Two Hundred Years of Financial Integration:
A New Database with an Example from Latin America

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Abstract

Most empirical studies on financial integration examine the experience of the last thirty years because capital flow data are available only since the late 1970s. With just thirty years of data it is hard to estimate the effects of globalization on growth or examine the differences between crises starting in the financial center or in the periphery. I construct a new database on international issuance starting in 1820. This database includes individual sovereign bonds and loans as well as bonds, loans, and equities issued by private corporations. This paper presents the database with an example for Latin America.

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I. Introduction

The last three decades have been witness to a dramatic process of financial globalization not seen since the Gold Standard period before WWI. This process of integration was warmly welcomed around the world since it was believed that financial integration allows capital to travel to its most attractive destination. But the booms in international capital flows ended with major busts, currency crises, and a great recession. As a result, the hot debate on the benefits of financial integration is now tilted against financial globalization.

But, is it possible to dismiss so easily the benefits of financial integration? The 1990s and the 2000s are also witness to a worldwide growth surge across emerging economies in part financed by international capital flows. Similarly, during the heydays of financial globalization in the 19th and early 20th centuries, many emerging economies started to converge to income per capita levels of developed countries with production in new industries mostly financed by borrowing internationally. Still, the empirical literature on the effects of financial integration is inconclusive. Why is that? All empirical findings are based on data on capital flows since the late 1970s because there are no data available for earlier periods. With at most three episodes of capital flow bonanzas in the last thirty years, it is hard to untangle the effects of surges of international capital inflows on growth in the receiving countries. Generally, we can only capture the links between capital flow bonanzas and the business cycle around the world.

With only thirty years of data, it is also hard to assess the aftermath of the current financial crisis. All the crises in the last thirty years started in the periphery (for example, Mexico (1994) and Thailand (1997)). In contrast, the current crisis has the financial center at its epicenter. The downturn following the crises of the 1990s was short-lived, with economies recovering in part due to a growing world economy. In contrast, the world economy is still immersed in the worst recession since WWII even two years after the onset of the Subprime crisis. Our understanding of the current crisis will benefit from comparing the current crisis to those crises of the 19th and early 20th centuries that started in the financial center, such as the crises in 1825, 1873, and 1929. Using a database on capital flows encompassing 200 years, we can examine the empirical regularities of these two types of crises.

Overall, it is very hard to draw generalizations from just thirty years of data. Post-1970 data can help us untangle some of the cross-country differences in international capital flows but
they cannot help to uncover the effects of sporadic time shocks, time dependence, or the effects of the slow evolution of international capital markets. Cycles in monetary easing/tightening in the United States and other financial centers have been blamed for excessive booms and busts in capital flows to emerging economies, triggering currency and banking crises in the periphery. The focus of the studies on the role of monetary policy in the financial centers is on the easing in the late 1970s, the one in the early 1990s, and most recently the one in 2001-2003. With just three cycles, it is hard to pinpoint the role of monetary policy in the financial centers on the rest of the world. This is especially so because these cycles coincide with other worldwide shocks, such as the oil shocks of the 1970s or the savings glut in East Asia in the early 2000s. A new area of research in international finance emphasizes time dependence in sovereign defaults, the so-called serial defaults that span over more than a century.\(^1\) The study of serial defaults, their link to growth, and the characteristics of capital flows cannot be possible without a database on capital flows that spans a long period. International capital markets change slowly. For example, most capital flows to developing countries in the 1970s and 1980s were in the form of syndicated loans, with commercial banks holding those loans on their balance sheets. Only in the mid 1990s did international bond and equity flows start to surge; they have become the most common type of issues just in the last decade. So, we are left with a few time data points to examine whether the composition of capital flows affects the size and frequency of international capital flow bonanzas and sudden stops. In contrast, during the 19th and early 20th centuries bond and equity issuance was the norm. This new historical database will help to examine the effects of the slowly evolving composition of international flows.

A central contribution of this project is to create a new database of gross primary issuance of bonds, equities, and loans floated in London, Paris, Berlin and Frankfurt, and New York, the financial centers of the 19th and early 20th centuries. The data collected include all individual issues floated in these financial centers and the time of the floating of each security, the name of the issuer, and the amount of capital called. For bonds and loans, the data also include the price, the interest rate, the currency of denomination, and the maturity of every issue. For equity, the data also include the type of shares (ordinary versus preference) and the price at which shares are issued. Using this new database, we can decompose capital flows into...

\(^1\) See, for example, Reinhart and Rogoff (2003) seminal work and Catão, Fostel, and Kapur (2007).
sovereign and private borrowing and by maturity and purpose of the issue. We can also identify the sectoral composition of the firms that are tapping international capital markets (say, railways, meat processing plants, petroleum).

The purpose of this working paper is to present a part of the dataset. Section II describes the sources of this database and reports the data for Latin American countries both during the 19th and early 20th centuries until international capital markets collapsed in 1931 and compares these data to similar data since 1980. Appendix 1 describes the sources of the database.

II. A Description of the Database

Most of the previous empirical studies on financial integration only examine the experience of the last thirty years because capital flow data are available only for this period. Studies on international capital flows for the heydays of financial integration during the gold standard period have to rely on current account data of the major capital exporters: Great Britain during the 19th and early 20th centuries until the onset of WWI, France and Germany during the late 19th and early 20th centuries, and the United States during the early 20th century up to the great depression. While these data can approximate the extent of total capital flows from the main financial centers to the rest of the world, they do not provide disaggregated information on capital flows to the receiving countries. There are also annual trade account data for a small number of countries starting in the 1880s. While these data can capture the ability of those countries to tap international capital markets, they cannot provide a metric of financial integration around the world or information on the characteristics of the flows. For example, it is impossible to untangle sovereign and private borrowing, equity and bond flows, or to learn the types of companies that have access to international capital markets. While there are some compilations of international capital issuance during the 19th and early 20th centuries, they do not cover all the period since London became the financial capital of the world at the end of the Napoleonic wars nor do they include international issuance in all the financial centers of those

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2 Modern data are from Dealogic.
3 Country data on stocks of foreign capital are also available for a small number of countries but the data are quite fragmentary for the 19th and early 20th centuries.
4 These data are presented and thoroughly examined in the important studies by Taylor (2002), Obstfeld and Taylor (2004), and Eichengreen and Adalet (2005).
times.\(^5\) Again, these compilations do not provide information on individual issues to uncover the characteristics of firms that are able to tap international capital markets.\(^6\)

Data on international issuance since 1820 are not readily available. They are scattered in archives in London, Paris, Berlin, Frankfurt, and New York, such as the House of Rothschild in London and the Crédit Lyonnais\(^7\) in Paris. They are partly available in financial newspapers of the time, such as The Times, The Economist and its publication Investors Monthly Manual for London, L’Économist Européen and Le Rentier for Paris, the Deutsche Ökonomist and the Frankfurter Zeitung for Berlin and Frankfurt. The information can be complemented with the Annual Reports of the London and Paris Stock Markets as well as the Börsen-Enquete-Kommission for Berlin and Frankfurt. For international issuance in the United States, information can be gathered from the New York Stock Exchange Quotations and Listing Statements. Part of the information can be gathered from the prospectuses that governments and firms have to publish as a prerequisite for floating debt and equity. Partial information can also be obtained from some country studies (mostly for sovereign issues) such as Suzuki (1994) for Japan and Bazant (1968) for Mexico. The newly constructed database includes data from stock market manuals and financial newspapers as well as industry manuals published in London, Paris, Berlin, Frankfurt and New York together with country studies. Appendix 1 identifies the main sources of data for the five financial centers.

\(^5\) While London had the lion’s share of international issuance during the 19\(^{th}\) century, France’s international issuance during this period was about 40 percent of London’s issuance (see Saul, 2005). Moreover, Paris and London specialized in different regions, with Paris concentrating in issuance to continental Europe, Russia, and the Ottoman Empire and London specializing in the British Empire, Latin America, and Japan. Germany, home to the third financial center of the 19\(^{th}\) century, specialized in lending to Eastern Europe, Russia, and the Baltic countries. Thus, to capture countries’ access to international capital markets, it is essential to collect data on issuance on all financial centers of those times. For the early 20\(^{th}\) century, we need to add international issuance in New York, the main international financial center following the end of WWI.

\(^6\) An important source of country data on international issuance is that of Stone (1999) which provides information on bond and equity issuance in London from 1865 to 1914 for twenty one countries but it lacks information on the individual issues. Davis and Gallman (2001) collected information on international issuance in London from 1865 to 1914 by Argentina, Australia, Canada, and the United States. Again, this study lacks detail on individual issues. An important source of Latin America’s sovereign issuance is Marichal (1989), which has disaggregated information for the periods 1850-1873, 1880-1890, and 1920-1930. Similarly, Lindert and Morton collected data on sovereign issuance for ten countries (http://www.econ.ucdavis.edu/faculty/fzlinder/SovereignDebtHistorical Data.htm).

\(^7\) The Crédit Lyonnais was the most important deposit bank in France and was also the leading bank in the world in 1913 according to the volume of its assets. With its many branches and its ability to put a considerable amount of securities in the hands of the public, the Crédit Lyonnais was an important partner in a large number of syndicates formed in the Paris market in the late 19\(^{th}\) and early 20\(^{th}\) centuries (See Saul, 2005).
To introduce the historical data, I present two prospectuses in Figure 1. The first one is a 1,034,700 sterling-pound bond issued by the Province of Buenos Aires (Argentina) in 1870. This is a 6% loan issued at a discount (88 percent of face value) redeemable in 33 years, with interest paid twice a year in London. This bond, as most sovereign bonds in the early phase of financial integration, was callable, allowing governments to refinance their debt in low-interest rate years. The second one is a 5% mortgage bond issued by the Railway Company Victoria to Minas in Brazil payable in 80 years. Note that this bond as most bonds issued by Railway companies are guaranteed by the government.

Figures 2 and 3 show the evolution of total primary-issuance in international capital markets. Figures 4 and 5 decompose total issuance into sovereign/public and private issuance. Figure 2 shows the better known boom-bust cycles in international issuance from 1980 to 2008 while Figure 3 shows the newly collected data covering the period from 1820 to 1931. The top panel in these figures shows the face value of all bonds, equities, and loans issued over time. Another metric to capture participation in international capital markets and the degree of liquidity of these markets is shown in the bottom panel, where I report the number of issues. As shown in Figure 2, there are three cycles in international issuance in the last 30 years. The first one starts in the late 1970s and peaks in 1981 at 38 billion dollars. There are 209 issues, with only 34 percent of those issues arranged by the private sector. A new cycle starts in 1990 following the Brady Plan in 1989-1990 and peaks in 1997 at 113 billion dollars, a 200 percent increase from the peak in 1981. There are 1988 issues floated during this boom, with 72 percent of those issues being private. The last cycle starts in 2003 and peaks in 2007. Participation in international capital markets continues to expand, with issuance in 2007 increasing to 157 billion dollars, an increase of almost 40 percent from the previous peak. Again, in number of issues, the private sector deals are 78 percent of the 1533 issues floated from 2003 to 2007. Overall, during the 1980-2008 period, banks are the most active participants in international capital markets with 27 percent of all private issues related to the banking and financial sector. Other active

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8 I should note that public issuance in the earlier period increases substantially because bonds at that time were callable with frequent refinancing in times of low interest rates. I should also note that sovereign issuance in the earlier period includes conversion of the defaulted sovereign debts. This is not the case in the last 30 years.

9 The data for this period is still incomplete. All private companies bonds and equities as well as some sovereign bonds floated in Berlin, Frankfurt, and Paris are still not included. The data from France and Germany will be included in the revised version of this paper.
participants are the oil/mining industry with 12 percent of all private issues, the energy/electricity sector with 13 percent of all private issues, and the communication/telecommunication industry with 11 percent of all issues.

The pattern of boom-bust in international issuance during the last 30 years is not new. As shown in Figure 3, there are clear boom-bust episodes throughout the 19th and early 20th centuries peaking in 1824, 1872, 1889, 189910, 1909, and 1927. I should note that the data presented in Figure 3 is not strictly comparable to that of Figure 2. The earlier data includes refinancing of the sovereign debt in times of low interest rates as well as the conversion loans following a sovereign default, thus magnifying the importance of sovereign issuance. I should also note that while most of the sovereign loans are long term bonds, after the 1929 stock market crash in New York, the data also includes issuance of short-term treasuries. For example, in 1930 Argentina issued 17 million British pounds in 6 month bonds.

The boom of the 1820s is mostly due to public loans to the newly independent countries. There are thirteen issues11 for a total of 21 million pounds (at face value). The nominal interest rate of these bonds oscillates between 5% and 6%. Bonds are sold at an average discount of 22 percent. This episode also witnessed the creation of new companies in the mining sector. In total, twenty eight companies are formed with a proposed capitalization of 24 million pounds. However, by the time of the collapse in the summer of 1825, the shares issued amounted only to 3.5 million pounds.

There are 200 issues during the boom of the late 1860s until 1872, of which 128 were private issues. It is during this period that a large number of British banks are created following the laws in 1858 and 1862 allowing the formation of joint-stock banks with limited liability. This is also the period of the creation of deposit banks such as the Credit Lyonnais (1863) and the investment banks (banques d’affaires) such as Banque de Paris et des Pays-Bas (1873), with both English and French banks founding new banks in continental Europe and Latin America. In Latin America, The London and Brazilian Bank is the first to be incorporated in May 1862 with a capital of 1,000,000 pounds; the London and River Plate Bank follows with a capital of 500,000 pounds. In 1863, the London and South American Bank limited is founded and merged

10 The peak in 1899 is mostly due to the conversion loans in Argentina.

11 There are two Brazilian bonds, one Central American bond, two Colombian bonds, one Chilean bond, three Mexican bonds, three Peruvian bonds, and one bond is issued by the Province of Buenos Aires.
with the Mexican Bank in 1864 to form the London Bank of Mexico and South America Limited with a proposed capital of 1,000,000 pounds. Many others, such as the London and Venezuelan Bank, the Mercantile Bank of the River Plate in Uruguay, and the Anglo Peruvian Bank are founded in this period. It is also during the 1860s and 1870s that the first joint-stock railway companies are formed. Railway construction is financed through issues of bonds, mortgage bonds, and equity issuance. Some of the earlier issues are those of the Brazilian Street Railway in 1869, the Sao Paulo Railway in 1870, City of Buenos Aires Street Railway in 1870, and Buenos Aires National Tramways Limited also in 1870. While the expansion is slowed down by the Overend Gurney crisis in London in 1866, by the early 1870s Latin American countries are heavily participating in international capital markets. In this episode, Peru becomes the most indebted country in Latin America, with the foreign debt increasing to about 36 million pounds in 1873 from 5 million pounds in 1856. The collateral provided by the exports of guano, monopolized by the Peruvian government, allows Peru’s government to access international capital markets in such grand way.

After the crisis in 1873, the next lending cycle peaks in 1889. From 1874 until 1889, there are 514 new issues, 393 of those issues are private. Argentina floats 184 issues, with 57 percent of those issues related to the construction of railways and tramways. Brazil’s issues are 121, with 37 percent of the issues financing railways and 10 percent financing sugar factories. Chile floats 36 issues with 64 percent related to the production of nitrates. Finally, Uruguay’s issues during this period are 30 with 43 percent of those issues financing railway construction.

The next cycle peaks in 1909. From 1890 to 1909 there are 780 issues and 82 percent of those issues are private. The most active participants in international capital markets during this boom are Argentina (236 issues), Brazil (138 issues), Chile (91 issues), Cuba (45 issues), Mexico (140 issues), and Uruguay (32 issues). Of the 236 Argentine issues, 39 are public (included conversion bonds after the default of 1890) and 191 are private. Of the 138 Brazilian issues, 79 of those are private. All but three of the 45 Cuban issues are private, 121 of the Mexican issues are private, and 26 Uruguay issues are private. A large part of Argentine issues (78) finance the construction of railways while 24 issues finance the building of a tramway system in various cities. Finally, 12 issues finance gas works. The importance of railway issues is smaller in Brazil, with only 19 issues. A larger number of issues (29) finance mines and coffee, rubber,
sugar plantations. Chile’s issuance is highly concentrated, with 52 percent of the issues linked to the production of nitrates. Although more diversified, 25 percent of all Mexican issues are related to mining.

The last capital flow bonanza starts in 1918 and peaks in 1927. There are 303 issues, only 120 of them are issued by the private sector. Interestingly, while Argentina continues to be the most important participant in international capital markets, its importance diminishes. During this episode Argentina floats only 48 issues for a total of 142 million pounds. Cuba takes a major role, floating 65 issues for a total of 91 million pounds. Brazil as Argentina also plays a diminished role in capital markets, floating 41 issues for a total of 109 million pounds.

A summary of the stylized characteristics of these cycles is reported in Tables 1-4. Table 1 shows the amplitude of the boom-bust cycles. The average duration of the booms is 9 years in the earlier episode and 8 years during the last 30 years. The duration of the busts is shorter, around 5 years for both periods. Downturns are more dramatic during the earlier period, with basically no issuance at the bottom of the cycle. Crashes during the last 30 years are less pronounced. Only the crash in the 1980s is as pronounced as those of the 19th and early 20th centuries. To have a metric of the increase in participation in international capital markets, I estimate the increase in issuance from the first peak to the last one in each period. In the earlier period, issuance increases 1062 percent (at an annual rate of 10.3 percent) while in the latter period, issuance increases 308 percent (at an annual rate of 11.8 percent).

Table 2 tries to capture another feature of these cycles, that of the length of the episodes of stagnation in issuance. I define two metrics of stagnation (being in the doldrums). Episodes of extreme stagnation are those years when issuance is 80 percent below issuance at the previous peak and episodes of medium stagnation are those years when issuance is 50 percent below issuance at the previous peak. Interestingly, even if we exclude the three decades of lack of participation in international capital markets following the crisis in 1825, the episodes of stagnation are more protracted during the 19th and early 20th centuries. Finally, Table 3 and 4 examine the characteristics of the private and sovereign capital flow cycles. Interestingly, private and sovereign cycles are similar suggesting an important country effect or a common world factor.
Information on total issuance is insufficient to compare the extent of financial integration then and now. I need to compare total issuance with an indicator of the size of the economy. The most common indicator used to capture the extent of integration across countries is the ratio of total issuance (or capital flows) to GDP. Official estimates of GDP for the 19th century and even the early 20th century are not available. Instead, I use exports as the scale variable. Table 5 reports the ratio of issuance to exports for the two periods. Interestingly, these ratios are similar over the two episodes of financial globalization. However, we should remember that many of the countries in Latin America are more open to trade in the 19th century than in the last decades of the 20th century. For example, Argentina’s exports are about 25-30 percent of GDP in the second half of the 19th century while since the 1970s exports are about 10 percent of GDP. These numbers suggest that the extent of financial integration of Argentina in the earlier period to be three times larger than that of the last thirty years. While there are not good estimates of economic activity for the large economies of Latin American during the 19th and early 20th centuries, some point estimates of GDP again suggest that these economies are more open to international trade and thus more financially integrated in the 19th and early 20th century than they are on average in the last three decades.

The previous analysis focused on measures of financial integration for the region. Figures 6 – 7 report the total value of issuance per country and Figure 8 compares each country’s share in international issuance then and now. We can divide all the issuing countries into two groups, the more financially integrated and that of countries that tap international capital markets sporadically. For the earlier period, the first group includes Argentina, Brazil, Chile, Colombia, Cuba, Mexico, and Uruguay with total issuance ranging from 800 million pounds (632 issues) for Argentina to 110 million pounds (101 issues) for Uruguay. The third group comprises Bolivia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, and Panama, Peru, and Venezuela with at most 100 million pound issuance and at most 60 issues. During the last thirty years, we can also classify the countries into groups. The first group includes Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela with total issuance ranging from 430 billion dollars to 70 billion dollars. The number of bonds, shares and syndicated-loan

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12 The number of bonds and shares issued during the earlier period are: Argentina (632), Brazil (467), Chile (202), Colombia (114), Cuba (172), Mexico (299), Peru, and Uruguay (101)
issues for this group ranges from about 2000 to 500.\textsuperscript{13} The second group comprises Bolivia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Panama, Peru and Uruguay with total issuance below 200 billion dollars and less than 200 issues each. I should note that the number of issues in the modern times is not strictly comparable to that in the 19\textsuperscript{th} and early 20\textsuperscript{th} century. In modern times, with floating rates in the financial centers, corporations and governments in the periphery issue simultaneously bonds in yens, pound, euros, and dollars. These are counted as different issues. Instead, during the gold standard there is no need to diversify currency risk. Bonds are issued in pounds with a clause that payment in another currency is set at a predetermined parity.\textsuperscript{14} The data suggests that overall small countries do not participate actively in international capital markets unless they have exportable natural resources, such as Cuba and Uruguay in the earlier period and Venezuela now.

As shown in Figure 8, there are winners and losers in the most recent period of financial integration. While Argentina’s share in international issuance is 32 percent in the earlier period, now its share relative to all Latin America’s issuance is just 16 percent. Brazil’s share increases from 21 to 32 percent and Mexico’s share increases from 15 to 31 percent. In contrast, the smaller countries’ shares decline in the most recent period when compared to those of the earlier period.\textsuperscript{15}

\textsuperscript{13} The number of bonds and shares issued during the last thirty years are: Argentina (1043), Brazil (1903), Chile (535), Colombia (358), Mexico (1522), and Venezuela (486).

\textsuperscript{14} In a revised version of this paper, I will examine the proportion of simultaneous issues in different currencies to assess the number of issues based on a same metric.

\textsuperscript{15} The changing shares reflect not only the fluctuations in participation but also the changes in the size of the economies during the 200 years. We need to untangle these two effects of the changing participation in international capital markets.
Appendix 1
Data Sources and Historical References

Books, Articles, and Chapters


Madden, John, 1985, *British Investment in the United States*, Cambridge, Massachusetts, Peterhouse


**Periodical Publications**

*Bankers’ Magazine* (London)
*Bankers’ Magazine* (New York)
*Commercial and Financial Chronicle* (New York)
*Department of Commerce Special Agents Series*, Washington, DC
*Deutsche Oekonomist*, Berlin.
*Economist* (London)
*Frankfurter Zeitung*, Frankfurt
*Journal of Geology*, University of Chicago, Illinois.

L’Économiste Européen (Paris)

L’EconomisteFrancais (Paris)

*Le Temps* (Paris)


*Moniteur des interest matériels* (Brussels).

*The Mines Handbook*, (New York)

*Times*, London

**Manuals**


*Annuarie des Valeurs Admises a la Cote Officielle de la Bourse de Paris*, Paris


*Bulletin des Annonces Légales Obligatoires* (Paris)


*Kimber’s Record of Government Debts and Other Foreign Securities*, (New York)

*Latin America Yearbook* (New York)

*Prospectuses of individual companies*

*Stock Exchange Official Intelligence*, London.

*Stock Exchange Yearbook*, London.

*The Mexican Yearbook* (London)


*The Railways of South and Central America*, New York

**Archives and Universities’ Special Collections**

Baker Library (Harvard University)

Biblioteca Nacional (Buenos Aires, Argentina)

Bibliothèque Nationale de France (Paris)

Baruch University, New York.

Cambridge University, Cambridge, England.

Credit Lyonnais, Paris.

Guildhall Library (London)

Erasmus University, Rotterdam, The Netherlands.

Leiden University, Leiden, The Netherlands.

Library of Congress, Washington, DC

Rothschild House, London.

The John Rylands University Library (University of Manchester), England.

University Library (Michigan University)
BUENOS AYRES 6% STATE LOAN, 1870,
Under the authority of the State Laws of the 16th November, 1833, and 27th January, 1870;
and 11th February, 1869 (as varied by a further Law of 1st September, 1869), and 23rd January, 1870,
FOR £1,034,700 STERLING,
In Bonds to Bearer for £100, £500, and £1,000 each,
The Interest Payable Half-Yearly in London.
The Loan to be redeemed at par by Annual Drawings in about 33 years, by means of
an accumulative Sinking Fund, which however the Government reserves to itself the
right to increase, so as to redeem the Loan at an earlier period.

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AU PORTEUR
Rapportant 25 francs nets par an
Remboursables au pair en 80 ans à partir de 1920
Jouissant pendant 30 ans d’une
GARANTIE OR DU GOUVERNEMENT FÉDÉRAL BRÉSILIEN

Prix d’émission : 465 francs
Figure 2
International Gross Primary Issuance
(in Billion Dollars)
Figure 3
International Gross Primary Issuance
(in Million British Pounds)
Figure 4
Public and Private International Gross Primary Issuance
(in Billion Dollars)

Public and Private Issuance During the Boom Years

<table>
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<th>Episodes</th>
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<th>Public</th>
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<td>1988-1997</td>
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<td>2003-2007</td>
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Figure 5
Public and Private International Gross Primary Issuance
(in Million British Pounds)

Public and Private Issuance During the Boom Years

<table>
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<th>Episodes</th>
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<td>1919-1927</td>
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Figure 6
Access to International Capital Markets International Gross Primary Issuance
(in Billion Dollars)
Figure 7
Access to International Capital Markets: International Gross Primary Issuance
International Gross Primary Issuance: 1820-1931
(in Million British Pounds)
Figure 8
Winners and Losers

Country's Share in Total Issuance
(in Percent)
# Table 1
Booms and Busts in International Issuance

## 1820-1931

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Total Issuance</th>
<th>Booms</th>
<th>Busts</th>
<th>Peak to Peak Increase</th>
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<td>97</td>
<td>9</td>
<td>-91</td>
<td>4</td>
</tr>
<tr>
<td>average</td>
<td>95</td>
<td>10</td>
<td>-97*</td>
<td>5*</td>
</tr>
</tbody>
</table>

Increase in Issuance (Peak 1927 versus Peak 1824): 1062

## 1980-2008

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Total Issuance</th>
<th>Booms</th>
<th>Busts</th>
<th>Peak to Peak Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Amplitude</td>
<td>Duration</td>
<td>Amplitude</td>
</tr>
<tr>
<td>1981</td>
<td>...</td>
<td>...</td>
<td>-95</td>
<td>5</td>
</tr>
<tr>
<td>1997</td>
<td>100</td>
<td>11</td>
<td>-65</td>
<td>5</td>
</tr>
<tr>
<td>2007</td>
<td>75</td>
<td>5</td>
<td>-52</td>
<td>1</td>
</tr>
<tr>
<td>average</td>
<td>88</td>
<td>8</td>
<td>-80*</td>
<td>5*</td>
</tr>
</tbody>
</table>

Increase in Issuance (Peak 2007 versus Peak 1981): 308

Notes: * average excluding last (incomplete) downturn. The amplitude and duration of last crash of both eras is incomplete. In most cycles, issuance drops to zero (or close to zero) at the through. Thus, the usual measure of the amplitude of the boom: $((\text{issuance at the peak/issuance at the previous through}) - 1) \times 100$ is not informative. In the above tables, the amplitude of the booms is measured relative to the peak. That is, amplitude of the boom is equal to: $(1 - (\text{issuance year at the previous through/issuance at the peak})) \times 100$
Table 2  
The Doldrums

1822-1931

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>80% Below the Previous Peak</th>
<th>50% Below the Previous Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1824</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>1865</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1872</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>1889</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>1909</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>1927</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>average 1865-1909</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>

1980-2008

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>80% Below the Previous Peak</th>
<th>50% Below the Previous Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>average 1981-1997</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Notes: This Table shows the number of years in which Latin America's participation in international capital markets stagnated. I measure stagnation with two metrics: Number of years with issuance 80 (50) percent below the previous peak. For example, after the peak in 1981, there were 7 years in which issuance was 80 percent or more below the peak in 1981. The amplitude and duration of last crash of both eras is incomplete.
Table 3
Booms and Busts in International Issuance:
The Public and Private Sectors

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Public Sector's Total Issuance</th>
<th>Private Sector's Total Issuance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amplitude</td>
<td>Peak to Peak Increase</td>
</tr>
<tr>
<td></td>
<td>Booms</td>
<td>Busts</td>
</tr>
<tr>
<td>1824</td>
<td>100</td>
<td>-100</td>
</tr>
<tr>
<td>1865</td>
<td>100</td>
<td>-93</td>
</tr>
<tr>
<td>1872</td>
<td>93</td>
<td>-100</td>
</tr>
<tr>
<td>1889</td>
<td>100</td>
<td>-99</td>
</tr>
<tr>
<td>1909</td>
<td>88</td>
<td>-99</td>
</tr>
<tr>
<td>1927</td>
<td>99</td>
<td>-92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Public Sector's Total Issuance</th>
<th>Private Sector's Total Issuance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amplitude</td>
<td>Peak to Peak Increase</td>
</tr>
<tr>
<td></td>
<td>Booms</td>
<td>Busts</td>
</tr>
<tr>
<td>1981</td>
<td>100</td>
<td>-97</td>
</tr>
<tr>
<td>1997</td>
<td>98</td>
<td>-55</td>
</tr>
<tr>
<td>2007</td>
<td>42</td>
<td>-73</td>
</tr>
</tbody>
</table>

Notes: The amplitude and duration of last crash of both eras is incomplete. In most cycles, issuance drops to zero (or close to zero) at the through. Thus, the usual measure of the amplitude of the boom:

\[ \frac{\text{issuance at the peak}}{\text{issuance at the previous through}} - 1 \times 100 \]

is not informative. In the above tables, the amplitude of the booms is measured relative to the peak. That is, amplitude of the boom is equal to:

\[ (1 - \frac{\text{issuance year at the previous through}}{\text{issuance at the peak}}) \times 100 \]
Table 4
The Doldrums

1822-1931

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Years of Stagnation in Issuance Following a Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80% Below the Previous Peak</td>
</tr>
<tr>
<td></td>
<td>Public</td>
</tr>
<tr>
<td>1824</td>
<td>3</td>
</tr>
<tr>
<td>1865</td>
<td>6</td>
</tr>
<tr>
<td>1872</td>
<td>5</td>
</tr>
<tr>
<td>1889</td>
<td>3</td>
</tr>
<tr>
<td>1909</td>
<td>2</td>
</tr>
<tr>
<td>average 1865-1909</td>
<td>4</td>
</tr>
</tbody>
</table>

1980-2008

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Years of Stagnation in Issuance Following a Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80% Below the Previous Peak</td>
</tr>
<tr>
<td></td>
<td>Public</td>
</tr>
<tr>
<td>1981</td>
<td>6</td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>0</td>
</tr>
<tr>
<td>average 1981-1997</td>
<td>3</td>
</tr>
</tbody>
</table>

Notes: This Table shows the number of years in which Latin America’s participation in international capital markets stagnated. I measure stagnation with two metrics: Number of years with issuance 80 (50) percent below the previous peak. For example, after the peak in 1981, there are 6 years in which public issuance was 80 percent or more below the peak in 1981. The amplitude and duration of last crash of both eras is incomplete.
## Latin America's Access to International Capital Markets

<table>
<thead>
<tr>
<th>Episodes</th>
<th>Issuance/Exports</th>
<th>Episodes</th>
<th>Issuance/Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880s</td>
<td>0.66</td>
<td>1980s</td>
<td>0.18</td>
</tr>
<tr>
<td>1890s</td>
<td>0.23</td>
<td>1990s</td>
<td>0.22</td>
</tr>
<tr>
<td>1900s</td>
<td>0.15</td>
<td>2000s</td>
<td>0.16</td>
</tr>
<tr>
<td>1910s</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920s</td>
<td>0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average 1885-1931</td>
<td>0.20</td>
<td>Average 1980-2008</td>
<td>0.18</td>
</tr>
</tbody>
</table>

**A Caveat:** Overall economies were more open to trade in the 1800s. For example, Argentina's exports are about 30% of GDP at the turn of the 20th Century but are about 10% of GDP in the 1980s.