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ABSTRACT

The ongoing slowdown in international capital flows has brought again to the attention the booms and bust cycles in international borrowing. Many suggest that capital flow bonanzas are excessive, ending in crises. One of the most frequently mentioned culprits are the cycles of monetary easing and tightening in the financial centers. More recently, the 2008 Subprime Crisis in the United States has also been blamed for the retrenchment in capital flows to both developed and developing countries. To further understand international capital flow cycles, I construct a new database on capital flows spanning the first episode of financial globalization from 1820 to 1931. During this episode, monetary policy in the financial center is constrained by the adherence to the Gold Standard, thus providing a benchmark for global cycles in the absence of an active role of central banks in the financial centers. Also, panics in the financial center are rare disasters that can only be studied in this longer episode of financial globalization. This paper presents the historical data with an example for Latin America.

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I. Introduction

The slowdown in international capital flows has brought again the attention to the booms and bust cycles in international borrowing.[1] Many suggest that capital flow bonanzas are excessive, ending in crises. Naturally, it is important to understand the triggers of what have become to be known as *bad booms*. While the culprits behind the boom-bust cycles are many, the most frequently mentioned are the cycles of monetary easing and tightening in the financial centers. The empirical research on the role of monetary policy in the financial center on international capital flow cycles focuses on the easing in the late 1970s, the one in the early 1990s, and most recently the one predating the Subprime crisis in 2008. With just a few 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.

Another aspect of booms and busts in capital flows that has attracted attention most recently is the role of crises in the financial center. Many have already pointed to the global retrenchment in capital flows in the aftermath of the 2008 Subprime Crisis in the United States (see, for example, Boussière, Schmidt, and Valla, 2016). This slowdown in international borrowing has been accompanied by a protracted collapse in the global economy quite different from the one following previous capital flow bonanzas and crashes. While the boom-bust borrowing cycle in Latin America, Asia, Russia, and Turkey in the 1990s also ended with crises, those crises were short-lived with the periphery rapidly rebounding. Importantly, those crises erupted in the midst of highly liquid international capital markets with a healthy financial center and a growing world economy, with vulnerabilities only present in the crisis countries. In contrast, the current crisis erupted in the aftermath of a panic in the financial center, with international capital markets collapsing and the world economy coming to a standstill. With basically one crisis in the financial center since globalization restarted in the 1970s, it is hard to assess the outlook of capital flows and the global economy in the aftermath of the 2008 Subprime Crisis.

[1] See, for example the IMF World Economic Outlook, April 2016.

In this paper I study international capital flow cycles during a far larger episode. I look at the first episode of financial globalization that starts with the end of the Napoleonic Wars in the early 19th century and ends with the Great Depression in 1931 when barriers to international capital flows and trade are erected around the globe. Studying the dynamics of capital flows during this episode has two advantages. First, during this episode, monetary policy in the financial center is constrained by the adherence to the Gold Standard, thus providing a benchmark for global cycles in the absence of an active role of central banks in the financial centers. Second, panics in the financial center are *rare disasters*. Thus, to understand the empirical regularities of this type of global crises, we need to look at a longer historical episode. The first episode of financial globalization spanning more than 100 years is witness to major crises in the financial center, such as the one starting with the massive panic in London in 1825, the world crisis in 1873 fueled by the collapse of financial markets in continental Europe, the 1890 Baring Crisis in London, and the crisis following the collapse of financial markets in New York and London in 1929.

This paper presents a new database of international issuance spanning more than one century. The data was collected in London, Paris, Frankfurt and Berlin, and New York, the financial centers of the 19th and early 20th century, using information in archives, prospectuses, and financial newspapers of those times. The database collected includes public issuance (central governments, provinces/states, and municipalities) as well as private issuance by financial and non-financial corporations. The database is granular. It includes data on every bond and share floated in international capital markets. For bonds, it includes the amount issued, the interest rate, the issue price, the amortization characteristics, the underwriting banks, as well as information on the markets those bonds were floated. For shares, the database includes the amount issued, the price of issue, as well as whether shares are ordinary or preferred. The database on issuance is complemented with a database on economic fundamentals, including economic activity (captured with exports), commodity prices, terms of trade, world interest rates, inflation, and monetary statistics, all going back to 1820. Here, the focus of attention are Latin American countries. These countries started to participate in international capital markets right after independence from Spain and Portugal in the first twenty years of the 19th century.

I study the characteristics of booms and crashes in international gross primary issuance for each country, with particular attention to duration and amplitude. For each cycle, I calculate the increase in indebtedness using the information on gross issuance and the amortization

characteristics of bonds as well as the effects of defaults and restructurings. Cycles in private and public gross issuance are then studied separately to examine their contribution to the boom-bust cycle in international gross primary issuance.[2]

The rest of the paper is organized as follows. Section II provides a history of Latin American countries participation in international capital markets. Section III describes the new database as well as its sources. This section also describes the construction of the data on international issuance and debt for the seven largest Latin American countries. Section IV examines the characteristics of booms and crashes in international gross primary issuance for each country, with particular attention to duration and amplitude. It also examines the debt buildup during the booms and the deleverage during the crashes. Section V concludes.

II. Latin America's Participation in International Capital Markets, 1820-1931[3]

All Latin American countries (except Puerto Rico and Cuba) gain independence from Spain and Portugal in the early 1800s. The new independent countries immediately eliminate the restrictions to trade imposed on the colonies by Spain and Portugal. International trade starts and participation in international capital markets soon follows, with all governments floating bonds in London, the new financial capital of the world. The first Latin American country to float bonds in London is Gran Colombia. The first issue is in 1820 for 547,784 British pounds. By the end of 1825, Latin American's total international issuance has reached 20 million British pounds. The ability of Latin American countries to tap funding in London is in part favored by the increase in liquidity fueled by the sharp decline in military spending following the end of the Napoleonic wars. It is not just sovereign's borrowing, private international investors create a large number of firms to exploit mineral resources in Latin America, previously under the control of the Spanish Crown.

The boom ends in the summer of 1825 when the Bank of England raises the discount rate to stop the drain of reserves fueled by the import boom and the outflow of capital. The tightening of liquidity is followed by a stock market crash in October, a banking panic in December, and

[2] This is an important contribution of this paper since while there is partial data on central government external debt there is no information on private external borrowing and debt.

[3] The chronology of crises during the 19th and early 20th centuries is partly based on Bordo and Murshid (1999) and Marichal (1989).

numerous bankruptcies. The financial debacle in London rapidly spreads to continental Europe, with bankruptcies of major banks in Germany, Italy, Amsterdam, Saint Petersburg, and Vienna. The crisis extends rapidly to Latin America as overseas loans are cut off. This is not all. The crisis also triggers a major fiscal problem in Latin America. As world trade collapses, so do tariff revenues, the only source of income of the governments of the new countries with Argentina, Brazil, Chile, the Federation of Central America, Colombia, Mexico, and Peru defaulting starting in 1826. It takes three decades before the debts are renegotiated and capital flows to Latin American resume.

The world economy recovery in the 1840s fuels a new boom in demand for primary products and raw materials, benefiting Latin American economies, in particular, Chile and Peru.[4] The growing international trade accompanying the recovery in Europe fuels a new fiscal bonanza in all Latin American countries (as tariff revenues increase accordingly) and with it the possibility of settlement of the foreign debts.[5] Brazil is the first to issue a new bond in London in 1839 and is followed by Peru in 1853. Still, the new loan boom to Latin America only flourishes in the 1860s after the end of the panic of 1857.[6]

The capital flow bonanzas to Latin America starting in the 1860s are far larger than that of the early 1820s, with capital flows financing not just governments and the extraction of mineral resources but also the creation of banks and the adoption of cutting edge technologies such as, telegraphs and the construction of railroads. The world international capital flow bonanza slows down with the British crisis in 1866[7] and even more with the crisis of 1873. The end of the Franco-Prussian War in 1870 plays a critical part in the unfolding of the crisis of 1873. Following the defeat of Napoleon III, the new French government has to pay a huge indemnity of 5,000 million

[4] The export of agricultural and mineral products surges dramatically: Guano from Peru, copper from Chile, wool from Argentina, coffee from Brazil, sugar and tobacco from Cuba, tobacco from Colombia, and silver from Mexico. See Marichal (1989).

[5] Chile is the first to renegotiate its debt in 1842, Peru follows in 1849. Most Latin American countries renegotiate their debts in the 1850s.

[6] The crisis of 1857 begins in the U.S. A railroad stock boom fueled by British capital and the California gold discoveries in 1849 crashes in August 1857 with a banking panic. The crisis spreads to England in the Fall. From England the crisis spread to the continent, with a serious panic in Hamburg in December.

[7] The crisis of 1866 is preceded by a large credit expansion both in England and France that triggers a boom in prices of intermediate goods, construction, and cotton-related industries. The boom ends with the panic of 1866 when Overend & Gurney, a major discount firm in London, collapses. France's first investment bank, the Crédit Mobiliaire also fails. The crisis rapidly spreads to Spain, Italy, and Latin America.

francs (200 million British pounds) to Germany. These indemnity transfers lead to a massive flow of capital into the economics of central Europe, fueling speculation in various financial markets. A spectacular stock market crash in Vienna in May 1873 ends with the stock market boom in Austria and spreads rapidly to Germany. Between 1873 and 1878, half the Austrian banks close, and 400 of the 800 Austrian join-stock companies go bankrupt. Stock markets in Amsterdam and Zurich also crash. The crisis crosses the Atlantic in September, the New York Stock market collapses and is followed with a U.S. a banking panic. As during the crisis of 1825, there is a collapse in world trade and in the prices of commodities and loans are called off. Tax revenues in Latin America sharply drop and trigger a new wave of defaults across the region. The steep decline in commodity and stock prices as well as the bank and industrial bankruptcies in most countries start the first worldwide 1873 recession. The crisis is also felt in the Middle East. By 1876 the Ottoman Empire, Egypt, Greece, and Tunisia have defaulted. In total, by the year 1876 fifteen non-European nations have suspended payments on almost 30 million of British pounds. In Latin America, Bolivia, Colombia, Costa Rica, Guatemala, Honduras, Peru, and Uruguay default on their foreign debt.

While the world depression of the 1873 wreaks havoc in some Latin American economies, with several countries defaulting on their foreign debts; by the early 1880s a process of recovery has begun. The upswing in world economic activity fuels foreign trade and new capital flows. Again as in the 1860s and 1870s, capital flows finance not just governments but also private activities in new industries, such as railways, tramways, construction of ports, gas works, and of course, they also finance the production of raw materials, mining, and land companies, with Argentina and Uruguay as important recipients of this inflow. The boom of the 1880s ends in 1890 with the crisis set off by the near-failure of Baring Brothers, the underwriter of Argentine Government loans. The Bank of England prevents a panic via a recapitalization of Baring Brothers with the help of other major London financial institutions and loans from the Banque de France and the Russian central bank. Still, the crisis spreads back to Latin America with the cessation of British lending to Argentina, and Uruguay. Between 1890 and 1894 Argentina, Ecuador, Guatemala, Nicaragua, Paraguay, Uruguay, and Venezuela default. During the next years there is a sharp decline in the flow of British capital.

The next international capital flow cycle starts in mid-1890s and ends with the start of WWI.[8] While Britain continues to be the main creditor, France, German and American investors set up new companies in banking as well as in railways, tramways, mines, ports, sugar refineries, flour mills, gas works, water works, and even some early electric and telephone companies. This episode is considered until now the heyday of financial globalization. The outbreak of World War I contributes to the end of this boom in international capital flows. In July, as war becomes imminent, a liquidity crunch spreads around the world as investors start to liquidate foreign assets, fueling panics in all asset markets. While the panic is promptly stopped by the central banks in the United Kingdom, the United States, and continental Europe, the outbreak of the war in Europe causes an abrupt suspension of capital flows. Only Brazil, Ecuador, Mexico, and Uruguay default. This time around, the governments of most nations of the region continue to service their debt using export surpluses.

Capital flows resume with the end of the war in Europe. Increases in productivity due to major inventions, including electricity, automobiles, communications, and petrochemicals as well as, innovations in industrial organization lead to a boom in economic activity that spills over around the world. Most Latin American nations benefit from the continuing rise in international prices of raw materials and primary products. It is at this time that New York becomes the leading financial center while lending from London and Paris retrenches following the imposition of capital controls in Great Britain and France[9] and the collapse of capital markets in Germany. In 1927-1928 the Federal Reserve, concerned over stock market speculation, tightens monetary policy; a recession begins in July 1929. Prices of commodities collapse, stock markets around the globe crash, and capital flows sharply decline, precipitating currency and banking crises in Latin America, Europe, and Australia. In September 1931 Great Britain abandons the Gold Standard

[8] This boom is interrupted in 1907 with a crisis originating in the United States following the San Francisco earthquake in April 1906. The destruction caused by the earthquake puts pressure on financial resources in the United States and puts strain on the Bank of England's reserves when British insurance companies start to pay out the U.S. claims. To stop the loss of reserves, the Bank of England hikes the discount rate from 3.5 to 6 percent causing a severe liquidity crunch in the United States. The U.S. stock mark crashes in early 1907 and economic activity begins to decline. In October, depositor runs on trust companies spread to the commercial banks. Banks suspend cash payments and the economy enters a sharp recession.

[9] Foreign lending is formally restricted in Great Britain starting in December 1914. While formal restrictions are removed in various stages and completely eliminated in November 1919, foreign lending continues to be restricted by the Bank of England, with control undertaken through moral suasion. As discussed in Cottrell (2005) all projected foreign flotation has to be discussed with the Bank of England's Governor.

and so does the United States in 1934. Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Guatemala, Nicaragua, Panama, Paraguay, Peru, and Uruguay default in the midst of the great depression. Barriers to capital flows are erected around the globe ending this first episode of financial globalization. During the next forty years, international capital flows languish only to recover following the collapse of the Bretton Woods System.

The rest of this paper compares these waves of the Latin American participation in international capital markets.

III. International Issuance: The Database

The historical data for this paper forms part of a database I am constructing of international issuance of both the government and the private sector of all countries that participate in international capitals markets, including countries like Paraguay that floats a few bonds during the first episode of financial globalization to Australia that issues thousands of bonds and shares in international capital markets during the same period. The historical data for this project has been collected over several years from financial newspapers of the 19th and early 20th centuries, annual reports of the Stock Markets in London and Paris, the Annual Listings of Bonds and Stocks in the Berlin, Frankfurt, and Hamburg Stock Markets, the archives of the London Stock market, the Paris Bourse, and the New York Stock Exchange, as well as the archives of merchant banks such as the House of Rothschild in London and deposit banks, such as the Credit Lyonnais in Paris. I have also used publications from government agencies in the United States, such as the Department of Commerce. Part of the material has also been collected from important studies on sovereign debt by scholars in Latin America, Asia, and Europe. This database is unique, it includes all issuance in all the financial centers from 1820 to 1931.

The data contains information on each single issue. For bonds, the data includes the date of the issue, the name of the borrower, the purpose of the issue, the type of business of the borrower, the amount issued, the price of the issue (whether it is issued at par/premium/discount), the interest rate and the maturity of the bonds, the banks underwriting the issue, the financial centers where the bonds are issued, and the currency of issue. For shares, the data includes the date of the floating, the name of the company issuing the shares, the price of the shares, whether the shares are ordinary or preferred, and the financial centers where the shares are issued.

To introduce the historical data, I present two prospectuses in Figure 1.[10] The first one is a 1,034,700 British-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, is 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 in 1911 for 25 million French francs redeemable in 89 years and issued in Paris.

Although not shown in the photos that just include the top part of the prospectuses, these bonds are, like most of the bonds issued in the 19th and early 20th centuries, sinking fund bonds, similar to current mortgage loans. For example, the Buenos Aires 6% bond has an accumulative sinking fund of 1%. The total annual service of this loan is 7% (1% for the sinking fund and 6% for the coupon rate) of the total amount issued. For the 1,034,700 British pound bond, the annual service is equal to 72,429 British pounds. As with mortgages, the service mostly pays the coupons in the first years of the life of the bond, with the part dedicated to the amortization increasing over time. In the case of the Buenos Aires 6% bond, the service is partly used to amortize the bond by annual drawings of the bond at par. More infrequently, bonds are bullet bonds, with the face value of the principal paid at maturity. The information on repayment characteristics of the bonds is used to estimate net primary issuance (gross primary issuance minus amortization) and to construct series of both public and private debt.

The information in the prospectuses, annual reports of the Stock Markets, or listings in financial newspapers when the bonds are issued only provides the originally planned repayment characteristics of the bond. But most bonds are callable, allowing the borrower to repay earlier the bonds. During the first episode of financial globalization, there are waves of refinancing in low-interest rate years, with old high-coupon bonds converted into newly issued low-coupon bonds. Thus, in order to estimate net issuance and debt series, it is necessary to identify these conversions. The original repayments of the bonds also change when the country defaults. To estimate net issuance and debt it is necessary to study in detail the characteristics of the restructurings. The restructurings of the debt following default for Latin America are described in Kaminsky and Vega-García (2016). That paper only studies the defaults and the restructurings of

[10] These photos only include the top part of the prospectuses.

the central government bonds. This paper extends that research to bonds issued by Provinces, States, and Municipalities and also studies the conversions of bonds issued by private firms.

The data on gross primary issuance captures access to international capital markets, that is only includes issuance for cash.[11] As estimated, gross primary issuance does not include the value of the bonds issued in exchange for previously issued bonds via a conversion or an exchange of defaulted bonds for new bonds when the default ends. Nor does it include bonds issued to pay accumulated coupon arrears during a default spell. Finally, net primary issuance is estimated by substracting cash amortizations from gross primary issuance. In contrast, the debt series includes the remaining value of all the bonds issued for cash as well as that of the new bonds issued in conversions or bonds issued in the aftermath of defaults to exchange the original bonds or to pay the accumulated arrears in coupons while eliminating the bonds converted. That is, debt increases with new borrowing and the issuance of bonds to pay coupon arrears as well as with the issuance of conversion bonds and declines with both the amortization of bonds with cash payments or with the newly conversion bonds.

Figure 2 shows the newly collected data covering the period from 1820 to 1931. This figure shows the international gross primary issuance of Latin America as captured by the issuance of Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. These seven countries are the most active participants in international capital markets in the region during the first episode of financial globalization. The top panel shows total gross primary issuance in British pounds, the middle panel decomposes total issuance into public and private issuance. Finally, the bottom panel shows the gross primary issuance/exports ratio to have a measure of participation in international capital markets relative to the size of the economy. As shown in Figure 2, there are clear boom-bust episodes throughout the 19th and early 20th centuries peaking around 1824, 1865, 1873, 1888, 1910, and 1928.

The boom of the 1820s is mostly due to public loans to the governments of the newly independent countries. International issuance of Latin American countries totals 20 million British pounds (at face value). 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 British pounds. However, by the time of the collapse in the summer of 1825, the shares issued amounted only to 3.5 million British pounds.

[11] All issuance is measured at face value.

The capital inflows to Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay during the 1860s and early 1870s total 132 million British pounds. 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 British pounds; the London and River Plate Bank follows with a capital of 500,000 British pounds. In 1863, the London and South American Bank limited is founded and merged 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 British 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 created 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 again. In this episode, Peru becomes the most indebted country in Latin America, with its foreign debt increasing to about 36 million British pounds in 1876 from 7 million British 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 1888. From 1874 until the onset of the Baring crisis in 1890, the accumulated gross primary issuance of these seven countries reaches 280 million British pounds. The next cycle of capital issuance peaks around 1910. From 1890 until the start of the first war capital flows to Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Uruguay almost reach 1 billion British pounds. A large part of international issuance finances the construction of railways and tramways, ports, gas works, and water drainages. Other areas financed by international capital flows are land development, coffee and sugar plantations, production of nitrates, and general mining operations. The last capital flow bonanza starts in 1918

and peaks in 1928. From 1918 to 1931, the accumulated total gross issuance by the seven countries totals about 600 million British pounds

An important international finance literature on Latin American participation in international capital markets has been just concerned with sovereign borrowing. Still, as shown in Figure 2 middle panel, private international issuance has been very important during this episode, with the private share oscillating around 46 percent, making it imperative to assess the contribution of private issuance to these cycles. The share of private issuance changes over time. In the 1820s, private issuance is just 10 percent of total issuance. In the 1860s and early 1870s, private issuance increases to about 30 percent of total issuance while in the 1880s private issuance reaches 55 percent of total issuance. Private issuance at the turn of the century until the WWI is approximately 65 percent of total issuance while it declines to 20 percent during the last capital flow bonanza before the crisis of 1931. During this episode, the correlation between public and private international issuance is almost 0.50, with private borrowing reinforcing sovereign borrowing cycles.

Information on total issuance is insufficient to compare the extent of financial integration during this episode. We need to scale 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.[12] Figure 2 bottom panel shows the issuance/exports ratio. Average issuance/exports is 15 percent during the first episode of financial globalization starting in 1820 and ending in 1931 with a peak at 121 percent in 1824.

IV. Boom-Bust International Capital Flow Cycles

I now examine in more detail the capital flow cycles and the evolution of the debt for the seven countries in the sample. Figure 3 shows gross primary issuance for each country as a share of exports. The blue bars in this figure show total issuance (as a share of exports), with the date of issuance identified by the time of subscription of bonds or shares, the so-called time of

[12] Exports are quite volatile. In order for the issuance/export ratio to capture the volatility of capital flows only, I use trend exports as the scale variable. Trend exports are estimated using the Hodrick-Prescott filter.

"creation" of a bond or share. During the 19th century and early 20th centuries, subscribed issues are paid in installments, with all payments sometimes spanning over two years. These installments are known as "calls."[13] To approximate these payments in tranches, the red line in Figure 3 also shows international primary issuance as a three-year moving average (as a share of exports), better capturing the timing of the effective floating of bonds and shares. The moving average representation also helps to better capture the boom-bust cycles without the volatility introduced in the series of capital flows by large "creation" of capital, especially large sovereign bonds.

As shown in Figure 3, booms and busts in international issuance across the seven countries are highly correlated, with mostly all countries participating in each cycle.[14] There are two exceptions. Following the boom of the 1820s, all Latin American countries default. These defaults last around 30 years. Following the debt restructurings mostly in the 1850s, Argentina, Brazil, Chile, Peru, and Uruguay start tapping international capital markets again in the 1860s. In contrast, Colombia and Mexico, in the midst of serial defaults,[15] are out of international capital markets until the beginning of the 20th century and the 1880s respectively.[16]

Figure 4 shows the evolution of the debt burden of the seven countries as captured by the debt/exports ratio. Importantly, the estimated debt does not include arrears in coupons. These coupons are only included in the debt when those arrears are paid by issuing bonds. For example, the Debt/exports ratio of Argentina increases from approximately 0.8 in 1856 to 1.3 in 1857 when the debt is restructured and the Government of Argentina issues a 1.6 million British pound bond to pay the accumulated unpaid coupons during the default spell of 1828-1957. Similarly, the Debt/export ratio of Colombia duplicates from 4.6 in 1844 to 9.2 in 1845 when the debt is restructured and the Government of Colombia issues a 3.3 million British pound bond to pay the accumulated unpaid coupons from the default of 1826.

[13] See Davis and Gallman (2001) for a more detailed description of issuance practices in the 19th and early 20th centuries.

[14] Uruguay is a province of Brazil during the capital flow bonanza of the 1820s, gaining independence in 1828. It taps international capital markets for the first time in 1864.

[15] During the period 1826 to 1905 Colombia defaults 5 times, with Colombia being in default in total for 70 years. Mexico defaults twice, in 1827 and in 1854. The first default last 25 years and the second lasts 33 years.

[16] Even in default, Mexico taps international capital markets in the 1860s during the French intervention from 1861 to 1867. During the intervention, the French government imposes Maximiliam I as emperor. During this period, the government of Maximiliam I issues bonds in Paris. After the French intervention is defeated, Benito Juárez is re-elected president and the loans contracted by the government of Maximiliam I are repudiated.

I will now examine the boom-bust capital flow cycles, their duration and amplitude as well as the evolution of the debt burden in each of the cycles. To identify the boom-bust cycles in gross international issuance, I apply the algorithm used to identify business cycles.[17] The first step in the determination of the cycles is the identification of the cyclical turning points. The algorithm that I am going to apply looks for clearly defined swings in total issuance with at least a minimum duration similar to that of business cycles. Essentially, the algorithm isolates local minima and maxima in a time series, subject to a constraint on the length of upturns and downturns. In particular, I impose the restriction that the cycle cannot have duration of less than 5 years. That is, y_t is a maximum if:

$$y_{t-2}, y_{t-1} < y_t < y_{t+1}, y_{t+2} \tag{1}$$

and the trough is identified as the minimum value between two local peaks.

I apply this filter to the (3-year moving average) total issuance /exports ratio for each of the seven countries in the sample. The algorithm identifies 34 cycles. Table 1 shows the characteristics of these cycles. The average duration of the capital flow bonanzas is 8 years, with a minimum boom duration of 2 years and the maximum boom duration of 17 years. The coefficient of variation of the duration of the booms is 0.53. The length of the bust is more varied. The minimum duration of the bust is 2 years. Capital flow crashes can last much longer. For example, Colombia after the capital flow bonanza of the 1820s and in the midst of serial defaults cannot tap international capital market for 84 years. But long-lasting bust spells may be due to global patterns. For example, following the Great Depression in 1931, barriers to capital flows are erected around the world with international capital markets disappearing for about 40 years. Latin American countries start tapping international capital markets only in the 1970s. The coefficient of variation of the duration of the busts is 1.01, almost the double of that of capital flow bonanzas.

[17] See, for example, Bry and Boschan (1971), Harding and Pagan (2002), and Kaminsky and Schmukler (2008).

In order to examine the magnitude of the capital flow bonanzas, I need to estimate the accumulated net issuance during the boom.[18] In particular, I estimate the amplitude of the bonanza for each cycle *i* as follows:

$$amplitude_i = \frac{\sum_{t_i=1}^{T_i} net\ issuance_{t_i}}{X_{T_i}} \quad (2)$$

Where *1* is the year when the capital flow bonanza starts, *T* is the year of the peak of the capital flow bonanza and the numerator is total accumulated net issuance over the boom normalized by the level of exports at the peak of the cycle.

As shown in Table 1, the average capital flow bonanza is quite pronounced, with average total accumulated net issuance being about twice the level of exports. Still, the amplitude of the cycles is quite varied with some bonanzas being quite dramatic and reaching almost seven times the level of exports and others much milder with accumulated total net issuance being just a fraction of exports during the cycle. Interestingly, some of the most extreme capital flow bonanzas occur in the 1820s, with Colombia and Mexico's bonanzas reaching seven and four times the level of their exports at the peak of the cycle. Not surprisingly, Colombia's and Mexico's default spells following this boom are the longest, with endless restructurings until their debt burdens reach sustainable levels. The last column in Table 1, shows the debt/export ratio in the year of the peak of the capital flow bonanza. This column shows a somewhat different picture of these bonanzas reflecting not just the increase in indebtedness in each particular cycle but also the build-up of debt across various cycles. Notably, while the capital flow bonanzas preceding the Great Depression are not the most pronounced, they contribute to some of the largest debt buildups of this more than one-hundred-year episode, with Brazil and Chile reaching a debt burden of about four to five times the level of their exports.

Table 1 indicates that the capital flow cycles around times of crises in the financial centers are different. The first episode of financial globalization is witness to four major crises in the financial center: 1825, 1873, 1890, and 1929. These crises were preceded by more extreme capital flow bonanzas. While the average capital flow bonanza for all the cycle is 194 percent of exports, the average bonanza in Latin America for cycles surrounding panics in the financial centers reach

[18] Issuance includes both issuance of bonds and shares.

230 percent of exports, with the average bonanzas unrelated to these global panics only reaching 130 percent of exports.

Figure 5 and Table 2 examine the evolution of public and private international issuance and their contribution to the capital flow bonanza in these 34 identified international capital flow cycles. The average contribution of public issuance to the capital flow bonanzas as measured by the accumulated total primary issuance in all cycles is 70 percent of total accumulated issuance. This share does not vary much across countries, with the public share oscillating between a minimum of 59 percent for Uruguay to a maximum of 76 percent for Chile. In contrast, this share varies significantly across episodes, with the average public share of the capital flow bonanzas of the 1820s and the 1920s equal to 100 percent and significantly higher than the average public share during the rest of the capital flow bonanzas which averages 50 percent, suggesting time-varying global patterns that need to be studied.

Table 3 shows the evolution of the debt/exports ratio over the cycle and further separates the movement in the debt/export ratio into the contribution of changes in debt and changes in exports. On average, the debt/export ratio over the capital flow bonanza increases from 1.60 to 2.71 (an increase of 111 percentage points). This increase in the debt/export ratio can be further decomposed into an increase in the debt of 140 percentage points and a decline in the debt/export ratio due to an increase in exports of 29 percentage points across all capital flow bonanzas. Overall, 70 percent of these capital flow bonanzas occur in times of economic expansion. Interestingly, most of the busts in capital flows are not accompanied by deleveraging. While the debt/export ratio declines on average from 2.71 to 2.31 (a decline of 40 percentage points), this decline is accomplished by the growth of the economy, with export growth leading to a 57 percentage points decline in the debt exports ratio. In contrast, changes in debt contribute on average to an increase in the debt exports ratio of 17 percentage points. Overall, in only 20 percent of the busts, the decline in the debt-export ratio is partly achieved via deleveraging.[19]

Table 4 examines the determinants of the fluctuations of the debt over the cycle. It decomposes the changes of the debt into gross issuance (for cash), cash amortization, and changes in the debt because of debt restructuring. For example, during the boom of the 1820s, Argentina's debt increase reflects basically new borrowing in international capital markets (gross issuance for

[19] Note that the estimations of the changing debt burden during the busts following the 1929 crisis are truncated in 1931 when my estimations for the debt of all countries ends.

cash). Amortization during this boom is just 1 percent. During this boom debt restructuring is zero.[20] During the bust following the boom of the 1820s, Argentina's debt increases 62 percent. In default, Argentina cannot tap international capital markets, with new gross issuance (for cash) equal to zero. Amortization of the debt is only 2 percent of total debt since Argentina defaults in 1828. In 1857, the debt is restructured and the default spell ends. The restructuring does not include a reduction of the face value of the debt. The face value of the debt increases as Argentina issues a bond to pay for (non-capitalized) arrears in coupons resulting in an increase of the debt of 64 percent.[21] The evidence of the booms of the 1820s and the following busts in Chile, Mexico, and Peru is quite similar. In contrast, the case of Colombia is different. After many restructurings the face value of the debt declines by 13 percent of the debt even when non-capitalized arrears in coupons are paid by issuing new bonds. On average, across all countries and episodes, during the booms debt increases because net issuance, with mostly no debt restructuring. The most important exception is the case of Peru. Peru defaults in 1876 when the debt reaches 500 percent of exports. After the default, the economy collapses, with exports declining by 60 percent by the time of the restructuring of the debt in 1890. At that time Peru's debt has increased to 1,200 percent of exports. In 1890, via the Grace Agreement, mostly all Peru's debt is cancelled.

V. Conclusions

The goal of this manuscript was just to present a new database on international capital flows. Still, the database provides new stylized facts.

First, boom-bust cycles in international capital flows are hardy perennials. Interestingly, the evidence from the 19th and early 20th centuries suggests that pronounced capital flow bonanzas occur even in the presence of episodes during which monetary policy in the financial centers is constrained by the adherence to the Gold Standard. Interestingly, as shown in a forthcoming paper (Kaminsky, 2017), capital flow bonanzas during the first episode of financial globalization are far larger than those of the second episode of financial globalization from 1970 to 2015.[22]

[20] We measure the increase in the debt during the boom as a percent of the debt at the peak of the cycle.
[21] Still, since the Government of Argentina issues a new bond to pay only the non-capitalized arrears in coupons, the debt relief reaches 73 percent. See Kaminsky and Vega-García (2016) for the estimations of debt relief.
[22] Capital flow bonanzas from 1970 to 2015 are estimated using net international issuance in the bond, syndicated loan, and equity markets.

While the average capital flow bonanza during the first episode of financial globalization (1820-1931) is 194 percent of exports it only reaches 104 percent of exports from 1970 to 2015.

Second, the above results suggest that international capital flow cycles around times of crises in the financial centers are different, with the average capital flow bonanza preceding the crises in the financial center being on average twice the size of that of episodes without panics in the financial center.

Third, the estimates from the early episode of financial globalization indicate that the increase in the countries' debt burden during the capital flow bonanzas is not followed by deleveraging during the bust, with economic growth at the core of declining debt burdens. With the global economy still in the doldrums since the Subprime Crisis of 2008, the evidence from the first episode of financial globalization suggests that debt restructurings seem to be only tool to reduce debt burdens of highly-indebted countries.

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Table 1
International Capital Flow Cycles

Country	Cycles			Duration			Capital Flow Bonanzas	
	Beginning	Peak	End	Booms	Busts	Whole Cycle	Total Net Issuance/Exports	Debt/Exports
Argentina	1823	1824	1859	2	35	37	1.69	1.68
	1860	1872	1877	13	5	18	1.97	1.63
	1878	1888	1893	11	5	16	4.79	4.49
	1894	1910	1919	17	9	26	2.29	2.74
	1920	1927	1972	8	45	53	0.24	1.95
Brazil	1823	1825	1856	3	31	34	0.90	1.22
	1857	1864	1869	8	5	13	0.54	0.62
	1870	1887	1891	18	4	22	1.75	1.79
	1892	1896	1900	5	4	9	0.35	2.52
	1901	1911	1917	11	6	17	2.56	3.98
	1918	1927	1972	10	45	55	0.93	4.67
Chile	1821	1822	1856	2	34	36	1.56	1.56
	1857	1867	1870	11	3	14	0.84	0.99
	1871	1874	1879	4	5	9	0.22	1.14
	1880	1889	1891	10	2	12	1.41	1.37
	1892	1896	1901	5	5	10	1.00	2.04
	1902	1911	1919	10	8	18	0.98	1.73
	1920	1929	1974	10	45	55	1.91	3.56
Colombia	1820	1824	1903	5	79	84	6.88	6.78
	1904	1909	1914	6	5	11	0.47	1.28
	1915	1928	1975	14	47	61	2.29	2.15
Mexico	1823	1825	1862	3	37	40	4.30	3.80
	1863	1865	1877	3	12	15	3.08	6.37
	1878	1890	1892	13	2	15	3.97	3.98
	1893	1909	1972	17	63	80	4.66	5.31
Peru	1822	1825	1860	4	35	39	3.39	3.39
	1861	1873	1884	13	11	24	3.46	4.53
	1885	1891	1903	7	12	19	0.58	1.57
	1904	1911	1918	8	7	15	0.78	1.12
	1919	1928	1972	10	44	54	0.94	1.37
Uruguay	1863	1864	1869	2	5	7	0.51	0.51
	1870	1873	1880	4	7	11	2.30	2.03
	1881	1889	1894	9	5	14	1.91	3.87
	1895	1906	1974	12	68	80	0.37	4.26
Average	All Cycles			8	22	30	1.94	2.71

Notes: Net issuance is equal to gross issuance minus amortization. Total Net Issuance/Exports captures the accumulated net issuance over the boom as a ratio of the trend of exports in the year of the end of the boom. Debt/Exports is the ratio of Total Debt/trend exports in the year of the end of the boom.

Table 2
International Capital Flow Bonanzas: The Role of Public and Private Borrowers

Country	Cycles			Capital Flow Bonanzas					
	Beginning	Peak	End	Total Net Issuance/Exports	Debt/Exports	Public Net Issuance/Exports	Public Debt/Exports	Private Net Issuance/Exports	Private Debt/Exports
Argentina	1823	1824	1859	1.69	1.68	1.68	1.68	0.01	0.00
	1860	1872	1877	1.97	1.63	1.27	1.62	0.70	0.01
	1878	1888	1893	4.79	4.49	2.53	3.34	2.26	1.15
	1894	1910	1919	2.29	2.74	0.39	1.52	1.90	1.22
	1920	1927	1972	0.24	1.95	0.34	1.17	-0.10	0.78
Brazil	1823	1825	1856	0.90	1.22	0.88	1.22	0.02	0.00
	1857	1864	1869	0.54	0.62	0.11	0.50	0.43	0.12
	1870	1887	1891	1.75	1.79	0.65	1.22	1.10	0.57
	1892	1896	1900	0.35	2.52	0.17	1.37	0.18	1.15
	1901	1911	1917	2.56	3.98	1.46	2.63	1.10	1.35
	1918	1927	1972	0.93	4.67	1.10	3.60	-0.17	1.07
Chile	1821	1822	1856	1.56	1.56	1.56	1.56	0.00	0.00
	1857	1867	1870	0.84	0.99	0.74	0.99	0.10	0.00
	1871	1874	1879	0.22	1.14	0.22	1.14	0.00	0.00
	1880	1889	1891	1.41	1.37	0.19	0.96	1.22	0.41
	1892	1896	1901	1.00	2.04	0.73	1.57	0.27	0.47
	1902	1911	1919	0.98	1.73	0.74	1.38	0.24	0.35
	1920	1929	1974	1.91	3.56	1.56	2.69	0.35	0.87
Colombia	1820	1824	1903	6.88	6.78	6.78	6.78	0.10	0.00
	1904	1909	1914	0.47	1.28	0.07	0.75	0.40	0.53
	1915	1928	1975	2.29	2.15	1.63	1.79	0.66	0.36
Mexico	1823	1825	1862	4.30	3.80	3.80	3.80	0.50	0.00
	1863	1865	1877	3.08	6.37	2.97	6.37	0.11	0.00
	1878	1890	1892	3.97	3.98	1.65	2.45	2.32	1.53
	1893	1909	1972	4.66	5.31	0.74	1.67	3.92	3.64
Peru	1822	1825	1860	3.39	3.39	3.39	3.39	0.00	0.00
	1861	1873	1884	3.46	4.53	3.35	4.43	0.11	0.10
	1885	1891	1903	0.58	1.57	-0.06	0.93	0.64	0.64
	1904	1911	1918	0.78	1.12	0.13	0.30	0.65	0.82
	1919	1928	1972	0.94	1.37	1.05	1.14	-0.11	0.23
Uruguay	1863	1864	1869	0.51	0.51	0.51	0.51	0.00	0.00
	1870	1873	1880	2.30	2.03	0.73	1.03	1.57	1.00
	1881	1889	1894	1.91	3.87	0.87	2.85	1.04	1.02
	1895	1906	1974	0.37	4.26	0.21	3.44	0.16	0.82
average	all cycles			1.94	2.71	1.30	2.11	0.64	0.59

Notes: Total Net Issuance/Exports captures the accumulated net issuance over the boom as a ratio of the trend of exports in the year of the end of the boom. Debt/Exports is the ratio of Total Debt/trend exports in the year of the end of the boom.

Table 3
What Moves the Debt Burden?

Country	Cycles			Booms				Busts *			
	Beginning	Peak	End	Initial Debt Burden	Final Debt Burden	Contribution of Total Debt	Contribution of Exports	Initial Debt Burden	Final Debt Burden	Contribution of Total Debt	Contribution of Exports
Argentina	1823	1824	1859	0.00	1.68	1.68	0.00	1.68	0.81	0.50	-1.37
	1860	1872	1877	0.81	1.63	1.29	-0.48	1.63	1.45	0.14	-0.32
	1878	1888	1893	1.45	4.49	3.67	-0.63	4.49	5.14	1.44	-0.79
	1894	1910	1919	5.14	2.74	1.43	-3.83	2.74	1.68	0.33	-1.39
	1920	1927	1972	1.68	1.95	0.22	0.06	1.95	2.49	0.04	0.50
Brazil	1823	1825	1856	0.00	1.22	1.22	0.00	1.22	0.53	0.05	-0.74
	1857	1864	1869	0.53	0.62	0.23	-0.15	0.62	0.86	0.34	-0.09
	1870	1887	1891	0.86	1.79	1.12	-0.20	1.79	2.46	0.95	-0.27
	1892	1896	1900	2.46	2.52	0.33	-0.27	2.52	2.48	0.30	-0.34
	1901	1911	1917	2.48	3.98	2.57	-1.08	3.98	4.14	0.71	-0.55
	1918	1927	1972	4.14	4.67	0.93	-0.40	4.67	6.95	0.24	2.04
Chile	1821	1822	1856	0.00	1.56	1.56	0.00	1.56	0.42	0.12	-1.26
	1857	1867	1870	0.42	0.99	0.74	-0.17	0.99	0.99	0.09	-0.10
	1871	1874	1879	0.99	1.14	0.22	-0.07	1.14	1.02	0.00	-0.12
	1880	1889	1891	1.02	1.37	0.64	-0.29	1.37	1.30	-0.03	-0.04
	1892	1896	1901	1.30	2.04	0.84	-0.10	2.04	1.62	-0.05	-0.37
	1902	1911	1919	1.62	1.73	0.91	-0.80	1.73	1.31	0.26	-0.68
	1920	1929	1974	1.31	3.56	1.91	0.34	3.56	4.54	0.27	0.71
Colombia	1820	1824	1903	0.00	6.78	6.78	0.00	6.78	1.15	0.00	-5.64
	1904	1909	1914	1.15	1.28	0.42	-0.29	1.28	0.71	0.00	-0.57
	1915	1928	1975	0.71	2.15	1.90	-0.47	2.15	2.16	-0.10	0.11
Mexico	1823	1825	1862	0.00	3.80	3.80	0.00	3.80	1.93	0.72	-2.59
	1863	1865	1877	1.93	6.37	4.56	-0.11	6.37	3.16	-3.44	0.23
	1878	1890	1892	3.16	3.98	2.06	-1.24	3.98	3.90	0.19	-0.26
	1893	1909	1972	3.90	5.31	3.80	-2.38	5.31	3.71	0.54	-2.14
Peru	1822	1825	1860	0.00	3.39	3.39	0.00	3.39	1.28	0.88	-3.00
	1861	1873	1884	1.28	4.53	3.73	-0.48	4.53	8.42	0.52	3.37
	1885	1891	1903	8.42	1.57	-11.81	4.97	1.57	0.77	-0.29	-0.51
	1904	1911	1918	0.77	1.12	0.78	-0.43	1.12	0.41	-0.06	-0.64
	1919	1928	1972	0.41	1.37	0.94	0.01	1.37	1.52	0.00	0.15
Uruguay	1863	1864	1869	0.00	0.51	0.51	0.00	0.51	0.35	-0.02	-0.14
	1870	1873	1880	0.35	2.03	1.73	-0.05	2.03	1.76	0.23	-0.50
	1881	1889	1894	1.76	3.87	2.59	-0.47	3.87	4.34	0.87	-0.41
	1895	1906	1974	4.34	4.26	0.73	-0.81	4.26	2.70	0.24	-1.80
average	All Cycles			1.60	2.71	1.40	-0.29	2.71	2.31	0.17	-0.57

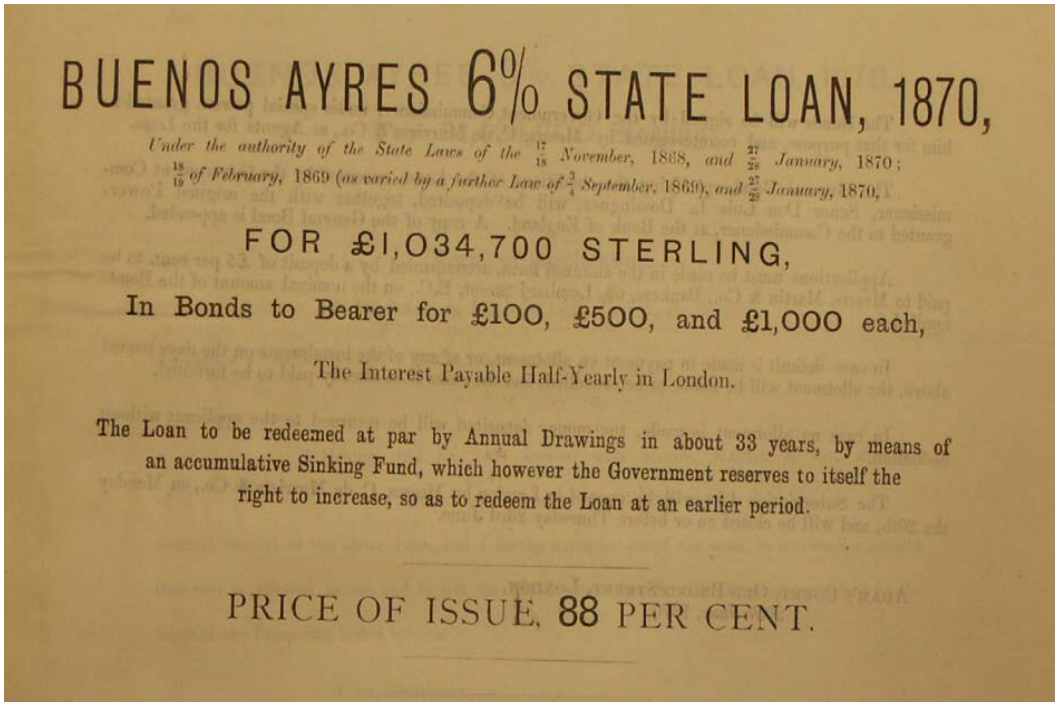
Notes: Initial (end) Debt/Exports in the Boom (Bust) is the ratio of Debt/trend exports in the year of the beginning (end) of the boom (bust). While the crash in international capital markets starting around 1928 lasts until international capital markets restart in the 1970s, this table measures the debt burden and the contribution of debt and export changes up to 1931.

Table 4
What Changes The Debt?

Country	Cycles			Booms				Busts			
	Beginning	Peak	End	Increase in Debt	Gross Issuance	Amortization	Debt Restructurings /Defaults	Increase in Debt	Gross Issuance	Amortization	Debt Restructurings /Defaults
Argentina	1823	1824	1859	1.00	1.01	0.01	0.00	0.62	0.00	0.02	0.64
	1860	1872	1877	0.79	0.90	0.11	0.00	0.10	0.25	0.15	0.00
	1878	1888	1893	0.82	0.97	0.16	0.01	0.28	0.20	0.05	0.13
	1894	1910	1919	0.52	0.58	0.14	0.08	0.20	0.39	0.19	0.00
	1920	1927	1972	0.11	0.36	0.25	0.00	0.01	0.14	0.12	-0.01
Brazil	1823	1825	1856	1.00	0.74	0.02	0.28	0.10	0.54	0.44	0.00
	1857	1864	1869	0.38	0.92	0.54	0.00	0.39	0.52	0.13	0.00
	1870	1887	1891	0.63	0.97	0.35	0.01	0.39	0.27	0.07	0.19
	1892	1896	1900	0.13	0.22	0.09	0.00	0.12	0.10	0.06	0.08
	1901	1911	1917	0.65	0.68	0.10	0.07	0.17	0.20	0.10	0.07
	1918	1927	1972	0.20	0.34	0.14	0.00	0.04	0.14	0.08	-0.02
Chile	1821	1822	1856	1.00	1.00	0.01	0.01	0.29	0.00	0.25	0.54
	1857	1867	1870	0.74	0.90	0.16	0.00	0.09	0.17	0.08	0.00
	1871	1874	1879	0.19	0.31	0.11	-0.01	0.00	0.13	0.13	0.00
	1880	1889	1891	0.47	0.51	0.07	0.03	-0.02	0.01	0.03	0.00
	1892	1896	1901	0.41	0.49	0.07	-0.01	-0.03	0.05	0.09	0.01
	1902	1911	1919	0.52	0.71	0.18	-0.01	0.20	0.39	0.20	0.01
	1920	1929	1974	0.54	0.86	0.32	0.00	0.06	0.11	0.05	0.00
Colombia	1820	1824	1903	1.00	1.08	0.08	0.00	0.00	0.49	0.36	-0.13
	1904	1909	1914	0.33	0.37	0.04	0.00	0.01	0.09	0.10	0.02
	1915	1928	1975	0.89	1.05	0.14	-0.02	-0.05	0.05	0.09	-0.01
Mexico	1823	1825	1862	1.00	1.02	0.02	0.00	0.37	0.00	0.01	0.38
	1863	1865	1877	0.72	0.47	0.01	0.26	-1.09	0.12	0.03	-1.18
	1878	1890	1892	0.52	0.96	0.21	-0.23	0.05	0.05	0.01	0.01
	1893	1909	1972	0.71	0.88	0.17	0.00	0.15	0.30	0.20	0.05
Peru	1822	1825	1860	1.00	1.00	0.06	0.06	0.69	0.51	0.58	0.76
	1861	1873	1884	0.82	1.09	0.40	0.13	0.06	0.00	0.07	0.13
	1885	1891	1903	-7.51	0.41	0.13	-7.79	-0.38	0.01	0.45	0.06
	1904	1911	1918	0.70	0.87	0.32	0.15	-0.15	0.06	0.24	0.03
	1919	1928	1972	0.69	1.21	0.52	0.00	0.00	0.01	0.07	0.06
Uruguay	1863	1864	1869	1.00	1.01	0.01	0.00	-0.06	0.00	0.06	0.00
	1870	1873	1880	0.85	1.04	0.19	0.00	0.13	0.14	0.05	0.04
	1881	1889	1894	0.67	0.35	0.05	0.37	0.20	0.11	0.05	0.14
	1895	1906	1974	0.17	0.21	0.16	0.12	0.09	0.55	0.37	-0.09
average	all cycles			0.40	0.75	0.16	-0.19	0.09	0.18	0.15	0.06

Notes: Increase in Debt is the growth rate of the Debt in percent of the Debt at the end of the episode (boom or bust). Gross Issuance, Amortization, and Debt Restructurings/Defaults are also measured in percent of the Debt at the end of the episode (boom or bust). Gross Issuance is Gross Issuance for Cash. Not-Cash Gross Issuance is included in Debt Restructurings/Defaults.

Figure 1
Prospectuses



BUENOS AYRES 6% STATE LOAN, 1870,

Under the authority of the State Laws of the $\frac{17}{18}$ *November,* 1868, *and* $\frac{27}{28}$ *January,* 1870; $\frac{18}{19}$ *of February,* 1869 *(as varied by a further Law of* $\frac{3}{4}$ *September,* 1869), *and* $\frac{27}{28}$ *January,* 1870,

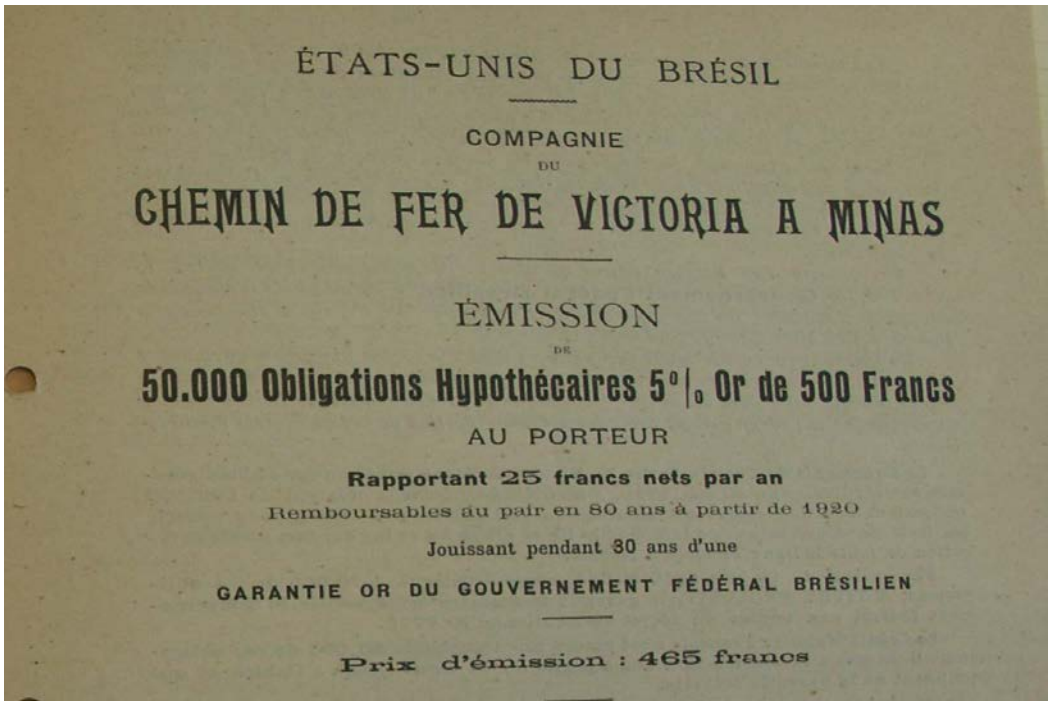
FOR £1,034,700 STERLING,

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.

PRICE OF ISSUE, 88 PER CENT.



ÉTATS-UNIS DU BRÉSIL

COMPAGNIE
DU

CHEMIN DE FER DE VICTORIA A MINAS

ÉMISSION
DE

50.000 Obligations Hypothécaires 5% Or de 500 Francs

AU PORTEUR

Rapportant 25 francs nets par an

Remboursables au pair en 80 ans à partir de 1920

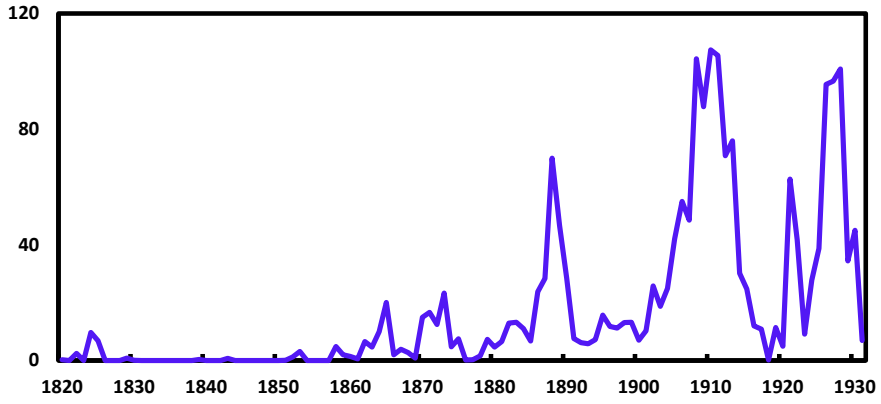
Jouissant pendant 80 ans d'une

GARANTIE OR DU GOUVERNEMENT FÉDÉRAL BRÉSILIEN

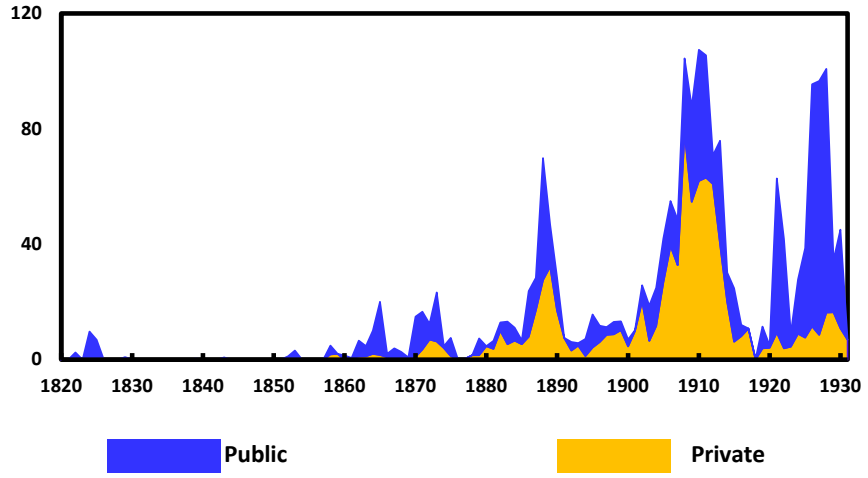
Prix d'émission : 465 francs

Figure 2

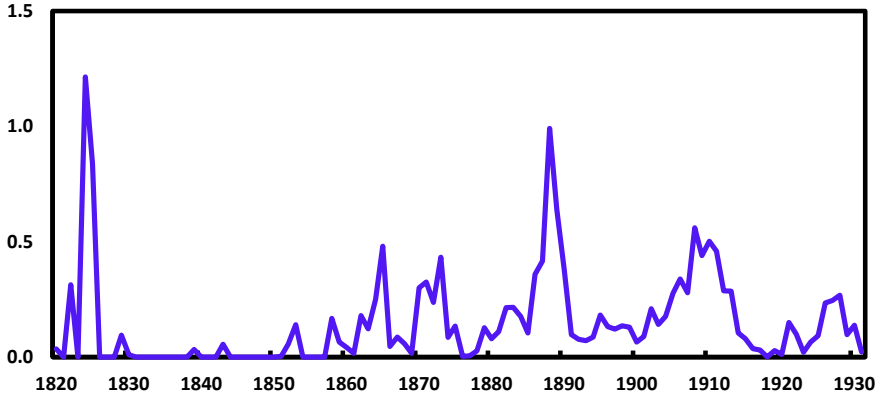
Latin America International Total Issuance
(in million British Pounds)



Latin America Public and Private International Issuance
(in Million British pounds)



Latin America International Total Issuance
(Share of Exports)



Notes: International Issuance is Grosss Primary International Issuance

Figure 3
International Issuance/Exports

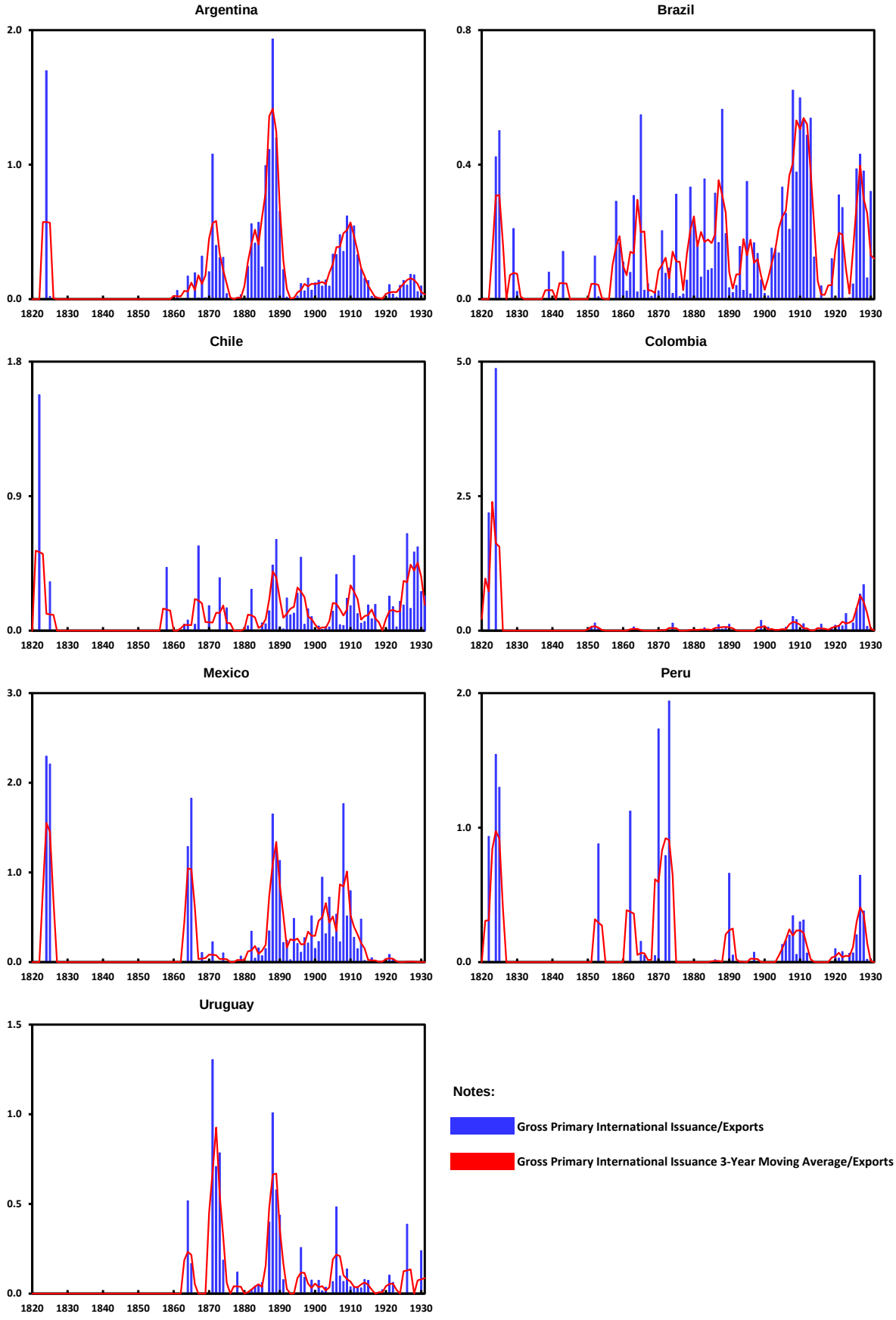
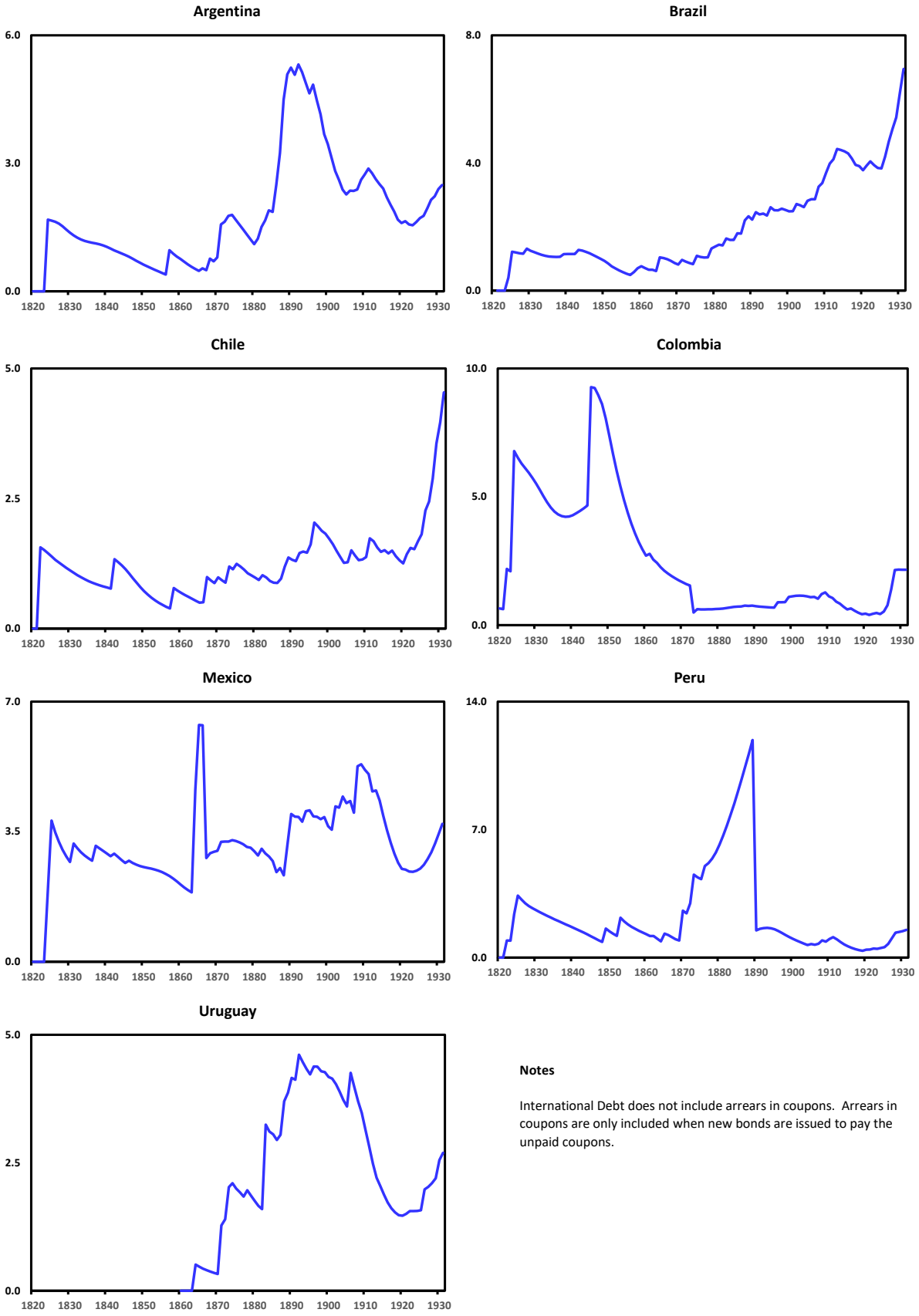


Figure 4
International Debt/Exports



Notes

International Debt does not include arrears in coupons. Arrears in coupons are only included when new bonds are issued to pay the unpaid coupons.

Figure 5
Public and Private International Issuance