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Abstract

This chapter analyzes the role of central banks during the first years of the Great Depression. The literature has focused on central banks' loss of autonomy and on the implementation of innovative, countercyclical monetary policies which fostered economic recovery but also led to higher rates of inflation and exchange rate volatility. However, we show that these kinds of policies had been foreseen by foreign advisors before and during the crisis. Policymakers had been reluctant to implement them due to the fear of a loss of credibility for the gold standard regime. Furthermore, we show that in most cases this shift was short-lived and central banks could avert, to a large extent, the problem of fiscal dominance. Central banks became effective actors, channeling credit to the real economy and also supporting the emergence of state institutions that would promote the development of local industry.

Keywords: central banking, Great Depression, gold standard, money doctors, financial crises

Codes JEL: N0, N26, N160, F38

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Introduction

In periods of economic downturns, one major problem that affects currency stability is fiscal dominance. This term refers to the situation in which an expansionary fiscal policy constrains the implementation of monetary policy (Sargent and Wallace 1981). Fiscal dominance might emerge mainly in the context of high levels of public debt, as central banks must support governments' efforts to reduce servicing costs. Latin America has traditionally been treated as a region in which fiscal dominance has reoccurred during periods of populist governments since at least the 1980s. (Edwards 2019). These episodes are characterized by expansionary fiscal policies aimed at financing large public investment projects and increased social transfers, while central banks pursued accommodative monetary policies that generally resulted in debt defaults and large increases in inflation rates.

This chapter revisits the early years of Latin American central banks. In view of the changing economic and political conditions, we analyze how central banks made use of the monetary policy tools at their disposal in the aftermath of the Great Depression. Our narrative begins with a description of the motives underlying the creation of the first central banks in Latin America during the 1920s. In a nutshell, these new institutions were largely founded to solve the persistent problem of monetary instability, a condition that had led to conflicts among socioeconomic groups either benefiting or losing from exchange depreciation. The establishment of central banks was followed by the adoption of a gold standard regime and, in many cases, monetary reforms were also accompanied by a set of banking and fiscal reforms, generally designed by foreign advisors or "money doctors".[2] Governments expected central banks to provide monetary stability, to become a secure source of financing, to foster the capacity of the banking sector to provide credit to the private sector through rediscount operations, and to act as lenders of last resort.

In this chapter we show that while the Great Depression led to the deterioration of central bank independence, it also triggered a set of institutional reforms designed to expand the kinds of instruments needed to conduct the region's monetary policies. The onset of the crisis had severely affected Latin America's economies, causing a sharp decline in the fiscal position of most governments. In many cases, governments decided to abandon the gold standard, to impose exchange controls and, ultimately, to default on their external debt. Central banks entered into expansionary monetary policies partly as a response to governments' financial needs, but also to support economic activity through the provision of credit.

[2](Drake 1994; B. Eichengreen 1994; Flores Zendejas 2021).

The literature on Latin America's central banking in the interwar period has mainly focused on the role of foreign advisors in supporting the efforts by Latin American governments to adopt the gold standard. To a large extent, scholars have analyzed these relationships through the lens of US colonialism, first in central America at the turn of the 20th century, and then in South America, when Princeton Professor Edwin Kemmerer visited the Andean countries and designed the central banks established during the 1920s (Seidel 1972; Rosenberg and Rosenberg 1987; Drake 1994; Rosenberg 1999). Other works have looked at the missions lead by Otto Niemeyer, from the Bank of England, who advised Brazil and Argentina during the 1930s (Sayers 1976; Fritsch 1988; Sember 2018). The consensus of this literature is that the Great Depression marked a turning point in terms of economic policy. In the 1930s, money doctors largely lost relevance, partly because they did not tailor their advice to the new conditions of Latin American countries.[3] A general consensus is that governments seized their countries' monetary institutions, leading to a permanent situation of high inflation and exchange instability.[4]

Nevertheless, this traditional narrative oversimplifies the characterization of the monetary policies implemented by Latin American central banks at the beginning of the 1930s and underestimates the role of money doctors during those years. While economic historians have emphasized the emergence of a new development model based on state-led industrialization, the role of central banks in that transition remains obscure and has been largely overlooked.[5] Conventional views underline how, on the eve of the Great Depression, national monetary authorities promoted a set of unspecified countercyclical policies which fostered central banks discretionary powers.[6] However, several questions regarding the temporality and the reasons behind central banks' participation in the transition to this new development model remain unanswered. Furthermore, we do not know which were the "countercyclical economic policies" and whether they were truly innovative.

In this paper, we posit that Edwin Kemmerer had favored some of these countercyclical policies, yet local policymakers opposed them due to the fear of jeopardizing the credibility of the monetary regime. To some extent, the history of Latin American central banks in the 1930s is no different from that of central banks in other regions in terms of loss of autonomy.[7] However, in many cases, after the first phase of currency devaluations, Latin American central banks often

[3] On a survey of this literature, see (Flores Zendejas 2021).
[4] See (Jácome 2015).
[5] On the economic history of Latin America during that period, see (Bértola and Ocampo 2013; Victor Bulmer-Thomas 2003; Thorp 1984).
[6] See (Pérez Caldentey and Vernengo 2020).
[7] During the 1930s, a great number of central banks all over the world acted as government agencies in charge of exchange rate management, the implementation of clearing agreements and commercial banks' supervision. For an overview see (Toniolo 1988).

managed to maintain exchange rate targeting while also financing the new development model which would prioritize the support of the industrial sector. As we demonstrate, the role of central banks as capital providers would be short-lived, but it was relevant during the transition to the new banking framework that emerged in the 1940s, when development banks dominated the industrialization process in the region.

This chapter is structured as follows. In section I, we provide a brief overview of Latin America's economic and financial circumstances during the 1920s. Section II traces the history of central banks and provides a general overview of governments' decisions to establish central banks. Section III focuses on a central bank's design as an autonomous institution free from government interference. We show that this was the case for central banks established in the aftermath of a Kemmerer mission even though, in such instances, governments maintained a considerable influence via their nominative power for a high proportion of board members. This, however, was not the case for central banks designed by British money doctors. In section IV we describe how the monetary and fiscal orthodoxy was abandoned after the onset of the 1929 crisis. Our historical narrative suggests that after suspending convertibility and having introduced exchange controls, the expansionary monetary policy implemented by central banks accompanied economic recovery. Nevertheless, this shift was temporary. After an initial devaluation, since at least 1934 when inflation rates began to diminish accordingly, central banks did not completely disregard the relevance of exchange rate targeting. Overall, and against the conventional wisdom, we also show that Kemmerer's post-1929 advice pushed the first phase of central banks' countercyclical policies. The loss of autonomy and the increase in central banks' credit to governments that were observed in some countries was a consequence of political turmoil and wars, rather than being an explicit stimulus policy decision. Section V concludes.

I. Latin America in the early 1920s

The development model of the period between 1870 and the Great Depression is known as a commodity export-led boom (Bértola and Ocampo 2013). While tariffs were among the highest in the world, falling transport costs, capital inflows and improved infrastructure led to a rapid integration of Latin America into the world economy.[8] The rates of economic growth had increased before World War I but decelerated thereafter. In a minority of cases, GDP per capita levels had caught up to, and even surpassed, its European counterparts, an aspect of which also explains the increase in immigration rates from Southern European countries, particularly to Argentina and

[8] On tariffs levels, see (Coatsworth and Williamson 2004).

Uruguay. Latin American societies however remained largely agricultural and most of the labor force was still engaged in production for domestic markets. The region's economic performance depended upon the behavior of commodities' prices -the commodity lottery, as it was termed by Díaz-Alejandro- and on the links between the export sector and the rest of the economy(C. Díaz-Alejandro 1982).

In accordance with the diversity of experiences, living standards varied considerably, with figures for per capita income in the richest countries such as Argentina, Chile, and Uruguay being about five times those of the lowest such as Brazil, Colombia, and Peru (Victor Bulmer-Thomas 2003). Furthermore, within countries, inequality remained high during the same period (Prados de la Escosura 2007). While this inequality fueled the frequency of social conflicts, political instability had declined compared to the first decades of political independence.[9] By the late 19th century, the institutional framework had achieved a certain level of development but was still very conditioned upon local social and geographical factors. In countries relying upon crop growing, the abolition of slavery was only achieved in the 1880s (Cuba and Brazil) even though wage labor was already largely dominant. However, the exports of many countries still relied on a handful of commodities even if a certain level of diversification had been achieved by a few countries. In those cases, cottage industries had also achieved certain rates of growth, this being accompanied by the rise of urbanization and the development of the services sectors' (Bértola and Ocampo 2013, 129).

The literature has also begun to look at the low level of financial development in the region and has analyzed its consequences for economic development. (C. Díaz-Alejandro 1985) argued that even in the 1920s, when commercial banks had been established almost everywhere, there was a lack of medium and short-term credit. (Marichal 2020) has recently emphasized the role of local politics and the late development of capitalism to explain the slow launch of financial markets in the region. This author suggests that Argentina certainly had the most developed financial sector, as shown by the size and geographical expansion of its largest bank, the Banco de la Nación. However, (Della Paolera and Taylor 2007) posit that different indicators on financial development show that Argentine lagged behind countries in South Eastern Europe. Our own estimations, based on data on commercial and saving bank deposits as reported by the League of Nations, show that deposits per capita were 255 US$ in Argentina, the highest for Latin America, and several times greater than the figures for others such as Salvador (2.67) and Ecuador (2.85). For comparative purposes, the figure was 273 US$ for the US. [10]

[9] See (Bates, Coatsworth, and Williamson 2007; Sicotte and Vizcarra 2009).
[10] These strong variations can be also observed for the deposits to note issue ratio, even if the highest figure is the one for Chile (4.31) followed by Argentina (2.37) and Brazil (1.50). Again, these outcomes lie largely behind their US

The export-led model was also characterized by strong macroeconomic volatility. Government revenues were very dependent on custom duties, and thus exposed to fluctuations in foreign trade. This volatility also affected the countries' money supply. Exchange availability was highly dependent upon capital flows and downward business cycles in the world economy therefore led to capital sudden stops (Triffin 1944). However, even if monetary instability had also been a persistent problem across the region, most South American countries were on the gold standard at the onset of WWI, a general shift that had been adopted at different times during the 19th century. For countries such as Chile, Brazil, and Colombia, the last decade of 19th century saw national economic elites being divided ideologically between the so-called *papeleros*, who supported fiat money credit expansion, and *metalistas* or *oreros* who wished to reduce the money supply in order to appreciate the currency and thus adhere to the gold standard.[11] Mexico and Central American countries, where the banking system was still underdeveloped, switched form bimetallic regimes to a few variants of 'limping gold standard', where silver remained an important component of the money in circulation in the early 1920s.[12] Despite these differences, for the great majority of Latin American countries, the adoption of the gold standard alternated with periods of fiat money even if this monetary regime had remained the dominant one throughout the continent during the first decades of the 20th century.[13]

At the onset of World War I, most Latin American countries suspended the formal requirements of the gold standard by either refusing to redeem paper money in exchange for gold or prohibiting the free export of gold. Yet these provisions meant little until 1919/1920. The great increase in both price and physical volume of almost all important exports during the war made the gold value of practically every currency rise above the official parity with the dollar.[14] However institutions in charge of monetary issuing and exchange management remained eclectic until the latter part of the 1920s. In the decades preceding WWI, countries such as Mexico, Brazil, Argentina and Paraguay had created public agencies called stabilization or exchange offices which, in tandem with public or semi-public banks, were in charge of managing the gold convertibility.[15] With regard to paper money issue, in some cases the treasury retained the capacity to issue notes (Brazil), while

counterpart, whose figure was 9.83 for the US. Own computation based on the (League of Nations. Economic and Financial Section 1927).

[11] See (Martín Aceña and Reis 2000).

[12] See (E. W. Kemmerer 1940).

[13] See for instance Table 1 in (Meissner 2005, 391).

[14] See (E. W. Kemmerer 1916) and Archives of the Council of Foreign Relations (hereafter ACFR). Studies Department Series. Box 130 Folder 1 " Problems of Reconstruction in South America. Second Meeting: Exchange and Currency Problems", by Frank Fetter, 14 Feb. 1933.

[15] These institutions were set up by respective governments to issue and redeem local money in return for gold or bills of foreign exchange at fixed rates. This task was executed by the Caja de Conversión (Argentina); Caixa de Conversão (Brazil); Comisión de Cambios y Moneda (México); Caja de Conversión (Costa Rica) and Oficina de Cambios (Paraguay). See (McQueen 1926).

in others, private banks held this privilege (as was the case in Argentina, Chile, and Mexico before the 1911 revolution)[16].

II. The landscape of central banks' foundations in Latin America

There is no single answer to the question as to why some Latin American countries decided to establish a central bank during the interwar period. Scholars have mainly focused on three non-exclusive responses that include the extent of external influence (either through imposition or through the more subtle advice of a money doctor); political economy factors (among which were the interests of national banks that blocked attempts to establish central banks);[17] and institutional development with central banks being created to meet the needs of the monetary and banking systems.[18] We revisit these arguments in this section and show why none of these factors fully explains the wave of central bank creation in the 1920s, partly because the new institutions were not homogenous.[19] As we will demonstrate in the next section, governments could decide to found a central bank with little or no independence, while other institutions could have led to more monetary stability and lending of last resort functions. These differences also led to diverse reactions as the crisis of 1929 began to affect the region.

First of all, external influence and "dollar diplomacy" did not directly lead to the establishment of a central bank (or even a sole issuing institution). The first experiences of foreign advising took place in Central America. Money doctors emphasized the need to introduce fiscal reforms intended to provide the necessary fiscal balance to secure the payment of the external debt service. Exchange stability was also perceived as a means to achieve this goal. According to (V. Bulmer-Thomas 1987), in Central American countries there was an implicit conflict between exporting oligarchies who benefited from exchange rate depreciation, and governments that favored a fixed exchange rate in order to deal with the 'original sin' problem (i.e. its income was in local currency but its debt mostly had to be serviced in foreign currency).[20] This author claims that the probability of a sovereign default on the external debt, whose main creditors were European investors, risked triggering a foreign intervention and pushed the US government to assume a proactive role in the region.

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[16] For an overview on financial development's differences amongst Latin American countries during the 19th early 20th century see (Marichal and Gambi 2017).
[17] See (Calomiris and Haber 2014).
[18] See (Marichal and Díaz Fuentes 2016).
[19] According to (Triffin 1944, 96) during the interwar period, central banks of Latin America "present the most diverse pattern from country to country".
[20] See (B. Eichengreen and Hausmann 1999).

The US government and US money doctors designed many of the fiscal and monetary regimes in Central America, but none of them foresaw the establishment of a central bank. In Nicaragua, the US government favored the establishment of a Collector-General and the Banco Nacional de Nicaragua (a state bank) in 1911. This new institution held the monopoly on the monetary issue and maintained the currency on a gold standard basis until the 1930s, with a brief interruption in 1914. In 1920, Arthur Young acted as foreign advisor in Honduras, where he proposed to establish a gold standard regime (but without a central bank). This effort was not entirely successful and silver, along with the US dollar, continued to circulate during the 1920s.[21] After the treaty signed in 1915 with the US Government, Haiti, created the *Banque Nationale de la Republique d 'Haiti*, an affiliate of the National City Bank of New York. This bank had the sole right of note issue. In Panama, where the US government held a particular interest due to the construction of the Canal, no banks of issue were established. The US dollar was declared the only legal tender early in 1903, becoming thereby the principal medium of exchange.[22]

Even without the presence of a money doctor, other Central American countries implemented reforms attempting to adhere to the gold standard. El Salvador managed to introduce a gold standard regime (from a silver standard) in 1919, which remained until 1932. In 1921, Costa Rica established the *Banco International* which held the monopoly on note issuing, while the *Caja de Conversión* was in charge of holding the exchange reserves and began to convert the notes to gold in 1924, a regime that also lasted until 1932 (V. Bulmer-Thomas 1987, 32).

The first wave of new central banks in Latin America was a direct outcome of Edwin Walter Kemmerer's missions, even if the policies recommended were only implemented seven years after the money doctor's visits. The first of these missions took place in Mexico (1917) and Guatemala in (1919). In Mexico, (Nodari 2019) argued that the government adopted the gold standard, established a central bank and pursued a fiscal reform in 1925, all based on the principles designed by Kemmerer and despite high levels of political instability. To some extent, a similar narrative was to be found in Guatemala, where the central bank was established in 1926 (D. L. Kemmerer and Dalgaard 1983). From 1923 to 1930, Kemmerer's missions led to the creation of central banks in Colombia (1923), Chile (1925), Ecuador (1926), and Bolivia (1928).[23] In Peru, the government had already established a bank of rediscount and issue (*Banco de Reserva del Peru*) in 1922 but its statutes were majorly reformed by Kemmerer during his 1930 mission.

[21] On the contrary, and without the presence of a money doctor, El Salvador managed to introduce a gold standard regime since 1919 (from a silver standard) which remained until 1932.
[22] For an overview see (Mc Queen 1926). Even today, Panama has no central bank.
[23] On the historical narrative of these visits, see (Drake 1989).

Argentina did not establish a central bank until 1935. This instance shows that financial development did not necessarily lead countries to establish a central bank. However, it is noteworthy that debates on the convenience of establishing a central bank had begun since at least 1899, when a project to convert Argentina's National Bank into a State Bank (a central bank though owned entirely by the State) was first presented, while subsequent schemes were intended to centralize the issuing functions and the management of currency convertibility. Such an institution was to be capable of fostering long-term credit. After 1914, discussions on the advantages of having an autonomous central bank intensified, and largely focused on the benefits of strengthening rediscounting operations and those that served to maintain the value of wages (Lorenzutti 1996). (Della Paolera and Taylor 2007, 174) suggest that one reason for the rejection of these projects was the National Bank's capacity to provide lender of last resort functions to private banks, which it did under favorable conditions, thereby encouraging excessive risk-taking. This arrangement, and the fact that the Bank provided a secure supply of resources to the government through its rediscounting of treasury-bills, implied that there was significant interest in maintaining the status quo.

Other examples of domestic politics and government finance impeding the establishment of central banks were Brazil, Uruguay, and Venezuela. In Brazil, a state bank called Banco do Brazil was in charge of the monetary issue. The British mission of 1923, led by Edwin Montagu, recommended the transformation of the state bank into a central bank, wherein the government would sell its entire participation in the bank, amounting to about 52% of the total number of shares (Fritsch 1988, 90). Brazil's government expected a foreign loan once this was implemented but a loan embargo declared in Britain during 1924 impeded the floating of the loan. This setback delayed the creation of the central bank, and contributed to the *Banco do Brasil's* pursuit of an expansionary monetary policy, which was mainly used to finance the federal government.[24] In Uruguay, central bank functions were divided between a private bank, which enjoyed a monopoly on paper money issue, and the Treasury, which was in charge of supervising the banking system as well as managing the whole national monetary system. For (Baudean 2017), the political and economic elites had also disfavored the projects to establish a central bank since the 1930s. Finally, in Venezuela, four private banks were in charge of issuing paper money redeemable in gold on demand (McQueen 1926), and also opposed the creation of a central bank during the 1930s (Crazut 1970).

III. Money doctors and central banks' autonomy

[24] See (Fritsch 1988; Villela 2017).

The central banks created in the 1920s were designed to maintain monetary and banking stability and to provide government finance on a limited basis. As with other monetary institutions designed during the 1920s, Kemmerer's central banks were expected to maintain the convertibility of the currency into gold at a fixed price, respect the real bills doctrine (providing just as much credit as was required by the legitimate needs of business), and follow the so-called “rules of the game” (tightening monetary policy in response to gold outflows and loosening in response to gold inflows) (Jácome 2015). Furthermore, most of them were conceived according to the principles of the time, as outlined at the International Conferences of Brussels and Genoa of 1920 and 1922 respectively, where central banks were supposed to be freed from political pressure, while governments were expected to run sound public finances.[25] A major justification for this need for central bank independence was that this might contribute to exchange stability and the reduction of inflation.

It is interesting to note, nevertheless, that macroeconomic imbalances did not necessarily lead to the creation of central banks. Table 1 shows some basic fiscal and monetary variables in a sample of countries in the five years before the foundation of the first central bank in Latin America. It is divided into three groups. The first group includes the countries that established a central bank during the 1920s based on the recommendations by Edwin Kemmerer ("Kemmerer countries"). The second group show countries that established a central bank with no money doctor. This group includes Guatemala and Mexico, which had been also influenced by previous visits from Kemmerer. The third group concerns countries that did not establish a central bank in the 1920s.

Table 1 does not allow us to differentiate each group of countries according to their macroeconomic position. While the countries that established a central bank show higher inflation rates, these figures are not homogenous. On the one hand, Peru and Chile stand out as the countries with the highest level of inflation, both having decided to establish a central bank. On the other hand, Argentina and Brazil did not establish one, but had higher inflation rates than those that did. This heterogeneity is even more blatant if we consider exchange rate volatility. Again, countries without a central bank show higher exchange rate volatility than countries such as Guatemala and Mexico.

Finally, and contrary to what might have been expected, countries without a central bank were characterized by higher levels of fiscal deficits (average of 21.8% of public revenues). This figure would be higher if we removed Venezuela, which maintained persistent fiscal surpluses.

[25] See (League of Nations 1923).

Kemmerer countries also suffered from high fiscal deficits even though their figures were comparatively lower. On the contrary, countries with a central bank and without a foreign advisor had the lowest levels of fiscal deficits, while Mexico was even running fiscal surpluses. Probably the main difference between these groups of countries was their governments' capacity to access foreign capital markets. Governments from countries with no central bank had been able to access capital markets at the beginning of the decade as shown by (Lewis 1938)**,** while there is ample evidence that countries such as Bolivia, Ecuador and Colombia had struggled to issue a loan in the New York capital market (Flores Zendejas, Lopez Soto, and Sanchez Amador 2016). In the case of Mexico, also excluded from capital markets, one of the reasons behind the government's budgetary surpluses was precisely its capability of providing the necessary capital for the central bank. This had also been achieved through the suspension of the external debt service since 1924, one year before the establishment of Mexico's central bank (Gomez-Galvarriato 2019).

Previous works have emphasized that one reason why governments appealed to money doctors was to overcome political resistance to policies that governments intended to implement even without money doctors' advice.[26] This was achieved, to a large extent, by the expectation that implementing Kemmerer's reforms would facilitate access to foreign capital markets.[27] However, as Table 1 shows, Bolivia and Chile had been able to secure a foreign loan even before Kemmerer's visit. Kemmerer insisted nevertheless that borrowing costs could have been improved with the implementation of his reforms. In this regard, during his visit to Bolivia in 1928 he criticized the loan that the government had issued in New York in 1922 considering the high interest rates and underwriting fees attached, but also the pledged revenues granted to creditors.[28] He therefore recommended improving the macroeconomic position of the government by establishing a long-term relationship with a strong banking house in New York.[29] Finally, he recommended the founding of an independent central bank. He regarded Bolivia's *Banco de la Nación Boliviana* as conducting its monetary policy primarily to meet the needs of the government, and thereby being incapable of securing a stable exchange policy.[30]

[26] See (Drake 1989). However, (Banco de la República (Colombia) 1990, 343) claims that the level of technicity of Kemmerer's second mission was impossible to find in the country.
[27] See for instance (Drake 1989; B. Eichengreen 1994; Flores Zendejas, Lopez Soto, and Sanchez Amador 2016).
[28] This was a long-term loan for 25 million dollars with an underwriting fee of 9.2 percent. Brazil issued two loans during the same year at slightly lower yields to maturity (7.3 and 7.8) but much lower underwriting fees (3 and 3.5%, respectively). Dataset from (Flandreau, Gaillard, and Panizza 2010). Original source is (Young 1930).
[29] "Report in support of a project of a General Banking Law, by the Commission of Financial Advisers", June 1927. EKP "Kemmerer Commission of Financial Advisers", Box 79, folder 1.
[30] "El Plan Kemmerer para la reorganización del Banco de la Nación Boliviana, 1927", EKP, "Banks and Banking, Banco de la Nación Boliviana, 1912-1927", Box 76, folder 4.

How independent were Kemmerer banks compared to other central banks established in Latin America during the same period? Table 2 shows certain relevant features. A first feature shown in the table is the duration of the concession of the bank, which increased from 20 to 50 years in all cases. A large duration was relevant, according to Kemmerer, to guarantee a certain autonomy from persistent political interference. Conversely, a limited duration was better than an indefinite one, as each renewal had to be approved by the legislative power, thereby conceding that a central bank protects national interests (E. W. Kemmerer and Banco Central de Reserva del Perú 1997, 55). The third column of the table presents the number of shares held by the governments, which, in Kemmerer countries, was high compared to the others. The only exception, where the government was expected to acquire at least 51% of the shares, was Mexico. Furthermore, and in contrast to Mexico's central bank, the shares to be held by the government in Kemmerer banks did not secure the right to vote. Finally, in the central banks designed by British money doctors (Brazil and El Salvador), governments had been excluded as potential shareholders.

Other major difference between the groups of banks was their capacity to influence the board of directors, the limits to government borrowing and the possibility of dealing directly with the general public. As we should note, government participation in central banks' management was higher in Kemmerer than in British money doctors' countries. Kemmerer insisted on providing central banks with a certain level of autonomy, even though he foresaw that the government would participate as a shareholder and would also have the power to appoint the president and a certain number of board members, generally between two or three out of nine or ten. Even more notably, the limit on government borrowing established in the US money doctor countries (30 percent of paid up capital and reserves in Colombia and Chile; 20 percent in Ecuador and 25 in Bolivia) was higher in comparison to other central banks in the region. Otto Niemeyer expressed himself against such a recommendation. He criticized central banks from Kemmerer countries as they were perceived to not be sufficiently independent of national governments. This was indeed the case given that the organic laws of those institutions permitted governments to hold a "substantial bulk" of shares as well as "nominative power for a proportion of members of the boards".[31]

During the 1920s, only Mexico's central bank did not enjoy the same level of autonomy as others Kemmerer banks[32]. After the predatory policy pursued by the government against the banking system during revolutionary years, national commercial banks always viewed with distrust the operations of the new central banks. These suspicions were also provoked by the loans granted

[31] "Central Banks in Latin America", 25 May 1933, BoEA, OV188/1, "Latin America – General".
[32] As some contemporaries also underlined, "Mexican central bank would seem to be much more under the control of the Government than is common in central banks in other countries' (Sterrett and Davis 1928, 127).

by the central bank to firms and enterprises owned by government officials (Gomez -Galvarriato 2019).

IV. Central banks and fiscal distress

The Great Depression affected Latin America through various channels. Export revenues declined following the fall in commodities' prices and the general rise of protectionist measures (C. F. Díaz-Alejandro 1983). Since the majority of governments' revenue was trade related, by the end of 1929 Latin American countries experienced both budget and balance of payments difficulties. Additionally, foreign banks had cancelled their lines of credit to governments and Latin American banks since 1931. To make the situation even worse, the numerous branches of foreign banks operating in Latin America after the Great Depression experienced a credit drop from their head offices situated in Europe and in the United States[33]. Since investment rates fell considerably, governments were unable to issue new loans.

At the onset of the crisis, Latin American countries adopted the so called 'orthodox response' (B. J. Eichengreen 1995, 230–32). In order to preserve the foreign exchange needed for maintaining the debt service and defending gold convertibility, they tried to limit imports and boost exports by a tax increase on import duties. Many central banks and monetary authorities introduced restrictive policies (increases in the rediscount rates) in an attempt to preserve international reserves.[34] The deteriorating position of the balance of payments forced central banks to use their reserves to meet the deficits and to resort to deflationary policies.

Since austerity policies and orthodox adjustments proved inadequate in strengthening Latin American trade balances, most governments were forced to suspend the payment of their external debt, to abandon the gold standard and/or to implement some form of exchange control. As Table 3 shows, every country chose one of these options even if with different temporality. It is noteworthy that the first countries to devalue their currency were those without a central bank. Argentina and Uruguay suspended the gold standard before the end of 1929; Brazil followed in November 1930, and by the beginning of 1933, only Venezuela and Central America's "dollarized"

[33] According to a rough estimate presented by Guillermo Butler Sherwell, head of the Latin American Section of the Federal Reserve Board, the amount of foreign credit cancellation during 1931 in Latin America reached US$ 283,5 million. See " The Latin America exchange problem", by Guillermo Butler Sherwell, in EKP, BOX 170, Folder 8 "Latin America, 1927-1940". This amount was equivalent to 1.5 times the total amount of Latin American loans issued in New York in 1928 and 1929 (according to the figures presented in (Lewis 1938).

[34] From 1929 to 1931 Chile increased rediscount rate from six to nine percent; Colombia increase the rate from seven to eight percent in 1929, Bolivia from seven to nine percent and the Central Bank of Peru increased its rate six time between 1928 and 1929. See (Jàcome 2015).

countries maintained their peg with the US dollar until the gold embargo declared by Franklin Delano Roosevelt in April 1933.

In general, the abandonment of the gold standard was preceded by the introduction of exchange controls in order to prevent sudden fluctuations in the exchange rate, reduce speculative demands of foreign exchange, and slow the rate of the international reserve drain (C. F. Díaz-Alejandro 1983, 11). By the beginning of 1932, only Mexico, Peru and Venezuela did not use this instrument. In spite of the different mechanisms implemented in each country, foreign exchange control functioned as a sort of exchange clearing under which drawings on the exterior would only be affected against available supplies of foreign exchange. Only Argentina, Uruguay and Mexico did not restrict the export of gold, while all others countries designed some form of gold embargo.[35] In line with the recent findings by (Bordo and Meissner 2020), and given the high proportion of public debt denominated in foreign currency, governments attempted to remain in the gold standard and only defaulted thereafter.[36] In most cases, these defaults occurred only after exchange controls had been introduced and after the suspension of the gold standard (see Figure 1).[37] By 1934 only Argentina, Haiti, and the Dominican Republic had not suspended normal debt servicing.

Figure 2 shows the evolution of GDP growth, inflation, exchange rates and public deficit for a sample of Latin American countries between 1928 and 1935. It shows that Latin America's diversity of experiences has probably been underestimated. In Chile, GDP had fallen the most, while Colombia's figures never fell below the pre-crisis level (1928). In terms of inflation, it is interesting to note that deflation was common in almost all cases (the notable exception being Chile) and remained so until 1932, precisely when Chile saw an upsurge. Chilean exceptionality, abetted by the short-lived socialist coup of June 1932, was also emphasized by contemporaries. That is why, in early 1933, US economist Frank Fetter underlined how the budgetary deficits (also shown in Figure 2) forced the Chilean government to turn to the central bank for help, with the result that from 1932 to 1933 the issue of paper money "more than doubled in the period of a year".[38] Exchange rates experienced a high depreciation in all cases, particularly in Argentina and Chile, although they would remain stable throughout the decade.

[35] " The Latin America exchange problem", by Guillermo Butler Sherwell, in EKP, BOX 170, Folder 8 "Latin America, 1927-1940".
[36] Most governments held a ratio between 70% to 95% foreign to total debt (most foreign debt being denominated in foreign currencies). Own estimates based on (United Nations 1948).
[37] (Jorgensen and Sachs 1989).
[38] According to Fetter, at the beginning of 1933 "over 80 percent" of the total earning assets of the Chilean Central Bank represented government debt " and a good part of the rest represented advances that do not belong in the portfolio of a central bank". See " Problems of Reconstruction in South America. Second Meeting: Exchange and Currency Problem. Session led by Professor Frank Fetter", 14 Feb. 1931 in the Archive of the Council on Foreign Relations. Studies Department Series. Box 130, Folder 1.

V. New functions of central banks since the 1930s

A major question in the literature focuses on the tools and institutional innovations introduced into the ways central banks implemented their monetary policies. The literature has identified major institutional changes taking place at the beginning of the 1930s as the starting point of modern central banking in Latin America. According to (Pérez Caldentey and Vernengo 2020, 960), the new rediscount policies and open market operations implemented by central banks signaled the beginning of a "more proactive, and in some cases explicitly countercyclical policy" which put an end to the money doctors' orthodoxy of previous years. Institutional changes, as we will show, did indeed foster the first phase of recovery. Nevertheless, it was not Latin American local policymakers, but Edwin Walter Kemmerer who first nurtured and encouraged the adoption of these reforms.

Latin American governments and central bankers had actively sought external support since 1930. However, the advice proffered by Kemmerer and British money doctors varied considerably and led to very different outcomes. Edwin Kemmerer visited Colombia in 1930 and Peru in 1931, and attended two multilateral conferences in Washington and Lima. The Bank of England reported on missions that had been active in South America: Niemeyer visited Brazil in 1931 and Argentina in 1933, while M. Powell, who had advised El Salvador, went to Argentina in August 1935 as technical adviser to the new central bank.[39]

Kemmerer's visit to Colombia took place in August 1930, and, contrary to common belief, his advice was to increase credit rather than do the opposite. Among the recommendations raised by the Kemmerer mission was the provision of more representation for coffee growers – who had complained about the lack of credit since the central bank's inception – and to raise the levels of credit to local governments as well as to the general public. The former was to be achieved through a modification to the board of directors to include three government appointees from the trade chamber and the industrial and coffee growing sectors. Coffee growers could be supported through the new capacities of the central bank to widen the kind of financial assets (short-term commercial paper) that could be presented for rediscounting[40]. Kemmerer also attempted to tailor some reforms to national circumstances. Since paper eligible for rediscount was scarce, he emphasized to various levels of governments, including departments and municipalities, the need to increase

[39] Paraguay sent an invitation to Niemeyer when he was visiting Brazil in 1931, though this invitation was declined and instead, the governor of the Bank of England referred them to the Bank for International Settlements. Memorandum from the Overseas & Foreign Department, "Bank of England Missions to Latin America", 25 October 1935. BoEA, OV16/2 "Latin America. General".

[40] This advice resembled the content of US Banking Act of 1932 which expanded Federal Reserve discount and rediscount policy. See (Meltzer 2003, 358).

direct lending to the private sector in order to tackle the credit crunch which followed the 1929 crisis.[41]

These expansionary recommendations —lowering the rediscount rates; the extended maturity of commercial paper that could be discounted; the banks' reserve requirements at the central bank; the central bank's reserve to notes and deposits ratio— were criticized by local policymakers..[42] Kemmerer observed that the general level of reserves to deposits and notes ratio had been above 80% —well above the required minimum of 60%— and thus encouraged the bank to reduce this ratio.[43] He also recommended marginally increasing the limit for the amount of government loans to 30% of the Bank's capital and surplus.[44] This was to be accomplished indirectly through the acceptance of government securities of short maturities as collateral for loans to banks and the general public. Kemmerer also defended the role of national governments' representatives on the Board of Directors of central banks and, even if initially reluctant, he also sponsored the idea of raising the limit of government borrowing capacity to a "modest extension" in case of emergency.[45] Finally, the mission also recommended undertaking open market operations with the public in order to develop an active market for short-term government securities, and the design of a scheme for agrarian bank credit[46].

Thereafter, during his visit to Peru in early 1931, Kemmerer recommended that the government reform the central bank statutes in line with what he had already suggested to Colombia and adopt fiscal reforms to signal a commitment to balanced public finances, thereby becoming capable of contracting a foreign loan (E. W. Kemmerer and Banco Central de Reserva del Perú 1997, XXXV). Kemmerer also recommended decreasing the government's dependence on custom duties and strengthening the fiscal base on direct taxes. His proposed reforms were largely disregarded however because of the political turmoil which followed the military revolt of August 1930 (Quiroz 1993).

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[41] See "El Banco de la Republica ha principiado a otrogar prestamos a particulares", *El Tiempo*, 22 October 1930. According to Kemmerer, with the exception of the Federal Reserve Bank of the United States, central banks of France, Germany, Greece, Hungary, Italy, Japan, Latvia, Netherlands, Poland, Russia, Sweden and Switzerland were allowed to embark on regular banking business with the public. The Bank of England, despite being chiefly a "banks' Bank" had no limitation on dealing with public. EKP "Provisions of Status of Leading Central Banks", EKP Box 236, Folder 8, "Central Banks".

[42] See "Reforma de la Ley Bancaria", El Diario Nacional, 22 September 1930. Lowering the levels of reserves was also demanded by different sectors, see for instance "A Trascendentales reformas a la legislación bancaria vigente en la República" in Relator, 8 May 1930.

[43] Exposition of Motives of the Law amending Law 25 of 1923, The Organic Law of the Bank of the Republic". EKP, Box 132, Folder 5, Banks and Banking – Banco de la República, 1930-1933 p.18.

[44] "Exposition of Motives of the Law amending Law 25 of 1923, The Organic Law of the Bank of the Republic". EKP, Box 132, Folder 5, Banks and Banking – Banco de la República, 1930-1933.

[45] "Exposition of Motives of the Law amending Law 25 of 1923, The Organic Law of the Bank of the Republic". EKP, Box 132, Folder 5, Banks and Banking – Banco de la República, 1930-1933.

[46] "Kemmerer Bill-Banking Policy", 3 Oct. 1930, EKP, Box 132, Folder 2, Banks and Banking – General, 1926-1931.

Kemmerer attended the Fourth Pan American Commercial Conference held in Washington between 5 and 13 October 1931, where he expressed his new views on monetary and banking policy reforms. While still a strong defender of the gold exchange standard, he introduced new ideas about the role of central banking in response to the crisis. According to him, all central banks in Latin America needed to be reorganized and to operate as "quasi-public institutions". This would prevent them from becoming a "tool of politics" to be exploited by national governments, and it would spare them from the almost " equally great danger" of being controlled by the banking interests of the country which operated primarily for financial profit.[47] In order to avoid this danger, Kemmerer proposed a change in the board of directors with not more than ten men to be chosen in equal part by the government, commercial banks, and a select group of agricultural, industrial, commercial and organized labor interests. He also strongly recommended that central banks share their profits with their national governments and open the door to a future expansion of governments' maximum borrowing limit. [48]

Kemmerer was also present at the South American Conference of Central Banks held in Lima in December 1931. The meeting was convened by Bolivia's central bank, and included representatives from Kemmerer central banks and the Federal Reserve. One goal was to set up a program of reforms and to promote international credit for productive purposes. After a detailed review of the status of leading central banks in the world, Kemmerer insisted on the need for central banks to abandon real bills doctrine and to increase the discount and rediscount of paper which arose from agricultural, industrial and commercial transactions. Indeed, central bankers agreed to reform their organic laws in order to amplify rediscount and credit operations in general thorough the creation of a system of bankers' acceptances. Kemmerer also recommended making use of open market operations, easing monetary policies and extending the operations of lenders of last resort in case of "urgent need of assistance".[49]

As the crisis deepened, political instability increased. Bolivia and Paraguay conducted a war between 1932 and 1935 (Chaco War), as did Colombia and Peru between September 1932 and May 1933, while Chile experienced a coup in June 1932. These events accelerated government financing through central banks' loans. In Bolivia, as the Chaco War against Paraguay commenced in 1932, the expenses were first met by tax increases to the mining sector, and only thereafter by an increase

[47] " Currency Stabilization in Latin America. Address of Edwin Walter Kemmerer" EKP, Box 259, Folder 2 " Fourth Pan American Commercial Conference, 1931".
[48] " Currency Stabilization in Latin America. Address of Edwin Walter Kemmerer" EKP, Box 259, Folder 2 " Fourth Pan American Commercial Conference, 1931".
[49] EKP, Box 236, Folder 8 "Conference of South American Central Banks, Lima, Peru, December 1 to 12, 1931".

in lending from the central bank (Peres-Cajías 2014)[50] The League of Nation (1935, 159) reported that the government had multiplied its borrowing at the central bank by a factor of 13 between 1931 and 1933, which in that year represented almost 75% of the bank's total assets. Comparable figures for Chile's central bank are estimated at 67% in 1933 (from 15% in 1931).

Government financing by the central banks could materialize through a set of reforms that increasingly benefited other sectors. To name the most representative, the central bank in Chile had been allowed since July 1931 to widen its discount and lending operations in foreign currency and thus was able to buy foreign currency denominated bonds from the government. The legal minimum of the gold reserve was reduced from 50% to 30% (in September 1931; it was further reduced to 25% in January 1932) and the limits of government advances was also increased (from 20% to 80% of the bank's capital and reserves).[51] In Ecuador, the legal minimum of gold reserves was reduced to 25% of deposits and 50% of notes (previously 50% of notes and deposits combined) after a new Banking Law was passed in December 1931.[52] In Peru, despite the recommendations given by the Kemmerer mission, the legal minimum reserves were decreased to 50% of notes (from 50% of notes and deposits) in May 1932, while the composition of the reserves could be modified. Banking acceptances were allowed to be one half of the total legal minimum instead of two fifths. Finally, the government was permitted to increase its credit limit at the central bank from two to three months' revenue.[53]

The increased amount of available credit also benefited other sectors. In Chile, the reserves at the central banks were also used (since July 1932 and under pressure from the socialist coalition which took power in June 1932) to pay for imports and to lend to other public sector bodies. These loans were also granted to programs for the relief of unemployment and the development of industry.[54] In Colombia, the central bank was allowed to make loans as follows; up to 15% to banks and the general public and not in excess of 30% of its paid-up capital and surplus to the government. The legal minimum was reduced in November 1931 from 50% to 40% against notes and deposits. The bank also participated in various government programs to support relief to debtors and coffee exporters, and, during 1933, to buy shares from the central mortgagee bank[55]. Lastly the project for the creation of a state bank, the *Caja de Credito Agraria,* crafted by Kemmerer

50 (Peres-Cajías 2014, 94) further posits that exchange controls were used as an income tax, as mining companies were obliged to sell their foreign exchange gains at an overvalued exchange rate, while the government sold them at market rates.
51 "Central Banks in Latin America", 25 May 1933, BoEA, OV188/1 "Latin America – General".
52 BoEA, op.cit, "Ecuador", no page.
53 BoEA, op.cit. "Peru", p.2.
54 BoEA, op.cit, "Chile", pp.3-4.
55 BoEA, op.cit, "Colombia", p.2.

during his 1930s mission, was established in 1932 with the goal of channeling national credit to agricultural sectors (Drake 1989, p.71).

How did these experiences compare to others where central banks were absent? In those cases, the main commercial banks provided credit to the government. In Argentina, where advances on government securities increased more than 30% between 1929 and 1931, it increased by 25% from the Banco de la Nación [56]. However, this bank also increased its rediscounting operations to commercial banks against government securities. Argentina's Caja de Conversión began to issue domestic currency in exchange for commercial bills and, in 1932, also against treasury bonds. (C. F. Díaz-Alejandro 1983; Della Paolera and Taylor 2007). In Brazil, the notes in circulation decreased in 1930. The *Banco de Brasil* and the Stabilization Office diminished their notes, with the Stabilization Office being abolished at the end of 1930. The Federal Treasury however increased its own issue to finance the budgetary deficits and also through large issues of treasury. In Central America, Guatemala, Nicaragua and Honduras struggled to defend their peg with the dollar, while Costa Rica and El Salvador allowed their rates to float and were repegged to the dollar after Roosevelt's devaluation (Victor Bulmer-Thomas 1984)

Contrary to Kemmerer's advice, Niemeyer did not foresee any measures intending to ease the economic effects of the crisis. In Brazil, Niemeyer defended the idea that a central bank's mandate was solely to maintain monetary stability and not to "take wider commercial risks or to provide capital for long term investment" as this could create conflict with the bank's main goal (Niemeyer 1931). He maintained that foreign investment needed to be encouraged, for which sound public finances and a stable currency were necessary (p.19). In the case of Argentina, (Sember 2018) stressed that Niemeyer was against open market operations and exchange controls and, more generally, any instrument that could serve to soften economic fluctuations (Sember (2018, 70).

While all over Latin America governments attempted to gain control over central banks, the opposite was true in Mexico where, during the 1930s, a mix of orthodox and heterodox reforms were implemented to make it more autonomous. While legally designed as a central bank, Bank of Mexico functioned until 1931 more as an instrument to directly promote and generate investments than as a proper central bank (Nodari 2019). After 1931, while the legal gold minimum reserve remained untouched (50%), the central bank was allowed to issue paper money backed by silver reserves (100%). Even if it was forbidden for the bank to engage in direct loan and discount operations with the public, the Organic Law approved in April 1932 fostered a new policy of

[56](League of Nations 1935, 155).

rediscount in line with Kemmerer countries' reforms.[57] Members of the New York Federal Reserve Board welcomed these reforms as a turning point in the road towards central bank autonomy and management[58]. Their British counterparts, however, were more cautious. In fact, according to the Bank of England, the central bank of Mexico should be classified as a Kemmerer style central bank, although its "great evil still lies in the political control", a fact that was described as "probably unavoidable" in the Latin American context[59].

Mexico's experience converged with those in Kemmerer countries to the extent that they all began to establish a system of national banks which were capitalized entirely by the state and whose main aim was to encourage agricultural development (Bank of Agricultural Credit and National Ejidal Bank) and the financing of public works (National Mortgage Bank of Public Works). Finally, in 1934, *Nacional Financiera* was founded with the primary goal of developing the national capital market and promoting industrialization. Similar institutions were created in Colombia, where, following Kemmerer's advice, the government established the *Caja Colombian de Credito Agrario* in 1932. In Peru, an agrarian Bank was set up in August 1931 using funds obtained by the reduction of the central bank's social capital (Seidel 1972). These new state institutions, all associated with their respective central banks, were of paramount importance in promoting national agriculture and industry in the late 1930s. They contributed to a revival of commercial banking credit and to fostering a new economic model where the state took on a leading role in intervening and guiding the direction of economic development.[60]

VI. Conclusions

In 1944, after his mission as a money doctor in Paraguay, Robert Triffin published a study on the recent evolution of central banks in Latin America. He criticized the League of Nations' central banking advice, pointing out that "however good in general", it was primarily derived from the experience of industrialized nations and could "often be rightly regarded by less developed countries as impracticable or even irrelevant to their problems" (Triffin 1944, p. 101).

As we have shown in this paper, a proper assessment of the fragilities in the original central banks' design in Latin America requires identifying the strategies and tools which they used to tackle the consequences of the Great Depression. In this paper we followed their evolution from the 1920s until the middle of the 1930s. We underscored how, during the 1920s, governments with

[57] See (Diario Oficial 1932).
[58] " Strictly Confidential. Conditions in Mexico", AFRB 1 Jun. 1932.
[59] BoE, Series OV 166/1, Exp. 1/2, Subject, "Bank of México".
[60] (Moreno-Brid and Ros n.d.; Patiño Rosselli 1981).

fiscal imbalances and difficulty in accessing capital markets introduced various measures to pursue monetary stability, to obtain a secure source of financing, and to foster the capacity of banking sector to expand credit to the private sector. The establishment of central banks was followed by the adoption of a gold standard regime and, in many cases, monetary reforms were also accompanied by a set of banking and fiscal reforms, generally designed by foreign advisors or money doctors. Kemmerer central banks, despite minor differences, were designed to follow the rules dictated by the gold standard regime, while maintaining a certain level of autonomy, even though he foresaw that the government would participate as a shareholder. Considering national economic constraints, he recommended a higher limit on governments' borrowing possibility compared to the advice offered by Otto Niemeyer.

During the 1920s and until the Great Depression, central banks operated smoothly. After an orthodox response to the crisis, Latin American central banks suspended the gold standard and implemented some form of exchange control before defaulting on their external debt. As we stressed in this chapter and in spite of conventional wisdom, including objections raised by Triffin, Kemmerer's advice played an important role in promoting some institutional reforms which allowed central banks to react proactively to the Depression. While exchange rate targeting persisted as the prevalent monetary anchor, the weapons used by Latin American central banks to tackle the crisis were indeed similar. All expansionary policies were stimulated by some form of exchange control with the main goal of promoting a domestic credit expansion.

The introduction of new legislation expanded both the scope of action and the discretionary powers of central banks, particularly at the beginning of the 1930s. They were allowed to undertake open market operations, to enlarge and ease discount and rediscount policies, to extend loans directly to the public and also to increase the governments' maximum borrowing limits. Some of these reforms did not function as expected. For example, a widely used countercyclical central bank weapon like open market operations, was inefficient in Latin America due to the lack of a well-developed financial market. As a consequence, credit expansion mainly took the form of an increase in central banks' loans and investments. After an upsurge in rediscount policy to ease monetary stringencies, central banks extended credit to the general public as well as to official and semiofficial development institutions. These reforms went hand in hand with the reduction of the banknotes' legal reserve ratio and a more tolerant view on government borrowing. The plethora of continental wars pushed some national governments into seizing their monetary authorities, leading to a permanent situation of high inflation and exchange instability. Nevertheless, in other countries such as Colombia, Mexico, and Argentina, the post 1929 central bank reforms played a role of paramount importance in supporting other countercyclical measures and fostering the economic recovery. Overall, this process of reorganization paved the way for the emergence of modern central banking in the continent.

Sources

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ACFR, Archives of the Council of Foreign Relations, Princeton

BoE, Bank of England Archive, London

EKP Edwin Kemmerer Papers, Princeton

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Table 1. Monetary and fiscal variables, 1917-1922

Country	Inflation	Exchange rate volatility.	Average Public deficit (i) in percentages	Loan in NY in 1921-1922
a. Central bank and foreign advisor				
Bolivia	NA	0.22	43.0	Yes
Chile	7.0	0.40	11.8	Yes
Ecuador	4.7	0.28	5.5	No
Colombia	6.9	0.09	6.5	No
Average	6.2	0.25	10.5	
b. Central Bank – no foreign advisor				
Guatemala	NA	0.02	4.7	No
Mexico	4.8	0.05	-11.9	No
Peru	7.9	0.16	18.1	Yes
Average	6.4	0.10	3.6	
c. No central bank				
Argentina	4.4	0.14	23.6	Yes
Brazil	6.4	0.36	42.0	Yes
Uruguay	3.4	0.23	23.0	Yes
Venezuela	2.4	0.10	-1.5	No
Average	4.8	0.24	21.8	

Source: Moxlad database with the exceptions of Uruguay (ref.) and Venezuela, (Carrillo Batalla 2002). Exchange rate volatility is measured as the mean to standard deviation ratio. (i): Negative figures represent surpluses.

Table 2. Central banks autonomy and government lending

Country and date of enactment law	Duration in years	Percentage of shares to be held by government	Total members in board of directors	Members appointed by the government	Limits on government borrowing
Peru (9 March 1922)	25	0	10	3	None
Colombia* (11 July 1923)	20	50.00%	9	3	30.00% of paid-in capital and reserves
Chile* 21 August (1925)	50	13.30%	10	3	30.00% of paid-in capital and reserves
Mexico (1 September 1925)	30	51%	9	5	10.00% of paid-in capital and reserves
Guatemala (11 December 1926)	30	No imposition	9	2	10.00% of paid-in capital and reserves
Ecuador* (4 March 1927)	50	No imposition	9	2	20.00% of paid-in capital and reserves
Bolivia* (20 July 1928)	50	No imposition	9	2	25.00% of paid-in capital and reserves (possibility to extend to 35% in case of emergency)
Argentina (28 March 1935)	40	33.30%	12	1[(1)]	Only short-term loans up to 10% of tax revenues (, estimated as an average of last three years)
Brazil [(2)] (4 July 1931)	30	0	5	0	Limit to one eight of the revenues of the previous year
El Salvador (26 July and 9 September 1933)	30	0	4	0	Temporary advances only (10% of customs duties) - revenues
Venezuela (8 September 1939)	50	50.00%	8	4[(3)]	Not allowed

Source: Flores Zendejas (2021). Central banks with a (*) are those designed by Edwin Kemmerer. [(1)]: This figure does not include the President and Vice-president, also elected by the executive with the approval of the Senate. (2): The case of Brazil refers to the project presented by Otto Niemeyer but not actually implemented. (3): The president is not included; to be elected by the bank's shareholders from a list proposed by the government's president.

Table 3. Suspension of gold standard regime, introduction of exchange controls and debts payments suspensions in Latin America.

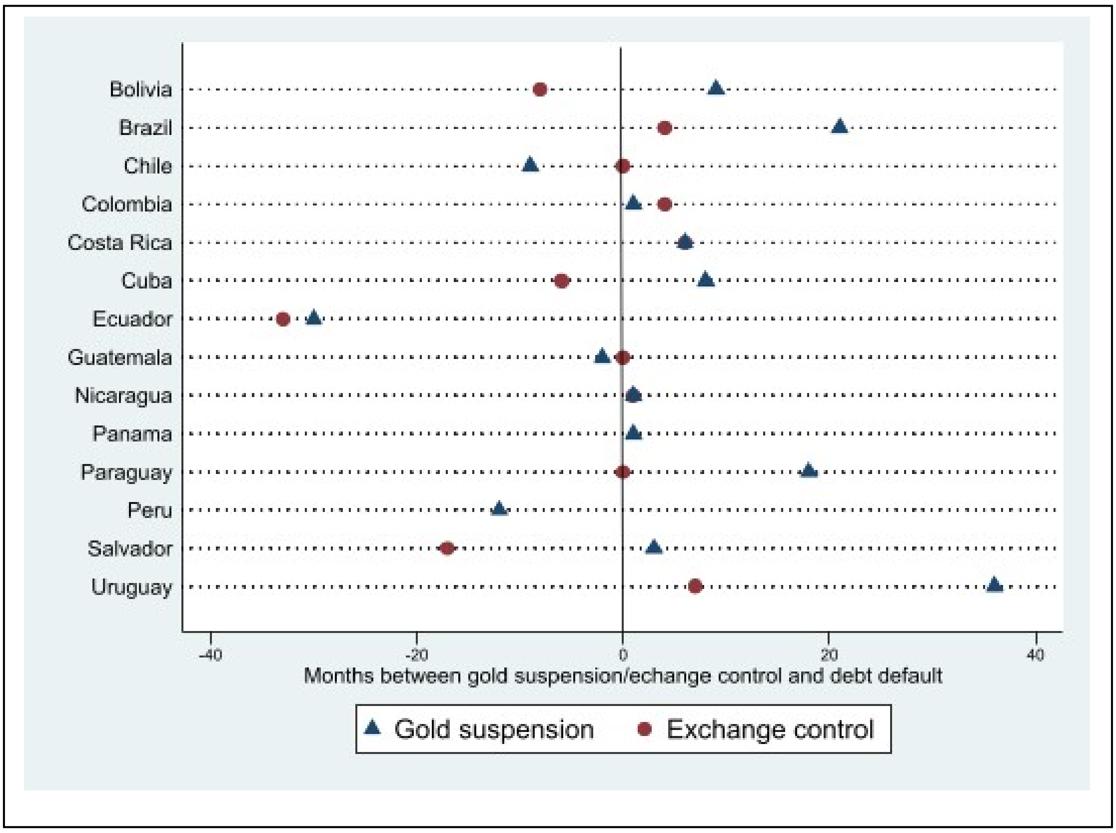
Country	**Monetary Unit**	**Official suspension of gold standard**	**First introduction of exchange controls**	**First depreciation in relation to parity**	**Debt Suspension***
Uruguay	Peso	01-Dec-29	07-Sep-31	April-29	May -33
Argentina	Paper peso	16-Dec-29	13-Oct-31	November-29	None
Paraguay	Peso	None	20-Jun-32	November-29	June -32
Brazil	Milreis	Nov- 1930[a]	18-May-31	December-29	October -31
Bolivia	Boliviano	25-Sep-31	03-Oct-31	March-30	January-31
Venezuela	Bolivar	None	01-Dec-36	September-30	None
Mexico	Peso	25-Jul-31	None	August-31	January -28
Salvador	Colon	07-Oct-31	August-1933	October-31	February-32
Colombia	Peso	24-Sep-31[b]	24-Sep-31	January-32	February-32
Costa-Rica	Colon	None	16-Jan-32	January-32	August-32
Nicaragua	Cordoba	13-Nov-31	13-Nov-31	January-32	January-32
Chile	Peso	19-Apr-32	30-Jul-31	April-32	July-31
Peru	Sol	14-May-32	None	May-32	May-31
Ecuador	Sucre	08-Feb-32	02-May-32	June-32	July-29
Cuba	Peso	21-Nov-33	02-Jun-34	April-33	December-33
Guatemala	Quetzal	None	None	April-33	February-33
Haiti	Gourde	None	None	April-33	None
Honduras	Lempira	None	27-Mar-34	April-33	None
Panama	Balboa	None	None	April-33	May-33

Sources: League of Nations (1937), table 122.

*= For debt suspension we consider a country which suspended the payment for sinking fund. Nevertheless, various countries still maintained interest debts services payments. These countries were: Uruguay (until July 1933); Paraguay (until April 1933); Colombia (until April 1933); Salvador (until January 1935); Guatemala (until May 1939). Mexico temporarily deferred debt payment in 1928; by the end of 1930 signed a new agreement with the International Committee of Bankers and finally suspended debt payment in January 1932. *Source*: Annual report of the Council of the Corporation of Foreign Bondholders, various issues.

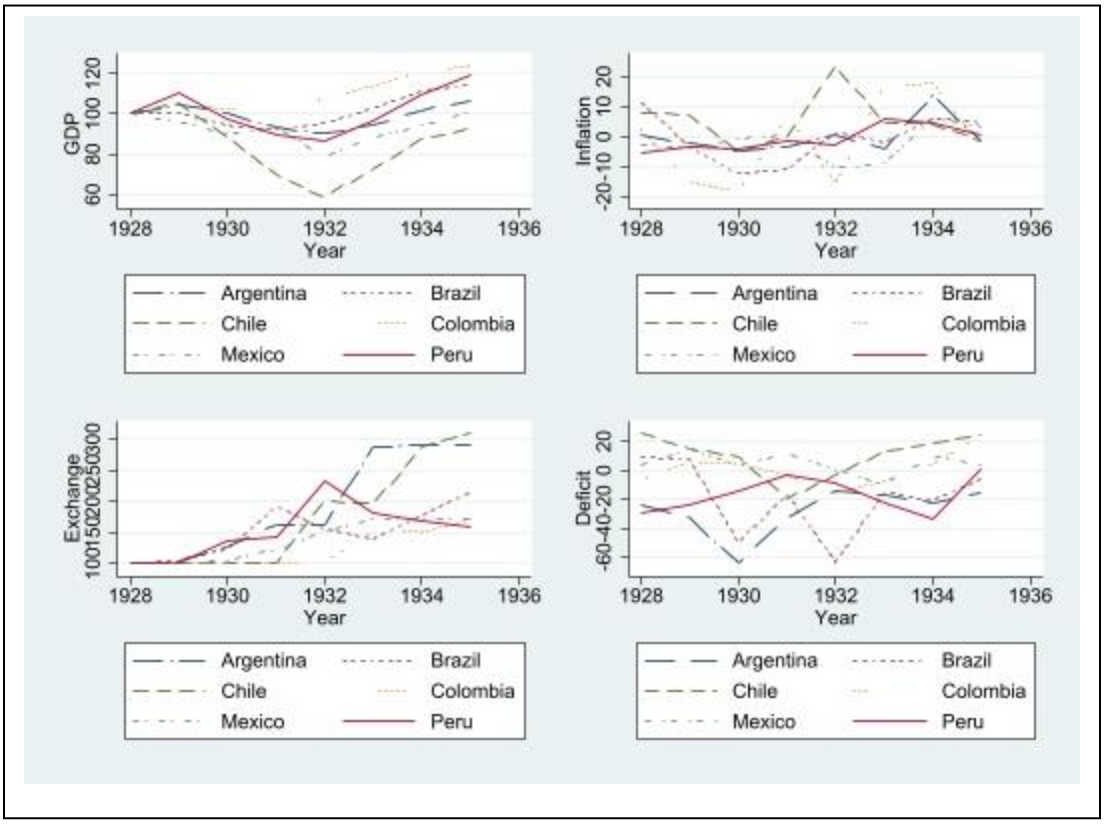
a= See (Fritsch and Franco 2001, p. 161)
b= Despite the official gold standard suspension Colombia only suspended internal convertibility while maintained the pre-1931 pegged with the dollar until march 1933. See (Ocampo 1984)

Figure 1. Months between gold suspension, exchange controls and external debt defaults.



Sources: Own computations from the League of Nations Yearbook (1937).

Figure 2. Macroeconomic indicators



Sources: League of Nations Statistical Yearbooks, several issues for inflation and public deficits. Real GDP growth is own computations based on (Bértola and Ocampo 2013), Table A1, pp.287-8. Exchange rates are from Global Financial Data. The computations of Mexico's inflation and deficit figures are based on Moxlad database. Inflation is defined as percentual changes in prices. GDP figures and exchange rates are indexes with basis year 1928=100. Deficits are defined as the ratio of deficit to public revenues of the central government. They are reported as percentages.