate of 5.8 per cent in real terms. As an additional reflection of the increase in the international stock of money, Argentina imported external inflationary pressures: the price level increased by an accumulated rate of 36.3 per cent during this period, an average of 2.6 per cent annually. Following the severe depression in prices at the beginning of the century (1899-1901) which brought with it a fall of 15 per cent in price levels, the subsequent tendency for domestic prices to rise reflected the extraordinary improvement in the terms of trade in the countries that exported agricultural goods. The increase in exports plus the continued inflow of capital into Argentina had its correlation in the country's financial and monetary performance.

From the monetary point of view, the Caja de Conversión respected the rules of the game and automatically exchanged any paper pesos it received for specie at a nominal rate fixed at 2.27 paper pesos per gold peso. In each of the years from 1903 to 1914, the only source of creation or contraction in the monetary base was the variation in the stock of specie at the Caja de Conversión. On adopting a fixed rate of exchange system, the monetary authorities lost control of the quantity of the monetary base, which was left to be determined endogenously by the domestic monetary market. The monetary focus on the balance of payments signified that, under a fixed exchange rate system, the movements of specie became a vehicle by which to restore equilibrium to the monetary market through adjustments in monetary supply.

In Table 3 we can observe in Columns 11 and 12 that the accumulated increase of 103.9 per cent in the monetary base could be completely explained by the variation in the level of specie reserves at the Caja de Conversión. The secular evolution of the monetary base was surpassed by the expansion of bank money which grew at an accumulated rate of 161.5 per cent, or an annual rate of 12.2 per cent. Bank credit, once again, defined as the difference between the monetary supply and the monetary base, and the evolution of the monetary multiplier, clearly showed pro-cyclical tendencies. After an accentuated fall in the post-Baring period, the average level of the multiplier rose from a minimal value of 1.23 in 1893 to a maximum of 2.2 in 1912, a figure that could not match the financial deepening achieved in the period of the national guaranteed banks.

We can be certain, nevertheless, that the degree of deepening of financial intermediation which occurred during this period was more genuine than in the previous expansive experience. In this latter case, the country's economic agents made real use of bank deposits as an alternative monetary asset.

In the boom of 1889, for each guaranteed peso held by the public, a little more than two pesos of commercial deposits existed. By 1912, for each peso in the hands of the public, there were more than three pesos in private commercial deposits. Comparatively, in an economy with emerging capital markets--the case then of the United States--the relationship deposits/cash was 3.40 in 1890 and 6.78 in 1910. This process of expansion of money or bank credit can be explained by the behavior of the level of reserves in the financial system and the proportion cash/money in public hands.

While the level of reserves, defined as the relationship between bank reserves and deposits remained unexpectedly high in Argentina, as of 1901 the level fell from an average of 50 per cent for the previous

decade to an average value of about 30 per cent in 1910. This fall in the aggregate level of reserves explains the 8 per cent variation in the total monetary supply during this period of considerable economic and monetary expansion.

It is interesting to note that even when the Banco de la Nación began to play an important role in financial markets, the bank remained very conservative in terms of loans, maintaining maximum reserves in the order of 61.9 per cent in 1903 and minimum levels of 31.1 per cent in 1912. The private banks in Argentina maintained more reduced reserve levels with maximum percentages in the order of 31 per cent in 1901 and minimum levels of 23.8 per cent in 1911. It is important to stress that the financial system of fractional reserves functioned in the absence of a lender of last resort, since neither the Caja de Conversión nor the Banco de la Nación had the prerogatives to advance rediscounted funds in the eventuality of a massive withdrawal of deposits from banks.

This structural weakness could conceivably be justified had there been an elevated level of reserves in relation to those held by banks in financial systems which already had central banks with their respective rediscount policies. The level of reserves in the Argentine financial system, nevertheless, during the gold standard was three times superior to the average reserves of the financial system in the United States, which shared with Argentina the characteristic of not having a formal lender of last resort within a gold standard system.

One marked difference with our country, however, were the clearing houses in the United States, formed to forestall future episodes of financial panic. Richard Timberlake (1978) cites the importance of the Aldrich-Vreeland Act of 1908 as a point of inflexion on the degree of official intervention in the credit sector in the United States. In this Act, an association of a group of highly capitalized banks was established. The group was called the National Currency Association. They were authorized to advance cash temporarily against the rediscount of the portfolio of those banks which were suffering a run on deposits by the public. The project authorized, within specific limits, banks with problems to convert their assets into cash, to enable them to avoid suspending the repayments of deposits, a move which, it was sustained, would halt any generalized run by depositors and forestall any ensuing credit debacle. Several authors sustain the the Aldrich-Vreeland Act provided the mechanisms by which to avoid an important financial crisis in August 1914.<sup>35</sup>

Neither this contingency mechanism nor private clearing houses of the above-described characteristics existed in the Argentine financial system, a structural weakness that would become evident in the crisis of 1914.

We will now analyze how the general public behaved, illustrated by the evolution of the relationship between cash and money. We have mentioned earlier that an important degree of financial deepening, measured by the relative increase in private deposits, can serve as a vehicle to retain the monetary holdings of the country's monetary agents. The relationship between cash and money was 36 per cent when the

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35 Friedman and Schwartz (1963) describe the Act as an association of 10 or more private banks that had a net relationship between liabilities and capital inferior to five and which could emit national currency (dollars) up to a value of 75 per cent of their rediscounted portfolios, and up to 90 per cent of the market value of the public bonds received from banks with problems. There was an incentive mechanism to amortize the emergency emission once the complex financial conditions were overcome. See pp. 170-71.

Conversion Law was approved in 1899. As of that moment, with the exception of 1901 in which the proportion increased to 38 per cent, the ratio fell monotonically until reaching a plateau at 24 per cent in 1911. This secular evolution fed the secondary expansion of money until 1912, the year that the economy began to feel the first symptoms of public and private financial fragility. Remembering that the stock of money can be split into primary money and banking money, the latter explains the 55 per cent growth in the stock of money in the economy during this period.

The credibility that was generated by the gold standard from 1899 to 1914 was reflected in the important reduction of the so-called country risk, measured by the spread or difference between the yield of national public bonds and the yield of an external asset such as a British Consol. Graph 12 clearly shows that the country risk fell abruptly from a spread of 5.5 points in 1898 to a spread of 2.5 points in 1905. This convergence of domestic interest rates with international ones was briefly interrupted in 1906-7 with the financial crisis in the United States. The trend then recovered its downward movement, to reach a record low of 2 points in 1912. The resurgence of more efficient capital and financial markets is shown by the drastic fall in the real ex-post interest rates that prevailed during this period. From average real rates of 11 per cent annually which were common during the period of contractive monetary policy (1891-1899), the values descended to an average of 5 per cent from 1899 to 1913. There was also a reduction in the degree of variability in the real rates of interest with respect to historic periods, although it is interesting to note that in critical periods when international crises were "imported" such as was the case in 1901, 1903 and 1908, the real ex-post interest rates rose by 25.2, 23 and 9.6 per cent respectively. These jumps were overcome by the variations in the price index, since it was only in 1908 that a significant increase in the nominal interest rate occurred, while in the other years of crisis the rates actually fell.

It is interesting to note that the dynamics of the real exchange rate and of the real interest rates during this period of fixed exchange rates coincide with contemporary attempts of stabilization based on anchoring the currency to a fixed exchange rate. Strengthened by the phenomenon of credibility, domestic money appreciated in relation to the pound sterling by 15 per cent for the period of 1899 to 1914.

In other words, the inflow of capital to the Argentine economy implied an increase in the quantity of money and, fundamentally, in the quantity of credit (the increase in the level of bank money was 60 per cent above that corresponding to the monetary base), which produced a sustained increase in the aggregate demand, generating a domestic rise in prices superior to the level of international inflation at the time. The sustained economic boom was reflected in the evolution of the values indicated in a preliminary index of the real estate market, which measured the price in paper pesos per square meter of residential properties in the city of Buenos Aires. While clearly imperfect, the index resulted in an interesting proxy of the evolution of prices of nontradable goods. Due to the significant mobility in the labor factor during this period, this indicator of real estate prices is perhaps a better thermometer of the evolution of the level of aggregate demand than the nominal salary.

The index shows a clearly pro-cyclical evolution: (a) a real estate boom during 1887-1890 with an increase of 210 per cent in the prices of properties; (b) depression in 1890-1894 with a fall of 50 per cent in real estate prices; (c) stagnation between 1895-1903 and (d) an important increase of more than 350 per cent in prices during the period of the gold standard from 1904 to 1913. Finally the sensitivity of these

prices in relation to the phenomenon of the movement of capital can be seen during the financial crisis of 1914 with the fall of 32.9 per cent in the values of residential real estate in a single year.<sup>36</sup>

This dynamic situation was recognized 30 years ago by Alec Ford (1962) who emphasized the importance of the international economic cycle on the economy of peripheric countries that had adopted the gold standard. For this author, the gold standard maximized an economy's credibility to attract international investors in periods of international bonanza, but simultaneously the intrinsic weakness of the model was also being gestated. For Great Britain the adoption of the gold standard mitigated the consequences of unfavorable external shocks, while for Argentina the convertibility system left the economy sensitive to brusque shocks in the country's trade or to changes in international interest rates. In 1909 after the United States recovered from the menace of financial crisis in 1907, Silvio Gesell (1909) expressed:

"...Our money is so intimately and solidly linked to gold, as the pound sterling is and even more so than the franc and the mark... If in some faroff country with a gold standard a crisis develops, this crisis will have immediate repercussions on the Argentine paper currency... And it should be that way, as that is what the Law of Conversión is all about. He that enjoys the advantages of an international money must also accept its inconveniences, the pro's and the con's of monetary solidarity..."<sup>37</sup>

A vision of the gold standard that "amplified" economic cycles is succinctly expressed by A. G. Ford:

"It is easy to understand the dislike of some Argentines for a system which dictated that a slump must be aggravated by monetary reactions, although, doubtless, they had forgotten that the same system served to enhance booms..."<sup>38</sup>

By 1912 most macroeconomic indicators were at their best levels: (a) monetary circulation had backing in specie equivalent to 63.3 per cent; (b) the country risk measured as the differential between the yields of domestic fixed income assets and international ones was 1.5 per cent annually; (c) there was a steady increase in the real quantity of money, which had reached 7 per cent annually; and (d) the Treasury deficit was not higher than 20 per cent of genuine fiscal revenues, while the relationship between public debt and the gross product was 35 per cent (we can recall that in 1891 this relationship was more than 100 per cent). Taking all these factors into consideration, it is quite probable that the inhabitants of Argentina were not prepared for the severe exchange and financial crisis which hit the country in 1914.

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36 This unpublished indicator was prepared by della Paolera in 1987 from information taken from the *Anuario Estadístico de la Ciudad de Buenos Aires* (Annual Report of Statistics for the City of Buenos Aires) and in which detailed annual information is included on the number of properties sold, square meters sold and the prices obtained in paper pesos by Parish. A price index based on prices per square meter has been prepared weighing the residential prices in 14 Parishes and in which those weights represent the relative sales by Parish.

37 See Silvio Gesell (1909). *La plétora monetaria de 1909 y la anemia monetaria de 1898*, (Monetary Superabundance in 1909 and Monetary Anemia in 1898), Buenos Aires, April 1909, p. 56.

38 A.G.Ford (1962), op. cit., p. 188

### IV.3. The Foreign Exchange and Financial Crisis of 1914

The start of the First World War acted as a tremendously negative external shock to an economy as open as Argentina's, maintaining fluid international economic relationships with both sides of the conflict, but financially tied to the area of the pound sterling. This conflict would end by destroying the harmony of the international monetary system based on the gold standard. With the exception of the United States, the other central countries decided by mid-1914 to let the value of their monies depreciate, and Argentina joined them by abandoning convertibility in August 1914.<sup>39</sup>

By the beginning of 1913, the contractive financial and monetary policies adopted in London had their effect on the domestic economy. The discount rate at the Bank of England rose from 3.4 per cent in 1912 to 5 per cent toward the end of 1913. The ongoing increase in the domestic monetary base was halted and, for the first time since the implementation of the convertibility law, a nominal reduction in the money supply and in bank deposits occurred, reaching 4.8 per cent and 6.4 per cent respectively. These were clear indications that Argentina was importing the deflationary pressures of pre-World War Europe. The level of prices slowed from 2.6 per cent annually to 0.2 per cent, while the growth rate of the economy settled at a discouraging 1.0 per cent. Bankruptcies increased by 20 per cent in relation to 1912, and we already mentioned the 35 per cent drop in residential real estate values in the city of Buenos Aires.

The sudden intracyclical deterioration in this group of financial indicators, including the values of real estate and farm land, bankruptcies, and the contraction in the volume of deposits preannounced the difficulties that the financial system was to face. In a deflationary atmosphere, there is a change in the relative values of the banks' assets and liabilities. With deflation, the economic agents look for liquidity, which means an increase in the relative value of cash in relation to deposits (bank liabilities) and a reduction in the propensity to be invested in illiquid assets (assets that normally form part of any bank's portfolio). This tendency leads to a general deterioration in the indicators of liquidity and solvency of the financial system.

Another microeconomic ratio to keep in mind when considering a country facing such a deleterious external shock to its economy is the relationship between the monetary liabilities and the reserves in specie, known as the ratio between inside money and outside money. At the beginning of 1912 the relationship between M3 and reserves in specie was 28.5 per cent; that is to say that the quantity of domestic money was three times superior to the specie on hand at the Caja de Conversión. In this relationship, two important characteristics of the Argentine monetary market are included: (a) the relationship between the monetary base and the reserves in specie, which provides an indicator of the solvency of the Caja de Conversión in terms of being able to maintain the external convertibility of the peso, and (b) the relationship between monetary supply (M3) and the monetary base, i. e., the monetary multiplier which reflects the existence of a financial system with fractional reserves can be a source of instability due to changes in the supply of deposit money.

If the money supply is a multiple of the base, the banks create secondary money by means of the deposits they hold. The Caja de Conversión assumed decisively its macroeconomic responsibility,

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<sup>39</sup> The United States imposed restrictions on the export of specie during 1917-1919, but maintained the convertibility of dollars to gold within its borders. In June 1919, the free movement of capital was reestablished. See Bordo and Kydland (1992), pp. 22-24.

preserving the external value of money but has no instruments to assume the microeconomic responsibility of guaranteeing the stability of the financial system. The problem of "the inherent instability" of fractional reserves occurs when the general public suddenly perceives that a peso in the pocket is better than one on deposit and, simultaneously, the banks must increase their own levels of liquidity. A contraction is thereby produced in the monetary multiplier, which reduces the quantity of money in the economy. The economy moves from deflation to financial crisis when the public begins to panic, trying to convert all its deposits into pesos. With bank reserves constituting only a fraction of the existing deposits needed to brake the general run on the banks by a public who want to prove the convertibility of their deposits into cash, the intervention of the monetary authority is needed to provide the liquidity necessary to preserve the stability of the financial system.

It is easy to see the trade-off created between stabilizing the domestic financial system and maintaining the monetary standard which guarantees external convertibility of the money (we can recall what happened during the Baring crisis). Facing the eventuality of a financial crisis, when the Caja de Conversión acts as lender of last resort, the money market could absorb the fall in the nominal quantity of money, avoiding the chain reaction of bank closures. If the intervention of the monetary authority is, nevertheless, of a magnitude that the relationship between the monetary base and international reserves increases significantly, this could exacerbate the expectations of an eventual devaluation of the peso, which would feed a new run on bank deposits, but this time to convert peso deposits into specie.

This tension was illustrated in August 1914 when a generalized run on commercial banks occurred. Any appreciation of the anatomy of the financial crisis of 1914 can be made richer by the testimony of the minutes of the then-called Banco de Londres y Río de la Plata. Perhaps the most important private commercial bank in the financial system in 1914.<sup>40</sup> In the first place it can be noted that this bank always maintained a more conservative banking policy than that of the market average. Toward the end of 1913, the level of aggregate reserves was 32 per cent (see Table 4). Toward April 1914, the Banco de Londres increased the level of its reserves considerably to 53 per cent, in response to an increase in the rediscount rate of 3 per cent to 4 per cent by the Bank of England. The bank also continually monitored the index of commercial bankruptcies in Buenos Aires. From that data it could be inferred that in 1913, the annual bankruptcy rate surpassed that of the previous year by more than 20 per cent, but by the third quarter of 1914 an increase at an annual rate of 175 per cent in bankruptcies was projected. In Table 4 we can see that the tendency had worsened toward the final quarter of that year, with the estimated annual rate increasing to 232 per cent. These statistics were used then as leading indicators or thermometers to test the evolution of the level of activity, and transpose that information to the evolution or tendencies of the financial situation of the firms that were seeking credit. This information was public (the Bolsa de Comercio published it regularly), so it was possible, therefore, for economic agents to take it as a proxy of the change in the quality of the portfolio of the consolidated system. In the eventuality of a strengthening of deflationary tendencies, the effect of the quality of bank assets could act as a trigger in the expectations as to the future solidity of the financial system.

On further study of the statistics in Table 4, we can see that at the moment the First World War began, Argentina's financial system had a level of reserves equivalent to 33.8 per cent, while the United

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40 The chronology of events are based on BOLSA reports (Bank of London and South America) which were consulted at the College University Library at the University of London in March-April 1994, especially Folios 192-195, 199-205, and 286 of 1914.

States maintained a level of bank reserves/deposits of 11.5 per cent, and none of the European countries surpassed 5 per cent in its fractional reserves. Argentina also had a more accentuated preference for liquidity. The ratio cash/money in the public's hands was almost 23 per cent; in the United States at the same time, the proportion was 13 per cent. The Argentine financial system seemed, according to these indicators, to be better prepared to face an eventual situation of illiquidity. In the early days of August 1914, however, a run on deposits of unexpected dimensions occurred. The principal institutions in the banking system, under the leadership of the President of the Banco de la Nación, pressured the government to call a bank and foreign exchange holiday for the period of one week. Their reason was to put a stop to the banking panic and avoid cessation of payments by several commercial banks.<sup>41</sup>

The government acceded to the request to call a bank and foreign exchange holiday, and during the week of August 3-8, a variety of proposals were presented for resolving the crisis. The presidents of the most important banks met daily and on August 4 they presented a proposal which suggested that the Government make a transitory emergency issue of currency to enable the Banco de la Nación Argentina to rediscount or make guaranteed advances to the banks. This proposal was put into effect together with another one, to suspension withdrawals of specie from the Caja de Conversión and the Conversión of the banks.<sup>42</sup> The minutes of the Banco de Londres commented that the Executive Branch opposed the idea of an

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41 The run on the banks also put pressure on the degree of liquidity at the Banco de Londres y Río de la Plata, which had one of the highest reserve levels in the entire system. "...In the face of such unusual circumstances we could not insist that our financial position was such as to withstand all the demands that could be made upon us and we accordingly joined our colleagues in the suggestion above referred to...". BOLSA, Folio 193.

42 The complete proposal established that: "...in Buenos Aires on August 4, 1914, in the presence of representatives of the Banco Alemán Transatlántico, Británico de la América del Sur, de Italia y Río de la Plata, de Londres y Brazil, Nuevo Banco Italiano, de la Provincia de Buenos Aires, Suizo Sud-Américo, Anglo Sud Americano and Banco de Londres y Río de la Plata, after dissenting widely on the convenience or not of a proposal that the Government of the Nation decrees a moratorium for the payment of due commercial obligations, and if this should be of a broad character or a limited one, the conclusion was reached by the above-mentioned, in view of the considerations heard, that this measure would not only be counterproductive for the country, but also in a lesser degree for the banks themselves, as none of these could accept submitting to this measure and find themselves in a situation of having to meet their obligations, finding themselves incapacitated to liquidate these commitments by which they would be able to satisfy their respective clients.

In addition those present manifest that they believe that, given the current abnormal situation, it is necessary and indispensable to ask the Government for measures in the general interest that benefit not only banks but also the commercial sector as well, to the end that the normal rhythm of business is not interrupted.

With this end in mind, it was considered, almost unanimously, that it would be convenient to recommend the following measures:

1. Prohibit the exportation of gold except in limited quantities than can be carried by passengers exhibiting the required documents.
2. Prohibit withdrawals of gold from the Caja de Conversión and from the banks.
3. That the government authorize a transitory emergency emission so that the Banco de la Nación Argentina can rediscount or make guaranteed advances to the Banks...

...The Banks consider that these measures will restore tranquillity to the general public and the commercial and economic situation will return to normality quickly... Folios 199-200, BOLSA.



emergency issue, being more in favor of using the Fondo de Conversión (Conversión Fund) of 30 million gold pesos to rediscount commercial paper of banks with problems. Congress approved a Presidential decree declaring a moratorium of 30 days on all financial obligations falling due during that period and established that banks must respond with up to 20 per cent of the deposits that were to fall due. The Banco de la Nación was authorized to convert the stock at the Fondo de Conversión to paper and use these funds to rediscount commercial obligations. The possibility of establishing emergency issues was finally approved, in spite of the opposition of the Executive Branch. It was established, however, that money in circulation could never have a backing in specie of less than 40 per cent. In the moment of voting on the law, 72 per cent of the monetary base had backing in specie. The prerogative, therefore, offered the possibility of producing an eventual expansion of money with sufficient backing, which made circulation more elastic to the eventuality of sustained external shocks. This emergency issue was also to be used for rediscounting commercial paper, but only with the consent of the Executive Branch.

One of the most serious problems that came on abandoning convertibility was how to confront and settle bank liabilities that were denominated in specie. The Government authorized banks to pay gold deposits in paper pesos at the official rate of 2.27 paper pesos per gold peso. This prerogative was voluntary. So when the depositor objected to this form of settling his contract, he could wait until the reopening of the Caja de Conversión to recuperate his metallic money. Some private banks, in spite of this, honored their monetary liabilities in the originally contracted medium of payment.

It is interesting to note that the Government confronted the financial crisis by authorizing the Banco de la Nación to utilize two thirds of the 30 million gold pesos at the Fondo de Conversión to resolve problems of transitory illiquidity at banks, but it did not authorize any additional increase in specie backing for money in circulation. In this way, the Caja de Conversión, through the Banco de la Nación, acted in a limited way as the lender of last resort, moderating the contraction in the monetary base by reducing the backing in specie from 72.6 per cent to 66.3 per cent. In 1914, the money supply declined 9.5 per cent, and deposits and secondary expansion by 14.2 per cent and 16.3 per cent respectively. In spite of establishing substantial exchange controls by prohibiting the exportation of specie, it is interesting to note that the exchange rate depreciated less than 2 per cent in 1915. This minor adjustment in the rate probably occurred because the country's economic agents evidently felt that any suspension in Conversión was clearly contingent on international events. The recuperation of the financial system was a rapid one, while recovery in the level of activity had to wait until 1916.

## **SECTION V. THE PERIOD 1918-1935: INTERNATIONAL EVENTS AND THEIR IMPACT ON DOMESTIC MONETARY POLICY**

At the end of the First World War, the belligerent nations were unable to reestablish a convertible monetary standard for their monies. The wartime efforts demanded a strategy of very expansive fiscal policies in order to cover the increase in military expenditures and, at the same time, the necessities of the economic infrastructure. The majority of the countries resorted to their central banks to finance disequilibriums in public accounts, since any capacity to take on debt in the capital markets had been exhausted.<sup>43</sup> The lack of coordination in the monetary policies of the European countries delayed any hope

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43 Between 1914 and 1919, the stock of domestic public debt in the United Kingdom had been multiplied by four in real terms, while the the German debt rose to 10 times the 1914 level. See Eichengreen (1922), pp. 79-80.

of reestablishing an international gold standard, which led to the beginning of a sustained period of divergent inflations. During this period, all of the industrialized countries, with the exception of the United States,<sup>44</sup> adopted fiduciary monetary systems and allowed the value of their monies to depreciate. As a result of the United States dollar appreciating 11 per cent in relation to the pound sterling during the War, the international financial center moved from London to New York.

Most European nations tried to avoid the negative consequences that the absence of an international monetary system which could provide coordinated discipline for fiscal and monetary policies presupposed. At the beginning of the Twenties there was still a consensus in many circles of opinion as to the advantages of returning to a system of fixed exchange rates. The principal attraction that such a system offered was the hope that by adhering to this type of exchange system and all that it implied, the countries would achieve, as they had in the past, the desired stability in their general price levels. For the enthusiasts of this system, exchange and price stability would be the prelude to financial stability and would permit a significant recovery in international trade and a period of growth in a context of greater efficiency in the allocation of resources.

This outlook had an immediate impact on the design and implementation of economic policy. Deflation came to be accepted in hopes that it might contribute to reestablishing a cooperative international mechanism for setting foreign exchange rates. Several years later, the majority of the industrialized countries were back on the Gold Standard. In Table 5 the dates when the gold standard prevailed in different countries in Latin America are listed. These countries, by the second half of the Twenties, had, in their majority, approved laws which established the convertibility of their domestic money to gold.

As we have seen in the previous section, Argentina abandoned the convertibility of the peso in 1914 and prohibited the Caja de Conversión to export specie. From then on and until 1927, the Caja de Conversión acted in an asymmetrical way. The monetary base increased automatically when the reserves in specie grew, but exporting gold was not permitted, so that the quantity of money was exogenous when the balance of payments was negative. Table 2 shows that the monetary base grew more than 9 per cent a year between 1914 and 1918; a process of financial deepening can be seen when the money supply began to grow at a rhythm of 19 per cent annually. The country, in any case, imported inflationary pressures during the wartime years: in the period 1914-1918, wholesale prices rose 50.4 per cent in the United States and 61.8 per cent in the United Kingdom, and 50.1 per cent in Argentina.

Some studies affirm that the Argentine Belle Époque began to fade with the fall of the United Kingdom as the world's financial and monetary center.<sup>45</sup> In 1921 the pound sterling lost 25 per cent of its

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44 The United States abandoned the Gold Standard for a short period of time during the First World War. In June 1919, the United States returned to fix the value of the dollar in terms of gold. Cuba, Panama, Nicaragua and the Philippines followed this decision. See Kemmerer (1941) and Kemmerer and Dalgaard (1978).

45 In Alan Taylor's article (1994) "Three Phases of Argentine Economic Growth", NBER#60 Paper, the author affirms that "...Britain's hegemonic power in capital markets was effectively broken by enormous war debts, and the new "bankers to the world" were the Americans, emerging into net creditor status; yet Americans were less than enthusiastic about assuming this new responsibility as an international center for finance, and the rise of New York as a truly international capital market was somewhat slow and reluctant. This was certainly the case for the Argentines when trying to raise capital abroad after the onset of the war,

value in terms of the United States dollar. Another positive economic cycle was abruptly interrupted with the fall in international prices for Argentina's exportable goods. In just one year, wholesale prices fell 20.6 per cent; the exchange rate for the dollar fell 13 per cent. Under the prevailing system of inconvertibility, the monetary base remained fixed in nominal terms, but bank credit contracted by 6.6 per cent, generating a reduction in the level of activity that, while rising 7.3 per cent in 1920, was to increase only 2.5 per cent in 1921. At the same time, the real rate of ex-post interest rose to 35 per cent annually.

The recession, however, lasted little more than a year. In 1922 the world economy took off again, with the United States posting a 7.2 per cent increase in its GDP, leading the new cycle of growth. Argentina registered an 8 per cent growth in economic activity. With the help of Tables 2 and 3 we can follow the most important indicators of the period 1918-1927, summarized as follows: (a) an annual expansion in the level of activity which averaged 5.7 per cent annually; (b) deflationary pressures signified an average fall in wholesale prices of 5.7 per cent annually; (c) an important process of financial deepening was maintained during the period: the secondary expansion of money was more than double that of the expansion of the monetary base.

With the world economy in full expansion, the Government decided to return to the Gold Standard in August 1927, with the nominal parity set by the Law of 1899. In order to achieve this objective, it was not necessary this time to implement a contractive monetary policy, since the market exchange rate was already fluctuating between the levels of the legal parity.<sup>46</sup> This new attempt at convertibility was maintained for two years, and once again we should stress the significance of the acceleration in the process of financial deepening as measured by the following indicators: (a) the overall money supply represented 3.5 times the monetary base, which was an historic record; (b) the procyclical increase in the monetary multiplier (and in credit) was clearly fed by a fall in bank reserves, which went from a level of 17 per cent in relation to deposits in 1926 to 10 per cent in 1929 in a context of expansion in the demand for money. This optimistic conduct by the banking sector was, perhaps, based on the important boom that was being enjoyed in certain domestic markets. Domestic salaries, for example, rose in nominal terms by 15 per cent during 1927-1929, demonstrating greater participation by the service and building sectors which took an increasing importance in the structure of the Argentine domestic product.

The fortune of the Argentine Gold Standard was clearly tied, this time around, to the movements of New York's financial and monetary markets. The beginning of the end of Argentina's convertible monetary system came about in June 1928. That month the rediscount rate set by the Federal Reserve Bank of New York reached 5 per cent, the highest rate since 1921. Even though there is not a consensus in the academic community as to the most important causes of the Great Depression, the majority of the analysts of the period agree that the determining factor for precipitating the crisis of 1929 was the abrupt change in monetary policy in the United States. Many coincide in emphasizing that the Federal Reserve was too worried about the stock market boom in the United States, instead of concentrating on the leading indicators in the economy, which did not show inflationary pressures building up at the beginning of 1928. Then the

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and adjusting to the shift from an established link with experienced lenders in London to forging new borrowing relationships with the banker in New York. See p. 6.

46 The decision to return to the Gold Standard in 1927 was characterized by contemporary analysts "as 'long overdue' (by the Times of Argentine), 'premature' (by Prebisch), and 'mistaken' (by Finance Minister Molina)". The quote is from Salera (1941).

rediscount rate was raised to 6 per cent by the Federal Reserve Bank of New York in August 1929, accentuating the process of monetary illiquidity in an attempt to halt stock market speculation.

This change, in what today would be called the international interest rate, had a profound monetary impact on Argentina, as can be seen in Graph 13, where the sources of expansion in the monetary base of the Caja de Conversión are shown. Argentina had already begun to suffer a deterioration in its external accounts by the mid-1928. This deterioration was accentuated during the second half of 1929 with a drop of 11.3 per cent in a year in the monetary base. The Caja absorbed the fall in the quantity of money, respecting the automatic rules of the game set by the gold standard, that is to say, losing specie. The automatic mechanism was interrupted on December 16, 1929, when President Yrigoyen decided to close the exchange office.<sup>47</sup> The shock of 1929 was a profound one: a contraction of 14 per cent in money in terms of specie occurred. The level of bank reserves fell to an historic low of 10 per cent, and in less than a year the deficit rose from 36 per cent to 60 per cent in terms of genuine fiscal revenues.

Following these difficulties, the democratic process in Argentina was interrupted on September 6, 1930, when the de facto government of General Uriburu took over the government. During the first months of the de facto government, the depreciation of the peso slowed, in reaction to a policy declared by the authorities which explicitly assured that service on the foreign debt would be paid punctually. As can be seen in Table 6, the year 1930 brought an end to clearcut deflationary pressures in terms of prices and the level of activity. Real rates of interest, in turn, had become positive. The 1931 year, however, was without doubt a peculiar one: the year started with the combination of an extremely orthodox domestic fiscal policy and an unequivocal convergence toward a fiduciary monetary system, when it was decided to use half of the reserves in specie to resolve balance of payments problems. By April of that year the contraction in cash, if it were still backed by specie, would have been so great that the government found itself forced to return to the old law of 1914 authorizing rediscounts, with the objective of tempering the fall in the monetary base and providing the banks with liquidity. This law, which had never been used before, permitted the Caja de Conversión to issue bills in exchange for short-term commercial paper. It is important to note here that until that moment, the government had attempted to counteract--through the Banco de la Nación Argentina--the increase in international interest rates and solve the problem in the foreign exchange market by an increase in the rediscount rate. Graph 14 shows that, for the second half of 1931, Argentina, after Chile, made the second largest adjustment in its rediscount rate in an attempt to halt depreciation in the parallel exchange market, since as of 1931, rigid exchange controls existed in Argentina. In spite of that, the market exchange rate fell by 26 per cent and the level of activity slipped 8 per cent. In 1932, the Caja de Conversión was authorized to issue new bills against redeemed public debt issues. This mechanism permitted monetizing a part of the Treasury's short-term debt.

As mentioned above, the de facto government had emphatically announced that one of its priorities was to balance the budget. During 1931 the government took firm action to reduce expenditures and implement measures to increase fiscal revenues (one of the measures taken was an increase of 10 percent on import duties).

When President Agustin P. Justo (1932-1938) and his team came into power in February 1932, the outgoing government had already obtained approval for its budget for the current fiscal year. That budget went much further than usual in its goal of achieving fiscal balance. The strategy consisted in general

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47 See Salera (1941).

reductions in government expenditures and, at the same time, the introduction of diverse new taxes, such as a tax on transactions, the first tax on gross income, and special indirect taxes on gas and tire consumption.<sup>48</sup>

These policies obviously tended to reduce the automatic effects to stabilize the deficits brought on by the recession. Taking these results into account, the countercyclical policies carried out by the government and the severity of the international crisis (in the United States, for example, the gross product fell by 35 per cent between 1929 and 1933, and the unemployment rate reached a maximum of 25 per cent of the work force), it is surprising to observe that in terms of productivity and employment, Argentina was not one of the countries that suffered most during the Great Depression. The magnitude of the external shock and the policies implemented to resolve that situation, nevertheless, produced an accumulated decline of 13.8 per cent in the constant GDP (see Graph 10).

Graph 15.1 shows that Argentina demonstrated an important degree of flexibility, when studying the fall in nominal prices and wages. A preliminary look at consumer prices between 1928 and 1932 shows a fall of 22.9 per cent. The decline registered in this index was even greater than the fall shown in the wholesale price index, which reached 11 per cent. If one considers the quotient of those prices as an adequate "proxy" for the relative domestic prices for tradable goods with respect to those of non-tradable goods, a strong relative deterioration can be seen on the part of the latter. This suggests that the deterioration in the terms of trade produced an important income effect, in addition to the substitution effect that contributed to generate a considerable proportion of the excess of supply in the non-tradable markets. The high degree of flexibility in the reduction of nominal salaries, which fell by 20 per cent in a period of three years, nevertheless, permitted the labor market to return to a point of equilibrium without any significant increase in the level of unemployment. Although we do not have unemployment statistics for these years, Graph 15.2 illustrates the evolution of the number of individuals with jobs, which shows only a slight decline between 1928 and 1932, followed by a recuperation. By 1933 a recovery of 5 per cent in the gross product, in real terms, can be seen, after three consecutive years of recession. From this data we can infer that the unemployment rate did not grow during the peak of the international crisis (once again in comparison with other countries).

Returning to Table 6, an important factor which influenced the evolution of the level of activity in a negative way was the sustained ex-post real interest rates. The combination of gradually diminishing nominal interest rates together with the rapid decline in the prices of goods and services in the economy combined to generate short term real rates of interest which climbed to over 10 per cent in 1931 and in 1933. As of 1930 one can detect a sizable fall in the money supply, and it is interesting to note that in 1932 the rediscount mechanism, used as a source to create the monetary base, represented 28.4 per cent of the currency in circulation.

It is also important to note in order to be able to measure the deterioration in the real sector of the economy, that the United Kingdom announced its decision to abandon the Gold Standard in September 1931. The decline in the value of the pound was so unexpected in Argentina that, as was commented later, exchange controls had to be improvised. In October 1931 the authorities established a system of "temporary" exchange controls and began to ration the country's reserves.

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48 See Ministry of Finance (1933).

Even with the Justo administration's plan for budgetary adjustments, which the Congress had approved, 1932 proved to be a harsh year in spite of improvements on the fiscal front. The fiscal adjustment of 1931 was "financed" by delaying payments to public employees and suppliers. Under the growing pressure of the State's creditors, the government decided to send a project to Congress proposing a new public debt issue, the *Imprestito Patriotico* (Patriotic Loan). This bond issue would enable the government to pay its debts to employees and suppliers. The proposed law, however, went even further, authorizing the Caja de Conversión to issue bills in exchange for these bonds. One of the determining factors in the design of this particular piece of legislation was the personal opposition of Finance Minister Hueyo to the other available alternative: suspending service on the foreign debt.<sup>49</sup> The government finally placed 150 million pesos in the hands of the public and changed 350 million pesos worth of bonds at the Caja de Conversión for cash.<sup>50</sup> The government, having permitted an important reduction in the monetary base for a second time, allowed an emission of fiduciary money. As we can see in Table 6 and in Graph 13, the implementation of the Patriotic Loan meant an important increment in the monetary base, as much as 7.3 per cent, producing a fall in reserves of specie.<sup>51</sup>

As a result of the approval of these initiatives, the nominal monetary supply stopped falling in 1932. It remained stable until the creation of the Banco Central (in nominal terms). It is important to note that the motivation to pass both of these laws did not originate in a premeditated policy to put a deliberately expansive monetary policy into practice.<sup>52</sup> The proof of this was that Minister Hueyo decided to delay temporarily sending Congress the proposal for the creation of the Central Bank. Hueyo acted in this way because of the implications involved in creating a Central Bank, but especially because he was against the idea of revaluing gold, a measure that he considered to be strongly inflationary. So, the authorization to place government bonds at the Caja de Conversión was not just an isolated action. The government declared that balancing the budget was one of its priorities. In order to achieve this, the government approved tax increases, new taxes and across-the-board reductions in expenditures, including a substantial reduction in the nominal salaries of the employees in the Public Administration.

This focus, however, did not last long. In August 1933 Antonio de Tomaso, the influential Minister of Agriculture and leader of a faction of the highly respected Socialist Party, died. Another member of the party, Federico Pinedo, had been named the new Minister of Finance, after Hueyo had resigned. Pinedo had been, together with Prebisch, one of the initial forces in favor of creating the Banco Central. As minister he surrounded himself with a group of talented technocrats and, at the same time, was able to get critical

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49 The decision to comply with the government's external debt service was rejected at the National Convention of the official party, the National Democratic Party. See Hueyo (1937) for an analysis of the proposal and its political repercussions.

50 The law was vigorously opposed by the Socialist Party in Congress. The Socialists, whose policy was based on a well established tradition of *laissez faire*, objected to the bill, arguing that it would harm employees, pensioners and creditors in general.

51 The immediate result of the new laws and the continued outflow of gold was to lower the backing of the base from 83.1 per cent in 1928 to 43 per cent in 1932.

52 In the words of Prebisch (1944): "...when the rediscount mechanism was used in 1931, the government was not trying to follow an expansive credit policy, nor was it trying to give consumers greater purchasing power. Its motive was to reconstitute the bank reserves in order to avoid greater problems". When the government passed the Patriotic Loan, the objective was not to improve once again the position of the banks, but to permit the government to pay the arrears owed to creditors.

support in the cabinet. At this time, Luis Duhau, a prominent conservative leader and a convinced supporter of the Banco Central, was named to replace de Tomaso as Minister of Agriculture.

Pinedo and his group, among them the young and energetic Raul Prebisch, began almost immediately to prepare a drastic change of policy. The Plan they proposed included: (1) devaluating the official exchange rate and authorizing a progressive liberalization of transactions in foreign exchange (an end of exchange controls); (2) the progressive liberalization of monies blocked abroad; and (3) the refinancing of the government's domestic debt.

In November of the same year, the economic authorities implemented the devaluation of the official exchange rate, together with a system of multiple exchange rates.<sup>53</sup> Three different rates were established, two official ones and one free rate. The foreign exchange produced from "traditional" exports (which represented nearly 90 per cent of total exports) had to be sold to the government at the buyers' rate on the official market. The government used foreign exchange to service the foreign debt and to cover those imports authorized by a new system of import permits previously purchased through a public tender for exchange. All export transactions designated as "non-traditional" and exports to neighboring countries provided the exchange needed for other capital outflows, transport costs, licensing fees, imports without prior permits, etc. in a free market with a free rate.

It is important to remember that the government had authorized a flotation of exchange rates since the imposition of exchange controls in 1931. This mechanism remained in effect only until the end of the following month. The official rate of exchange functioned in terms of dollars, until the dollar fell in March 1933. Then the French franc was chosen to be the foreign currency of reference.<sup>54</sup> The new system implied an appreciation of the peso in relation to the dollar, given that the value of the peso was tied to a third currency which had a parity fixed in gold. In 1934 there was a return to a more flexible system when the administration signed several important Bilateral Payment Agreements, with the object of liberating exchange balances that were "blocked" abroad.<sup>55</sup>

The most important step toward liberating the blocked balances was taken in October 1933 with the signing of a commercial agreement with the United Kingdom. Several months later new agreements were signed with the United States and other countries holding frozen Argentine funds. The sharp nominal and real devaluation brought with it an improvement in the balance of payments.

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53 See Raúl Prebisch (1945) for an analysis of the Argentine experience with different exchange systems during the Thirties.

54 See Salera (1941)

55 In the mid-Thirties the world was divided in five principal monetary groups: (1) the dollar area, which was composed of a large number of countries that had their currency tied to the dollar, among them various nations in South and Central America; (2) the pound sterling area, which included the countries of the British Empire and those of Northern Europe; (3) the area of exchange controls, with Germany as its central power and including various countries of the South Eastern and Central Europe; (4) the gold area of Western Europe; and (5) the area of the yen: the Japanese Empire and the Far East. Countries like Argentina, who were creditors of the United Kingdom and debtors to the United States, did not fit easily into any of the above-mentioned groups (Fiechengreen (1992)).

The new economic team, led by Pinedo, also proposed creating a group of regulatory agencies, the *Juntas Reguladoras* (Regulatory Agencies), for products such as grain, meat, wine and milk. The objective of the Regulatory Agency for Grain, the Regulatory Agency for Meats, the Regulatory Agency for Wineries, and the Regulatory Agency for the Milk Industry was to enable the government to intervene directly in the markets of each of these products. Some, like the Grain Agency, were to be financed with government funding, in this case, the money coming from the sale of foreign exchange.

At the macroeconomic level, the government sought to reactivate the level of economic activity. One of its major efforts was to launch a large scale program of public investment. President Justo, an engineer, proved to be an enthusiastic promotor of projects which included significant emphasis on road building.

In spite of the fact that external indexes fell even more in 1933, that year marked the beginning of a period of recuperation for the Argentine economy. In 1933, the real GDP rose 4.6 per cent and 7.6 per cent in 1934. Even though the wholesale price index fell that year, reflecting the drop in the price of tradable goods, it recuperated in 1934, rising 13.1 per cent. Nominal salaries ended their prolonged decline, and sectors such as services, construction and industry began to post improvements. Sustained growth on the part of the country's economic indicators prepared the ground led to pass new financial and monetary legislation.

## SECTION VI THE CREATION OF THE CENTRAL BANK

In the previous section it was noted that Argentina was one of the first countries to abandon the Gold Standard in 1929 and started a policy of sterilization of capital outflows. By mid-1932, the Executive Branch had contacted the Bank of England to invite a mission of consultants to advise the Argentine government as to how to establish a Central Bank. The Bank of England named one of its most distinguished directors, Sir Otto Niemeyer, to lead the group. The mission arrived in Argentina in January 1933 and, after three months, issued a report recommending the creation of the bank.<sup>56</sup> Minister Pinedo and other members of his team, as mentioned previously, had been unsuccessful when proposing the possibility of forming a Central Bank. An improvement in the current economic situation opened the way to gaining approval for the idea in Congress.<sup>57</sup> While it was sustained publicly that Argentina's authorities respected the suggestions Niemeyer had offered, there is no doubt that the economic team's final proposal was much

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56 Niemeyer, director of the Bank of England and of the International Adjustments Bank in Basel, was at that time the president of the Finance Commission of the League of Nations. The other members of the mission were Clay, who was a professor at Oxford and Manchester Universities, and other well known experts in the areas of budgets, money and banking, such as Powell, Watson and Young. Niemeyer had previously been an advisor on financial affairs to a number of European countries, Brazil, New Zealand and Australia. For further information on the role played by the Niemeyer Mission in Argentina, see Hueyo (1933).

57 Ortiz (1993) presents a description of how favorable economic and political conditions had been an important factor during the Twenties in contributing to the success achieved by the missions of foreign advisors in producing important institutional changes in Argentina. The missions of foreign advisors could, in the context of the comfortable economic climate of the decade prior to the Great Depression, "arbitrate" between the different proposals for monetary reforms sponsored by local economists and administrators, helping the governments to escape the "impasse" and finally carry out the reforms.



closer to the project designed by the Uriburu Commission which looked more carefully to the structure of the Federal Reserve System in the USA.

The new legislation introduced the controversial measure of revaluating gold, aimed at generating liquidity in order to rescue the ailing banks in the financial system and give the Central Bank the capacity to carry out operations in the open market. In 1935, the project of establishing a Central Bank became Law together with a package of financial and monetary reform laws. The reforms were composed of five interlinked measures:<sup>58</sup> (1) the creation of the Central Bank; (2) the approval of a banking law which granted the Banco Central the control and the supervision of all activities in the banking sector; (3) the foundation of a new institution, the Instituto Movilizador de Inversiones Bancarias, with the objective of rescuing financial institutions that were insolvent; (4) the reorganization of the Banco de la Nación and the Banco Hipotecario Nacional (The National Mortgage Bank); and (5) the reorganization of money in circulation.

As we noted previously, this move signified a profound change in the prevailing system. The Banco Central that opened its doors on May 31, 1935 was designed as a stock corporation, and the government was allowed to subscribe to a third of the shares. The bank was granted, by the group of laws recently approved, the functions that in the past had been carried out by a number of other institutions: the Caja de Conversión, the Foreign Exchange Control Commission, the Junta de Amortización (the Amortization Board)<sup>59</sup> and the state bank, Banco de la Nación. The Banco Central was given exclusive responsibility to manage the reserves and the circulation of the country's currency, its bills and coins. The new laws required the Caja de Conversión to close and to transfer the note issuing function to the Banco Central. All of the assets and liabilities of the Caja de Conversión were transferred to the Banco Central, as did the functions of the Foreign Exchange Control Commission. Currency notes and coins in circulation were replaced by new bills and coins. The law required a minimum backing in gold reserves and foreign exchange equal to 25 per cent of the bills, coins and other sight obligations in circulation. The law provided for the convertibility of domestic money into gold, but it also included a suspension of that measure, and finally convertibility was never put into effect.<sup>60</sup>

The bank was also permitted to operate in the open market and in the rediscount market. Its rediscounting activities were limited to operating with short term commercial paper. The bank was limited in making loans guaranteed by public bonds; it could loan no more than the sum of its reserves and its capital. Loans to the government itself were permitted, but could not exceed the sum of 10 per cent of the bank's average income of the preceding three years.

In addition to the changes enacted in the Central Bank Law, the Monetary and Banking Reform Law contained a number of important regulations. A Superintendency of Banks was created to supervise the financial system. This function was under the authority of the Central Bank, and eventually became a department of the bank.

The Banking Law established, for the first time in history, an official policy of banking reserves requirements: banking institutions would maintain minimum legal requirements equal to 16 per cent of sight

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58 See Diz (1970).

59 This state commission was in charge of managing the public debt.

60 Orthodox central banks created by Kemmerer establish a minimum reserve balance of 50 per cent in gold. See Ortiz (1993).

deposits and 8 per cent of deposits in savings accounts and long-term deposits. At the same time, the Instituto Movilizador Bancario became in fact the "bailing-out institution" of insolvent banks. The capital and reserves of this new institution would come from the "earnings" produced by the revaluation of the country's gold reserves.

The laws that reorganized two of the state banks, the Banco de la Nación and the Banco Hipotecario Nacional, were aimed at restricting the kinds of operations that these two banks could carry out. The Banco de la Nación, which held a sizable portfolio of insolvent debtors, also due to the fact that it concentrated in the past the rediscount window facility, was prohibited from lending the government more than 15 per cent (instead of 25 per cent) of the sum of its capital and reserves.

The most controversial measure of the reforms, the revaluation of gold, endowed the government with 701 million pesos, the equivalent of 57.7 per cent of the total quantity of money outstanding in May 1935. That "endowment" was distributed in the following way: (1) to subscribe shares in the Central Bank: 10 million; (2) to amortize Treasury Bonds: 152 million; (3) to purchase government debt in the portfolio of the Banco de la Nación; and (4) to provide capital (10 million) and reserves (380 million) for the bail-out of banks. Of these reserves, 216 million were to be used to guarantee the rediscounted commercial paper that the Caja de Conversión transferred to the bank.

The revaluation, however, had been conceived with another important objective, to permit the government to carry out operations in the open market, giving the bank the opportunity to implement a countercyclical policy. This mechanism had not been suggested by the Niemeyer Mission<sup>61</sup> and was strongly criticized in Congress by the opposition, especially by members of the Socialist Party. Spokesmen of this party, who had been the most dedicated defenders of monetary stability, quickly turned into the most staunch opponents to the project to revalue the gold reserves. Debate in Congress became extremely intense, as can be seen in the following commentary:

"The Central Bank projected by the Executive Branch and approved in committee, aspires to achieve two principal functions: issue money and regulate credit. The stabilization and the convertibility of the money are two questions that have been left aside, and are reserved for a law that will be prepared in the future. For these first two functions, note issue and regulating credit, the country does not need a Central Bank. We have the Caja de Conversión to issue currency; and we have the rediscount mechanism to regulate credit...Without a balanced budget, according to the expert opinion of Niemeyer, the Banco Central will not be able to take command of the situation...We are going to have a Central Bank with enormous influence over the government. It is going keep after the government, wiping up the deficit in its budgets with the money it gets from the banks, and this situation will last for a long time, taking us further and further from the possibility of regularizing our monetary situation, as the general will of the country requires, and as public opinion demands..."<sup>62</sup>

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61 This mechanism was already included in the report prepared by the Uriburu Commission and was defended by Prebisch in 1935.

62 This quote is taken from the Diario de Sesiones del Congreso (1935). These are the words of Nicolás Repetto, spoken during the parliamentary debates over the Central Bank Law, during the sessions of Congress of February 28 and March 10, 1935.

For Pinedo, Prebisch and other members of the economic team, the approval of the Central Bank Law was one of the steps necessary for embarking on a complete reorganization of the banking and monetary systems. The new laws were aimed at assisting the traumatized financial system, and creating a Central Bank that could supervise and control the country's financial institutions.<sup>63</sup>

As to monetary policy, the project for central banking that Congress approved incorporated the idea of monetary contraction in the ascendent phase of the economic cycle and an injection of circulation during recessions. On this point, Prebisch is eloquent: "...should the Central Bank contribute to adjust domestic economic activity to achieve a perfect equilibrium in the balance of payments or should it give priority to internal economic activities and look for other mechanisms to influence the balance of payments...?"<sup>64</sup>

The Niemeyer proposal, of course, did not contemplate either of these arguments, since the report was limited to what could be considered orthodox banking practices at that time. The reason that the Niemeyer proposal had been invoked as one of the fundamental sources for the law prepared by the Ministry of Finance was clarified concisely by Pinedo himself, in the following terms: "We knew that, at this particular point in time, because of the peculiarities of the collective spirit, in order to facilitate the approval of the government's initiative...we should present it as a suggestion made by a foreign advisor."<sup>65</sup>

The principal differences between the Niemeyer proposal and the final draft of the law sent to Congress were analyzed by Prebisch (1944) and are the following: (1) The draft for the Law provided for creating a Banking Superintendency with ample powers to supervise and control the financial institutions that depended on the Banco Central, while Niemeyer did not envision such an organization; (2) the Banco Central had the faculty of operating in the open market on a large scale, for countercyclical purposes, another measure not suggested by Niemeyer;<sup>66</sup> (3) the new project was more liberal with respect to rediscount policy; (4) the Niemeyer project made no reference to Foreign Exchange rate Control; and (5) the

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63 According to Diaz Alejandro (1983): "In contrast with the United States, there were no reports of widespread bank failures in South American countries during the early 1930s. Also in contrast with the United States, monetary aggregates fail to reveal a flight into currency and away from bank deposits...In active Latin American countries monetary authorities simply did not let many banks fail, casting fears of moral hazard to the wind." While the comment on the absence of massive bank failures in Latin America is a correct one, it is not entirely right to affirm that the Argentine economic authorities ignored the problems of incentives created by salvaging banks. The ample powers of supervision and control with which the Superintendencia de Bancos de Argentina was endowed emerges as an important point, contrary to the affirmation of Diaz Alejandro. For a description of the vision of the authorities on the topic, see Prebisch (1944).

64 Extracts from conversations in the Banco de Mexico S.A., p. 49. Similar to the ideas of Julio Olivera (1985).

65 For an interpretation of the role played by these foreign advisors who proliferated in Latin America during these years, see Hirschman (1963), Drake (1989), Eichengreen (1989) and Ortiz (1993).

66 Argentina had been one of the last countries to establish a Central Bank. Given the fact that the bank was created several years after the Great Depression, its design was, as we have mentioned before, based on the objective of establishing stability in the domestic economy. For that reason the Central Bank of Argentina became the first bank in the region to be authorized to carry out large scale open market operations. See Ortiz (1993).

new Central Bank Law did not provide for punitive action if the gold reserves fell below 33 per cent of the monetary base, a proposal included in the Niemeyer project.

Besides the differences indicated by Prebisch, the Law contained several other important points of divergence. The Law authorized the government to own shares in the Bank and granted it ample powers, such as naming directors and even the president of the Bank.<sup>67</sup>

Before concluding this preliminary paper, we will make a succinct examination of the monetary policies carried out by the Bank during the period 1935-1943, which coincided with the term of Raul Prebisch as the General Manager of the Bank.<sup>68</sup>

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67 Documented in the Diarios del Congreso (1935), the difference in views regarding the proposal of the Minister of Finance and the Niemeyer Commission were clearly seen and denounced by the opposition in Congress. In addition to the intervention of Nicolás Repetto, a heated debate took place between Senator De la Torre (leader of the Demócrata Progresista Party) and Minister Pinedo. The Demócratas-Progresistas and the Socialistas joined in voicing their lack of confidence in the projects for Monetary Reform.

68 Pazos (1988) offers an interesting interpretation, but one that differs with the role played by Raúl Prebisch as a central banker

## VI.1 Sterilization Policies and the International Economic Scenario

When the Central Bank opened its doors in May 1935, the directors found that the Banco de la Nación was in a very difficult situation. In an attempt to act as the financial system's lender of last resort, the bank had absorbed a large portfolio of non-performing assets from the private banks.

Once the new legislation had been approved, the Instituto Movilizador absorbed the equivalent of 315 million pesos of Banco de la Nación's non-performing assets in exchange for 178 million pesos in cash. The bailing-out institution also acquired the frozen assets of other banks with liquidity problems. It took over, in addition, the deposits and liquid assets of four private banking institutions that were in difficulties, merging them into the Banco Español del Río de la Plata in December 1935.

These measures, together with an important redemption of government bonds, improved the degree of liquidity in the banking system considerably.

In reality, the initial constitution of the Banco Central involved the finely-tuned engineering of a variety of financial mechanisms that affected a number of institutions. In the first place, it implied to transfer the Caja's assets and liabilities as of May 31 to the Banco Central. At that moment, the portfolio of public debt and rediscounts represented 30 per cent of the monetary base. Coinciding with the closing of the Caja de Conversión, the monetary authorities made another important move, in accounting terms, to increase the value of the monetary base. This step consisted in revaluing the Caja's specie, which was equivalent to 561 million pesos on accounting terms, to 1,224 million, producing an immediate paper profit of 663 million. The operation credited the profit to the government, a profit which in reality reflected the depreciation in the value of the peso since the country had abandoned the Gold Standard in 1929. By valuing the reserves at the market rate of exchange, which was significantly higher than that historically carried on the books, the government emerged with an implicit instrument of become lender of last resort of the financial system.

The revaluation represented a depreciation in the peso of 118.3 per cent in terms of the historic exchange rate. The idea of the revaluation of State-held gold reserves, in reality, had become a very popular policy in the turbulent 1930s in international economics. The mechanism was described by Diaz Alejandro (1983) in the following terms: "Unorthodoxy was sometimes cloaked by gestures to the old financial orthodoxy: Argentina claimed to have used "profits" from increases in the peso price of gold to create an institution which supported the commercial banks."

The revaluation of gold in Argentina served an additional purpose: it permitted the government to operate on the open market in a large scale in order to neutralize shocks originating abroad. The Bank's authorities used the rediscount mechanism and different government bond issues as active instruments in their monetary policy. As of 1933, Argentina's external indicators had improved sharply, pushing the economy to a new level of activity (see Table 6). Even so, during 1933 and 1934, the monetary base continued to contract by an accumulated 13 per cent, due to the application of the deflationary policies required to maintain solvency on the external front. As we mentioned before, the process of reorganizing the banking system brought with it a massive injection of funds into the economy. In 1935, for example, the impact of the revaluation of the gold reserves produced an increase of 41.5 per cent in the monetary base. The money supply, however, rose only 3.3 per cent. A good part of the increase in the base had a positive impact on bank reserves, which rose from 12.4 per cent in 1934 to 26.4 per cent in 1935. In 1936, an

additional positive push from abroad was felt. International reserves expanded 12 per cent, while, at the same time, the monetary base grew by only 1.7 per cent. The Banco Central began to apply a policy of sterilization, regulating liquidity in the monetary market. The mechanism it chose was to use public bonds instruments with the following characteristics: (a) Certificates of Participation in Consolidated Treasury Bonds; (b) Treasury Notes; and (c) Gold and Foreign Exchange Custody Certificates.

From May 1935 to May 1937 the Central Bank placed 861 million pesos in bond issues with banks. During this expansive period, the financial sector absorbed the bonds, due to the high degree of liquidity in the markets since the founding of the Banco Central and the Instituto Movilizador. In the middle of 1937, however, Argentina began to feel the effects of a worldwide recession. After several years of sustained recuperation, the world's industrial production began to decline in early 1937. The recession lasted until 1938 when the level of activity began to recover its positive rhythm.<sup>69</sup>

The external sector of the Argentine economy was affected negatively by the international situation: purchasing power of the country's exports fell 34.3 per cent. The Gross Product, however, held at almost the same level. On observing the through of the economic cycle, we can see, as of mid-1937, that the Banco Central had begun to operate in the open market in order to inject funds into the system. Annual statistics on the policy of absorption of funds show that, in spite of an accumulated fall of 15.2 per cent in international reserves between 1937 and the beginning of 1938, the monetary base fell only 4.8 per cent, which indicates a certain degree of countercyclical sterilization by the Central Bank. In a future study we will show that there was a strongly negative correlation between the domestic component of the monetary base and the international reserves component of the monetary base prior to World War Two, which indicates the success of the efforts to stabilize the monetary aggregates.

## VI.2 Some Concluding Remarks

In short, by 1938, the Banco Central of Argentina had all the characteristics of what we could call a modern central bank. One of the principal advocates in encouraging central banks to take action in establishing countercyclical policies was none other than the League of Nations. A well-known report issued by the League of Nations titled "International Currency Experience", states: "There is probably a wide measure of agreement...that the policy of neutralization--if countries feel that they can afford it--is an appropriate means of mitigating the effects of violent cyclical price fluctuations upon the domestic credit situation in the world market."

In this sense the League watched the founding of incipient central banks with optimism: "The establishment during the Thirties of central banks in such countries as Argentina, Canada, India, New Zealand and Venezuela, no doubt reflected a desire for national monetary management...The Argentine Central Bank Law of 1935 expressly stated that the bank's object was "to concentrate sufficient reserves to moderate the consequences of fluctuations in exports and investments of foreign capital, on currency, credit and commercial activity, in order to maintain the value of the currency". The policy of neutralization pursued by the Argentine in 1936-38...attained this object with a large measure of success."

The paragraph quoted above makes it clear that the League of Nations saw the founding, institutional structure and functioning of the Banco Central as a model to be emulated. More praise can be

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<sup>69</sup> Eichengreen (1992).

found in the League's publications, referring to the monetary policies which Argentina had chosen to implement: "But it is the Argentine which affords the most striking example of cyclical neutralization in both boom and recession during the three years 1936-38...The Argentine experience suggests that, to be effective, neutralization must start in the boom so as to provide a sufficient reserve for the slump."

During the early Forties, a new wave of financial advisors took the place of the previous clan of "money doctors". Diaz Alejandro writes: "Import substitution extended to economic policy: gone were Kemmerer, Niemeyer and Fisher, their places taken by Prebisch and Pani and partly by new "imports" such as Triffin and Wallich."

These new "money doctors" had substantial influence on the tendency toward a greater intervention in monetary affairs. The majority of these experts shared the personal conviction that carrying out countercyclical policies was both possible and desirable. Within this new school of thought, the Argentine experience with its policies of sterilization proved to be the model to follow. The notion that a central bank could direct open market operations (buying and selling bonds) in order to safeguard the economy from the erratic changes in international prices and the unpredictable fluctuations in the flow of capital was to become a generally accepted belief. It is in this sense that the Argentine Central Bank was recognized and praised as a pioneer. According to Triffin (1944), then an advisor to the Paraguayan government:<sup>70</sup> In the short period since 1935 the Central Bank of Argentina has developed into an outstanding institution among central banks not only in Latin America but in older countries as well. Credit for this achievement is largely due to the brilliant leadership of Raoul[sic] Prebisch, General Manager of the bank during most of the period, and to an extremely able staff of executives and research workers."

The validity of the influence exercised by the Bank in the transformation of the institutions that regulated monetary affairs was clearly demonstrated by Raoul Prebisch himself in his Conversaciones en el Banco de Mexico (Conversation at the Bank of Mexico) in 1944. Prebisch spoke of a growing certainty that monetary policy, complemented by exchange controls, were the instruments by which governments could manage to insulate the behavior of their domestic economies from the ups and downs of international markets. Furthermore, this doctrine began to be accompanied by the conviction that monetary policy, through the direct management of credit (by the method called "picking the winners", sheltering those sectors with dynamic advantages to enable them to become future engines of growth), was the desired policy to enhance economic growth.

In the Forties, a change could be seen which emphasized modifying minimum bank reserves in relation to deposits and exercising a direct control over credit as the principal instruments of monetary policy. It has already been mentioned that in the late Thirties a proliferation of policies based on direct intervention had been applied to monetary policy. A significant number of countries had adopted severe exchange controls, such as multiple exchange rates and periodical adjustments. In the same way, many kinds of restrictions on the flow of capital throughout the world had been applied, under the belief that such flows were erratic and unpredictable.

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70 Triffin was an advisor at the time of the founding of the Central Bank of Paraguay. He also advised Paraguay on the possibility of fixing the value of the country's currency to that of a basket of monies

The new central banks, however, steadily lost contact with reality. The end of the Second World War brought with it a new worldwide economy, based on a gradual process of integration and more liberal international credit markets. From 1941 on, Argentina will experience a drastic decline in its degree of money deepening together with a protracted relative economic decline. Topics such as financial repression, control of interest rates and credit, nationalization of the banking system and the recurrence of financial crises even in the presence of a central bank are topics for the next stage of this preliminary survey of the Argentine Monetary History.



**Table 1**  
**MACROECONOMIC PERFORMANCE**  
**Pre and Post Central Bank**  
(Mean and Standard Deviation)

	Pre - Central Bank		Post - Central Bank					
	1884-1934		1935-1972		1973-1994		1935-1994	
	Mean	Deviation	Mean	Deviation	Mean	Deviation	Mean	Deviation
<b>ANUAL % CHANGE</b>								
Money Supply	6.6	11.5	18.7	10.1	113.4	74.6	53.4	64.7
Monetary Base	5.7	9.9	21.2	16.7	114.5	75.9	54.3	65.7
Banking Money	7.1	19.5	19.3	14.7	112.6	102.3	52.9	77.6
Inflation	2.7	12.2	18.2	16.5	111.0	88.8	51.9	71.3
Exchange	2.8	12.0	14.5	18.9	104.0	92.4	47.6	72.1
Inflation Rate USA	0.7	6.1	3.4	3.1	5.4	2.4	4.1	3.1
Inflation Uk	1.1	6.7	4.4	2.7	8.7	5.3	5.9	4.4
Real Output	4.0	6.5	3.9	4.2	2.2	4.9	3.3	4.5
<b>AVERAGE LEVEL</b>								
Multiplier	2.3	0.7	2.1	0.4	2.0	0.8	2.0	0.6
Reserves/Deposits	0.3	0.1	0.3	0.1	0.4	0.2	0.3	0.2
Cash / Money	0.3	0.1	0.3	0.1	0.2	0.1	0.3	0.1
Velocity	2.5	0.5	3.1	1.1	5.7	2.5	4.0	2.2
Int. Reserves / Base	0.4	0.3	0.5	0.4	0.6	0.3	0.5	0.4
(i-i*)	3.8	1.6	2.0	2.8	280.6	650.8	104.1	416.3
(i-II/1+II)	5.5	9.1	-11.0	11.6	-15.1	25.6	-12.5	18.2
Deficit as % of Fiscal Reserves	30.6	24.9	40.5	20.3	43.9	39.3	41.8	28.8

SOURCE: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares Argentina 1884-1994, in preparation.

**Table 2**  
**KEY MACROECONOMIC VARIABLES (1884 -1934)**

PERIOD	84-89	89-91	91-99	99-13	12-14	14-18	18-27	27-29	28-34	84-34
Number of years	5	2	8	14	2	4	9	2	6	50
<b>(A) ACCUMULATED CHANGE</b>										
(1) Money Stock	111.4	-22.3	12.0	129.3	-15.4	69.6	33.3	8.6	-14.6	318.7
(2) Monetary Base	78.7	46.8	10.8	103.9	0.4	36.3	17.7	-10.0	-18.2	275.5
(3) Bank Created Money	131.4	-85.2	14.1	161.5	-30.4	97.1	41.6	16.3	-13.0	343.2
(4) Inflation	38.1	78.4	-45.0	36.3	1.3	50.1	-25.2	-2.1	-1.0	133.9
(5) Exchange Rate	58.8	73.1	-50.8	4.3	3.6	-8.2	5.0	1.2	51.6	135.9
(6) Inflation USA	-4.9	-2.9	-6.6	28.4	1.9	50.4	-5.6	0.6	-24.8	36.2
(7) Inflation UK	-2.5	1.4	-1.4	12.3	1.2	61.8	-6.3	-1.4	-10.5	54.3
(8) Real Output	42.5	-16.1	39.1	78.4	-9.9	6.0	50.0	10.5	1.9	196.9
<b>(B) % CHANGE</b>										
(1)' Money Stock	25.0	-10.6	1.5	9.7	-7.4	19.0	3.8	4.4	-2.4	6.6
(2)' Monetary Base	17.1	26.4	1.4	7.7	0.2	9.5	2.0	-4.9	-3.0	5.7
(3)' Bank Created Money	30.1	-34.7	1.8	12.2	-14.1	27.5	4.7	8.5	-2.2	7.1
(4)' Inflation	7.9	48.0	-5.5	2.6	0.7	13.4	-2.8	-1.0	-0.2	2.7
(5)' Exchange Rate	12.5	44.1	-6.2	0.3	1.8	-2.0	0.6	0.6	9.0	2.8
(6)' Inflation USA	-1.0	-1.5	-0.8	2.1	1.0	13.4	-0.6	0.3	-4.1	0.7
(7)' Inflation UK	-0.5	0.7	-0.2	0.9	0.6	16.7	-0.7	-0.7	-1.7	1.1
(8)' Real Output	8.9	-7.7	5.0	5.8	-4.8	1.5	5.7	5.4	0.3	4.0
<b>(C) AVERAGE LEVEL OF:</b>										
(15) Multiplier	2.46	2.32	1.46	1.89	2.06	2.10	2.84	3.39	3.43	2.30
(16) Reserves/Deposits	0.27	0.22	0.46	0.34	0.31	0.34	0.23	0.13	0.14	0.30
(17) Currency / Money	0.21	0.33	0.41	0.30	0.26	0.23	0.16	0.19	0.18	0.26
(18) Velocity	1.84	2.36	3.34	2.71	2.56	2.42	2.14	2.08	2.03	2.47
(19) Int. Reserves / Base	0.21	0.04	0.00	0.41	0.70	0.72	0.79	0.83	0.62	0.44
(20) (I-I*)	4.94	6.82	6.07	4.47	2.86	3.05	2.47	2.15	2.52	3.76
(21) (I-II/1+II)	1.69	-20.22	10.42	5.04	6.47	-3.05	9.30	8.18	6.76	5.52
(22) Deficit as % Fiscal Revenues	41.9	49.9	41.8	19.4	39.0	48.0	20.6	35.5	29.2	30.6

SOURCE: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Table 3**  
**THE MONEY SUPPLY PROCESS 1884-1934**

PERIOD	84-89	89-91	91-99	99-13	12-14	14-18	18-27	27-29	28-34	84-34
Number of years	(5)	(2)	(8)	(14)	(2)	(4)	(9)	(2)	(6)	(50)
(A) Money Stock Change (%)	111.4%	-22.3%	12.0%	129.3%	-15.4%	69.6%	33.3%	8.6%	-14.6%	318.7%
(B) Proximate Determinants of the change in the Money Stock:										
1. Monetary Base	78.7%	46.8%	10.8%	103.9%	0.4%	36.3%	17.7%	-10.0%	-18.2%	275.5%
2. Currency Ratio	10.1%	-86.3%	18.6%	8.3%	-8.4%	16.1%	-6.4%	2.4%	-0.3%	7.1%
3. Reserve Ratio	16.5%	-22.3%	-13.1%	12.4%	-9.3%	10.4%	21.6%	14.4%	3.9%	26.5%
4. Interaction of Ratios	6.1%	39.5%	-4.3%	4.7%	2.0%	6.9%	0.3%	1.8%	0.1%	9.6%
(C) Fraction of Change in Money Stock attributable to change in:										
5. Monetary Base	0.71	(2.10)	0.90	0.80	(0.03)	0.52	0.53	(1.17)	1.25	0.86
6. Currency Ratio	0.09	3.87	1.54	0.06	0.55	0.23	(0.19)	0.28	0.02	0.02
7. Reserve Ratio	0.15	1.00	(1.09)	0.10	0.61	0.15	0.65	1.69	(0.27)	0.08
8. Interaction of Ratios	0.05	(1.77)	(0.35)	0.04	(0.13)	0.10	0.01	0.21	(0.00)	0.03
(D) Fraction of Change in Money Stock consisting of a change in:										
9. Monetary Base	0.26	(0.95)	0.57	0.43	(0.01)	0.23	0.19	(0.35)	0.37	0.28
10. Bank Created Money	0.74	1.95	0.43	0.57	1.01	0.77	0.81	1.35	0.63	0.72
(E) Fraction of Change in Monetary Base consisting of change in:										
11. Domestic Assets	0.99	1.17	1.00	(0.15)	—	0.00	(0.20)	0.00	(1.64)	0.50
12. Monetary Specie	0.01	(0.17)	—	1.15	—	1.00	1.20	1.00	2.64	0.50

SOURCE: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Table 3.1**  
**MACROECONOMIC INDICATORS DURING THE BARING CRISIS**

	1884-1889*	1889	1890	1891	1892	1891-1896
Annual Rates of % Variations	Five years before	One year before			One year after	Five years after
Monetary Base (M0)	17.1	26.4	49.7	6.7	7.7	2.5
Money Supply (M3)	25.0	29.7	8.0	-25.9	-6.9	1.0
Deposits	26.9	32.1	-9.7	-47.2	-4.7	5.5
Prices	7.9	20.0	40.4	56.0	-20.3	-5.8
Real Output	8.9	17.2	-4.3	-11.0	8.8	6.1
Nominal Exchange Rate (1884=100)	139.8	180.0	258.0	374.0	329.0	337.5
Real Exchange Rate (1884=100)	106.6	117.0	117.2	107.8	114.3	113.4
Nominal Interest Rate (in %)	7.9	8.0	10.3	10.3	9.2	8.9
Real Interest Rate (in %)	-0.4	-11.9	-30.0	-45.7	29.5	3.6

Note: Annual Equivalent Rate of Variation in %. Real Interest Rate 1884-1889 is 1885-1889

Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884- 1994 in preparation

**Table 4**  
**MACROECONOMIC INDICATORS DURING**  
**THE FIRST WORLD WAR CRISIS**

Annual Rates of % Variations	1908-1913*	1913	1914	1915	1914-1919*
	Five years before	One year before		One year after	Five years after
Monetary Base (M0)	7.2	2.9	-2.4	23.0	7.9
Money Supply (M3)	8.5	-5.2	-9.6	16.1	16.7
Deposits	10.4	-6.9	-14.2	23.4	20.3
Prices	3.7	0.2	1.2	7.2	11.1
Real Output	4.6	1.0	-10.4	0.5	1.9
Nominal Exchange Rate (1884=100)	232.2	234.9	240.2	235.7	230.3
Real Exchange Rate (1884=100)	92.0	92.0	94.3	89.0	88.5
Nominal Interest Rate (in %)	5.4	5.4	7.9	7.6	7.2
Real Interest Rate (in %)	2.8	5.2	6.8	0.4	-2.5

Note: Annual Equivalent Rate of Variation in %

Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994 in preparation

## Table 5

### GOLD-STANDARD DURING THE INTERWAR PERIOD IN LATIN AMERICA

Countries	1919	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Argentina									x	x	x							
Bolivia										x	x	x	x					
Brazil									x	x	x	x	x					
Chile								x	x	x	x	x	x	x				
Colombia					x	x	x	x	x	x	x	x	x	x				
Costa Rica				x	x	x	x	x	x	x	x	x	x	x				
Cuba	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Ecuador									x	x	x	x	x	x	x			
El Salvador		x	x	x	x	x	x	x	x	x	x	x	x					
Guatemala					x	x	x	x	x	x	x	x	x	x	x			
Honduras <sup>1</sup>																		
Mexico							x	x	x	x	x	x	x					
Nicaragua	x	x	x	x	x	x	x	x	x	x	x	x	x					
Panamá	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
Perú														x	x			
Uruguay										x	x	x	x	x				
Venezuela									x	x	x	x						

Source: Barry Eichengreen (1992).

X=Years under Gold Standard

<sup>1</sup> Honduras was under a Silver Standard until 1931.

**Table 6**  
**MACROECONOMIC INDICATORS DURING THE GREAT DEPRESSION**

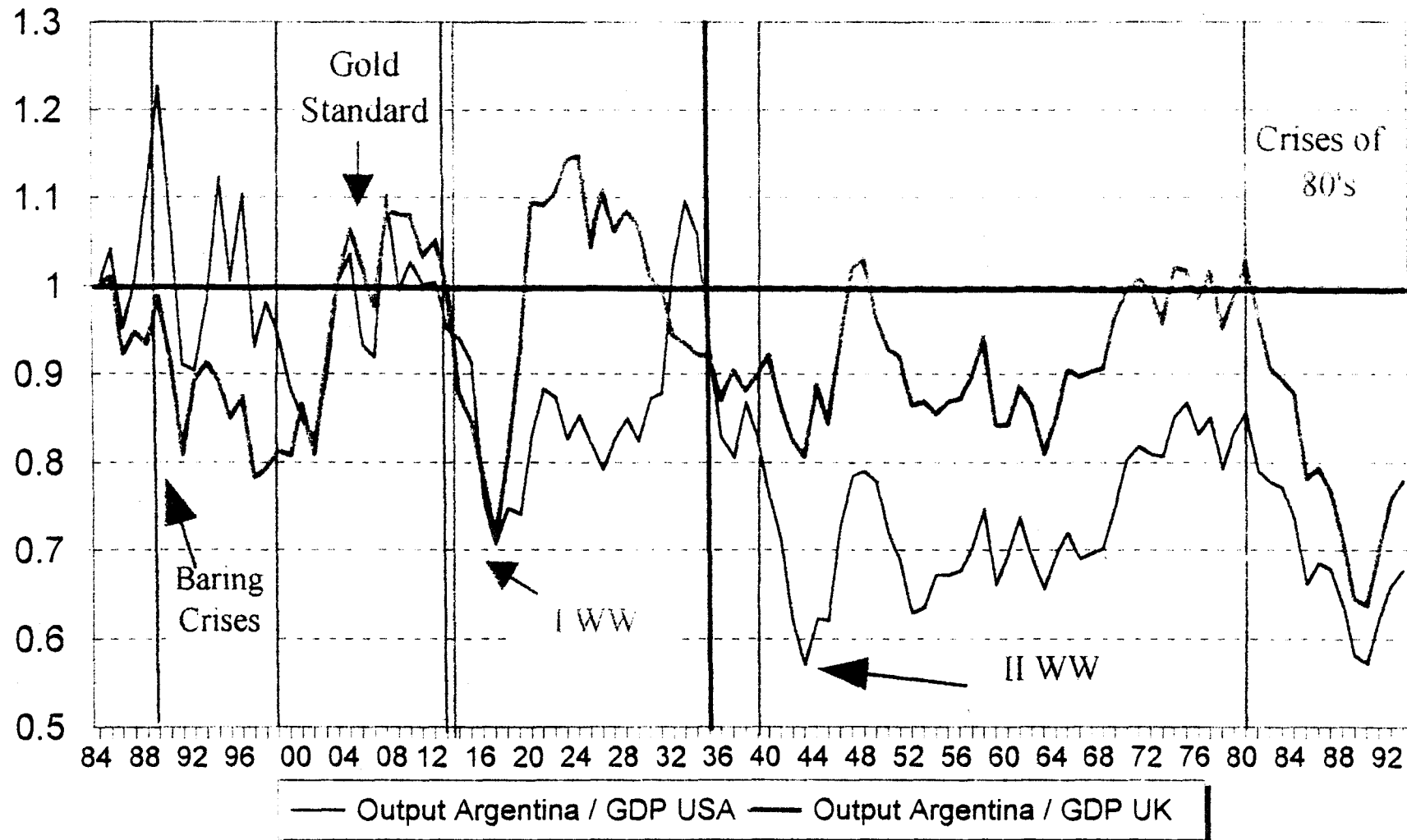
	1924-1929	1929*	1930	1931	1932	1933	1933-1937*
<b>Annual Rates of % Variations</b>							
Monetary Base (M0)	-1.1	-11.3	1.1	-1.2	7.5	-9.3	6.0
Money Supply (M3)	3.5	-1.4	0.2	-11.0	-0.8	-1.4	3.6
Deposits	3.4	-1.4	1.4	-11.2	0.3	-1.6	2.3
Prices	-2.6	-3.0	-4.2	-3.3	1.1	-4.4	4.7
Real Output	4.4	4.6	-4.1	-6.9	-3.3	4.7	5.0
Nominal Exchange Rate (1884=100)	246.0	235.5	269.7	340.4	382.8	318.5	358.1
Real Exchange Rate (1884=100)	114.1	115.8	132.8	151.7	149.3	128.2	135.3
Nominal Interest Rate (in %)	6.8	6.9	6.9	7.2	7.1	6.1	5.8
Real Interest Rate (in %)	7.6	9.9	11.0	10.5	6.0	10.5	0.6

Note: Annual Equivalent Rate of Variation in %

Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884- 1994, in preparation.

Figure 1

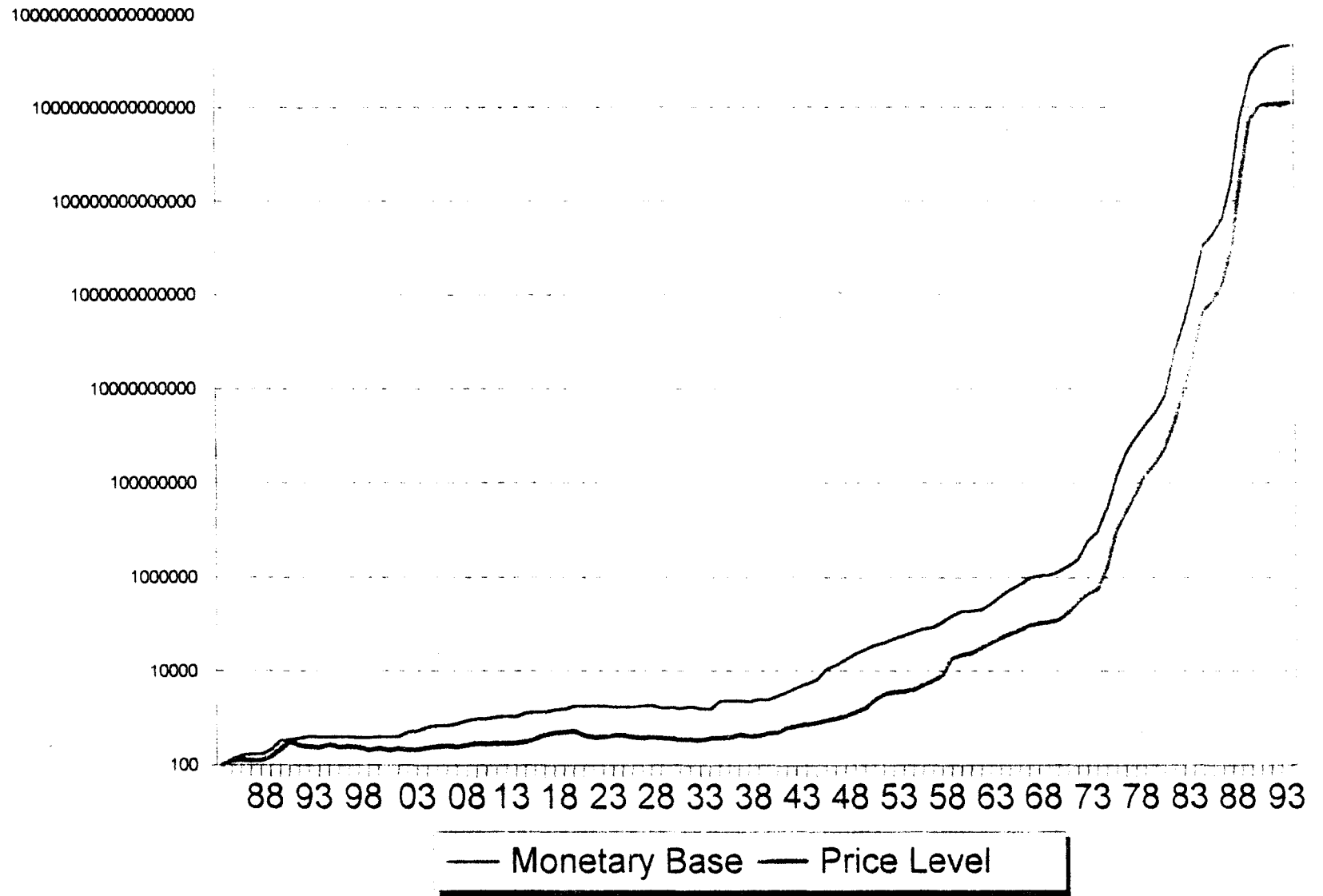
RELATIVE PERFORMANCE OF ARGENTINA (1884-1994)  
GDP per capita Output vis-a-vis USA,UK



Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.



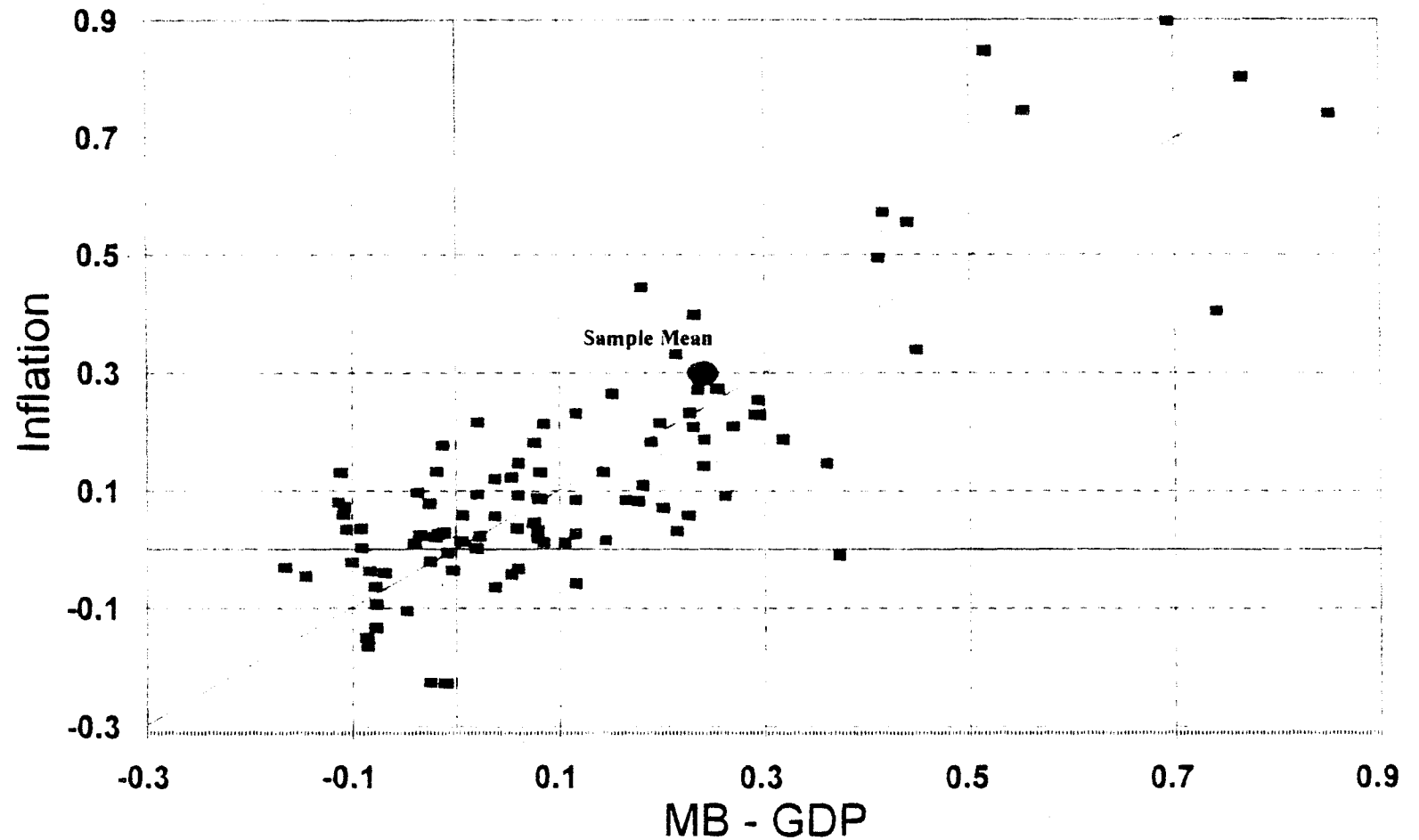
**Figure 2.1**  
**Monetary Base and Price Level**  
1884-1994. (Logarithmic Scale)



Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

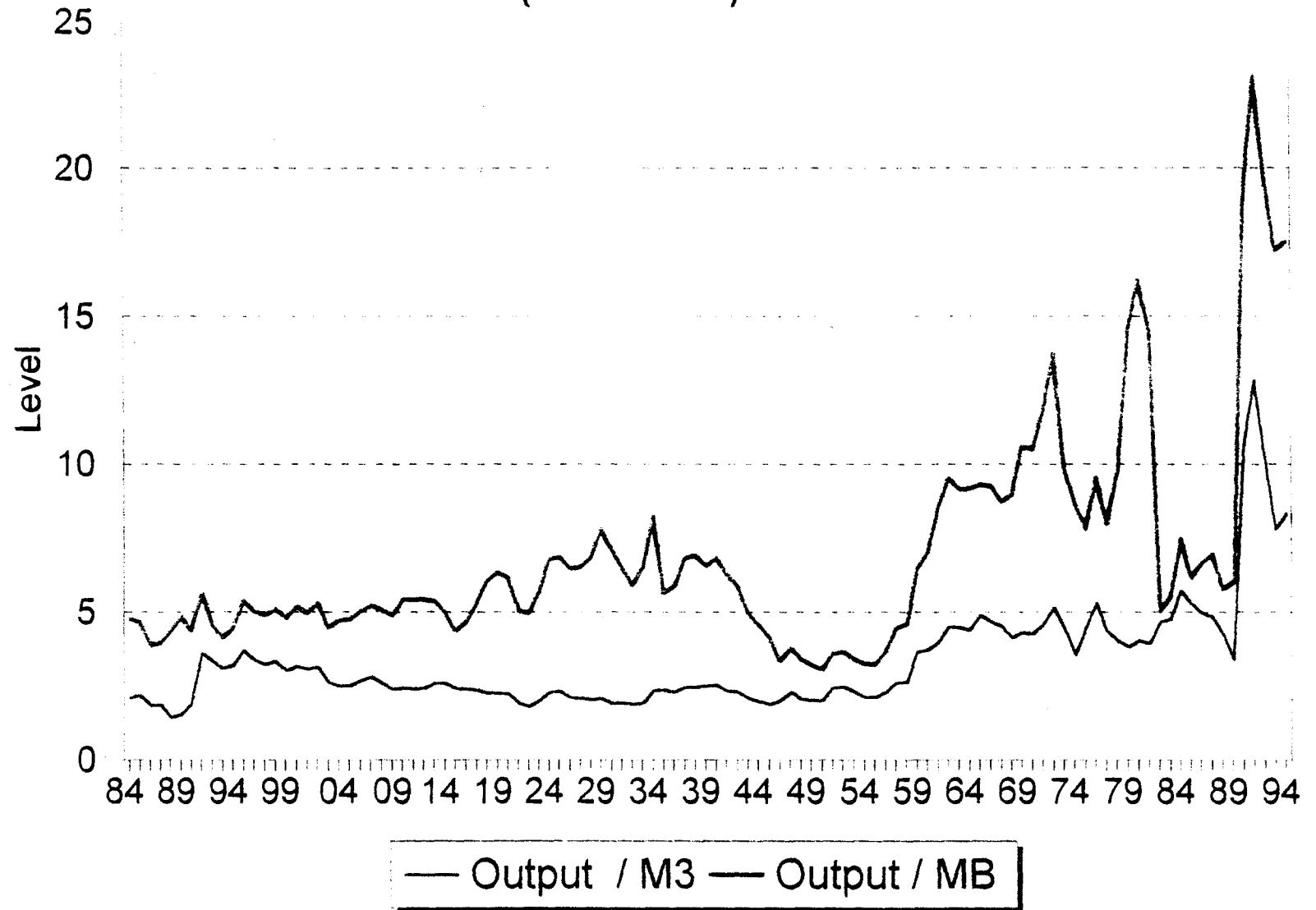
**Figure 2.2**  
**A Preliminary Illustration of The**  
**Quantity Theory of Money 1885-1994**

Inflation and Monetary Expansion Controlled

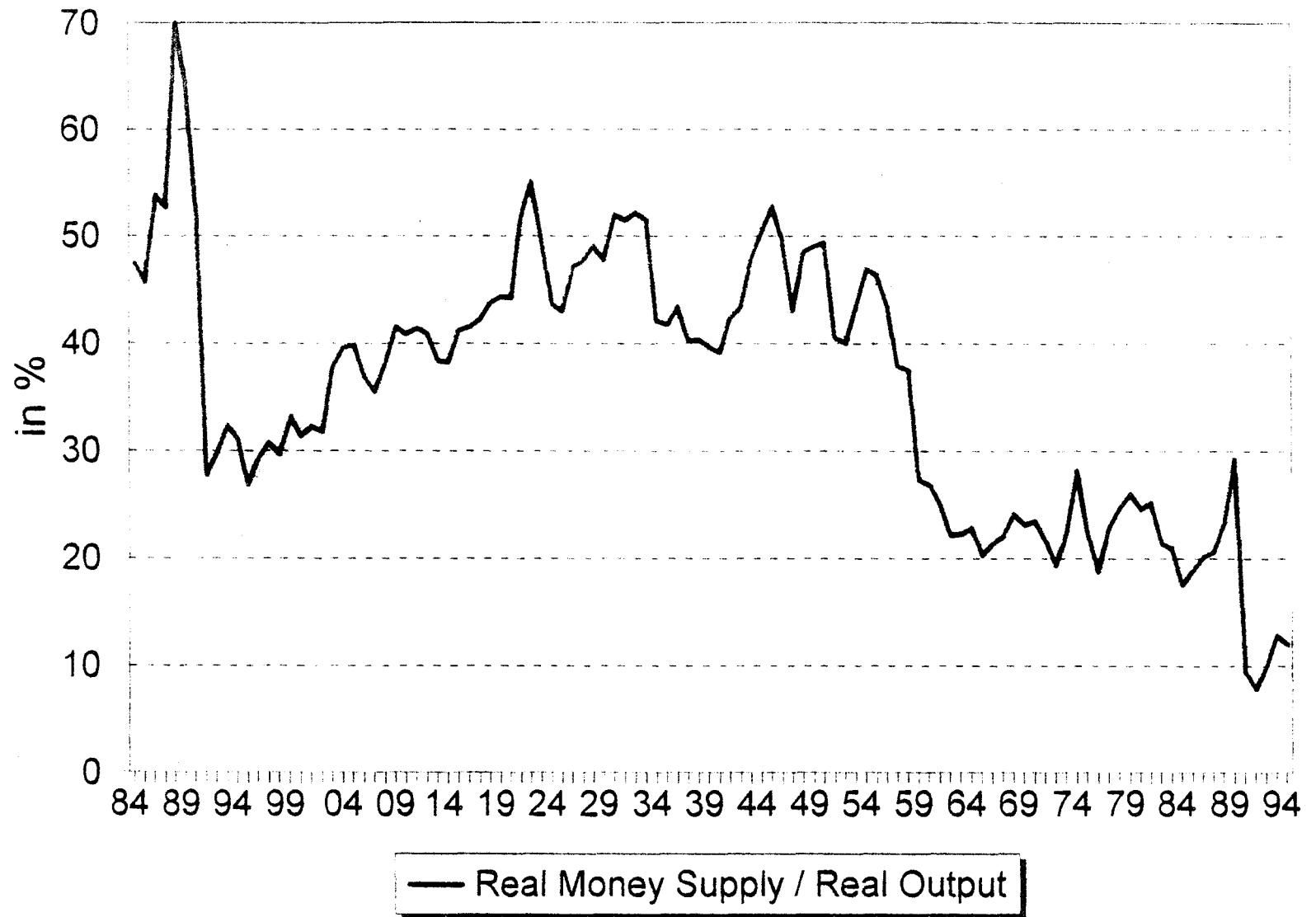


Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 3**  
**Secular Trend of the Velocity of Money**  
**( 1884-1994 )**

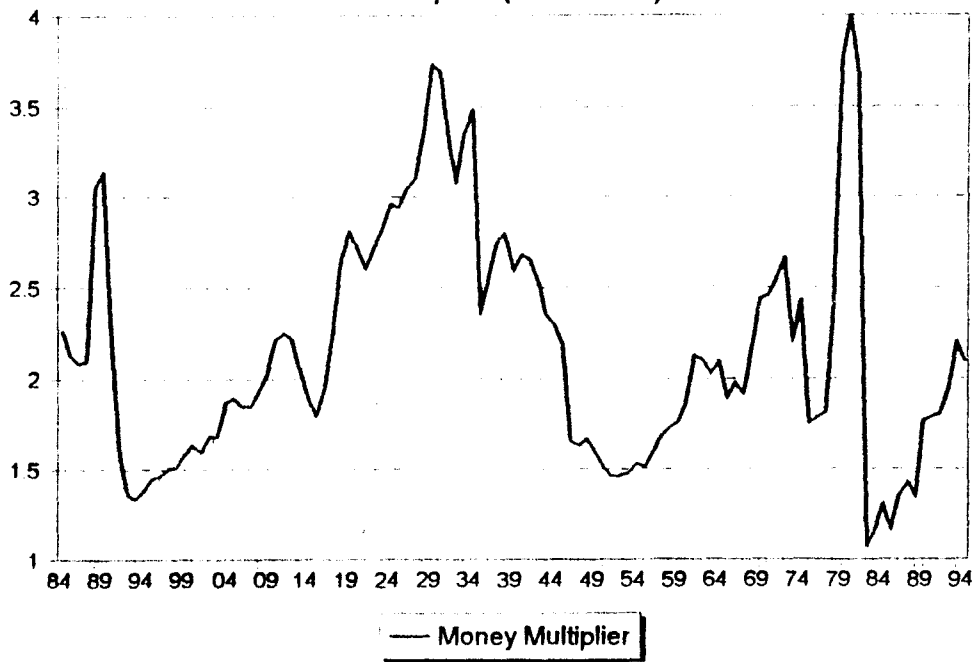


**Figure 4**  
**Money Supply as % of Real Output**  
( 1884-1994)

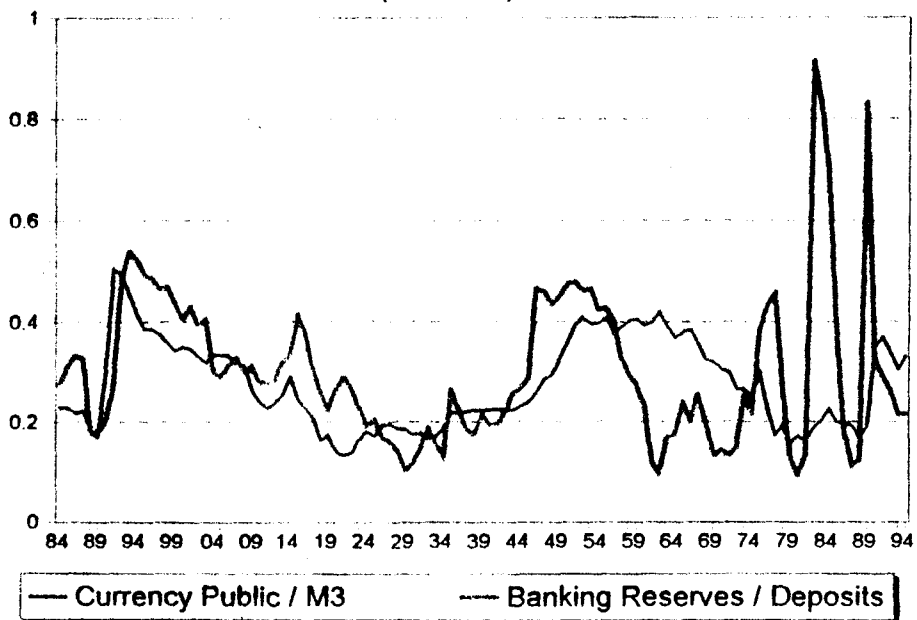


Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 5.1**  
**Secular Behavior of the Money**  
**Multiplier (1884-1994)**

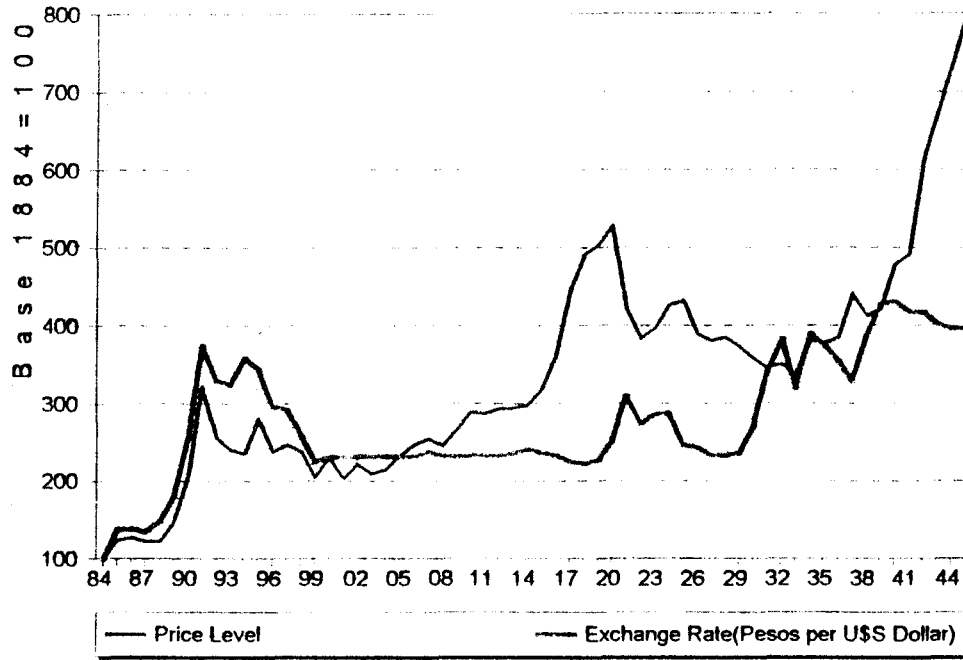


**Figure 5.2**  
**Components of Money Multiplier**  
**(1884-1994)**

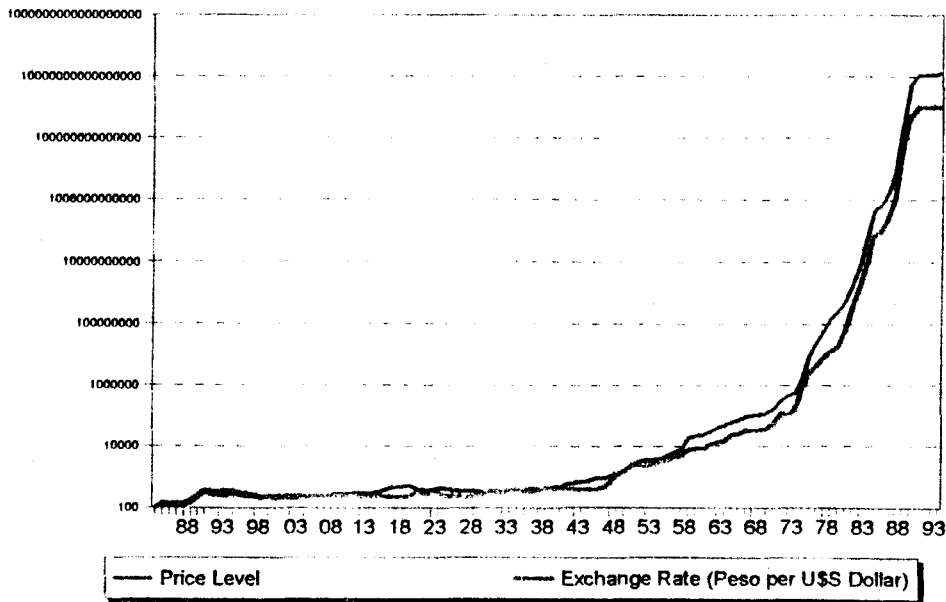


Source: Gerardo della Paolera, Javier Ortíz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 6.1**  
**Price Level and Exchange Rate**  
**1884-1945. (Base 1884=100)**

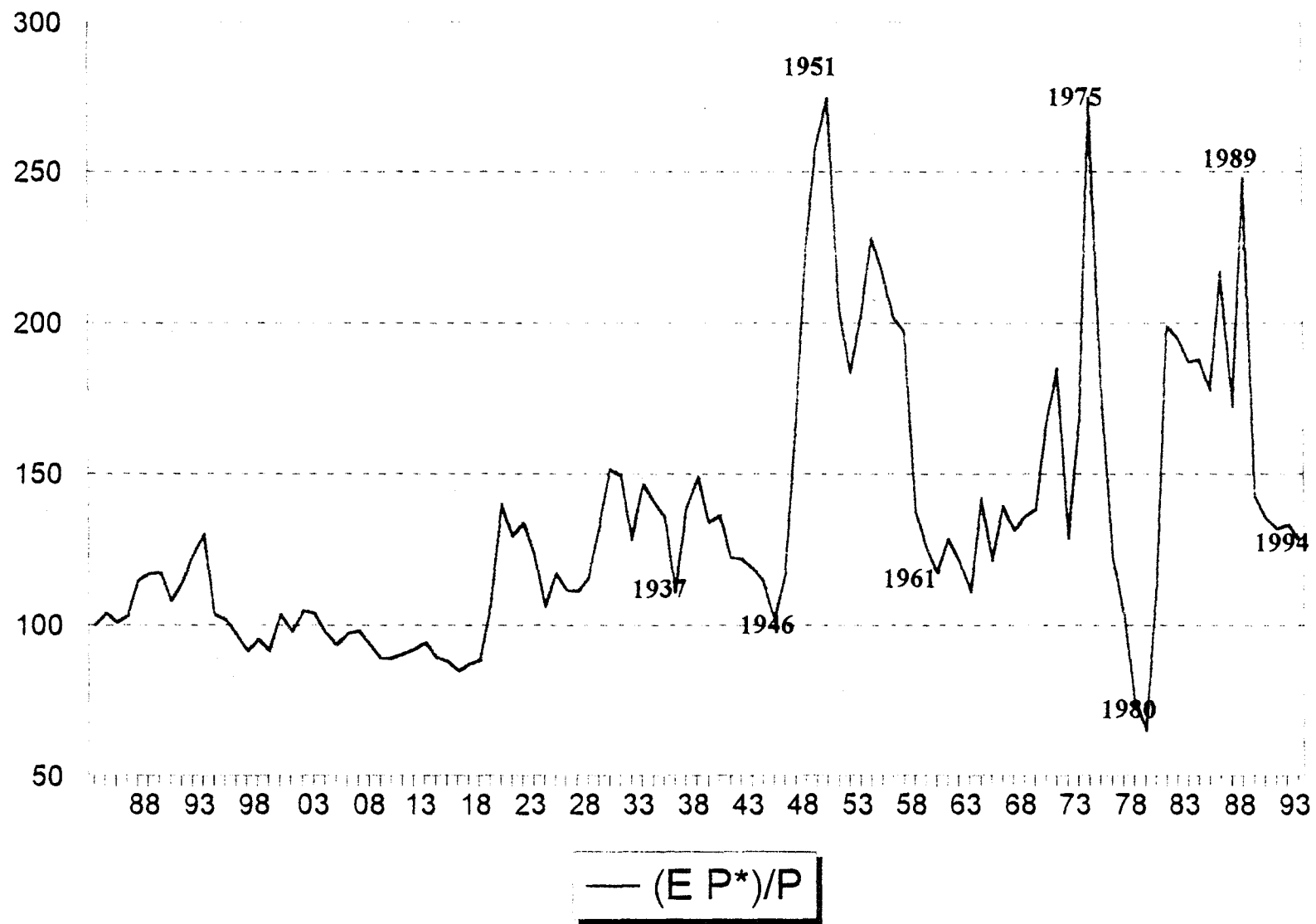


**Figure 6.2**  
**Price Level and Exchange Rate**  
**1884-1994. (Logarithmic Scale)**

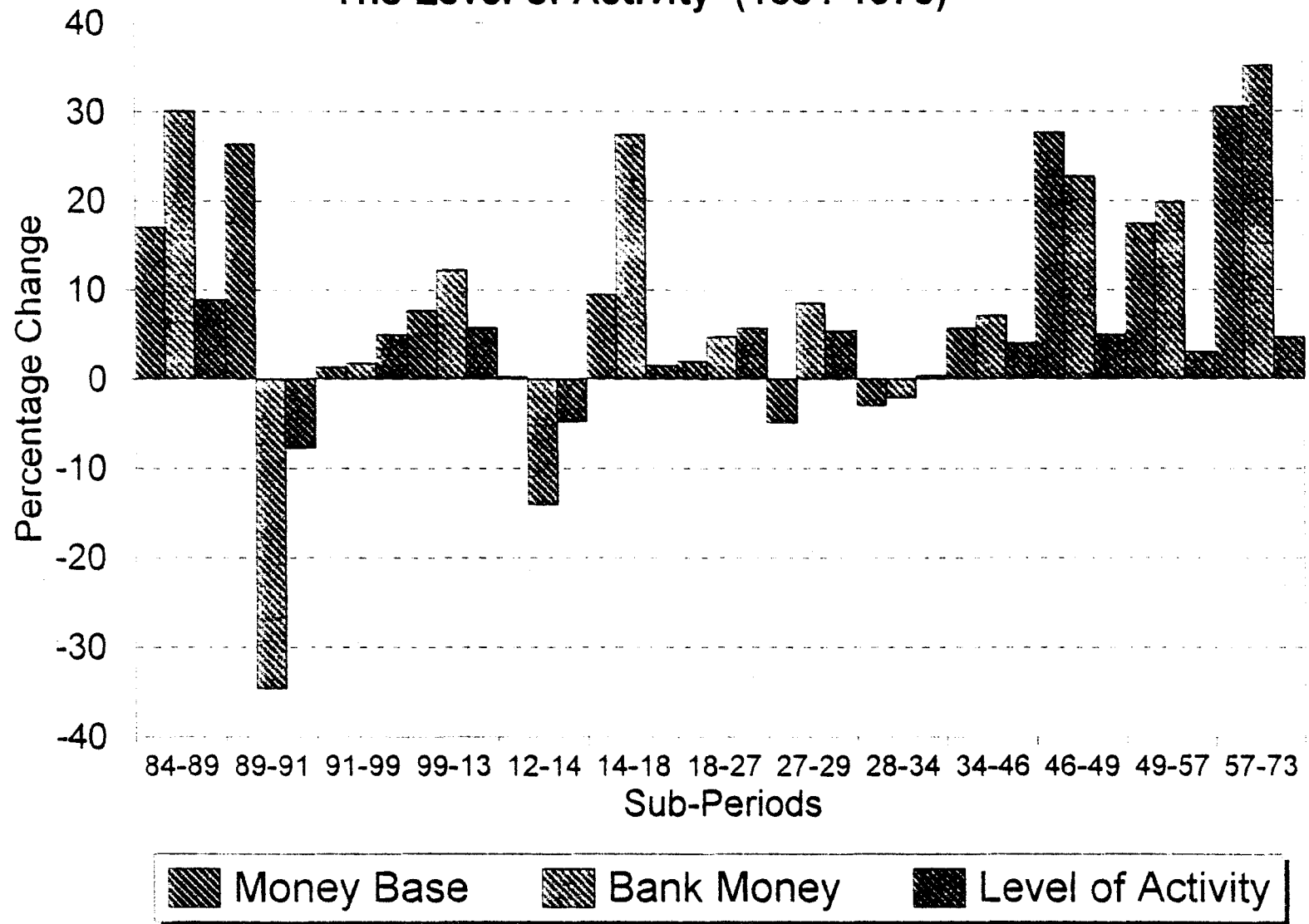


Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 7**  
**Real Exchange Rate (Base 1884=100)**



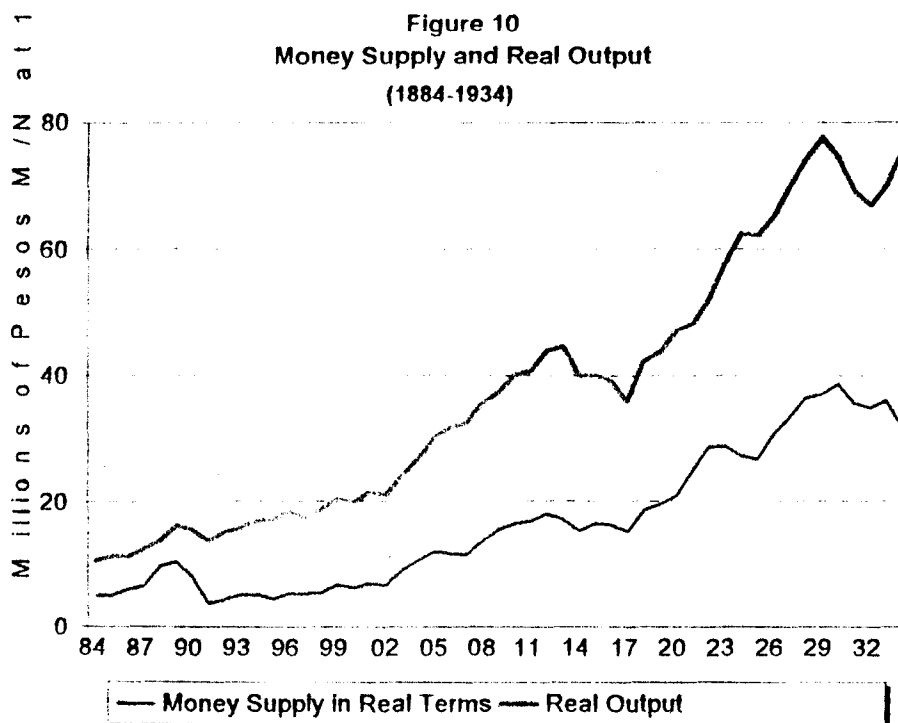
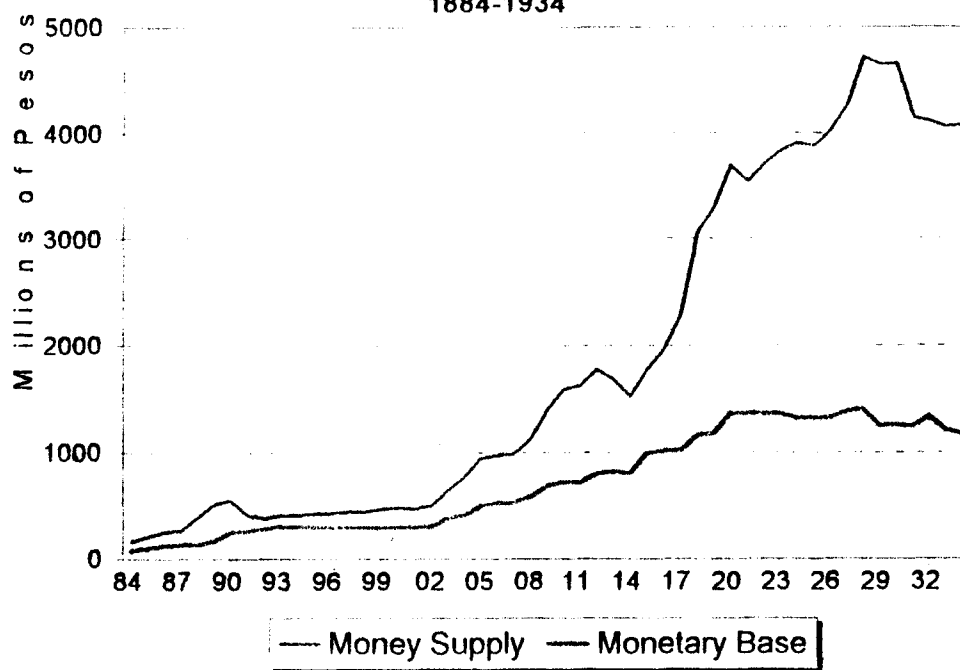
**Figure 8**  
**Monetary Base, Banking Money and**  
**The Level of Activity (1884-1973)**



Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

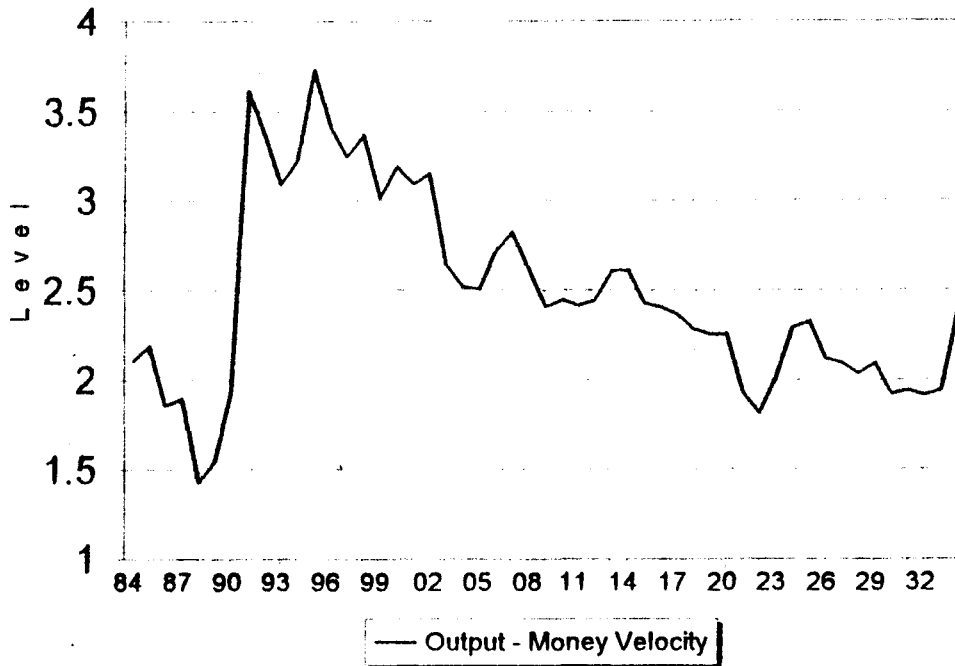


Figure 9  
 Money Supply and Monetary Base, Levels  
 1884-1934

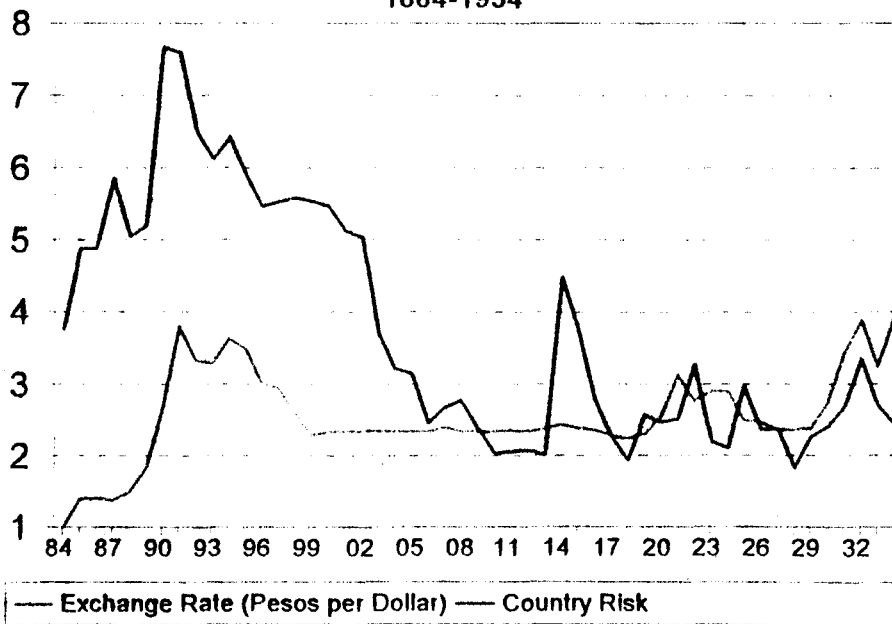


Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso: Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 11**  
**Money Velocity. 1884-1934**

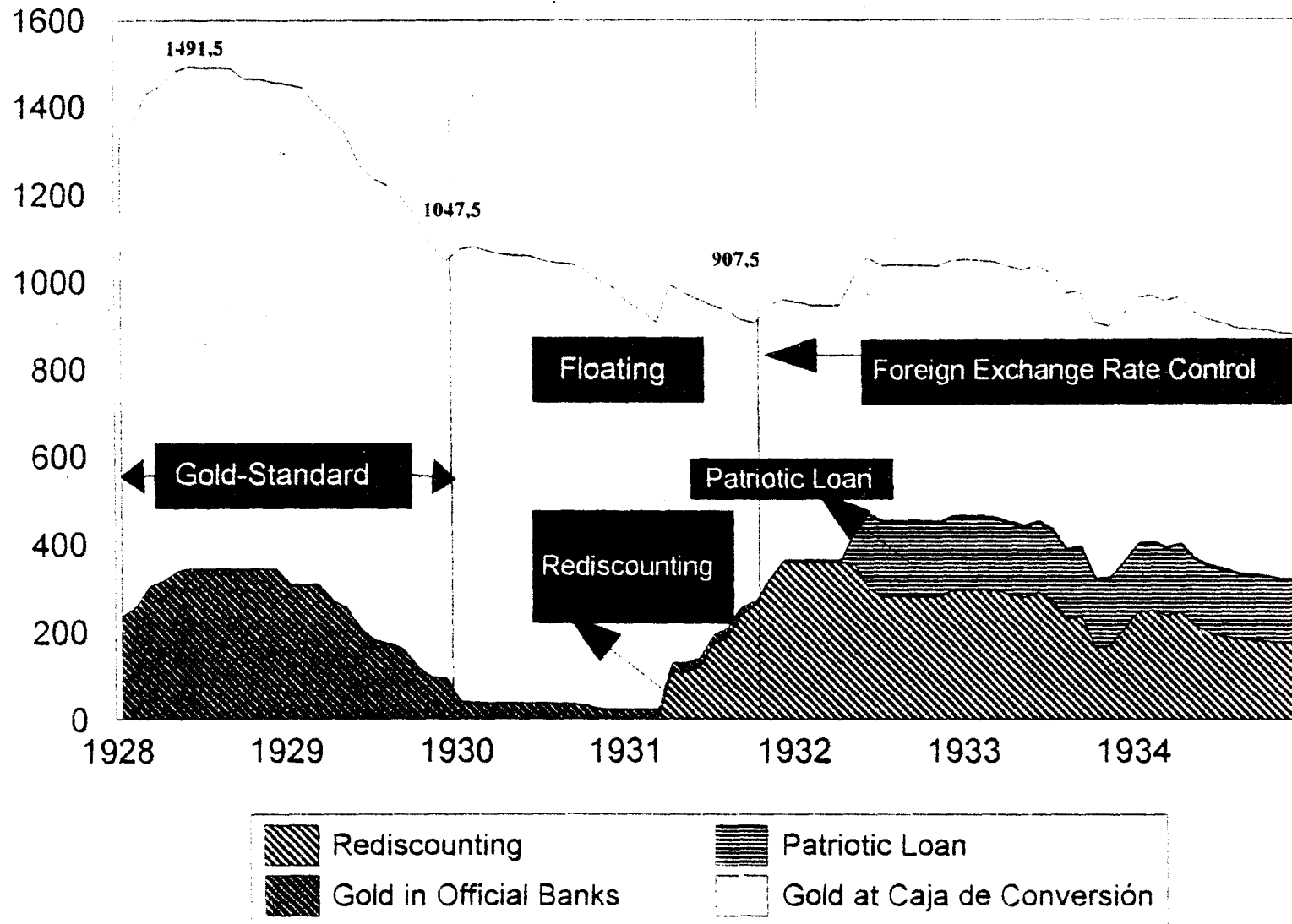


**Figure 12**  
**Country-Risk and Nominal Exchange Rate**  
**1884-1934**



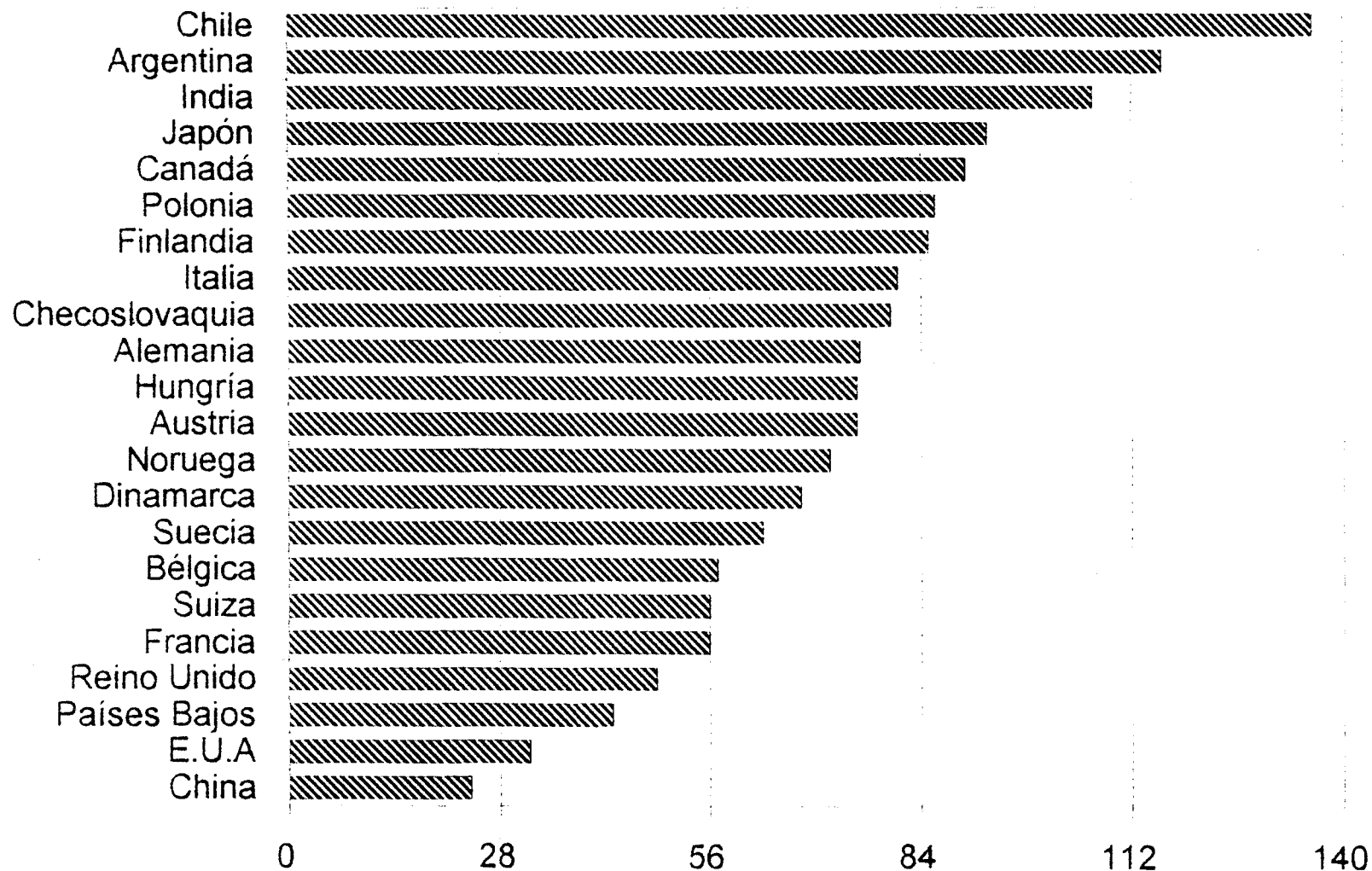
Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 13**  
**Composition of the Caja de Conversion**  
**Circulation (in millions of pesos)**



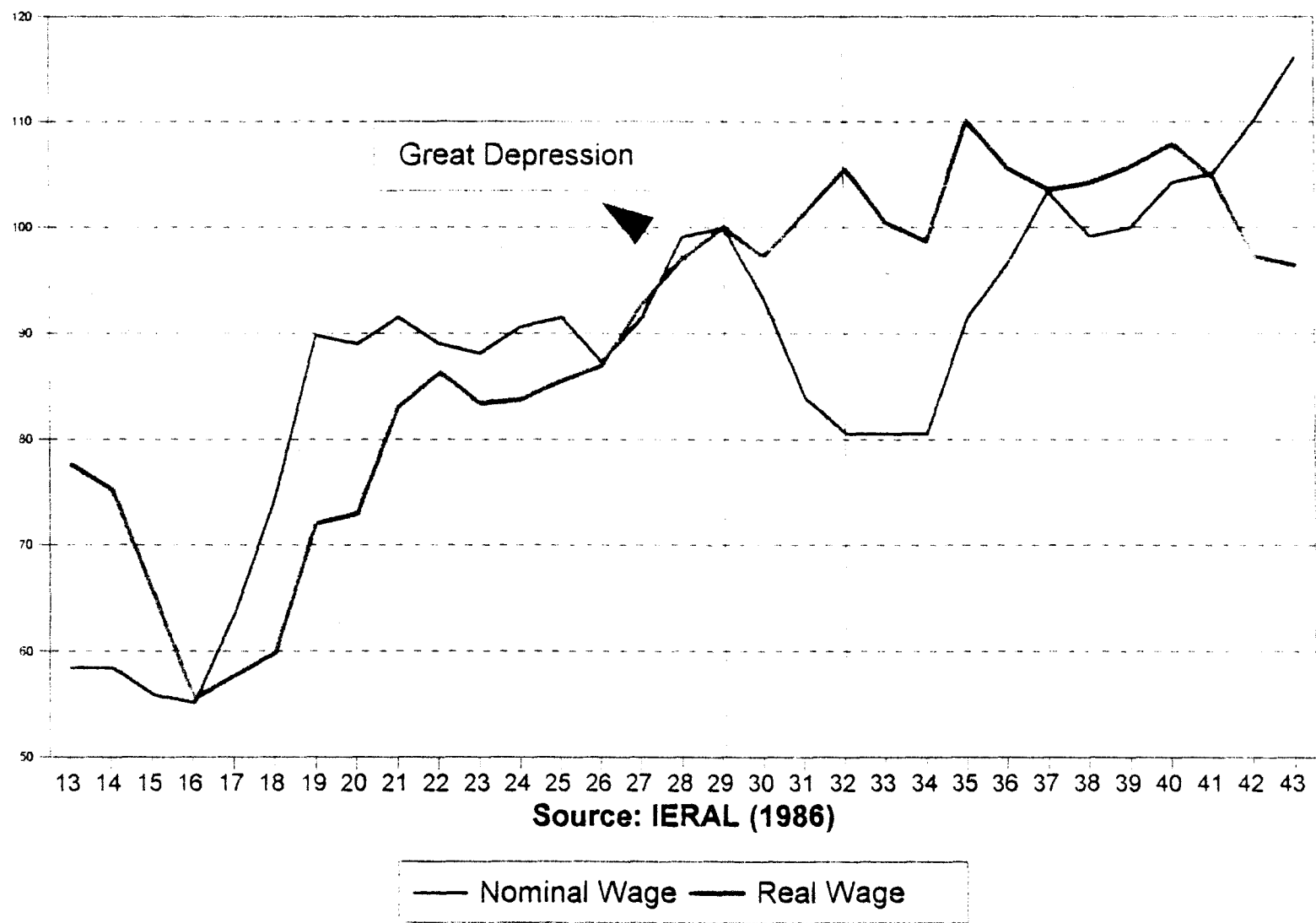
Source: Gerardo della Paolera, Javier Ortiz, Marcela Harriague, Sandra Amuso; Estadísticas Monetarias Preliminares - Argentina 1884-1994, in preparation.

**Figure 14**  
**Discount Rate II Quarter 1931**  
(Annual Rate, 1929=100)

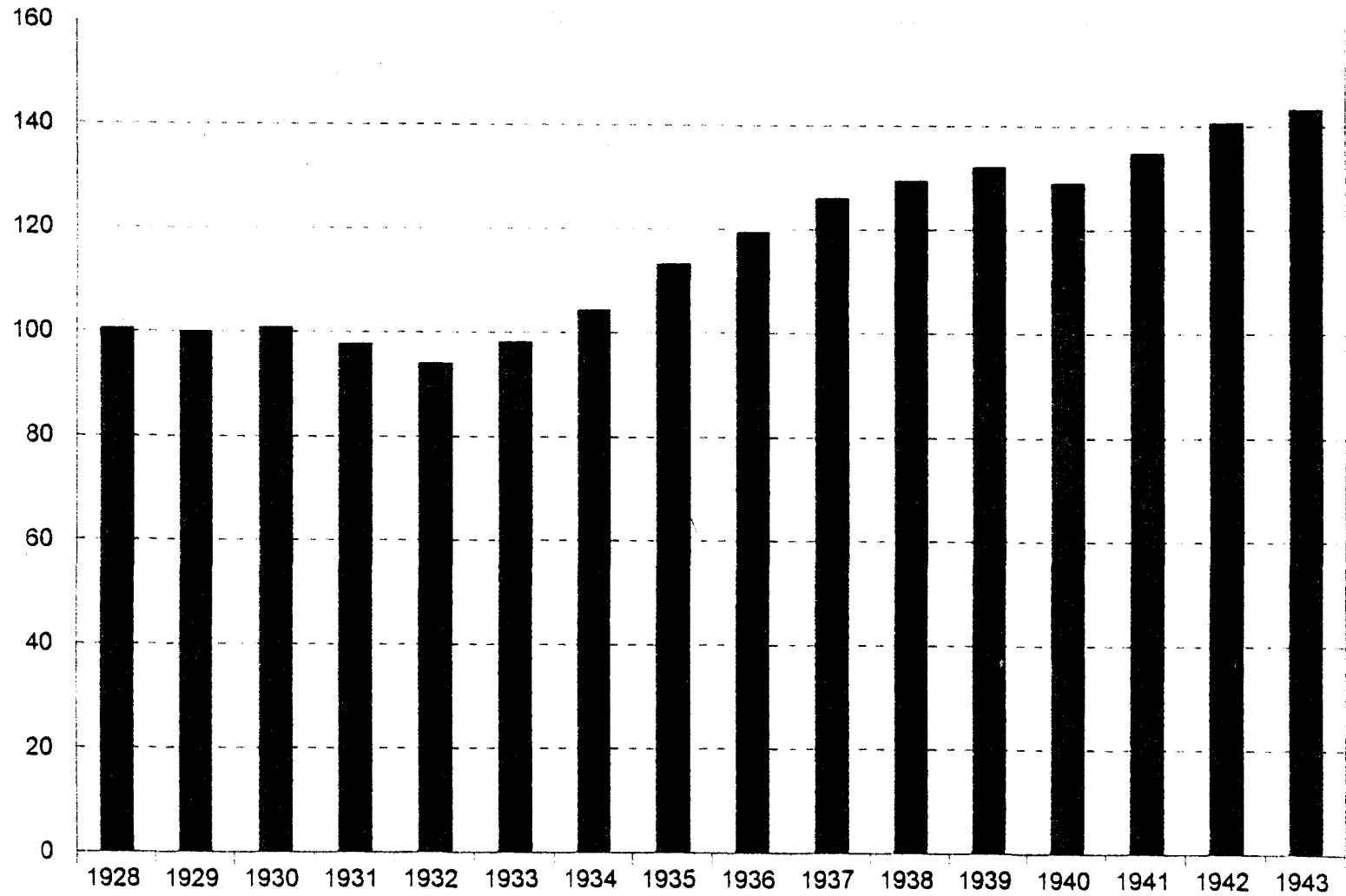


Source: League of Nations (1938)

**Figure 15.1**  
**Argentina: Wages 1913-1943**  
**(1929=100)**



**Figure 15.2**  
**ARGENTINA: EMPLOYMENT 1928-1943**  
**(Federal District, 1929 = 100)**



Source: Comité Nacional de Geografía, 1941, 1943

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