Universidad de la República
Facultad de Ciencias Sociales

Tesis Doctorado en Ciencias Sociales con especialización en Historia Económica

Essays on the Gold Standard: The Case of Uruguay

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1 de febrero, 2023
Montevideo

Díaz Steinberg, Gastón Manuel.
Essays on the gold standard: the case of Uruguay / Gastón Manuel Díaz Steinberg.
Montevideo: Udelar. FCS, 2023.
206 p.
Tesis (doctorado) - Universidad de la República (Uruguay), Facultad de Ciencias Sociales, 2023.
1. Patrón oro. 2. Sistemas monetarios. 3. Convertibilidad. 4. Bancos. 5. Tipo de cambio. 6. Balanza de pagos. 7. Uruguay
I. Título. II. Herranz-Loncán, Alfonso, tutor. III. Flores Zendejas, Juan, tutor
CDD: 332.422 2

Ficha catalográfica elaborada por la Sección Procesos Técnicos de la Biblioteca de Facultad de Ciencias Sociales (Udelar).

Página de aprobación

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Tribunal: …….

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Fecha de defensa: …….

Calificación: …….

Abstract

The objective of this thesis is to explore how Uruguay adhered to the gold standard for 38 years almost without interruption. This requires examining two related aspects. The first regards how the gold standard actually operated in Uruguay. What were the specific factors that allowed the banks to maintain the convertibility of notes? What tools were available to deal with economic volatility? The second aspect relates to the consequences of gold standard adherence. In other words, what were the benefits and the costs of a fixed exchange rate for the Uruguayan economy? Chapter 2 examines the issue of the rules of the game under a multiple currency issuing bank system, focusing on the actions of specific banks. Chapter 3 takes a macro level approach, looking at one of the main sources of external volatility, capital flows, and analyzes how the balance of payments and the money supply adjusted to changes in this variable. Chapter 4 looks more closely at one episode of capital inflows, the leadup to the 1890 crisis (also known as the Baring Crisis), comparing Uruguay to its neighbor, Argentina, which experienced a similar boom and crisis.

The results of this thesis show that, in general terms, gold standard adherence placed important limits on a peripheral country like Uruguay. Over the long run, the rules of the game had to be respected, meaning the money supply had to stay in line with gold reserves. However, some bank may have tried to cushion the effects of external volatility by managing their balance sheets countercyclically, with economy-wide effects. In addition, the fixed exchange rate may have offered certain advantages beyond those commonly highlighted by the literature (ease of trade and access to capital markets on better terms). The gold standard allowed the government to avoid the erosion of fiscal revenues caused by currency depreciation. Strict convertibility forced banks to manage reserves prudently; this in turn may have attracted gold to Uruguay its neighbor, Argentina, that was on inconvertible paper currency.

Key words: Uruguay, gold standard, banks, fixed exchange rates, balance of payments

Resumen

El objetivo de esta tesis es explorar cómo Uruguay pudo adherirse al patrón oro por 38 años casi sin interrupción. Esto requiere examinar dos aspectos relacionados. El primero refiere a cómo el patrón oro efectivamente operó en Uruguay. ¿Cuáles fueron los factores específicos que permitieron a los bancos mantener la convertibilidad de sus billetes? ¿Qué herramientas estaban disponibles para enfrentar la volatilidad económica? El segundo aspecto se relaciona con los beneficios y los costos del tipo de cambio fijo para la economía uruguaya. El capítulo 2 examina el tema de las reglas del juego en un sistema de banca libre, poniendo el foco en la acción de bancos específicos. El capítulo 3 aborda el nivel macro, mirando una de las principales fuentes de volatilidad externa, los flujos de capital, y analiza cómo la balanza de pagos y los agregados monetarios reaccionaban a cambios en esta variable. El capítulo 4 mira más de cerca un episodio de entrada de capitales, los años anteriores a la crisis de 1890 (también conocida como la Crisis de Baring), y compara con su vecino, Argentina, quien experimentó un boom y crisis similar al de Uruguay.

Los resultados de esta tesis muestran que, en términos generales, el patrón oro implicaba limites importantes para un país periférico como Uruguay. En el largo plazo, las reglas del juego tenían que ser respetadas, implicando que la oferta monetaria tenía que mantenerse en línea con las reservas de oro. Sin embargo, es posible que algunos bancos intentaron amortiguar los efectos de la volatilidad externa, manejando sus balances de forma contra cíclica, con impactos para la economía en su conjunto. Además, el tipo de cambio fijo puede haber brindado a Uruguay ciertas ventajas más allá de las que son comúnmente señaladas en la literatura (más facilidad en el comercio internacional y mejor acceso a mercados de capitales). El patrón oro permitió que el gobierno evite la erosión de ingresos fiscales que sería causada por la depreciación cambiaria. La convertibilidad estricta obligó a los bancos a manejar sus reservas de forma prudente; esto posiblemente hizo que llegara oro a Uruguay del país vecino, Argentina, que operaba una moneda papel inconvertible.

Palabras claves: Uruguay, patrón oro, bancos, tipo de cambio fijo, balanza de pagos

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Acknowledgements

Over the course of this project, I was fortunate enough to count on the collaboration and support of various institutions, colleagues, friends and family without which this thesis would not have been possible. I must thank the Progama de Historia Económica y Social of the Facultad de Ciencias Sociales, Universidad de la República (UdelaR), as the primary source of financial and institutional support throughout this process, and the Instituto de Economía of the Facultad de Ciencias Económicas y de Administración, UdelaR, for additional financial and institutional support. I also received a three-year scholarship, the *Beca de apoyo a docentes para estudio de posgrado* from the Comisión Académica de Posgrado, Udelar, as well as financing from the Swiss National Science Foundation for an academic visit to the Institut Paul Bairoch d'histoire économique and the Université de Genève, for which I am grateful. I would also like to thank that same institute and the Maison de l'histoire for additional financing to carry out archival work in Geneva and London.

This thesis would not have been possible without the guidance of my supervisors, Juan Flores Zendejas and Alfonso Herranz-Loncán, who encouraged me to follow my curiosity, even when it strayed from our original plan. They also lent their expertise and wisdom, and read my work with patience, offering invaluable advice and criticism. To them I am eternally grateful.

I would like to thank Cecilia Moreira for inspiring me to do financial history and for her help with archives and sources in Uruguay, Maximiliano Presa for his assistance with data collection, Nektarios Aslanidis for his help with statistical methods and Atenea Castillo for her help with proofreading. I am also grateful to my colleagues in Montevideo, at the Programa de Historia Económica y Social and the Grupo de Historia Económica of the Instituto de Economía, as well as the PhD and Post-Doctoral students that I worked alongside with in Geneva, at the Département d'Histoire, Economie et Société, UNIGE, for their support and encouragement. In addition, I would like to mention and thank Roberto Cortés Conde, Xu Yihuan, Èric Gómez i Aznar, Joel Mokyr, Florencia Sember, Guillermo Antuña Martínez and Gianandrea Nodari for their helpful comments on preliminary versions of some of the chapters of the thesis.

My research involved much time spent in historical archives, and I am indebted to several archivists for their help and guidance: Lorena Merli at the Archivo de la Bolsa de Comercio de

Montevideo, Karen Sampson at the Lloyd's Archive, Clara Harrow at the Baring Archive, Rafael C. Siodor at the University College of London special collections and the staff at the Biblioteca Nacional del Uruguay.

Finally, I would like to thank my parents, Elisa Steinberg and Manuel Díaz, and my aunt, Adriana Anfusso, who's constant encouragement made it possible for me to achieve something that I once believed was out of reach. I am also grateful to my other family and friends for their support and patience throughout this process.

Chapter 1: Introduction

1.1 Uruguay: a case study for the gold standard in peripheral countries

The choice of exchange rate regime has been of central interest for economists and policymakers since at least the 19th century. The current consensus appears to have materialized around floating exchange rates as the optimal choice, albeit with some major exceptions. The euro area has opted for the most fixed of internal exchange rates -a single currency-, while many developing countries exhibit a "fear of floating", as demonstrated by the wide variety of "crawling pegs" and "dirty floats" applied by central banks (Calvo and Reinhart, 2002; Bordo and Flandreau, 2003).

The consensus around floating exchange rates is a relatively new phenomenon. During the classical gold standard era, which got underway in the last third of the 19th century, many countries chose to link their domestic currencies to gold at a fixed exchange. All the major European powers adhered to the system from at least the 1870s, while many countries in the European periphery joined that decade or soon after. Other countries further afield often attempted to fix their currency to gold, usually with only short-lived success (Eichengreen, 2008). Countries adopted the gold standard in order to promote internal stability and foster external integration.[1] Since the collapse of the system during the First World War, the interwar gold exchange standard, Bretton Woods and the European Monetary Union were all, in a sense, attempts by developed countries to recuperate the benefits that a fixed exchange rate system can provide (Bordo, 1999: 1-2, 14-18).

This can in part be explained by the fact that the classical gold worked quite well in many respects, at least for the countries at the core of the system (Bordo and Schwartz, 1999: 238-39; Eichengreen, 2008: 29-31). It was to a certain degree a self-adjusting system, but the reputation of each country's monetary authorities and cooperation between the major powers

[1] The gold standard provided long run price stability (Bordo, 1999), and there is evidence that being on gold fostered trade with other gold standard countries (Lopez-Córdova and Meissner, 2003) and allowed access to foreign capital on better terms (Bordo and Rockoff, 1996; Meissner, 2004).

also played a role. The investment flows that emanated from the core created demand for the capital goods and manufactures they exported, relieving pressure on the balance of payments. However, core countries, as well as most countries in the European periphery, also tended to have large, long-established institutions -central banks- that helped manage monetary affairs. Their unquestioned commitment to the gold standard meant that when exchanges fell, short term capital flowed in, anticipating that the monetary authorities would do whatever it took to protect the fixed exchange rate. Over time central banks learned to work within the gold points and leverage their credibility to achieve some breathing room within which they could act as lender of last resort -providing liquidity to struggling banks in order to prevent a wider panic-, a responsibility that was slowly assumed over the course of the late 19th century. In addition, cooperation between core country central banks smoothed frictions and stemmed crises before they could spread (Eichengreen, 2008: 32-37).

Peripheral countries had a more difficult time adhering to the gold standard, in part because equilibrating forces in the balance of payments were absent. There was no accommodating factor to adjust to a fall in export values or a reduction in capital inflows, events which often coincided. Being primary goods producers, these countries were price takers for their exports and for a broad range of imports, meaning there was little scope for internal price changes. Adjustments had to occur through painful changes in income and employment, with consequent pressures for changes in policy (Triffin, 1947; Ford, 1962; Eichengreen, 2008: 37-41). Moreover, outside of Europe, most countries did not have central banks that could smooth volatility even within the narrow limits provided by their international insertion.

Despite this, many peripheral countries tried to fix their currencies to gold in the hopes that this would provide financial stability, facilitate trade and lower capital costs (Bordo and Rockoff, 1996; Meissner, 2004; Mitchener, Shizume and Weidenmeir 2010). However, most countries outside Europe that attempted to join the gold standard in the 19th century could only remain in the systema few years. To name just a few Latin American examples, Argentina was on gold beginning in 1867, but was forced to exit in 1876 after a major crisis. It joined again in 1883, but was forced off in 1885, and did not return to the gold standard until 1899. Brazil had a failed attempt from 1888 to 1889, joining again only in 1906. Chile fixed its currency to gold in 1895, but devaluated in 1898 and never went back (Bordo and Rockoff, 1999: 332). It wasn't until the 20th century that a flood of peripheral countries outside Europe joined the club with success, only to exit when the system collapsed during WWI (Reinhart and Rogoff, 2010).

There is one exception to this rule for peripheral countries: Uruguay was on the gold standard for 38 years, joining in 1876 and remaining on gold almost uninterruptedly until 1914. This is longer than any country outside of Europe and a few of her colonies, and as long or longer than some of the core countries of Europe. For example, of the European countries that were still on gold in 1914, Denmark joined in the same year as Uruguay, Finland in 1877, and France, Belgium and Switzerland in 1878 (Reinhart and Rogoff, 2010).

It is difficult to highlight sufficiently the singularity of the Uruguayan case. This small republic began to engage with the Atlantic economy in the 1860s, exporting livestock products, mostly hides, wool and salted beef. It was highly dependent on foreign investment to finance the expansion of the state and for the construction of railways and urban infrastructures (Bertino and Millot, 1996). Uruguay's narrow export basket, commercially open economy and dependence on capital inflows would have left it highly exposed to the vicissitudes of international markets. Yet, outside of Europe and a handful of her colonies, no country adhered to the gold standard longer than Uruguay did.

Uruguay is unique not only in the length of time it maintained a fixed exchange rate, but also in how it achieved this feat. The country lacked anything like a central bank throughout most of the period.[2] Until 1907, it had multiple privately-owned currency issuing banks. Furthermore, these banks operated with a minimal regulatory framework. They needed a government charter to operate, but the only limits placed on their balance sheets was that note issues were capped at three times the bank's paid-up capital and the requirement that notes be converted to gold on demand at the stipulated exchange rate. There were no other prudential regulations or legal safeguards of any kind (Acevedo, 1903: 307-308). This makes Uruguay an unlikely gold standard success story, and therefore an interesting case through which to study how the system worked in peripheral countries.

The uniqueness of the Uruguayan case begs for two questions to be answered. The first is, why did the country remain on the gold standard for 38 years? The second is how did achieve this feat, where so many other countries failed? The ultimate answer to the first question is a political economy one: the gold standard endured because people in power wanted it to. These were the merchant community, many of them foreigners residing in Uruguay (mostly British,

[2] In 1907, the Banco de la República Oriental del Uruguay (BROU), a quasi-state bank, became the sole paper currency issuer. However, at that time, most modern-day central banking functions were either not within its control or not yet developed in Uruguay (for a description of central banking functions see Goodhart, 1988, and Ugolini, 2017; for a discussion of the evolution of central banking in Uruguay see Diaz and Moreira, 2016).

but also French and German), that dominated the import trade (Barrán and Nahum, 1971: 448-452). The Uruguayan state was relatively weak during the 19th century and, perhaps because of this, enjoyed relative autonomy from rural landed interests (Peloso and Tenenbaum, 1996). This meant that merchants were a comparatively powerful force in Uruguay, compared to, say, Argentina, where rural landowners dominated the government (Barrán and Nahum, 1987; Rapoport, 2000: 14-16). The merchant elite controlled the main banks, and through them imposed monetary orthodoxy on the republic.

This thesis does not address these political economy issues. Instead, it focuses on the 'how', rather than the 'why', Uruguay stayed on the gold standard for 38 years. As will be discussed in more depth in the next section, gold standard adherence presented major challenges for a country like Uruguay. As an exporter of a small number of primary products and an importer of capital, the Uruguayan economy was exposed to a large degree of volatility from the external sector, leading to major current account reversals, and consequent negative effects on growth. The temptation to try to escape the iron grip of the balance of payments on the money supply was strong. The lack of a central bank made reserve management of the type practiced in Europe difficult. The rules of the game were broken in both directions. Sometimes, banks allowed note circulation and deposits to grow much more rapidly than gold reserves, inevitably putting the exchange rate at risk. However, in the short run, some banks appear to have sterilized gold flows, in a similar fashion to what central banks did in Europe, and may have had relative success in shielding the economy from external volatility.

The thesis focuses on Uruguay in order to shed light on how the classical gold standard worked outside of Europe. The main objective is to explore how Uruguay adhered to the gold standard. This requires examining two related aspects. The first regards how the gold standard actually operated in Uruguay. Ogren (2012) highlights that the gold standard was not a system imposed from above. On the contrary, it was a bottom-up system, where each country found ways to navigate the challenges it presented. What were the specific factors that allowed the banks to maintain the convertibility of notes? What tools were available to deal with economic volatility? The second aspect relates to the consequences of gold standard adherence. In other words, what were the benefits and the costs of a fixed exchange rate for the Uruguayan economy? How did moments of financial fragility, that led so many other countries to abandon the system, play out in Uruguay?

1.2 Theoretical considerations

1.2.1 General themes in the gold standard literature

Being on the gold standard implied two things: using only gold (or gold backed foreign exchange) as the monetary base and maintaining the convertibility of domestic paper currency. The first was attained by making gold the only legal tender and demonetizing other metals. The second was achieved by the monetary authority standing ready to convert domestic currency to gold at a specified rate and allowing the metal to be freely exported and imported (Bordo, 1999: 6, 28).

One part of the gold standard literature has been concerned with explaining the move from other metallic standards to gold. Most European countries were on a bimetallic or silver standard during the greater part of the 19th century. However, the changing relative supply or demand of silver and gold meant that the market exchange rate between the two metals could deviate from the official mint prices, creating violent swings in the monetary base when the undervalued metal was drained from circulation. Many countries joined the gold standard in the 1870s and 1880s when they abandoned silver or bimetallism and recognized only gold coins as legal tender.[3] The move from silver and bimetallism to gold is often explained by "network effects", since trade and finance between countries were facilitated by adoption of the same monetary standard (Meissner, 2004). Britain's rise as the world's foremost international lender and Germany's adoption of gold in 1871 created incentives for their closest trading partners to do so as well. In this way, gold became the international currency with which trade and finance was conducted, essentially eliminating external exchange rate risk (Eichengreen, 2008: 16-17).

Banknotes and deposits allowed countries to economize on scarce gold reserves, lubricating internal trade and finance. However, the expansion of banking, paper currency and deposits created internal exchange rate risk. If the fixed exchange rate was to be defended, sufficient reserves had to be maintained to meet demand for converting domestic currency to gold, making changes in the country's money supply heavily conditioned by changes in reserves held by the monetary authority. Since most countries did not have mineral gold deposits, reserves were intimately tied to the balance of payments, and consequently so were money and prices. The risk of suspending convertibility and resorting to currency depreciation was present

[3] The first country to go on the gold standard was Britain, which demonetized silver in 1821. Portugal, with close commercial ties to Britain, moved from bimetallism to gold in 1854.

throughout the gold standard period. The fact that the major economic powers, as well as part of the European periphery, maintained fixed exchange rates for several decades before 1914 is in some ways surprising, and economic historians have dedicated great effort to explaining how this was achieved.

Because of the central role of the balance of payments, a good deal of the gold standard literature has focused on the way economies adjusted to disturbances in the external sector. The earliest model of how adjustment worked, the price-specie-flow mechanism popularized by Hume (1777), postulated that balance of payment disturbances resulted in international gold flows, and these brought restored equilibrium through their effect on prices and consumption patterns.[4] However, Hume's model predicts large gold flows and divergent price movements between countries, when in fact the opposite is observed. Gold flows were small relative to current account imbalances, and price movements tended to remain in line between gold standard countries, both in the short and long-term (McCloskey and Zecher, 1981). Since Hume's description was published, the model has been extended to explain these facts and to capture other important aspects of the gold standard world, including the role of capital flows, the function of interest rates and the actions of central banks.[5]

Short-term capital flows played an important role in the balance of payments adjustment mechanism. A gold outflow would cause the money supply to contract and interest rates to rise. Higher rates would prompt capital to flow in, stemming the gold outflow. A gold inflow would have the opposite effect, causing interest rates to fall and short-term capital to flow out. This meant that part of the burden of adjustment was taken up by capital flows, and explains in part the relative lack of international gold movements. As capital markets grew more integrated over the last third of the 19th century, short-term capital flows came to be regarded as the primary adjustment mechanism under the gold standard (Bordo, 1999: 32).

[4] For example, a balance of payments deficit would lead to a gold outflow, decreasing the money supply and thereby lowering the domestic price level. Falling prices would then move the balance of payments back into equilibrium as domestic goods became cheaper vis-a-vis imports and consumption shifted away from imported goods towards local production. In the case of a gold inflow, the opposite would occur; the money supply would expand, pushing up domestic prices, shifting spending to imported goods and returning the balance of payments to equilibrium (Eichengreen, 2008: 24-25).

[5] These have tended to be related to different trends in economics that have arisen over the last century. That is, the classical gold standard era has been used as a testing ground for different macroeconomic theories. Many of these applications are summarized in detail in chapters 2 and 3 of Bordo (1999: 27-124), and more succinctly in Eichengreen (1992).

A second important factor in equilibrating the balance of payments was the role of long-term capital flows. The spread of the gold standard in the last decades of the 19th century coincided with a massive rise in international capital flows from the most advanced countries of Europe towards the periphery.[6] Britain, the largest capital exporter, invested on average about 5% of its GDP overseas in the four decades before 1914, while France and Germany invested about half as much (Fishlow, 1985: 384). The greater part of these flows was directed towards financing government spending and investment in private enterprises, often involving construction of large infrastructures like railways, ports, waterworks, sewage systems and electricity generation and distribution networks. They allowed for substantial trade surpluses in core countries and financed large current account deficits in peripheral regions (Fishlow, 1985; Davis and Huttenback, 1986). Due to the uses to which capital exports were put, they created a large demand for goods exports. Capital goods, like locomotives, steel rails, and copper wire were necessary for the construction of transport and communications infrastructure. Mining equipment, wire fencing cattle ranching, plows for agriculture and machinery for basic industry were also key for developing the resources made accessible by transport infrastructures. Exports of manufactures, such as textiles, also rose as population and incomes grew in the importing countries. Much of these goods were produced exclusively in the capital exporting countries, meaning their goods exports rose along with overseas investment. Furthermore, this investment created a stream of interest and dividend flows from peripheral towards core countries. Merchandise exports and debt service played a compensating role in the balance of payments, allowing capital exports to be offset by current account surpluses (Ford, 1962; Bordo, 1999).

Another significant phenomenon was the role that central banks played in adjusting to economic disturbances. These institutions managed the country's international reserves and were tasked with maintaining the fixed exchange rate. When facing a gold drain, they could raise interest rates preemptively, which would have a two-pronged effect. First, higher rates would be deflationary, through curtailed lending and dampened demand. Second, they would draw in short-term capital from abroad. Both mechanisms would stem the gold outflow. Where the commitment of the monetary authorities to the fixed exchange rate was unquestioned, it was often not necessary to raise interest rates. A rise in the exchange rate would be met with

[6] This does not mean that most British, French and German capital went to poor countries. Clemens and Williamson (2004) show that capital flowed in greater volume to countries with high GDP per capita. However, in the late 19th century, Uruguay falls into their definition of a high GDP per capita country, along with Argentina, Australia, Canada and New Zealand.

an inflow of capital, since investors knew that the monetary authority would do whatever it took to defend parity, and this capital inflow would itself return the exchange rate to normal levels (McKinnon, 1993: 8; Eichengreen, 2008: 30-31).

Preserving the exchange rate meant the ratio of paper notes to gold reserves had to remain relatively steady over the long run.[7] The monetary authorities were supposed to adjust the money supply in the same direction as changes in gold reserves. As gold reserves accumulated, they had to lower interest rates and expand credit, causing the money supply to expand, and as gold reserves were drawn down, rates would be raised and credit restricted, reducing the money supply. This was referred to as following the "rules of the game", and was believed to explain in part why the gold standard was so successful, in that it would aid the adjustments in the balance of payments necessary to keep price levels in line between countries (Bloomfield, 1959; Bordo, 1999: 34). This meant governments and central banks had to subordinate other policy objectives, such as smoothing external shocks, supporting economic activity and maintaining employment levels, to exchange rate stability. This was possible because limited suffrage and weak labor organization in the 19th century meant they were relatively free from political pressures (Eichengreen, 2008: 2).

However, examination of the actual behavior of central banks during the period shows that they did entertain multiple policy objectives and that, more often than not, at least in the short run, the rules of the game were not followed. Credit often moved in the opposite direction of changes in gold reserves and central banks did not adjust their discount rates in line with those of other countries (Bloomfield, 1959; Bordo, 1999: 34; Ogren, 2012: 5-7, Bazot et al., 2022). It appears they sterilized gold flows in order to shield their economies from volatility that would otherwise be imported through the balance of payments. They did this by building up gold reserves or by manipulating the gold points[8] in order to gain breathing room within which to operate a countercyclical monetary policy. Faced with a large change in gold reserves, the role of the central bank was to decide whether it was temporary, and try to smooth its effect on the money supply, or due to fundamental causes, and thus follow the rules of the game (Sayers, 1957: 111). In other words, countercyclical balance sheet management could not be applied indefinitely, as eventually the bank would run up against the balance of payments constraints;

[7] It also meant that deposit money had to maintain a stable relationship with the country's gold reserves, although the role of deposits is often given little attention, in not ignored entirely, in the literature on the rules of the game.
[8] The gold points were upper and lower limits withing which the exchange rate could vary. They were determined by the cost of shipping gold abroad or of importing it (Officer, 1986; Bordo, 1999: 9)

over the long-run the rules of the game had to be respected, but over the short-run, they could be broken.

1.2.2 The gold standard in peripheral countries

The above paragraphs describe how the gold standard worked in the core economies of the system. For peripheral countries, things operated very differently, due largely to the nature of their international insertion and institutional structures that made adherence much more difficult. To begin with, short-term capital flows did not react to changes in exchanges the same way they did for core countries. The movement of short-term capital into an advanced economy when exchanges weakened was based on the confidence of investors in the monetary authorities and the centrality of those countries in international financial networks (Eichengreen, 2008: 30-31; Flandreau and Jobst, 2005). For peripheral countries, confidence in their commitment to the gold standard and their ability to maintain a fixed exchange rate in the face of a gold drain was much less, and they therefore did not receive compensating short-term capital inflows

In addition, peripheral countries were generally long-term capital importers. Low domestic savings and immature financial markets created a dependence of foreign capital for growth. These countries often specialized in exporting a limited range of primary products.[9] Prices for these goods were set in international markets, and could fluctuate dramatically with respect to import prices (also set abroad). Thus, terms of trade were volatile for the periphery. Foreign investors followed events in borrowing countries closely, and capital flows could cease abruptly if economic news turned sour (Ford, 1962; Catão, 2007). This meant the disappearance of a major source of financing for imports and of foreign exchange. In addition, interest on public debt and a portion of private debt was fixed, so debt service requirements remained inflexible. This meant that in the face of a fall in export prices or a sudden stop in capital inflows there was no compensating force to equilibrate the balance of payments, and that adjustment often had to occur through a fall in imports.[10] For a country on the gold standard, currency depreciation was not an option, and import compression had to be achieved through painful reductions in income (Ford, 1962).

[9] For example, for Latin America between 1870 and 1913, the top three products of each country made up between one half and two thirds of their total exports (Bértola and Ocampo, 2010: 99).
[10] Debt default could relieve pressure on the balance of payments, but was not an option if the country desired to maintain access capital markets in the near future.

For peripheral countries outside Europe, a further complication was a lack of central banks. While in much of the European periphery central banks were founded in the 19th century, countries further afield did not establish these institutions until at least the 1920s (Ogren, 2012: 7; Marichal and Fuentes, 1999). Although large, state banks were common, they did not necessarily have a monopoly of note issue and other tools available to European style central banks.[11] Multiple competitive note-issuing banks would have been more likely to follow the rules of the game (Ford, 1989: 209), thus relinquishing the possibility of shielding the domestic economy from external shocks. Consequently, remaining on the gold standard implied absorbing the full brunt of external volatility.

Given the challenges that peripheral countries faced, why attempt to fix the value of their currency to gold? One reason was trade. By reducing exchange rate risk and thereby lowering transaction costs, trade with other countries on gold was facilitated (Meissner and Lopez-Cordova, 2003; Flandreau and Maurel, 2005). A fixed exchange rate could also increase access to international capital markets. There is evidence that countries on the gold standard could market public debt in Europe at lower rates than non-gold standard countries (Bordo and Rockoff, 1996; Meissner, 2004). This was because being on the gold standard tied the government's hands, and thus acted as a signal to investors of their fiscal and monetary prudence. The restraints placed on the government could have domestic benefits as well, in terms of more stable prices (Bordo, 1999: 2). Non-economic motives could also factor in; the gold standard was considered "the most modern monetary system", and countries sought to abandon backwards bimetallic or fiat currency systems for the prestige of gold (Yeager, 1984: 657).

1.2.3 Financial history and the problem facing Latin America in the first globalization

Until recently, financial history has been largely left aside by economic historians of Latin America (Marichal and Gambi, 2017). This is somewhat surprising, since the role of the financial sector in the development of capitalism and state formation has long been considered important to historians of Europe. For example, Rostow (1960) identifies the modernization of financial markets as a key condition for takeoff of capitalist economies. The immaturity of financial systems in Latin America in the 19th century cries out to be explored as part of the

[11] According to Marichal and Fuentes (1999: 2), there was "considerable experimentation with forms of central banking throughout [Latin America]", but none of the state banks in existence in the 19th century became central banks. See Tedde and Marichal (1994) for a discussion of the formation of state banks in various Latin American countries.

explanation for the slow development of the region. In the second half of the 19th century, Latin America was a veritable laboratory of experimentation in financial and monetary organization, where the problem of banks, money and the state were closely intertwined.

In contrast to an earlier literature which had emphasized the impact of British banking, which arrived in the 1860s, between 1850 and 1873, over 80 domestic banks were founded in the more dynamic economies of Latin America, including Argentina, Brazil, Chile, Peru, Cuba and Uruguay (Marichal, 2022: 210). These tended to be concentrated in the capitals and major ports. The difficulties states had in exerting control over the countryside and continued armed conflicts at first prevented banking from becoming a national phenomenon.

Banks met the demand for credit of various agents: those linked to the new export sectors, such as grain and beef products in Argentina, guano in Peru and sugar and tabaco in Cuba, as well as the urban classes that arose in growing cities. In addition, despite the lack of banks in the countryside, discounting of bills, paper currency and deposits allowed credit to extend to the agricultural centers, sometimes through informal mechanisms connected to merchant circuits (Marichal, 2022: 212-13).

The state was also a major client of nascent banks, with treasuries depositing funds and governments taking on loans. Indeed, states promoted the organization of banks for such purposes, and the relationship between banks and the state was not always voluntary. During wartime, especially, states obliged banks to fund spending, often exempting them from prudential regulations designed to limit inflationary overissue of banknotes.

The organization of the banking system and bank legislation itself tended to be inspired by European experiences, and was often part of a larger suite of liberal policies intended to guarantee property rights and reduce uncertainty in politically chaotic times. One important element was whether banknote issue should be dispersed among multiple private banks, or whether it should be concentrated in the hands of one bank, either owned by the state or with some elements of public control. This debate took place in Europe in the 19th century, with a variety of configurations arising (Dowd, 1992). As Marichal (2022: 301) points out, in contrast to Europe, this debate took place in Latin America at the same time, or even before, the first banks were being founded.

For example, the first modern bank in Chile was founded in 1855 and the second in 1859, concurrently with a series of laws designed to create a liberal framework for business and

finance, including the Mortgage Bank Law of 1855 and the General Banking Law of 1860 (Marichal, 2022: 312). These established one of the least restrictive bank regimes in existence at the time, and led to the opening of upwards of 20 banks over the next decades (Marichal, 2022: 318). This experience ended in 1878, when inconvertibility of banknotes was declared, and the Treasury began issuing its own banknotes.

Argentina provides a counter example. The Banco de la Provincia de Buenos Aires, founded in the early 20th century, fought off the free banking lobby and gained a monopoly on paper currency issue early on, with its notes circulating widely in the capital, and less so in the interior of the country, which relied on metallic coins from neighboring Bolivia and Chile (Cortés Conde, 1989: 19-21). This bank helped Argentina join the gold standard in 1867, although the experience was short lived, with inconvertibility of notes declared in 1876. The Banco Nacional was founded in 1872, also with the privilege of note issue, although it struggled to compete with the Banco de la Provincia de Buenos Aires until the 1880s. An 1887 law permitted provincial banks to issue notes as well, but rather than a return to free banking, it was more a scheme for the national government to access gold through foreign loans received by the provincial governments (Cortés Conde, 1989: 195-204). The experiment ended with the crisis of 1890; in its aftermath, a strict currency board was established, which remained in existence until 1936.[12]

The debates over banking organization often revolved around protecting the value of the currency and avoiding inflation. Governments could be ravenous in their need for financing, and, if not able to raise sufficient funds through taxation or public debt sales, often sought loans from the banking sector. A large state bank could be a convenient partner for the government, but, in exchange for large loans of questionable soundness, sometimes sought certain privileges, such as a monopoly of note issue. Free banking was seen as a way to guard against abuse of monetary issue by the state, and an arms-length distance between governments and banks was often written into the law (Schuler, 1992: 22-26).

The problem of convertibility of notes was tied up with issue of the organization of the banking sector. Private currency issuing banks could not make their notes legal tender, and thus had to provide backing in some desirable commodity (Schuler, 1992: 21). In the late 19th century, as most of Europe and other countries moved from bimetallism to gold, this meant that convertible

[12] See Marichal (2022: 299-358) for an extensive discussion of free banking in Latin America, and further country examples.

notes had to be backed by the scarce metal, thus creating the challenges described in the preceding section.

However, Latin America's various experiments in free banking were extinguished over time, as the needs for banking services on the part of governments and some semblance of control over money and credit grew when economies became more sophisticated. Multiple currency issuing banks gave way to the concentration of note issue in large, state banks or in currency boards (Marichal, 2022). In the early 20th century, the lessons of earlier successes and failures were incorporated into these new monetary configurations, which presided over several years of high economic growth and which allowed several countries to adopt the gold standard definitively, until its international collapse in 1914.[13]

1.3 The gold standard in Uruguay

In some ways, Uruguay had certain advantages when it came to the gold standard. It had relatively high GDP per capita during the gold standard period, the highest in Latin America and comparable to that of the US and the core countries of Europe in the 1870s, and still around 60% to 80% of core country GDP per capita by 1913 (Bértola, 2000: 59). Uruguay's GDP also grew at an average annual rate of 3.9% from 1870 to 1913, higher than the average rate for Latin America of 3.5% (Bertola and Ocampo, 2012: 97). In addition, the country was Latin America's sixth largest exporter by value throughout the period, and in the top four in terms of export value per capita (Bértola and Ocampo, 2010: 88). High and rising incomes would have made adjustments under the gold standard more bearable for the average person, while high exports would have been a draw for foreign investment directed towards developing the country's resources.

However, Uruguay also suffered from the disadvantages faced by most peripheral countries. Highly dependent on trade and a price taker in international markets, it was vulnerable to external shocks. Dependence on capital flows added another source of volatility, and meant that there were no equilibrating forces to bring the balance of payments back into equilibrium when facing, for example, a fall in export prices or a sudden stop in capital flows. Despite this, Uruguay made its first attempt to join the gold standard in the 1860s, and was successful in doing so from 1876 to 1914.

[13] Argentina re-entered the gold standard in 1900 and Brazil in 1906. Other countries joined for the first time: Peru in 1901, Mexico in 1905 and Bolivia in 1908 (Reinhart and Rogoff, 2010).

1.3.1 The institutional aspects of the gold standard in Uruguay

The country's first banks were founded in 1857, as currency issuing banks, backing notes in gold and silver. The gold standard was made law in Uruguay in March of 1865, when silver was demonetized, except as a fractional currency. The three main stipulations of the Banking Law were: 1) banks needed a charter from the government to operate, usually given for 20 years, 2) banknote issue was limited to three times the paid-up capital and 3) notes had to be converted to gold on sight at the exchange rate set by the government, with failure to do so leading to the immediate closure and liquidation of the bank. The law also prohibited the government from obliging banks to lend it money. It allowed for minting of gold coins, but this never occurred.[14] No other limits were placed on bank balance sheets. In other words, what we could today call 'prudential regulation' was essentially absent; there were no minimum reserve ratios with respect to note issue or deposits, and there were no solvency ratios in terms of credit with respect to reserves. This regulatory framework operated essentially unchanged, albeit with some lapses, until Uruguay exited the gold standard in 1914.

Thus, from the founding of the first banks in 1857, the country operated a system of multiple private currency issuing banks, which faced almost no regulation or government interference. However, in general, banks maintained high reserve ratios. Those that didn't were punished by gold withdrawals on the part of clients or other banks presenting their notes for conversion. Moments of crises were generally associated with some banks behaving imprudently, increasing liabilities and credit beyond what their reserves merited.

The first lapse came in 1865, the same year the Banking Law was passed, when the government broke its own rules, forcing the Banco Mauá and the Banco Comercial[15] to extend it a loan of 100,000 pounds to finance military spending. The government returned the favor by declaring the inconvertibility of banknotes that same year, since it was not in a position to repay the loan in a timely manner (Acevedo, 1903: 313). The following years were tumultuous for Uruguay, with moments of economic expansion followed by severe crises, prompting several more inconvertibility decrees. In 1871 convertibility was reestablished, but an unknown quantity of depreciated banknotes circulated alongside convertible notes (Acevedo, 1903: 217-18).

[14] Silver, copper and nickel coins were minted as small change.
[15] These were Uruguay's first two banks, both founded in 1857 (Acevedo, 1933a: 697-98).

From its founding, the Banco Mauá had acted as the state's main banking agent, lending it money and handling its foreign debt. By 1875 the bank was completely overextended, and a major crisis that year forced the government to declare inconvertibility once again (Acevedo, 1903: 240). However, this action was resisted by the rest of the banking and merchant community, which demonetized the notes of the offending bank and refused to do business with anyone who dared to use them. In 1876 the Mauá was liquidated and convertibility reestablished, with the military government which came to power that year instituting a policy of purchasing and burning all old inconvertible notes.

What followed was a period where few banks, controlled by the merchant elite and which maintained their distance from the government, managed the country's monetary system. However, the tension between the desire to shield the banks from government intervention and the needs of the state for financing were ever present. In 1887, the Banco Nacional was founded. It was privately owned, although its director was appointed by the government, and was to handle the state's accounts and the public debt. It overissued banknotes and credit, due in part to its close ties to the government, which came to its rescue with another inconvertibility decree during a major crisis in 1890. Once again, the banking and merchant community resisted, demonetizing the inconvertible notes and forcing the government to backpedal and reestablish that all contracts would be honored in gold (Acevedo, 1903: 268). This episode, in 1890, led to one of the worst financial crises in the country's history and to the government's default on external debt in 1891 (Bertino and Millot, 1996: 414).

Although opposition to inconvertibility remained strong, so did the desire for a state bank. In 1896, the Banco de la República (BROU) was founded, essentially owned by the government, to act as a state bank and with the mission of extending credit to previously neglected sectors. It appears policymakers learned some important lessons from earlier experiences, and strict limits were placed on the BROU's capacity to issue notes and deposits (Acevedo, 1934b: 66-67; Barrán and Nahum, 1978: 75-108).

The only major regulatory change was the loss of the right of note issue on the part of private banks. This occurred gradually, with the government refusing to issue new charters containing the privilege after 1890. The two private banks with note issue rights to survive the crisis -the London and River Plate Bank and the Banco Italiano- were allowed to keep doing so until their charters ran out in 1904 and 1907, respectively (their charters were renewed, but without the note issuing privilege) (Acevedo, 1934b: 482).

Thus, in 1907, the BROU became the sole paper currency issuer, and quickly became the country's largest commercial bank. Although not quite a central bank, it acted as the monetary authority and was able to avoid the pitfalls of the state banks of earlier decades. It successfully stewarded the economy in prosperous years of the early 20th century, and through the collapse of the gold standard in 1914 (Acevedo, 1936: 218-223).

This brief sketch of the evolution of the banking and monetary system will be expanded upon in Chapter 2 of this thesis, but it serves here to highlight some of the most salient characteristics of the system: the establishment of the gold standard in 1865, and it's continued adherence from 1876 to 1913; a multiple currency issuing bank system from the founding of the first banks until 1907; minimal government intervention regarding private banks, and essentially no prudential regulation; and several experiments with large, state banks, some which ended in disaster, until the rise of the BROU in the 20th century.

1.3.2 The gold standard in the Uruguayan historiography

The uniqueness of Uruguay in adopting the gold standard so early in its history, and in adhering to it until 1914, is highlighted by the country's historiography. Among the explanations for why the country held so dearly to this system are: the political instability of the early and mid-19th century, which created the psychological conditions for gold to be seen as a beacon of stability, the conservatism of the Montevideo merchant community and the pressure from European capital exporters who wanted to ensure the country's debts would be repaid in gold (Barrán and Nahum, 1987: 80-83). However, the main reason given is that it was in the interest of the "*alto comercio*", the merchant elite that controlled the regional transit trade. They imported manufactured goods from Europe and used the port of Montevideo as a hub from which to distribute them beyond Uruguay's borders, to nearby regions of Argentina, Brazil and Paraguay, often bypassing the tariffs levied by those countries. These merchants and their financiers represented European interests, and had a strong interest in transacting in gold (Barrán and Nahum, 1971: 444-48; 1987: 83).

Views differ on the consequences of Uruguay's adherence to the gold standard. Eduardo Acevedo (1903; 1933b; 1934a), a contemporary of the period studied in this thesis, and one of Uruguay's greatest economic historians, argues that a gold backed currency was beneficial for the republic, and a part of a suite of liberal policies that promoted foreign investment, the development of the country's resources and a flourishing commerce. Barrán and Nahum (1971;

1978), writing several decades later and from a *dependentista* tradition, take a much different view. For them, the gold standard was the face of imperialism and represented a monopoly of financial resources by the foreign aligned merchant elite (Barrán and Nahum, 1971: 452).

Here, the issues of the gold standard, the government and the structure of the banking sector are closely tied. For Acevedo (1903: 332-41), the greatest danger to financial stability and a sound currency was the state, since the temptation to monetize debt would be irresistible. Total separation between the state and the banks was the only way to limit over issue of paper currency and to guarantee gold convertibility. This meant that the push to establish a large bank with special privileges to serve the government, as was common in other countries, had to be resisted.[16] In contrast, for Barrán and Nahum (1971), leaving credit in the hands of foreign controlled private banks meant renouncing financial sovereignty.[17] The crux of the issue wasn't whether the currency was backed by gold or not, but to what use the country's metallic reserves were put. In order to break the stranglehold that the merchant elite had on credit, the state needed its own bank -with special privileges- that could wrest scarce reserves away from the private banks and direct them towards developing the country's resources. Montero Bustamante and Morató[18] view the country's history with state banks as a learning experience. For them, the founding of the BROU "constitutes the culmination and solution of a long and troubled historical process"[19] regarding state banks (BROU, 1918: 32)

Real de Azúa (1984: 41) highlights the problem that a fixed exchange rate represented for the livestock sector. In Argentina, a depreciating paper currency meant falling wage costs and diminishing debt burdens for cattle ranchers, while at the same time they received income in gold. Uruguayan ranchers had no such privilege, and, according to this author, were thus much slower to invest in improvements in land and cattle stocks. He traces the late entrance of meatpacking plants in Uruguay, 20 years after they had already been established in Argentina, to the handicap that the gold standard put on the livestock sector.

[16] Acevedo (1903: 340) went so far as to argue for the full privatization of the BROU, the state bank founded in 1896 after the failures of the Banco Mauá in 1875 and the Banco Nacional in 1890, both instances in which the country was submerged into economic ruin. The BROU, however, was not privatized, and would go on to become not only the state's main financial agent, but also the most important commercial bank, a primary organ of the country's industrialization project in the mid-20th century and, by the 1950's, the country's central bank. It is in fact still in existence today as the country's largest commercial bank.

[17] The only two banks to survive the 1875 crisis were the Banco Comercial and the Uruguayan branch of the London and River Plate Bank. The first was controlled primarily by British merchants residing in Uruguay. The second was owned by shareholders in London.

[18] These were the authors of the BROU's memoir published in 1918 to celebrate the 20th anniversary of its founding, and were also employees of the bank.

[19] Own translation from Spanish.

1.4 Map of this thesis

As mentioned above, the objective of this thesis is to explore how Uruguay adhered to the gold standard for 38 years almost without interruption. To this end, empirical evidence regarding many of the macroeconomic variables that are important for understanding the gold standard has been assembled. This involves a reconstruction of Uruguay's annual balance of payments, including new estimates of capital inflows and the services and unilateral transfers balances from 1870 to 1914. Annual data on the balance sheet of the banking sector, including capital, specie reserves, notes in circulation, deposits and credit, is reconstructed for the same time period. Estimates of gold stocks, and their distribution between the banking sector and the public are also developed for the period 1880-1900. In addition, high frequency data on key financial variables -the domestic market discount rate, the exchange rate for bills on London and gold flows- are presented. Microeconomic evidence is also employed, especially in regard to the banking sector. Data on reserves, notes in circulation, deposits and credit of several banks that operated during the period is collected and used to discuss banking sector liquidity, a key determinant of gold standard adherence. The empirical evidence offered represents one of the main contributions of this thesis.

The three main chapters of this thesis explore the questions discussed in section 1.1: how did the gold standard actually operate in Uruguay and what were the consequences of adherence. Chapter 2 examines the issue of the rules of the game under a multiple currency issuing bank system. Evidence is presented that, contrary to the theoretical assumptions of the literature, some banks in Uruguay adjusted credit countercyclically with respect to gold reserves in an attempt to smooth volatility of money and credit for their clients. Furthermore, their efforts may have had economy-wide effects. Econometric evidence is offered showing that domestic discount rates did not react to changes in international rates as predicted for an economy where banks followed the rules of the game. On the contrary, domestic interest rates were highly insensitive to changes in international rates.

Chapter 3 takes a macro level approach, looking at one of the main sources of external volatility, capital flows, and analyzes how the balance of payments and the money supply adjusted to changes in this variable. It suggests that, first, Uruguay was not the model student in terms of the gold standard. It came close to exiting more than once, in large part due to episodes of massive monetary expansion far beyond what gold reserves warranted. This caused

economic havoc, contributing to sudden stops, which let to major current account adjustments through import compression and reduced economic activity.

Chapter 4 looks more closely at one episode of capital inflows, the leadup to the 1890 crisis (also known as the Baring Crisis). It compares Uruguay to its neighbor, Argentina. Both countries underwent economic expansions during the 1880s, led by foreign investment booms with very similar characteristics. They also both experienced a severe crisis in 1890. However, Uruguay was on the gold standard, while Argentina operated with an inconvertible paper currency. The chapter examines the evolution of the boom and crisis in each country in comparative perspective, focusing on the consequences of their differing exchange rate regimes. In many ways, gold standard adherence appears to have offered Uruguay some benefits during this period. Prices were much more stable than in Argentina and the banking sector seems to have been in general healthier, although some banks behaved imprudently, eventually contributing to the financial collapse and putting the exchange rate at risk. In addition, the fixed exchange rate allowed Uruguay to avoid the erosion of fiscal revenues that plagued its neighbor. Finally, Uruguay's more secure banking system may have attracted gold east from Argentina, bolstering the reserves of banks and contributing to the country's ability to adhere to the gold standard.

The results of this thesis show that, in general terms, gold standard adherence placed important limits on a peripheral country like Uruguay. Over the long run, the rules of the game had to be respected, meaning the money supply had to stay in line with gold reserves. When it didn't, the consequence was sudden stops, major current account reversals and negative effects on growth.

However, the fixed exchange rate may have offered certain advantages beyond those commonly highlighted by the literature (ease of trade and access to capital markets on better terms). The gold standard allowed the government to avoid the erosion of fiscal revenues caused by currency depreciation. This was important, since foreign debt service was fixed in gold terms. Strict convertibility forced banks to manage reserves prudently; this in turn may have attracted gold to Uruguay its neighbor, Argentina, that was on inconvertible paper currency.

The idea that, in the short run, central banks followed the rules of the game has long been debunked. Central banks had more than one objective: exchange rate stability was paramount, but so was smoothing external volatility. However, the literature generally does not address

how countries without central banks managed these issues, and in fact assumes that they were more faithful followers of the rules of the game. The results of this thesis point in the opposite direction. It appears that private banks in Uruguay acted in ways similar to European central banks, using countercyclical balance sheet management to reduce volatility that would otherwise be imported through the balance of payments.

The implications of these results go beyond the issue of how Uruguay adhered to the gold standard. They touch on issues regarding the benefits of the gold standard for countries outside Europe, the importance of financial links between peripheral countries on different exchange rate regimes and the applicability of the "rules of the game" for countries without a central bank. These implications, as well as an agenda for future research, are discussed in the final chapter of this thesis.

Chapter 2: The Gold standard and the Rules of the Game in the Periphery: The Uruguayan Experience

2.1 Introduction

The Mundell-Fleming policy trilemma suggests that a country can have two, but not all three, of the following: fixed exchange rates, free movement of capital and an independent monetary policy. Under the classical gold standard, which was defined by the practice of linking paper currency to gold at a fixed exchange rate and by the relative lack of restrictions on international capital movements, independent monetary policy should have been severely limited (Triffin, 1947: 54). Changes in the money supply would have to move in the same direction as gold flows, which in turn were dictated by the balance of payments, lest convertibility of paper notes into gold be put at risk. Indeed, the first models of the operation of the gold standard, the price-specie-flow mechanism laid out by Hume, and later extensions, predicted just that. The money supply would move in proportion to changes in the gold stock, helped along by central banks which would have to follow the "rules of the game", adjusting credit and interest rates in a way that would cause changes in the money supply to move in the required direction (Bordo, 1999: 31-32; Eichengreen, 2008: 27).[20]

However, one of the main findings of the literature of the last decades regarding the classical gold standard has been to dispel the myth that the central banks abided strictly by the "rules of the game". It was already argued by Bloomfield (1959) that central banks in many countries shielded their economies from international shocks by sterilizing gold inflows and by expanding domestic credit when facing gold drains. The costs of shipping gold overseas, as well as the occasional application of institutional impediments to gold movements, created a band within which exchanges could fluctuate without triggering gold exports or imports. This gave Central banks room to apply limited countercyclical monetary policies, sterilizing gold inflows or cushioning the deflationary effects of gold outflows. These institutions were able to do this due to their central position in the banking market and their monopoly on paper currency

[20] See Eichengreen (2008: 27-28) for a discussion of the different factors, apart from the balance of payments, which influenced central bank credit and interest rates.

emission, which allowed them to manipulate the discount rate and affect the volume of credit (Bloomfield, 1959: 27). Numerous country case studies, as well as cross cross-country analyses, have confirmed this intuition.[21] Morys (2013) and Bazot et al. (2022) provide multi-country statistical analyses that support the idea that central banks in gold standard countries practice volatility smoothing. In countries without central banks, however, adjustments were processed in a decentralized way, by commercial banks. It is believed these banks adhered more strictly to the rules of the game, in part because competitive pressures would have given them less room to maneuver (Ford, 1989: 209; Eichengreen, 2008: 38). This chapter sheds doubt on this last assertion, through the study of Uruguay, a small, peripheral country that adhered to the gold standard almost continuously from 1876 to 1914, with no central bank before 1907.

One important aspect of the gold standard world was that peripheral countries had certain disadvantages in maintaining fixed exchange rates, which explains why so many of these countries struggled to stay on the gold standard (Ford, 1962; Triffin, 1947; Eichengreen, 2008: 37-41). For core countries, long-term capital outflows tended to generate demand for exports, relieving pressure on the balance of payments, while short-term capital flowed in during critical moments, under the expectation that the monetary authorities would do everything necessary to maintain gold parity and preserve their reputation. In the periphery, there were no such equilibrating forces. A fall in exports often coincided with a reduction of capital inflows, and being primary goods producers, these countries faced fixed international prices for their exports and for imports of manufactures and capital goods, meaning there was little scope for internal price changes and adjustments had to occur through changes in income, with consequent pressures for changes in policy (Ford, 1962).

Furthermore, core countries tended to have large, long-established institutions -central banks- that helped manage monetary affairs and maintain the fixed exchange rate. These institutions were less common in peripheral countries. Some areas in the European periphery, such as the Scandinavian countries, also had large banks with privileged relationships with the state that took on central banking functions. These countries had a certain degree of success in adhering

[21] The collection edited by Bordo and Schwartz (1984) contains individual country case studies for England (Dutton and Pippenger), Germany (McGouldrick), Sweden (Jonung) and Italy (Gratianni and Spinelli). Other case studies include Reis (2007) for Portugal, Ogren (2012) for Sweden, Oksendal (2012) for Norway and Bazot et al. (2016) for France.

to the gold standard. In Latin America, central banks were generally not established until the 20th century (Goodhart, 1988; Marichal and Fuentes, 1999).

This view of the asymmetries between core and peripheral countries, and the role of central banks, in regard to the gold standard predicts that a small, peripheral country like Uruguay, with no central bank, should have had a difficult time maintaining a fixed exchange rate. Uruguay was particularly exposed to external shocks due to its trade openness[22] and dependence on capital inflows. However, the country managed to link its currency to gold at a fixed rate from 1876 until 1914, with only a brief suspension during the 1890 crisis, after which it returned to gold backed currency at its previous par value. In fact, it was the only Latin American country to maintain the gold standard for more than a short period of time.[23] Uruguay did not have anything like a central bank for most of this period. Multiple currency emitting banks operated until 1907, the year when the state-owned Banco de la República (BROU) acquired a monopoly on currency emission. Adhering to the Gold standard under these conditions should have implied great sacrifice in terms of internal stability. The country was self-sufficient in food, but imported most manufactures and capital goods. Without a flexible exchange rate, external shocks would have been processed through changes in incomes and non-traded goods prices (Ford, 1962). Under these conditions, temptation to leave the gold standard would have been strong. How did Uruguay maintain a fixed exchange rate for so long?

The claim of this chapter is that two private banks, -the Banco Comercial and the Uruguayan Branch of the London and River Plate Bank (LRP)-, consistently broke the rules of the game, changing their volume of credit in the opposite direction as metallic reserves. The intention may have been to smooth fluctuations in credit and the money supply for their clients, mostly businessmen involved in international trade, but their actions had an economy-wide effect, reducing volatility that otherwise would have been imported through the balance of payments. In this sense, these banks appear to have played a role similar to that of central banks in other gold standard countries, and this can partially explain Uruguay's success in maintaining a fixed exchange rate for so many years.

[22] Uruguay had the highest ratio of exports to GDP, in 1870-74 and in 1910-1914, of the eight largest Latin American economies in those years (Bértola and Ocampo, 2010).
[23] Argentina has the second longest record, maintaining the Gold standard from 1882 to 1884 and from 1899 to 1913 (Della Paolera and Taylor, 2001). Other countries were on gold for less time, with many Latin American economies joining only in the early 20th century.

To this end, two types of evidence are provided. First, the balance sheets of several banks are examined, showing that the reserve management with respect to credit and bank created money of the Comerical and LRP was heavily countercyclical before 1907. In other words, during the free banking period, these two banks did not play by the rules of the game, in contradiction to what the literature predicts. Second, a VAR model is used to test the reaction of the domestic discount rate to shocks in international interest rates. The rate at which international shocks were incorporated into local discount rates is low, similar to rates found in gold standard countries with central banks that actively practiced volatility smoothing.

The traditional answer to how the country stayed on the gold standard found in the Uruguayan historiography has been that the banking sector was dominated by forces that staunchly defended currency convertibility, at the expense of the credit needs of the domestic economy (Barrán and Nahum, 1971: 444-52; Barrán and Nahum, 1987; Visca, 1967). Specifically, for most of the period, the main banks would have directed their resources primarily towards short-term commercial transactions, shying away from longer-term, higher risk loans and mortgages that could have aided the rural sector, especially smaller scale establishments. The authors that defend this position tend to see the country's development during the period in a negative light; they say modernization was slow and that this retarded agricultural and industrial development. They lay part of the blame for this on the class of men engaged in international commerce and the banks they controlled. The main culprits of this narrative are the Banco Comercial and the LRP, mentioned above. They were the two oldest banks in operation during the period, and historically had been defenders of gold backed currency, resisting attempts by the government to ease credit or found state banks which may abuse their position and put the gold standard at risk (Barrán and Nahum, 1971).

The hypothesis put forward in this chapter regarding these two banks and the rules of the game is not necessarily at odds with the view detailed in the preceding paragraph. These banks may well have restricted credit to certain sectors that were deemed too risky and focused resources on short-term trade finance, but they also behaved in a way that smoothed volatility for their clients that otherwise would have been imported through the balance of payments. The point is that these two banks did not behave in a single-mindedly competitive way. They appear to have taken a long-term view, perhaps sacrificing a degree of short-term profitability, in order to maintain stability of financial resources for their clients.

The rest of this chapter is organized as follows. Section 2 offers a brief description of the evolution of the monetary and banking system in Uruguay from its founding in the 1850s up to 1913. Section 3 analyzes the balance sheets of Uruguayan banks, showing that the Comercial and the LRP engaged in countercyclical behavior with regard to gold reserves and credit, different from what other banks were doing. In addition, the effect of this policy on bank liabilities is examined, showing that fluctuations in note circulation and deposits were lower for these banks than for others. Section 4 develops a VAR model which examines the relationship between domestic and international interest rates. Section 5 discusses the specific conditions which may have allowed these banks to escape the need to play by the rules of the game. The final section offers some concluding remarks.

2.2 The evolution of the monetary and banking system in Uruguay

2.2.1 The beginnings of a banking system and the adoption of the gold standard

The general outlines of Uruguay's monetary system were established in the 1862 Monetary Law, which fixed the gold value of the Uruguayan peso, and the 1865 Banking Law which, among other things, officially instituted gold convertibility, thus putting Uruguay on the Gold standard (Acevedo, 1903: 287).[24] Silver and other metals were still allowed to be used in payments, but only in small fractions of the total amount owed, thus serving as a way to augment the supply of small denomination coins.[25] Although minting of gold coins was provided for in the law, it never occurred in Uruguay during the period. The economy relied on the circulation of foreign coins and bills, as well as the emission of gold-backed paper currency by local banks.

[24] Throughout the 19th century, several laws upheld a bimetallist standard; an 1854 Law permitted the circulation of French, Spanish and Latin American gold and silver coins, as well as the minting of domestic pieces (Pivel Devoto, 1976: 79-80). The 1862 Law updated the system, redefining the metal content of the peso and establishing the exact exchange rates with different foreign coins based on their weight and metallic content, this time including US, British and other European currencies (Acevedo, 1903: 268-290). The Uruguayan peso was defined as 25.48 milligrams of silver at 917 fine, while the Uruguayan gold doubloon (valued at 10 pesos) was to contain 16.97 grams of gold at 917 fine. This implied the following exchange rates:

Currency	**Value in Uruguayan pesos**	**Currency**	**Value in Uruguayan pesos**
Ounce of gold	15.12	Spanish doubloon (100 reales)	4.82
British pound	4.7	20 marks	4.6
Argentine gold peso	0.93	20 francs	3.73

Source: Acevedo 1934 (volume IV): 73

[25] For example, for payments of over 5,000 pesos (about 1,064 pounds), only 2% of the total could be paid in silver coins. Copper coins could also be used in small amounts, replaced by nickel in 1900 (Acevedo, 1903: 287).

The 1865 Banking Law limited note emission to three times the level of capital for all banks. Gold convertibility was strictly imposed; the inability to convert paper currency on sight would mean the immediate closure of the bank, with note holders having first claim on the bank's assets. Charters were to be given for twenty years at a time, and the government was prohibited from forcing banks to offer it credit or from offering privileges to specific banks (Acevedo, 1903: 307-08). No other restrictions were placed on bank balances; in particular, minimum ratios of metallic reserves in relation to note emissions or deposits were not required.

While these aspects of the monetary regime remained relatively unchanged over the period, the banking system evolved significantly over time. 1857 saw the founding of Montevideo's first banks: the Banco de Mauá, named after the Brazilian financier who promoted it, and the Banco Comercial, established by local merchants. The Mauá bank would be the main actor in the sector until its collapse and liquidation in 1876. A third bank, a branch of the London and River Plate, of British origin, began operating in 1863. Along with the Comercial, it was one of the major players in the banking sector throughout the period. All were headquartered in the capital, Montevideo, with some opening branches in the port cities of Mercedes, Paysandú and Salto, on the Uruguay river (BROU, 1918: 15). The main activities of the banks included the discounting of bills, short term loans, note issue and taking of deposits, although the Mauá ventured further than the other two, taking on longer term lending and managing the government's first overseas debt issue.

However, in this early period, civil war threatened periodically, and external shocks, such as the 1866 Overand Gurney crisis in England, upset local markets. Between 1865 and 1868, in order to save overextended banks (primarily the Mauá bank), the government decreed the inconvertibility of paper currency no less than four times.[26] In March of 1875, due to another crisis, convertibility was suspended once again (Acevedo, 1903: 240). This act was resisted by most banks, in particular the Comercial and the LRP, as well as most of the other financial and commercial houses, a pact being signed not to accept the inconvertible bills in circulation and to operate only in gold.

[26] In 1865 it was as a result of the blockade and bombardment of Montevideo by rebel forces. In 1866, inconvertibility was declared due the bank run caused by news of the Overand Gurney crisis in England. In December of 1867, cholera outbreaks, trouble in the livestock and agriculture markets and commercial shocks due to Argentina's insistence that goods shipped from Uruguayan ports to the war zone in Paraguay pay duties in the Argentine river port of Corrientes, combined with over emissions by certain banks, prompted the government to declare inconvertibility for six months, and in June of 1868 again, this time for twenty months. (Acevedo, 1903: 217-18).

2.2.2 The re-founding of the gold standard and the disaster of 1890

1876 was a key year. A military government which had taken control the previous year reversed the inconvertibility decree and instituted a policy of purchasing and burning all the old inconvertible bills (Acevedo, 1903: 456-57).[27] It also reintroduced the gold standard, guaranteeing convertibility of paper currency to gold, and reducing the use of silver coins in payments to minimal amounts. The liquidation of the Mauá that year left only two banks in operation: the Comercial and the LRP. These banks tended to act conservatively, refusing to lend to the government and shying away from other risky ventures, concentrating on financing commerce through short term lending and discounting of bills, and operating in the foreign exchange market (Joslin, 1963: 54; Banco Comercial, 1957). Throughout the period under study, these two banks continued to operate and remained important players in the banking sector.

They were joined by several more banks beginning in the early 1880s, the total number of establishments reaching seven by 1887. An economic boom began in this year, fueled by foreign investment, in which at least 25 new banks were founded, as well as dozens of utilities, land, investment, and other companies, with a total capital estimated at 400 million pesos (about 85 million pounds) (Acevedo, 1903: 261-63).[28]

The boom created demand for credit. It was argued that the Comercial and LRP, too conservative in their business strategies, were monopolizing the country's metallic reserves in order to maintain their profits, at the cost of rural producers, the urban middle class and entrepreneurs, who would build new enterprises if only they could access credit on easier terms. The demand for a "national" bank, with a large amount of capital, special privileges and government support, could no longer be resisted by the more conservative forces (Barrán and Nahum, 1971: 460-62). Several proposals were studied by the government, including some which tried to limit the negative impacts of a "national" bank and restrict its ties to the state. These proposals lost out, however, to the less conservative sectors, who were not necessarily opposed to remaining on the gold standard, but did hope to eliminate the traditional banks' stranglehold on credit, if necessary, by expansion of paper currency beyond customary limits.

[27] There were around 2,580,000 pounds worth of these notes in circulation in 1876. They were slowly amortized over the following years, with around 35,000 pounds still in circulation in 1890 (Acevedo, 1934a: 559).
[28] Many of these companies were purely speculative ventures, and likely never operated.

Thus, in 1887, the Banco Nacional was founded, brainchild of the Spanish entrepreneur Emilio Reus and a cadre of Anglo-Argentine capitalists (Barrán and Nahum, 1971: 464).[29] The project was supported by industrialists, the urban middle class and owners of small and medium sized rural landholdings (Barrán and Nahum, 1971: 453-56). The main purpose of this bank was to extend credit to customers that had thus far been shut out, and at rates that would promote the productive use of the country's resources.

The traditional banks reacted apprehensively to the Banco Nacional's entrance and expansion in the banking market. Indeed, the Comercial, whose paper currency had circulated uninterrupted for 30 years, gave up its right to emission in 1887, so as not to expose itself to what it considered the imprudence of the new bank and the risks this involved for the entire sector (Barrán and Nahum, 1971: 475). It was supplanted by the Banco Italiano, founded that year, which took the Comercial's place as a note issuing bank. The Comercial and the LRP also carried out a policy of presenting the Banco Nacional's notes for conversion on a daily basis,[30] forcing that bank to maintain sufficient specie reserves and limiting their exposure in case disaster struck (Barrán and Nahum, 1971: 474).[31]

The boom of the late 1880s turned to bust towards the end of 1889. The stock market collapsed, in part due to knock on effects from the crisis in Argentina that same year. In July of 1890, the overextended Nacional was not able to convert 400,000 pesos presented by the LRP, and the bank was forced to suspend convertibility and was in liquidation by the following year (Bertino and Millot, 1996: 448). As a result of the crisis, the government was forced to suspend debt service in the second semester of 1891 (Bertino and Millot, 1996: 414). In 1892 a deal was reached in which a 20-million-pound loan would be made available to refinance the Uruguayan government's debts, allowing it to resume debt payments (Nahum, 1991: 41-43).

[29] The bank was to have a capital of 10 million pesos and would venture into activities which until that moment had been underserved by the banking community. It could emit paper currency up to two times its capital and was obligated to maintain a 25% specie reserve. It also would have a monopoly on the emission of small bills, with a limit of 40% of its capital. It would be divided into a commercial department and a mortgage department, the latter being able to make secured loans for up to 30 years and to emit "*cédulas*", a financial instrument designed to facilitate land investments. A network of branches in every department was to be established. The Director of the bank was to be appointed by the government. In addition, the bank would run a current account for the government of up to 1.5 million pesos and handle public debt service at home and abroad (Barrán and Nahum, 1971: 465).

[30] This, despite the government's request for a pact to only convert bills once a week (Barrán and Nahum, 1971: 475).

[31] Barrán and Nahúm (1971) suggest that this strategy was designed to bring down the Banco Nacional. However, this could have been merely a defensive strategy, so as not to be left holding inconvertible bills when the bank inevitably collapsed, rather than an attack on their competitor.

2.2.3 Recovery, expansion of the banking sector and the monopoly of note issue

The only currency emitting banks to make it through the crisis were the LRP, the Banco Italiano and the Banco de España y Rio de la Plata (founded in 1887, during the boom years). The Comercial, which had given up its role as a note emitting bank, still offered other banking services, such as deposits, short term loans and discounting of commercial bills. Of these banks, the LRP quickly became the most important, occupying the vacuum left by the Nacional and English Bank of the River Plate, which were liquidated after the crisis (Joslin, 1963: 137). A return to the conservative banking strategies of the late 1870s and early 1880s meant a restricted money supply and limited credit.

However, by the mid-1890s, attitudes of landowners had changed (Barrán and Nahum, 1971: 523; Barrán and Nahum, 1987: 86-87), and calls for a more flexible monetary system were answered by the founding of a new bank: the Banco de la República (BROU). It had some similarities with the Banco Nacional: it would operate as the state's bank, handling the government's accounts, debt payments and operating a current account for the government of up to 5 million pesos. However, it was to be a mixed bank, with half of the initial capital of 10 million pesos to be paid by the government, while the other half was to be raised through the sale of shares to private investors.[32] It could emit paper currency up to twice its capital. However, once the charters of the LRP and the Banco Italiano expired, they would not be renewed as emissions banks, and the BROU would have a monopoly on paper currency emissions. The restrictions on emissions were somewhat tighter than they had been for the Banco Nacional; a specie reserve of 40% of notes in circulation plus deposits was to be kept at all times.[33] In addition, notes in circulation were not to exceed three times paid up capital, as had been the rule for private banks since 1865. Furthermore, the bank was prohibited from investing in company shares or participating in speculative activities.

The LRP's charter ran out in 1904, while that of the Banco Italiano expired in 1907. Both were renewed, but their right to issue banknotes was not. Thus, in 1907, the BROU, as the sole note issuer left in the market, gained a monopoly on note issue, ending the era of free banking in

[32] The board of directors was to be made up of a President, appointed by the government, and six members, also appointed by the government until the private shares were sold, at which time only two would be government appointees, while the rest elected by the shareholders. However, local investors were skeptical about the venture, and never purchased the shares which were to make up the other half of the bank's capital. This meant that, in effect, the BROU was a state-owned bank, and in 1911 the bank's charter was changed to institutionalize this fact, eliminating the possibility of private investment and increasing the bank's capital through reinvestment of profits and through state funds (BROU, 1918: 93).

[33] Reserve requirements were not established for private banks until 1938 (Díaz and Moreira, 2015).

Uruguay.[34] It was charged with defending the exchange rate and promoting development of agriculture and industry. It had legal permission to rediscount bills from other banks, although this was never put into use before 1914, and then only in small amounts during the First World War. From the time of the BROU's founding up to 1913, it grew in importance as a commercial bank, extending credit to the countryside and to the middle classes. By the time it assumed its role as sole note issuer in 1907, it had about 40% of the metallic reserves of the banking sector and 33% of the credit market. By 1913, these proportions were closer to 60% and 45%, respectively. Beginning in the early 20th, new banks joined the market, reaching a total of 24 in 1913, more than double the number of institutions in existence immediately after the 1890 crisis.

The economy grew rapidly in the early years of the 20th century, GDP increasing by 7% annually between 1900 and 1913 (own calculation based on Román and Willebald, 2019). Under the stewardship of the BROU, the pitfalls of earlier growth episodes were avoided. For one thing, the bank was well capitalized. The paid-up capital of over 1,000,000 pounds at its founding had more than doubled by 1912, the year it was nationalized (Acevedo, 1934: 481). Moreover, liabilities and credit were kept within the limits established in the banks charter. Note issues never reached their limit of three times the bank's capital, in part because of the large increases in capitalization over the two decades after the BROU's founding (BROU, 1918). The reserve ratio remained above 50% of liabilities until 1910, when it began to deteriorate somewhat.

2.2.3 The collapse of the gold standard

By 1913, however, the financial situation in Uruguay was showing signs of weakness. Foreign markets refused to roll over large amounts of foreign debt, causing heavy gold exports. Domestic private banks began withdrawing gold from the BROU, causing the bank to announce the suspension of all new credits. Despite this, reserves fell below the ratio of 40% allowed under the bank's charter, before recovering slightly by the end of the year (BROU, 1918: 95)

[34] Whether or not the BROU became a central bank at this moment can be debated, and depends on one's definition of a central bank. Many of the functions which we normally ascribe to a central bank were non-existent in Uruguay at this time, such as a clearing house, supervision of private banks and an active rediscount facility. These were developed over the course of the first half of the 20th century, but were not necessarily under the control of the BROU. See Jacob (2000) for a view of the changing role of the BROU over its life and Díaz and Moreira (2016) for a discussion of the evolution of central banking functions in Uruguay before the founding of the Banco Central del Uruguay in 1967.

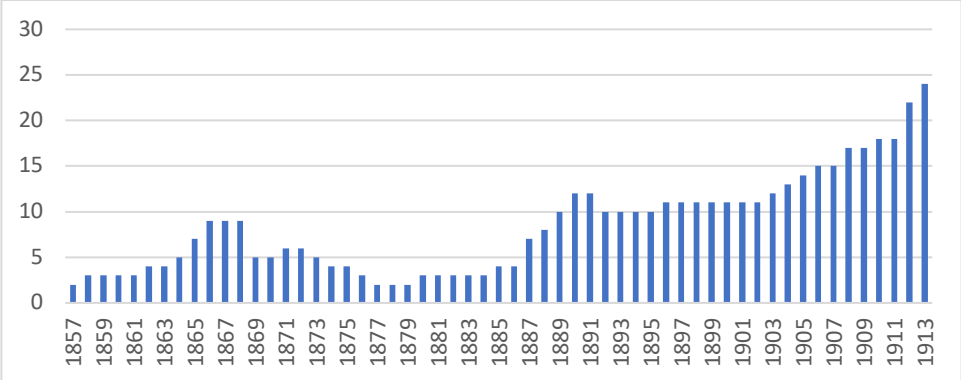
In august of 1914, following edicts by the central banks or England, France, Germany and the US restricting international loans, the government of Uruguay closed the Montevideo Stock Market and all banks for a week. A few days later, it prohibited exports of gold, suspended convertibility of the banknotes of the BROU, and made illegal all speculation regarding said banknotes, on punishment of imprisonment. This effectively took Uruguay off the gold standard (Acevedo, 1934b: 624).

The following years saw a series of measures for maintaining internal stability in the face of the massive external disruption cause by the outbreak of WWI. Exchanges floated freely, with the peso rising against the dollar until 1918, and against the pound until 1920, but depreciating severely thereafter. In order to prevent reserve losses, gold exports were restricted, trade in gold coins was prohibited and private banks were obligated to deposit their gold with the BROU, thus fortifying the bank's reserves (Acevedo, 1936: 218-223). In this way, the internal exchange rate was kept stable, even though external rates fluctuated. Although not a full-fledged controlled exchange, this was a prelude to such system, that was to be implemented in the 1930 and became one of the main axes of government control of the economy during Uruguay's state led industrialization period.

2.2.5 The structure of the Uruguayan banking system over time

The transition from multiple currency issuing banks to a system with a single monetary authority was the most significant institutional innovation over the period. As mentioned before, the regulation of private banks was almost non-existent, and changed very little before 1914. What did change was the structure of the banking system, with the number of banks evolving rapidly over time. The number of banks in operation in Uruguay in each year from 1857 to 1913 can be seen in Figure 2.1.

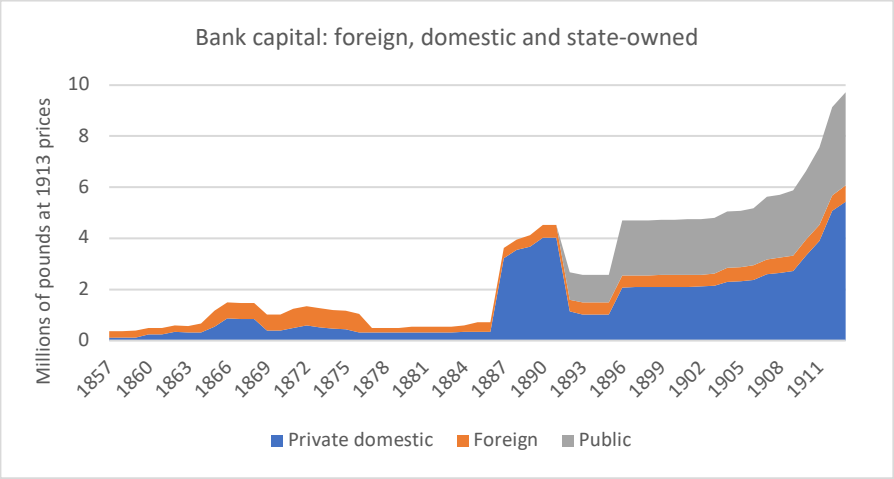
Figure 2.1: Number of banks in operation in Uruguay, 1857-1913



Source: see appendix A.

From the founding of the first banks, both domestic and foreign capital operated in the sector. Before 1876, foreign capital was preponderant, mainly due to Banco Mauá. After this year, the market was split between the domestically owned Banco Comercial and the foreign owned LRP. While several more British banks joined the market in the late 1880s, so did many domestic banks, including the large Banco Nacional. The collapse of this bank, along with two others, decreased total bank capital, and especially the share of domestic capital. Part of the Banco Nacional was converted into the quasi-public Banco Hipotecario. This, along with the founding of the BROU in 1896, meant that about half of banking sector capital was state owned. This proportion diminished in the early 20th century as several domestic banks joined the market. Figure 2.2 shows the amounts of domestic, foreign and public bank capital over the period.[35]

Figure 2.2: Bank capital, foreign, domestic and state-owned, 1857-1913



Sources: see Appendix A.

2.3 Bank credit and reserve management in Uruguay under the Gold standard

Under Hume's price-specie-flow model of the gold standard, changes in gold reserves act on prices in such a way as to return external balance to the economy after balance of payments shocks. For example, a fall in exports, which causes a balance of payments deficit would lead to a gold outflow, decreasing the money supply and thereby lowering the domestic price level. Falling prices would then move the balance of payments back into equilibrium as domestic goods became cheaper vis-a-vis imports. The same is true for models that include banks and paper notes backed by reserves. Banks would have adjusted money creation and credit in the same direction as changes in their reserves in order to ensure sufficient gold backing for their

[35] Bank-by-bank capital figures from 1857 to 1913 are presented in Appendix A, section A.1.

notes, and external balance would be achieved through the impact of the changing money supply on prices (Eichengreen, 2008: 24-25). In the case of a gold inflow, the opposite would occur; the money supply would expand, pushing up domestic prices, shifting spending to imported goods and returning the balance of payments to equilibrium.

Where central banks existed, the gold standard would require them to play by the same "rules of the game", meaning they had to adjust the money supply in the same direction as gold flows, thus guaranteeing paper currency was always backed by sufficient gold. They could do this by changing interest rates or in other ways adjusting the quantity of credit (Ford, 1989: 208-09). In fact, through these measures, a central bank could accelerate the adjustment process, inducing rapid price changes, meaning that little gold had to be shipped across borders in order for equilibrium to be achieved (Eichengreen, 2008: 27).

However, as argued by Nurske (1944), and later by Bloomfield (1959), central banks in many countries appear to have shielded their economies from the vagaries of international shocks by expanding domestic credit when facing gold drains, and reducing holdings of domestic assets when capital flowed in. That is, they did the opposite of what the rules of the game prescribed. Bloomfield presented evidence for 11 countries during the classical Gold standard period, showing that, overall, central bank domestic and international assets (that is, credit and reserves) moved in opposite directions in 60 percent of years between 1880 and 1913. Bloomfield (1959: 50) admitted that, from this evidence, it could not be inferred that this was necessarily by design, but concluded that "the results are so striking as to cast some measure of legitimate doubt upon the common view that central bank action under the pre-1914 gold standard had the effect of tending to reinforce the effects of gold flows on the domestic credit base".

Scholarship over the last several decades has confirmed Bloomfield's intuition, showing that countries with central banks rarely played by these "rules of the game". Numerous country case studies confirm this result. Bazot et al. (2022) show for a sample of 20 countries with central banks, both core and peripheral countries consistently cushioned their domestic money supply from international shocks. These central banks used a variety of strategies, sterilizing gold inflows that may otherwise have adversely affected prices and ensuring credit availability for agriculture, industry and commerce, even during episodes of gold outflows. In practice, they balanced the objective of maintaining exchange rate stability with smoothing economic fluctuations (Bloomfield, 1959; Eichengreen, 2008).

According to Ford (1989: 209), in countries with no central bank, commercial banks "had less discretion than central banks and, indeed, were more wholehearted followers of the rules of the game, as popularly interpreted". Indeed, faced with a gold drain, they "could react in similar ways [to central banks following the rules of the game] by raising their lending and borrowing interest rates, by increasing their desired cash-deposit ratios, and by reducing their willingness to lend." Eichengreen (2008: 38) also takes for granted that countries without central banks would follow the rules of the game: "Banking systems at the periphery were fragile and vulnerable to disturbances that could bring a country's foreign as well as domestic financial arrangements crashing down, all the more so in the absence of a lender of last resort. A loss of gold and foreign-exchange reserves led to a matching decline in the money supply, since there was no central bank to sterilize the outflow or even a bond or discount market on which to conduct sterilization operations." Neither author explains how commercial banks react during times of gold inflows, but it can be assumed that competition between banks would naturally lead them to increase credit and note issues when metallic reserves entered their vaults, since failure to do so would imply a loss of market share and profits.

This was undoubtedly true for some countries with no central bank. Bazot et al. (2022: 23-26) show that, between 1891 and 1913, the US money supply was less shielded from international shocks than gold standard countries with central banks. However, the US banking system was highly regulated, with note emissions on the part of commercial banks required to be strictly backed by government bonds. A reserve fund for deposits was also required by law (Timberlake, 1993). The Treasury also emitted notes, but with a strict cap, limiting the scope for monetary policy (Ugolini, 2017: 197-98).

In Uruguay, note issue was capped at three times capital, but other than that, banks faced virtually no regulation of their balance sheets. Balance sheet management was limited only by the need to preserve convertibility of notes and by the profit motive. The main claim of this section is to show that in Uruguay some banks consistently broke the rules of the game, and managed their balance sheets in a countercyclical manner.

Table 2.1 reproduces Bloomfield's approach, but for several banks operating in Uruguay between 1885 and 1913. It shows, in the last column, the percentage of years for which metallic reserves and credit moved in opposite directions. For most banks, this figure is significantly less than 50%, meaning that in most years these banks adjusted credit in a way consistent with the rules of the game. There are two banks (the Banco Nacional and the English Bank of the

River Plate) for which the figure is exactly 50%. However, these banks were in operation for only a short period of time, and there is data for only four year-to-year changes for both of them, making it difficult to detect any particular pattern. However, for two banks -the Comercial and the LRP- international and domestic assets moved in opposite directions in 61% of years.

Table 2.1: metallic reserves and credit co-movement for Uruguayan banks, 1885-1913

Bank	Years for which data is available (number of year-to-year changes)	Percent of years for which reserves and assets move in different directions
Banco Comercial	1885-1913 (28)	61%
London and River Plate Bank	1885-1913 (28)	61%
Banco Italiano	1887-1913 (25)	31%
English Bank of the River Plate	1886-1890 (4)	50%
Bank of Spain and the River Plate	1888-1892, 1898-1903 (10)	33%
Banco Nacional	1887-1891 (4)	50%
BROU	1896-1913 (17)	41%
Banco Popular	1904-1913 (9)	22%

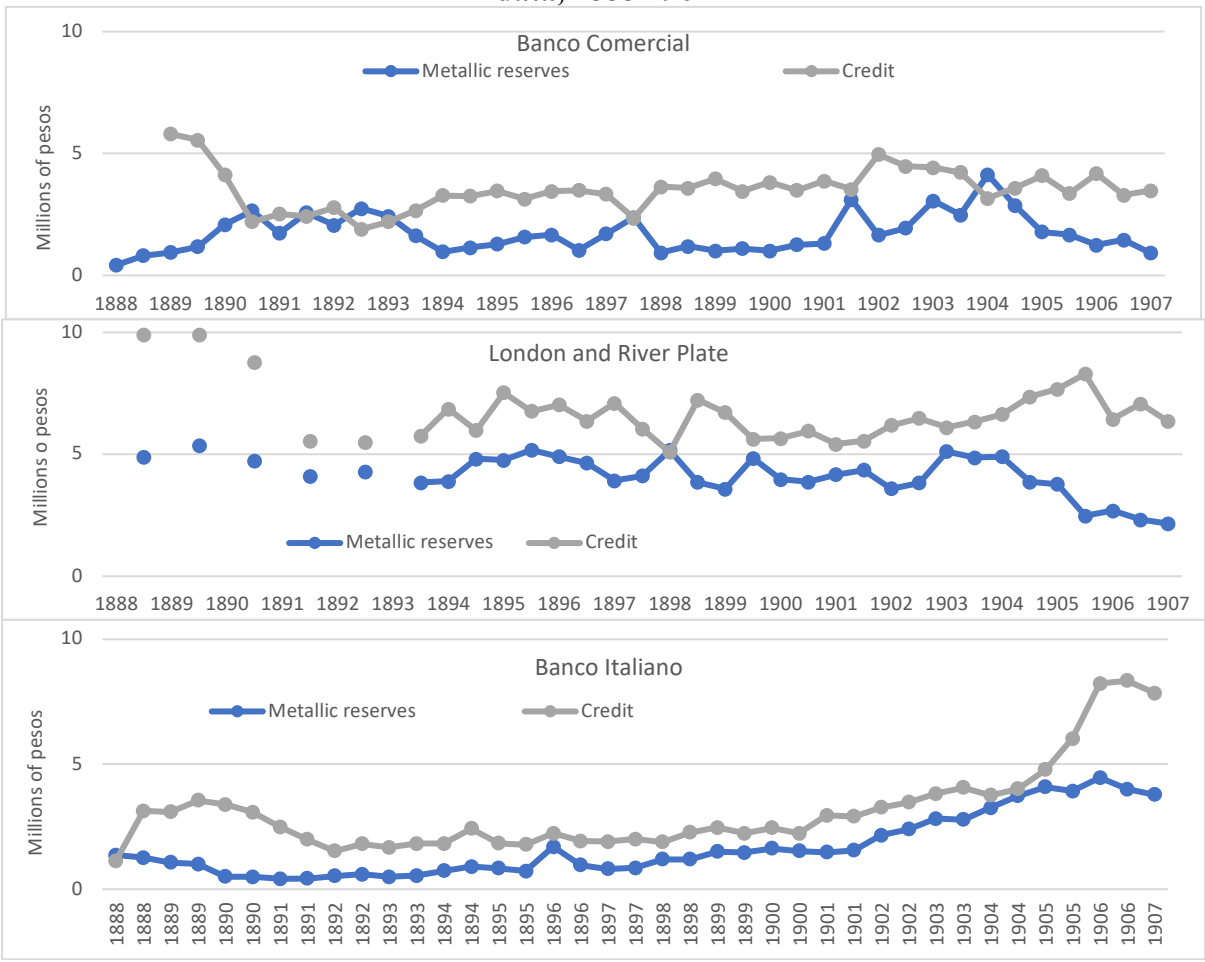
Source: AEU and BROU 1918.

The annual data present some limitations. First, there are few data points. Second, there were intra-annual fluctuations in these variables that are not captured by the annual data. Bi-annual balance sheet data are available for three of these banks: the Comercial, the LRP and the Banco Italiano, beginning in the late 1880s. Figure 2.3 shows the bi-annual data on metallic reserves and credit for these three banks from 1888 to 1913.[36] The countercyclical nature of the series can be clearly seen for the Comercial and the LRP. Semesters where reserves rise generally coincide with falls in credit, and vice versa.[37] If they were following the rules of the game, credit should generally move in the same direction as reserves, as was the case for the Italiano, where reserves and credit appear to change in the same direction in most years. The correlation coefficients of the two series are as follows: -0.30 for the Comercial, -0.14 for the LRP and 0.67 for the Italiano.

[36] For the Banco Comercial, bi annual data on reserves is available from 1865, while credit data is available beginning in the second semester of 1889. The data are for March and September. For the LRP, bi annual data on reserves and credit are available beginning in the first semester of 1894, while for the Italiano, data for these variables are available beginning in the first semester of 1888. For these last two banks, the data are for June and December.

[37] The rapid reaction of credit to changes in reserves can be explained by the nature of the loans made by these banks. Most of the portfolio of these banks was composed of discounted bills, the maturity of which was generally three months (Comercial, 1957; Joslin, 1963).

Figure 2.3: Metallic reserves and credit for the Comercial, LRP and Italiano, semester data, 1888-1907



Source: AEU, 1919.

Table 2.2 summarizes this data, for each bank from the year data is first available up to 1913, showing the percentage of semesters where the level of credit moved in the opposite direction of the level of metallic reserves. In addition, three sub-periods are shown for each bank: from the initial year up to 1896 (year of the founding of the BROU), from 1897 up to 1907 (the year the BROU became the sole note emitter), and from 1908 to 1913.

This limited evidence shows two very different behaviors. The Comercial and LRP appear to systematically break the rules of the game by moving credit in the opposite direction to gold reserves. The percentage of semesters in which reserves and credit moved in opposite directions was high, around 80% for the first bank and 70% for the second. For both banks, the percentage of semesters in which the two variables moved in opposite directions is higher in earlier years. For example, for the Comercial, before 1896, reserves and credit moved in opposite directions in 86.7% of semesters. From the founding of the BROU to 1907, these

variables moved in opposite directions in 86.4% of semesters. After the BROU gained a monopoly on note emissions, this figure dropped to 58.3%. A similar pattern can be seen for the LRP. In other words, the countercyclical behavior on the part of private banks was more prevalent in the years before Uruguay acquired an institution resembling an actual central bank. The Banco Italiano, on the other hand, behaved more in line with the rules of the game: domestic and foreign assets moved in the opposite directions in only 35% of semesters.

Table 2.2: metallic reserves and credit co-movement for the Comercial, LRP and Italiano, 1885-1913

Bank	Period (number of semester-to-semester changes)	Percent of semesters in which reserves and credit moved in opposite directions
Banco Comercial	1889-1913 (49)	79.6
	1889-1896 (15)	86.7
	1897-1907 (21)	86.4
	1908-1913 (11)	58.3
London and River Plate	1894-1913 (39)	70.0
	1894-1896 (5)	80.0
	1897-1907 (21)	77.3
	1908-1913 (11)	58.3
Banco Italiano	1888-1913 (51)	34.6
	1888-1896 (17)	22.2
	1897-1907 (21)	31.8
	1908-1913 (11)	58.3

Sources: Own calculation based on AEU (1919)

If the Comercial and the LRP systematically broke the “rules of the game” in terms of credit and reserve management, it should be reflected in the liabilities side of their balance sheets as lower volatility of note issue and deposits. Table 2.3 shows the coefficient of variation of liabilities, that is bills in circulation plus deposits, for several Uruguayan banks from 1885 to 1913. For most of this period, the only banks to circulate banknotes were the LRP, the Italiano and the BROU (other banks circulated notes only for a few years before 1892). The Comercial and the LRP have the lowest coefficient of variation of liabilities (0.39 and 0.20, respectively). For the other banks, the level of this indicator is between 0.40 and 0.75.

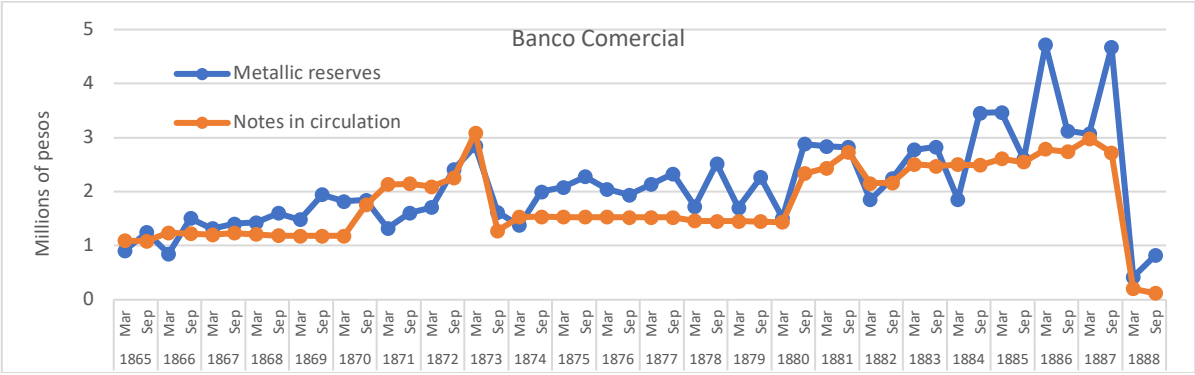
Table 2.3: Coefficient of variation of liabilities for several Uruguayan banks, 1885-1913

Bank	Years for which data are available	Coefficient of variation of liabilities
Banco Comercial	1885-1913	0.39
London and River Plate Bank	1885-1913	0.20
Banco Italiano	1887-1913	0.75
English Bank of the River Plate	1886-1890	0.40
Bank of Spain and the River Plate	1888-1892, 1898-1903	0.44
Banco Nacional	1887-1891	0.52
BROU	1896-1913	0.71
Banco Popular	1904-1913	0.63

Sources: Own calculation based on AEU (1919)

The annual data on liabilities suffers from the same problem as the information on reserves and credit; there are few data points and there were intra-annual fluctuations that are not captured by the annual data. Fortunately, we also have bi annual data for the Comercial, the LRP and the Banco Italiano for notes in circulation and total liabilities. We can examine this data in comparison to reserves data we used in our earlier analysis. To start with, for the Banco Comercial, there is bi annual data on metallic reserves and notes in circulation (but not for deposits) from 1865 to 1888 (shown in figure 2.4).[38]

Figure 2.4: Metallic reserves and notes in circulation of the Banco Comercial, 1865-1888



Source: AEU (1919)

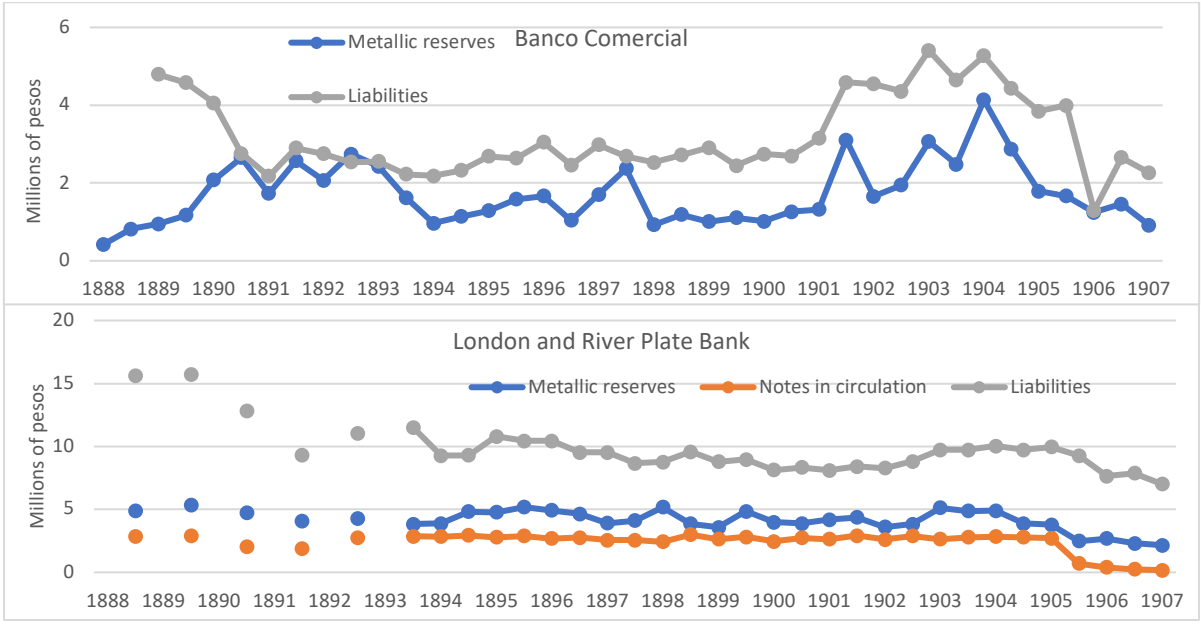
It appears note circulation for this bank did not adjust in direct relation to changes in reserves. Reserves fluctuated greatly, in some semesters by over 50%, while notes in circulation remained remarkably stable. For example, the return of prosperity after the 1869 crisis led the bank to increase note circulation beginning in the second half of 1871, while reserves did not

[38] Although the country was permanently on the gold standard beginning only in 1876, the date of first adoption was 1865, and the Comercial (along with the LRP) resisted all attempts to deviate from strict convertibility from at least this date, including rejecting adherence to various suspensions of banknote convertibility decreed during these years (Acevedo, 1933b). Thus, it is instructive to examine this bank's behavior from before 1876.

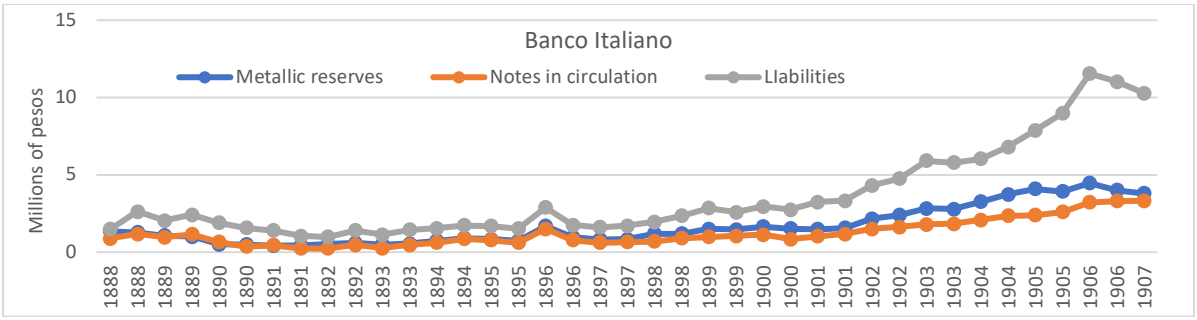
begin to rise until the following year. Both reserves and note circulation fell in 1873, coinciding with a bank run due to the collapse of a small competitor, the Banco Oriental, that year. The reserves of the Banco Comercial experienced increasingly wild swings from the mid 1870s onwards, while note circulation remained stable through the 1875 crisis and subsequent depression. Notes began rising in 1880, when prosperity returned to the country, trending upwards until the bank gave up its right to currency emission in 1887, but always remained much more stable than the erratic movements seen in reserves.

For 1888 to 1907, there is information on all three banks.[39] In general, for the three banks, notes in circulation and total liabilities tended to move in the same direction as reserves, although much less so for the Comerical and the LRP than for the Italiano. For example, from the late 1880s to 1913, the percentage of semesters for which reserves and total liabilities moved in different directions were 43%, 43% and 14% for each bank, respectively. In addition, although these variables tended to move in the same direction in most semesters, fluctuations in banknote circulation and total liabilities were smaller than changes in reserves for the Comercial and the LRP (Figure 2.5).

Figure 2.5: Metallic reserves, notes in circulation and liabilities of the Banco Comercial, London and River Plate Bank and Banco Italiano, 1888-1907



[39] Recall that the Comercial ceased note emissions in 1887, the LRP in 1894 and the Banco Italiano in 1907. Note issue dropped off for each bank in these respective years, and is not shown for the Comercial



Source: AEU, 1919.

Table 2.4 summarizes the bi annual data by presenting the coefficient of variation for metallic reserves, note circulation and liabilities for the three banks, from 1865 to the first half of 1907 (the free banking period), depending on when data is available. The coefficient for note circulation is only for the years in which the banks engaged in this activity, and is compared to coefficients of reserves over the same time periods.

Table 2.4: Coefficient of variation of metallic reserves, notes in circulation and total liabilities of the Banco Comercial, LRP and Banco Italiano, 1865-1913

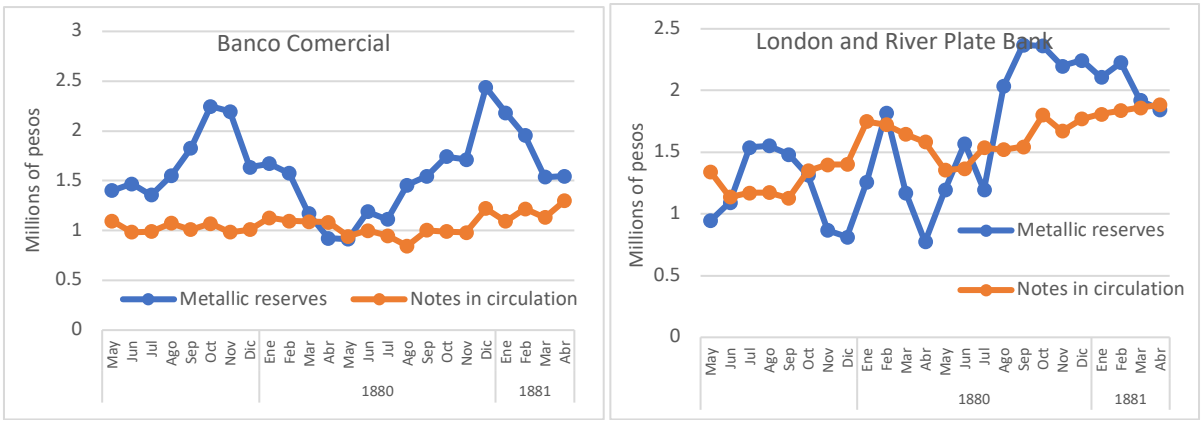
Bank	Period	Metallic reserves	Notes in circulation	Total liabilities
Banco Comercial	1865-1887	0.39	0.33	-
	1889-1907	0.43	-	0.32
London and River Plate	1893-1904	0.13	0.06	0.10
	1893-1907	0.21	-	0.11
Banco Italiano	1888-1907	0.72	0.70	0.82

Source: Own calculation based on figures from AEU, 1919.

The coefficients of variation for notes in circulation and liabilities for the LRP and the Comercial were substantially lower than those for reserves. It appears that not only did the note emissions of these banks change less than would have been warranted by a strict rules-of-the-game approach, but deposits also adjusted to a lesser degree. The same cannot be said for the Banco Italiano, which has a coefficient of variation for note circulation (1888-1907) only slightly lower than that for metallic reserves, while the coefficients of variation for liabilities are far higher for both the 1888-1907 and 1888-1913 periods. In addition, the fluctuations in the note circulation and liabilities of the Comercial and LRP were much lower than the fluctuations of those of the Banco Italiano.

In addition to the bi annual data, monthly data on reserves and notes in circulation is available for the Banco Comercial and the LRP from May, 1879, to April, 1881 (Figure 2.6), and shows the same pattern observed with the bi annual data. Reserves vary much more than notes in circulation. For the first bank, the coefficients of variation are 0.25 for reserves and 0.10 for notes, while for the second they are 0.33 and 0.16, respectively.

Figure 2.6: Metallic reserves and notes in circulation for the Banco Comercial and the LRP, monthly figures, May, 1879 – April, 1881



Source: Berra et al (1882: 252).

The evidence presented in these sections suggests that the Banco Comercial and the LRP did not manage assets and liabilities in a way consistent with the "rules of the game". Changes in domestic assets moved in the opposite direction of changes in international assets more often than not. Furthermore, liabilities remained rather stable with respect to the variations in metallic reserves, as well as with respect to the liabilities of other banks. These banks appear to have acted in a way which neutralized movements in their metallic reserves and smoothed fluctuations in their note circulation and deposits.

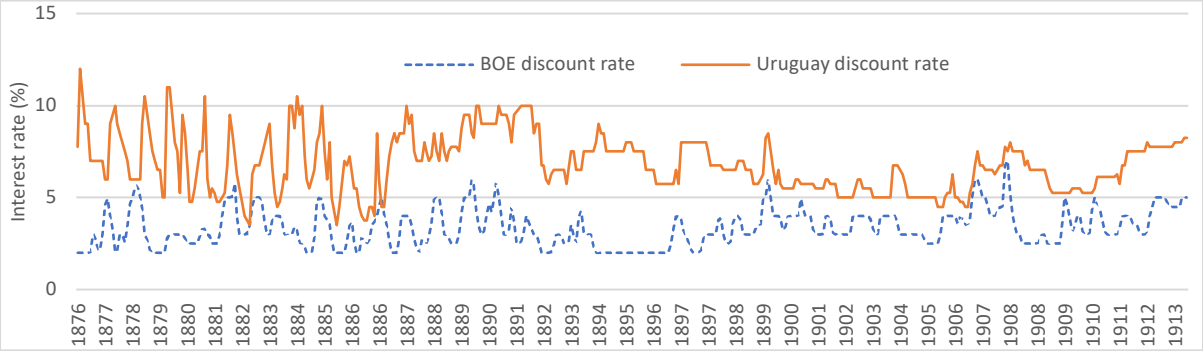
2.4 Economy-wide effects of countercyclical balance sheet management[40]

With well-integrated capital markets, for a country with banks playing by the rules of the game, shocks in world interest rates should be incorporated into domestic rates to a large degree. However, if central banks were trying to smooth volatility by managing balance sheets countercyclically, domestic rates would have a low correlation with world rates. Bazot et al. (2022) show that for countries on the gold standard and with central banks, domestic interest rates were in fact highly independent from world rates, as proxied by the Bank of England (BoE) discount rate. They use panel data for 22 countries, 21 of which had central banks, and show that the interest rate "pass through" was on average around 20% (i.e., after a rise of 100 basis points in the BoE rate, the domestic rate rose an average of 20 basis points). It was slightly higher in core countries (24%), which relied more heavily on countercyclical balance sheet management, than for peripheral countries (17%), which in addition used restrictions on capital flows in order to protect central bank gold reserves. However, for the US, the only country in their sample that did not have a central bank, the pass-through rate was much higher: 49%.

[40] I am grateful to Nektarios Aslanidis for his help on the econometric exercise presented in this section.

Here, we examine the pass through of shocks in the BoE rate for the Uruguayan economy, using a VAR model and impulse response analysis. Other variables have been included in order to capture the main dynamics of interest rate adjustments. Because of free capital movements and almost instantaneous information flows, external shocks caused rapid domestic reactions, and monthly data has been used in order to capture adjustments that could occur and dissipate well within a year's time. This, of course, limits the variables that can be used, since monthly data for this period is scarce. Monthly data on the BoE rate is available from Jorda et al. (2017), while for the Uruguayan discount rate (uru) it is available from the *Boletin de la Bolsa de Comercio de Montevideo* and the Uruguayan financial press.[41] Figure 2.7 shows the monthly Uruguayan market discount rate and the Bank of England discount rate from November of 1876 to December of 1913.

Figure 2.7: monthly BoE rate and Uruguayan discount rate, 1876-1913



Sources: BoE rate, Jorda et al. (2017). Uruguayan discount rate from the following newspapers: *Boletin de la Bolsa de Comercio de Montevideo*, *El Siglo, La Democracia, La Idea, La Nación, El Bién Público, El Hilo Eléctrico, La Tarde* and *Montevideo Noticioso*.

Information on the exchange rate for 3-month bills on London is available from the same sources as the Uruguayan discount rate. The exchange rate for three-month bills has been transformed into a spot rate (ex) using the London open market rate, available from Jorda et al. (2017).[42] Ideally, in addition to the financial variables, we would include information on the

[41] The *Boletin de la Bolsa de Comercio de Montevideo* is available monthly from April 1884 to August 1894 and from October 1899 to December 1913. For the rest of the period, data was drawn from the following newspapers: *El Siglo, La Democracia, La Idea, La Nación, El Bién Público, El Hilo Eléctrico, La Tarde* and *Montevideo Noticioso*. Figures are from the last day of the month, unless no figure was published this day (or it was unreadable), in which case the figure for the preceding day was used. The financial press quotes the figures published by the stock exchange (*Bolsa de Comercio*), so the underlying source for both is the same.

[42] The three-month bill rate tells us how many pesos one had to pay on the spot in order to receive one pound in London in three months' time. It therefore contains the British interest rate, which must be stripped out in order to convert it to a pure spot rate. The spot exchange rate is given in pesos per pound sterling and was calculated the following way:

S=E1+OM/400

Where *S* is the spot exchange rate, *E* is the exchange rate on three-month bills and *OM* is the London open market discount rate in percentage points. *OM* is an annual rate, and is therefore divided by four to convert it to a three-month rate.

real economy and on the money supply. There are no monthly estimates of GDP for Uruguay. Bazot et al. (2016), in a similar exercise for France, use monthly imports as a proxy for aggregate demand, despite the fact that this variable would also be affected by foreign supply. While for Uruguay the customs house did not report import values at monthly intervals, it did report monthly receipts from import duties, which were the main source of government revenues. This data, of course, is even noisier than direct information on imports, due to the fact that receipts could vary not only according to the volume of imports, but also to their composition, which could change over time, even over the course of a year due to seasonal variations, since different products carried different tariff rates.[43] A further complication is that tariff rates, and the official values -*valores de aforo*- upon which they were calculated, changed periodically. Despite this, the import tariff receipt data can give an indication of overall demand from an economy heavily dependent on imports. The log of this variable is used here (ln_imp_tar). There are no monthly series for the Uruguayan money supply either. Monthly data on gold exports and imports is available. In general, this type of data on gold flows from customs house records is considered somewhat unreliable.[44] For example, Bazot, et al. (2016: 91) suggest that for France, the omission of flows was important, especially due to undeclared coins brought by travelers in their personal belongings. However, they use this data in spite of its unreliability, suggesting "trade statistics may provide interesting information to estimate the response of gold flows to a change in foreign discount rates". Thus, net gold inflows have been used here (gold_total).

Data on the BoE rate, the Uruguayan discount rate and the exchange rate are available for basically the entirety of the gold standard period in Uruguay: from November of 1876 to December of 1913. For import receipts, data is available from January 1880 to December 1913. For net gold flows, figures are available from January of 1883 to December of 1907. The VAR model has applied for the whole period, as well as for several sub periods, and for different specifications and lags. We obtain impulse response functions with their 68% confidence intervals, using the Kilian's bootstrap technique. To identify the shocks, we adopt the standard Cholesky scheme with the following ordering: boe, uru, ex, ln_imp_tar, gold_total. Placing the BoE rate first in the ordering implies that it is affected by the other variables describing the

[43] These could vary from around 5% for some investment goods, like wire fencing, to 57% for consumption goods like cigarettes (Bertino and Millot, 1996: 375-376).
[44] In regard to the Uruguayan statistics, Acevedo (1934a: 41) states that the data on monetary specie was "deficient, due to a lack of efficient auditing of the declarations made by the commanders of ships".

Uruguayan economy only after a month (but not contemporaneously).[45] The pass-through rate is determined by calculating the response of the Uruguayan discount rate to a one standard deviation shock to the structural error of the BoE rate.[46]

For all sub periods, the Schwarz criterion indicates either one or two lags. For any particular period and specification, the one-lag model always reports lower pass-through rates than the two-lag model. As a robustness check, rates for both one and two lags are compared across different sub periods and specifications.

For the whole gold standard period (1876-1913), only a three-variable model can be estimated (boe, uru, ex). The pass-through rate for the recommended 2-lag specification is 42%, while for the four-variable model (over the period 1880-1913), the rate is 46%.[47] Both figures are close to the rate which Bazot et al (2022) find for the US (49%). However, the results vary significantly if we divide the gold standard period in two parts: the free banking period, up to August of 1907, on one hand, and the period after the BROU gained a monopoly on currency issue, on the other. Table 2.5 shows the pass-through rates for the two sub periods under different specifications (the maximum value of the impulse response is reported). For each model, the lags suggested by the Schwartz criterion are in grey. For the period where the BROU was the sole paper currency issuer, the pass-through rates are much higher. For the recommended one-lag model, rates range from 40% to 44%, while for two lags, they range from 46% to 51%. In contrast, for the free banking period, for the three and four variable models, the rates are 39% and 38% respectively (using two lags). If one lag is used, the rates are around 26%. For the same period, the five-variable model, one lag is recommended, and the pass-through rate is 24% (32% for two lags).

[45] Since only a shock to the BoE rate is modelled, the order of the other variables is not important.
[46] The rise in the impulse response function of the Uruguayan rate is taken as a percentage of the standard deviation of the residual of the BoE rate.
[47] For one lag, the rates are 29% and 30%, respectively.

Table 2.5: pass-through rates for free banking (1883-1907) and central banking periods (1907-1913)

	Multiple currency issuing banks 01/1883 to 07/1907		**BROU sole currency issuer** 07/1907 to 12/1913		**Whole period** 01/1883 to 12/1913	
Variables	**1 lag**	**2 lags**	**1 lag**	**2 lags**	**1 lag**	**2 lags**
3 (boe uru ex)	0.260	0.393	0.444	0.505	0.286	0.424
4 (boe uru ex ln_imp_tar)	0.255	0.381	0.403	0.458	0.308	0.456
5 (boe uru ex ln_imp_tar gold_total)	0.239	0.322	-	-	-	-

Sources: Own estimation based on BoE rate from Jorda et al. (2017); uruguayan discount rate and exchange rate from the following newspapers: *Boletin de la Bolsa de Comercio de Montevideo*, *El Siglo, La Democracia, La Idea, La Nación, El Bién Público, El Hilo Eléctrico, La Tarde* and *Montevideo Noticioso*; import tariffs and gold flows from AEU.

After 1907, the BROU's monopoly on paper currency emission and its accumulation of specie reserves (almost 50% of banking sector reserves by 1907, and almost 70% by 1911) put it in a position where it could have attempted volatility smoothing through countercyclical balance sheet management, but we do not know if it actually did. The annual data presented in figure 2 showed specie reserves and credit moving in opposite directions in only 41% of years, although, as mentioned earlier, annual data may hide intra-annual correlations. However, regardless of whether the BROU was attempting to smooth volatility or not, the response of the local discount rate to shocks in the BoE rate was high, around the same level that Bazot et al. (2022: 32) find for the US. In the free banking period, the reaction of the local discount rate was much lower. For the most complete model, with five variables, the pass-through rate was equivalent to what Bazot et all (2022: 22) find for gold standard core countries which practiced volatility smoothing.

Figures 2.8 and 2.9 show, for each period, respectively, the response of the Uruguayan economic variables in the two-lag models to a one standard deviation shock in the BoE rate.[48]

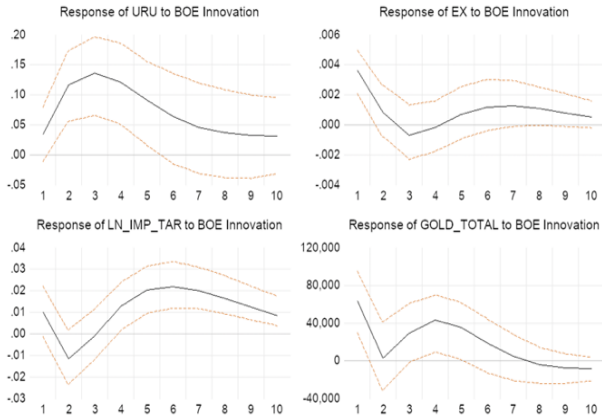
[48] Although the Schwarz criterion recommends the one-lag model for the most relevant specifications in both periods, Bazot et al (2016) and Bazot et al (2022) present results for two lags, and thus it can be instructive to examine the responses of the endogenous variables for the two-lag model in the Uruguayan case, but also because it makes for a more direct comparison to the results reported by those papers for other countries.

The main results do not differ much for the one model. For the free banking period, exchange rate rises (currency depreciation) immediately by 0.0024, which is about 0.05% of its par value, but quickly returns to normal levels. The initial negative reaction in the aggregate demand proxy is not statistically significant, which is consistent with successful volatility smoothing, and is slightly positive after six months. One strange result is the reaction of gold inflows, which rise in the first month after the shock, although the effect quickly dissipates.

For the BROU-as-sole-currency-issuer period, the exchange rate rises by 0.14% of par value, almost three times as much as in the first period, although the effect quickly dissipates. This is the opposite of what would be expected under the hypothesis suggested here. If there was no volatility smoothing in this period, or less than in the free banking period, the reaction of the exchange rate should be less than in the earlier period, since the higher increase in the discount rate would keep the exchange rate in check. Import tariff revenue falls in the month of the shock, consistent with a lack of sterilization, since higher interest rates would dampen aggregate demand, although the effect quickly dissipates.

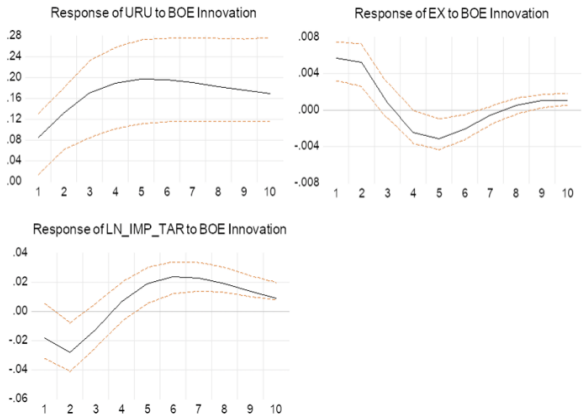
For the free banking period, this implies a rise in the BoE rate of 0.42 percentage points. In this case, the Uruguayan discount rate rises by 0.14 percentage points, meaning the pass-through rate is 32%, somewhat higher than the levels reported by Bazot et al (2022) for volatility smoothing countries, but far below the level reported for the US. The maximum is reached after two months and the effect quickly dissipates, reaching non statistically significant levels five months after the original shock. The response of the exchange rate is slightly higher than in the one-lag model, rising around 0.08% of par. The immediate reaction of the aggregate demand proxy is not statistically significant until four months after the external shock, after which it becomes positive. Gold inflows rise in the first month after the shock, by about 64,000 pounds, although the effect quickly dissipates. This is a non-trivial amount, since average net gold inflows in the period were 80,000 pounds per year.

Figure 2.8: impulse response (five variables, two-lags) 1883-1907



Sources: Own estimation based on BoE rate from Jorda et al. (2017); uruguayan discount rate and exchange rate from the following newspapers: *Boletin de la Bolsa de Comercio de Montevideo*, *El Siglo, La Democracia, La Idea, La Nación, El Bién Público, El Hilo Eléctrico, La Tarde* and *Montevideo Noticioso*; import tariffs and gold flows from AEU.

Figure 2.9: impulse response (four variables, two-lags) 1907-1913



Sources: Own estimation based on BoE rate from Jorda et al. (2017); uruguayan discount rate and exchange rate from the following newspapers: *Boletin de la Bolsa de Comercio de Montevideo*, *El Siglo, La Democracia, La Idea, La Nación, El Bién Público, El Hilo Eléctrico, La Tarde* and *Montevideo Noticioso*; import tariffs and gold flows from AEU.

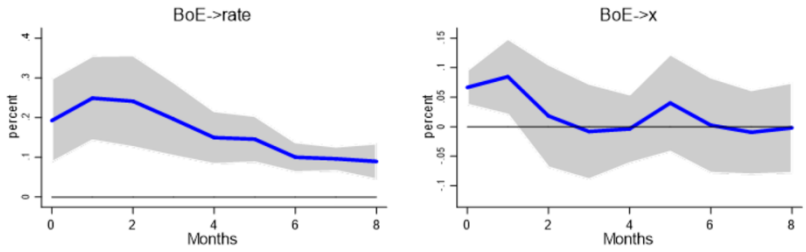
For the BROU-as-sole-currency-issuer period, the four-variable model with two lags, a one standard deviation shock in the BoE rate implies a rise of 0.44 percentage points. The local rate rises by 0.2 percentage points, implying an interest rate pass-through of 46%, which reaches its peak at four months after the initial shock. The response of the exchange rate is similar to the free banking period, rising about 0.08% of the par rate. The aggregate demand proxy responds much in the same way as in the one-lag model, showing a slightly statistically significant negative effect in the first month after the shock. This would be consistent with a lack of volatility smoothing, because the rise in the local discount rate dampens economic activity.

Bazot et al. (2022) present their results for three categories of gold standard countries: core, peripheral (both of which have central banks) and the US, which had a free banking system with no central bank. These can be seen in Figure 2.10. As mentioned earlier, they find that pass-through rates in core countries were slightly higher (24% on average) than those for peripheral countries (17% on average). This is because in peripheral countries the discount rate was less effective a tool for influencing short-term capital flows, due to weaker financial integration and less credibility than in core countries. Thus, peripheral countries relied more heavily on partial inconvertibility, sometimes called “gold devices”, in order to widen the gold points and allow for greater fluctuations in the exchange rate without provoking gold exports. This is reflected in the reaction of exchange rates in the right-hand graphs in figure 16. For core countries, the exchange rate reacts swiftly, rising by about 0.08%, but the effect dissipates by the second month after the shock. For peripheral countries the exchange rate rises by almost double, around 0.014%, and the effect lasts much longer. For the free banking US, the market

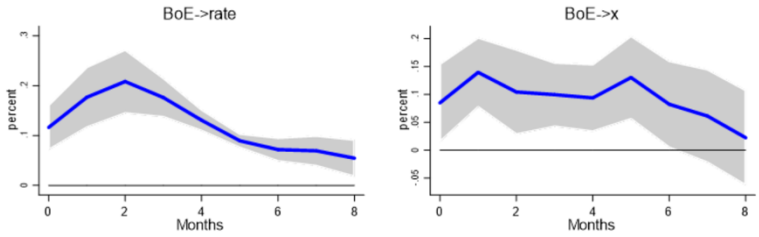
discount rate rises much more than in countries with central banks, the pass-through rate being 49%. There is an immediate rise in of exchange rate, but it swiftly returns to its normal range. This is because the burden of adjustment is carried by the interest rate.

Figure 2.10: reaction of local discount rate and exchange rate to shock in BoE rate for:

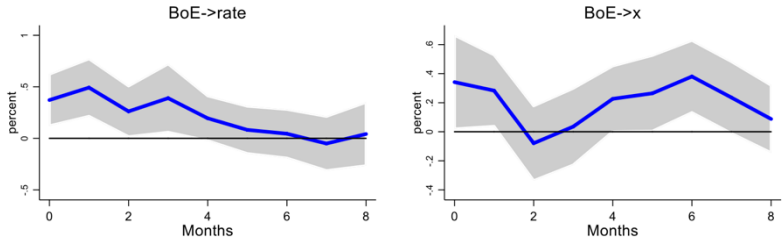
Core countries



Peripheral countries



The USA



Source: Bazot et al., 2022: from figures 1, 2 and 4

The point of this section has been to show that the results for Uruguay's free banking period are more in line with countries that had volatility smoothing central banks than with the free banking US.[49] It is also interesting to note that the response of the Uruguayan discount rate and exchange rate look more similar to the results for core countries than for peripheral countries.

[49] An alternative explanation for the insensitivity of Uruguayan domestic interest rates to shocks in the international rate is that banks could have been credit rationing. In some early banking systems, directors used bank resources to fund their own or their family members' business activities, neglecting other clients. In this sense, interest rates would not have responded to normal supply and demand conditions, and would show up as having a low pass-through rate in the econometric analysis. For an example and discussion of this phenomenon, see Lamoreaux (1996). This topic merits further investigation for the case of Uruguay, and is part of my agenda for future research.

Not only is the pass-through rate in Uruguay closer to that for core countries, the reaction of the exchange rate is also swift, of similar size, and short lived.

Part of the reason may lie in the use of gold devices, that is, partial inconvertibility, by most countries in the Bazot et al. (2022) sample, but the authors find a greater reliance on the part of peripheral countries than core countries. These were strategies implemented by central banks that temporarily raised the cost or otherwise impeded the export or import of gold. Common practices involved raising the price at which they sold (bought) gold bars or foreign coins, which essentially raised the gold export point (lowered the gold import point), sometimes known as "gold devices". They could also encourage the redemption of notes in lightweight gold coin or in silver (by placing a premium on gold withdrawals), which had the effect of allowing exchanges to go past the gold export point without provoking gold outflows. Redemption of notes could be restricted geographically to the main office in the capital, raising the cost of converting notes to gold. Some countries placed special requirements on commercial banks that wanted to redeem notes at times of balance of payments stress, or used informal pressure to discourage withdrawals of gold (Bloomfield, 1959: 52-54).

It is likely that these strategies were not available to the Comercial and LRP in Uruguay. The law prevented them from placing impediments on gold withdrawals or a premium on gold. These two banks did not have branches outside Montevideo until the 20th century,[50] and could therefore not have temporarily placed geographical restrictions on withdrawals. It is also doubtful that they could have influenced other banks from redeeming withdrawing gold. In Uruguay, discount rates were also likely not as effective a tool as in core countries, but gold devices were not an available option either. This could explain the rapid adjustment of the exchange rate, since there was no way for banks to temporarily widen the gold points.

In the case of Uruguay, the rise in gold inflows in the free banking period presents a mystery. If banks were actively smoothing external volatility by keeping the domestic interest rate from rising when the BoE rate rose, it means they would have had to allow gold to flow out of their coffers, and out of the country. They would have offset this by increasing domestic credit, thereby cushioning the impact of the external shock. It is not clear what could explain a gold

[50] The LRP opened its second branch in Salto in 1905 and a third in Rivera a few years later, as well as several agencies in Montevideo (Joslin, 1963: 138), while the Comercial did not have any secondary agencies in Montevideo until 1937 and any branches outside Montevideo until 1940 (Comercial, 1957)

inflow contemporaneous with a rise in the BoE rate. In any case, the effect is short lived, becoming non-statistically significant in the month after the shock.

2.5 The reputation and size of the Banco Comercial and the LRP

Breaking the rules of the game would create two problems for a commercial bank. The first, endangering convertibility, was a problem faced also by central banks in other countries. The solution was generally to work within the gold points and rely on reputation to ensure reserve ratios never dipped too low. The second was a loss of market share and short-term profits. Central banks, if not state-owned, could compensate this loss with the income generated from note circulation and from other privileges they might have.[51] However, the Banco Comercial and the LRP had no such privileges. Why then would they consistently break the rules of the game, when doing so could endanger convertibility, and, at least in the short term, put them at a competitive disadvantage relative to other banks? The answer may lie in their unquestioned commitment to the gold standard and their dominant position in the banking sector for much of the period.

The Comercial and the LRP were two of the oldest banks in the country, founded in 1857 and 1863, respectively. The Comercial was founded by foreign merchants, mostly of British origin, operating in Uruguay, and this group was heavily represented on the bank's board throughout the period. The LRP was a branch of the British bank of the same name, and also served foreign commercial interests (Barrán and Nahum, 1971: 448-52). They were traditionally defenders of monetary orthodoxy, resisting attempts by the government to found a state bank (Barrán and Nahum, 1971: 470). For example, they strongly opposed the establishment of the Banco Nacional in 1887, and from the moment it opened its doors, these two banks cleared their holdings of the Nacional's notes on a daily basis (Joslin, 1963: 135; Barrán and Nahum, 1971: 474).

These banks had been founded during the tumultuous 1850s and 1860s. They both served the merchant class involved in international trade, especially the import of European goods (Barrán and Nahum, 1971: 448-451). This group of merchants was highly committed to the gold standard because of the nature of their business. Their costs for imports were in gold, while their revenue was in pesos, and it behooved them to receive their income in a gold-linked

[51] These could include the handling of government accounts, lending to the government and having a monopoly on certain types of transactions, for example, the sale of *cédulas*.

currency. In addition, the LRP also served many of the British companies that built and operated the country's transport and urban infrastructures, such as railways, tramways and waterworks. The Central Uruguay Railway, for example, had its account with the LRP, and received occasional large loans from the bank (Díaz, 2014: 82). Not only that, but often the same men served on the board of directors of these banks and those of their client companies. For example, the director of the Uruguayan branch of the LRP, George Drabble, was also director of the Central Uruguay Railway Company (Winn, 2010: 21). These companies also faced many costs in gold[52] and received income in local currency, and thus benefitted by adherence to the gold standard.

Their commitment to the gold standard was unquestioned, and, despite their countercyclical balance sheet management, they never allowed reserve ratios to fall dangerously low. As can be seen in Table 2.6, the Comercial and the LRP had the highest ratios of reserves to notes in circulation of any bank, maintaining reserves of over 150% of notes. These ratios never fell below 100% in any one year. Other banks generally also maintained reserve ratios of at least 100%, with the exception of the Banco Nacional. The ratio of reserves to liabilities were also high for the Comercial and LRP, at the higher end of banks in the sector, around 50%. This figure occasionally fell to as low as 20% for these two banks, although it quickly recovered.

Table 2.6: Average reserve ratios for Uruguayan banks, 1885-1907

Bank	Reserves/Notes in circulation	Reserves/Liabilities
Banco Comercial	154%	55%
London and River Plate	160%	44%
Banco Italiano	134%	46%
Banco Nacional	51%	22%
English Bank of the River Plate	145%	25%
Spanish Bank of the River Plate	145%	43%
Banco de la República	100%	63%
Banco Popular	-	27%

Source: Own calculation based on figures from AEU.

For example, the LRP and the Comercial raised their reserve ratios during the boom years at the end of the 1880s. For the LRP, reserves went from 170% of notes in 1888 to 235% in 1890. In relation to liabilities, reserves rose from 40% to 55% for the LRP, while for the Comercial

[52] In Uruguay, railway companies imported much of the materials for building and operating the line: rails, locomotives, wagons, metallic structures for bridges and even the sleepers upon which the rails were laid. Coal was also a major imported input (Díaz, 2014).

they went from 21% to 89% in the same years. This was at a time when ratios for most other banks fell, or rose only slightly. For example, reserves to notes for the Banco Italiano were 109%, 88% and 136% for 1888, 1889 and 1890, while reserves to liabilities were 48%, 42% and 41%. For the Banco Nacional, the reserves to notes were 74%, 48% and 7%, while reserves to liabilities were 25%, 14% and 1%.[53] The reason for rising reserve ratios on the part of the Comercial and LRP is clear. They were protecting themselves and their clients from the coming crisis. Joslin (1963: 135) notes that the LRP's branch director, Robert Thurburn,

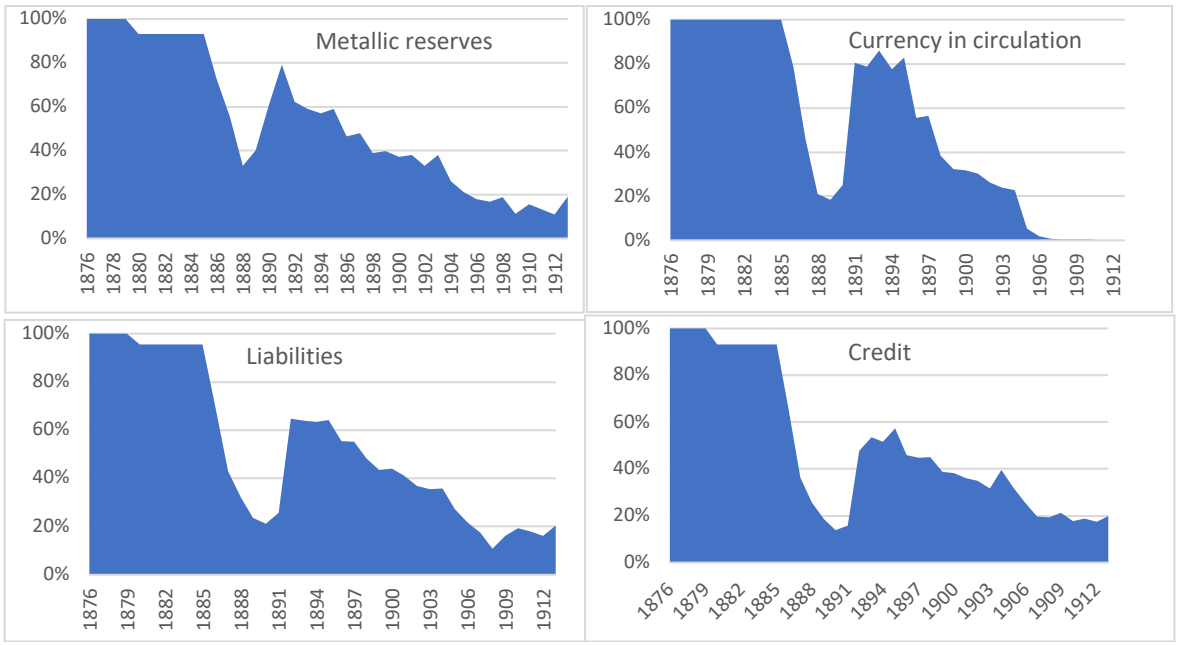
> "began to reduce his loans in gold and to strengthen the bank's gold reserve, as in a crisis the branch would be subject to a dual strain. Merchants would be withdrawing gold for export, and notes would be cashed in a domestic banking panic. The London Bank's position resembled that of the Bank of England in the first half of the nineteenth century rather than that of an ordinary commercial concern. Long before the crash came Thurburn told Head Office that he was 'well prepared'".

The Comercial, in 1887, went so far as to renounce its right to emit banknotes, for the same reason. It saw what the founding of the Banco Nacional would bring, and preferred to sacrifice the profitability of banknote emission rather than be exposed to an inevitable run once the crisis hit (Banco Comercial, 1957).

The Comercial and the LRP were the only two banks to survive the crisis of 1876, and from this year, until the end of the century, they dominated the banking sector. Figure 2.11 shows the percent of total metallic reserves, notes in circulation, liabilities and credit in the hands of these two banks. In the late 1870s and early 1880s, these two banks held over 90% of the metallic reserves, liabilities and credit of the banking sector, and 100% of the currency in circulation. The market share of these banks dropped precipitously through the boom years of the late 1880s, as several banks joined the market, but recovered after the crisis, when several large banks went bust. In 1895, before the founding of the Banco de la República, when there were already 11 banks operating in the country, these two banks held over 50% of reserves, liabilities and assets of the sector and around 80% of notes in circulation. These proportions fell gradually over the rest of the period, reaching about 20% by 1913, while their note circulation disappeared after the LRP lost its right to emit paper currency in 1904.

[53] Calculated from bank balance sheets, AEU.

Figure 2.11: percent of total metallic reserves, currency in circulation, liabilities and credit in the hands of the Comercial and LRP



Source: Own estimation based on capital figures from Appendix A and balance sheet data from AEU.

The reputation of the Comercial and the LRP as stalwart defenders of the gold standard and their dominant position in the banking sector likely gave these banks some leeway in regard to balance sheet management. They maintained high reserve ratios on average, although they could allow reserve ratios to fall on occasion, because the public knew that they were committed to note convertibility. They also had close extra-commercial ties with their client base; the men directing both banks also ran several of the companies that they did business with. This, coupled with their dominant position in the market, meant that they did not have to behave in a single-mindedly competitive way. When gold flowed into their vaults, they did not feel compelled to expand credit, seeking short-term profits. Rather, they could hold off, allowing reserves to accumulate, putting them in a better position for when economic conditions reversed.

2.6 Conclusions

This paper presents evidence on the operation of the gold standard in Uruguay from its adoption in the 1870s up to 1913. The results are suggestive in light of Uruguay's performance in adhering a fixed exchange rate for almost 40 years without a central bank. Under its free banking system, two banks, - the Comercial and the LRP-, appear to have consistently broken the rules of the game by expanding domestic assets in the face of reserve losses, as well as sterilizing gold inflows. Furthermore, currency in circulation and total liabilities of these two

banks appear to have fluctuated far less than did metallic reserves, and less than those of other banks. This indicates that they acted to smooth volatility in gold reserves and shield their clients from changes in gold reserves.

Could this action, intended to shield their clients from volatility in gold movements, have helped ease the burdens imposed by the gold standard on the economy as a whole, in a way similar to what occurred in countries with central banks? In addition to the micro level evidence regarding the Comercial and the LRP, a macro level analysis of the reaction of the domestic interest rate to shocks in world interest rates suggests that these banks' efforts at volatility smoothing may have had economy-wide impacts. The local interest rate was relatively insensitive to shocks in the BoE rate, with interest rate pass through being quite low during the free banking period before 1907. That is, shocks in international interest rates were not fully absorbed into domestic rates.

The Comercial and the LRP, the oldest banks in operation in the country, were stalwart defenders of the gold standard and were the dominant banks in the sector before 1900. This may have put them in a position where they had some leeway in terms of balance sheet management, allowing them to provide liquidity to their clients even when gold reserves fell. They did this by accumulating reserves in good times, even though it meant sacrificing short term profits.

Chapter 3: Capital flows, sudden stops and balance of payments adjustments under a fixed exchange rate: Uruguay, 1870-1913

3.1 Introduction

The balance of payments can represent a fundamental constraint for developing countries (Thirlwall, 2004). Specialization in primary products requires imports of specific goods, especially capital goods, in order to grow and low savings rates makes developing countries dependent on foreign capital to raise investment rates and to provide foreign exchange for imports. Furthermore, foreign reserves are an integral part of managing the value of local currency, especially under fixed exchange rate regimes. In this way, foreign investment, the balance of payments and the domestic money supply are intimately tied.

This was the rule under the classical gold standard in the late 19th century and early 20th century. International capital flows were a fundamental feature of this period, when newly formed nation states, which lacked local capital and sufficiently developed financial markets, needed foreign investment in order to develop internal resources. Without railways, ports and land improvements, natural resources could not be exploited and exported to European markets. Large waves of capital flowed from core countries to the periphery, much of it directed towards infrastructure investments, promoting economic development in many of the receiving countries and raising growth rates.

For capital exporting countries on the gold standard, outward investment could have an equilibrating effect on the balance of payments, as it created demand for their exports of capital goods and manufactures. For capital importing countries, foreign investment provided an opportunity, but could have unexpected outcomes which were not always positive. Long-term investments could fail to generate the expected returns, weighing the economy down with debt service which could not be met through export growth. To make matters worse, financial and political instability could scare investors, which could withdraw funding, leaving the country unable to maintain import levels necessary for growth. In addition, the intimate link between

the balance of payments and the domestic money supply under the gold standard made capital inflows a particularly important source of volatility.

Sharp turnarounds in capital flows, sometimes called 'sudden stops' were a permanent feature of the first wave of globalization (Catão, 2007). These were often associated with major current account balance adjustments, financial crises and sovereign debt defaults, and could have severe negative effects on output growth (Edwards, 2004). There is also a strong link between sudden stops and currency depreciations (Catão, 2007: 258-264). Thus, sudden stops are particularly relevant to the international monetary regime that drew in much of the trading world during the first globalization.

Uruguay appears to be one of the success stories of engagement with the world economy during the first globalization. The country ranks well among a group of Latin American economies that grew rapidly in the decades leading up to 1914, based in large part on the exploitation and export of natural resources to international markets.[54] It also received large amounts of foreign capital; among independent Latin American countries, by 1913 only Argentina, Brazil, Chile and Mexico had received more foreign investment than Uruguay, in absolute terms. In this year, the value of total foreign investment per capita placed Uruguay in 4th position, after Argentina, Peru and Chile (Fishlow, 1985: 394). However, this made the country vulnerable to the vicissitudes of international capital markets, suffering several episodes of downturns in capital inflows, two of which can be considered sudden stops.

Another aspect of Uruguay's history that makes it stand out among its neighbors is its adherence to the gold standard. As mentioned in chapter 2, the gold standard was made law in Uruguay in 1865, although the country struggled to maintain convertibility in the first years. However, after a convertibility suspension in 1875, it suspended convertibility of paper currency only once, in 1890. These two suspensions were years associated with sudden stops in capital flows and economic crises. However, in both cases the suspension of specie payments was short lived, with a return to the gold backing at the same earlier parity. This meant that the adjustments to sudden stops did not occur through currency depreciation, and makes Uruguay an interesting case study, since it was particularly exposed to external volatility through its

[54] With less than 2% of the region's population (Bértola and Ocampo 2010: 95) and less than 1% of its surface area, it was the seventh largest economy in Latin America in 1913. GDP grew at an average annual rate of 3.9% from 1870 to 1913, second only to Argentina's 5.8%, and higher than the average rate for the region of 3.5% (Bertola and Ocampo, 2012: 100) Uruguay was Latin America's sixth largest exporter by value throughout the period, and in the top four in terms of export value per capita (Bértola and Ocampo, 2012: 86).

commercial openness and dependence on foreign investment. If it did not resort to devaluation, a crucial tool for avoiding the full brunt of a sudden stop, how was the fall in capital flows accommodated? In particular, how did the balance of payments adjust and what was the effect on the money supply?

In order to explore these questions, this chapter offers a reconstruction of the balance of payments and the balance sheet of the banking sector in Uruguay from 1870 to 1913. For the capital account, new series for foreign investment are constructed, which go beyond the usual sources used for this time period (many studies rely exclusively on Stone's (1999) database on British capital exports). A larger set of international sources are used, as well as local sources. In regard to the current account, corrected series for merchandise trade are used, and new series for the services and unilateral transfers balances are developed. Data on gold flows from 1878 to 1907 is also presented for the reserve account. The balance sheet of the banking sector - capital, reserves, notes in circulation, deposits and credit- is reconstructed based on information from individual banks that operated over the period.

This information, along with the monetary aggregates mentioned in chapter 2 and discussed in appendix A, is used to explore how the economy adjusted to three episodes of downturns in foreign investment, two of which were sudden stops. Section 3.2 presents the reconstruction of foreign investment flows, the current account and gold movements in the decades before 1914. Section 3.3 defines two sudden stop episodes and compares them to a third episode of a fall in investment flows that was not a sudden stop. It discusses the balance of payments adjustment process in each case. In section 3.4, information on the banking sector and the money supply data is used to discuss the adjustment process and the consequences of sudden stops for Uruguay during the period. Section 3.5 offers concludes.

3.2 Uruguay's balance of payments

This section presents a reconstruction of Uruguay's balance of payments from 1870 to 1913. It is important to highlight that for the first globalization period, this type of information is scarce for countries outside Europe.[55] Data on merchandise trade is easy to come by, since it

[55] As far as I know, for the Americas, pre-1914 balance of payments figures, which include direct estimates of capital flows and of the "invisible items", are available only for the US (Simon, 1960), Brazil (Barroso-Franco, 1987) from 1876 to 1897, Chile (Edwards, 2000) and Argentina (Gerchunoff and Llach, 1998) starting in 1900. For Uruguay, Donnángelo and Millan (2006) offer an estimate of the balance of payments for the pre-1914 period, but uses uncorrected trade series, makes only a limited attempt to estimate the rest of the current account and the capital account, and contains some important conceptual errors.

was often collected and published by governments. However, the services balance, especially items like service on foreign debt and freight costs, could weigh heavily in the current account. For countries that received large numbers of immigrants, remittances, part of the unilateral transfers balance, could also be important. Furthermore, estimates of capital flows for the first globalization are often based exclusively on British foreign investment data, since Britain was the largest capital exporter during this period.[56] Some studies dispense entirely with direct estimates of capital flows, and use indirect estimates, that is, the residual of the current and reserve accounts.[57] For indirect estimates of the capital account to be believable, a high degree of confidence is required in the data on the other items of the balance of payments.

In this section, direct estimates of all the major items of the balance of payments are presented: the capital account, the merchandise trade balance, the services and unilateral transfers balances, changes in international reserves, as well as the errors and omissions series.

3.2.1 Capital account balance

Since the focus of this paper is on sudden stops in foreign investment, it made sense to start with estimating the capital account. This account registers transactions in financial assets, that is, sums transferred with the promise of future repayment. To date, the best estimate of Uruguayan capital flows is Donnángelo and Millan (2006), which provides a series for the 1870 to 2003 period. This is an important effort, but relies on few, only local, sources and contains several errors. Due to these problems, an original estimate has been constructed here.

Little data is available on investment by Uruguayan residents in overseas ventures, but it was likely minimal during the period. Before 1914, most foreign investment on the part of Uruguayans would have been in the agriculture and livestock sector in Argentina and Brazil. According to the Argentine Agricultural Census of 1908, Uruguayans had invested about 635,000 pounds in agricultural establishments by that year, mostly in the provinces bordering Uruguay (Jacob, 2004: 167-168).[58] Less was likely invested in livestock, since only 40% of Uruguayan establishments in Argentina were of this nature in 1914. By 1920 there were 1,365

[56] The most thorough presentation of annual British foreign investment data is provided in Stone (1999), which relies on data from Jenks (1944) and Simon (1967; 1968; 1970). Estimates for other countries -France, Germany and the US- for some years are presented in Fishlow (1985). Esteves (2011 and 2012) present annual data on French and German foreign investment that are comparable to Stone's estimates for Britain.
[57] For example, see Prados de la Escosura (2009).
[58] Jacob (2004: 167) presents a figure of 6,777,552 Argentine paper pesos. The exchange rate in that year was about 10.7 pesos per pound. One pound = 5.05 gold pesos (Acevedo, 1934: 73); one gold peso = 2.27 paper pesos (della Paolera and Taylor, 2001: 23).

Uruguayan run establishments operating in Brazil. However, year-to-year data is not available, and due to the small volume compared to incoming investment flows, an estimate for this item has not been included here.

In contrast to Uruguayan investments abroad, there is a wealth of information available on investment in Uruguay on the part of foreigners. As mentioned above, most studies on foreign investment during the first globalization rely almost exclusively on Stone's (1999) database of British overseas investment. Since Britain was the main capital exporter in this period, his figures are adequate to get a general idea of foreign investment in a particular country. However, they do not give the whole picture, and for a detailed analysis of sudden stops and balance of payments adjustments, a more nuanced approach is needed. Thus, in this section, foreign investment has been estimated using a variety of local and international sources. Investment has been broken down into three categories: public debt, railways and other foreign direct investment. A brief description of the sources and methods used for each category is given here, but a full explanation is provided in Appendix A.

Annual foreign investment in public debt has been estimated from year-to-year changes in external public debt in circulation abroad. Information has been taken primarily from official sources, -the Anuarios Estadísticos del Uruguay (AEU) and the *Memorias del Ministerio de Hacienda*-, as well as from some secondary sources. These are the works of Eduardo Acevedo (*Anales históricos del Uruguay*, volumes 3 (1933), 4 (1934) and 5 (1934), and *Notas y Apuntes*, volumes 1 and 2 (1903), Ferrando (1967) and Nahum (1994). In addition, Stone's (1999) database for British overseas investment was used to complement the information where official accounts are thought to be unreliable. All ten known emissions of external public debt sold during the period have been taken into account, as well as treasury notes that circulated abroad. This debt circulated mostly on the London stock market, with some loans being floated in Paris in the early 20th century. Three main adjustments have been made to the nominal figures in order to estimate *effective* capital flows, that is the actual amount transferred across borders. First, discounts offered on the nominal price of loans have been taken into account. Second, bonds often moved between European and Uruguayan markets after their initial sale. This was the case because external debt was often used to convert old internal debt,[59] and therefore ended up in the hands of Uruguayan residents. They could then sell these bonds to

[59] Internal debt was denominated in pesos and sold domestically. External debt was denominated in gold and intended to be marketed abroad.

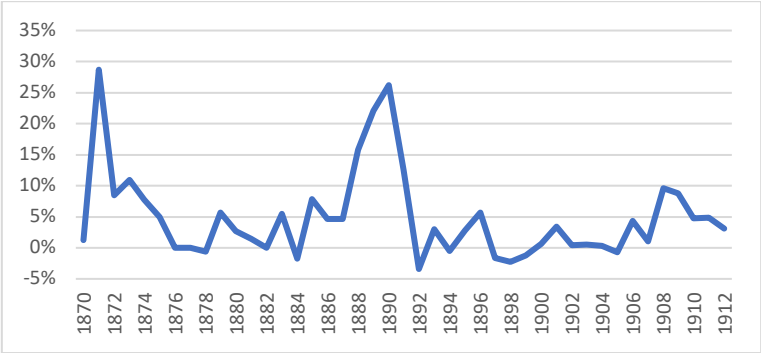
foreigners. The initial bond conversion does not constitute a capital inflow; the secondary sale of the bond by a resident to a foreigner does. Finally, amortization of bonds could be made at market value, depending on the stipulations of the contract. For bonds that permitted this type of amortization, effective amounts amortized have been taken into account for the capital flows series. A series for nominal amounts in circulation abroad has also been constructed in order to calculate interest paid overseas (see section 2.2.3, on invisible items in the balance of payments).

Railway investment was carried out almost solely by British companies during the period. Data on the value of shares and debentures emitted by these companies overseas has been taken directly from Company reports. Discounts and premiums, as well as share buybacks, have been taken into account. Complete company reports are available for all of the main companies, and for many of the smaller ones. The picture that can be obtained from these sources contemplates almost 100% of railway investment over the period.

Other foreign direct investment has been reconstructed primarily based on Stone (1999), which reports the amounts emitted in London for utilities, financial, mining, commercial and industrial firms. Esteves (2011) database on French overseas investment and Esteves (2012) database on German overseas investment have been used as well, since some foreign investment in Uruguay came from these countries. These sources use information obtained from the financial press, and the many errors in these sources are well known. For example, securities placed for sale could later be withdrawn, but it was the initial amount that was reported in the financial press, and therefore picked up by the databases provided by Stone and Esteves. Vendors could also keep a portion of securities for themselves, meaning the amount posted for sale on the stock market was less than the actual amount sold by the government (Simon, 1968: 19). These databases give capital amounts issued on European stock markets every year, but do not identify the specific names of the companies. Here I have tried to use sources with more specific data, and match them with the amounts that figure in the international databases. These sources include company reports, the Investors Monthly Manual, international studies, such as those of Rippy (1947, 1948, 1952), and other secondary sources, both local and international.

Total foreign investment as a percentage of GDP is shown in figure 3.1. Investment inflows were on average 5% of GDP, but highly volatile, with large spikes in the early 1870s and late 1880s.

Figure 3.1: Foreign investment as a percent of GDP, 1870-1913



Source: For foreign investment, see text. GDP from Román and Willebald, 2019.

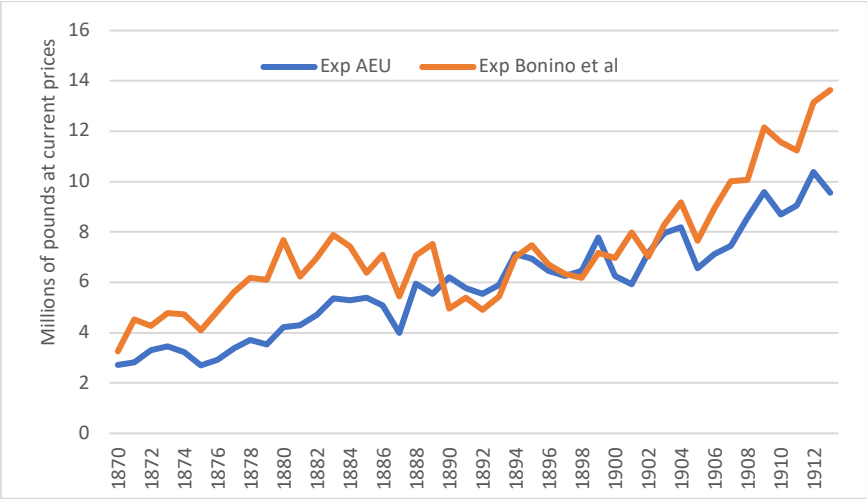
3.2.2. Merchandise trade balance

Uruguayan official trade statistics for the pre-1914 period are known to suffer from several problems which make them inaccurate representations of actual payments made for goods exported and imported. The main problem derives from the use of officially quoted prices for many goods -*valores de aforo*-, rather than market prices. These official prices were used for determining the amounts owed for tariffs and duties and, since they were adjusted only occasionally,[60] in most years the figures presented in official publications differed from the amounts actually paid for goods crossing the border. A second problem derives from Uruguay's position as an entrepot for goods moved between the larger region (Argentina, Brazil, Paraguay and Bolivia) and Europe. Some goods coming especially from Argentina and Brazil were incorrectly registered as Uruguayan exports. Furthermore, live cattle were often smuggled across the border with Brazil, to be butchered in Brazilian salting houses, the product then being sold within that country's protected economy, and thus these animals were obviously not counted in Uruguay's official export statistics.

Bonino et al. (2015) presents a series for Uruguayan exports which corrects these factors. Export values are calculated from export volumes from official statistics, to which a Price Accuracy Index is applied derived from comparing export values from Uruguayan statistics and the value of Uruguayan imports recorded by the country's main trading partners. Further adjustments have been made for transit trade related mis-registrations and for the existence of cattle rustling. Figure 3.2 shows Uruguayan exports in current pounds sterling.

[60] Major changes to customs tariffs and official prices were made in 1861, 1875, 1888 and 1889 (Acevedo, 1903: 165-70).

Figure 3.2: Uruguayan exports, official and corrected series, 1870-1913



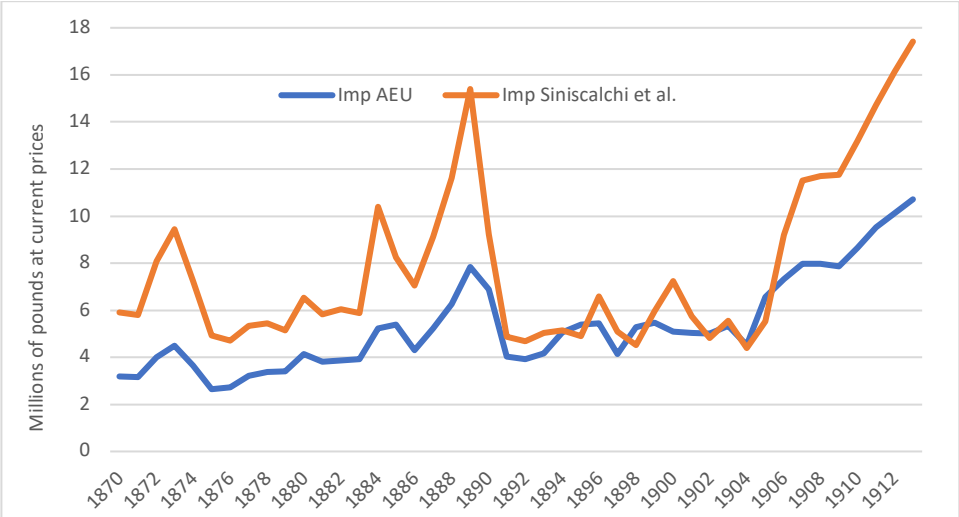
Source: AEU and Bonino et al., 2015.

Uruguayan import data suffers from the same problems as the export statistics: goods are priced at official values and there is misregistration or omission of the transit trade. Correcting for these problems is more difficult than in the case of exports due to the much larger number of products and changing categorizations and groupings that must be accounted for.

Siniscalchi et al. (2021) provide a corrected series for imports for 1883 to 1911, using a similar methodology as for the export series. The biases in this series may be quite large, since it uses only British prices, not those of Uruguay's other export partners. British goods made up about 25% of total imports on average over the period. Furthermore, for some years, few matching products could be found in order to construct the price accuracy index. Thus, this data must be taken with caution and may be one of the main sources of error in the balance of payments estimates. This series has been extrapolated backwards to 1870 and forwards to 1913 using the variations in the official statistics, adjusted by an import price index from Baptista and Bértola (1999). The results are shown in figure 3.3, along with the official statistics.[61]

[61] It is important to note that current price series used here, since they include price effects, can hide underlying trajectories in trade volumes. Overall export growth over the period is unchanged when taken at constant prices (Bonino et al., 2015), although export volumes remained relatively stable until 1893. This is because prices of Uruguayan export goods were falling in the 1880s, even as investments made during the decade allowed for increased export volumes. After a rise in the early 1890s, export volumes stagnated in the middle of the decade, but prices began to rise soon after, leading to the increase in export values in the last 15 years of the period. Import

Figure 3.3: Uruguayan imports, official and corrected series, 1870-1913

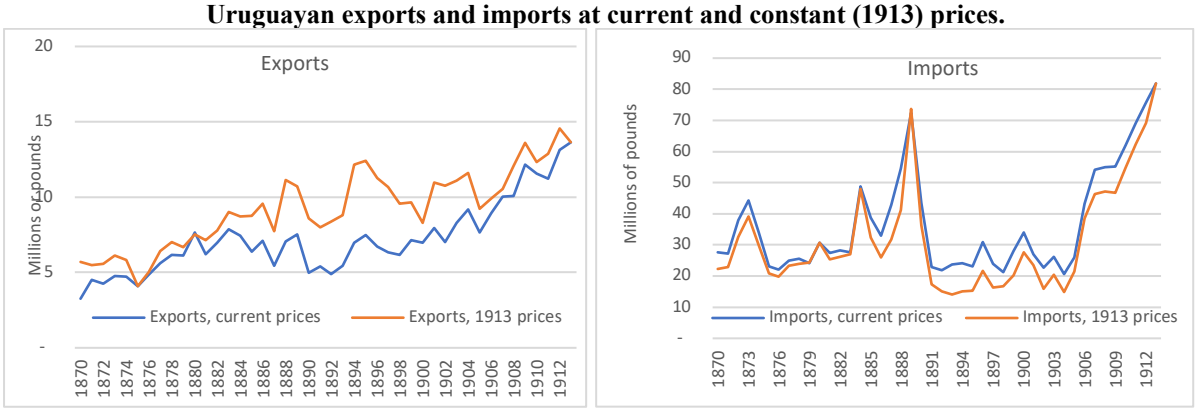


Source: AEU, Siniscalchi et al. (2021), and Baptista and Baptista (1999).

Figure 3.4 shows the merchandise trade balance as a percent of GDP that results from using the official statistics, on one hand, and from using the corrected series, on the other. The main difference appears during times of deterioration of the trade balance, mostly due to the sharp increases in imports that arise from using international market prices. With the official statistics, the trade balance is never much more than 10% of GDP in surplus or deficit. With the corrected series, surpluses reach up to 20% of GDP (in 1904), while deficits can reach as much as 40% of GDP (in 1873 and 1889).

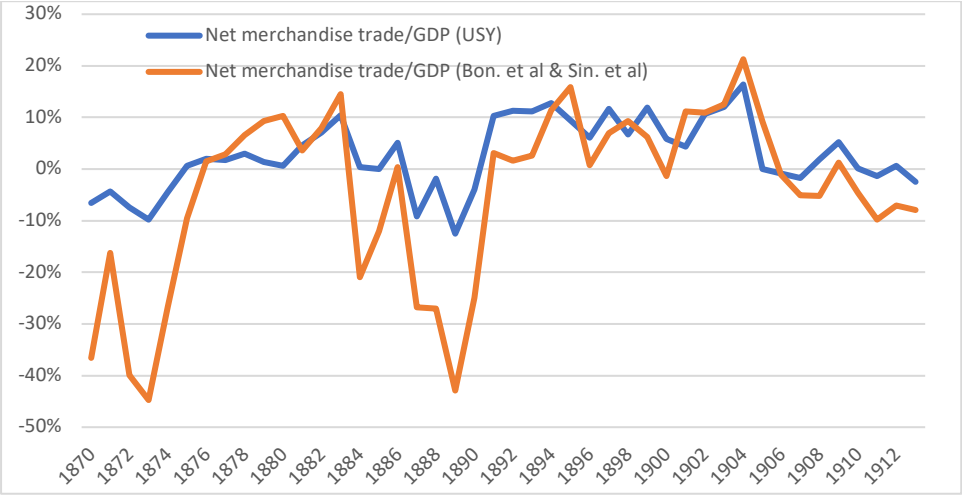
prices did not change significantly, especially before 1890. They rose after that year, causing import volumes to fall much more than import values after the crisis, although prices began to fall in later years.

Uruguayan exports and imports at current and constant (1913) prices.



Sources: Exports at current and constant prices, Bonino et al. (2015). Imports at current prices, Siniscalchi et al. (2021) and Baptista and Baptista (1999). Imports at constant prices, deflated with CPI from Bértola et al. (1999).

Figure 2.4: merchandise trade balance as a percent of GDP, 1870-1913



Sources: AEU, Bonino et al (2012) and Siniscalchi et al (2021).

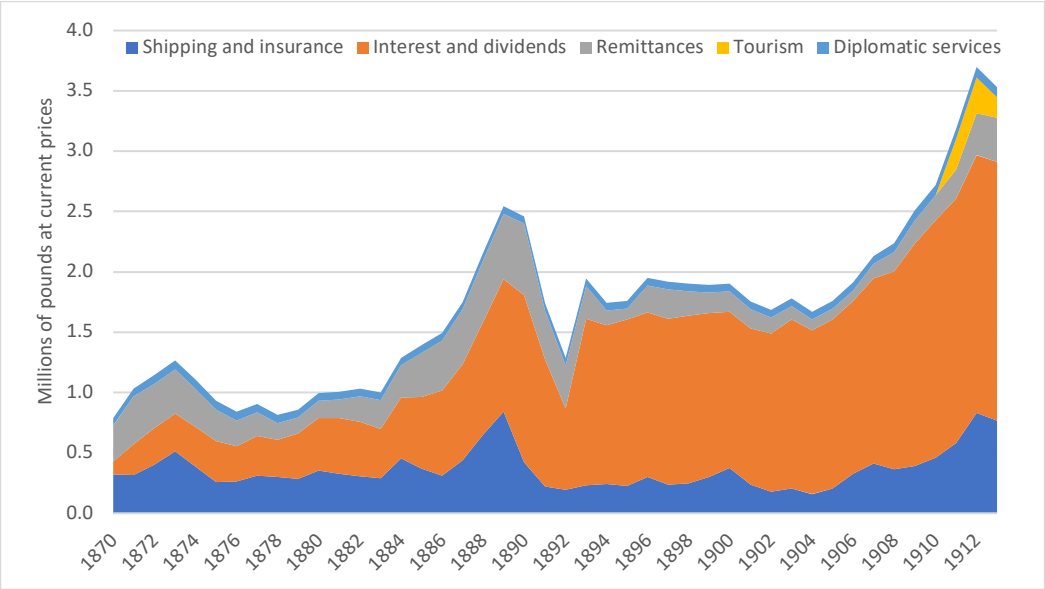
3.2.3 Services and unilateral transfers

The services balance, sometimes called 'invisible exports and imports', contemplates non-physical goods traded across borders, such as transport, tourism, and capital and labor incomes. For the time period under study, reconstructions of only some of these are possible, as information on many of these items is scarce. The specific categories estimated are: freight and insurance; tourism, interest and dividend payments sent abroad; and consular services.

The Unilateral transfers balance registers transfers of funds made without receiving merchandise or services in exchange. These include remittances by workers, and gifts or donations between governments, international organizations and private citizens. In the period before 1914, the only important item in this balance was likely remittances. These were sums sent back to the home country in Europe by immigrants, and could have a large impact on the balance of payments of both sending and receiving countries and play an important role in financial development of the receiving countries (Esteves and Khoudor-Castéras, 2009b). Direct data on remittances is difficult to come by, and is therefore generally estimated indirectly from information on the stock of recently arrived immigrants and average remittances per migrant.

The method of estimation for each of these items is presented in appendix C. Figure 3.8 shows the sum of the service and unilateral transfers balance, broken down into the above-mentioned categories. As can be seen, the largest item is interest and dividend payments on foreign capital. The second largest item is shipping and insurance, while the third largest is remittances sent abroad by immigrants.

Figure 3.8: Services and unilateral transfers balance, 1870-1913



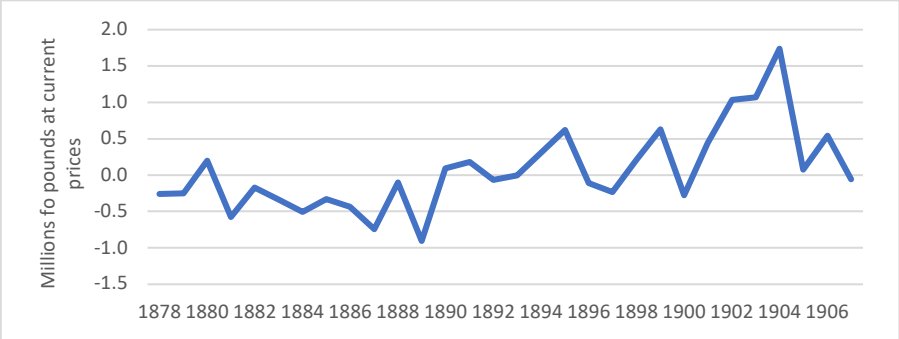
Sources: See Appendix C.

3.2.4 Reserve account

The final component of the balance of payments estimated here is the reserve account, which registers the change in foreign reserves held in the country. Since Uruguay did not have anything like a central bank throughout most of the period,[62] foreign reserves in the form of gold, some silver, and foreign currencies, were held by banks and the public.

Due to the decentralized nature of reserve holdings during the period, and the fact that a large part of reserves was likely held outside the banking system by the public, it is difficult to directly estimate the stock of reserves. Information on inflows and outflows of gold are available from the AEU from 1878 to 1907, and are shown in figure 3.9.[63]

Figure 3.9: Net gold inflows, 1878-1907



Source: AEU.

[62] Before 1907, there were multiple currency issuing banks. In 1907, the Banco de la República gained a monopoly on paper currency issue, although it had few real central banking functions (Diaz and Moreira, 2016).
[63] These figures must be accepted with caution. See chapter 3, for a discussion of the reliability of gold export and import data.

The net metallic inflows series shows reserves leaving the country during the decade of the 1880s, with the outflow being reversed after 1890, and remaining positive in most years until 1907.

3.2.5 Errors and omissions

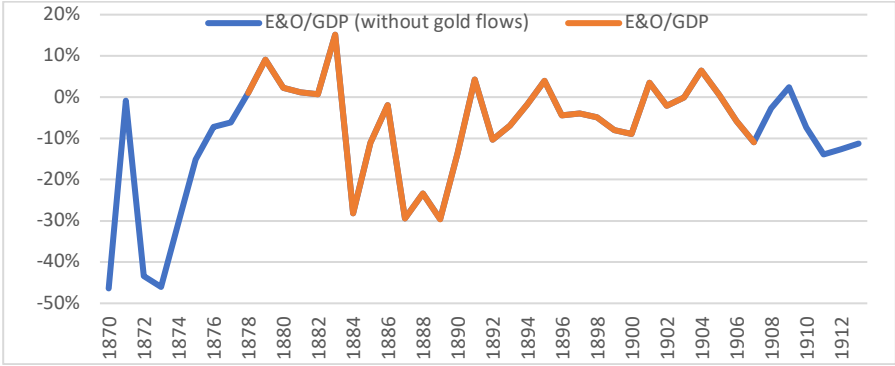
In theory, the balance of payments should 'close', in the sense that if all payments are accounted for, the capital account balance plus changes in foreign currency reserves should be the mirror image of the current account balance. In other words, the surplus or deficit in goods, services and unilateral transfers in a particular year must inevitably be covered by some financial transaction or a change in reserves.

All of the items of the balance of payments estimated here can contain errors. The main source of biases is likely the merchandise import series. Due to the large number of goods considered, and the difficulty in collecting price data for each good, the authors applied price indices to broad categories of goods. The estimated levels are very sensitive to the assumptions used in this process, and biases of unknown size and direction could arise. A second source of important source of errors could derive from the services balance, which leaves out many important items, for example tourism before 1911, and the unilateral transfers balances, which uses strong assumptions regarding the stock of immigrants and average amounts remitted overseas. The capital flows series is likely biased downwards since it surely misses some private investment flows. Furthermore, for known investments, both private and in public debt, the dating could be off, since the date when securities appeared on European stock markets, and the financial press, did not necessarily coincide with the date they were sold or payment was remitted to the issuing government. This would mostly affect the largest capital influxes, which were the occasional large government bond sales common in this period. Furthermore, only long-term capital flows have been estimated. No effort has been made to estimate short-term capital flows, which may have been important (Bloomfield, 1963: 34-39). Finally, as mentioned, the data on gold flows could contain biases of unknown direction, since both the gold import and export series could be imprecise.

The extent to which the different accounts do not net out implies errors and omissions in the data, due to problems with the sources or methodology employed. The residual errors and omissions series derived from combining the above accounts from 1870 to 1913 is shown in

figure 3.10, as a percentage of GDP, and serves to "close" the balance of payments in an accounting sense, giving an indication of how accurate the data collection efforts have been.

Figure 3.10: errors and omissions as a percent of GDP, 1878-1913



Source: see Appendices C and D.

For the most part, the different elements of the balance of payments, when combined, tell a coherent story, although for some periods, the errors are large. From 1870 to 1877 and from 1908 to 1913, there are no data on gold flows, so the E&O series includes this omission. The errors and omissions are generally no more than 10% of GDP. The main exception is the mid-1880s when they rise in some years to more than 25% of GDP.[64] These years when the errors are largest coincide with the massive rise in imports during the 1880s. Imports almost doubled between 1883 and 1884, and then doubled again from 1886 to 1889. The inherent biases in the import series are likely most prevalent when the series reaches its most extreme levels, which could explain the large errors in this period. The other period where the series shows large errors is from 1870 to 1875. The data for this period are necessarily prone to biases, due to the scarcity of information. This goes for the balance of payments data as well as the GDP series.

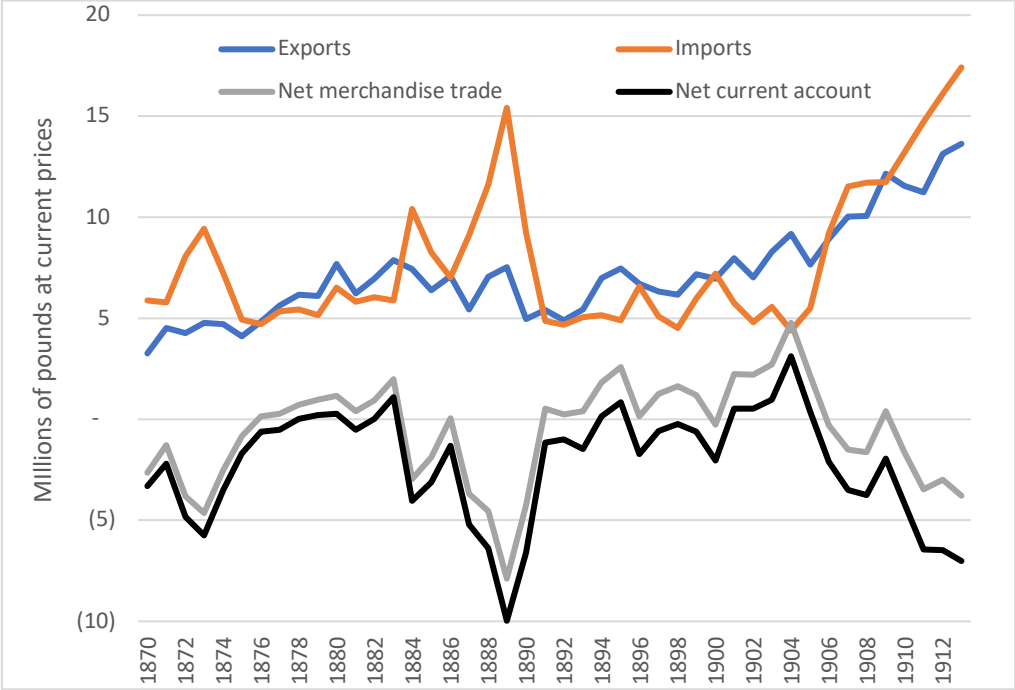
3.2.6 The evolution of Uruguay's balance of payments

Figure 3.11 shows the export and import series, as well as the merchandise trade balance and current account balance, in current prices. Export values rose from 1870 to 1883, fell until 1890, and then began rising again until the end of the period, more than doubling between 1898 and 1913. Uruguay's poor export performance in the 1880s and 1890s was in part due to falling prices (see footnote 61), but could also have been due to the fixed exchange rate, which

[64] The errors and omissions series reported for Finland, between 1890 and 1913, in Barlund (1992: 40) is of much smaller magnitude compared to Finnish GDP for the period (from Hjerppe & Pihkala, 2012, arithmetic interpolation between the figures for 1890, 1900 and 1913), with most years under 2% and a few years approaching 5%. However, trade statistics for this country do not suffer from the problem of use of official values. Furthermore, there is data on foreign assets, mostly deposits and treasury bills (short term capital) held by the bank of Finland overseas, information which is not available for Uruguay.

overvalued Uruguayan production costs relative to countries such as Argentina, which had a similar export basket but was on a depreciating inconvertible paper currency in the 1880s. Import values, after a spike in the early 1870s, remained relatively stable through the early 1880s. They rose dramatically from the middle of the decade, almost tripling their value between 1883 and 1889. However, over the next two years imports fell precipitously back to the levels of the 1870s, after which they remained essentially stable until 1904. From this year they rose sharply, almost doubling their 1904 levels by 1913. According to this data, the merchandise trade balance was negative before 1876, then positive until 1884, when it began deteriorating precipitously. It returned to positive territory in 1891, due to the massive reduction in imports, and remained so until around 1906, when it began to deteriorate once again.

Figure 3.11: Exports, imports and net merchandise trade balance, 1870-1913



Sources: AEU, Bonino et al (2012) and Siniscalchi et al (2021) and Appendix C.

Figure 3.11 also shows the current account balance (net merchandise trade plus the services and unilateral transfers balances) in black, in addition to the net merchandise trade account. This allows us to see the effect of adding services trade and unilateral transfers. The negative balance of services and unilateral transfers is typical for peripheral countries during the period, and is largely a result of the dependence of foreign capital and foreign transport and financial

services, as well as on the massive immigration inflows, with their correspondent remittances.[65] The impact of accounting for these items is to drag the balance of trade downwards. This largely erases the trade surpluses of the late 1870s/early 1880s and the 1891 to 1905 period. The net merchandise trade balance was positive in 24 of 44 years, while the net current account was positive in only 12 years. In effect, the net current account for Uruguay was almost always close to zero or negative. The only years in which large current account surpluses arose were 1883, 1895 and from 1901 to 1905.

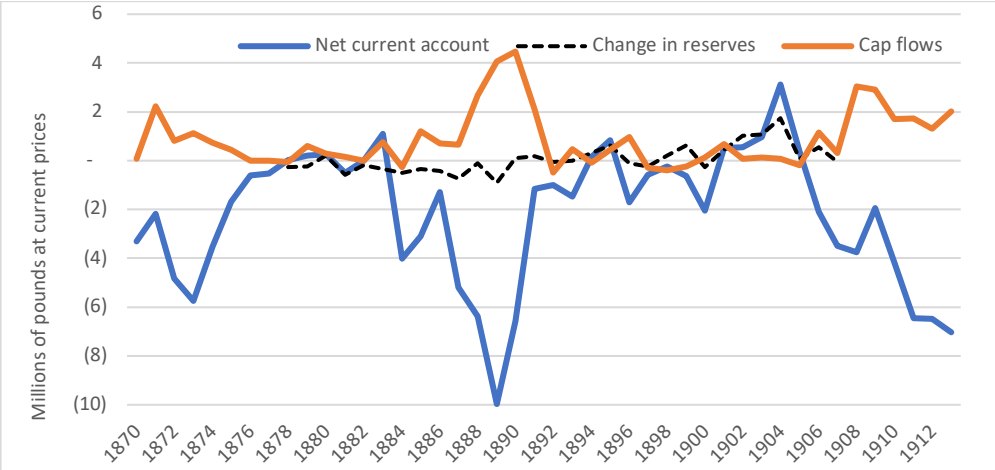
The other important fact about the services trade and unilateral transfers balances is their increasing importance over the period. There is an initial period, up to the late 1880s, where these items reduce the net trade balance by about 1,000,000 pounds per year, However, starting in the second half of the 1880s, and especially after 1891, the deficit in the services and unilateral transfers balance becomes much larger, reducing the net trade balance by almost 2,000,000 pounds or more per year. This increase is due mostly to interest and dividend payments abroad, which rose sharply in the late 1880s. The effect was to turn what would have been a positive net current account for the decade after the Baring crisis into a negative one.

As discussed above, exports and imports of goods and services in Uruguay almost never balanced each other out in any given year, that is, the net current account was almost always in deficit. Current account imbalances can be paid for in two ways: gold and capital flows. In Uruguay, as in many countries, large capital flows allowed imports to outpace exports for several years at the time.

Figure 3.12 shows the net current account and long-term capital flows. As can be seen, these two parts of the balance of payments appear to be almost mirror images of each other, revealing that most of the current account deficits were covered by long-term capital inflows, that is, public debt floated abroad and foreign direct investment.

[65] See, for example, Barosso-Franco (1987: 47) for Brazil and Prados de la Escosura (2009: 18) for Spain.

Figure 3.12: Current, capital and reserve account balances, 1870-1913



Sources: AEU, Bonino et al (2012) and Siniscalchi et al (2021) and Appendices B and C.

Figure 3.12 also shows gold flows (dotted black line). The massive current account deficit beginning in the mid 1880s was only partially compensated by capital inflows. The difference was paid in gold, which flowed out at a rate of around 500,000 pounds a year until 1889. The current account correction after the 1890 crisis led to a stabilization of gold flows, and small current account surpluses in some years drew gold in, despite an almost total cessation of capital inflows. Foreign investment resumed in the early 20th century, leading to a deterioration in the current account, as imports rose. This suggests net gold outflows were negative in the final years of the period, but lack of information impedes a direct estimate.

As mentioned in section 3.2.5, there are likely important errors in some of the estimated series. The greatest source of bias is likely the merchandise import series, due to the large number of goods considered, the difficulty in collecting price data for each good, and the assumptions used to compensate for these difficulties. In the 1870s and 1880s, the corrected merchandise import series is between 2,000,000 and 7,000,000 pounds higher than the official series. If the correction in import prices is over estimated by, say, 50%, that is, the import series is only between 1,000,000 and 3,500,000 pounds higher than the official series, or if corrected import prices are underestimated by 50%, that is, the import series is between 3,000,000 and 10,500,000 pounds higher than the official series, the overall story told by the balance of payments would not change significantly. We would still have periods of relative neutrality of the current account, which coincide with periods of low capital inflows, and periods of severe current account deficits, which coincide with the large waves of capital inflows. The same

could be said for the other estimated series, although the biases are likely much smaller, as well as their effect on the accounting carried out here.[66]

3.3 The balance of payments and sudden stops

What is the relationship between the current account and capital flows? Conventional international finance theories hold that current account deficits are a result of the desire for consumption smoothing on the part of governments and private agents. Capital flows are assumed to be accommodating to these needs. Changes in the current account arise from changes in expected income levels (Guidotti et al, 2004: 174). Other views suggest that capital inflows arise from a desire of foreigners to invest in a country, reflecting profitable investment opportunities and optimism about future export growth (O'Rourke and Williamson, 2006: 303; Borio and Distayat, 2015).

These theories have been challenged by balance of payments constrained models of growth, which emphasize the limits that the external sector and the need for foreign exchange can place on growth (Prebisch, 1986; Thirlwall, 2011). Export growth is limited by the demand of trading partners, and thus by their growth rates. However, even if export demand is rising, if the income elasticity of demand for imports is high, then the balance of payments can represent a restriction on growth even if exports increase, since import spending rises faster than export income. Capital inflows can lift the constraints on growth by allowing countries to increase imports by more than what can be paid for through export growth. In theory, a country can run a sustained current account deficit so long as foreign capital keeps flowing in and export growth keeps pace with debt service needs (Fishlow, 1995). Nevertheless, empirical studies using Thirlwall's approach show that while capital inflows do allow countries to grow faster, over the long run the effect is small relative to the effect of export growth (Thirlwall, 2011: 26-29; for Uruguay, Donnángelo and Millán, 2006).

However, in the context of late 19th century peripheral economies, much foreign investment went into the construction of railways, ports, urban infrastructures and other land developments that could connect new areas to world markets and boost economy-wide productivity (Stone, 1999). Capital flows, and the large current account deficits they financed not only allowed for consumption smoothing and satisfied demand for foreign exchange; they stimulated increased

[66] See appendix D for the balance of payments series.

production and commercialization of exportable products, raising growth rates and generating the foreign exchange necessary to import capital goods and service foreign debt.

If long-run growth rates were not much higher than what the balance of payments constrained theories predict, a crucial problem may reside in the volatility of capital flows to peripheral countries (Claessens and Gosh, 2013; Fishlow, 1985; 1995). Far from optimally adjusting to the long-term growth needs of developing nations, capital flows had a complex relationship to internal and external factors. Favorable conditions, such as abundant natural resources and investor optimism about the potential for export growth could draw in foreign investment. However, foreign investors reacted swiftly to changing domestic political and economic circumstances, and negative perceptions about the receiving country could cause rapid halts in capital inflows. International financial conditions could also affect investment flows, causing rapid reversals (Accominotti and Eichengreen, 2016). This phenomenon, often called a 'sudden stop', is one of the downsides of dependence on foreign investment, and was a common occurrence in the 19th century.

Sudden stops are considered to be "financial and external" (Calvo et al., 2008: 2); this implies that, during one of these episodes, capital flows change exogenously and the other items of the balance of payments must adjust as a consequence. Adjustment requires either increased export growth or a large reduction in imports (Guiditto et al., 2004: 172). If the former is not available, the latter must be processed through painful contractions in income, currency devaluation, changes in relative prices, or some combination of these. Reserve outflows can mitigate these effects, but this is limited by the available stocks of foreign exchange. For countries dependent on taxing foreign trade, like Uruguay in the 19th century, fiscal adjustments were often necessary. In the extreme case, default on government debt, with its consequent effects on reputation and access to international capital markets, was inevitable.

Much of the literature on sudden stops is concerned with their relationship to currency devaluations (Guiditto et al., 2004; Edwards, 2004). However, under the gold standard, adjustments had to occur through other means. Under fixed exchange rates, the current and capital accounts were directly related through their effect on international reserves. If, for example, a current account deficit was not fully compensated by capital inflows, gold reserves flowed out. If the exchange rate was to be maintained, this implied a fall in the money supply, with equilibrium returning to the balance of payments through the consequent effect on prices. This is the central dynamic of the price-specie-flow models of the gold standard (Bordo, 1999:

8). For small countries heavily dependent on foreign trade, most prices were fixed in international markets, and adjustment had to occur through reductions in income in order to bring demand for imports into line with the balance of payments (Ford, 1962; Eichengreen 2008).

Many authors apply precise definitions for sudden stops, which usually refer to minimum size of the drop in capital flows occurring over a maximum (short) period of time. The point is to capture changes in capital flows that are cause of, rather than reactions to, balance of payments adjustments (Calvo et al., 2008: 12). For example, Catão (2007: 254), who focuses specifically on the first globalization period, defines a sudden stop as "as a drop (from peak to trough) [in gross or net capital flows] of no less than two standard deviations of the deviations of respective series from a linear trend, and/or any drop that exceeds 3 percent of GDP over a period shorter than four years". From 1870 to 1913, the author finds between two and four sudden stops for a sample of 14 peripheral countries, using gross capital flows from Stone (1999).

A cursory inspection of figure 3.12 shows that Uruguay likely experienced at least one sudden stop during the period under study. Three episodes of large falls in capital inflows can be identified: a first in the early 1870s, a second fall in 1890 and a third towards the end of the period. However, applying criteria such as Catão's (2007) to a country like Uruguay creates problems. Although Uruguay received a large amount of foreign investment relative to its size (second only to Argentina in Latin America), the absolute amounts were small, and there were few individual investments. Thus, a loan floated on the London Stock Market, if successful, could imply a large rise in capital flows one year, but if no other investments were made at the time, there would be an equally large drop the next year.[67] This is not what is meant by a sudden stop, which tries to capture the dynamics of the waves of foreign investment characteristic of capital markets in the 19th century (and today). Another problem is the timing of sudden stops, beginning with the year in which capital inflows peak. Some investment projects, such as railways, once started, must be finished (to reach a city, mine or country border for example). This may mean that even though investor sentiment has soured, capital can continue flowing in, and even rise, the next year.

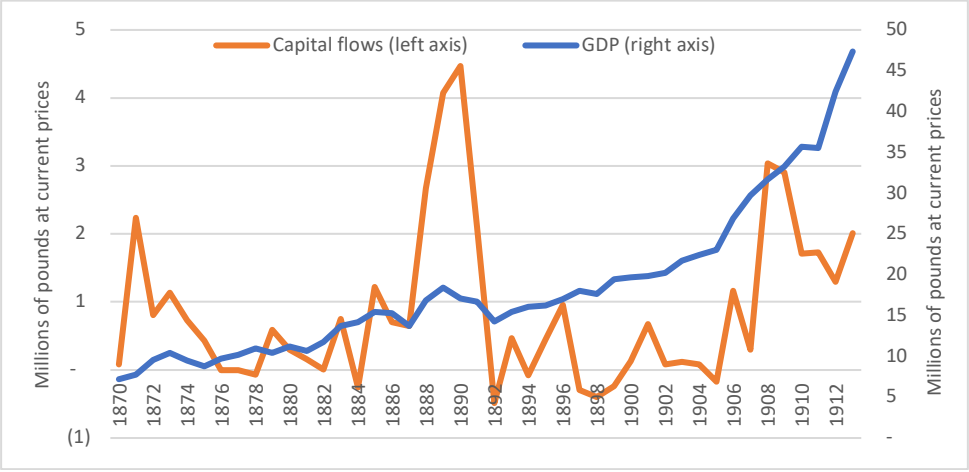
Applying Catão's (2007) first criterion to Uruguay using the capital flows series as estimated above, one sudden stop is detected, from 1890 to 1892. A second episode, from 1871 to 1876

[67] Governments did not always receive the full value of the loan all at once.

comes close to meeting the two standard deviation criterion (by 96%). The third period, from 1908 to 1912, doesn't qualify, with the reduction in capital flows equaling only one and a half standard deviations. In regard to the second criterion, seven sudden stops are detected, which include the two episodes just mentioned. The high number of sudden stops detected with the second criterion is likely due to the small country problem mentioned above. Here I have defined two sudden stops for Uruguay based on Catão's first criterion for the size of the fall in capital flows, although I have based the timing on when accompanying downturns began: 1873 to 1875 and 1889 to 1892.[68] A third period, from 1908 to 1912, cannot be considered a sudden stop, but is examined in comparison to the first two periods to highlight the differences in adjustments required by a sudden stop scenario. These waves of foreign investment coincide with cycles observed for other Latin American countries and at the global level (Kaminsky, 2017).[69]

Each of these sudden stops was preceded by a rapid increase in capital flows. Figure 3.16 shows capital flows and GDP from 1870 to 1913, while Table 3.1 shows the years of run-ups in capital flows and the periods of sudden stops, with the corresponding percentage growth in GDP and annual growth rates during the upswing and downswing periods.

Figure 3.16: capital flows and GDP, 1870-1913



Sources: Capital flows, see Appendix B; GDP, Román and Willebald (2019).

[68] These periods coincide with the general periods of downswings in capital flows for the sample of countries in Catão (2007).

[69] Several authors have highlighted the cyclical aspects of the Uruguayan economy and its effect on long-term growth (Bértola and Lorenzo, 2004; Carbajal and De Melo, 2007; Oddone, 2010). In general, they relate economic cycles, in part, to volatility in financial variables such as capital inflows and domestic bank deposits and credit. They furthermore identify institutional features that are in part a reaction to economic volatility, but at the same time tend to increase the amplitude of cycles. For example, Carbajal and De Melo (2007: 24) suggest that volatility in Uruguay causes the substitution of currencies, reliance on short-term contracts, frequent regulatory changes and an uncertain nominal anchor. These weaknesses in the country's financial architecture tend to amplify shocks and increase volatility.

Table 3.1: periods, change in GDP and annual growth rates of GDP during capital flow upswings and sudden stops, 1870-1913

Period	Movement in capital flows	Change in GDP	Annual growth rate of GDP
1870-1873	Upswing	44.4%	13.0%
1873-1875	Downswing	-15.8%	-8.2%
1887-1889	Upswing	34.1%	15.8%
1889-1892	Downswing	-22.5%	-8.1%
1905-1908	Upswing	37.4	11.2%
1908-1912	Downswing	33.8	10.2%

Source: Change and growth rates in GDP calculated from Román and Willebald (2019)

The first major wave of foreign investment in Uruguay occurred at the beginning of the 1870s,[70] driven by the Uruguayan government's second ever external loan, the *Emprestito Uruguayo* of 1871. This large loan led to a peak in investment, and despite falling off somewhat, private investment in the country's first railway line, an expansion of the Liebig's Extract of Beef Company plant in beginning in 1870, and major gas works, telegraph and land investments in 1872 led to continued capital inflows up to 1873. This led to growth rates in GDP of around 13% per year. However, the first sudden stop, from 1873 to 1875, erased over one third of the growth that had been achieved during the wave of foreign investment in the first years of the decade.

This sudden stop was accompanied by social and economic upheaval that began in 1873, sparked by an outbreak of yellow fever in Montevideo and the collapse of the Banco Franco-Platense, and which led to a major crisis in 1875 (Acevedo, 1933a: 731, 790). When capital flows dried up, the main adjustment mechanism seems to have been import compression, aided by the fall in output mentioned above. Import values fell by half, from around 9,000,000 pounds in 1873 to 4,900,000 pounds in 1875, while exports remained stable. Data on gold flows are not available for these years, but it is likely that reserves flowed out after 1873, considering the deficit in the balance of payments even with the dramatic fall in imports, as well as the wave of bank failures in 1877/76. The most important bank to fail was the Mauá, the largest bank in the country, which was unable to continue converting its notes in 1875 and was liquidated in 1876.[71] While the government took over the debts of the Banco Mauá and tried to impose

[70] Before 1870, the only large capital inflows were the Empréstito Montevideano-Europeo, the government's first external loan, in 1864, and the initial capital for the Liebig's Extract of Beef Company, established in 1865.
[71] Among the other banks that failed was the Banco Navía & Cia, which closed its doors in 1875, along with the Banco Union, the Banco Alemán-Belga, the Banco Mercantil de Rio de la Plata, the Banco Herrera Eastman & Cia and the Banco Villaamil & Cia (Banco Central del Uruguay [BCU]). These banks are assumed to have failed in 1875 or 1876, as they are not mentioned in any primary or secondary sources after these years.

inconvertible paper currency on the market, the surviving banks and commercial houses resisted by declaring that all debts had to be paid in gold, despite government decrees to the contrary, and refusing to do business with anyone who accepted depreciated notes (Acevedo, 1933a: 788-792). The fiscal situation of the government was gravely affected, in part due to the fact that most tax revenue came from levies on imports (Bertino and Millot, 1996). Tax revenues fell by one quarter between 1873 and 1875, and the government defaulted on its foreign debt in 1876.

The second major wave of foreign investment came at the end of the 1880s. Capital had started flowing in during the first part of the decade, with the government's third external loan in 1883 and investment in telephone networks, waterworks and the expansion and entrance of several British banks. However, from 1887 to 1889, investment soared, with two more external loans being floated in 1888, three major railway lines initiating construction[72] and further investments in urban infrastructures and financial companies. A major crisis befell the country in 1890, concurrent with a crisis in Argentina the same year. This episode, known as the Baring Crisis, due to its effect on the British bank of that name which failed when investors rejected the Argentine and Uruguayan government bonds it was marketing for sale in London, almost brought down the British financial system and forced the Bank of England to step in and organize orderly exit for Baring (Clapham, 1944). The consequent sudden stop was major. Net capital inflows peaked in 1890, at almost 4,500,000 pounds (500,000 higher than in 1889), mostly due to the construction of railway lines that had been started a few years earlier and could not be left half completed. By 1892 capital flows were negative. The annual growth rate had been on average 16% from 1887 to 1889, but fully two thirds of this was wiped out by 1892. The crisis had long-lasting effects, with GDP not reaching its previous peak until almost the close of the century.

This sudden stop shared many characteristics with the earlier episode. The main adjustment mechanism was through a reduction in imports, which fell from over 15,000,000 pounds in 1889 to less than 5,000,000 in 1892. Exports did not help the situation, in fact falling by 35% during the sudden stop. Almost 1,000,000 pounds of gold had flowed out in 1889, as it had throughout the second half of the 1880s, but during the sudden stop, gold flows stabilized, being slightly positive in 1890 and 1891, and slightly negative in 1892. Just as in the earlier

[72] These were the Central Uruguay Railway Eastern Extension, the Central Uruguay Railway Northern Extension and the Midland Uruguay Railway Company.

episode, the largest bank in 1890, the Banco Nacional, stopped converting its notes in July of that year. While the government tried to keep it running through the crisis, the bank was forced to close in the second half of 1891 (Acevedo, 1903: 268, 273). During the suspension of convertibility, the banking and merchant community resisted, just as they had in 1875, meaning that most business continued honoring debts in gold (Acevedo, 1903: 270-71). Tax revenues fell by 20% between 1890 and 1892, and the government defaulted on its external debt in 1891.

As mentioned earlier, the drop in capital flows from 1908 to 1912 was not a sudden stop; rather, it was simply a downward adjustment in capital inflows after a particularly large burst of activity following the resumption of public debt emissions in 1905, with the *Empréstito de Conversion*,[73] as well as the construction of tramways in Montevideo, the extension of railway lines in the interior of the country and the continued expansion of urban infrastructures. Although capital flows peaked in 1908 at 3,000,000 pounds, a new, large external loan was floated in 1909. In addition, the 1905 loan had converted old internal debts, and thus around 63% of it was in the hands of Uruguayan residents. However, demand for Uruguayan debt was so strong that almost half of these external bonds held by residents were exported overseas by 1913. There were also further investments in industrial enterprises, specifically meatpacking plants beginning in 1911. Thus, despite the drop off in capital inflows after 1908, foreign investment still flowed in an average of 1,5000,000 pounds per year over the following years.

Although capital flows fell by 57% between 1908 and 1912, adjustment was much different than in earlier episodes. In this case, there was no import compression to speak of. Import values almost doubled from 1905 to 1908, and rose by another 38% by 1912. Export growth, although it did not keep up with imports, collaborated by rising by around 30% during the capital flow upswing and another 30% during the fall. There is no data on gold flows after 1907, but reserves in banks peaked in 1909 and had fallen by 30% by 1912. This doesn't necessarily mean gold flowed out of the country; it could imply gold hoarding by residents, perhaps due to perceived banking sector weakness. However, the large balance of payments deficit suggests that it was likely met by large gold outflows. Nevertheless, during this episode, convertibility of notes, -the exchange rate-, was not threatened. Furthermore, GDP grew at an annual rate of 10% and the government's fiscal situation was not threatened during this period

[73] Between the consolidation loan of 1892 which allowed an exit from the crisis initiated in 1890, and the 1905 *Emprestito de Conversión*, there was only one external loan floated, in 1896, to finance the founding of the BROU.

In none of these episodes did exchange rate depreciation act as an escape valve, although during the two sudden stops, it came quite close. As mentioned, the government suspended convertibility temporarily during both episodes. What prevented depreciation was the banking and commercial community actively resisting the government's attempts to exit the gold standard. The reason they came so close to devaluing during the sudden stops can be seen by examining the monetary situation during the preceding booms.

3.4 Banks, the money supply, the exchange rate and adjustment[74]

Under the gold standard, if the exchange rate is to be preserved, over the long run bank liabilities (notes in circulation plus deposits) and credit must be kept close enough in line with banking sector reserves so as for demand for gold to be met without problems. Banks can increase credit and liabilities as gold flows into their coffers, but not beyond prudent limits, and must reduce them as gold flows out. Figure 3.17 shows reserves, liabilities and credit of the Uruguayan banking sector from 1870 to 1913. All three episodes of capital inflows we have been examining are associated with large increases in liabilities and credit, and a growing gap between these and reserves. The two sudden stops also saw a drop in reserves. In the first episode, reserves fell by 40% in the year capital flows peaked. In the 1889 episode, reserves also fell off slightly in that year compared to the year before, and then dropped by 47% by 1891. In 1908, however, while capital flows began to fall, bank reserves continued to rise until 1910, after which they fell sharply.

Figure 3.17: reserves, liabilities and credit of the banking sector, 1870-1913

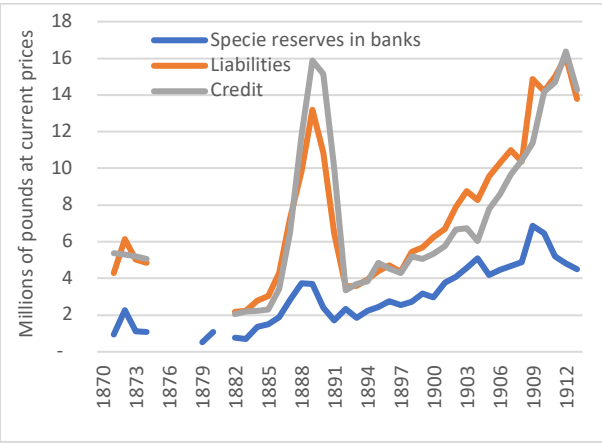
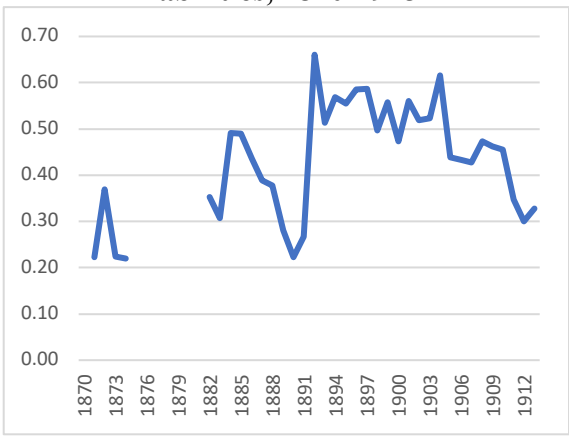


Figure 3.18: ratio of bank reserves to liabilities, 1870-1913



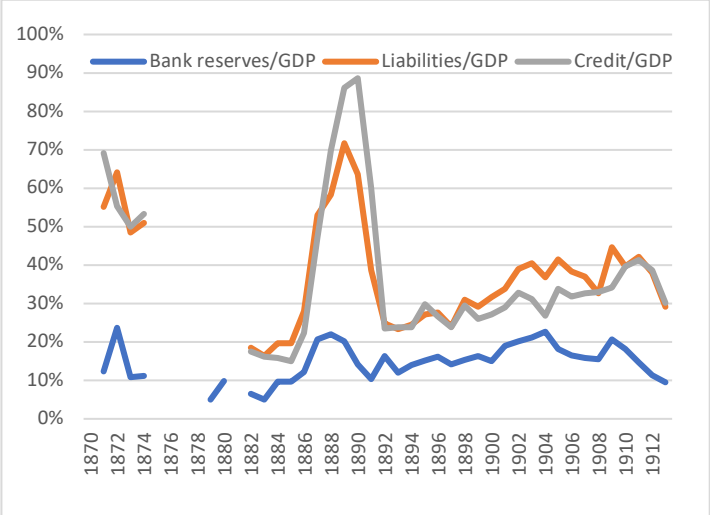
Sources: see appendix B

[74] The banking sector balance sheet data used in this section is developed in Appendix A, section A.2.

Figure 3.18 shows the ratio of bank reserves to liabilities. In 1873, this ratio had fallen to 22%, that is, only about one fifth of notes in circulation and deposits were backed by reserves. When capital flows peaked in 1889, this ratio was 28%, and dropped to 22% in 1890. In 1908, however, the reserve ratio was 47%: almost half of liabilities were backed by reserves. Rising liabilities meant that the ratio deteriorated, but was still at 30% by 1912.

Figure 3.19 shows reserves, liabilities and credit as a percent of GDP, which helps put the large rises in liabilities and credit during each episode of capital flow reduction into perspective. During all three moments of capital inflows, reserves in banks rose to around 20% of GDP. However, in the 1873 episode, liabilities were between 55% and 65% of GDP, while credit was 55% to 70%. In the 1889 episode, liabilities rose to 71% of GDP in 1890, and credit reached 89% in 1891. This contrast greatly with what occurred in the last episode studied. In the early 20th century, liabilities and credit had kept pace with GDP growth. In 1908, they both equaled around 32% of GDP.

Figure 3.19: reserves, liabilities and credit of the banking sector as a percent of GDP, 1870-1913



Source: For monetary series, see appendix A. GDP from Román and Willebald, 2019.

The above information helps explain why the exchange rate was put in danger in the 1870s and 1890, with the government decreeing inconvertibility, while there was no such problem in the later period. Although gold did flow in to banks' coffers during periods of capital inflows, money expansion greatly outstripped this growth, driving the reserve ratio to dangerously low levels. These rapid monetary expansions also fueled speculative bubbles (Acevedo, 1933a: 731; 1934a: 438-39; Winn, 2010: 166-173). A perception on the part of investors of overinvestment, monetary imprudence and speculation led to sudden stops in both periods. In

both cases, the temptation to devaluate was strong, and only the relative independence of the banking and commercial communities kept the government's efforts to exit the gold standard from sticking. Low reserves meant that the monetary expansion had to be liquidated through painful contraction, which led to reductions in output and economic stagnation.

By the beginning of the 20th century, the banking sector had accumulated reserves to a much greater degree. Furthermore, although bank money and credit grew rapidly, it did not outpace GDP, and therefore did not spur speculative activity like in the earlier episodes. In addition, the high level of reserves likely meant the banking sector could meet the downturn in capital inflows by allowing gold to flow out. This is in part why we do not see a current account correction in these years. Meeting a capital downturn with gold outflows would not have been sustainable indefinitely. However, with strong export and output growth, capital would likely have begun to flow back in soon (indeed, capital flows increased in 1913). The stronger economy and the more solid position of the banking sector at the end of the period likely allowed the country to avoid a major current account correction like in earlier episodes.

3.5 Conclusions

This chapter presents a reconstruction of Uruguay's balance of payments, including new estimates of the capital account and the services trade balance and the unilateral transfers balance. It also uses corrected series for merchandise trade and provides an estimate of gold flows. In addition, the banking sector balance sheet is reconstructed, which allows for estimation of banking sector reserves, monetary aggregates and for the calculation of banking sector liquidity. This type of information is scarce for peripheral countries during the period, and these reconstructions therefore constitute one of the main contributions of this thesis.

The time series presented here are used to investigate the phenomenon of sudden stops in Uruguay during the first globalization. Since the country was on the gold standard for most of the period, changes in the domestic money supply were intimately tied to the balance of payments. One of the most consequential elements of the balance of payments was capital flows, which suffered several sharp declines over the period.

Three periods of downturns in capital inflows are studied: 1873 to 1875, 1889 to 1892 and 1908 to 1912. The first two can be defined as sudden stops. The third cannot. Under the gold standard, currency devaluation was not an option for adjusting to a sudden stop. However, during Uruguay's two episodes of this nature, depreciation was tempting for the government,

and the exchange rate was almost broken. This can be explained by the fact that Uruguay was not very prudent in monetary terms with regard to the gold standard. Monetary expansion during the capital inflows of the early 1870s and late 1880s was enormous, far outstripping GDP growth. This made reserve ratios to fall. Since preservation of the exchange rate was made a priority, and low gold reserves made reserve outflows a non-viable option for adjustment, a massive current account correction was needed in both sudden stop episodes. Imports were compressed in both cases, since exports did not respond (which is to be expected without currency depreciation). There was also a severe downturn in output, and several years of stagnation after each episode. During the reduction of capital inflows starting in 1908, the banking sector was in a much different position. Gold reserves were high, as were reserve ratios. Furthermore, monetary growth, though high, had been in line with GDP growth. This allowed imports to continue rising despite falling foreign investment. The adjustment mechanism likely occurred via gold outflows, although there is no clear data on this.

The story of sudden stops highlights the difficulties that peripheral countries had in adhering to the gold standard. There was a temptation to break the rules of the game and expand money beyond what was prudent. However, foreign investors responded to financial news in borrowing countries, and could withdraw capital if they came to believe there was a risk that investments would not be repaid. Many countries, when faced with falls in capital inflows and the consequent pressure on the balance of payments, decided to exit the gold standard and allow their currencies to depreciate. Uruguay, when faced with this situation, remained steadfast, and suffered the consequences in terms of erasure of earlier growth.

Chapter 4: Uruguay, Argentina, the gold standard and the 1890 Crisis

4.1 Introduction

Financial crises appear to be recurrent and catastrophic for developing countries, leading to halts in foreign investment, currency devaluation, debt default and credit contractions. The need for foreign investment in developing countries exposes them to international shocks. Export price volatility or sudden stops in capital inflows can put strain on the capacity to pay back loans and thus precipitate crises. An important aim of government policy is avoiding financial crises. However, inappropriately managed exchange rate, monetary and fiscal policies can not only fail to avoid crises, but can directly contribute to them (Claessens et al., 2014). Large fiscal deficits, over indebtedness and debt monetization put countries in a weak position to respond to shocks, and can themselves precipitate crises if they lead investors to lose confidence or cause inflation.

One of the most famous of these events was the Baring Crisis of 1890, named after the London merchant bank whose inability to meet payment obligations related to Argentine securities set off an international financial panic. The crisis gravely affected the Argentine economy, and had knock on effects in many other Latin American countries. Furthermore, the crisis shook the British capital market, forcing the Bank of England to ask its counterparts in other European countries for loans in order to provide liquidity and bolster confidence. The crisis also impacted countries further afield, such as Spain, Portugal, Australia, New Zealand and Turkey, which had trouble accessing international capital markets in the early 1890s (Marichal, 1989: 121; Eichengreen, 1992: 250). Uruguay was perhaps the country most directly affected, experiencing a severe downturn concurrently with the Argentine crisis.

There is an extensive literature about the Argentine Baring Crisis, with a major area of debate centering on its causes. Did overeager investors place too much faith in the capacity of the Argentine economy to produce returns which could sustain indebtedness? Did the structure of financial markets blind investors to the country's deteriorating position? Or was Argentine

government policy to blame? In particular, the role of Argentina's floating exchange rate has been the subject of intense scrutiny. Williams (1920) and Ford (1956; 1962) used Argentina as a case study of how balance of payments adjustments operated under an inconvertible paper currency. However, despite their emphasis on the exchange rate, they both conclude that external factors were the major cause of the crisis, in particular over lending in the 1880s and the subsequent ebbing of capital flows at the end of that decade. Other authors have disagreed, highlighting the role played by monetary expansion, paper currency depreciation, inflation, and their relationship to fiscal deficits, in the lead up to the crisis (Cortés Conde, 1989; della Paolera and Taylor, 2001).

The Uruguayan experience offers an important contrast to the Argentine case. Unlike Argentina, Uruguay was on the gold standard almost without interruption from 1876 to 1913. It exited briefly when currency inconvertibility was declared in July of 1890, due to the crisis, but returned to gold soon after at its earlier par value.[75] The country managed most of its time on the gold standard with no central bank to speak of, operating under a free banking system until the early 20th century. This was very different from Argentina's system where large state banks dominated the banking sector. It also goes against the predictions of the standard theory on the gold standard, which highlights the reinforcing mechanisms present in core countries and how they were absent in peripheral countries, and thus explain why these in general had a difficult time remaining in the regime (Eichengreen, 2008: 37-41).

The main theme of literature on the Baring Crisis regards the causes of financial instability in peripheral countries. Were profligate governments to blame? Or can the causes be traced to the nature of international financial markets during the period? This chapter investigates these questions through a comparison of the Argentine and Uruguayan crises, allowing us to put some of the research on the former country into relief. In particular, the assertion that Argentina's monetary policy was a key factor in the crisis can be tested in light of Uruguay's different policy environment. While Argentina used inconvertible paper currency starting in 1885, the Uruguayan commercial and banking communities resisted attempts to depart from monetary orthodoxy throughout the 1880s (Barrán and Nahum, 1971). While monetary expansion did occur as a result of the actions of the Banco Nacional in Uruguay and the banking boom of the final years of the 1880s, only as a result of the crisis in 1890 was the country forced to declare inconvertibility, returning to convertibility at par soon after. The specific

[75] See appendix E for a discussion of exactly how long Uruguay was off gold.

questions to be explored regard the role of exchange rate policy in the 1890 crisis. What were the economic effects of Uruguay's adherence to the gold standard in the leadup to the crisis? This question is explored in two ways. First, through a direct comparison of both countries' banking sectors, monetary aggregates and debt in the buildup to the crisis. Second, through an examination of the financial links between the two countries, and the role they may have had in Uruguay's ability to maintain a fixed exchange rate.

The evidence presented here shows that, up to around 1887, Uruguay's banking sector played by the rules of the game regarding the gold standard, maintaining gold reserves in sufficient amounts to back paper currency issue and deposits, and economic adjustments occurred as one would expect for a small peripheral economy. After 1887, the rules were broken by some banks, with note and deposit growth outstripping growth of bank reserves, finally putting the exchange rate at risk in 1890. Uruguayans reacted to monetary expansion much as Argentines did, by hoarding gold, draining reserves from the banking system. The burden of public debt in relation to government revenues was lower than that of its neighbor, implying that Uruguay avoided one of the negative consequences of flexible exchange rates. Furthermore, there is evidence that Uruguay benefited from the monetary chaos of its neighbor in the 1880s by receiving gold inflows from her, which cushioned the effects of overall gold losses to the rest of the world. These gold inflows were likely induced by gold adherence and the relative safety offered by Uruguay's banking system.

The rest of the chapter is organized as follows. Section 3.2 examines the historiography of the Argentine and Uruguayan crises, and offers brief descriptions of events in each country in the 1880s and early 1890s. Section 3.3 analyzes the evolution of the money supply in both countries, focusing on the stock and distribution of gold between banks and the public. Section 3.4 discusses the burden of public debt in government revenues, while section 3.5 looks at the financial links between Argentina and Uruguay and the possible effects they might have had on Uruguay's banking sector. Section 3.6 offers some concluding remarks.

4.2 Historiography and history of the crisis

4.2.1 The historiography of the Argentine crisis

The Argentine version of the 1890 crisis has been studied in depth. Discussion of the crisis generally frames the debate as being about the relative weight of internal versus external factors. Contemporary writers placed emphasis on internal factors, especially over issue of

notes by the banking system and government deficits (Cortés Conde, 1989: 212-13). However, in the first major treatment by an economic historian, *Argentine International Trade under Inconvertible paper money: 1880-1900*, Williams (1920: 102) stressed the importance of external factors. Although he recognized the role of the issuance of paper currency, he focused on the balance of payments as the primary cause of financial collapse and currency depreciation. "There can be no question that … the predominating cause of the crisis was borrowings, intensified, to be sure, by inconvertible paper currency, the depreciation of which was due quite as much to the collapse of borrowings as to the over-issue of paper money" (Williams, 1920: 104). Gold outflows in 1889 were caused by the ebbing of capital inflows and the increase in interest payments on foreign debt. The reduction in capital inflows was a reaction by investors to what by then had become clear was massive over borrowing. "Such borrowings as this would in all likelihood have occasioned a panic even without the presence of depreciated paper" (Williams, 1920: 104). The fall in foreign investment, together with the burden of interest payments, caused the government to default on its debt in 1890, setting off the panic known as the Baring Crisis.

For Ford as well, the main cause of the crisis was the relation between fixed interest loans and the balance of trade. Shortfalls in export earnings could be covered by capital inflows to meet interest payments and import demand as long as foreign investors remained confident in the country's potential for producing economic returns. The "excessive issue of notes and extravagant banking policies formed a contributory feature of the crisis of 1890" (Ford, 1962: 100). For Ford, the most important consequence of depreciating paper currency was its distributive effects. Landowners received income in gold, while most costs, -wages, rents and domestically produced (non-traded) goods-, were in depreciated paper currency. Furthermore, paper currency denominated debts would reduce their real value compared to gold incomes. Landowners therefore viewed currency depreciation favorably, and indeed lobbied for it (Ford, 1956: 131-32).[76]

The role of the balance of payments and especially the importance of capital flows has remained central to most accounts of the crisis in the century since Williams' publication. It was what Ford (1962: 127) called a "crisis of development" or Fishlow (1985: 403) a "developmental default". It is essentially a problem of miscalculation on the part of market

[76] Conversely, landowners were hurt by currency appreciation, and thus lobbied for a return to fixed exchange rates in times of rising export prices and falling gold premiums (Ford, 1956: 132, footnote 1).

participants on how long it would take for long term investments in railways and land improvements to mature and generate export earnings. The role of governments, and their fiscal, monetary and exchange rate policies play only a secondary role in this view.

Why this miscalculation occurred is difficult to know. Some authors, delving into the microeconomics of international financial markets, have pointed out how certain aspects of the international financial system may have skewed incentives in a manner that led to overinvestment. For example, Flores (2011) posits that competition between banks for the privilege of handling initial public offerings for Argentine government debt issues allowed Argentina to continue borrowing throughout the 1880s, at decreasing costs, despite deteriorating economic fundamentals. Flores (2010) suggests that information asymmetries, due to the control of information flows by Baring, also contributed to investor enthusiasm for Argentine debt even though the government's weak position could have been known to the investing public.

However, some have questioned the idea that the cause of the crisis can be traced primarily to external factors. For example, Eichengreen (1999: 250) states that "monetary and fiscal excesses were a principal element in the crisis", while Bernholz (1984: 673) stresses that external factors cannot be blamed: recessions in Argentina's major trading partners post-dated the crisis, the general level of exports remained high through 1890 and international interest rates remained stable. Marichal (1989: 121) claims the 1890 crisis was "unleashed fundamentally by the crash of the Argentine economy. More than any other factor it was the bankruptcy of the Argentine state banks and of the government itself that led to the downfall of Baring Brothers". Cortés Conde develops this notion in his work on the fiscal and monetary history of Argentina, pointing to the policies of the Argentine government –large fiscal deficits, massive monetary expansion and government intervention in the gold market to slow currency depreciation– in the years leading up to the crisis as the main causes. Massive spending on public works was covered by enormous increases in external debt, which almost doubled from 1884 to 1890. At the same time, note issue expanded drastically, almost tripling between 1887 and 1890, while the gold premium almost doubled over the same period (Cortés Conde, 1989: 182, 190, 210). Ever since the country had exited the gold standard in 1885, the unit of measure for payment of taxes had been paper pesos, meaning that currency depreciation eroded government revenues. The banking reform of 1887 had placed the gold reserves of the guaranteed banks in the hands of the Banco Nacional, who sold them in an intent to stall

currency depreciation. For Cortés Conde, the explanation for the crisis lies in these monetary factors. Argentina's long history with fiat money and depreciation meant that the public reacted to deficits and note expansion by hoarding gold (what the author terms "capital flight"), neutralizing the effect of government intervention in the gold market (Cortés Conde, 1989: 220). The result was mass gold exports, with consequent effects on the balance of payments and the exchange rate. These authors do not claim that external forces did not matter, only that government policies directly contributed to the crisis.

Monetary factors also figure centrally in Della Paolera and Taylor's (2001) explanation of the crisis, but they frame the discussion in terms of the policy trilemma: the incompatibility of maintaining exchange rate stability, free movement of capital and an independent monetary policy. For these authors, inconsistency in government policy was the main culprit. On one hand, it sought to stabilize the currency and prices, communicating its intention to return to the gold standard and intervening in the gold market to prevent currency depreciation. On the other, it used the banking system to finance deficits in order to fuel the economic expansion of the late 1880s. When capital inflows slowed, it chose to abandon exchange rate stability, with consequent impacts on prices, government revenues and the public's willingness to hold paper currency. They refer to the 1890 event as the first modern emerging market crisis, because it involved many of the same factors we have seen in financial collapses in recent decades. These authors contrast Argentina's experience in the 1880s with later years, when it managed to establish a "nominal anchor" by adhering to the gold standard from 1900 to 1914, which set the stage for the country's spectacular economic performance in the early part of the 20th century.[77]

Della Paolera and Taylor (2001) view the government's actions in the 1880s in a negative light: monetary and financial stability are necessary ingredients of long-term development. The government was not willing to practice the fiscal discipline necessary to provide this "nominal anchor", thus precipitating the crisis and negatively affecting economic performance. However, authors like Duncan (1983) take a different view: the financial collapse of 1890 can be regarded as a failure of the monetary regime, but must be viewed in light of the uses to which foreign investment, especially public borrowing, was put. Deficits financed massive

[77] Della Paolera and Taylor (2001:17) suggest that the policy reaction to the crisis –an orthodox monetary reform centered on the creation of a currency board– "changed the course of Argentine economic history, and still, through its influence on the design of Cavallo's convertibility plan, is making itself felt today". It is ironic that their book was published in 2001, the same year as the failure of Cavallo's convertibility plan and Argentina's greatest financial collapse since the Baring Crisis.

railway investment, public works, support for immigration and other developmental activities, which laid the groundwork for the country's move to higher value pastoral products and the creation of export agriculture in the late-19th and early 20th centuries. The financial collapse was an inevitable consequence of the government's fiscal policies, but may have been a price worth paying. Fishlow (1987) also suggests that inconvertible currency and monetary expansion could have been the rational choice for a country in Argentina's position.

One strand of literature has studied the issue of contagion, that is, the financial consequences of the Baring crisis for other countries. For example, Triner (2001) focuses on the effect of the Argentine crisis on Brazil, arguing that open capital markets and similar fundamental conditions in both countries caused capital flows to dry up for Brazil after the Argentine collapse. Mitchener and Weidenmier (2008) examine bond yields for 28 emerging markets. They find that yields rose for Latin American economies in the years after the crisis, although not for other countries, and conclude that contagion appears to have been a regional affair. These authors include Uruguay in their sample, thus treating it as another case of contagion. However, in the case of Argentina's eastern neighbor, this may not be the most useful way of looking at the crisis. The investment booms in Uruguay and Argentina in the second half of the 1880s and the subsequent crisis may be looked at as part of the same process, due to their timing and the close economic ties between the two countries.

The Uruguayan crisis has been less studied than its neighbor's. Its investment boom and financial crisis resembled events in Argentina in many ways. According to Winn (2010: 215), Uruguayan contemporaries blamed mostly external factors, such as the cyclical nature of British capital flows, the greed of British financiers and the Argentine crisis, while the British perspective placed blame on Uruguayan politicians and the absence of a forward-thinking mentality on the part of the Uruguayan public. The 20th century historiography of the crisis has tended to focus on the speculative nature of the 1880s boom and on collusion between the government and a small clique of financiers. The best account of the crisis can be found in Acevedo (1903: 260-85; 1934a: 438-39), where the government's role, and especially that of the Banco Nacional, is detailed. Acevedo places a large part of the blame for the crisis on the Bank's profligacy in terms of credit expansion and speculative activity. Winn (2010: 166-173) claims that a large part of the enormous flows of foreign capital arriving in the 1880s were directed towards speculative activity, rather than developing the country's resources, and that a fragile institutional and economic structure contributed to the crisis. One of the only writers

to directly compare the situation of Argentina and Uruguay, Morató (1926: 35), remarks that while the 1880s boom in the former was associated with increasing price inflation, the same did not occur in the latter, and that outside the stock market and real estate, prices actually fell. These approaches to the Uruguayan crisis have tended to be purely descriptive, and quantitative analysis has been lacking.

Thus, studying the Uruguayan crisis can provide an interesting contrast to Argentina's experience. The country experienced an investment boom of similar magnitude to that of its neighbor in the 1880s and a crisis with many of the same characteristics in 1890. However, one important difference between Argentina and Uruguay was their differing experiences in terms of adherence to the gold standard. The rest of this chapter studies the crisis in comparative terms, putting the focus on consequences of this policy difference.

4.2.2 The boom of the 1880s and the 1890 crisis in Argentina

The 1880s was a prosperous decade for Argentina, with expansion of livestock and agricultural production, the founding of new industries, rising exports and massive capital and immigration inflows. A short-lived attempt at joining the gold standard, made law in 1881 and operational in July of 1883, failed at the end of 1884, when the inconvertibility of paper pesos was decreed (Della Paolera and Taylor, 2001: 47). This, however, did not deter massive foreign investment flows to the country through the rest of the decade. In the ten years from 1881 to 1890, Argentina received over 135 million pounds in foreign investment. These inflows peaked in 1889 at around 22% of GDP (see Figure 4.1, below). Over half was foreign direct investment in private undertakings, mostly railways (40% of total investment), urban infrastructures like tramways, waterworks and gas, as well as industrial, agricultural and financial enterprises. However, 46% was absorbed by the state, which emitted bonds with a value of over 60 million pounds.[78] The state used funds to cover current spending, but also for investments in infrastructure, such as railway lines (some built directly, others by private investors with a state-backed interest guarantee) and port works.

However, by mid-decade, cracks had already begun to appear in the financial structure upon which the boom was built. The second half of the decade was characterized by massive monetary expansion, currency depreciation and inflation. The Banco Nacional and the Banco

[78] Calculated from Stone (1999), and figures kindly provided by Rui Esteves for French and German investment in Argentina, from the database underlying Esteves (2011) and Esteves (2012). GDP from Ferreres (2005).

de la Provincia de Buenos Aires (BPBA), the country's two largest banks, expanded note issue more than threefold and deposits by more than twofold between 1885 and 1890 (Cortés Conde, 1989: 158, 190). Other banks of issue existed in the interior of the country, but their notes did not circulate outside of their respective provinces. The Law of Guaranteed banks, intended to unify the country's note issue, guaranteed the notes of provincial banks if they purchased, with gold, specially designated bonds of the federal government. Provincial governments floated external debt in London in order to acquire gold for the operation; investors eagerly purchased this debt that in theory had a 'triple guarantee' (that of the Provincial government, the Provincial bank which they were intended to finance and, most importantly, the Federal government; Cortés Conde, 1989: 195-97). These banks had added another 20% to the economy's note circulation by 1890. Private banks expanded credit sevenfold between 1884 and 1887 (Regalsky, 1999: 41).[79] In consequence, the exchange rate between paper currency and gold rose fourfold between 1884 and 1890, and prices jumped 25% in 1887, and rose another 17% by 1890 (Ferreres, 2005).

Debt service weighed heavily on government budgets, made worse by currency depreciation which reduced the gold value of tax revenue. As long as new capital flowed in, spending could keep pace with the needs of the expanding economy. However, in the face of deteriorating revenues, the government decided in early 1889 to pay off in paper money internal debts denominated in gold, which technically meant it was in default (Della Paolera and Taylor, 2001: 24). This sparked concern among investors, and capital inflows ebbed that year, falling to less than half their value in 1888.

In order to halt paper currency depreciation (what contemporaries referred to as a rise in the gold premium), the government began intervening in the foreign exchange market in 1886 (Cortés Conde, 1989: 220-21, 246-47). The sale of the gold reserves of the Banco Nacional was at first effective, the exchange rate rising only about 7% between 1886 and 1888. However, it jumped 28% in 1889, by which time the reserves of the bank were almost exhausted. The problem was that the intervention of the Banco Nacional meant gold was undervalued with respect to paper (the policy had essentially created a gold export point), prompting the shipment of gold overseas. As a response, in March of 1889 the government resorted to banning trading of gold on the stock market (Cortes Conde, 1989: 221).

[79] Unless otherwise noted, monetary and banking figures for Argentina are quoted in paper peso terms. If quoted in terms of gold equivalency, growth rates would be lower.

One of the key moments of the crisis revolves around the flotation by Barings of shares of the Buenos Ayres Water Supply & and Drainage Company Ltd. Barings began circulating the prospectus in London in January of 1889. The amount offered on the market was massive: 8.5 million pounds in shares and debentures, for purchase of the concession, partially constructed works and to expand the water and sanitation network (Ferns, 1992: 251). By the end of the year, it was clear that the flotation had been unsuccessful, leaving Barings exposed and revealing the reticence of investors to continue funding the Argentine economy. This, along with news about exhaustion of gold reserves, prompted a run on the Banco Nacional and the BPBA in early 1890. The government responded by allowing the banks to increase their note issue, with consequent effects on the exchange rate, which rose by 32% in 1890 and 55% in 1891 (Della Paolera and Taylor, 2001: 70-71).

In July of 1890, the Banco Nacional communicated to Barings that it was suspending debt service on Argentine external debt. Rioting in Buenos Aires over the next weeks forced the resignation of the President, Juárez Celman (Ferns, 1992: 258). The new government, led by Celman's Vice President, Carlos Pellegrini, undertook the task of reining in the government's finances and reforming the financial system, as well as renegotiating Argentina's debt with external creditors. Barings' situation became public in November of 1890, when the authorities in London arranged a rescue package for the bank (Clapham, 1944: 327, 335).

In January of 1891 a funding loan was extended to Argentina, in order for it to meet its payments on external obligations. The conditions tied to the loan prevented expansion of note issue, causing the Banco Nacional and the BPBA, the two largest banks, to close their doors in April of that year (della Paolera and Tayor, 2001: 100-05). This set off a generalized banking panic, straining the reserves of private banks, causing a wave of failures and a contraction of credit.

The crisis prompted policy makers to institute a drastic reform of monetary, banking and fiscal institutions. The monetary reform centered on the creation of a currency board, which was designed to eventually issue paper currency in exchange for gold at a one-to-one ratio, making changes in note circulation respond strictly to gold movements and removing the ability of the government to use money creation to cover deficits. The "*Caja de Conversión*" began operating at the end of 1890, with the explicit goal of returning the country to the gold standard at its earlier parity. This idea, however, was eventually abandoned, as the deflation necessary to achieve this would have been ruinous. After several years of currency appreciation beginning

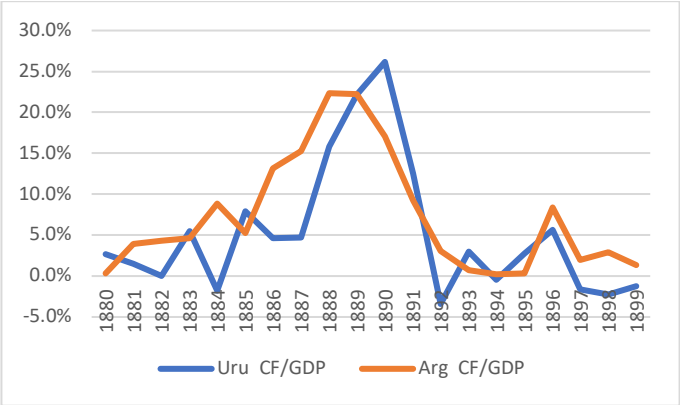
in 1894, the exchange rate was finally fixed in 1900, at 2.27 paper pesos per gold peso (della Paolera and Taylor, 2001: 119). At the same time as the currency board was established, note issuance was denied to banks, and the two largest banks, the Banco Nacional and the BPBA, along with several others, were allowed to fail. The Banco de la Nación was founded in 1891, to replace the failed Banco Nacional. Fiscal reforms broadened the tax base in order to make revenues less dependent on international trade, and a long, painful, external debt renegotiation ensued, which temporarily lowered the burden of debt service until the country could get back on its feet (Della Paolera and Taylor, 2001: 33, 100-09).

4.3.3 The boom and crisis in Uruguay

Uruguay in the 1880s shared many aspects with its larger neighbor. A similar climate of general prosperity induced rising foreign investment, mostly British, and immigration flows, mostly from Southern Europe. The two countries also shared similar economic structures, in that exports were largely pastoral products. However, by this decade Argentina already had frozen meatpacking plants in operation and had begun to move into agricultural exports, like wheat and corn, while the frozen meatpacking industry would not arrive in Uruguay on a large scale until the 20th century and its export basket remained almost entirely pastoral even in 1913 (AEU). Thus, while Uruguay likely enjoyed the highest exports per capita in all of Latin America in the 1870s (Bértola and Ocampo, 2010: 98), export values did not rise during the 1880s (Bonino et al., 2015). In regard to the factors contributing to the crisis, developments in Uruguay paralleled those in Argentina in many ways. A foreign investment boom, accompanied by few banking restrictions, an expanding money supply and loose credit, led to, first, the failure of the largest bank in 1890, and a year later, to government default on external debt.

Figure 4.1 shows Argentine and Uruguayan capital inflows as a percentage of the GDP of each country. The former received rising capital inflows from the beginning of the decade, while in the latter, capital did not begin flowing in consistently until 1885. In Uruguay net capital inflows reached a high point in 1890 at just over 25% of GDP. Both countries experienced a severe fall in capital flows after the crisis, with foreign investment remaining low for the following decade.

Figure 4.1: Argentina and Uruguay, capital inflows as a percent of GDP, 1880-1899



Sources: For Argentina, capital flows are the sum of British investment from Stone (1999) and French and German investment from Esteves (2011 and 2012), while GDP is from Ferreres (2005). For Uruguay, capital flows, see Appendix B, GDP from Román and Willebald (2019).

One major difference between Uruguay and its neighbor was the former's strict adherence to the gold standard. First established in 1865 when silver was demonetized, the country experienced financial and monetary chaos in the 1860s and 1870s and suspended convertibility several times. However, from 1876 on, it maintained convertibility of banknotes at a fixed exchange rate until July of 1890, when convertibility was briefly suspended, setting off the Uruguayan version of the crisis. Uruguay's banking system was quite different from Argentina's in the early 1880s. The latter country had several large state-run banks –the Banco Nacional, the BPBA and several other provincial banks–, which operated as state banks and were in charge of note issue, and competed with private banks. Uruguay had no state bank, and only two private banks in 1880, with a strict separation between the banking sector and the government codified in the banking and currency Laws of 1865 and 1876, and jealously guarded by the banks (Acevedo, 1903: 249-253; 1933b: 71-73). Attempts in the early 1880s to found a state bank were resisted by the private banks and the merchant community, which believed government interference in banking and note issuance would result in over issuance, inflation and exit from the gold standard (Barrán and Nahum, 1971: 252-259). However, in 1887 the political climate had changed, and less orthodox forces achieved the establishment of the Banco Nacional, modeled after the Argentine bank of the same name. At the same time, several private banks entered the market, bringing the total number of banks up to twelve in 1890, although the number of banks inscribed in the Commercial Public Register was much greater.[80] The Banco Nacional, along with several of the new entrants, expanded the money

[80] Nine new banks were registered in 1887, twelve in 1888 and fourteen in 1889, although it is likely that many of these never actually operated or raised much capital, and most did not survive the crisis (AEU, 1888, 1889, 1890).

supply enormously, with note issue rising fourfold between 1882 and 1889 and total liabilities rising by a factor of six (see Appendix A for Uruguayan monetary data).

1886 saw the resignation of an unpopular dictator, and his replacement by a more moderate and unifying figure, General Tajes, in what was seen as a return to the constitutional order. The return to political stability inspired renewed confidence, and money began to flow (Acevedo, 1903: 261). The boom was fed in large part by British foreign investment. The government loans floated in London in 1888 and 1889 injected capital into the economy and into the Banco Nacional, where the government's funds were deposited (Winn, 2010: 129-122). The promise of external loans led to speculation on internal debt eligible for conversion. Furthermore, foreign capital poured into various sectors, mostly railways and urban infrastructures. Three large railway lines commenced construction in 1887 and 1888: The Central Uruguay Northern Extension, the Central Uruguay Eastern Extension and the Midland Uruguay Railway. Banks, tramways and telephone companies also received foreign financing (Winn, 2010: 147-151). In addition, British investors entered heavily into livestock and agricultural endeavors (Winn, 2010: 152-159).

However, at the center of the boom was the Banco Nacional. The sale of shares was so successful, that in 1887 they circulated at a 25% premium even before the bank began operating officially. The bank used the money raised through the sale of shares, as well as the funds deposited by the government, to the purchase of company shares, public debt and real estate, as well as to promote the businesses of its directors (Winn, 2020: 100). This spending spree caused a general frenzy of activity, leading to rising prices for public debt, stocks and land sales.

The Uruguayan financial sector was showing signs of weakness well before the crisis. The share price of the Banco Nacional collapsed in mid 1888 (Acevedo, 1934: 439). After recovering, the stock market collapsed again in 1889 (Winn, 2010: 176; Acevedo, 1934: 439). In January of 1890, the government decided to guarantee the *cédulas* emitted by the Banco Nacional, as a way to bolster the floundering bank (Joslin, 1963: 135-36).[81] However, note issue, which had increased by 73% from 1887 to 1889 for the banking sector as a whole, had increased by 280% for the Banco Nacional. This bank had gone from circulating 35% to 60%

[81] *Cédulas* were securities hypothecated on agricultural lands. They were designed as a way for landowners to raise money on financial markets. The Argentine *cédulas* floated in the late 1880s circulated in London. There is no evidence that the Uruguayan version of these securities circulated internationally.

of the total note issue of the country. Due to the worrying increase in note issue, the Banco Comercial and the Bank of London and River Plate, two of the country's most important banks, took to presenting notes of the Banco Nacional for conversion into gold on a daily basis (Barrán and Nahum, 1971: 474).[82]

On July 5th of 1890, the government suspended convertibility of the notes of the Banco Nacional for six months (Acevedo, 1903: 268; Joslin, 1963: 136).[83] However, one week later, the Banco Comercial, the London and River Plate, most other private banks and over 500 merchant houses signed a memorandum declaring their non-adherence to any inconvertibility decree. All obligations would continue to be paid in gold (except those which were stipulated in inconvertible money) and the signers would suspend transactions and withdraw credit from anyone that did not honor debts in gold. In essence, the private banks and merchants defied the government, continued payments in gold and demonetized the notes of the Banco Nacional. A law passed on the 28th of the same month essentially accepted the position of the merchant community, and added that paper currency would be accepted for payment of taxes at its market value, and that the government could require all customs duties to be paid in gold (Acevedo, 1903: 270-71).

When convertibility of Banco Nacional notes was resumed at the beginning of July of 1891, it did not last long. The bank was forced to suspend payments again on July 20th. This time, the government declared a bank holiday and shut down trading on the stock market for several weeks. The final blow to the country's financial bubble occurred when the Uruguayan branch of the English Bank of the River Plate closed its doors in September, setting off a run that forced the Banco Nacional into liquidation and obliging the government to default on foreign debt (Acevedo, 1903: 273; Winn, 2010: 194).

[82] Barran and Nahúm suggest that this strategy was designed to bring down the Banco Nacional. However, this could have been merely a defensive strategy, so as not to be left holding inconvertible bills when the bank inevitably collapsed.

[83] The decree suspended convertibility for six months. The Emissions Department was separated from the rest of the bank and handed over to a commission charged with using the bank's good assets in order to constitute a fund to back notes in circulation. Note issue was limited to an amount equal to the bank's capital (10,196,440 pesos) and small change issue to 2,500,000 pesos. Inconvertible notes were declared legal tender, accepted by all state offices (except for 20% of customs taxes, which had to be paid in gold in order to support the conversion fund). Inconvertible notes were also considered legal tender for private transactions. The bank had to accept inconvertible notes for service of mortgages, but had to pay *cédulas* in gold; all public debt, internal and external, would be paid in gold. Acevedo says the decree was from July 7th, but Nahum (2011: 20), Joslin (1963: 136) and Winn (2010: 183) refer to the announcement being made on July 5th (a Saturday).

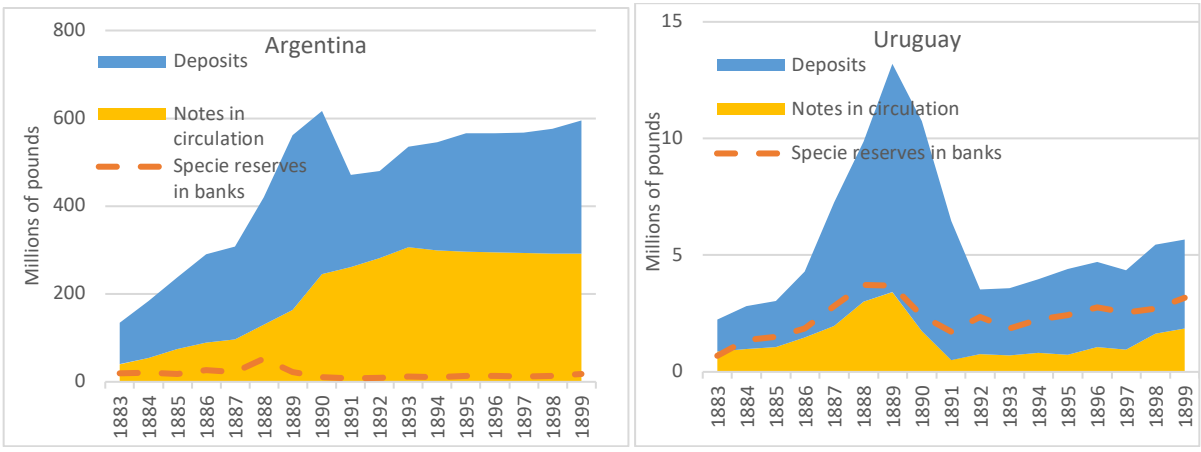
The reforms carried out in Uruguay in response to the crisis were in many ways less drastic than Argentina's. In all, three banks failed during the crisis: the Banco Nacional, the English Bank of the River Plate and the Banco Italo-Oriental. The Mortgage Department of the Banco Nacional was spun off into an independent mortgage bank, which was nationalized in 1912, and still exists to this day as the Banco Hipotecario del Uruguay (Bertino and Millot, 1996: 452-53). The only currency emitting banks to survive the crisis were the London and River Plate, the Banco Italiano, and the Banco de España and Rio de la Plata. In 1896, a new state bank was founded, the Banco de la República Oriental del Uruguay. It was to operate as a commercial bank, a state bank and development bank, and eventually gained a monopoly on currency issue in 1907, as the permission to emit notes was not renewed for private banks when their charters lapsed.[84] Just as in Argentina, the Uruguayan state reformed its revenue structure, raising internal taxes in an effort to reduce dependence on import tariffs (Bertino and Millot, 1996: 365). The government's debts were renegotiated, lowering the nominal interest rate paid on external loans and the guarantee rate for railway subsidies to 3.5%.

4.3 Argentina and Uruguay: banking and the money supply

This section compares the Argentine and Uruguayan money supply and banking sector liquidity, in order to study the relationship between prices, exchange rates and gold standard adherence in the lead up to the crisis. Figure 4.2 shows the evolution of bank created money (notes in circulation in yellow and deposits in blue, the sum of which equals total liabilities of the banking sector) in absolute terms for Argentina and Uruguay. In both countries, note issue increased by a factor of four between 1883 and 1889. However, total liabilities rose more for Uruguay over the same period, by a factor of almost six, while for Argentina they rose by around four. To put this increase into greater perspective, notes in circulation for both countries rose from under 10% of GDP at the beginning of the decade, to around 20% by 1890. Total liabilities, which were around 20% of GDP for both countries in the early 1880s, rose to 70% of GDP by 1889 for Uruguay, whereas in Argentina this ratio peaked at just over 40% in the same year.

[84] This occurred in 1904 for the London and River Plate and in 1907 for the Banco Italiano. The Banco de España and Río de la Plata had stopped issuing paper notes after an initial emission in 1888, although its notes still circulated for years after (from bank balances, AEU).

Figure 4.2: Argentina and Uruguay, bank reserves and bank created money, 1883-1899



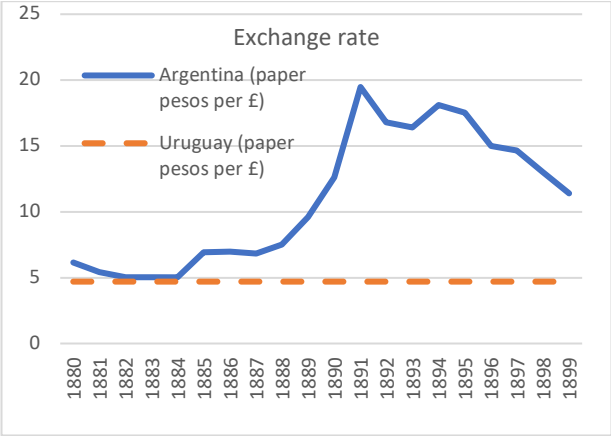
Sources: For Argentina, notes in circulation and deposits are from Ferreres (2005), and specie in banks is from della Paolera and Taylor (2001: 53). For Uruguay, see Appendix A.

Specie reserves in banks (orange, dashed line) are also shown. In Uruguay, the increase in specie reserves in banks allowed the reserve to liabilities ratio of the banking sector to remain relatively high, around 0.5 in the mid 1880s, falling to 0.23 in 1890. Since notes in circulation made up less than half of liabilities, the note stock was essentially fully backed by gold at all times for the sector as a whole (but not for some individual banks). In Argentina, the reserve to liabilities ratio was always low, around 0.1 in the mid-1880s, and falling to 0.02 by 1890.[85] Notes were backed by reserves at around 30% in the mid-1880s, and only 4% in 1890.

What was the effect of this monetary expansion on exchange rates and prices? Argentina, with an inconvertible currency from 1885 on, saw its paper currency depreciate relative to gold. While it had remained relatively firm until 1884, the exchange rate jumped by almost 40% in 1885, and after remaining relatively stable for a few years, began rising precipitously in 1888, reaching almost 4 times its 1884 level by 1891. Uruguay, on the other hand, maintained a fixed exchange rate of 4.7 pesos per pound throughout the period, except during a brief period after July of 1890. These movements can be seen in Figure 4.3.

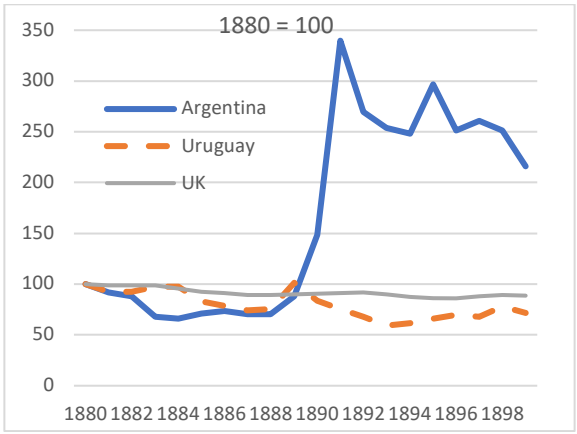
[85] The data from della Paolera (1988) break down notes in circulation into notes in hands of the public and notes held by banks, or "vault cash". Here, we have used total notes in circulation to calculate the money supply, in order to maintain comparability with the Uruguayan statistics, which do not allow the same level of discrimination. If we remove vault cash from the banking sector liabilities and include it in banking sector reserves, the reserve ratio would be around 0.2 in the mid-1880s, falling to 0.16 in 1890. In other words, it would be somewhat closer to the calculated ratio for Uruguay. However, if we could know the amount of note circulation that was held by banks for Uruguay, recalculating the reserve ratio would also likely give higher results.

Figure 4.3: Argentina and Uruguay, exchange rates, 1880-1889



Sources: For Argentina, Ferreres (2005). For Uruguay, Acevedo (1933b).

Figure 4.4: Argentina, Uruguay and Britain, price indices, 1880-1889



Sources: Argentina: Cortés Conde (1989). Uruguay: Bértola et al. (1999). UK: Bank for International Settlements.

The 1880s were a time of world price deflation, as proxied by the British price index (Figure 4.4). Argentine prices fell during its years on the gold standard (1883 and 1884), and rose only slightly in the years immediately after gold was abandoned. However, they began rising precipitously in 1888, increasing almost fivefold up to 1891. Uruguayan prices, while stable in the early part of the 1880s, fell from 1885 to 1887 by over twice as much as British prices. They rose sharply in 1889, and then fell thereafter until 1893.

The monetary figures presented above show essentially an equivalent proportional increase in bank money for both countries, although it is higher for Uruguay in relation to GDP. The main difference appears to be the reserve ratio, which was higher for Uruguay and likely was important for the country's ability to maintain the gold standard. However, how can we explain the completely different trajectories of prices, especially in light of the fact that bank money growth was higher in Uruguay relative to GDP?

Obviously, bank created money does not tell the whole story. Gold also made up an important part of the money supply in many countries during the late 19th century, although the proportion of gold to other money could vary. For example, Portugal, a country that was on the gold standard from 1854 to 1890, had almost no note circulation, and deposits made up less than one third of the money supply. The rest was gold, which circulated in the form of coins (Reis, 2000: 71, 85). In other countries, like the Philippines, which operated a gold exchange standard from 1905 to 1910, no gold circulated in the country and gold reserves were held at a bank in New York (Kemmerer, 1944: 153-61). Gold, and to a limited extent other metals, circulated freely along-side banknotes in both Argentina and Uruguay. The public could choose to hold specie as a medium of exchange that competed with paper currency or for hoarding purposes.[86] Under the Gold standard, specie was also used to back paper note issue. Thus, changes in a country's gold stocks, and their distribution between the banking system and the public, were a major determinant of changes in the money supply.

Consequently, in order to get a sense of changes in the total money supply, estimates of specie stocks are needed. For countries like Argentina and Uruguay, which produced little or no precious metals, specie stocks were determined by the balance of payments. Argentina minted gold coins, while in Uruguay only silver, copper and nickel coins were minted, to a limited extent, for low value transactional purposes. In both countries, foreign coins circulated freely. For Argentina, Della Paolera and Taylor (2001: 53) present estimates of total gold stocks based on the export and import of monetary gold (coins and bullion), taken from official statistics of the customs house (they claim circulation of silver coins was negligible). They use an estimate of the stock of gold in the country in 1881, valued at 3,000,000 gold pesos, and adjust the level of stocks year-by-year according to net gold flows. Data on gold held by the main banks is available from their balances and official publications, and the gold in the hands of the public is obtained as a residual.

For Uruguay, similar data on gold flows is available based on customs house records from 1878 to 1907.[87] There are few estimates of specie stocks for the period. In his message to the

[86] Gold hoarding was common in peripheral economies during the period. In Portugal, for example, gold rose from about 80% to about 90% of the M1 money supply from 1865 to 1890, a period in which the rest of Europe was moving towards greater use of bank money, suggesting residents were hoarding gold for non-transactional reasons (Reis, 2000: 84-86). Gold was hoarded for speculative reasons, as a hedge against paper currency depreciation, or due to lack of confidence in the banking system.

[87] In general, data on gold flows from customs house records is notoriously unreliable. For example, for Spain, Prados de la Escosura (2009: 16) prefers to interpolate between direct estimates of the gold stock rather than rely on customs house reports, since he claims they do not capture all flows due to smuggling. Bazot, Bordo and

Congress in 1891, Julio Herrera y Obes, the country's President, claimed a metallic stock of 13 or 14 million pesos, or around 3,000,000 pounds (Barrán and Nahum, 1971: 477). This is far too low since it would make total specie stocks lower than reserves in the banking system for the years leading up to the Crisis. Acevedo (1933b: 458) presents and estimate for 1896 of about 7,300,000 pounds worth of gold, to which must be added about 1,000,000 in silver and nickel coins (these made up on average around 10% of the specie stock throughout the period).[88] The result is a specie stock valued at about 8,500,000 pounds for Uruguay in 1896.[89] Acevedo (1934b) also presents an estimate of total specie stock for 1906 of 10,000,000 pounds, based on "the most current commercial information" and an estimate for 1908 of about 9,500,000 pounds. Extrapolating the 1896 figure by net specie flows leads to an overshoot of the specie stock estimates for 1906 and 1908 of more than 4,000,000 pounds (likewise, taking the 1906 figure as the base leads to a specie stock for 1896 far below Acevedo's estimate for that year). Here, I have taken the halfway point, taking 75% of the 1896 estimate as the base year from which to extrapolate the net gold import data, leading to a specie stock in 1896 about 2,000,000 below Acevedo's estimate for that year, and for 1906 a specie stock above the estimate in that year by the same amount.[90] Figure 4.5 shows the estimates of specie stocks for Argentina and Uruguay from 1877 to 1899.

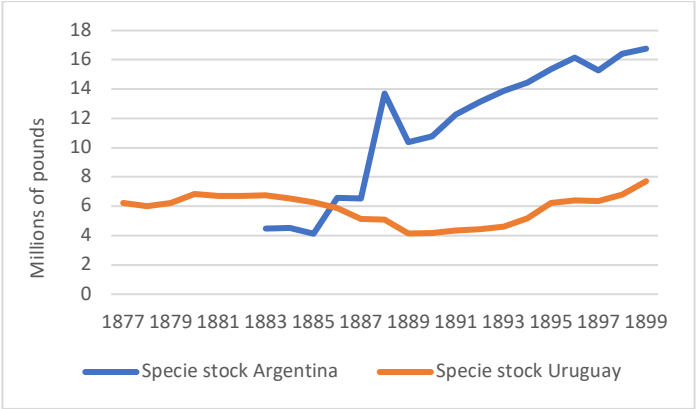
Monnet (2016: 91) suggest the same for France, due to the omission of important flows, especially from coins brought by travelers, although they use this data in spite of its unreliability. In regard to the Uruguayan statistics, Acevedo (1934a: 41) states that the data on monetary specie was "deficient, due to a lack of efficient auditing of the declarations made by the commanders of ships". However, the Argentine historiography has always relied on customs house records for estimating gold flows, and neither Williams (1920), Ford (1962) or Della Paolera and Taylor (2001) question their reliability. Reis (2000) uses this type of data as well, for Portugal. Here, I have used the Uruguayan customs house data, for lack of a better source, since it is likely as reliable as the data used by the Argentine economic historiography.

[88] Calculated from the sum of all coins minted since the 1870s. 1,000,000 pesos in silver coins were minted in 1877, 2,000,000 in 1893 and another 1,000,000 in 1895. 500,000 pesos in nickel coins were minted in 1901, and an equivalent sum again in 1909 (BROU, 1918: 274-84).

[89] In that year, complaints about the circulation of worn gold coins from Chile, called condors, led to the banks purchasing them at weight and exporting them to Europe in the form of gold bars. Between the months of April and May of that year, 420,997.5 condors (worth 3,713,198 pesos) were exported. According to Acevedo, this revealed a surprisingly high number of condors, more than double what was thought to be in circulation. The author applies this same ratio to estimates of all other circulating coins, and concludes that the gold in circulation was far larger than what was held by banks as reserves.

[90] The level of the base year makes a large difference in terms of the percent of specie held by the public versus held by banks. However, the general direction of trends in the composition of the money supply is not affected by this choice.

Figure 4.5: Argentina and Uruguay, specie stocks, 1877-1899



Sources: For Argentina, della Paolera and Taylor (2001: 53). For Uruguay, gold flows from AEU and initial gold stock is own estimation based on Acevedo (1934b).

The first thing one notices about this figure is that in the early 1880s it appears that Uruguayan specie stocks were almost 50% higher than Argentina's. The latter country's GDP at that time was about 6 times that of Uruguay's. Can these specie stock figures be believed? There are some reasons to think so. First, Argentina's long history with paper currency –metallic backed notes being first circulated in 1822– meant there was historically less need for specie and that the public was accustomed to conducting business with paper currency. Ford (1962: 94) notes that Argentina's "specie reserves were slender". An 1881 law designed to create monetary order allowed for the minting of gold and silver coins. However, observers decried that the coins were shipped overseas, since none were detected in circulation a few years after minting (Williams, 1920: 34). Uruguay, on the other hand, had scant experience with banking and paper currency. The first banks were founded in 1857 and the country's merchant class was accustomed to operating in gold or bills of exchange denominated in foreign currencies (Acevedo, 1933b; Barrán and Nahum, 1971: 441). In the 1891 message from Julio Herrera y Obes cited above, he mentions the Uruguayan public's "repulsion" towards fiduciary money and that almost all transactions occurred in gold (Barrán and Nahum, 1971: 477). Second, the figures presented by Della Paolera and Taylor are perhaps somewhat of an underestimate, since it is known metal, especially silver coins from neighboring countries, circulated widely in the interior of the country (Williams, 1920: 31-31; Irigoin, 2000: 343) and the authors explicitly neglect silver in their estimates.

The other striking thing about Figure 4.5 is the different trajectories of the specie stocks of the two countries. Argentine stocks rose dramatically from 1885 to 1888. They fell sharply in 1889, before continuing their upward trajectory until the end of the century. In Uruguay, specie stocks were stable in the early 1880s, but fell in the second half of the decade. This process reverted

after the 1890 crisis, with stocks almost doubling by 1899. What explains these divergent trajectories in the 1880s?

We have already seen that both countries had similar levels of capital inflows relative to GDP. Figure 4.6 shows exports and imports for the two countries.[91] Argentina experienced strong export growth from 1880 to 1899, with export values rising from around 13,000,000 to 42,000,000 pounds over the period. In these years Argentina not only moved into higher value pastoral products, like frozen beef (the first meatpacking plant was installed in 1882), but also incorporated agricultural products like wheat and corn into its export basket (Rapoport, 2000: 74-76). Uruguayan exports, around 7,500,000 pounds in 1880, did not increase in value over the next decades. Uruguay did not experience the same productive transformation that Argentina did. In 1890 more than 90% of exports came from the livestock sector, while agricultural products represented only 4%. In 1913 these proportions were basically unchanged (AEU, 1913/14). As for imports, they rose in both countries over the course of the 1880s, and collapsed after 1889.

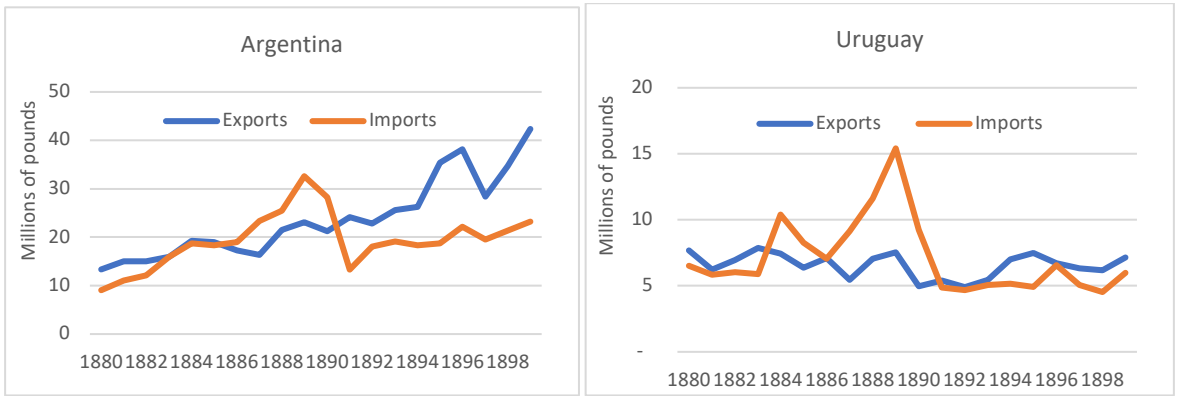
Both countries experienced widening deficits in their merchandise trade balance beginning in the mid-1880s. In Argentina, strong export growth meant the gap did not appear until 1887, and did not grow to extreme proportions. Import expenditures were never more than 50% higher than export revenues. In Uruguay, export values did not increase over the period, due to falling prices, the closing of markets for salted beef and the failure to diversify into export agriculture.[92] Merchandise trade deficits appeared in 1884, with imports values increasing to twice the level of exports by 1889. As mentioned in chapter 3, there may be large biases in the Uruguayan trade series, especially for imports.[93]

[91] Argentine trade statistics suffer from the same problem as the Uruguayan trade statistics mentioned in chapter 2. For the period under study, both countries recorded merchandise trade statistics at officially quoted prices (*valores de aforo*), which were changed only occasionally, and did not reflect current market prices. As with Uruguay, there are corrected series for Argentina. Federico and Tena (2019) presents corrected series for exports and imports at current prices, which apply prices at foreign ports to Argentine export volumes, and uses price indices to deflate import volumes. For further discussion of the problem with Argentine trade statistics see Rayes (2014) and Tena-Junguito and Willebald (2013).

[92] As mentioned in Chapter 3, the fixed exchange rate may have also played a role in the country's poor export performance. Argentina had falling costs in gold, due to its depreciating paper currency, helping it become competitive as a grain exporter. Uruguay did not have this advantage, which may partly explain its difficulty in diversifying out of livestock products.

[93] Despite the possible biases in the import series, it is clear that import values rose significantly in Uruguay at the end of the 1880s. This was partly due to the impact of the fixed exchange rate. If the country had had a floating exchange rate, like Argentina, imports may have increased less, since the currency would likely have been depreciating and thus the peso cost of imports would have been rising, reducing the quantity demanded.

Figure 4.6: Argentina and Uruguay, exports and imports, 1880-1899



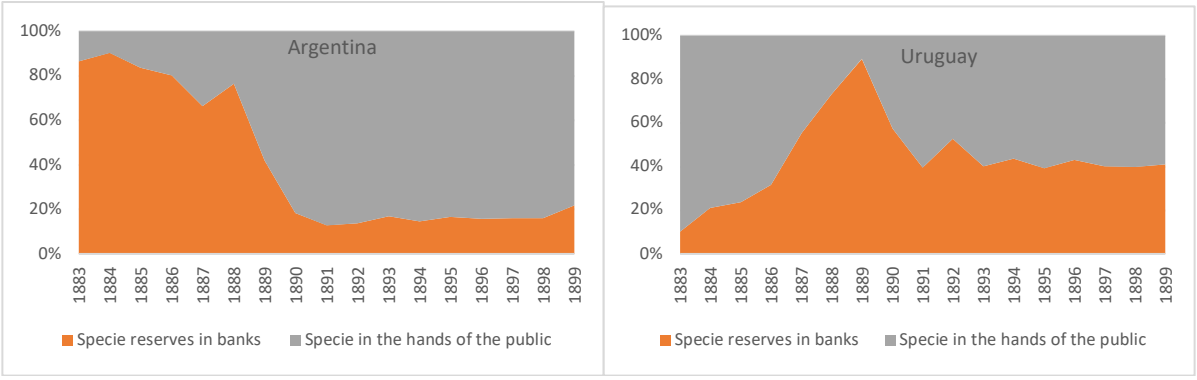
Sources: For Argentina, Federico and Tena (2019). For Uruguay, Bonino (2015) for exports and Siniscalchi et al. (2021) for imports.

The services and unilateral transfers balances were most likely negative for both countries,[94] meaning they would have had large current account deficits in that decade. However, Uruguay's current account deficits were likely proportionally larger than Argentina's, in large part due to its poor export growth. This led to gold drains for Uruguay during the investment boom at the end of the decade, when imports rose dramatically, caused in large part by the direct and indirect effects of foreign investment (purchases of capital goods for building infrastructures and consumption goods related to rising incomes). Argentina's enormous capital inflows equaled or surpassed the negative current account in most years, leading to relative stability of gold stocks from 1883 to 1885 and 1887, and large gold inflows in 1886 and 1888.

Part of specie stocks circulated among the public, either as means of payment or for hoarding purposes. The other part was held by banks as backing for note issue and deposits. Figure 4.7 shows the estimated proportion of specie reserves in the hands of the public versus that held as bank reserves for both countries.

[94] The major components would have been dividends and interest on foreign investment and immigrant remittances. Other items, also negative and of lesser importance, would have included freight costs for imports (since neither country had a merchant navy working outside of the Uruguay river), tourism and overseas consular services. For an estimate of the services and unilateral transfers balances for Uruguay, see Chapter 2.

Figure 4.7: Argentina and Uruguay, estimated proportion of specie reserves held by the public, 1883-1899



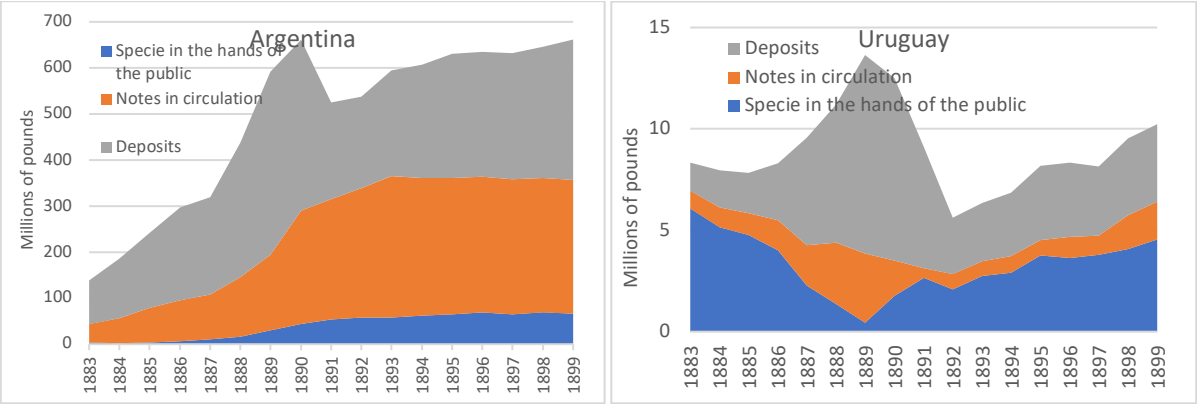
Sources: For Argentina, della Paolera and Taylor (2001: 53). For Uruguay, own estimation based on reserves in banks from Appendix A and specie stocks from figure 4.5.

Here we see one of the impacts of the differing exchange rate policy in the two countries. For Argentina in the early 1880s, the greater part of the (low) specie stock of the country was held as reserves in banks, with the public holding only around 10% of monetary gold. However, after inconvertibility was declared in 1885 and the exchange rate of paper pesos to gold began rising, preference on the part of the public for holding gold began to rise. By 1890, on the eve of the crisis, over 80% of the country's gold stock were in the hands of the public.

For most of the 1880s, the opposite occurred in Uruguay. In 1883 the public held around 90% of the country's specie stocks. However, throughout the boom years, as the banking sector expanded and confidence in banks grew, a greater proportion of the specie stocks ended up in banks vaults, reaching a peak of over 80% in 1889. After the 1890 crisis and temporary suspension of the gold standard, the public's preference for gold rose, but this increase halted in 1892 after the resolution of the crisis and resumption of debt payments on the part of the government.

What this information on gold allocation reveals is that despite the fact that bank money increased faster in Uruguay before 1890, the total money supply rose much more in Argentina. Figure 4.8 shows the money supply of both countries, and its composition in three categories: specie in the hands of the public, notes in circulation and deposits. In Argentina, the money supply increased by almost five times between 1883 and 1889. In Uruguay, the increase over the same period was much lower, the money supply rising by around 50%. The reason for this is the massive reduction in specie in the hands of the public, which fell by 92%, and had two causes: the reduction in overall specie stocks due to gold outflows and the transfer of gold to the banking sector. Thus, the overall increase in the Uruguayan money supply over the same period was just 64%.

Figure 4.8: Argentina and Uruguay, money supply, 1883-1899



Sources: For Argentina: della Paolera and Taylor (2001); for Uruguay, see Appendix A.

Despite the massive increase in liabilities in Uruguay (even greater, proportionally, than the increase in Argentina), monetary matters were more stable than its neighbor's, for two reasons. First, reserve ratios remained high throughout the 1880s and, second, the increase in the money supply, which started in earnest only in 1887, was much lower than in Argentina. This explains in large part how Uruguay was able to maintain a fixed exchange rate up to 1890.

Why did Uruguay's exchange rate peg eventually break? Ultimately, monetary imprudence on the part of two major banks caught up with them. The specie reserve to liabilities ratio fell from around 0.5 in 1885 to 0.27 in 1891 for the banking sector as a whole (Figure 4.9). However, many banks maintained high reserve ratios during this period. For the Banco Comercial, the oldest bank in operation, the ratio dropped to 0.21 in 1888, but this was due to it giving up the right of note emission the year before and the consequent gold drain from clients turning in the bank's note circulation. In the years prior to this, it had ratios of around 0.5 or 0.6, and during the crisis years, this bank held reserves equaling over 80% of its deposits. The reserve ratio of London and River Plate, the second oldest bank in operation, never dropped below 0.38, while the Banco Italiano, founded in 1887, maintained a reserve ratio above 0.3 in all years. However, the English Bank of the River Plate, a British Bank that began operations in 1886, with an ambitious plan for capturing market share, began losing reserves in 1889, as its liabilities rose, and ended up closing its doors in October of 1891 (Winn, 2010: 194).[95] By 1890 its reserves had dipped to 13% of liabilities. However, the main culprit was the Banco Nacional. This bank had 34% of the banking sector's liabilities in 1889, and 24% of specie reserves. However, the following year, after its collapse was forestalled by the temporary suspension of note

[95] This was the only bank to continue accepting the notes of the Banco Nacional after the inconvertibility decree of July of 1890 (Morató, 1926: 30).

convertibility, it held 24% of the sector's liabilities, but only 3% of its specie reserves. That is, its reserve ratio had fallen from 0.2 to 0.03 in one year.

Table 3.1: reserve ratios for the Uruguayan banking sector and several individual banks, 1885-1892

Year	Uruguayan banking sector	Banco Comercial	London and River Plate	English Bank of the River Plate	Banco Italiano	Banco Nacional
1885	0.49	0.60	0.36	-	-	-
1886	0.44	0.49	0.43	0.35	-	-
1887	0.39	0.48	0.51	0.19	0.32	0.53
1888	0.38	0.21	0.38	0.40	0.48	0.34
1889	0.28	0.38	0.42	0.17	0.42	0.20
1890	0.22	0.89	0.44	0.13	0.31	0.03
1891	0.27	0.82	0.55	-	0.41	0.01
1892	0.66	1.02	0.52	-	0.42	0.06

Sources: For the banking sector as a whole, calculated from monetary series presented in Appendix A. For individual banks, calculated from figures in AEU.

The Banco Nacional was founded in 1887, brainchild of the Spanish entrepreneur Emilio Reus and a cadre of Anglo-Argentine capitalists (Barrán and Nahum, 1971: 464). The project was supported by industrialists, the urban middle class and owners of small and medium sized rural landholdings (Barrán and Nahum, 1971: 453-56). The bank was to have a capital of 10 million pesos (more than six times the capital of any other bank in operation that year) and would venture into activities which until that moment had been underserved by the banking community. It could emit paper currency up to two times its capital and was obligated to maintain a 25% specie reserve (a limit that was not respected). It also was to have a monopoly on the emission of small bills, with a limit of 40% of its capital. It would be divided into a commercial department and a mortgage department, the latter being able to make secured loans for up to 30 years and to emit "*cédulas*", a financial instrument designed to facilitate land investments. A network of branches in every department was to be established. The Director of the bank was to be appointed by the government. In addition, the bank would run a current account for the government of up to 1.5 million pesos and handle public debt service at home and abroad (Barrán and Nahum, 1971: 465).

The purpose of this bank was to extend credit to customers that had thus far been shut out, and at rates that would promote the productive use of the country's resources. When its first efforts did not pan out, due to the *cédulas* circulating at only 75% of their par value, the state decided to subsidize credit, guaranteeing loans made by the bank. Nevertheless, most of the mortgage department's resources went into urban property and the stock market, fueling rising prices and speculation, while relief for the credit starved countryside, and especially for small landholders, was limited (Barrán and Nahum, 1971: 466-67). However, the main problem was the bank's

close ties to the government. Uruguay's president, Herrera y Obes, and the financiers that controlled a web of speculative investments, decided to use the bank's resources to inflate a bubble. For the investors, the purpose was to maintain various lucrative speculative bets until they could be profitably unloaded. For the government, the short-term objective was to finance growing deficits, while in the long term it was to promote investment and immigration that could eventually generate export revenues in large enough volume to meet the country's debt burden (Winn, 2010: 174-177). Thus, just as in Argentina, one of the key weaknesses in the Uruguayan financial structure was intimately related to the government's fiscal position and public debt.

4.4 The exchange rate, foreign debt and the fiscal situation

Argentina's floating exchange rate had major consequences for the relation between fiscal revenues and payments on external debt;[96] the former was denominated in depreciating paper currency, while the latter was fixed in gold.[97] As the Argentine paper peso depreciated, the government's ability to pay loan interest eroded. According to Cortés Conde (1989: 177), the amount of paper pesos necessary to cover external loan service was increased by 45% in 1889 and 29% in 1890 due to the rising gold premium.[98] The additional amount spent in 1889 made up about 10% of the deficit that year. Both Cortés Conde and Williams (1920: 97), presents similar figures, highlight paper peso depreciation as one of the main causes of the government's worsening fiscal position.

The fixed exchange rate in Uruguay allowed the government of that country to avoid this problem. External debt was paid in gold, as were internal debt and other spending by the state. However, taxes were collected in gold as well.[99] Unfortunately, it is difficult to say anything concrete about the fiscal situation in Uruguay due to the fact that government accounts do not

[96] Most of Argentina's debt was payable in gold, since much of the internal debts had been externalized through a series of conversion loans. Additionally, Williams (1920: 94) claims 90% of existing internal debt was held abroad in the late 1880s, and therefore payable in gold. Cortés Conde (1989: 181) also suggest that part of Argentine internal debt was held by foreigners.

[97] In the past episodes of inconvertibility of notes, the government had continued operating in a gold denominated unit of account for tax collection and payment of salaries and other costs. However, since 1885, the government had maintained its accounts in paper pesos.

[98] Calculated as the amount paid for debt service, plus the "exchange difference" (*diferencia de cambios*), divided by the amount paid for debt service.

[99] Only for the approximately three weeks from July 5th to 28th, 1890, did the government receive tax payments in depreciated paper currency at *its face value*. After this period, it received the depreciated notes of the Banco Nacional at their market value, meaning revenues were still charged in gold.

show believable results.[100] For the 1880s, government revenues are available from the AEU, in which the government published summaries of its accounts. Expenditures are available from the published budgets, and reflect planned, not actual, spending. The problem is that when the two are combined, deficits appear in only three out of the ten years up to 1890. Other years show surpluses, sometimes quite large. This cannot be correct, as public debt grew by 68% between 1880 and 1889. Furthermore, deficits are discussed repeatedly in the messages of the Executive branch, and appear in the accounts of the Finance ministry examined by Eduardo Acevedo (1934a: 217-232, 323, 442, 565).[101] There were evidently large sums spent that weren't budgeted for and for which records are missing.

This also makes difficult an evaluation of the weight of debt service in government budgets; thus, the figures offered below should be interpreted with caution. Interest and amortization on public debt is available from the AEU beginning in 1892. For earlier years, the rate paid for external debt[102] service (interest and amortization divided by the stock of debt in each year) has been applied to internal debt, to calculate the service paid on all public debt.[103] Railway guarantee payments have also been included, since they were an important obligation, amounting on average to 4% of government revenues between 1870 and 1913 (Díaz, 2017: 288). For Argentina, the government expenditure data is from Della Paolera and Taylor (2001: 90) and the debt service figures, inclusive of railway guarantees, from Ferreres (2005), and is all in paper pesos.[104]

Figure 4.9 shows public debt service (DS) as a percentage of government revenues for Argentina and Uruguay from 1885 to 1893. Due to the rough nature of the figures, a year-to-

[100] It is important to note that the use of official prices (*valores de aforo*) by both Uruguay and Argentina would have had a stabilizing effect on government revenues. For both countries, most government revenues were derived from import tariffs (Bertino and Millot, 1996: 366; della Paolera and Taylor, 2001: 81). Falling import prices would have caused government revenues to decline. However, since the official prices were modified only occasionally, both countries generally avoided losing revenue in this situation. The effect of this type of tariff is discussed in Bértola and Williamson (2003).

[101] Acevedo offers several, conflicting figures for some years of the 1880s.

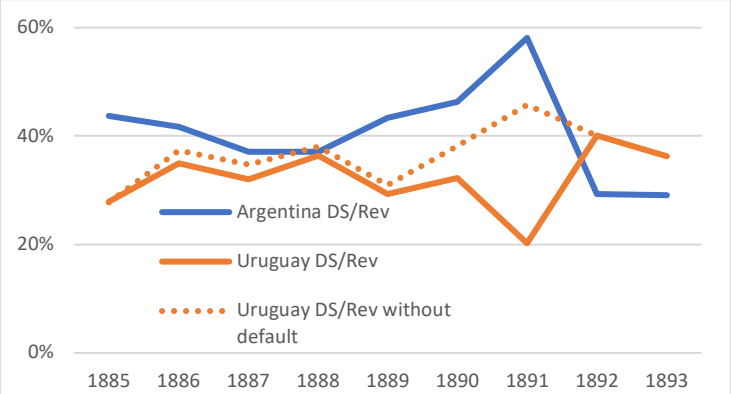
[102] External debt refers to Uruguayan debt held abroad. Much debt denominated as "external" was in fact held by Uruguayan residents, mostly due to the various bond conversions in which external debt was swapped for previously held internal debt. See appendix A for the exact method of estimation of external debt.

[103] Internal debt generally had higher effective interest rates, which was the main motive for the government to contract debt abroad. However, the nominal interest rates were generally the same or lower than that on external debt, since internal debt usually sold at steep discounts. For example, in 1889, four of the five circulating internal series carried a service of 6% between interest and amortization, while the two external series had a service of 5.5% and 7% (AEU, 1889).

[104] Della Paolera and Taylor's fiscal data is for the federal government, inclusive of debt service. Ferreres data is also for the federal government, and matches closely with Williams (1920: 101) figures for the federal government for 1886-1890.

year analysis must be taken with caution. In general, debt service was around 30% to 40% of government revenues for both countries in the mid 1880s. However, from 1889 to 1891, this measure diverges. For Argentina, debt service rose to 60% of government revenues, while for Uruguay it remained steady around 30%, and fell to 20% in 1891 when Uruguay failed to make interest payments in the second half of the year. After the crisis, debt service was about 30% of revenues for Argentina and close to 40% for Uruguay.

Figure 4.9: Argentina and Uruguay, debt service as a percent of government revenues, 1885 - 1893



Source: For Argentina, own estimation based on della Paolera and Taylor (2001) and Ferreres (2005); For Uruguay, see text.

Uruguay not only defaulted on its public debt in 1891, it failed to pay the full share of railway guarantees throughout the 1880s (Díaz, 2017: 288). The dotted line shows what debt service as a percent of revenues would have been if Uruguay had paid full railway guarantees and interest on public debt in 1891. In this counterfactual situation, debt service as a percent of revenues reaches 46%. Still, Argentina's debt service grew faster, almost tripling between 1885 and 1891, while Uruguay' counterfactual debt services increased by less than a factor of two.

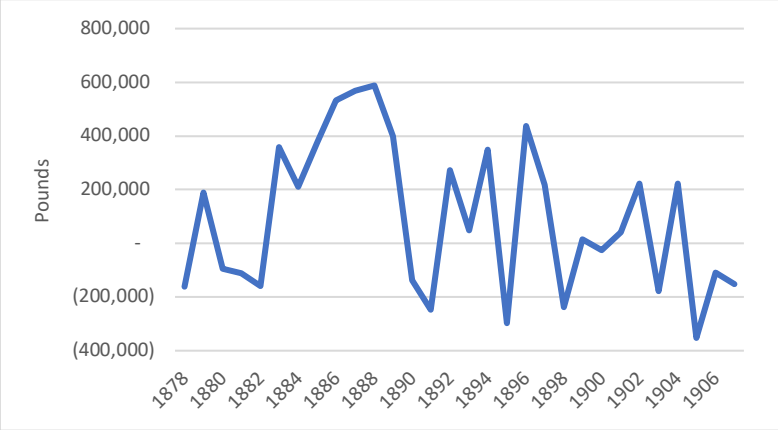
For Argentina, debt service weighed much more heavily in government revenues than it did for Uruguay. It appears that Uruguay's choice of fixed exchange rates protected the government from one of the negative effects of currency depreciation. However, while it avoided defaulting at the same time Argentina did in 1890, Uruguay could not avoid succumbing to the same fate a year later, defaulting on its external debt in the second half of 1891.

4.5 Financial links between Uruguay and Argentina

There is evidence of large capital flows between Uruguay and Argentina during the 1880s. For example, in 1889, during the attempt by the Argentine authorities to prevent the exchange rate

from appreciating by selling the gold held by the Banco Nacional, large shipments of gold left the country. Cortés Conde (1989: 220) cites documentation from the London and River Plate bank which mentions these gold shipments, and that a large part of them went to Uruguay. These gold movements also appear in the Uruguayan statistics, which break down specie flows by region, and show large inflows from Argentina in the 1880s (Figure 4.10).

Figure 4.10: Net specie inflows from Argentina to Uruguay, 1878-1907



Source: AEU

Net specie flows from Argentina to Uruguay were consistently positive from 1883 to 1889, reaching over 500,000 pounds per year from 1886 to 1888. However, by 1890, they had become negative, as the situation in Uruguay became dire, prompting Argentines to pull out their capital (Winn, 2010: 182). From 1883 to 1890, Argentina increased its specie stock by 6,300,000 pounds, or, by a factor of 2.4. Over the same period, Uruguay lost almost 2,600,000 pounds, or 38%, of its metallic stock. Why would gold flow from Argentina to Uruguay, when the former was receiving it from overseas and the latter was exporting it to the rest of the world?

Overall gold flows to each country were determined by the sign of the balance of payments, which was itself largely influenced by the balance of merchandise trade. As we have seen, the size of capital inflows relative to GDP was similar in both countries. In Argentina, the overall debt burden from foreign borrowings weighed heavily in the balance of payments, making the current account more negative (Williams, 1920: 45, 101). Since Uruguay's foreign borrowings were in line with Argentina's relative to the economy, interest and dividends payments would likely have weighed similarly. As seen in the last section, the evidence shows this was true for public debt. Immigrant remittances would have been another important, negative item, in both countries.

The main difference was in the relation between imports and exports. As discussed earlier, Uruguay's merchandise trade balance grew much wider than Argentina's in the 1880s (Figure 4.6, above). We mentioned how Argentina was able to increase export values, in large part by diversifying out of traditional sectors, into higher value livestock products and into export agriculture, while Uruguay failed to modify its economic structure. In Argentina, export values grew by 44% from 1883 to 1889, while in Uruguay they fell by 5%. The other factor was imports, which doubled for Argentina from 1883 to 1889, but grew by a factor of 2.6 in Uruguay over the same period. This, in relation to capital inflows from Europe, is what determined the sign of the balance of payments and direction of overall net gold flows to each country.

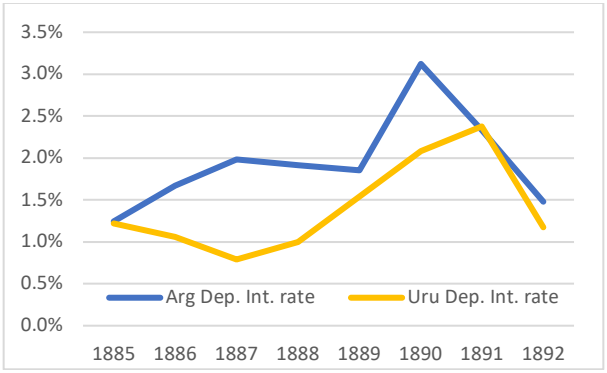
Long term capital flows between Argentina and Uruguay were likely insignificant. Neither country participated in major overseas investment in the 1880s (Rapoport, 2005; Jacob, 2011). Trade between the two countries was also relatively balanced in the decade, with the surpluses in favor of Uruguay in 1883, 1887 and 1888, and deficit in other years, which were on average not higher than 60,000 pounds and rarely reaching more than 100,000 pounds in any given year (AEU). Gold flows likely went into short term or speculative investments: bank deposits, discounting bills, purchase of company shares or public debt on the stock market and real estate (Morató, 1926: 28). There are three possible explanations for these sustained gold flows. Argentine capital could have been pursuing higher returns, if short-term interest rates were higher in Uruguay. Alternatively, speculative investment opportunities could have drawn capital east, due to the possibility of earning capital gains from rising stock and real estate prices. A third possibility is that capital was seeking safety in Uruguay's banking system, which was seen as stronger than Argentina's.[105]

Information on short term interest rates for this period is scarce. Average deposit and loan interest rates for the Argentine and Uruguayan businesses of the London and River Plate can

[105] A fourth possibility has to do with the illicit transit trade, known in Uruguay as the "*comercio de tránsito*", which involved smuggling imported European manufactures into Argentina from Uruguay. Gold inflows could represent payment for these goods. This trade existed since at least the 1860s, and slowly waned over the course of the 19th century (Mourat, 1971). It is possible that this trade increased during the rise in Argentine imports during the 1880s, which coincides roughly with the consistent gold inflows from Argentina to Uruguay between 1883 and 1889. The trade balance between the two countries was neutral, while total annual exports from Uruguay to Argentina were around 100,000 pounds in the mid 1880s, rising to around 250,000 pounds in the last years of the decade. If gold flows from Argentina were in payment for transit goods, it means the unregistered trade would have had to have been about four times registered exports. Without further information, it is impossible to evaluate whether this magnitude is believable. Further research is needed to establish the possible link between transit trade and gold flows between the two countries.

be calculated from bank balance sheets.[106] For Argentina, the sources are in gold terms; that is, paper denominated deposits, credits, interest payments and interest charges, are valued at par, regardless of whether the underlying asset or liability was in paper or gold. Paper deposits interest represented around 20% of total deposits interest from 1885 to 1890, dropping to around 10% in 1891 and 1892 (Lloyds, BOLSA/F/2/1/b/5.1).[107] Loans were mostly in paper, a policy the bank had been implementing since 1885 to avoid a situation in which gold loans would be repaid in inconvertible paper currency (Joslin, 1963: 124). Paper loan interest represented about 75% to 90% of total loan interest from 1885 to 1890, falling to 56% in 1892. These are shown in figures 3.11 and 3.12, along with the Uruguayan market discount rate.

Figure 4.11: deposit interest rates for the Argentine and Uruguayan branches of the London and River Plate Bank, 1888-1892

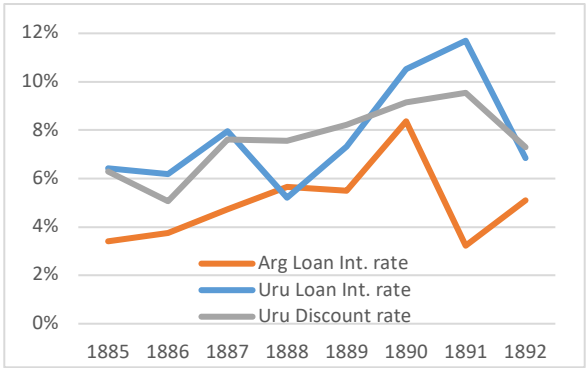


Sources: For LRP rates, AEU, Lloyds, BOLSA/F/2/1/b/5.2 and UCL, BOLSA/D/115 and 120.

[106] Deposits and loans have been estimated from the asset and liabilities balance, while interest paid on deposits and charged for loans comes from the profit and loss account. The asset and liabilities balance for Argentina is not available. The balances for the whole organization are available (Lloyds, BOLSA/F/2/1/b/5.2), as are the ones for the Montevideo branch (AEU, 1919), and the deposits and loans of the Montevideo branch have been subtracted from the total to get the Argentine figures, since the only other main branches operating at that time were the Buenos Aires and Rosario branches (there was a very small branch in Paris, opened in 1884, and the head office in London, which maintained very low levels of deposits, Joslin, 1963: 124). The profit and loss accounts are available for Buenos Aires (UCL, BOLSA/D/120) and Montevideo (UCL, BOLSA/D/115). These show deposit interest, on the spending side, and income from discounts and general loan interest on the revenue side. In order to get an estimate of total deposit and loan interest for Argentina, the Buenos Aires figures have been augmented by and estimate for the Rosario Branch. This is based on the ratio of gross profits from that branch to the Buenos Aires branch, and assumes deposit and loan interest maintains the same ratio. Gross profits for both Argentine branches are available in the profit and loss accounts from 1885 to 1889. For 1890 to 1892, the average of the ratio for earlier years is used. The head office accounts are recorded in pounds sterling, the Uruguayan branch accounts are in Uruguayan pesos and the Argentine profit and loss accounts record sterling totals, but also break this down into paper pesos and gold pesos.

[107] The sources do not permit discriminating between paper and gold deposits, nor do they break down loans into paper and gold.

Figure 4.12: Loan interest rates for the Argentine and Uruguayan branches of the London and River Plate Bank and Uruguayan discount rate, 1885-1892



Sources: For LRP rates, AEU, Lloyds, BOLSA/F/2/1/b/5.2 and UCL, BOLSA/D/115 and 120. For the Uruguayan discount rate, Boletín de la Bolsa de Comercio de Montevideo.

In Argentina, average deposit rates were around 1.2% in 1885, rising to 2% from 1887 to 1889, and reaching 3% in 1890. In Uruguay they were 1.5% or less in the 1880s, rising to 2.4% by 1891. Loan rates were generally higher in Uruguay, averaging 7% in the mid-1880s and rising to over 10% for the LRP, and just under 10% for the market discount rate, during the crisis. In Argentina they were around 4% in the mid-1880s, increasing to 8% in 1890.[108] Lack of competition and the dominance of the Montevideo branch of the LRP in Uruguay likely explain why it could pay less for deposits and charge more for loans than the branches in neighboring Argentina, which had to contend with more competitors, especially the large Banco Nacional and BPBA.

However, as we saw in section 3.3, domestic prices changed substantially over the period in both countries, and sometimes in different directions. It is the differences in real interest rates that would have provided incentives to move gold from one country to another. The price index for Argentina presented in Figure 4.4 is for paper pesos, while the interest rates presented here are averages for liabilities and assets that are denominated in both paper and gold. It is thus necessary to know gold price inflation, which can be obtained by adjusting paper price inflation by the Argentine exchange rate (gold premium), and is shown in table 3.2. As can be seen, gold prices in Argentina did not begin rising until 1890, and in fact fell in most years from 1885 to 1889, because up until that point the exchange rate generally appreciated faster than paper prices rose.

[108] Joslin (1963: 124) comments that during the boom years "interest rates on good bills were running from 10 to 12 per cent", although it is not clear if he is referring to Argentina or Uruguay.

Table 3.2: Argentina and Uruguay, paper price inflation, exchange rate and gold price inflation

Year	Argentina			Uruguay
	Paper price inflation	Change in exchange rate	Gold price inflation	Gold price inflation
1885	7.6%	38.3%	-30.7%	-15.0%
1886	3.2%	0.5%	2.7%	-5.4%
1887	-3.8%	-2.5%	-1.4%	-5.8%
1888	0.0%	10.2%	-10.2%	2.1%
1889	24.7%	27.6%	-2.9%	34.2%
1890	69.2%	31.5%	37.7%	-17.7%
1891	128.3%	54.5%	73.8%	-9.5%
1892	-20.6%	-13.7%	-6.9%	-9.7%

Sources: Paper price inflation calculated from a wholesale price index from Cortés Conde (1989: 210) for 1885 to 1891 and from della Paolera and Taylor (2001: 111) for 1891 to 1892. Change in exchange rate calculated from della Paolera and Taylor (2001) gold premium. Inflation for Uruguay from Bértola et al. (1999) CPI.

Table 3.3 shows real interest rates for deposits and loans of the Argentine and Uruguayan businesses of the London and River Plate, from 1885 to 1892, as well as the real Uruguayan market discount rate. The deposit and loan rates for the Argentine branches of the LRP have been adjusted by a weighted average of the paper and gold price inflation series, with the weighting derived from the proportion of paper or gold interest income from the profit and loss accounts.[109]

Table 3.3: real interest rates for the Argentine and Uruguayan branches of the London and River Plate Bank and Uruguayan real discount rate, 1885-1892

Year	Real dep int rate		Real loan interest rates		
	Argentina (LRP deposit rate)	Uruguay (LRP deposit rate)	Argentina (LRP loan rate)	Uruguay (LRP loan rate)	Uruguay (market discount rate)
1885	24.2%	16.3%	-0.5%	21.5%	21.3%
1886	-1.1%	6.5%	0.7%	11.6%	10.5%
1887	3.8%	6.6%	7.9%	13.8%	13.4%
1888	10.1%	-1.1%	8.2%	3.2%	5.5%
1889	-0.5%	-32.7%	-14.1%	-26.9%	-26.0%
1890	-40.7%	19.8%	-55.2%	28.2%	26.8%
1891	-76.5%	11.9%	-109.2%	21.2%	19.1%
1892	10.1%	10.8%	19.7%	16.5%	17.0%

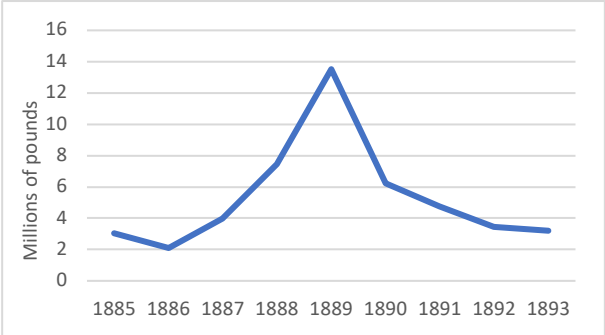
Sources: see sources for figures 4.11 and 4.12, and table 3.2.

[109] The proportion of paper and gold interest income has been used in lieu of information on the actual proportions of paper and gold deposits and loans, which is not available. The biases that can be introduced into the series are small relative to the changes in prices, both in paper and gold, and thus would likely not change the conclusions.

Before 1890, real interest deposit rates were higher in Uruguay only in 1886 and 1887. Loan rates were higher from 1885 to 1887. In 1888 and 1889, real deposit and loan rates were higher in Argentina than in Uruguay. In 1890 and 1891, real rates in Argentina were highly negative, as inflation in both paper and gold prices accelerated. In Uruguay, real rates were high, as severe deflation set in. Since gold flows from Argentina to Uruguay were accelerating from 1885 to 1888, and still high in 1889, but then reversed direction after this year, real interest rates do not appear to be a driving factor.

There are claims in the literature that gold flowed from Argentina to Uruguay for speculative investments. For example, in 1887 the director of the Buenos Aires Branch of the London and River Plate Bank commented on the effects of Argentine capital being invested in the newly established Uruguayan Banco Nacional (Joslin, 1963: 121). Gold also flowed east due to the Argentine government's intervention in the gold market in 1889 in an attempt to keep the exchange rate from appreciating. However, by all accounts, Uruguay's speculative boom began in earnest in 1887 (Acevedo, 1934a: 438-39; Winn, 2010). For example, the value of land sales in Uruguay (Figure 4.13),[110] after falling around 30% from 1885 to 1886, rose between 30% and 40% each year from 1886 to 1889. Sales collapsed in 1890, falling 50%, and continued a downward trend in the following years. Despite this, net gold inflows from Argentina were positive beginning in 1883 (around 200,000 pounds per year) and rising after 1884.

Figure 4.13: value of land sales in Uruguay, 1885-1893



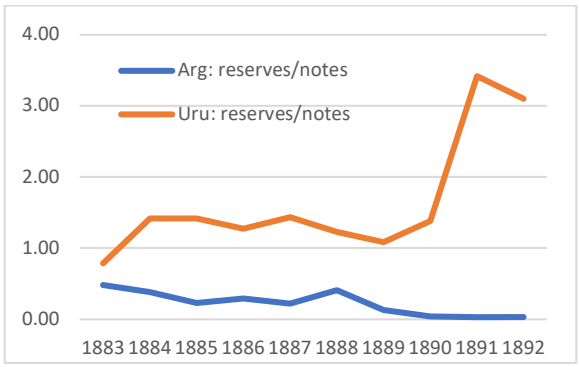
Source: Acevedo (1934a: 414, 519)

If seeking higher returns or speculative investments alone can't explain gold inflows from Argentina, especially before 1887, it is likely that capital moved east in part due to the Uruguay's adherence to the gold standard and the confidence in the country's banking system which upheld it. Figure 4.14 shows the ratio of reserves to notes of the banking sector for both

[110] This is the total value of land sales, that is, area times price. The value per hectare cannot be determined from the data.

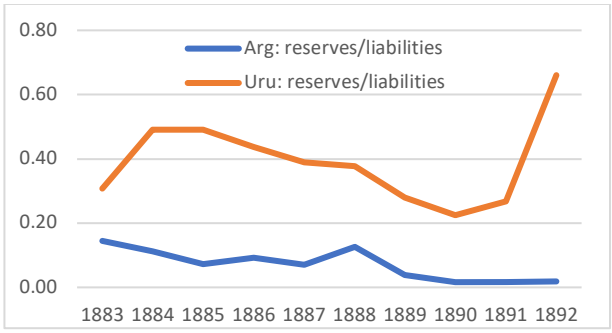
countries, while Figure 4.15 shows the ratio of reserves to total liabilities. For both measures, the Uruguayan banking system was much more secure. Reserves were around 125% of notes from 1884 onwards, while they were always above 20% of liabilities. For Argentina, reserves covered around 30% of notes until 1888, but fell precipitously afterwards. Liabilities were covered at around 10% until 1888, and also fell in subsequent years as the banking sector lost gold.

Figure 4.14: Argentina and Uruguay, ratio of reserve to notes in circulation



Sources: For Argentina, della Paolera (1988). For Uruguay, Appendix A.

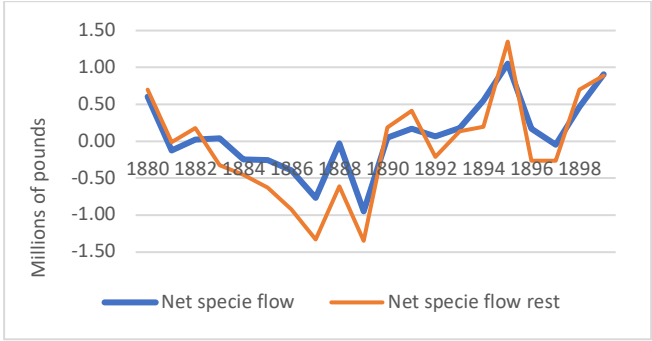
Figure 4.15: Argentina and Uruguay, ratio of reserve to liabilities of the banking sector



Sources: For Argentina, della Paolera (1988). For Uruguay, Appendix C.

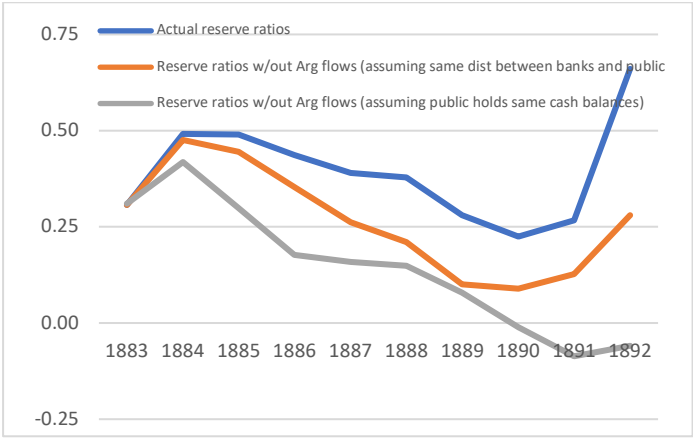
What was the impact of gold flows from Argentina to Uruguay? Figure 4.16 shows specie flows to Uruguay from 1880 to 1899. Total specie flows are shown in the thick, blue line. These were negative from 1884 to 1889, reaching 500,000-pound outflow in 1887 and almost 1,000,000 pounds in 1889. The orange, thin line shows net specie flows to other countries (total flows minus flows from Argentina). These represented an outflow of 1,000,000 pounds, on average, from 1886 to 1889. In essence, gold outflows would have been about twice as large had it not been for the specie flowing in from Argentina.

Figure 4.16: Net specie flows to Uruguay, 1880-1899



Source: AEU.

Figure 4.17: Reserve ratios for Uruguayan banking system, actual and counterfactual, 1883-1892



Source: Own estimation based on Appendix A, for reserve ratios, and AEU, for gold flows.

What effect could this have had on the banking system? Figure 4.17 shows the reserve to liabilities ratio of the Uruguayan banking system, along with two counterfactual ratios under the assumption that net gold flows from Argentina to Uruguay had been zero. The first counterfactual estimate deducts these gold flows from bank reserves and the public in proportion to the percent of the gold stock held by each. The second counterfactual estimate assumes the public held the same cash balances as it did in reality, and deducts the Argentine gold flows from bank reserves. In both cases, the reserve ratio of the banking sector would have been much lower by the end of the 1880s. Under the first counterfactual, it would have fallen to less than 10% by 1890, while under the second, the banking system would have run out of gold by that same year. Thus, net gold flows from Argentina likely had a large impact on the ability of the Uruguayan banking system to maintain high reserves and thus adhere to the gold standard.

The evidence presented in this section suggests that there was a benefit to Uruguay of being on the gold standard that is not picked up by the traditional models. Bordo and Rockoff (1996)

highlight the relationship between gold standard adherence and long-term capital flows. Countries on the gold standard could access capital markets at lower rates. However, we tend to think of access to short term capital as a benefit that only accrued to countries at the center of the international system, and indeed, the response of short-term capital flows is one of the explanations for why the gold standard worked smoothly in core countries, yet was so difficult to maintain in countries further from the center. However, if there ever was a country far from the center, it was Uruguay. For example, Flandreau and Jobst (2005) establish a hierarchy of countries based on the number of links each has to other financial centers.[111] In this hierarchy, Uruguay comes out near the bottom, and is in fact singled out by the authors as an example of a country whose currency is quoted "almost nowhere" (Flandreau and Jobst, 2005: 989).[112]

However, because of its adherence to the gold standard, and more specifically, because of the high level of reserves held by a large part of the banking sector, gold flowed into Uruguay from its less stable neighbor. Argentines, seeking to hoard gold, but fearing putting it in fragile banks in their country, chose to ship it east and place it in the relative safety of the Uruguayan banking system. This provided reserves for Uruguay at a time when the overall balance of payments was negative, and gold was flowing out of the country towards Europe. Without Argentine gold inflows, Uruguay's balance of payments deficits would have caused a much sharper decline in gold stocks, with consequent impacts on banking sector liquidity, the money supply and economic activity.

These short-term flows from Argentina did reverse course in 1890, just as the crisis broke. That is, Uruguay did not benefit from stabilizing capital flows when its financial weaknesses were revealed, as occurred in core countries when their exchanges fell (Eichengreen, 2008: 30). However, up until this point, the flow of gold from Argentina had the effect of bolstering the gold standard in Uruguay.

An alternative way of looking at the situation is to view the Rio de la Plata region as a whole. Most of the region, within the Argentine borders, operated under a depreciating paper currency, which benefitted landowners by decreasing their costs, in paper, as their incomes remained

[111] Links are based on whether the currency (exchange rate) of a country is quoted in the financial press of other countries.

[112] This general hierarchy, based on money market quotes, ignores what is likely a more salient factor in the Uruguayan case: foreign banks operating regional, with branches in multiple countries. In Uruguay, the LRP, among others, had branches in Buenos Aires and Montevideo, and could move gold from one to another at the behest of clients, or for its own purposes of liquidity management. The role of these banks in the financial flows between the two countries deserves further study.

fixed in gold. However, in order to protect their savings from losses due to banking sector fragility, they deposited them in Uruguay. The gold standard adhering country thus acted as the region's piggy bank. Argentine landowners and others able to accumulate gold benefitted from having a more stable neighbor, while Uruguay benefitted from Argentina's monetary volatility.

4.6 Conclusions

This paper has explored the impact of Uruguay's gold standard adherence in the leadup to the 1890 crisis. It directly compares the experiences of Uruguay and Argentina in order to disentangle the ways in which this policy affected the money supply, the banking sector and prices, and how these in turn contributed to each country's monetary and financial functioning in the 1880s. It also examines the financial links between the two countries, revealing that Uruguay may have benefited from its neighbor's monetary volatility. The main conclusion is that the differing policy with regard to exchange rates likely had significant impacts on the evolution of the boom and crisis in each country.

Despite roughly equal bank money creation by each country in the 1880s, Uruguay was losing significant amounts of gold through the decade, which, ironically, meant the overall money supply was much more stable than in Argentina. In addition, the banking sector was able to acquire gold from the public, likely due to its conservatism and reputation, which allowed it to maintain high reserve ratios. This underpinned the gold standard and allowed Uruguay to maintain a fixed exchange rate up to 1890. The main problem was with two banks, and especially the large Banco Nacional, with close ties to the government, that over issued currency in large volumes, and consequently lost gold reserves, eventually causing the government to suspend specie payments for the bank. In this sense, the crisis in Uruguay had a similar root to the one in Argentina: the use of state banks to finance deficits. The difference was that in Argentina the problem was generalized to a large part of the banking sector, while in Uruguay it was concentrated in a few specific banks, with the rest of the sector remaining solid.

The focus of the Argentine literature on the negative effects of currency depreciation for the government's fiscal position seem to hold up. The Uruguayan government's debt service burden was lower than Argentina's in relation to revenues, in part because it continued to receive payment in gold throughout the 1880s. Even after the crisis hit, it received devalued

notes of the Banco Nacional at their market value, avoiding the revenue erosion experienced by the Argentine government.

One important impact of Uruguay's adherence to the gold standard was that it likely helped attract gold from its neighbor, even as it was losing gold to the rest of the world. Without this gold inflow, it would not have been able to maintain sufficient reserves to back note issue and underpin the operation of the gold standard. This has implications for our understanding of the relations between financial markets in peripheral countries. Despite the challenges that the gold standard presented for peripheral countries, adherence made Uruguay an island of stability among its neighbors on inconvertible paper currencies. Further research should explore whether other peripheral gold standard countries benefitted from relations with non-gold standard peers.

Chapter 5: Conclusions

5.1 Summary of research results

This thesis has explored the problem of how Uruguay adhered to the gold standard for 38 years. Two types of questions are investigated. First, what were the consequences of gold standard adherence in terms of the money supply, balance of payments adjustments, and growth. Second, how did the gold standard actually operate in Uruguay.

In order to answer these questions, a range of macroeconomic and microeconomic evidence is brought to bear. Uruguay's annual balance of payments is reconstructed, including new estimates of capital inflows and the services and unilateral transfers balances, from 1870 to 1914. Evidence regarding the balance sheet of the banking sector is also presented, including capital, specie reserves, note circulation, deposits and credit. Estimates of gold stocks, and their distribution between the banking sector and the public are also developed for the 1880-1900 period. In addition, monthly data on the domestic market discount rate, the exchange rate for bills on London and gold flows are offered. Balance sheet data of several banks that operated during the period is collected and used to elaborate indicators of banking sector liquidity. This empirical evidence constitutes one of the primary contributions of this thesis.

The balance of payments data shows some striking results. The current account was almost never in surplus. There were three episodes of large deficits: one in the early 1870s, one from the mid 1880s up to 1890, and a third beginning around 1907 and lasting through 1913. These deficits were financed mainly through capital inflows, which came in large waves, coinciding with the three periods mentioned above. Data on gold flows is available only from 1878 to 1907, but is coherent in regards to the current trade and capital accounts.

Notes in circulation, deposits and credit evolved in the same direction as specie reserves in banks, all showing a high degree of volatility over the long run. However, there were moments when growth rates in the monetary variables outpaced growth in reserves, leading to drastically reduced reserve ratios. These periods coincided with the episodes of large current account

deficits and capital inflows. They also coincided initially with periods of high economic growth, the first two of which ended in sudden stops. The decision not to devalue and the low level of gold reserves in banks meant that adjustment had to occur through import compression, leading to large current account corrections and reductions in income.

The period in the 1880s leading up to the Baring Crisis, and the comparison with Argentina, is particularly illuminating. Both countries experienced economic expansions, led by foreign investment booms, that ended in severe financial crises in 1890. The role of depreciating paper currency in the leadup to the Argentine crisis has been highlighted by the historiography, with some authors arguing that it was a contributing factor. Uruguay maintained a fixed exchange rate throughout the 1880s, and although it did not avoid a crisis, its financial and monetary evolution was very different from that of its neighbor. Prices were much more stable, closely tracking changes in world prices, as would be expected under the gold standard. Confidence in the banking system attracted gold in two ways. The public, which had most of the country's gold reserves at the beginning of the 1880s, deposited large amounts in the banking system, and gold flowed from Argentina, also attracted by the security that Uruguayan banks offered. In addition, the fixed exchange rate meant the state avoided the erosion of revenues due to currency depreciation that plagued its neighbor in the second half of the decade. However, despite the more stable financial and monetary environment in Uruguay during the 1880s, it did not avoid falling into crisis in 1890.

While in Uruguay the gold standard was imposed by the merchant elite, which controlled the most important banks, shifting economic and political realities led to institutional changes, the founding of new banks and departures from monetary orthodoxy. During these episodes, the rules of the game were broken, eventually putting the gold standard at risk, as in 1890, when convertibility was briefly suspended.

The 1890 crisis, as well as an earlier event in 1875, were the only episodes of major financial instability, suspension of convertibility and current account reversal between 1870 and 1913. Throughout the rest of the gold standard period the banking system managed monetary affairs in a way that did not endanger the exchange rate. However, this does not mean that banks necessarily followed the rules of the game. While episodes of financial instability were associated with the procyclical overall monetary expansion, in the short run some banks broke the rules of the game in the opposite direction. They sterilized gold flows in order to protect their clients from volatility, stabilizing their provision of bank money. This may have had

economy-wide effects, since domestic interest rates appear to have been relatively insensitive to changes in international rates.

5.2 Wider implications of the results

Several interesting implications can be drawn from the results presented in this thesis. The first regards the difficulties that peripheral countries faced in their ability to adhere to the gold standard. The gold standard created significant restrictions in regard to the money supply and credit.

The rules of the game implied that changes in the money supply and credit had to move in the same direction as the stock of reserves. If they didn't, the mechanisms of adjustment, which were supposed to act through interest rates, prices and economic activity, would be short circuited, and there would be no natural force to move the economy back to equilibrium after a disturbance. Allowing the money supply to grow beyond what reserves warranted put the exchange rate at risk.

For a developing country, the temptation to depart from these restrictions was strong. The country alternated between periods of monetary orthodoxy and loose credit policies, with the latter inevitably leading to financial instability. In this sense, Uruguay confirms the main conclusion of standard theory, that over the long run, the rules of the game had to be respected.

However, the idea that central banks followed the rules of the game has long been debunked; central banks had more than one objective: preserving the exchange rate was of prime importance, but so was managing domestic liquidity and smoothing shocks. That is, they broke the rules of the game, at least in the short run, managing credit and the money supply countercyclically with respect to reserves. However, the literature generally assumes that countries without central banks were more faithful followers of the rules of the game, and that commercial banks could not implement volatility smoothing strategies, and much less so with economy-wide impacts. The results of this thesis point in the opposite direction. It appears that private banks in Uruguay acted in ways similar to European central banks, using countercyclical balance sheet management to reduce volatility that would otherwise be imported through the balance of payments.

This is interesting because it implies centralized banknote issue was not a precondition for domestic volatility smoothing. There were other countries where private banks could issue

notes alongside those of a central bank or large state bank with special privileges. However, in these situations the private banks often used central banknotes as reserves, giving the central bank some control over this secondary money creation.[113] In Uruguay, there was no single monetary authority until 1907, yet before this year, private banks acted in a way that secured sufficient money and credit for their clients even in the face of gold drains, and in this way likely partly shielded domestic interest rates from international shocks. It suggests that, at least in some countries, the origin of central bank liquidity management arose not from the privileged relationship of central banks with the rest of the banking sector, as suggested by Goodhart (1988), but from the competitive banks trying to meet the needs of their clients.

Another lesson that can be drawn from our results is the benefits that a fixed exchange rate offered a country like Uruguay. The gold standard literature highlights several advantages for countries adhering to the system. It was thought to facilitate trade by providing a stable international currency and eliminating exchange rate risk, thereby reducing transaction costs (Meissner and Lopez-Cordova, 2003; Flandreau and Maurel, 2005). Countries also hoped to gain access to international capital markets at lower costs (Bordo and Rockoff, 1996; Meissner, 2004). This was because being on the gold standard tied the government's hands, and thus acted as a signal to investors of their fiscal and monetary prudence.

However, there were other benefits that have been given less prominence in the international literature. One has to do with fiscal advantages for countries with high foreign currency denominated debt. The erosion of Argentina's fiscal revenues in the late 1880s has been emphasized in the literature on the Baring Crisis. The Uruguayan situation puts the Argentine case into relief. Uruguay's debt service remained lower as a proportion of revenues than in Argentina, likely in large part due to its adherence to the fixed exchange rate. Although it eventually defaulted on its foreign debt in 1891, this occurred a full year after Argentina's default. This specific effect on fiscal revenues is not generally mentioned in the literature that contemplates the benefits offered by the gold standard.

A further important ramification of the results presented here is that financial links between peripheral countries, even if not numerous, could have significant impacts for gold standard adherence. The financial relations between core countries on the gold standard, such as the

[113] For example, the Enskilda banks in Sweden issued their own notes throughout the gold standard period, but they used the Riksbank -Sweden's central bank- notes as reserves. The Riksbank was able to implement monetary policy through its control of the monetary base (Ogren, 2003; 2012)

response of short-term capital flows to changes in interest rates (Bloomfield, 1963) and cooperation between central banks (Eichengreen, 2008: 31-32), have been extensively researched. The relations between core and peripheral countries have also been discussed, for example, by Ford (1962), who highlights the unequal effects of long-term capital flows. More recently, Flandreau and Jobst (2005) showed that financial relations between countries were hierarchical, with some countries, like Britain, France and Germany, at the center of dense financial networks, others, like the US or countries in the European periphery in a secondary position, and countries like Uruguay at the bottom of a third tier, with very few financial links

However, Uruguay did have close financial links with Argentina (Morató, 1926; Flandreau and Jobst, 2005), due in part to their geographical proximity, shared colonial heritage and similar economic structures and immigrant stocks. As discussed in chapter 3, during the 1880s, large amounts of gold flowed from Argentina to Uruguay, due in part to their different exchange rate regimes. Argentina, on inconvertible paper currency, was experiencing rapid currency depreciation, inflation and gold draining out of the banking sector. Uruguay, on the gold standard, had a fixed exchange rate, relatively stable prices and, albeit with some exceptions, generally healthier banks. The amount of gold that flowed in to Uruguay from its neighbor compensated in some measure the gold the country was losing to the rest of the world, and it bolstered the reserves of the banking sector. It was the high gold reserves of Uruguayan banks that reinforced their reputation, and allowed some of them to employ volatility smoothing strategies. Without Argentine gold, the reserve ratio of the banking sector would have been much lower than it was, weakening the banks and putting the exchange rate at risk. Being on the gold standard appears to have allowed Uruguay to benefit from its neighbor's monetary chaos. This suggests that more research is needed on financial links between peripheral countries, especially in regard to relations between countries that have differing exchange rate regimes.

5.3 Agenda for future research

This thesis has argued that Uruguay is a unique and interesting case: a small, peripheral country, with no central bank, which maintained a fixed exchange rate for the 38 years leading up to 1914. It is an attempt to insert the Uruguayan case into some of the most salient debates in regard to the gold standard. However, the analysis presented in these pages reveals that further research is needed to understand the way the gold standard operated in peripheral countries and the consequences of adherence. Furthermore, the empirical evidence that has

been assembled can be further exploited in order to answer questions regarding exchange rate, monetary and banking policy in relation to Uruguayan development.

A first step is to use the estimations of the balance of payments and the banking sector balance sheet presented in chapter 2 in order to test more formal models of balance of payments adjustments under the gold standard, and to investigate the degree to which, for example, they occurred through changes in prices, incomes and interest rates. In some ways Uruguay is the perfect test case, given its small size, high degree of commercial openness, strong dependence on capital flows and lack of a central bank, since it is an extreme case of the peripheral condition.

A second avenue of research regards the 1890 crisis. Chapter 3 presented comparable estimates of trade variables, the money supply and gold stocks for Argentina and Uruguay that were used to examine the years leading up to the crisis and the role exchange rate policy may have played in their economic evolution during that period. However, the crisis itself and its aftermath was quite different in each country, and the information assembled here can contribute to their study.

One complicating factor is that Argentina and Uruguay implemented different institutional reforms after the crisis. For each country, the specific reforms were in large part a consequence of their experience during the 1880s. Argentina implemented an orthodox monetary scheme involving a strict currency board and removal of note issuing powers from the banking sector. The result was a slow deflationary process, which eventually allowed the country to rejoin the gold standard in 1900, although at a devalued rate with respect to the par value of the early 1880s. As della Paolera and Taylor (2001) assert, the 1890 crisis and the institutional response represented a turning point in Argentine history. Uruguay rejoined the gold standard soon after the brief suspension in 1890, with no change in the value of the peso. It consequently experienced a massive monetary contraction, something Argentina partially avoided after the crisis. However, the problems created by gold standard adherence -limits to monetary growth and credit- had not been resolved. These had been the main impetus for the establishment of new banks in the late 1880s with priorities that eventually put the exchange rate at risk. Six years after the crisis, the BROU was founded in another attempt to find a way to navigate the restrictions imposed by the gold standard. Its charter embodied some of the lessons learned from the crisis, and included, for example, strict limits on the bank's note issue and deposits. Over the following decades the BROU was slowly transformed into a proper central bank. In

this manner, the crisis was a turning point for both countries in institutional terms, a subject which warrants further research.

Chapter 4 showed that some banks implemented strategies that smoothed economic volatility. Two types of evidence are presented: micro level data with respect to the balance sheets of individual banks and macro level analysis regarding the sensitivity of local interest rates to external shocks. However, qualitative evidence about the perceptions and strategies of those who ran the operations of the banks is needed. This requires different sources and methods than those used in this thesis, but would add weight to the argument advanced here.

Finally, the introduction to this thesis stated that the ultimate answer to why Uruguay was able to adhere to the gold standard for 38 years is that the people in power wanted it. In other words, it is a political economy issue. This "why" question is fundamental for understanding the "how" questions regarding the operation of the gold standard and its consequences, but has not been directly confronted here. However, the political economy issues simmer under the surface of each chapter of the thesis, and bubble up every now and then. One example is the question of state banks, which despite their association with financial instability, arose time and again throughout the period under study. Proposals for state banks were supported by diverse forces: the professional classes tied to the state, the emergent industrialist bourgeois and agricultural producers, as well as a significant portion of the cattle ranchers (Barrán and Nahum, 1971: 452-459). Changing economic conditions and shifting alliances allowed these groups, at times, to wrest control from the merchant community and establish banks -the Banco Mauá, the Banco Nacional and the BROU- that expanded credit and directed financial resources towards neglected sectors. Another example is the inconvertibility decrees of 1875 and 1890, and the reaction of the traditional banks and the merchant community. In these cases, these forces were able to defy the government and the depreciation lobby, and impose their will, shutting down the offending banks and putting the country firmly back on the gold standard. Acevedo (1903; 1933b, 1934a, 1934b) and Barrán and Nahum (1971, 1978; 1987) discuss these matters in depth. However, future investigations can attempt to integrate quantitative analysis into the political economy story, especially in regard to the volume of credit received by various social groups. This research should also be carried out in comparative perspective. The relative political influence of different economic actors in Uruguay should be compared to the situation in other countries in the region, like Argentina, Brazil and Chile, where devaluation lobbies

were strong. This could shed light on the specific conditions under which the gold standard could work in peripheral countries.

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Appendix A: the balance sheet of the Uruguayan banking sector

This appendix presents aggregate time series regarding the banking sector from 1871 to 1913. In section A.1, a reconstruction of bank capital, on a bank-by-bank basis, for the entire sector from 1857 to 1913 is presented. In section A.2, series for specie reserves in banks, notes in circulation, deposits and credit are presented. The balance sheet data is available for a limited sample of banks for these years. Thus, the more complete bank capital series have been used to arrive at expanded estimates of monetary aggregates.

A.1: Bank capital in Uruguay, 1857-1913

This section presents information on bank capital for the entire banking sector from 1857 to 1913. Data has been collected for almost every bank that operated during the period.[114] The series covers the entire period, from the founding of the first banks up to 1913, and allow us to discriminate between domestic and foreign capital.

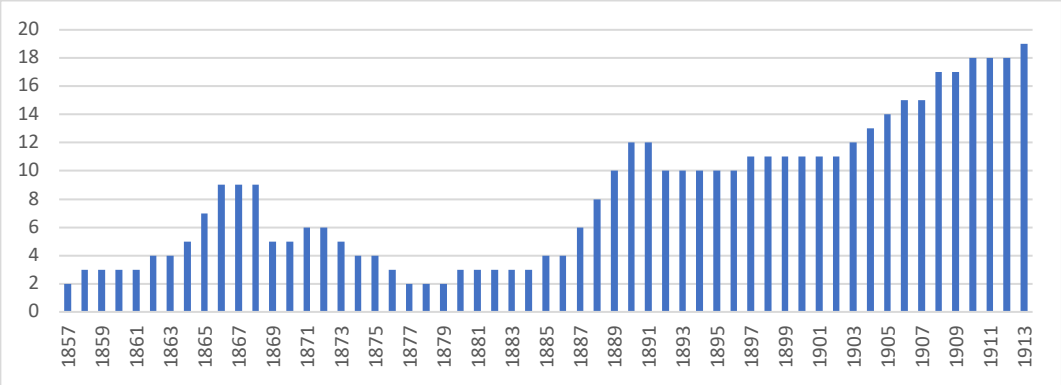
Bank capital is an indicator of the size of the banking sector, and is loosely related to more directly economically relevant variables such as specie reserves, currency in circulation, deposits and credit. In Uruguay, from 1865 onwards, currency emissions by private banks were limited to three times their paid-up capital. Market participants may also be wary of holding bills or placing deposits with banks that do not have minimum levels of capital. Thus, the amount of capital invested in a bank may set a limit, either through government regulation or via the market, on the size of other monetary variables.

[114] The historiography mentions several banks for which information on capital was not found.

- Five of these were opened in the 1870s: The Banco Unión in 1871 (BCU), the Banco Alemán-Belga, the Banco Mercantil del Río de la Plata and the Banco Herrera, Eastman and Cia. in 1872 (Acevedo, 1933b: 671; BCU) and the Banco Villaamil & Cia. in 1876 (BCU). These likely closed during the 1875 crisis or its aftermath. Another important institution is the Junta de Crédito Público, created in 1870 to withdraw from circulation the depreciated currency from problem banks (mostly the Banco Mauá) emitted before and during the 1868 crisis. It was state run and did not have its own capital, but acted as an emissions bank. It was dissolved in 1875.
- A multitude of banks were opened during the boom years in the late 1880s. At least 20 banks were registered between 1887 and 1889 (AEU), although it is not known how many of them were ever put into operation. Many were likely speculative ventures with inflated capital figures.

Figure A.1 summarizes the number of banks operating in each year for which capital information is available. The two banks founded in 1857 were quickly joined by several more, peaking at 9 before the 1868 crisis. Numerous closures over the next years reduced the number of banks in operation to two by the late 1870s. The number of banks increased during the Boom de Reus, reaching 12 by 1890. In the first decade of the 20th century the number of banks begins rising again, reaching 19 by 1913.

Figure A.1: Number of banks in operation, 1857-1913



Sources: See notes for tables A.1, A.2 and A.3.
Note: Some banks that are known to have existed, but for which date of closure and capital figures are not available (see footnote 114), have not been included in this chart.

Tables A.1, A.2 and A.3 present the data on capital for each bank, the total capital invested in the sector and the number of banks operating in each year. The date each bank commenced operations and the date it closed its doors to the public (in the cases this occurred before 1914) is also recorded. Table A.1 covers the years 1857, when the first two banks, the Mauá and the Banco Comercial, were founded, to 1876, when the Mauá was finally liquidated in the aftermath of the 1875 crisis. Table A.2 covers the years 1877 to 1895, the years in which the country operated a free banking system, with no central bank, under the Gold Standard. Table A.3 covers the years 1896 to 1913, after the Banco de la República was founded and gradually acquired central banking powers.

Capital amounts are presented for each bank that operated during period. Several different sources have been used. For the period before 1876, Pivel Devoto (1976) and Acevedo (1933a) have capital amounts for several bank for some years, as does Joslin (1963) for the LRB. Since bank capital was modified only occasionally, these figures have, in general, been extrapolated forward until the next figure is available. For later years, capital amounts have been drawn from individual bank balance sheets, many times published in the AEU or in Annual Company Reports. There were several branches of foreign banks established in Uruguay during the 1880s

and in the early 20th century. For these, capital amounts have been in many cases been drawn from Joslin (1963) and Winn (2010), and extrapolated using data on the capital of the mother companies from the Investor's Monthly Manual. Another important source is the works of Jacob (1992; 1993, 1994, 1996 and 2000), which provide data from the 1920s; for some banks, these figures have been extrapolated backwards when contemporary data is not available. Paid up, as opposed to authorized, capital has been quoted whenever possible. Details on the sources for capital figures for each bank are provided in the notes to tables A.1, A.2 and A.3.

Table A.1: Bank capital in thousands of pesos at current prices, 1857-1876 *(The "Mauá period")*

Year	Banco Mauá	Banco Comercial[a]	Banco Comerical de Salto	Banco Comercial de Paysandú[b]	London and River Plate Bank	Banco Comercial de Minas[c]	Banco Montevideano	Banco Navía y Cia.	Banco Italiano	Banco Oriental	Banco Franco-Platense	Total capital	Number of banks
1857	1200	600										1800	2
1858	1200	600	50									1850	3
1859	1200	600	60									1860	3
1860	1200	600	500									2300	3
1861	1200	600	500									2300	3
1862	1200	600	500	500								2800	4
1863	1200	600	500	500								2800	4
1864	1200	600	500	500	470							3270	5
1865	2000	600	500	500	940	50	1000					5590	7
1866	2000	600	500	500	940	50	1000	600	1000			7190	9
1867	2000	600	500		940	50	1000	600	1000	338		7028	9
1868	2000	600	500		940	50	1000	600	1000	338		7028	9
1869	2000	600			940			600		338		4478	5
1870	2000	600			940			600		338		4478	5
1871	2500	1289			940			600		338	350	6017	6
1872	2500	1289			940			600		338	350	6017	6
1873	2500	1289			940			600		338		5667	5
1874	2500	1289			940			600				5329	4
1875	2500	1289			940			600				5329	4
1876	2500	1289			940							4729	3
Commenced operations[d]	1857 (Acevedo, 1933a: 698)	1857 (Acevedo, 1933a: 697)	1858 (Acevedo, 1933a: 699)	1862 (Jacob, 1996: 65)	1863 (Joslin, 1963: 54)	1865 (Jacob, 1996: 66)	1865 (Pivel Devoto, 1976: 175)	1866 (Acevedo, 1933a: 584)	1866 (BCU)	November, 1867 (BCU)	May, 1871 (BCU)		
Closed[e]	1876 (BCU)	Remained open until after 1913	1868 (Acevedo, 1933b: 584)	1866 (BCU)	Remained open until after 1913	Likely 1868	1868 (Acevedo, 1933b: 584)	1875 (BCU)	1868 (BCU)	July, 1873 (BCU); Liquidated in 1874 (BCU)	August, 1872 (BCU)		

[a] The Banco Comercial was a currency emitting bank, but gave up this right in 1887.
[b] Absorbed by the Banco Italiano in 1866 (BCU).
[c] Assumed to have closed during the crisis of 1868.
[d] The date operations commenced may differ from the date in which capital is first recorded. The first is based on the date in which the bank is given legal authority to operate, while the second is based on the year in which a figure for capital first appears in the sources.
[e] Closing is based on the date in which the bank ceased operating with the public. Capital is registered up until the year of closing, even though it may appear in the sources in later years if liquidation is postponed.

Table A.2: Bank capital in thousands of pesos at current prices, 1877-1895 *(Free banking under the Gold Standard)*

Year	Banco Comercial[a]	London and River Plate Bank	London and Brazilian Bank	English Bank of the River Plate	Banco Francés Supervielle[f]	Banco Nacional[g]	Banco Italiano	Banco Español del Rio de la Plata/Bank of Spain and the River Plate[h]	Banco Ingles de Rio de Janeiro/ Británico de la América del Sud[i]	Banco de Cobranzas, Locación y Anticipos	Banco de Terapacá y Argentina/Anglo South American Bank	Banco Italo-Oriental	Banco Hipotecario[j]	Total capital	Number of banks
1877	1289	940												2229	2
1878	1289	940												2229	2
1879	1289	940												2229	2
1880	1289	940	212											2441	3
1881	1289	940	235											2464	3
1882	1289	940	235											2464	3
1883	1289	940	235											2464	3
1884	1289	940	235											2464	3
1885	1594	1500	235	94										3423	4
1886	1594	1500	235	94										3423	4
1887	1594	1500	294	188	1000	12000								16576	6
1888	1594	1500	294	188	1000	12000	220	800						17596	8
1889	1594	1500	294	188	1000	12000	220	800	235	800				18631	10
1890	1594	1500	294	188	1000	12000	220	800	235	800	500	1600		20731	12
1891	1594	1500	353	188	1000	12000	220	800	235	800	500	1600		20790	12
1892	1594	1500	353		1000		220	800	235	800	500		5070	12072	10
1893	1594	1500	353		1000		220	800	235	800	500		5070	12072	10
1894	1594	1500	353		1000		220	800	235	800	500		5070	12072	10
1895	1594	1500	353		1000		220	800	235	800	500		5070	12072	10
Commenced operations[d]	1857 (Acevedo, 1933a: 697)	1863 (Joslin, 1963: 54)	1878 (Joslin, 1963: 79)	1885 (Winn, 2010: 46)	1887 (Jacob, 2000: 184)	August 1887 (Acevedo, 1933a: 437-38)	1887 (Jacob, 2000: 224) or 1888 (Acevedo, 1933b: 441)	1888 (Acevedo, 1933b: 441)	1888 or 1889 (Joslin, 1963: 169)	1889 (Jacob, 1992: 13)	1890 (?)	April, 1890 (Guerra et al, 2008: 47)	1892 (Acevedo, 1933b: 562)		
Closed[e]	Remained open until after 1913	Remained open until after 1913	Remained open until after 1913	1891 (Winn, 2010: 194); Liquidated in 1893 (Winn, 2010: 199)	Remained open until after 1913	1891 (Acevedo, 1933a: 555); Liquidation not finalized until at least 1894 (Winn, 2010: 199)	Remained open until after 1913	Remained open until after 1913	Remained open until after 1913	Remained open until after 1913	Remained open until after 1913	1891 (Last year balances appear in the AEU)	Remained open until after 1913		

[f] Jacob categorizes this bank (founded by a French immigrant) as domestic (1992: 13), but suggests that some of its capital may have come from abroad (Jacob, 1991: 10).
[g] This bank was a quasi-state bank. Privately owned, yet its director was appointed by the Government and it handled the state's finances.
[h] The Banco Español, founded by Spanish immigrants, was purchased by the Bank of Spain, of Argentine capital, in 1904.
[i] This was a branch of a British bank with its main operations in Brazil and Argentina.
[j] This bank was created out of the Mortgage Department of the Banco Nacional when it was liquidated in 1892. Officially it was a private bank, but in effect was controlled by the state, and was officially nationalized in 1912.

Table A.3: Bank capital in thousands of pesos at current prices, 1896-1913 ***(Gold Standard with the beginnings of a Central Bank)***

Year	Banco Comercial	London and River Plate Bank	London and Brazilian Bank	Banco Francés Supervielle	Banco Italiano	Banco Español del Rio de la Plata/Bank of Spain and the River Plate	Banco Ingles de Rio de Janeiro/ Británico de la América del Sud	Banco de Cobranzas, Locación y Anticipos	Banco de Terapacá y Argentina/Anglo South American Bank	Banco Hipotecario	Banco de la República Oriental del Uruguay[k]	Banco Cooperativo de Ahorros/Credit Foncier del Uruguay[l]	Banco Popular del Uruguay	Banco La Caja Obrera	Almán Transatlántico	Banco de Crédito	Caja Popular de Pando	Caja Popular de San José	Italo Belga	Total capital	Number of banks
1896	1594	1500	353	1000	220	800	235	800	500	5070	5000									17072	11
1897	1594	1500	353	1000	220	800	235	800	500	5070	5020									17092	11
1898	1594	1500	353	1000	220	800	235	800	500	5070	5038									17109	11
1899	1594	1500	353	1000	220	800	235	800	500	5070	5058									17130	11
1900	1594	1500	353	1000	220	800	235	800	500	5070	5084									17155	11
1901	1594	1500	353	1000	220	800	235	800	500	5070	5119									17190	11
1902	1594	1500	353	1000	220	800	235	800	500	5070	5153									17225	11
1903	1594	1500	353	1000	220	800	235	800	500	5070	5186	93								17351	12
1904	1594	1500	353	1000	220	800	235	800	500	5070	5235	93	1000							18400	13
1905	1594	1500	353	1000	220	800	235	800	500	5070	5282	93	1000	10						18456	14
1906	1594	1500	353	1000	220	800	235	800	500	5070	5327	93	1000	10	266					18767	15
1907	1594	1500	470	1000	220	800	235	800	500	5070	6399	93	1000	10	266					19957	15
1908	1594	1500	470	1000	220	800	306	800	500	5070	6563	93	1000	10	266	100	5			20296	17
1909	1594	1500	470	1000	220	800	306	800	500	5070	6954	93	1000	10	266	100	5			20688	17
1910	1594	1500	470	1000	220	800	306	800	500	5070	7531	93	2000	10	266	100	5	10		22275	18
1911	1594	1500	470	1000	220	800	353	800	500	5070	9248	93	3000	10	266	100	5	10		25038	18
1912	1594	1500	588	1000	220	800	470	800	500	5070	11076	93	3000	10	266	100	5	10		27102	18
1913	1594	1500	588	1000	220	800	470	800	500	5070	12063	93	5000	10	266	100	7	10	750	30840	19
Commenced operations[d]	1857 (Acevedo, 1933a: 697)	1863 (Joslin, 1963: 54)	1878 (Joslin, 1963: 79)	1887 (Jacob, 2000: 184)	1887 (Jacob, 2000: 224) or 1888 (Acevedo, 1933b: 441)	1888 (Acevedo, 1933b: 441)	1888 or 1889 (Joslin, 1963: 169)	1889 (Jacob, 1992: 13)	1890 (?)	1892 (Acevedo, 1933b: 562)	1896 (BROU, 1917)	1902 (Jacob, 1992: 145)	1902 (Jacob, 1992: 13)	July, 1905 (Chagas y Trullen, 2009: 55)	1906 (Jacob, 1992: 13)	1908 (Jacob, 2000: 221)	1907 (Jacob, 1992: 13)	1909 (Jacob, 1992: 13)	1913 (Jacob, 1992: 13)		
Closed[e]	Remained open until after 1913																				

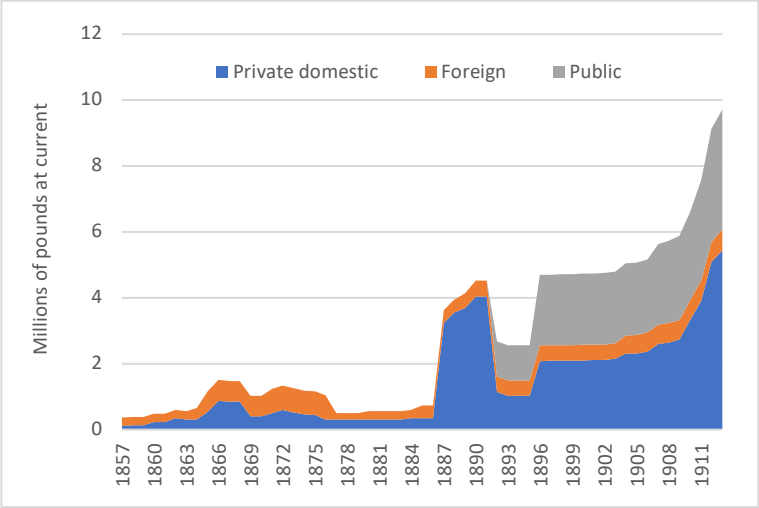
[k] Originally, half the shares were to be held by the state and the other half sold to the public. The private shares were never purchased and the Bank was officially nationalized in 1912 (BROU, 1917: 93)

[l] The Banco Cooperativo de Ahorros was absorbed by the foreign owned Credit Foncier in 1910.

Bank	Sources for capital amounts	Notes on capital amounts
1857-1876 (The "Mauá period")		
Banco Mauá	For 1857: Acevedo, (1933a: 698); For 1865: (Pivel Devoto, 1976: 168); For 1871: Acevedo (1933b: 671)	Capital amounts are assumed to have been increased in the year new figures appear in the sources (it is possible they were increased earlier).
Banco Comercial	For 1857: Acevedo (1933a: 697); For 1871: Acevedo (1933b: 671); For 1885: AEU (1885)	Capital amounts are assumed to have been increased in the year new figures appear in the sources (it is possible they were increased earlier).
Banco Comerical de Salto	Acevedo, 1933a: 699, 700	
Banco Comercial de Paysandú	Acevedo, 1933b: 350	
London and River Plate Bank	For 1864 and 1865: Joslin (1963: 54, 55); For 1885: Winn (2010: 48) and AEU (1885)	
Banco Comercial de Minas	1865 (Jacob, 1996: 66)	
Banco Montevideano	Pivel Devoto, 1976: 175	
Banco Navía y Cia.	Pivel Devoto, 1976: 175	Acevedo (1933a: 584) reports capital in year of founding as 1 million. Assumed as authorized capital, and figure reported by Pivel Devoto (1976) is applied retroactively for the whole period.
Banco Italiano	Acevedo, 1933a: 671	
Banco Oriental	Acevedo, 1933a: 671	Acevedo, 1933a: 584 reports capital in year of founding as 500,000. Assumed this is authorized capital, and figure reported in Pivel Devoto (1976) is applied retroactively for whole period.
Banco Franco-Platense	Acevedo, 1933a: 671	
1877-1895 (Free banking under the Gold Standard)		
London and Brazilian Bank	Own estimation based on Stone (1999), and capital for the mother company from the Investor's Monthly Manual (IMM)	Stone's figure of 50,000 pounds invested in 1880 is about 1/10th of the total capital for the company. This ratio has been applied to the capital of the mother company for the whole period to estimate the capital allocated to the Uruguayan branch.
English Bank of the River Plate	Winn, 2010: 46, 145, 194, 199	
Banco Francés Supervielle	Jacob, 2000: 184	
Banco Nacional	AEU	
Banco Italiano	AEU	
Banco Español del Rio de la Plata/Bank of Spain and the River Plate	AEU; Jacob, 1993: 23.	3.000.000 pesos reported for 1888, probable paid up not more than 800,000. Capital for the Bank of Spain is assumed to be equivalent to the existing capital of the Banco Español in 1904.
Banco Ingles de Rio de Janeiro/ Británico de la América del Sud	Own estimation based on Winn, 2010: 145 and capital for the mother company from the Investor's Monthly Manual (IMM)	Winn reports capital at opening at 50,000 pounds (235,000 pesos), or 1/10th of the capital of the mother company. The main company began increasing its capital in 1908, reaching double its earlier level by 1912. Here the capital for the Uruguayan branch is estimated maintaining the ratio of 1/10th the mother company's capital.
Banco de Cobranzas, Locación y Anticipos	Banco de Cobranzas, Locaciones y Anticipos (1922) Memoria Annual	The founding statute of this bank report authorized capital of 1 million pesos. The Company Report for 1922 reports capital of 800,000 pesos. This second figure has been applied to the whole period.
Banco de Terapacá y Argentina/Anglo South American Bank	Jacob, 1994: 33; Jacob 1992: 31	Based on capital in 1921
Banco Italo-Oriental	AEU	8 million pesos reported in the AEU 1890, but this is likely authorized, not paid up. The figure for 1891 hast been applied to both years.
Banco Hipotecario	AEU	
1896-1913 (Gold Standard with the beginnings of a Central Bank)		
Banco de la República Oriental del Uruguay	AEU	Authorized capital was 12 million pesos, raised to 20 million in 1910. Figures for paid up capital first appear for 1897 (AEU).
Banco Cooperativo de Ahorros/Credit Foncier del Uruguay	Jacob, 1996: 145; Jacob, 1992: 13, 32	Based on capital in 1921
Banco Popular del Uruguay	AEU	The balance sheet of this bank first appears in the AEU in 1902, although Jacob says it was founded in 1902.
Banco La Caja Obrera	Chagas y Trullen, 2009: 55	
Almán Transatlántico	Jacob, 1992: 13, 30	Based on capital in 1921
Banco de Crédito	Jacob, 2000: 221	Capital reported for 1908. By 1921, capital was 2.5 million (Jacob, 2000: 221), but it is not known what year capital was increased.
Caja Popular de Pando	Archivo de la Arquidiócesis de Montevideo, carpeta Serie 0.0.37/1: Correspondencia a la Unión Económica del Uruguay. Cajas populares y Sindicatos agrícolas - 1907-1970.	Figures are for capital and reserve fund. Figures are available for only 1908 and 1913.
Caja Popular de San José	Archivo de la Arquidiócesis de Montevideo, carpeta Serie 0.0.37/1: Correspondencia a la Unión Económica del Uruguay. Cajas populares y Sindicatos agrícolas - 1907-1970.	Figure reported for 1910
Italo Belga	Jacob, 1992: 13, 36	Based on capital in 1921

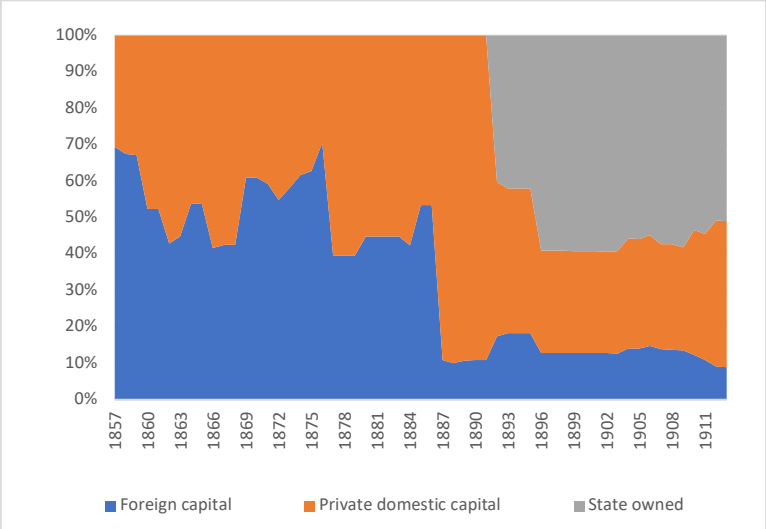
The total capital for the banking sector, discriminated by type -foreign, private domestic and public- is shown in figure A.2, while the composition as a percent of total is shown in figure A.3.

Figure A.2: Total private domestic, foreign and public bank capital in Uruguay, 1857-1913



Sources: Tables A.1, A.2 and A.3.

Figure A.3: Total private domestic, foreign and public bank capital in Uruguay as a percent of total, 1857-1913



Sources: Tables A.1, A.2 and A.3.

Total bank capital rose to around 1,200,000 pounds in the late 1860s, but fell around 550,000 by the late 1870s. It increased dramatically during the "Boom de Reus", from 1887 to 1889,

and fluctuated thereafter from around 4,500,000 to 10,000,000 until 1913. Of this, around half was of foreign origin, with the other half being private domestic, until 1885. The increase in investment during the boom years was mainly private domestic capital. After the collapse of the Banco Nacional, the mortgage department was spun off and converted to a quasi-state-owned Banco Hipotecario[127] in 1892, with a capital of around 1,000,000 pounds, and the BROU was founded in 1896 with a capital of 1,000,000 pounds. Together, these banks had over half the capital of the banking sector for the remainder of the period. Private domestic capital had about 30% of the market from 1896 onward, while foreign capital had about 10% or 15%.

The 9,700,000 invested in the banking sector in 1913 represented 9% of GDP. This was more than the combined investment of the gas, telegraph, telephone, tramway and waterworks sectors, which together had received accumulated investment of 5.300.000 million pounds by 1913.[128] By the same year, Uruguay had received about 15,200,000 pounds of accumulated railway investment,[129] a massive amount for such a small country (Uruguay was in 3rd place in Latin America in terms of railway kilometers per capital (Herranz-Loncán, 2011)). Resources directed towards the banking sector were on the order of 60% of what went into railways.

A.2: The balance sheet of the Uruguayan banking sector, 1871 to 1913

This section presents aggregate time series regarding the banking sector from 1871 to 1913. Specifically, series for specie reserves in banks, notes in circulation, deposits and credit are presented. Data is available for a limited sample of banks for these years. First, the data in this main sample, and its limitations, are discussed. Then, estimates of monetary aggregates based on an expanded sample using the capital figures discussed above, and more representative of the banking sector in its entirety, are presented.

Specie reserves are taken from references to "*caja*", "*encaje*" or "*reservas*". The series for notes in circulation is taken from the line in bank balances referring to "*emision"* or "*billetes emitidos*". For deposits, the aggregate data presented by Acevedo (1933b and 1934a) under the

[127] This bank, although technically privately owned, was in effect run by the state from its founding in 1892. It was officially nationalized in 1912.
[128] Own calculation based on Stone (1999), Esteves (2006) and the IMM.
[129] Own calculation based on Company Reports for the Central Uruguay Railway Company, the Central Uruguay Northern Extension, the Central Uruguay Eastern Extension, the Central Uruguay Western Extension, the Midland Uruguay Railway Company, the Northeastern of Uruguay Railway Company, the Hygueritas Railway Company of Uruguay and the AEU.

category "*acreedores*" is used for 1871 to 1884. For the post-1884 period, where individual bank balances are used, the information is not homogenous. Some banks refer to "*acreedores*", while others to "*cuentas corrientes*", "*depósitos*" of various types, -"*fijos*", "*a plazo*"-, and "*cajas de ahorro*". The sum of all these is used for the deposits series. For credit, the aggregate data presented by Acevedo (1933b, 1934a and 1934b) under the category "*deudores*" is used for 1871 to 1884. From 1885 to 1913, the categories "*varios deudores*", "*valores a cobrar*", "*valores descontados*" and "*cuentas corrientes deudoras*" are used.

The sources available for specie reserves in banks in general do not distinguish between gold, silver and other metals. We know that the major part of reserves was gold, as silver and other metals were limited by law in use for payments, and the convertibility requirements for banks were specified only in gold. An 1892 law allowed silver coins to be minted, in part to mitigate the shortage of small denomination currency after the 1890 crisis. After 1907, when the BROU had a monopoly on currency emission, part of its specie reserve was held in silver, but this rarely reached over 10% of its total reserves.

Another problem is that in some cases bank balances do not distinguish between metallic reserves and paper currency from other banks (they simply refer to the "*encaje*" or "*caja*"). In the cases in which they do, only metallic reserves are counted. In these cases, the holdings of paper currency from other banks was very small. For example, the Uruguayan branch of the London and River Plate Bank (LRP) reports their holdings of notes from other banks from 1898 to 1904, but these never amount to more than 2% of their total reserves (AEU). This suggests that the error that may arise from the banks that do not make this distinction is small.

For 1871 to 1874, Acevedo (1933b) presents totals for reserves, currency, deposits and credit from December of each year. The banks included in those totals are the full set of banks operating in those years. For 1879, 1880, and 1883 to 1891, similar figures are available from Acevedo (1934a and 1934b) for March, but cover only note issuing banks, excluding banks that took deposits and carried out other commercial operations but did not emit currency. From 1885 onwards, the Anuarios Estadísticos del Uruguay (AEU) present the balances of several of the most important banks that operated in the country in each year, as well as those of some non-currency emitting banks in operation after the BROU became the sole currency emitter. These are the LRP, the Comercial, the Banco Italiano, the Banco de España del Río de la Plata,

The English Bank of the River Plate, the Banco Italo-Oriental and the Banco Popular.[130] Again, this set does not cover the entirety of the population of banks that operated during those years.[131]

The series presented here have been constructed using the data from Acevedo (1933b, 1934a and 1934b) for 1871 to 1884. For 1882 to 1884, the March figures from the following year have been applied. From 1885 to 1913, the sum of individual bank data has been used. For most banks, data for a particular year has been taken from the AEU for that same year. For the Comercial, the data up to 1888 has been taken from the 1916 AEU, and for the Comercial, the LRP, the Banco Italiano, the BROU and the Banco Popular, data from 1889 on has been taken from the 1919 AEU.

For 1885 on, aggregating the individual bank data for notes in circulation gives an accurate total, since all banks able to issue notes are in the sample (heretofore referred to as the "main sample"). In the case of specie reserves, deposits and credit, the actual amounts are higher than what can be estimated from this limited sample of banks.[132] However, I have constructed estimates of bank capital for essentially the entire sector. Information on bank capital is more readily available than for other balance sheet variables. Initial authorized capital is usually declared in founding statutes of banks and in the laws permitting their establishment. Initial bank capital and later increases can also be found in the financial press, such as the Investor's Monthly Manual and local newspapers. The fact that bank capital is modified (usually increased) only occasionally means relatively accurate estimates can be elaborated from a few data points. The details of this reconstruction are presented in appendix B.

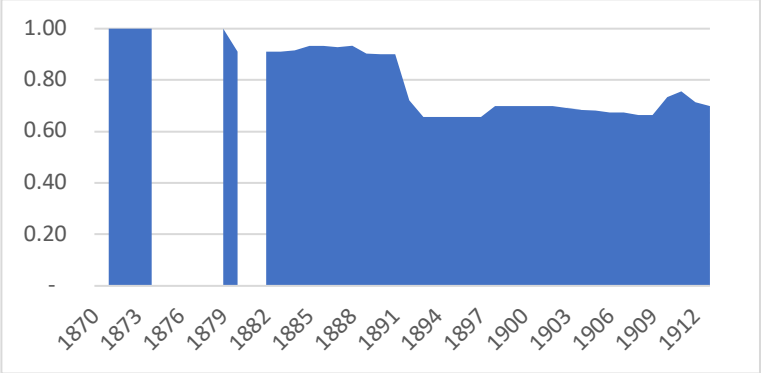
We can exploit the capital figures in order to estimate the aggregate levels for the other balance sheet variables. If we assume that the banks not in the main sample held balances, on average,

[130] The Banco Nacional was liquidated in 1892, but its balances show small, dwindling sums of gold reserves until 1898. These have been added to the total specie reserves series.
[131] The years for which the Acevedo (1934b) and AEU data overlap (1885-1891), the sum of the data in the latter coincide to a great degree with the former for each respective variable, except during the peak of the 1880s boom and crisis years.
[132] Román and Willebald (2015) present continuous series for aggregate specie reserves and deposits from 1870 to 1913, relying in large part on the same sources used here. They fill in gaps in the specie reserves with data from other sources, as well as arithmetic interpolations for some years. For 1875, 1880 and 1882, they incorrectly take the amount of circulating inconvertible bills, which the state had taken off the Maua's balance sheet in 1875, as the current gold-backed emission in circulation. For deposits, they arithmetically interpolate the years 1870 and 1875 to 1882, and for 1903 to 1911 use the variations in the deposits of the BROU to estimate those for the entire sector. This likely overstates the level of deposits by 1913, since the BROU went from having minimal market share in 1896, the year it was founded, to occupying about half the market for deposits and credit in the 1920s (Roman, 2010).

in the same proportion to their capital as those in the main sample, then we can estimate the actual level of monetary aggregates by expanding the figures from the main sample in each year in accordance with total bank sector capital. This has been done for the private sector banks, since it is reasonable to assume that the public sector banks behaved differently. Thus, the balance sheet data for the BROU is excluded from the exercise, and added to the total afterwards.

Figure 2.13 shows the capital of the private sector banks in the main sample as a proportion of the total capital of the private banking sector.[133] As can be seen, the capital of the main sample represented varying proportions of the total private capital of the sector; 100% in the early 1870s, around 90% in the late 1880s, and around 60% to 75% after 1893.

Figure A.4: Proportion of bank capital in main sample, 1870-1913



Source: Own calculation, AEU and Tables A.1, A.2 and A.3.

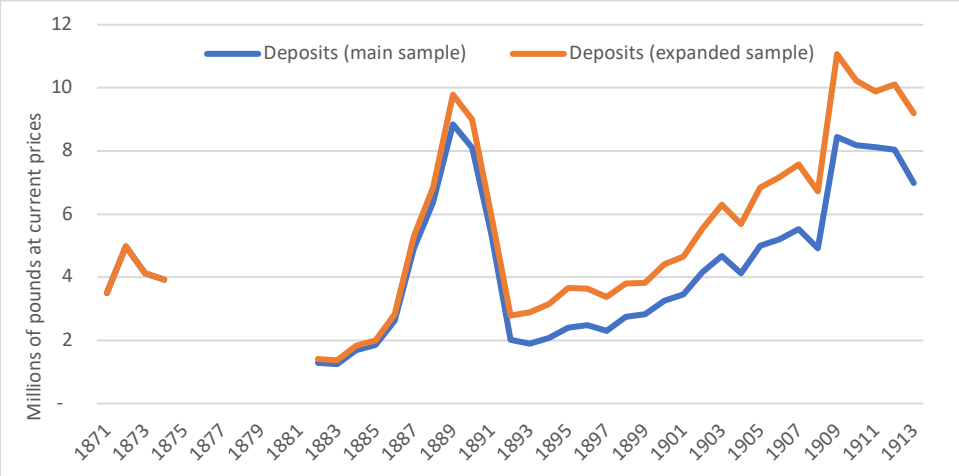
To see the difference between the two estimations including and excluding the banks without balance sheet data, figure 2.14 shows, as an example, the unexpanded and expanded deposits of the banking sector. The assumption that banks not in the main sample held deposits in the same proportion to capital as those in the main sample is likely too strong.[134] The banks outside the main sample tended to be less important, have lower capital, and may not have had as much

[133] The Banco Hipotecario has also been left out of this exercise, since it was not a commercial, deposit-accepting bank.

[134] After the Banco Nacional and the English Bank of the River Plate shut their doors in 1891, audits of the remaining note issuing banks were performed and 100,000 Chilean coins, called condors, were found in their coffers. An observer during the period claimed that, according to the total reserves of the non-note issuing banks in operation, they should together hold about 36,000 Chilean condors (Acevedo, 1903: 12). This observation reveals that the non-note issuing banks held about 26% of the total reserves of the system. The capital of the five note issuing banks (the LRP, Nacional, Español de Rio de la Plata, Italiano and Italo-Oriental) was 16,120,000 pesos, while that of the other banks in operation (the Comercial, London and Brazilian, Francés Supervielle, English Bank of Rio de Janeiro and Anglo South American) was 4,669,500 pesos, meaning that the non-note issuing banks held about 22% of the capital of the banking sector. These proportions lend strength to the methodology applied here, at least for the specie reserves series.

success in capturing deposits for a given amount of capital. Thus, the expanded liabilities series should be considered an upper bound, while the unexpanded series is effectively a lower bound.

Figure A.5: Deposits of the banking sector (main sample and expanded sample), 1871-1913

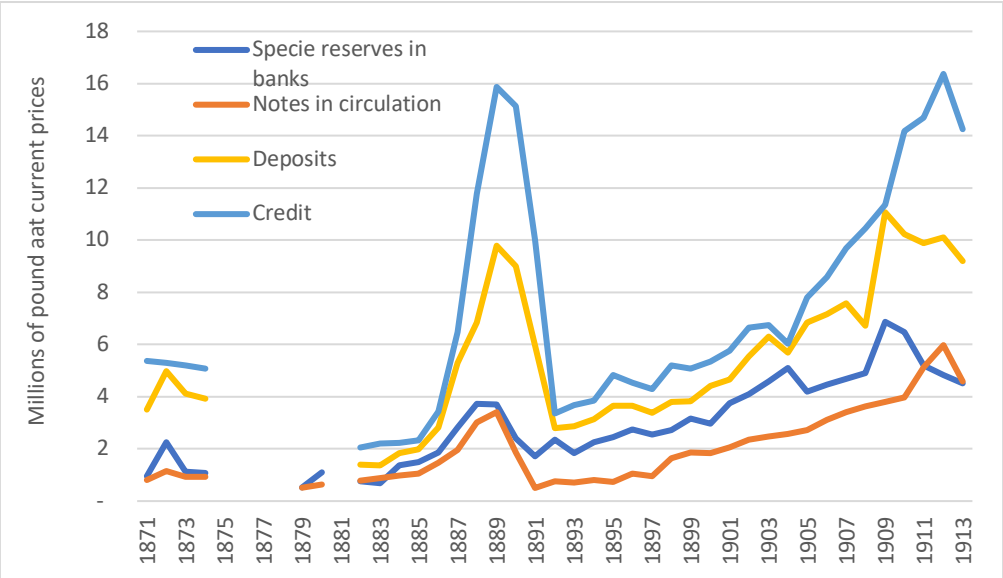


Sources: AEU and Tables A.1, A.2 and A.3.

Figure 2.15 shows the full set of expanded estimates developed above: specie reserves in banks, notes in circulation, deposits and credit, annually, from 1871 to 1913. Specie reserves were lower in the mid 1880s than they had been in the early 1870s. Bank created money (notes in circulation and deposits) and credit appear to have been high relative to specie reserves in the early 1870s, but were reduced sometime after. Gaps in the data do not permit identifying the exact moment, but it was likely during the 1875 crisis. The fact that the following decade was one of slow recovery means that the four variables likely remained low during that period.

All four series begin to rise towards the end of the 1880s, and reach a peak in 1889 or 1890, but collapse immediately after. Specie reserves fell to their lowest point over the period in 1891. Note issue collapsed by about 70%, and stayed relatively stagnant until after 1896, the year the BROU was founded. Notes in circulation dropped again in 1904, the year that the LRP emission charter expired, but began rising soon after as the BROU, soon to become the sole currency emitter, expanded its circulation of paper money.

Figure A.6: specie reserves, notes in circulation, deposits and credit of the banking sector, 1871-1913



Sources: AEU and Tables A.1, A.2 and A.3.

The expansion of deposits in the late 1880s was much more pronounced than that of currency in circulation. While the latter rose by a factor of three between 1885 and 1890, the former rose by a factor of nine in the same period. This fact has been somewhat overlooked by the historiography regarding the Boom de Reus, which highlights the expansion of currency emissions and the inability of the Banco Nacional to convert its notes, but does not discuss the massive expansion of other bank liabilities (see, for example, Acevedo, 1934a: 546-552). Credit followed a similar trajectory to the other variables, although growth rates were faster in the late 1880s and after 1904.

Appendix B: Foreign Investment in Uruguay during the First Globalization: Capital Inflows and Returns

B.1 Introduction

This appendix presents the reconstruction of foreign investment flows to Uruguay during the first globalization. Time series on capital flows to the country from 1864 to 1913 are constructed in three main categories: public debt, railways and other foreign direct investment. In addition, series for interest and dividend payments made on these investments are estimated.

The most important source of information on international investment flows during this period is the database compiled by Stone (1999) for British capital exports, which contains the value of foreign securities emitted on the London stock exchange annually, from 1865 to 1914, at market prices. Esteves (2011 and 2012) presents similar figures for French and German capital exports. These databases break down investment into three categories: public debt, railways and other foreign direct investments. However, these works can contain errors and incomplete information. Until recently, Stone's statistics, and the works of Jenks (1944) and Simon (1967; 1968; 1970) upon which it is based, were the main source for the international literature on investment flows before 1914 (Esteves, 2006: 2), and thus have been the most widely critiqued. The main problems identified derive from the fact that only new listings are included (meaning movements of securities between markets after initial issue are not captured) and from the difficulties involved in identifying the amounts actually sold in London for bonds issued in multiple markets simultaneously (Miller, 1995: 95-96). Furthermore, these statistics are based upon published data on amounts offered for subscription in London. However, these amounts were not always purchased by investors, and could be partially withdrawn later. Also, the vendors could decide to keep part of the bonds for themselves (Simon, 1968: 19). In addition, initial issues do not tell the whole story about foreign investment.

Miller (1995: 97), in reference to foreign investment in Latin America, suggests that "historians need to differentiate more clearly among three separate calculations: the total value of Latin American bonds issued in London over a set period; the outstanding principal of these loans at

particular dates; and the total value of Latin American government bonds held by British subjects", adding that the "actual flow of British capital", and return flows from amortization and interest payments are also important.[135] He also suggests that Latin American official statistics have been underexploited, especially with regard to this last issue.

Almost all major foreign investment in Uruguay in the late 19th century was British, although by 1913 French and German investment had entered the country as well. For the estimation of capital flows to Uruguay, data has been obtained from the international databases mentioned above, as well as from local sources. Official Uruguayan government statistics exist regarding external public debt emissions, while the Company Reports of railways operating in Uruguay can be used to obtain information on capital invested in this sector. For other foreign direct investment, there is scattered information from contemporary sources and secondary literature.

By drawing on data from both types of sources, we can get a relatively complete picture of actual capital flows to Uruguay during the period. Here we present a first effort in this direction. Foreign investment from 1864 to 1913 has been estimated in three categories: public debt, railways and other foreign direct investment. Sections A.2, A.3 and A.4 discuss each category, respectively, looking at the amounts invested in every year, cumulative capital flows, and financial returns on outstanding debt. Each section details the sources used and methods of estimation, and presents results, contrasting them with alternative estimates when relevant. Section A.5 examines total investment flows and the relative weight of each category. It also examines the net resource transfer from foreign investment inflows and the outflows resulting from interest and dividend payment.

B.2 Public Debt

The international databases mentioned above draw on information about listings of foreign securities in European stock markets at market prices. However, they contain several problems. First, only new listings are included. Movements of bonds between markets after their initial sale are not captured. Neither are reductions in circulating debt due to amortization payments. Furthermore, in Uruguay, there were instances of large emissions of public debt that did not make it to the stock exchange, and therefore are not captured in the international databases. For example, Baring made a 2-million-pound loan to the Uruguayan government in 1890, but was not able to place the securities in London due to the crisis in Uruguay and Argentina that same

[135] Miller was referring only to public debt, but these issues apply in part to foreign direct investment as well.

year. The bonds remained on the Bank's balance sheet, and therefore do not appear in Stone's statistics. However, they should be counted as a 1.5-million-pound capital inflow that year (taking into account the discounted price). In the early years of the 20th century, the Uruguayan state, looking to reduce dependence on British capital, turned to French banks to float bonds on the Paris stock exchange. However, Esteves' (2011) database on French investment does not capture foreign public debt, and therefore the 1905 and 1909 bond emissions placed with French banks do not show up in these statistics.

Due to these limitations, to estimate foreign investment in Uruguayan public debt, I have relied mostly on local sources. The Anuarios Estadísticos del Uruguay published by the *Dirección General de Estadística* contain information on the nominal value of public debt circulating in each year, separated into "internal", "external" and "international" debt. They also provide figures on the total public debt emitted annually and total annual amortization payments. The year-to-year differences in external and international debt in circulation grossly overestimate the actual capital inflows for several reasons. First, not all bonds denominated "external" were actually placed abroad. A portion of bonds emitted was often used for swap conversions of internal bonds (or older "external" bonds circulating internally), and thus ended up in the hands of Uruguayan residents. Second, the bonds that were actually placed abroad were usually offered at discounts, so the effective capital inflow was often much lower than the nominal value would suggest. Third, after the original debt emission, securities regularly changed markets. Bonds emitted in Uruguay were frequently later exported to Europe, implying a capital inflow after the initial emission. There were also years in which bonds were imported, constituting capital outflows.[136] There is the further issue of the "international" debt, which was owed to foreign governments. These debts, although often appearing as emitted between 1864 and 1913, were diplomatic solutions to grievances for events which occurred before the period under study, mostly in the 1850s, but some going back to the Colonial period. These should not be counted as capital inflows even if they appear as emitted after 1865, since no capital actually entered at the moment of their emission, although amortization and interest payments on these debts should be accounted for.[137]

[136] This phenomenon is hereafter referred to as "secondary bond exports".
[137] The data presented in this document does not include amortization and interest payments on "international" debt. This debt was about 500,000 pounds in the 1860s, rising to 1 million pounds in 1890, and falling to 500,000 pounds again by 1913. I hope to include information on this debt in the total estimates in the future.

This means that in order to get an accurate picture of foreign investment in public debt and its returns, we must examine each bond series emitted during the period, and try to discern how much capital actually flowed in as a result. There were ten external bond series emitted by the Uruguayan state between 1865 and 1913. These are shown in Figure B.1.

Table B.1: Uruguayan government external bond emissions before 1914

Year	Name of bond series	Nominal interest rate	Discount	Nominal value of loan (in pounds sterling)
1864	Empréstito Montevideano-Europeo	6.0%	60.0%	1,000,000
1871	Empréstito Uruguayo de 1871	6.0%	72.0%	3,500,000
1883	Empréstito Unificado de 5% de 1883	5.0%	60.0%	11,127,000
1888	Empréstito de Conversión y Obras Públicas de 1888	6.0%	82.5%	4,255,300
1888	Empréstito Municipal Externo	6.0%	85.0%	1,276,595
1890	Empréstito de 6% de 1890	6.0%	84.5%	2,000,000
1891	Deuda Consolidada de 1891	3.5%	100.0%	20,500,000
1896	Empréstito Urugayo 5% de 1896	5.0%	71.5%	1,667,000
1905	Empréstito de Conversión de 1905	5.0%	96.25%	6,912,404
1909	Empréstito de Obras Públicas de 1909	5.0%	97.0%	1,276,592

Source: Nahum (1994).
Note: "Year" is the year the loan was approved by the Uruguayan Legislature. The column "Discount" shows the percent of the nominal value at which bonds were taken by the foreign bank or syndicate that handled the loan, in the initial year of emission.

Two main estimates are developed regarding each debt emission: the nominal amount emitted abroad and the effective capital entry. The first has been estimated by taking the nominal value of the loan and subtracting the portion that was in fact emitted internally as conversions of internal debt (or of older "external" debt circulating internally). The effective capital entry has been estimated by subtracting the value of swap conversions of bonds circulating externally from the nominal amount emitted abroad. In addition to these two estimates, the value of secondary bond exports has been estimated, both in nominal terms and at market prices, when relevant. Furthermore, amortization payments have been estimated, in nominal terms and at market prices.

B.2.1 Empréstito Montevideo-Europeo (1864)

This bond emission, with a nominal value of 1,000,000 pounds, handled by the Brazilian financier the Baron de Mauá and his bank in Uruguay, marked the first time the Uruguayan government was able to access the London market for funds. The bonds paid a nominal interest rate of 6%, were to be taken by Mauá at 60% of their face value and a commission of 2.5% charged.

However, evidence on its placement in London is conflicting. Stone (1999; 252) reports 450,000 pounds called on the London market in 1865 (if sold at the same price as it was taken, 60%, this would correspond to a nominal value of equal 750,000 pounds). However, in 1871, in an attempt to stabilize the economy after a banking crisis, the state guaranteed the unbacked paper money that had been emitted by private banks. Banks were obliged to hand over the securities against which the paper money had been emitted. Mauá produced 781,000-pounds (nominal) worth of the *Empréstito Montevideo-Europeo* bonds (Nahum,1994: 17).[138] The Mauá bank had apparently kept most of the bonds on its balance sheet, unable to place them on the London market. However, some bonds must have been successfully sold in London, since the IMM reports prices for 1869, 1870 and 1871.

The law approving the deal was passed in December of 1864, and in February of 1865 the government received an up-front payment by Mauá of 10% of 100,000 pounds (presumably corresponding to a nominal value of 166,667 pounds). However, it is unclear when the government received the rest (which should have been 500,000 pounds, minus the commission of 2.5%, or 15,000 pounds). Since the historiography treats Maua's delivery of these bonds as collateral for paper money emissions as a surprise, I assume that the government received payment for the emitted bonds (and thus, paid interest on them).

Table B.2: Empréstito Montevideo-Europeo, effective capital entry

Year	Nominal value emitted and sold abroad	Discount	Commissions	Effective capital entry
1865	1,000,000	60%	15,000	585,000

By 1871, 185,100 pounds (nominal) had been amortized, while the remaining debt was cancelled with funds from the *Emprestito Uruguayo* of that same year (Ferrando, 1969: 59; Nahum, 1994: 13-17). Due to lack of more precise information, this total has been assumed to have been paid out in equal parts every year from 1865 to 1871 (26,433 pounds, or about 2.6% of the nominal value per year).

The market price at which bonds circulated and were amortized is reported in the IMM from 1869 to 1871. For earlier years, the market price is assumed to be 60% of nominal value, that is, the value at which the loan was taken by Mauá.

[138] Acevedo (1933b:570) reports a value of 592,128 pounds, which is about 75% of Nahum's figure. This disparity could be reconciled if Acevedo is reporting the market value, which was near 75%, while Nahum reports the nominal value.

Table B.3: Empréstito Montevideo-Europeo, amortization payments

Year	Nominal amortization payments abroad	Price (% of par value)	Amortization payments abroad at market prices
1865	(26,443)[139]	60	(15,866)
1866	(26,443)	60	(15,866)
1867	(26,443)	60	(15,866)
1868	(26,443)	60	(15,866)
1869	(26,443)	73.75	(19,502)
1870	(26,443)	78.75	(20,824)
1871	(26,443)	73.75	(19,502)

B.2.2 Empréstito Uruguayo (1871)

This 3,500,000-pound loan was placed in London by Thompson, Bonar and Co., paying 6% interest and 2.5% annual amortization at par.[140] It was taken at 72% by the bank, leaving 2,520,000 pounds (Ferrando, 1967: 76). Stone (1999: 253) reports an emission of 613,000 pounds in 1871 and 1,136,000 pounds in 1872, adding up to 1,749,000 pounds. For the purposes of this study, the figures derived from the Uruguayan statistics have been taken as the actual amount emitted abroad. Ferrando (1967: 77) reports a commission of 305,269 pounds.

Table B.4: Empréstito Uruguayo, nominal value introduced abroad and effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commissions	Effective capital entry
1871	3,500,000	3,500,000	3,500,000	72%	305,269	2,214,750

Debt service payments were suspended during the 1875 crisis, and reinstated in 1878. An additional 371,520 pounds were emitted that year to cover the unpaid interest during the years of suspension (free of interest and amortization payments for five years). By 1884, when the remaining bonds in circulation were converted to the Empréstito Unificado, 404,000 pounds had been amortized. I have assumed these occurred in equal parts during the 11 years from 1871 to 1875 and 1878 to 1883 (36,727 pounds, or about 1% of the nominal value of the loan annually).

The market price at which bonds were amortized is available from the IMM, and has been applied to the nominal amounts amortized to calculate the effective amortization payments.

[139] Figures in parentheses are negative, in this and all subsequent tables.
[140] The renegotiation of this debt in 1878 stipulated that, after 1883, amortization would be made at market prices and not at par value (Ferrando 1967: 96).

Table B.5: Empréstito Uruguayo, amortization payments

Year	Nominal amortization payments abroad	Price (% of par value)	Amortization payments abroad at market prices
1871	(36,727)	70.5	(25,893)
1872	(36,727)	81.25	(29,841)
1873	(36,727)	75	(27,545)
1874	(36,727)	61.375	(22,541)
1875	(36,727)	33	(12,120)
1876	-	20	-
1877	-	21.75	-
1878	(36,727)	23.625	(8,677)
1879	(36,727)	30.375	(11,156)
1880	(36,727)	38.75	(14,232)
1881	(36,727)	37.5	(13,773)
1882	(36,727)	39.5	(14,507)
1883	(36,727)	37	(13,589)

B.2.3 Empréstito Unificado (1883)

This was a 11,127,000-pound loan, handled by Thompson, Bonar and Co., paying 5% interest and amortization set at 0.5% yearly at par value. It was intended for consolidation of old internal and external debts. Swap conversions were made in the amount of 3,467,520 pounds, taken at par value, for the total of the 1871 *Empréstito Uruguayo* in circulation (presumably abroad) and in the amount of at least 6,404,325 pounds for several internal bonds (Ferrando, 1967: 95-96).[141] The remaining 1,255,155 pounds appear to have been sold in London at a minimum of 60% of their face value (60% would equal 753,093 pounds). Stone (1999: 255) reports a value of 837,000 pounds emitted in 1883, meaning they may have sold for an average of 67%, that year.[142] It is not clear from the sources whether this was taken firm or sale on commission. I have assumed that it was taken firm, and thus have used Stone's figure for the capital entry series. The nominal value introduced abroad was 4,722,675 pounds (external swap conversions plus nominal amount emitted abroad). Commissions were set at 1% on interest payments and 0.5% on amortized bonds.

Table B.6: Empréstito Unificado, nominal value introduced abroad and effective capital entry

Year	Nominal value emitted (a)	Nominal amount introduced abroad (b) = a - internal conversions	Nominal amount sold abroad (c) = b - external conversions	Discount (min) (d)	Commission * (e)	Effective capital entry (f) = c*d-e
1884	11,127,000	4,722,675	1,255,155	60%	51,776	701,317

[141] These were taken at anywhere from 30% to 130% of par value, depending on the bond series (Ferrando, 1967: 95-96).
[142] This may be doubtful, considering the drop in the price of these bonds in subsequent year. By 1886 they were trading at 43.4% of par (see Table B.7).

*Commissions were stipulated to be paid as a percent of interest and amortization payments, and are therefore assumed to have been paid out from 1884 to 1891 (see Table B.7). The figure that appears here is the sum total of these payments. Thus, the figure for effective capital entry is merely illustrative. The real capital entry was higher in 1884 as the commissions were distributed over the course of 8 years.

In that year then, 57.6% of the securities were emitted in Montevideo. However, by 1891, when this debt was absorbed into the *Deuda Consolidada*, only around 20% of the bonds in circulation were in Montevideo, the rest having been transferred to London in the intervening years (Acevedo, 1903, Tomo II: 265)[143]. Table B.7 shows the value of bonds circulating in Montevideo and London in each year from 1883 to 1891, as well as the price at which they were being sold in Montevideo. The "nominal value of bonds exported" has been calculated by taking the year-to-year differences in the percent of bonds held in Montevideo multiplied by the total value of bonds in circulation. The "market value of bonds exported" is calculated by adjusting these figures by the market price.

Table B.7: Empréstito Unificado, secondary bond exports

Year	Circulation in Montevideo	Circulation in London	Total in circulation	% in MVD	Nominal value of bonds exported	Price (% of par value)	Market value of bonds exported (or value of capital inflow)
1883	6,404,325	4,722,675	11,127,000	57.6			
1884	6,808,500	4,318,500	11,127,000	61.2	(404,175)	58.3	(235,432)
1885	5,131,800	5,952,900	11,084,700	46.3	1,657,117	47.6	788,166
1886	4,166,100	6,859,800	11,025,900	37.8	943,483	43.5	410,415
1887	3,194,100	7,770,100	10,964,200	29.1	954,026	60.5	577,185
1888	5,549,600	5,349,400	10,899,000	50.9	(2,388,699)	68.4	(1,633,273)
1889	3,487,500	7,343,200	10,830,700	32.2	2,040,107	73.0	1,489,278
1890	2,992,200	7,766,800	10,759,000	27.8	475,359	75.0	356,520
1891	2,215,800	8,467,700	10,683,500	20.7	760,741	31.0	235,830

Source: Value of bonds in circulation for Montevideo, London and Total are from Acevedo (1903, Tomo II: 265). Price of bonds are from the 1884 AEU, Acevedo (1934a: 456) for 1885-89 and Acevedo (1934a: 537) for 1890 and 1891.

For the 1883 loan, amortizations were made at par value,[144] but actual amounts amortized in Montevideo and London are not given. Only the total amortized in each year is discernible from the existing data. Annual amortization payments in London have been calculated from the total amortization payments (the year-to-year differences in the total value of the bonds in

[143] This information comes from official statistics, which record the city in which coupons were presented for amortization and interest payments.
[144] Par-value amortizations for Uruguayan debt were an innovation that ended up being quite controversial. Earlier loans were amortized at market values, a feature that would return with the 1891 debt consolidation, with the argument that par value amortizations created too onerous a burden for the government and contributed to the default of 1890 (Acevedo, 1934).

circulation), adjusted by the proportion in circulation abroad. This assumes that amortization payments were distributed between Montevideo and London in proportion to the amounts circulating in each city (as they were with the 1891 and 1906 loans).

Table B.8: Empréstito Unificado, amortization payments

Year	Amortization payments abroad, nominal value and at market prices
1883	(16,417)
1884	(31,578)
1885	(38,387)
1886	(46,206)
1887	(33,523)
1888	(48,613)
1889	(54,503)
1890	(47,159)
1891	(16,417)

Source: 1884, AEU; 1885-89, Acevedo (1934a: 456; 1890 and 1891, Acevedo (1934a: 537).

Commissions have been calculated as 1% of total interest payments and 0.5% of total amortization payments, and can be seen in Table B.9.

Table B.9: Empréstito Unificado, commissions

Year	Nominal amount in circulation	1% commission on interest payments	Total amortized *	0.5% commission on amortization payments	Total commission
1883	11,127,000	5,564	-	-	5,564
1884	11,127,000	5,564	42,300	216	5,775
1885	11,084,700	5,542	58,800	294	5,836
1886	11,025,900	5,513	61,700	309	5,821
1887	10,964,200	5,482	65,200	326	5,808
1888	10,899,000	5,450	68,300	342	5,791
1889	10,830,700	5,415	71,700	359	5,774
1890	10,759,000	5,380	75,500	379	5,757
1891	10,683,500	5,342	59,500	298	5,639

*These are total amortization payments, and are therefore different from the information in table B.8, which shows only amortization payments made abroad.

B.2.4 Empréstito de Conversión y Obras Públicas (1888)

With nominal value of 4,255,300 pounds and paying 6% interest and 1% amortization, this emission was meant to be used mostly for a swap conversion of old internal debts. However, holders of those securities rejected the government's offer and the totality of the bonds was emitted in London by Baring Bros. It was taken at 82.5% of par value, leaving 3,510,623 pounds (Ferrando, 1967: 102-03, very close to the 3,610,000 pounds reported by Stone (1999: 256). Commissions for the bank were to be 3% of the nominal value of the loan, and, along

with other costs, amounted to 215,948 pounds[145], (Acevedo, 1934a: 455) (around 5% of the nominal value). Subtracting this from the above figure reported by Ferrando (1967), the effective capital entry was 3,236,475 pounds. About 82% of this was used for the purchase of old internal debt, while the rest was to be devoted to public works and land purchases.

Table B.10: Empréstito de Conversión y Obras Públicas, effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1888	4,255,300	4,255,300	4,255,300	82.5%	215,948	3,236,475

Information on the amount of debt in circulation in each year, from 1888 to 1890, are available from the AEU. Amortization payments have been calculated from the year-to-year differences in these figures. These were 42,500 pounds in 1888, 45,100 pounds in 1889 and 47,800 in 1890, leaving a total of 4,119,900 pounds circulating in 1891. Since the debt contract stipulated amortization payments were to be made at par value, these figures also represent both nominal and effective values amortized.

B.2.5 Empréstito Municipal Externo (1888)

This bonds series was emitted by the Municipality of Montevideo, and handled by Baring Bros. The nominal amount was originally 1,276,595 pounds, paying a rate of 6% interest and amortization set at 1% per year. It was sold at 85% of its face value, for an effective amount of 1,085,106 pounds (Ferrando, 1967: 103). There is no information on commissions and other costs. Stone (1999: 256) reports an emission of municipal debt in the amount of 1,277,000 pounds in 1889, a number very close to the nominal value of the bond emission. Joslin (1963: 135) claims that "the City of Montevideo Loan of 1889 had been a failure and had largely been left in the hands of the syndicate that brought it out." In light of this, the effective capital entry is taken to be 1,085,106 pounds, derived from the Uruguayan statistics, but the year of emission has been recorded as 1889, as appears in Stone (1999) and Joslin (1963).

Table B.11: Empréstito Municipal Externo, effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1889	1,276,595	1,276,595	1,276,595	85%	-	1,085,086

[145] Official sources report that commissions and other costs were a little lower, 175,331 pounds (reported in Nahum, 1994: 27), while Ferrando (1967: 102) reports a slightly higher figure of 274,147 pounds.

The proceeds of this loan were deposited in the Banco Nacional, at current and time deposit accounts of different maturities and interest rates (Ferrando, 1967: 103). This allowed bank to use the money for short term investments, or speculation, while the municipal government earned interest.

The 1891 crisis interrupted the amortization and interest payments on this loan in that year. In 1892 a deal was reached in which the government emitted an additional 97,158 pounds in bonds, at 75% of face value (72,869 pounds, around 6% of the amount in circulation that year) to cover the first and second semester interest payments for that year (Ferrando, 1967: 123).[146] This deal lowered the interest to 4% for 1892-1894, to 4.5% for 1895-1897, and to 5% for 1898-1900, and amortization payments to 0.5% for the whole period. The interest rate was to rise to the original 6% and amortization payments to 1% in 1901, but a renegotiation that same year left interest payments at 5% and amortization at 0.5%. This interest schedule is reflected in the IMM data, and interest payments have been calculated from these rates and the amount in circulation each year.

The IMM shows the amounts in circulation from 1890 to 1913 (Table B.12), and the year-to-year differences have been taken as the amount amortized in each year. As with the other loans floated in the 1880s, the debt contract stipulated amortization payments were to be made at par value. Thus, these figures also represent both nominal and effective values amortized.

Table B.12: Emprestito Municipal Externo, nominal amounts in circulation and amortization payments

Year	Nominal amount in circulation	Year-to-year difference (amount amortized)	Percent amortized	Year	Nominal amount in circulation	Year-to-year difference (amount amortized)	Percent amortized
1890	1,276,600			1902	1,161,760	(32,000)	-2.8%
1891	1,245,000	(31,600)	-2.5%	1903	1,207,900	-	0.0%
1892	1,245,000	-	0.0%	1904	1,193,760	(14,140)	-1.2%
1893	1,238,600	(6,400)	-0.5%	1905	1,193,760	-	0.0%
1894	1,238,600	-	0.0%	1906	1,161,760	-	0.0%
1895	1,238,600	-	0.0%	1907	1,131,880	(29,880)	-2.6%
1896	1,238,600	-	0.0%	1908	1,131,880	-	0.0%
1897	1,233,000	(5,600)	-0.5%	1909	1,106,580	(25,300)	-2.3%
1898	1,233,000	-	0.0%	1910	1,080,940	(25,640)	-2.4%
1899	1,215,900	(17,100)	-1.4%	1911	1,063,390	(17,550)	-1.7%
1900	1,207,900	(8,000)	-0.7%	1912	1,044,640	(18,750)	-1.8%
1901	1,207,900	-	0.0%	1913	1,024,680	(19,960)	-1.9%

[146] These additional bonds were to be paid back with funds from the liquidation of the English Bank of the river plate. This bank was finally liquidated in 1893. I have thus recorded no interest paid in 1891 and added the nominal value of the bonds (97,158 pounds) to the interest paid by the government in 1893.

B.2.6 Empréstito de 6% (1890)

Handled by Baring Bros., this 2,000,000-pound loan was intended for covering that year's government deficit, paying off internal treasury bills and purchasing land for public works. It paid 6% interest and 1% annual amortization. It was taken by the bank at 84.5% of its nominal value, for 1,690,000 pounds. 4.5% was set aside for commissions, although with additional fees, the amount received by the government was reduced by 127,322 pounds (Ferrando, 1967: 111). The bonds never left the Baring's balance sheet due to the crisis that year (Ferrando, 1967: 111-12). This information coincides with Stone (1999: 257), which does not register any capital movements that year. However, it appears that the balance after discounts and commissions did reach the government (although some was lost in the collapse of the Banco Nacional that year), and has been counted as a capital inflow.

Table B.13: Empréstito de 6%, nominal value introduced abroad and effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1890	2,000,000	2,000,000	2,000,000	84.5%	127,322	1,562,678

Only 20,000 pounds of this bond was amortized before the suspension of debt service in 1891 (Ferrando, 1967: 112).

B.2.7 Deuda Consolidada (1891)

This 20,500,000-pound consolidation loan was approved in 1891 as part of the debt restructuring following the 1890 crisis. It converted almost all circulating "external" debt of the national government (the 1883, 1888 and 1890 loans, excluding the 1888 Municipal loan), at par value, in the amount of 18,130,505, reducing the nominal interest rate to 3.5%. 626,283 pounds was used to compensate unpaid railway guarantees, while 1,200,000 in bonds was reserved for promoting the construction of the Western Uruguay Railway. In all cases bonds were handed over directly, none being emitted on the London stock market (Ferrando, 1967: 115-19). Stone's database (1999: 257) shows no capital movement in 1892 (the year the deal was finalized), or the years immediately following.

Bond holders were to receive 105 pounds worth of the new loan for every 100 pounds of the Empréstito Unificado, 115 for every 100 pounds of the Empréstito de Conversión y Obras públicas and 113 for every 100 pounds of the Empréstito de 6%. Part of the old external bonds

absorbed into the *Deuda Consolidada* were actually circulating in Montevideo at the time of conversion, while those reserved for other uses were emitted locally. The sum of the Empréstito Unificado circulating in London in 1891, and the total of the unamortized Deuda de Conversión y Obras Púlbicas and the Empréstido de 6% that same year is 14,567,670 pounds, which is taken as the nominal amount introduced abroad.[147] Commissions were 536,074 pounds (about 2.6% of the nominal value of the loan). Since all of the bonds introduced abroad were for swap conversions, they did not represent any capital inflow, so the effective capital entry is negative 536,074 pounds.

Table B.14: Deuda Consolidada, effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1892	20,500,000	14,567,670	-	100%	536,074	(536,074)

This circulation of this bond in Montevideo increased to 34% in 1907, and later decreased, to 30% by 1913. Although there was no capital entry as a result of the initial emission of this debt, the movements of bonds between Montevideo and London do constitute capital flows. Figure A10 shows the value of bonds circulating in Montevideo and London in each year from 1892 to 1913, as well as the price at which they were sold in Montevideo. The "value of bonds exported" (or the capital inflow) has been calculated by taking the year-to-year differences in the percent of bonds held in Montevideo multiplied by the total value of bonds in circulation, and then multiplied by the price.

[147] This matches well with the official statistics on the Deuda Consolidada, which show that by the end of 1892, 14% of the bonds were held in Montevideo (AEU, 1913). 2,098,300 pounds of the *Empréstito Unificado* of 1883 was circulating in Montevideo in 1891, and 626,283 pounds worth of *Deuda Consolidada* bonds was given to some of the railway companies operating in Uruguay in compensation for unpaid guarantees accumulated in the previous three years. The sum of these two figures, 2,724,583 pounds, is about 14% of the 19,268,500 pounds of this loan that had been emitted by the end of 1892.

Table B.15: Deuda Consolidada, secondary bond exports

Year	Circulation in Montevideo	Circulation in London	Total in circulation	% in MVD	Price (% of par value)	Market value of bonds exported (or value of capital inflow)
1892	2,645,565	16,622,935	19,268,500	13.7	-	-
1893	2,391,340	16,893,660	19,285,000	12.4	33.0	84,642
1894	2,618,903	16,666,097	19,285,000	13.6	34.5	(78,509)
1895	2,372,055	16,912,945	19,285,000	12.3	48.5	119,703
1896	2,456,058	16,568,402	19,024,460	12.9	47.6	(55,272)
1897	3,117,497	16,306,163	19,423,660	16.1	41.5	(253,097)
1898	4,131,575	15,514,525	19,646,100	21.0	43.4	(424,586)
1899	4,600,910	15,162,450	19,763,360	23.3	45.3	(199,901)
1900	5,179,977	14,583,383	19,763,360	26.2	47.2	(273,290)
1901	4,939,205	14,754,595	19,693,800	25.1	48.1	106,973
1902	5,219,089	14,416,311	19,635,400	26.6	51.2	(150,760)
1903	4,900,368	14,669,792	19,570,160	25.0	56.9	171,436
1904	4,800,954	14,589,006	19,389,960	24.8	54.7	29,722
1905	5,418,787	13,865,153	19,283,940	28.1	67.0	(431,497)
1906	6,431,695	12,790,345	19,222,040	33.5	70.7	(728,734)
1907	6,399,535	12,328,985	18,728,520	34.2	70.9	(94,308)
1908	5,992,835	12,440,985	18,433,820	32.5	69.9	210,990
1909	5,841,473	12,299,747	18,141,220	32.2	72.8	39,287
1910	5,459,625	12,399,795	17,859,420	30.6	73.9	215,013
1911	5,181,643	12,407,097	17,588,740	29.5	75.2	147,809
1912	5,180,472	12,139,728	17,320,200	29.9	75.7	(59,037)
1913	5,200,110	11,849,430	17,049,540	30.5	76.2	(72,665)

Sources: Circulation in Montevideo, London and Total are from AEU 1913/14. The market price is for Montevideo, and is from AEU 1913/14 for all years, except for 1892 and 1893, which are from Acevedo (1934a: 587), and for 1898 and 1899, which have been interpolated from the figures for 1897 and 1900.
Note: figures for February of each year.

Amortization payments made abroad are available from the same source as for Figure B.15. Table B.16 shows amortization payments for the *Deuda Consolidada* from 1892 to 1913, in nominal terms and at market prices.

Table B.16: Deuda Consolidada, amortization payments

Year	Nominal amortization payments abroad	Amortization payments abroad at market prices
1892	-	-
1893	-	-
1894	(211,400)	(105,257)
1895	(291,200)	(142,174)
1896	(135,600)	(57,588)
1897	-	-
1898	-	-
1899	(51,200)	(24,899)
1900	(43,900)	(21,120)
1901	(48,300)	(25,055)
1902	(60,680)	(35,071)
1903	(153,240)	(88,739)
1904	(45,200)	(30,526)
1905	(196,020)	(141,143)
1906	(188,300)	(136,109)
1907	(195,700)	(135,236)
1908	(194,400)	(137,384)
1909	(188,600)	(139,711)
1910	(189,200)	(143,919)
1911	(186,640)	(142,954)
1912	(189,880)	(142,559)
1913	(206,520)	(143,556)

Source: AEU, 1913/14.

B.2.8 Empréstito Uruguayo de 5% (1896)

This loan was contracted specifically to provide for the capitalization of a new state bank, the Banco de la República, and marked Uruguay's return to international capital markets after the 1890 crisis and subsequent debt restructuring. The nominal amount was 1,667,000 pounds, paying 5% interest and 1% annual amortization. It was emitted at 71.5% of par value, for an amount of 1,191,905 pounds (Ferrando, 1967: 130). Stone (1999: 258) reports 1,192,000 emitted in London that year, essentially the same amount. Glynn, Mills, Currie and Co. handled the loan. Commissions and other costs were 75,177 pounds (Nahum, 1994: 45), about 4.5% of the nominal value, leaving an effective capital entry of 1,058,383 pounds.

Table B.17: Empréstito Uruguayo, nominal value introduced abroad and effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1896	1,667,000	1,667,000	1,667,000	71.5%	75,177	1,058,383

Amortization payments, all of which would have been made abroad, as well as the market prices at which the bonds were amortized, are available for almost all years from the AEU. Table B.18 shows amortization payments for the *Empréstito Urugayo* from 1896 to 1913, in nominal terms and at market prices.

Table B.18: Empréstito Uruguayo, amortization payments

Year	Nominal amortization payments abroad	Price (% of par value)	Amortization payments abroad at market prices
1896	(12,989)	60.6	(7,874)
1897	(35,700)	49.7	(17,745)
1898	(35,200)	55.8	(19,640)
1899	(34,780)	62.4	(21,689)
1900	(37,020)	62.4	(23,092)
1901	(40,600)	61.6	(25,008)
1902	(36,840)	73.4	(27,052)
1903	(36,000)	80.2	(28,867)
1904	(37,820)	81.06	(30,657)
1905	(34,621)	87.4	(30,244)
1906	(36,660)	93.7	(34,334)
1907	(38,560)	93.3	(35,963)
1908	(40,947)	94.9	(38,878)
1909	(40,947)	96.6	(39,568)
1910	(40,947)	98.3	(40,257)
1911	(44,260)	100.0	(44,260)
1912	(46,580)	99.7	(46,447)
1913	(32,100)	97.9	(31,439)

Sources: AEU. Amortization payments have been estimated from year-to-year differences in total bonds in circulation for some years. Amounts in circulation and prices for 1908 to 1910 have been interpolated from the figures for 1907 and 1911.

B.2.9 Empréstito de Conversión (1905)

Seeking to lessen dependence on British capital, the early 20th century *Battlismo* movement in Uruguay turned to French banks to market its securities abroad. In 1905 the *Banque du Paris et des Pays Bas* and *Societé Générale* (in association with Glyn, Mills, Currie and Co.) were contracted to float a 6,912,838-pound bond emission, paying an interest rate of 5% and 1% annual amortization. It was intended to convert internal debts and provide funds for public works. Swap conversions in the amount of 1,345,168 pounds were executed. The information on how much was actually emitted in European stock markets is conflicting. The *Association Nationale des Porteurs Français de Valeurs Mobilieres* (PFVM) reports that a total of 2,911,169 pounds were emitted in Europe, 2,741,166 in Paris and 170,003 in London (Nahum, 1994: 57). The British counterpart to this organization, the Council of Foreign Bondholders (CFB), reports that of the 2,911,169 offered, only about 1,600,000 was actually emitted in Europe (Nahum, 1994: 56-57). Esteves' (2011) database shows 2,800,000 pounds emitted in Paris in 1906, while Stone (1999: 260) shows 212,000 pounds emitted in London the same year. The AEU for 1913/14 presents figures on the nominal amounts of these securities circulating in Montevideo and Paris each year from 1906 to 1913, as well as the amounts amortized each year, both in nominal terms and at market prices. This source shows that by march 1906 there was a nominal value of 4,498,221 pounds circulating in total; 1,670,657 pounds of this was in Paris, the other part in Montevideo. The bonds sold in Paris in 1906

reportedly fetched a price of 96.25% of par value, making the amount circulating in Europe that year 1,608,007 pounds, very close to the figure reported by the CFB. I have taken the figure of 1,670,657 pounds reported in the AEU, plus the figure of 170,003 reported by the PFVM, as the nominal value introduced abroad (1,840,660 pounds). No information is available on commissions charged.

Table B.19: Empréstito de Conversión, effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1906	6,912,838	1,840,660	1,840,660	96.25%	-	1,771,635

The amount emitted rose by significant sums each year until about 1910,[148] and the total emitted over these years is 6,912,165 pounds, very close to the nominal value stipulated when the loan was approved by the Uruguayan Parliament. Part of these post 1906 emissions occurred in Montevideo and part in Paris. In addition, as with the 1883 and 1891 loans, part of the bonds emitted in Montevideo were later exported to Paris. In order to calculate the capital entry, we first must discern which part of the increases in bonds circulating in Paris were due to fresh emissions (presumably at 90% of the nominal value as according to the contract with the banking syndicate) and which part were due to secondary bond exports (at the market price paid in Montevideo). Figure B.20 shows the amounts emitted in Montevideo, Paris and in total from 1906 to 1913, from which information the nominal value of bond exports is calculated.

Table B.20: Empréstito de Conversión, nominal value of secondary bond exports

Year	Circulation in Montevideo	Circulation in Paris	Total in circulation	Percent in MVD	Nominal value of bonds exported
	a	b	c	d	$e = c*(d_t - d_{t-1})$
1906	2,812,281	1,662,628	4,474,909	62.8%	-
1907	3,040,942	2,093,815	5,134,757	59.2%	186,024
1908	3,256,984	2,727,265	5,984,249	54.4%	287,050
1909	2,919,677	3,466,122	6,385,800	45.7%	555,855
1910	2,705,004	3,911,937	6,616,940	40.9%	320,354
1911	2,544,118	3,987,926	6,532,043	38.9%	126,180
1912	2,380,851	4,061,236	6,442,087	37.0%	128,230
1913	2,222,128	4,123,753	6,345,880	35.0%	123,168

Table B.21 shows the Nominal, unamortized amount circulating in Paris from 1906 to 1913 in column a. If we deduct the nominal value of bonds exported (column e, Table B.20) from the year-to-year increases in circulation (column b, Table B.21), we obtain the nominal value of

[148] If amortization payments made in Montevideo and Paris are added to the nominal amounts in circulation, we get the total, unamortized amounts emitted.

bonds actually emitted in Paris (column c, Table B.21). The effective capital entry from emissions in Paris would be 90% of this value (column d, Table B.21).

Table B.21: Empréstito de Conversión, value of bonds emitted abroad

Year	Nominal, unamortized amount circulating in Paris	Increase of unamortized circulation in Paris	Nominal value of bonds emitted in Paris (column b from this figure minus column e from figure A14)	Effective value of bonds emitted in Paris (90% of face value)
	a	b	c	d
1906	1,670,657	1,670,657	1,670,657	1,503,591
1907	2,121,410	450,754	264,730	238,256.60
1908	2,781,326	659,916	372,866	335,579.03
1909	3,554,142	772,817	216,962	195,265.64
1910	4,041,984	487,842	167,488	150,738.88
1911	4,167,276	125,292	(888)	(799.17)
1912	4,297,760	130,484	2,254	2,028.16
1913	4,421,514	123,754	587	527.86

Figure B.22 shows the market price of bonds circulating in Montevideo from 1906 to 1913 (column a) and the effective value of bonds exported from Montevideo to Paris (column b). These values added to the effective value of bonds emitted in Paris (column d, Table B.20) equal the total effective capital entry in each year from bond emissions and secondary bond exports (column c).

Table B.22: Empréstito de Conversión, effective capital entry

Year	Price (% of par value)	Effective value of bond exports	Total effective capital entry
	a	b	c
1906	95.9	-	1,503,591
1907	88.3	164,292	267,173
1908	90.9	261,026	379,049
1909	95.9	532,900	234,355
1910	98.4	315,112	181,148
1911	100.0	126,180	6,851
1912	84.8	108,768	10,209
1913	95.0	117,042	10,129

Figure B.23 shows amortization payments for the *Empréstito de Conversión* from 1906 to 1913, in nominal terms and at market prices.

Table B.23: Empréstito de Conversión, amortization payments

Year	Nominal amortization payments abroad	Amortization payments abroad at market prices
1906	(8,029)	(7,715)
1907	(19,567)	(17,966)
1908	(26,466)	(23,702)
1909	(33,959)	(31,969)
1910	(42,028)	(41,325)
1911	(49,303)	(49,152)
1912	(57,173)	(56,804)
1913	(61,237)	(59,703)

Source: AEU, 1913/14

B.2.10 Empréstito de Obras Públicas (1909)

This loan was floated in Paris by the *Banque de Paris et des Pays Bas*, *Comptoir National d' Escompte* and *Societé Générale* in 1909. The nominal value was 1,275,672 pounds, paying an interest rate of 5% and amortization at 1% annualy. The bonds were taken by the banking syndicate at 91.5% of their face value, for an effective value of 1,168,085 pounds. Esteves (2011) shows 1,200,000 pounds emitted in Paris that year, close to the total nominal value of the loan. This loan was approved for various construction projects, and therefore no conversions were made. There is no information on Commissions for this loan.[149]

Table B.24: Empréstito de Obras Públicas, nominal value introduced abroad and effective capital entry

Year	Nominal value emitted	Nominal amount introduced abroad	Nominal amount sold abroad	Discount	Commission	Effective capital entry
1909	1,276,592	1,276,592	1,276,592	96.25%	-	1,238,294

Amortization payments, all of which would have been made abroad, as well as the market prices at which the bonds were amortized, are available for almost all years from the AEU. Figure B.25 shows amortization payments for the *Empréstito Uruguayo* from 1909 to 1913, in nominal terms and at market prices.

Table B.25: Empréstito de Obras Públicas, amortization payments

Year	Nominal amortization payments abroad	Price (% of par value)	Amortization payments abroad at market prices
1909	(5,833)	95.9	(5,592)
1910	(13,928)	98.4	(13,700)
1911	(13,928)	100.0	(13,928)
1912	(14,622)	99.7	(14,583)
1913	(15,733)	98.1	(15,427)

Source: AEU. Due to lack of data on market prices for 1909 and 1910, the prices for the 1905 *Empréstito de Conversión* have been used.

[149] Nahum (1990: 59) has a figure of 5.5% for commissions, but this is followed by a question mark, and no further explanation is given.

B.2.11 Treasury bills discounted abroad

Nahum (61-63) reports that soon after the 1909 Empréstito, the government began to discount short term treasury bills in foreign markets. A 1907 law authorized this activity on the part of the government at a maximum discount of 6%. By 1913, there was 1,276,596 pounds of this type of floating debt abroad. Here I have assumed that the first bills were discounted in 1910, and rose in equal parts each year to reach the value circulating in 1913.

However, when 851,064 pounds came due in July of 1913, and financial conditions abroad did not allow the debt to be rolled over, The Banco de la República was forced to export gold to cover half of it (the other half being paid with funds from a new bond emission in 1914) (Nahum, 1990: 62). Here I have assumed that 425,532 was amortized in 1913. No information on commissions is available. Interest payments are assumed to have been 6% per year.

B.2.12 Summary and discussion

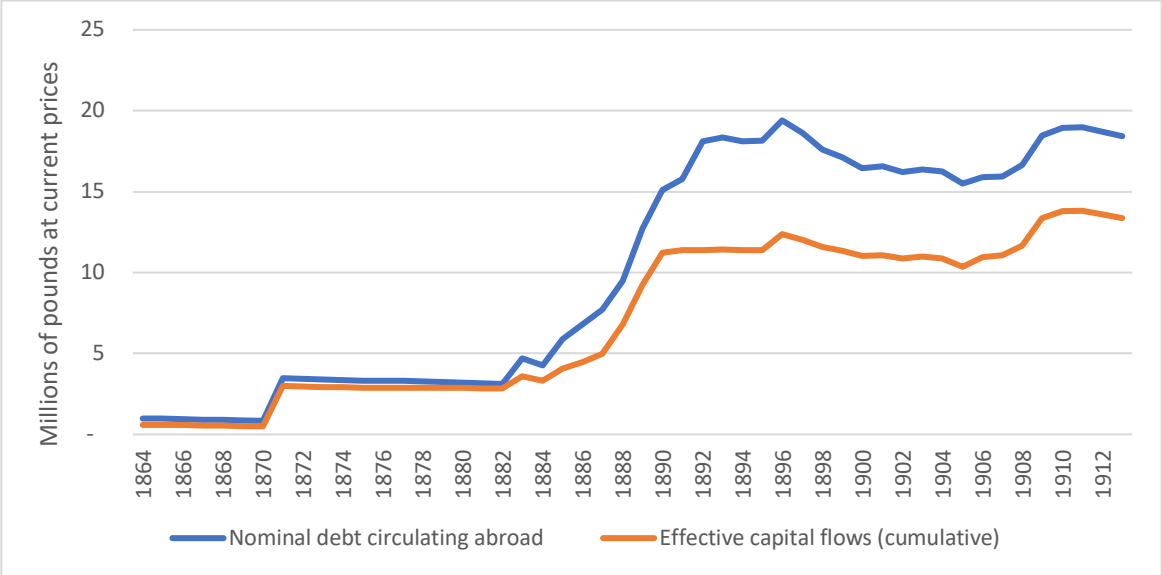
As explained in chapter 2 of the main text, total nominal and effective capital flows have been estimated from the data presented in this appendix. Adding nominal amounts emitted abroad, nominal bond exports and nominal amortization payments gives nominal capital flows. Adding effective amounts emitted abroad, effective bond exports and effective amortization payments gives effective capital flows. These eight series are shown in Table B.26.

Table B.26: Amounts emitted abroad, bond exports, amortization payments and total capital flows (nominal and effective), 1864-1914

Year	Amount emitted abroad		Bond exports		Amortization payments		Capital flows	
	(nominal)	(effective)	(nominal)	(effective)	(nominal)	(effective)	(nominal)	(effective)
1864	1,000,000	600,000	-	-	-	-	1,000,000	600,000
1865	-	-	-	-	(26,443)	(15,866)	(26,443)	(15,866)
1866	-	-	-	-	(26,443)	(15,866)	(26,443)	(15,866)
1867	-	-	-	-	(26,443)	(15,866)	(26,443)	(15,866)
1868	-	-	-	-	(26,443)	(15,866)	(26,443)	(15,866)
1869	-	-	-	-	(26,443)	(19,502)	(26,443)	(19,502)
1870	-	-	-	-	(26,443)	(20,824)	(26,443)	(20,824)
1871	3,500,000	2,520,000	-	-	(36,727)	(25,893)	3,463,273	2,494,107
1872	-	-	-	-	(36,727)	(29,841)	(36,727)	(29,841)
1873	-	-	-	-	(36,727)	(27,545)	(36,727)	(27,545)
1874	-	-	-	-	(36,727)	(22,541)	(36,727)	(22,541)
1875	-	-	-	-	(36,727)	(12,120)	(36,727)	(12,120)
1876	-	-	-	-	-	-	-	-
1877	-	-	-	-	-	-	-	-
1878	-	-	-	-	(36,727)	(8,677)	(36,727)	(8,677)
1879	-	-	-	-	(36,727)	(11,156)	(36,727)	(11,156)
1880	-	-	-	-	(36,727)	(14,232)	(36,727)	(14,232)
1881	-	-	-	-	(36,727)	(13,773)	(36,727)	(13,773)
1882	-	-	-	-	(36,727)	(14,507)	(36,727)	(14,507)
1883	4,722,675	753,093	-	-	(36,727)	(13,589)	4,685,947	739,504
1884	-	-	(404,175)	(235,432)	(16,417)	(16,417)	(420,592)	(251,849)
1885	-	-	1,657,117	788,166	(31,578)	(31,578)	1,625,539	756,588
1886	-	-	943,483	410,415	(38,387)	(38,387)	905,096	372,028
1887	-	-	954,026	577,185	(46,206)	(46,206)	907,820	530,980
1888	4,255,319	3,510,638	(2,388,699)	(1,633,273)	(76,023)	(76,023)	1,790,598	1,801,343
1889	1,276,595	1,085,106	2,040,107	1,489,278	(93,713)	(93,713)	3,222,990	2,480,671
1890	2,000,000	1,690,000	475,359	356,520	(102,303)	(102,303)	2,373,057	1,944,217
1891	-	-	760,741	235,830	(78,759)	(78,759)	681,982	157,070
1892	16,893,660	-	-	-	-	-	16,893,660	-
1893	-	-	256,491	84,642	(6,400)	(6,400)	250,091	78,242
1894	-	-	(227,563)	(78,509)	-	-	(227,563)	(78,509)
1895	-	-	246,848	119,703	(211,400)	(105,257)	35,448	14,446
1896	1,667,000	1,191,905	(116,049)	(55,272)	(304,189)	(150,048)	1,246,761	986,585
1897	-	-	(609,903)	(253,097)	(176,900)	(80,933)	(786,803)	(334,030)
1898	-	-	(978,376)	(424,586)	(35,200)	(19,640)	(1,013,576)	(444,225)
1899	-	-	(444,676)	(199,901)	(51,880)	(38,789)	(496,556)	(238,690)
1900	-	-	(579,066)	(273,290)	(96,220)	(55,991)	(675,286)	(329,282)
1901	-	-	222,540	106,973	(84,500)	(46,128)	138,040	60,845
1902	-	-	(294,531)	(150,760)	(85,140)	(52,107)	(379,671)	(202,867)
1903	-	-	301,380	171,436	(110,820)	(78,078)	190,560	93,358
1904	-	-	54,292	29,722	(191,060)	(119,396)	(136,768)	(89,674)
1905	-	-	(644,084)	(431,497)	(111,821)	(92,770)	(755,905)	(524,268)
1906	1,670,657	1,503,591	(1,030,301)	(728,734)	(232,680)	(175,477)	407,675	599,380
1907	264,730	238,257	53,052	69,984	(264,769)	(209,667)	53,013	98,574
1908	372,866	335,579	593,051	472,016	(256,213)	(192,080)	709,704	615,515
1909	1,493,558	1,363,351	612,093	572,187	(292,945)	(231,546)	1,812,705	1,703,993
1910	167,488	150,739	611,463	530,124	(303,074)	(251,278)	475,876	429,585
1911	(888)	(799)	321,415	273,989	(306,966)	(260,982)	13,561	12,208
1912	2,254	2,028	50,289	49,731	(315,896)	(271,886)	(263,353)	(220,127)
1913	587	528	22,575	44,377	(314,847)	(266,189)	(291,685)	(221,284)

We can obtain the total nominal capital flows by adding the nominal amounts emitted abroad (taking into account debt conversions), the nominal value of secondary bond exports and the nominal value of amortization payments in each year. Taking the cumulative value of this series gives the nominal value of Uruguayan government debt circulating abroad, as can be seen in A.1. We can also estimate the effective capital flows by adding the values of effective capital entry, and bond exports and amortization payments at market prices. The cumulative values of this series can also be seen in Figure B.1.

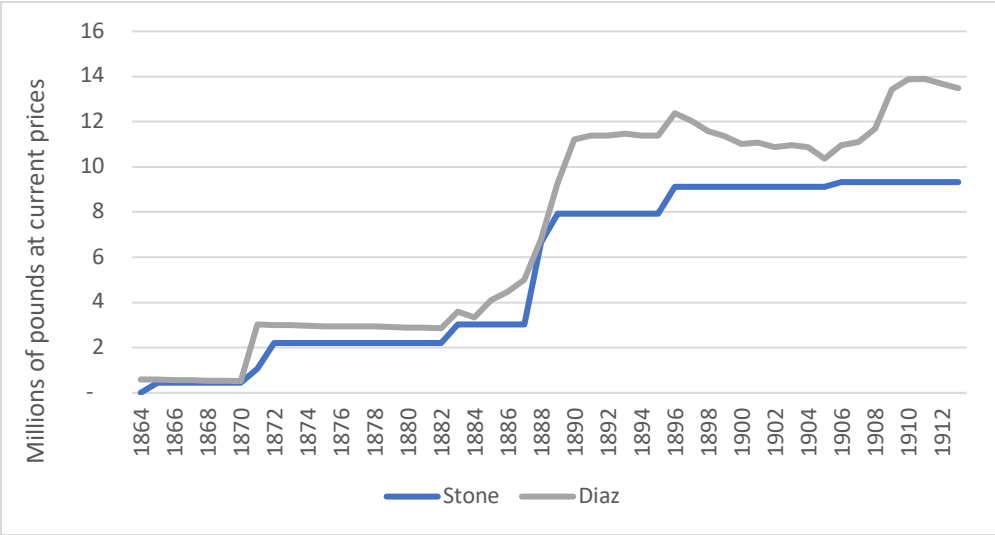
Figure B.1: Nominal debt circulating abroad and cumulative effective capital flows, 1864-1913



Sources: Nominal debt, AEU; Effective capital flows, see text.

Figure B.2 shows the cumulative effective capital flows estimated above, and the cumulative flows that would be obtained by taking the figures presented by Stone (1999). The main differences arise from the fact that the 1890, 1906 and 1909 bond emissions are not captured by Stone's database (the first because it wasn't successfully brought to market by Baring, and the second two because they were emitted almost entirely in Paris by French banks), as well as the secondary bond exports and amortization payments. My calculations for the amounts initially emitted, while close to Stone's for most years, differ to some degree as well. As can be seen, relying only on Stone's figures would underestimate the actual accumulated capital flows by about 30% in 1913. This comparison reveals that relying solely on Stone's statistics, as is common in the international literature on capital flows (Esteves, 2003: 2), leads to a large bias for Uruguayan capital flows.

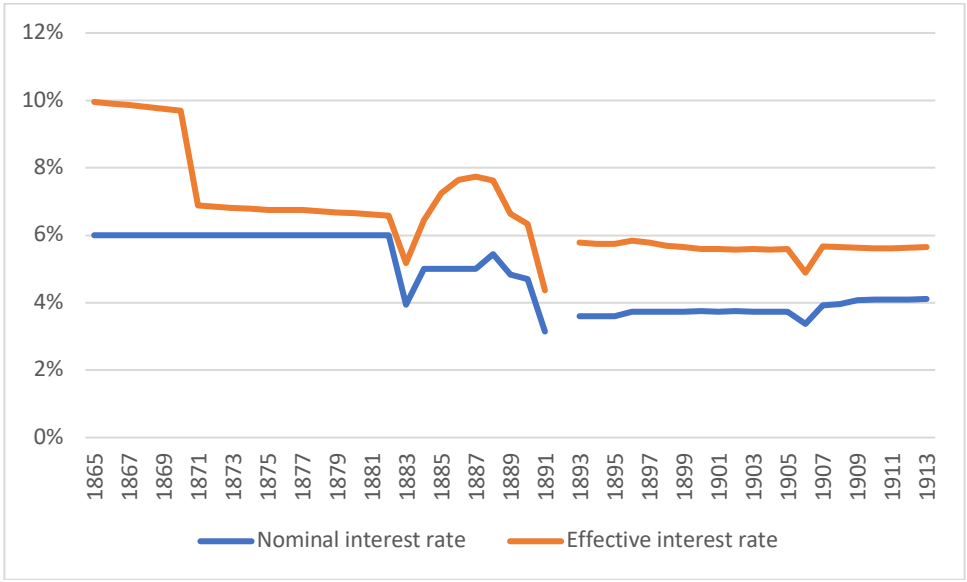
Figure B.2: Cumulative effective capital flows, own estimation and Stone (1999), 1864-1913



Sources: see text.

Interest payments abroad have been calculated separately for each bond series by applying their respective interest rates to the nominal amounts in circulation abroad in each year, and can be seen in Figure 2, taking into account periods of default and reorganization of debts. The nominal interest rate was on average 4.8% from 1865 to 1913. It was 6% during the 1860s and 1870s, falling to around 4% in the 1890s and remaining that way until 1913. The effective interest rate on debt held abroad (interest payments as a percentage of cumulative "effective capital flows") averaged 6.6% over the period. This was around 7% in the 1870s and 1880s, and slightly under 6% from the 1890s onwards.

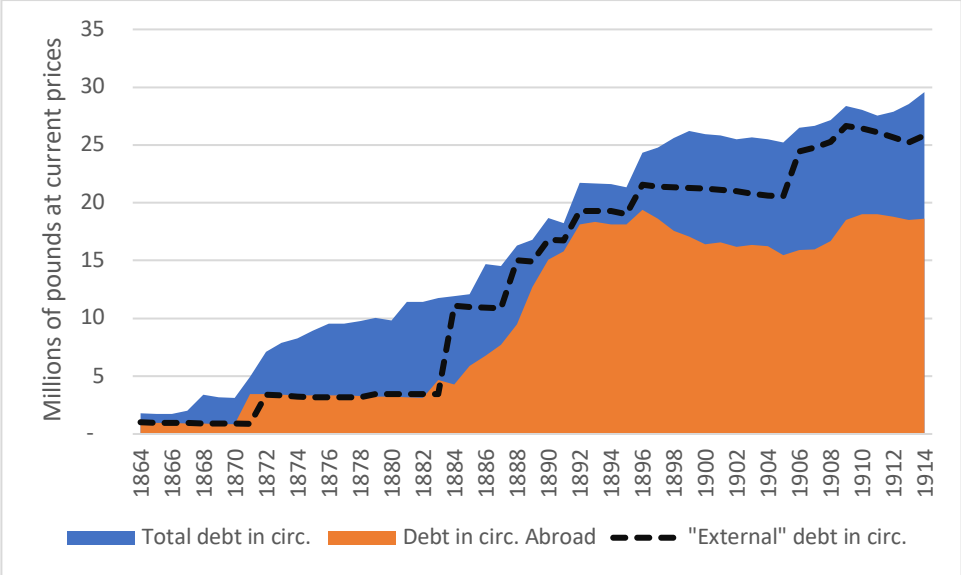
Figure B.3: Nominal and effective interest rates on public debt, 1864-1913



Sources: see text.

A few other aspects of foreign investment in public debt can be explored with the data at hand. Figure B.4 shows the Uruguayan government's total nominal debt in circulation, as well as the portion in circulation abroad (as estimated above). It also shows the value of debt denominated as "external" (dotted line), although, as explained above, not all of this was actually placed abroad.

Figure B.4: Total debt in circulation, total debt in circulation abroad and total "external" debt in circulation, 1864-1913



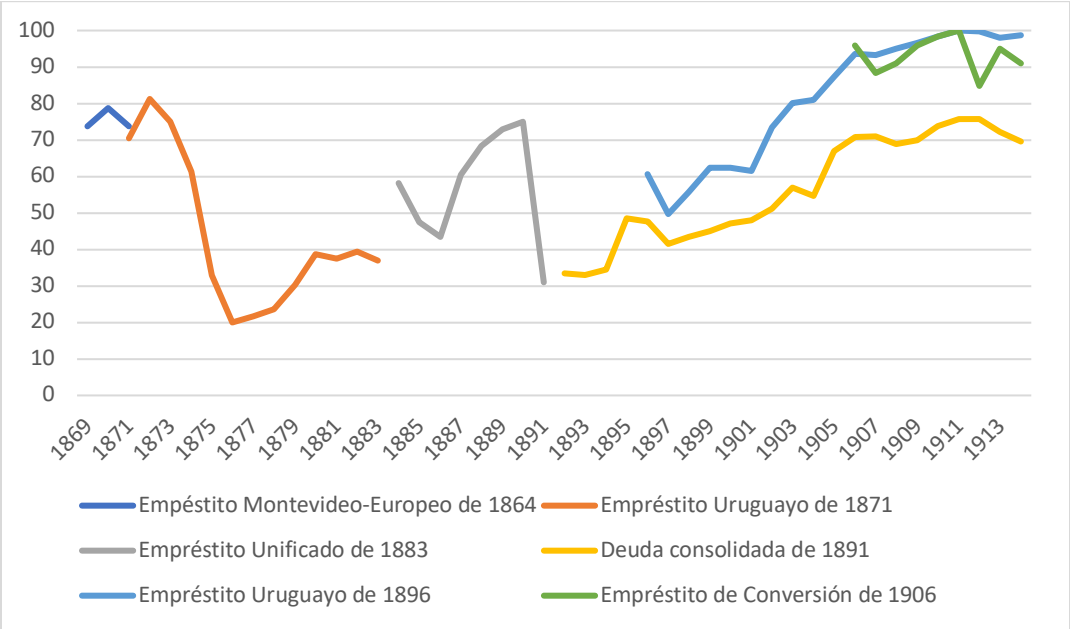
Sources: see text.

As can be seen, the debt denominated as "external" overstates actual foreign indebtedness in most years. Bertino and Bertoni (2006: 13), based on this series, claimed that foreign debt became the principal source of financing for the government in 1883. While it is true that the internal debt began to lose ground relative to foreign debt after that year, it wasn't until at least 1887 that over half of the government's total nominal indebtedness was to foreigners. In the early 1890s only about 15% of the government's debt circulated internally. However, after about 1895, internal financing gained some ground, but made up only about one third of the state's debt burden by 1913.

Figure B.5 shows the market price (as a percent of par value) for the 1864, 1871, 1883, 1892, 1896 and 1906 bond emissions.[150]

[150] Average of high and low price for the year. For the 1864 and 1871 emissions, prices are for the London market. For the 1883, 1892 and 1906 series, prices are for Montevideo. For the 1892 and 1906 series, market prices in London and Paris, respectively, are available as well, but not for all years. In general, these prices differed from Montevideo prices by less than 2%. I have opted to use the Montevideo because they are available for more years. The 1896 bond series circulated only abroad. Market prices are assumed to be for London (although the AEU do not specify the location).

Figure B.5: Market price of four Uruguayan bond emissions (percent of par value)

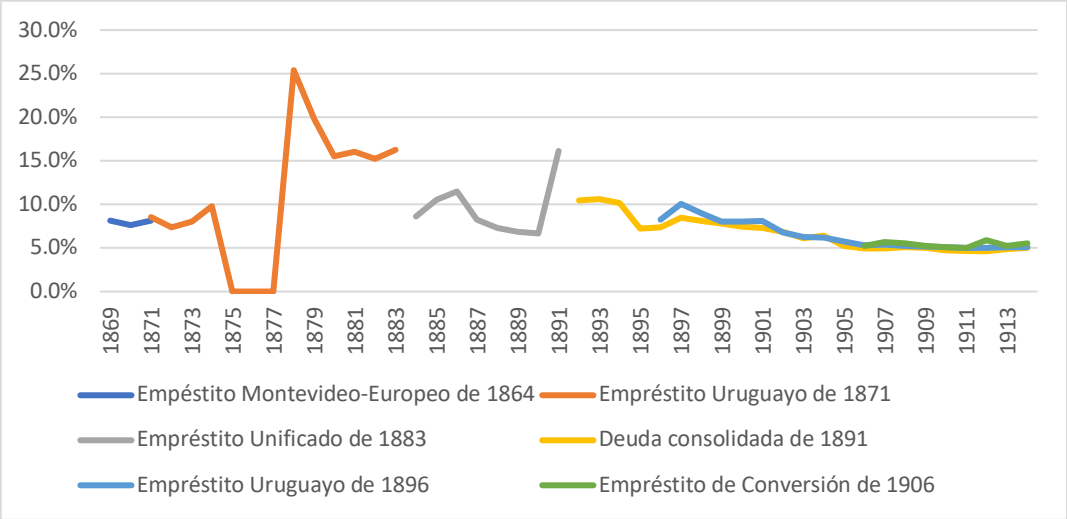


Source: see text.

Debt circulated at a price from 40 to 75% of its face value in the 1880s. During the 1890 crisis and immediately after, the market price fell to around 30%. Prices began to rise in the second half of the 1890s, the 5% bonds reaching almost 100% of face value, while the 3.5% bonds stabilized at around 70% of par value.

The yield on investment in Uruguayan public debt is shown in Figure B.6. Yields averaged around 8% in the early 1870s. They were 10% to 15% in the 1880s and first half of the 1890s, falling steadily after 1897, stabilizing at around 5.5% in the first decades of the 20th century. The average for the period from 1884 to 1913 was 7.6%.

Figure B.6: Yield on four Uruguayan bond emissions



Sources: see text.

B.3 Railway investment

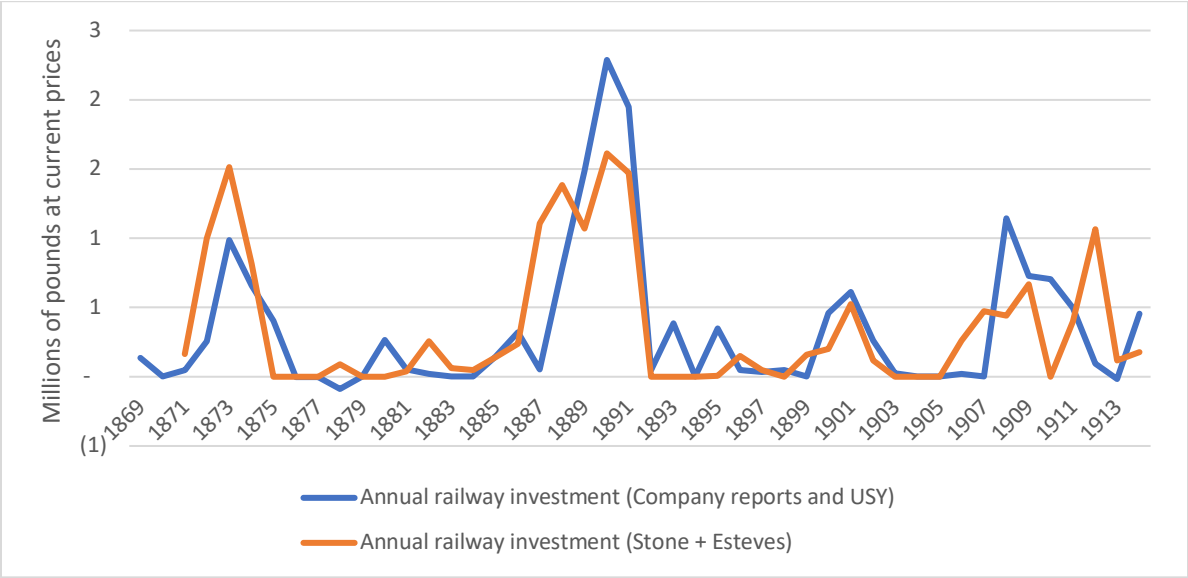
Railway investment in Uruguay was financed almost entirely by British capital during the period, and in general carried out by British free-standing companies. Over ten different companies operated in the country at different times, although throughout most of the period the sector was dominated the Central Uruguay Railway Company (CUR) and its three extension companies (Northern, Eastern and Western), which by 1913 operated over 60% of the railway network. The Midland Uruguay Railway Co. had another 18% (AEU, 1913/14). Company reports covering the whole period are available for these five companies, as well as for a few smaller companies that were absorbed into the Central Uruguay Railway system.

Financial capital invested has been estimated from company reports for the railways for which they are available. A large part of the shares and all of the debentures of the Western Extension were in the hands of the CUR (which in turn sold bonds, denominated "Western Extension Debentures", to finance the construction of this line), and thus these have been left out of the total investment series. Adjustments have been made for the fact that some CUR debentures were sold at a premium, while some of the Western Extension Debentures were sold at a discount. For the companies for which we do not have reports, the nominal capital in circulation in 1913 is available from the AEU of that year. This has been adjusted by the kilometers of track in existence in each year in order to estimate the capital stock in earlier years. For the *Ferrocarril Central del Uruguay* (the precursor of the CUR), the total capital emitted abroad is available from the 1874 Company Report. This has been adjusted by the same method as for the other minor railways.

Figure B.7 shows the annual railway investment series estimated in this way. It also shows annual railway investment obtained by combining the data on British and French capital flows from Stone (1999) and Esteves (2011).[151] The two series show the same general pattern of patterns of investment.

[151] The Esteves (2011) database shows French investment in the railway sector for only one year, 1909, equaling 461,460 pounds, although it is not known what this financed. It may bet that some of the securities for the Central Eastern Extension, the Midland or the Eastern of Uruguay emitted around that time were sold on the Paris Stock Market.

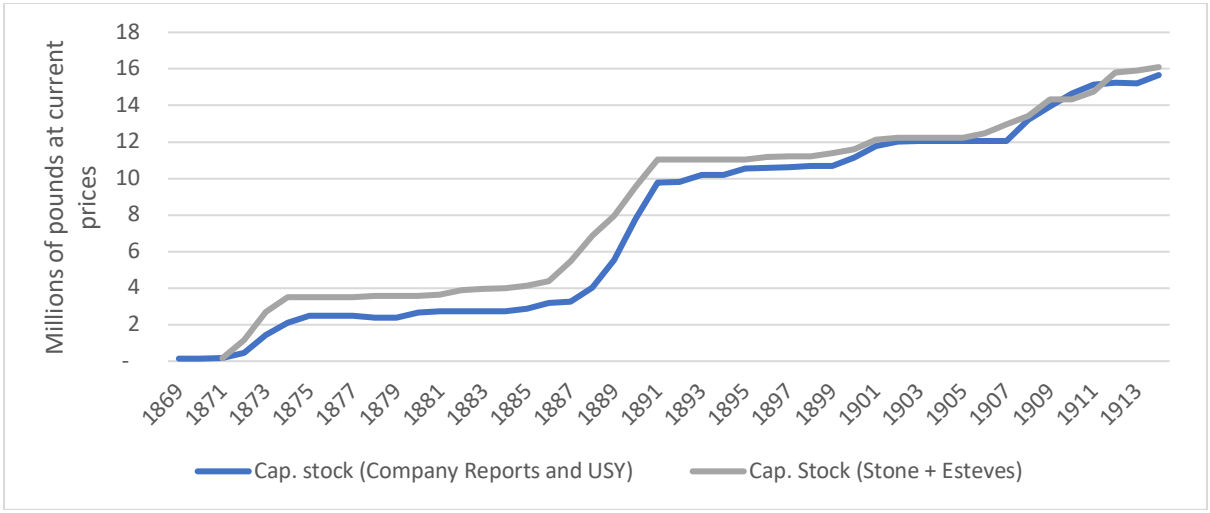
Figure B.7: Annual railway investment, 1869-1913



Sources: see text.

Figure B.8 shows the estimated series of annual cumulative capital investment (or the financial capital stock), in current prices. It also shows the same stock as estimated from the data available in international databases (a sum of the figures from Stone (1999) and Esteves (2011)).

Figure B.8: Cumulative railway investment, 1869-1913



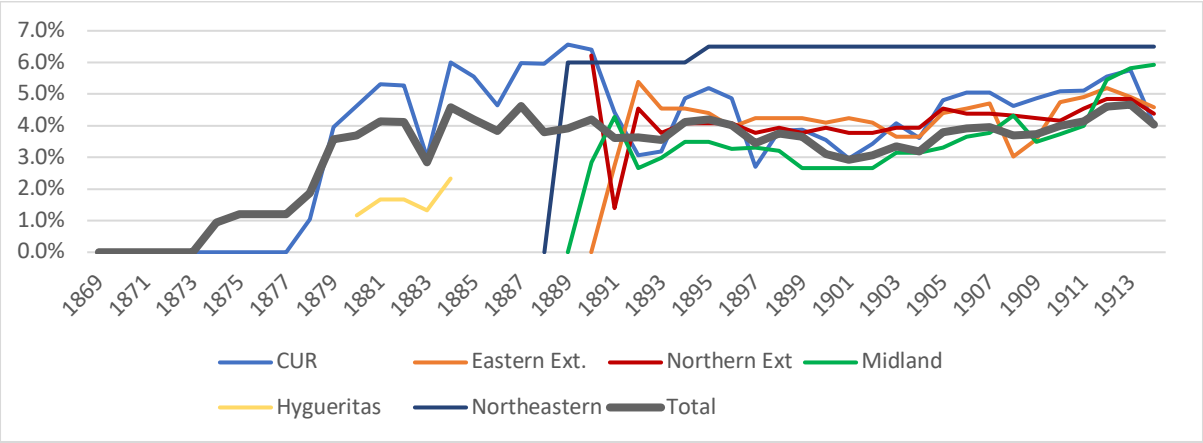
Sources: see text.

In the first half of the period, the estimates differ by about a million pounds, with the estimate based on international databases being the higher of the two. This is due mostly to large amounts appearing in Stone (1999: 253) in the early 1870s that do not appear in the other series. For those years, the series estimated here is based on kilometers of track in operation, and therefore may be biased. In the second half of the period the estimates coincide to a great degree.

Information on interest and dividend payments on share and debenture capital was taken from Company Reports. The average interest and dividend payments for the CUR was about 4.5% per year, about 4% for the Northern and Eastern Extensions, 3% for the Midland and 2% for the Western Extension. Some Company Reports are available for the Northeastern. This operated independently in the 1880s, but was absorbed by the CUR in 1891, under an arrangement where the latter leased the line and paid rent to the former. The CUR Company Reports show rent paid in all years from the time of the arrangement up to 1913. The 1891 Company Report for the Northeastern shows interest and dividend payments totaling 6% of capital. The next and only other available Company Report is for 1895, showing interest and dividend payments at 6.5% of capital. Thus, a rate of 6% is assumed from 1891 to 1894, and of 6.5 thereafter. For the railways for which Company Reports are not available, which tended to be smaller, had lower traffic and suffered greater financial problems (Winn, 2010: 62), average interest and dividend payments of 3% per year have been assumed.

Figure B.9 shows the rate of interest and dividend payments for all railway investment during the period (Total), as well as for the individual companies for which we have data. The Western Extension is not included since its interest payments were not sent abroad, but rather made to the CUR, who owned its debentures. From 1880 on, interest and dividend payments were around 4% of capital invested for the entire railway sector (using the series estimated from Company Reports and the AEU). For individual lines, they varied between around 3% and 5%, dipping slightly in the late 1890s and rising towards the end of the period.

Figure B.9: Rate of interest and dividend payments on railway investment, 1869-1913



Sources: see text.
Note: "Total" is the weighted average for the entire railway sector.

B.4 Other foreign direct investment

Other foreign investments were concentrated in the utilities sector, as well as some industrial, mining and financial services. Information on actual capital investment from local sources is scarce. Stone (1999) presents estimates for other foreign investments, divided by category, as shown in figure 11. Esteves (2003 and 2011) show other foreign investment spending, but do not specify in which sector. Here, I have tried to match the figures appearing in these databases to information for specific companies appearing in the Investor's Monthly Manual (IMM), as well as in the international literature and local historiography. For several categories, the figures match relatively well, in terms of capital amounts and dates of investment, with the major investments discussed in the historiography, although there are some known investments that do not appear. Interest and dividend rates for several of the major British companies are available from the IMM and Rippy (1952), and are applied to the total investment in each sector to obtain interest and dividend payments sent abroad.

Table B.26 shows the total invested from 1865 to 1913 in the different categories reported by Stone (1999).

Table B.26: Total non-railway foreign direct investment from 1865 to 1913 from Stone (1999)

Category of investment	Total invested in pounds from 1865 to 1913
Utilities	2,521,000
– Canals and docks	26,000
– Gas	631,000
– Electric lighting and power	-
– Telegraphs and telephones	674,000
– Tramways and omnibus	296,000
– Waterworks	894,000
Financial	1,934,000
– Banks and discount companies	1,767,000
– Land and investment	167,000
Mines	67,000
Commercial and industrial	107,000

Source: Stone (1999)

B.4.1 Utilities: Waterworks

The second largest capital entry category is for waterworks. The original waterworks company, established by local capitalists in the 1870s, was purchased by the Montevideo Waterworks Company in 1879 for 7600,000 pounds (Montevideo Waterworks Company Report, 1879). For most of its life, this company was managed by the River Plate Trust, Loan & Agency, created in 1881, as a holding for several major railway, utilities and land companies in the region

(Lanciotti, 2017: 27). In 1879, shares worth 350,160 pounds (paid up) were emitted, as well as 250,000 pounds in debenture bonds paying 7%. Share capital was raised several times, reaching 850,000 pounds by 1913. The debenture bonds were converted to 1st and 2nd debenture stock in 1884, and progressively raised to a total of 350,000 by 1913.[152] The interest rate was lowered to 5% in 1905.[153] The years when there were increases in share and debenture capital correspond roughly to the periods of expansion of the company's infrastructure in Montevideo (Bertino y Millot, 1996: 361; Finch, 2005: 219).

[152] Stone (1999) shows investment in waterworks beginning in 1883, with two waves of investment occurring, one from 1883 to 1888 and the other from 1907 to 1911. These roughly match the years in which capital increases appear in the Company Reports. However, the amount of investment that appears in Stone is only 1/3rd to 2/3rd that of the Company Reports. This could be due to the River Plate Trust, Loan & Agency holding some shares or debentures for itself, thus putting only part of the stock up for sale in the publications picked up by Stone's sources.
[153] This IMM shows the debenture stock paying 5% from 1890 (the first year the company appears in the publication). However, the Company Reports show disbursements equal to or near 7% of the value of emitted debenture stock from 1879 to 1904 (23,500 pounds from 1890 to 1904, which is 6.71% of emitted debenture stock in those years). Furthermore, in the IMM, the name of the debentures begins to include "5%" in 1904. Before this year they are simply referred to as 1st and 2nd debentures, without the "5%". For the foreign investment series elaborated in this paper, the information from the Company Reports has been used.

Table B.27: Capital, dividends and interest payments for the Montevideo Waterworks Company, 1879-1913

Year	Paid up share capital (thousands of pounds)	Annual dividend (percent)	Debenture bonds/1st and 2nd Debenture stock (thousands of pounds)	Interest rate (percent)	Total capital (thousands of pounds)	Dividend and interest payments (thousands of pounds)	Combined dividend and interest rate (percent)
1879	350	0	250	7.00	600	18	2.9
1880	350	0	248	7.04	598	17	2.9
1881	350	0	248	7.00	598	17	2.9
1882	350	0	248	7.00	598	17	2.9
1883	350	0	248	7.00	598	17	2.9
1884	350	2.5	252	6.89	602	26	4.3
1885	350	0	253	7.00	603	18	2.9
1886	350	3	270	6.64	620	28	4.6
1887	350	3.5	270	7.00	620	31	5.0
1888	350	5	300	6.30	650	36	5.6
1889	400	5	300	7.00	700	41	5.9
1890	400	5	349	6.26	749	42	5.6
1891	400	5	350	6.71	750	44	5.8
1892	400	5	350	6.71	750	44	5.8
1893	400	5	350	6.71	750	44	5.8
1894	400	5	350	6.71	750	44	5.8
1895	400	5	350	6.71	750	44	5.8
1896	400	5	350	6.71	750	44	5.8
1897	400	5	350	6.71	750	44	5.8
1898	400	5	350	6.71	750	44	5.8
1899	400	5	350	6.71	750	44	5.8
1900	400	5	350	6.71	750	44	5.8
1901	400	5	350	6.71	750	44	5.8
1902	400	5	350	6.71	750	44	5.8
1903	400	5	350	6.71	750	44	5.8
1904	400	5	350	6.71	750	44	5.8
1905	500	6	350	5.00	850	48	5.6
1906	500	7	350	5.00	850	53	6.2
1907	500	7	350	5.00	850	53	6.2
1908	500	7	350	5.00	850	53	6.2
1909	750	7	350	5.00	1100	70	6.4
1910	750	8	350	5.00	1100	78	7.0
1911	750	8	350	5.00	1100	78	7.0
1912	850	8	350	5.00	1200	86	7.1
1913	850	8	350	5.00	1200	86	7.1

Source: Montevideo Waterworks, Company Reports.

B.4.2 Telegraphs and telephones

Other large investments occurred in the Telegraph and Telephone sectors. The River Plate Telegraph Company was formed in Argentina in 1864, for the purpose of connecting Buenos Aires to Montevideo by cable, a task which was completed by 1866. The Montevideo and Brazilian Telegraph Co., Ltd. was organized in 1872, running a cable connecting the Uruguayan capital to the town of Chuy on the border with Brazil (Bright, 1898: 127). Rippy

(1948: 16; 1947: 233) reports a capital value of 88,856 pounds in 1872 for this company. In 1874, this system was connected to Rio de Janeiro by the London Platino Brazilian Telegraph Company, of Brazilian origin. This company was purchased by the Western and Brazilian Telegraph Co. in 1879, which also absorbed Montevideo and Brazilian Telegraph Co. Telegraphic service to the interior of the country was provided by the railway companies, which built lines alongside their railway tracks and established telegraph offices inside the railway stations. These investments appear in the balances of the railway companies (See, for example, CUR Company Report for year ending June 30th, 1884, page 29). Other, smaller companies provided service to towns where the railway did not reach.

The first telephone service in the country was provided by the British Gower Bell company, established in 1882, with a capital of 15,000 pounds (Winn, 2010: 74). By 1913, there were over 30 telephone companies operating in Uruguay, with one large British firm, the Montevideo Telephone Company dominating in Montevideo (Bertino and Millot, 1996: 359). This firm had a total capital of 215,000 pounds (75,000 pounds in ordinary shares and 140,000 pounds in 6% preference shares). This company was not profitable until its reorganization in 1898, which lowered the capital to 159,172 pounds (72,680 pounds in ordinary shares and 86,492 pounds for preference shares, now reduced to 5%) (Rippy, 1952: 127-128).

Stone shows a total of 370,000 pounds of British investment in the telegraph and telephone sector in the 1870s, distributed over several years, when the investments in the main Uruguayan cable and connections to Brazil were being made. An additional 214,000 pounds appear in 1888, when the Montevideo Telephone Company was founded, and 90,000 pounds in 1908. Due to the large number of companies that operated in this sector, and the international nature of some of them, it is impossible to reconstruct capital investment on a company by company basis. Therefore, for this paper, Stone's data has been used, adding only 15,000 pounds in 1882 to account for the Gower Bell Company's investment. Interest and dividends paid out by the Platino Brazilian are available from the IMM from 1880 to 1901 (When its parent company merged with several companies from other parts of the world to form the Eastern Telegraph Limited), and for the Montevideo Telephone Company from 1888 to 1913. Here, the returns for these companies are applied to the capital of the overall sector to determine interest and dividend payments sent abroad (for the years in which information overlaps, as weighted average has been used).

B.4.2 Gas

The first gasworks, established in 1852 in Montevideo by local capitalists, were purchased by Mauá and co. in the late 1860s, although the exact year and sale price is not known (Bertino and Millot, 1996: 360). The British "Montevideo Gas Company, Ltd." purchased the concession from Mauá in 1872, emitting with 500,000 pounds in ordinary shares. This was raised to 550,000 pounds in 1875, and adjusted to 541,920 pounds in 1877 (IMM). Stone (1999) reports a 500,000 investment in the gas sector in 1872 and another 50,000 pounds in 1874. Dividends were an average of 6% for the first two decades of the Montevideo Gas Company's existence. These fell to 5% in the 1890s and to 3.5% in the early 20th century, when the installation of electric street lighting removed one of the company's main sources of revenue (IMM; Winn, 2010: 149).

Stone (1999) also shows 44,000 pounds invested in 1890, 13,000 pounds the following year and 24,000 pounds in 1902, although it is not known what company these refer to. Here, the IMM figures have been taken for the initial investments in the 1870s,[154] while the figures from Stone (1999) have been included for the 1890s and 1900s. The dividend rate from the Montevideo Gas Company has been applied to the total capital of the sector.

B.4.3 Tramways

The Sociedad Comercial was founded in 1889, purchasing some existing horse drawn tramway lines. This was the local affiliate of what eventually became the United Electric Tramway Company of Montevideo, established in 1905, and listing on the London Stock Market, to raise funds for electrification (Bertino and Millot, 1996: 361). Stone (1999) shows 73,000 pounds of British investment in this sector in 1890, and about 200,000 pounds more spread over the years 1905, 1906, 1912 and 1913, which roughly matches the United Electric Tramway Company's investment activity. This company first appears in the IMM in 1908, with a total of 1,286,000 pounds of ordinary shares, preference shares and debenture stock, rising to 1,738,800 pounds by 1913. Here, Stone's (1999) figures have been used for the 1890-1907 period, and IMM data for 1908 to 1913. The IMM shows dividend and interest rates of about 5% or 6% per year for 1908 to 1913, while Rippy (1952: 128) reports dividends on ordinary

[154] The figure of 541,920 pounds, which appears in the IMM in 1877, has been applied here beginning in 1875, under the assumption that, of the 50,000 pounds offered in that second year, 8,080 were never sold (hence, the adjustment of the figures in the IMM two years later).

shares were an average of 5.5% from 1905 to 1914. The 5.5% average has been thus been applied to the years 1905, 1906 and 1907, for which there is no IMM data.

A German company, "*La Transatlántica*", was founded in 1905, purchasing the remaining non-British lines, and electrifying them soon after. Esteves' (2003) database does not break down the non-railway foreign direct investment statistics by industry, but shows small amounts of German investment in Uruguay almost every year from 1905 to 1913, which coincides with the electrification and expansion of "*La Transatlántica*" lines. There is no information on dividend and interest rates for this company, so those of the United Electric Tramway Company have been applied to the capital of the entire sector.

B.4.4 Canals and dry docks

Port works were financed principally by the state. Stone shows 13,000 pounds invested in 1872 and the same amount in 1912. It is not known what specific investments these figures refer to, but they have been included in the investment series. The average dividend and interest rate for the Utilities sector has been applied to this category.

B.4.5 Electricity

All investment in the electricity sector before 1914 was carried out by the tramway companies or by the state, and thus is included in the investment data for those sectors.

B.4.6 Banks and discount companies

The largest single category of foreign investment was in banks and discount companies. The London and River Plate Bank (LRPB) entered Uruguay in the early 1860s, and was one of the major banks in the country throughout the period. By the 1880s, three other British banks were operating in the country, including the English Bank of the River Plate, and the smaller London and Brazilian Bank and the British Bank of Rio de Janeiro. These were joined by the Banco Español del Rio de la Plata in 1904, of Argentine origin, in addition to a few other banks. Since these banks had their main business outside of Uruguay, the international sources are less helpful in establishing amounts or dates of capital investment. The IMM reports the total amounts floated in London for the company as a whole, and does not distinguish capital allocated to each branch. Stone (1999) reports capital emissions for Uruguay in this category for three years, 1880, 1907 and 1912. These, presumably, correspond to capital allocated to the Uruguayan branch of a larger bank or banks, but it is not clear how Stone was able to glean

this from the information available in the sources he used. Here, I have relied mostly on the balance sheets of the few Uruguayan branches of foreign banks published in the AEU, as well as some secondary literature, while the international investment sources have been used only as a guide for calculating dividends paid.

The Uruguayan branch of the LRPB began operations in 1864, and was initially assigned a fixed capital of 100,000 pounds, which was doubled to 200,000 pounds in 1865 (Joslin, 1963: 54, 55). The capital was increased again by around half, to 319,149 pounds, in 1885 (Winn, 2010: 48; AEU, 1885). None of these investments appear in Stone's database.[155] The AEU show the Montevideo branch with paid up capital (*capital integrado*) of 319,149 pounds from 1885 to 1913.[156] Here, the capital of the LRPB's Montevideo branch is taken to be 200,000 pounds from 1865 to 1884, and 319,149 from 1885 to 1913.[157]

The LRPB was joined by a second British competitor, the London and Brazilian Bank, which opened its Uruguayan branch in 1878 (Joslin, 1963: 79; Winn, 2010: 45 mentions it began operating in the early 1880s). There is no direct evidence of the initial capital allocated to the Uruguayan branch of this bank, although Winn mentions that it was a small player in the 1880s. Stone (1999) shows 50,000 pounds[158] invested in the "banks and discount companies" category in 1880, which may refer to the London and Brazilian, since there was only one other British bank operating in the country in that year. The AEU 1919 shows the bank registered its capital at 230,939 pesos from 1912 to 1916, which equals 49,136 pounds. This last figure has been applied from 1880 to 1913.

Furthermore, Stone (1999) shows capital emissions in the same category in 1907 (517,000 pounds) and 1912 (1,200,000 pounds). All of these years coincide almost perfectly with years in which the London and Brazilian mother company raised capital, although the amounts are much too high to be for the Uruguayan branch (and are likely for authorized, not paid-up capital of the main bank). This suggests that Stone's figures refer to the London and Brazilian, but may mistakenly quote the capital raised by the main bank instead of that allocated to the

[155] It is possible that increasing the capital of a branch would necessarily involve a fresh capital emission on the London Stock Market. If it didn't, this would explain why the 1865 and 1885 increases mentioned, as well as those for the other British banks, may not show up in Stone (1999).
[156] Since the AEU specifies the paid-up capital amount, the earlier doublings mentioned are taken as paid up capital as well.
[157] Nahum (1993, p. 252) assumes that the capital for the Uruguayan branch of the LRPB must have been raised to around 400,000 pounds in the late 19th or early 20th centuries because agencies were opened in the towns of Paysandú (1893) and Salto and Rivera (1905), but offers no direct evidence for this.
[158] Stone's figures are for paid-up capital. See Stone, 1999, note 2 (page 32).

Uruguayan branch. Winn mentions that the Uruguayan branch of the London and Brazilian was a small player in the 1880s, and it did not increase its capital until 1887, a year in which the main bank also increased its capital. The IMM shows an increase in paid up capital for the whole company (headquartered in London and with its main branches in Brazil) in several years, including in 1881, from 450,000 pounds to 500,000 pounds, and in 1887 to 625,000 pounds, and in 1907 and 1912, by 250,000 in each year. If the figure of 50,000 pounds appearing in Stone is the correct figure for the Uruguayan branch, which is reasonable, since it would make it a "small player", as claimed by Winn, this means that the company allocated about 1/10th of its capital to the Uruguayan branch. If we apply this ratio to the total capital for the company throughout the period, then the capital for the Uruguayan branch would be 45,000 pounds in 1880, 50,000 pounds in 1881-1886, 62,500 pounds in 1887-1890, 75,000 pounds in 1891-1906, 100,000 pounds in 1907-1911 and 125,000 pounds thereafter.

The English Bank of the River Plate, founded in 1881 in Argentina, opened its Montevideo branch in 1885 (Winn, 2010: 46). The AEU show capital at 200,000 pounds in 1886, raised to 265,975 in 1887.[159] The risky lending policies of this bank put it in a bad position to withstand the crisis of 1890, and it closed its doors in October of the following year, being finally liquidated in 1893 (Winn, 2010: 194, 199).

A fourth British bank, the English Bank of Rio de Janeiro, opened a branch in Montevideo in 1888 or 1889, with a capital of 50,000 pounds (Winn, 2010: 145; Joslin, 1963: 169). This bank changed its name to the British Bank of South America, Limited, in 1891.[160] The AEU 1916 shows capital unchanged, at 235,000 pesos, or 50,000 pounds, for 1912-1916.

Since little information is available on dividends sent by the Uruguayan branches of the banks discussed above to their overseas headquarters, the dividend rate for the whole company has been applied to the capital invested in Uruguay. For the LRPB, the available information begins

[159] Winn (2010: 145) mentions that this bank raised its capital for the Montevideo branch to 40,000 pounds in 1887. This figure must be an error, for it is far too low in relation to the large currency emissions of the bank (which were limited to three times paid up capital). Furthermore, Winn (2010: 147) also states that in 1890 the capital for all four British banks operating in the country was 700,000 pounds. Summing the figure of 265,975 pounds from the AEU to the estimates of capital for the other British banks, we arrive at a figure of 697,264 pounds, which is very close to the total quoted by Winn.

[160] The rebranding of this bank occurred when, in 1891, its Brazilian business was purchased by the Banco de Crédito Universal, an emerging Brazilian bank. The Rio de la Plata business changed its name to the British Bank of South America, Limited. Later that same year, the Banco de Crédito Universal sold back the rights to operate in Brazil for a fraction of what it had paid (Joslin, 1963: 169-70).

in 1869, when the company paid an annual dividend of 12.5%. Dividends are assumed to be 2.5% in 1865, 5% in 1866, 7.5% in 1867 and 10% in 1868.

The Anglo South American Bank (also known as the Anglo-Argentina Bank, formerly the Banco de Terapacá y la Argentina) opened a branch in Uruguay in 1890. The AEU 1916 reports capital equivalent to 50,000 pounds beginning in 1914. The bank is assumed to have been founded with this capital. Dividends for the Anglo-Argentine bank are reported in the IMM from 1890 to 1900, and for the Anglo South American from 1907 to 1913. The rate for 1890 was 5% and for 1907 was 9%. Here, I have assumed a rate of 6% 1901/02, 7% for 1903/04 and of 8% for 1905/06.

The Banco Español del Rio de la Plata entered the country in 1904 by purchasing the business of the similarly named local bank, the Banco the España del Rio de la Plata (Jacob, 1993: 23). According to the AEU, the capital of the local bank was equivalent to 170,213 pounds in 1904. Here, I have assumed it remained so until 1913. The local bank reported profits of 8.4% in 1903. The IMM shows dividends of 10% from 1907 (the first year the bank appears in that publication) to 1913 for the company as a whole. Here, dividends for the Uruguayan branch are assumed to have been 8.8% in 1904, 9.2% in 1905 and 9.6% in 1906.

Several more foreign banks entered the Uruguayan market in the early 20th century. The Banco Alemán Transatlántico opened a branch in 1906, with a capital amount of 42,553 pounds. In 1910, Credit Fioncier, a French bank, established a branch in Uruguay by purchasing the local Banco Cooperativo de Ahorros, and the Banco de Galicia y Buenos Aires, of Argentine origin, opened a Montevideo branch, with capital amounts equivalent to 19,848 pounds and 31,915 pounds, respectively. The Banco Italo Belga entered the Uruguayan market in 1913, with a capital of 21,227 pounds.[161] Information on dividend payments is not available. Thus, their dividends are assumed to have been paid at the average (weighted by their proportion of total capital) rate of the other foreign banks.

The paid up capital and annual dividend (percent) for the five foreign banks for which information was obtained is shown in Table B.28. The sum of the capital for the five banks is taken as the total foreign investment in the banking sector.

[161] These capital amounts are reported in the AEU (1916) for the years 1912 and 1913, and have been assumed to hold for earlier years.

Table B.28: Capital and percent dividend for foreign banks operating in Uruguay, 1865-1913

	London and River Plate		English Bank of the River Plate		London and Brazilian		English Bank of Rio de Janeiro		Spanish Bank of the River Plate		Total		
Year	Capital (thousands of pounds)	Dividend (percent per year)	Capital (thousands of pounds)	Dividend (percent per year)	Capital (thousands of pounds)	Dividend (percent per year)	Capital (thousands of pounds)	Dividend (percent per year)	Capital (thousands of pounds)	Dividend (percent per year)	Capital (thousands of pounds)	Dividends (thousands of pounds)	Dividends (percent per year)
1865	200	2.5									200	5	2.5
1866	200	5.0									200	10	5.0
1867	200	7.5									200	15	7.5
1868	200	10.0									200	20	10.0
1869	200	12.5									200	25	12.5
1870	200	12.5									200	25	12.5
1871	200	10.0									200	20	10.0
1872	200	11.0									200	22	11.0
1873	200	11.0									200	22	11.0
1874	200	12.0									200	24	12.0
1875	200	10.0									200	20	10.0
1876	200	4.0									200	8	4.0
1877	200	6.5									200	13	6.5
1878	200	8.0									200	16	8.0
1879	200	8.0									200	16	8.0
1880	200	10.0			45	8.0					245	24	9.6
1881	200	10.4			50	8.0					250	25	9.9
1882	200	10.8			50	8.0					250	26	10.2
1883	200	11.1			50	8.0					250	26	10.5
1884	200	11.5			50	10.0					250	28	11.2
1885	300	11.9	20	7.5	50	10.0					370	42	11.4
1886	300	12.3	20	7.5	50	9.0					370	43	11.6
1887	300	12.6	40	7.5	63	12.0					403	48	12.0
1888	300	13.0	40	5.0	63	12.0					403	49	12.0
1889	300	13.4	40	10.0	63	28.0	50	8.0			453	66	14.5
1890	300	13.8	40		63	13.0	50	8.0			453	53	11.8
1891	300	14.1	40*		75	14.0	50	10.0			465	58	12.4
1892	300	14.5	40		75	14.0	50	10.0			465	59	12.7
1893	300	14.9	40**		75	14.0	50	10.0			465	60	12.9
1894	300	15.3	40		75	14.0	50	10.0			465	61	13.2
1895	300	15.6	40		75	14.0	50	10.0			465	62	13.4
1896	300	16.0	40		75	14.0	50	10.0			465	64	13.7
1897	300	16.4	40		75	14.0	50	7.0			465	63	13.6
1898	300	16.8	40		75	10.0	50	6.0			465	61	13.1
1899	300	17.1	40		75	14.0	50	6.0			465	65	14.0
1900	300	17.5	40		75	14.0	50	8.0			465	67	14.4
1901	300	17.9	40		75	14.0	50	8.0			465	68	14.7
1902	300	18.3	40		75	10.0	50	16.0			465	70	15.1
1903	300	18.6	40		75	10.0	50	6.0			465	66	14.3
1904	300	19.0	40		75	10.0	50	8.0	170	8.8	635	83	13.1
1905	300	20.0	40		75	12.5	50	8.0	170	9.2	635	89	14.0
1906	300	20.0	40		75	15.0	50	9.0	170	9.6	635	92	14.5
1907	300	20.0	40		100	15.0	50	11.0	170	10.0	660	98	14.8
1908	300	20.0	40		100	15.0	50	12.0	170	10.0	660	98	14.8
1909	300	20.0	40		100	15.0	50	13.0	170	10.0	660	99	14.9
1910	300	20.0	40		100	18.0	50	13.0	170	10.0	660	102	15.4
1911	300	20.0	40		100	17.0	50	13.0	170	10.0	660	101	15.2
1912	300	23.3	40		125	22.0	50	17.0	170	10.0	685	123	18.0
1913	300	20.0	40		125	20.0	50	22.0	170	10.0	685	113	16.5

Source: Investor's Monthly Manual. * Bank ceases operations. ** Bank liquidated.

B.4.7 Land and investment

According to Winn (2010: 268), by the turn of the century, around 40% of accumulated British non-railway foreign direct investment in Uruguay was in urban and rural property. Stone (1999) mentions 125,000 pounds invested in 1872, and another 37,000 pounds by 1890. Rippy (1952) mentions the Prangas Estancias Company, with a capital of 116,000 in 1867, and the Uruguay United Estancias Company, with 65,000 pounds in 1909. For the first company, the author reports dividends of 8% in 1884, 5.4% in 1885, 8.2% in 1894 and 16.1% in 1894. For the second, dividend payments were 9.5%.

The figures from Stone (1999) have been used for capital for the sector, to which have been added those from Rippy (1952) for the Prangas estancia from 1867 to 1871 and the United Uruguay estancia from 1909 to 1913. A weighted average of the dividend rates has been applied to the total capital to get sectoral dividend payments.

B.4.8 Mining

There were several mining concerns that operated during the period, extracting small amounts of minerals (gold and copper). Some of these may have accessed foreign capital (Buzzetti, 1959: 151-52), but little information is available on these companies.

B.4.9 Industrial and commercial

The small amounts of capital emissions reported by Stone (1999) in the commercial and industrial sectors appear to leave out some major investments. The Liebig's Extract of Meat Co. was founded in 1865 (Rippy, 1948: 18; 1947: 234) and operated in Fray Bentos throughout the period. The IMM gives capital figures of 250,000 pounds in 1865, 357,200 in 1870, 360,000 in 1878, 480,000 in 1880, 500,000 in 1895, and 600,000 in 1907. The country's first frozen meatpacking plant was founded in 1903 by local capitalists, but was purchased by the Anglo-Argentine Sansinena in 1911. In 1912 a second meatpacking plant, of US origin, the Montevideo Swift, was established. Bertino and Millot (1996: 184) report capital of around 425,000 pounds for each in 1912, although the construction and expansion of plants took several years, and the capital inflow was likely spread out over this time (the construction of the Swift plant was commenced in 1911 and finished in 1922; *Libro del Centenario*, 1925: 121). Jacob (1981) reports capital for Sansinena of 300,000 pounds in 1911, raised to 346,497 the following year. The AEU (1916) shows 425,532 pounds for the Swift in 13. The figures

for Liebig's, and Jabob's figures for Sansinena and the AEU's figures for the Swift have been added to Stone's figures to obtain the total capital stock series for this sector.

Dividends for Liebig's Extract of Meat Co. are reported in the IMM, and ranged from 7.75% to 40% over the period. For the other investments, the average dividend rate for the rest of the "other FDI" sector have been applied.

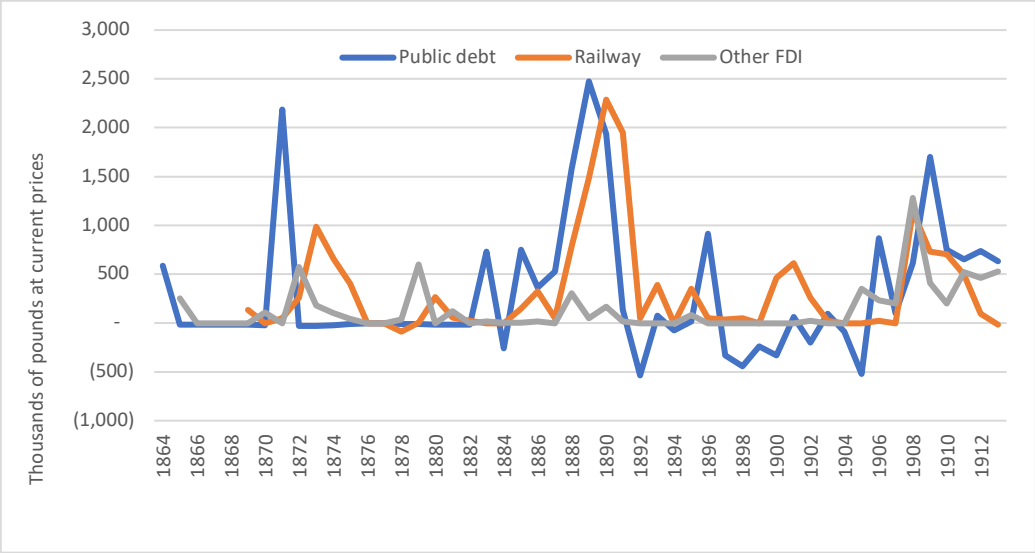
B.4.10 Other

Esteves (2011) reports French investment of 55,102 pounds in 1911. It is not known what this is, but could be French purchases of the securities of a British company, and thus have been included in the capital inflow series.

B.5 Total foreign investment

Figure B.10 shows the annual public debt, railway and other FDI series. Investment in the three categories tended to come in waves, which seem to be grouped together. A first wave occurred at the beginning of the 1870s, a second in the late 1880s, and a third wave towards the end of the period.

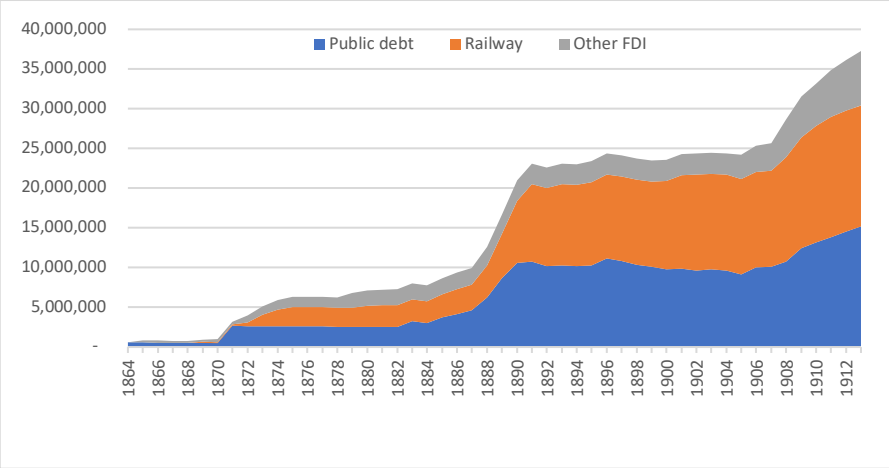
Figure B.10: Annual non-railway FDI and railway investment, 1865-1913



Sources: see text.

Figure B.11 shows the total accumulated foreign investment in Uruguay from 1864 to 1913, broken down into the main categories. By 1913, total accumulated capital flows amount to almost 40 million pounds. Of this, 41% was invested in public debt, 41% in railways and 18% in other foreign direct investments. The total annual capital flows series is shown in chapter 2.

Figure B.11: Cumulative foreign investment (total, broken down by category), 1864-1913



Sources: see text.

Appendix C: Services and unilateral transfers balance for Uruguay, 1870-1913

C.1 Services balance

The services balance, sometimes called 'invisible exports and imports', contemplates transport, insurance, tourism, capital and labor incomes and government services. For the time period under study, reconstructions of only some of these are possible, as information on many of these items is scarce.

C.1.1 Freight and insurance

Uruguay had practically no international shipping fleet.[162] Imports and exports were carried on foreign ships. Because the export statistics have been estimated with foreign prices, they are "free on board", that is, they do not include freight and insurance expenses. These would have been paid by foreigners who purchased the goods, and should not be included in the Uruguayan accounts.

Uruguayans would have had to pay freight and insurance expenses to foreigners for imported goods. The imports series from Siniscalchi et al. (2021) used here strips out the costs for freight and insurance. In order to estimate the costs for shipping and insurance, the percent costs estimated in Baptista and Bértola (1999) has been applied to the import series. The result series is about 3% of GDP before 1890, and drops to around 1.5% of GDP thereafter.

C.1.2 Net income from abroad

This category registers income to factors of production such as capital and labor that would have been paid by Uruguayan residents to foreigners, or vice versa. Payments to labor, either seasonal foreign workers in Uruguay, or Uruguayans temporarily working abroad, may have existed, but insufficient information is available to make an accurate estimate. The very limited

[162] In the mid-1880s, of the 8,000 ships that plied the rivers heading up to Paraguay, only 33 were Uruguayan (Jacob, 2004: 34).

data on Uruguayan capital invested abroad during the period indicates that it was likely minimal, and therefore the returns to this investment have not been considered here.

The main item in this category is payments to foreign capital invested in Uruguay. This has been calculated by applying interest and dividend rates to the capital investment series estimated above. For public debt, the interest on bonds has been applied to the total amounts of each emission circulating abroad. For railway investment, data on interest and dividend payments was obtained from company reports. For returns to other foreign direct investment, information is more difficult to obtain, and the little data available varies widely depending on the company. In general, information on dividend payments was obtained from the same sources as for capital invested (see appendix A).

The average rate of return on public debt was around 6% over the period, while for railways it was around 3.2%. The average return on other FDI was 7.5% over the period. Total interest and dividend payments as a percent of GDP rose from around 3% or 4% of GDP in the 1870s and 1880s, to over 7% in the early 1890s, falling to under 4% by the end of the period.

C.1.3 Tourism

The first tourist establishments in Uruguay were installed as early as the 1870s (Jacob, 1988: 90), and were known to attract Argentines to the beaches in and around Montevideo. Development of the beaches to the east of Montevideo, up to Punta del Este, began in the 1890s (Da Cunha, 2012: 27). By the early 20th century, fomenting Uruguay's tourist sector had become part of Jose Batlle y Ordoñez's progressive government's plan for diversifying the economy (Jacob: 1988: 92). However, data on tourism during the period under study is almost non-existent. Figures on the number of visitors are available only starting 1920, while estimates of spending per tourist start in 1940. Estimates of Uruguayan tourism abroad also start in the 1920s (Da Cunha, 2012: 51, 68, 70).

Acevedo Alvarez (1937: 47-48) suggests Uruguay's net tourist spending was negative for 1928, for while Uruguay's beaches were popular among Argentines during the summer months, Uruguayan's travelled to Buenos Aires and Europe all year round, and spent large sums there. He gives a very rough figure of a deficit of 3,000,000 pesos (209,787 pounds) for that year. Bertino et al. (2005: 129), extrapolating backwards from Da Cunha's (2012)

figures,[163] estimate the trade deficit in tourist services to be about 255,000 pounds in 1911, 298,000 pounds in 1912 and 170,000 pounds in 1913.[164] This is in the same order of magnitude as annual remittances sent abroad (see below).

From these figures, it is clear that tourism was likely a non-negligible item in the balance of payments, at least towards 1913. However, from the data provided by Bertino et al. (2005) it is impossible to reproduce their result, or to extrapolate backwards by the same method (using the GDP per capita of Argentina and Uruguay), since they only give the net balance, and not the levels of foreign tourist spending in Uruguay and Uruguayan tourist spending abroad. Furthermore, it is likely that inward and outward tourist flows responded to different factors. Uruguayan tourism abroad, to Buenos Aires and European capitals, may have depended on the evolution of living standards of Uruguayans.[165] However, tourism to Uruguay depended in great part upon the existence of infrastructure (hotels, roads, etc.) that allowed access to the country's natural beauty.

These problems impede the estimating of the balance of tourism spending during the period with any accuracy. Therefore, the figures for 1911 to 1913 from Bertino et al. (2005) have been used, but the balance for earlier years has not been estimated.

C.1.4 Consular and diplomatic services

This item includes the cost of maintaining consuls, embassies and other diplomatic services overseas, as well as the spending by foreign governments on these activities in Uruguay. Acevedo Alvarez (1934) estimates the government's spending in this category at 400,000 pesos (83,915 pounds) in 1928. Bertino et al., (2005) extrapolate this figure back to 1911, maintaining the same value in pesos. I have assumed the same levels for 1909 and 1910, and then extrapolated backwards by the variations in the level of spending on the item "exterior relations" which appears in government budgets during the period (these figures are available

[163] Da Cunha (2012) gives figures for the total number of tourists and for those of Argentine nationality. The note in Bertino et al. (2005), below the chart where the figures appear, says that tourist spending for Argentines was projected backwards by Argentine GDP per capita, while tourist spending by Uruguayans abroad was projected backwards by Uruguayan GDP per capita. However, it is not entirely clear whether they consider all tourists visiting Uruguay, or only those from Argentina. Also, it is not clear how they arrive at total tourist spending (if they applied the per capita figures for 1940 to earlier years, they do not say so explicitly).

[164] Bertino et al.'s figures are consistently negative from 1911 to 19130. This is despite the fact that, from 1920 to 1930, Da Cunha's (2012: 68, 70) figures for total foreign tourist visiting Uruguay are about double those for Uruguayans travelling abroad. This means spending per Uruguayan visitor abroad was much greater than the spending of foreigners visiting Uruguay.

[165] Changes in GDP per capita may be a good proxy for this. However, it was likely the upper classes that travelled abroad, and if inequality changed over the period, GDP per capita would not fully capture the relevant dynamics.

from Millot and Bertino [1996: 393] for the years 1869, 1874, 1880, 1882, 1886, 1888, 1894, 1900, 1907 and 1909). Information on foreign consular services in Uruguay is not available, but it can be assumed that the spending was much lower than what Uruguay spent overseas, since the costs of maintaining diplomats in Europe was higher than in Uruguay. Furthermore, it is likely fewer countries maintained consular services in Uruguay than Uruguay did overseas. The estimated series fluctuates between about 60,000 and 85,000 pounds per year.

C.2 Unilateral transfers balance

The Unilateral transfers balance registers transfers of funds made without receiving merchandise or services in exchange. These include remittances by workers, and gifts or donations between governments, international organizations and private citizens.

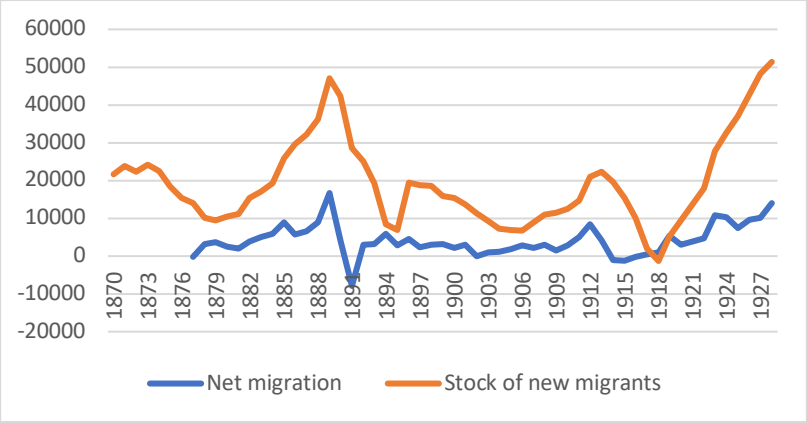
In the period before 1914, the only important item in this balance was likely remittances. These were sums sent back to the home country in Europe by immigrants, and could have a large impact on the balance of payments of both sending and receiving countries and play an important role in financial development of the receiving countries (Esteves and Khoudor-Castéras, 2009b). Direct data on remittances is difficult to come by, and is therefore generally estimated indirectly from information on the stock of recently arrived immigrants and average remittances per migrant.

Donnángelo and Millán (2006) provide an estimate of remittances sent from Uruguay for the period under study, based on information on total remittances available for 1911, and extrapolated by changes in the immigrant population of Montevideo with data obtained from municipal censuses for 1860, 1884, 1889, 1908 and 1930. This method contains several problems. First, it assumes that immigrants sent money back home for the entire duration of their time in the host country, contrary to the international literature, which generally assumes they stopped sending money home after about five years, either because they had by then been able to pay back money owed for travel expenses, or had decided to stay and invest in the host country (Prados de la Escosura, 2009). Second, calculating immigrant stocks from only a few data points does not allow them to capture the waves of migration, and therefore fluctuations in the immigrant stock, which where characteristic of the period. Third, it does not take into account changing wages of migrants and the effects of these changes on remittances.

Considering these weaknesses, I have estimated remittances in accordance with the practices found in the international literature. These include using annual data on net migration,

assuming only migrants arrived within the previous five years sent remittances, and adjusting for changes in wages (Esteves and Khoudor-Castéras, 2009a). I begin by calculating the stock of migrants arrived within the previous five years, for each year from 1870 to 1928, using data on net migration rates.[166] These are shown in figure 2.5.

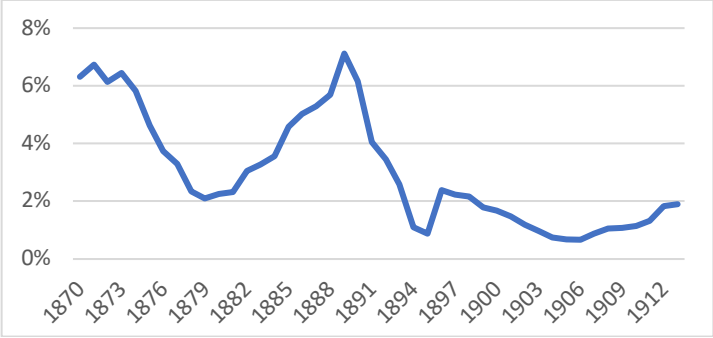
Figure C.1: Net migration and stock of newly arrived immigrants, 1870-1913



Sources: AEU, 1913/14

Calculated in this way, the newly arrived immigrant stock was around 7% of the population in the early 1870s, dropping to around 2% by the end of the decade, before rising to 7% again by 1890. By the middle of the 1890s the weight of the newly arrived immigrant stock in the total population had fallen dramatically, remaining about 1% or 2% for the rest of the period. This is shown in figure 2.6.

Figure C.2: Percent of newly arrived immigrants in total population, 1870-1913

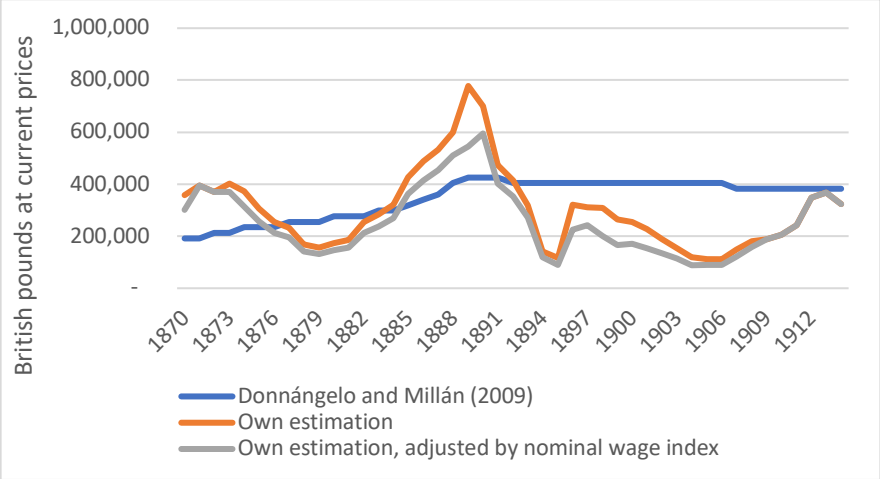


Source: Own estimation and population from the AEU.

[166] Immigration data are available from 1866, but figures on emigration are available starting only in 1877. Therefore, the newly arrived immigrant stock for 1870 to 1880 has been estimated from gross, rather than net, migration rates. Net migration has been estimated from figures on passenger entries and exits from the port of Montevideo. Mitchell (1993: 94-95) takes these same figures to mean immigration and emigration. Nevertheless, it is possible that not all registered arrivals were immigrants, but rather that some of them were temporary visitors. However, reducing the arrivals figures to account for temporary visitors would mean we must also reduce the exit figures, leaving net migration rates unchanged. Exit rates are not available before 1879, so the net migration figure for that year was extrapolated backwards by the variations in the arrivals rate.

The immigrant stock series estimated above has been used to extrapolate backwards the figure on total remittances from 1928 found in Acevedo Alvarez (1934: 51).[167] This is the first available estimate of remittances for Uruguay. This was then adjusted with a nominal wage index from Bértola et al. (1999). The remittances series is shown in figure 2.7, along with the one estimated by Donnángelo and Millán (2006).

Figure C.3: Remittances, 1870-1913



Source. Own estimation based on the AEU, Acevedo Alvarez, 1934 and Bértola et al., 1999.

The remittances per recent immigrant which result from this estimate range from about 16.5 pounds in the early 1870s, falling to around 11 pounds at the turn of the century, and then rising to about 16.5 pounds again by 1913 (these fluctuations are due to changes in nominal wages). These are in line with estimates for other countries. For example, estimates for remittances to Portugal from emigrants to Brazil range from 20 pounds per capita in the 1880s to 7 pounds in 1913 (Mata [2002] cited in Esteves and Khoudor-Castéras, 2009b), while Prados de la Escosura calculates about 14.5 pounds per Spanish emigrant for the years 1906 to 1910.[168] A report published by Uruguay's Minister in Rome in 1882 showed amounts remitted through the Italian consulate in Montevideo. These were on average 13.2 pounds per transfer between 1868 and 1872, 10.4 pounds between 1873 and 1877 and 3.3 pounds between 1878 and 1880 (Acevedo, 1934a: 289). The *Anuario Italiano de Emigrazione* has figures on total annual remittances sent

[167] The figure for 1911 used by Donnángelo and Millán (2006) is taken from Bertino et al. (2005: 129). This work in turn uses a figure published in Acevedo Alvarez (1934: 51) for 1928, and extrapolates it backwards by the change of Uruguayan GDP per capita. I have chosen to use the 1928 figure and extrapolate backwards by changes in the immigrant stock and nominal wages, so as to maintain consistency throughout the estimated series. The 1928 figure is based on a figure for remittances sent from Argentina to Europe, adjusting for Uruguay's smaller population and immigrant stock.

[168] Prados de la Escosura's figure is 400 pesetas, which I have converted considering an exchange rate of around 28 pesetas to the pound, using the peseta/dollar exchange rate data from Global Financial Data and the dollar/pound exchange rate from Measuring Worth.

from Uruguay to Italy by postal money order for 1901 to 1913, as well as the number of orders sent per year, from which remittances per capita for Italians can be calculated using this channel (as opposed to other channels like wire transfers or sending money with someone travelling back to Europe). The results average about 3.5 pounds per order,[169] lower than the per capita levels estimated above. However, if a single person sent money back, say, three or four times a year, the per capita figure would be in line with the estimated series above.

Remittances as a percent of GDP were around 4% in the early 1870s, but fell to around 1.5% by 1883. They rose to 3% by the late 1880s, due to the large influx of immigrants in the preceding years, but then fell off, stabilizing at around 0.5% of GDP by 1913. In other words, remittances likely had an important impact on Uruguay's balance of payments.

[169] The figures range from 77 to 95 lira per order, which I have converted considering an exchange rate of around 25.5 lira to the pound, using the lira/dollar exchange rate data from Global Financial Data and the dollar/pound exchange rate from Measuring Worth.

Appendix D: Balance of payments and GDP of Uruguay, 1870-1913

Figure D.1: Exports, imports, services and unilateral transfers balances, capital flows, change in reserves and GDP of Uruguay at nominal prices, 1870-1913

Year	Exports	Imports	Services and unilateral transfers balance	Cap flows	Change in reserves	GDP
1870	3,259,574	5,896,602	(790,421)	86,376		33,853,342
1871	4,529,787	5,794,051	(1,034,026)	2,235,944		36,626,324
1872	4,261,702	8,080,551	(1,142,674)	798,234		44,937,331
1873	4,785,106	9,437,253	(1,268,090)	1,138,311		48,868,515
1874	4,723,404	7,250,880	(1,108,508)	735,207		44,643,700
1875	4,093,617	4,925,830	(931,906)	432,988		41,150,807
1876	4,848,936	4,700,768	(843,672)	(3,700)		45,664,394
1877	5,619,149	5,331,671	(906,757)	(4,000)		47,761,236
1878	6,168,085	5,439,026	(817,077)	(63,853)	(256,712)	51,712,953
1879	6,108,511	5,138,244	(857,921)	592,050	(246,218)	49,006,429
1880	7,674,468	6,526,093	(996,169)	249,108	203,319	52,631,462
1881	6,219,149	5,830,239	(1,008,196)	160,607	(575,666)	50,248,668
1882	6,968,085	6,030,605	(1,031,225)	5,493	(172,625)	55,343,862
1883	7,872,340	5,880,459	(999,764)	748,940	(337,948)	64,521,436
1884	7,431,915	10,402,878	(1,289,635)	(253,624)	(503,379)	66,814,588
1885	6,387,234	8,252,201	(1,392,613)	897,854	(332,490)	72,629,758
1886	7,091,489	7,037,421	(1,496,012)	706,071	(433,265)	71,905,840
1887	5,446,809	9,118,437	(1,750,704)	577,591	(745,924)	64,514,584
1888	7,055,319	11,607,017	(2,155,774)	2,667,759	(100,048)	79,323,601
1889	7,525,532	15,412,990	(2,544,124)	4,012,718	(904,600)	86,514,598
1890	4,965,957	9,227,582	(2,461,946)	4,391,688	96,606	80,276,301
1891	5,393,617	4,868,142	(1,736,178)	2,095,122	179,963	78,532,656
1892	4,902,128	4,670,297	(1,285,152)	(486,612)	(66,395)	67,046,353
1893	5,440,426	5,042,501	(1,944,987)	465,392	(6,870)	72,527,626
1894	6,991,489	5,154,917	(1,741,205)	(78,509)	300,882	75,712,603
1895	7,476,596	4,897,824	(1,760,789)	444,826	621,217	76,140,962
1896	6,719,149	6,585,342	(1,951,116)	960,779	(112,368)	79,999,223
1897	6,340,426	5,087,424	(1,916,383)	(298,130)	(235,885)	84,903,968
1898	6,172,340	4,530,539	(1,903,717)	(394,225)	220,171	83,005,688
1899	7,165,957	5,964,305	(1,892,170)	(238,690)	629,504	91,548,372
1900	6,955,319	7,226,826	(1,904,549)	130,218	(274,973)	92,555,203
1901	7,972,340	5,743,592	(1,752,899)	674,484	442,178	93,403,786
1902	7,017,021	4,812,398	(1,686,501)	80,962	1,033,321	95,190,588
1903	8,276,596	5,553,802	(1,783,042)	116,808	1,068,498	101,985,725
1904	9,165,957	4,393,046	(1,668,451)	(89,674)	1,738,469	105,435,473
1905	7,646,809	5,515,449	(1,762,342)	(174,488)	78,251	108,432,684
1906	8,921,277	9,203,944	(1,912,018)	1,121,828	542,310	126,448,964
1907	10,017,021	11,518,524	(2,131,699)	301,206	(59,655)	139,638,698
1908	10,068,085	11,707,558	(2,237,645)	3,038,416		148,992,896
1909	12,144,681	11,741,577	(2,507,253)	2,839,514		156,446,693
1910	11,565,957	13,189,562	(2,718,646)	1,654,330		167,903,635
1911	11,242,553	14,720,347	(3,189,195)	1,671,909		167,105,511
1912	13,142,553	16,126,640	(3,698,007)	1,295,214		199,319,551
1913	13,636,170	17,416,409	(3,531,864)	1,141,309		222,593,503

Source: Exports: Bonino et al. (2015); Imports: 1883-1911 from Siniscalchi et al (2021) and extrapolated backward to 1870 and forward to 1913 with official statistics (AEU), adjusted by the import price index from Baptista and Bértola (1999); Services and unilateral transfers balance: various sources, see appendix xx; Capital flows: various sources, see appendix xx. Change in reserves: AEU; GDP: Román and Willebald (2019).

Appendix E: When did Uruguay return to the gold standard after its exit in 1890?

The July 5th decree meant Uruguay's exit from the gold standard. At what point can we consider that Uruguay returned to the regime?

At the moment the government suspended convertibility of notes of the Banco Nacional, they likely represented around 60% of the country's total note circulation.[170] The message sent to the London agent of the affected bank, and circulated in the British financial press, stated that "Today this emission is received everywhere, the same as gold, with absolute confidence."[171] This, of course, was not true, as the gold premium rose quickly to around 1.25 paper pesos per gold peso.[172] A week after the suspension of convertibility, the Economist reported "there is now not one country in South America possessing a currency resting upon a proper metallic basis".[173]

However, the rest of the banking sector and merchant community quickly did everything in their power to demonetize the notes of the Banco Nacional, not only declining to accept them, but also refusing to do business with anyone who did. Three weeks after the initial inconvertibility decree, the government had essentially accepted the terms of the business community, decreeing that the notes of the Banco Nacional would be accepted for collection of taxes and payment of government salaries at their market value, and that the government could require customs duties to be paid in gold (Acevedo, 1903: 270-71).

The government clearly wanted to give the impression that the country was firmly on the gold standard, even though the notes of the Banco Nacional were circulating at a discount. For example, in March of 1891, in a letter to the Chamber of Commerce, the Finance Ministry declared, "Quotation of the gold premium at the Montevideo Stock Exchange should be utterly

[170] It was 56% at the end of 1889 and 62% at the end of 1890. Despite a 44% reduction in the note circulation of the Banco Nacional from 1889 to 1890, the other emissions banks also reduced their note circulation by, on average, roughly the same proportion (calculated from bank balance sheets, AEU).
[171] The Economist, July 12th, 1890, p. 903.
[172] Low of 115 and high of 136 for the month of July, 1890 (Acevedo, 1903: 299).
[173] The Economist, July 12th, 1890, p. 890.

suppressed, although the value of the notes of the Banco Nacional can be quoted in the same way as the value of other commercial assets … Quotes of the gold premium transmitted abroad, just as the gold premium of neighboring countries under inconvertible paper currency regimes are transmitted, give room for believing that our country operates under the same regime, which denaturalizes the truth of the matter and causes considerable damage to our credibility." (Acevedo, 1934a: 560).[174] After this date, the gold premium (the number of Banco Nacional notes needed to purchase 100 pesos in gold) ceased to be published, and the value of Banco Nacional notes began being quoted as a percent of par. In the opinion of the government, the circulation of depreciated notes did not mean Uruguay was on an inconvertible currency regime, since all debts, domestic and foreign, were payable in gold. Under this perspective, Uruguay would have been off the gold standard for only a few weeks, between the July 5th suspension of convertibility and the July 28th law which declared the notes legal tender for state business, but only at their market value.

The proportion of the total note circulation made up of Banco Nacional notes can be seen in table E.1. In December of 1890, the nominal value of this second currency represented 62% of the country's total note circulation, although, if taken at its market value, it was only 40% of the countrywide note stock.

Table E.1: Gold premium on Banco Nacional notes and their part of total note circulation, at nominal and market value

Date	Percent of BN notes in total note circulation	Average gold premium for BN notes	Percent of market value of BN notes in total note circulation
1890 Dec	61.8%	154.3	40.1%
1891 Dec	28.8%	145.0	19.9%
1892 Nov	24.8%	204.2	12.1%
1893 Dec	21.2%	274.0	7.7%

Sources: Note circulation of Banco Nacional and total banking sector, from bank balances, AEU. Gold premium is the average of low and high price for the month, from Acevedo (1903: 299-300). Percent of market value of Banco Nacional notes in total note circulation is simply the nominal value of notes, multiplied by 100/gold premium.

By December of 1890, the situation of the bank had not improved, and the government extended the suspension of specie payments for another six months, and submitted a plan for reorganizing the bank. It included a partial reopening of conversion: the bank would amortize 300,000 pesos per month (almost 64,000 pounds), financed by a 600,000-pound loan from the Banco Popular de Rio de Janeiro (Acevedo, 1903: 272). By the time the Banco Nacional fully

[174] Own translation from Spanish.

reopened conversion in July of 1891, the funds were almost exhausted and the total collapse of the bank ensued. By September of 1891, the Banco Nacional was in liquidation.[175] In December of that year, the note circulation of the bank had fallen to 29% of the country's total note stock (20% if taken at its market value). The liquidation was finalized in March of 1892, the assets and liabilities of the bank being passed to the government, while the shareholders received internal government debt in compensation. By the November of that year, the notes of the Banco Nacional were 25% of the country's total note circulation, 12% at market value. By the end of 1893, these figures were 21% and 8%.

Most definitions of the gold standard refer to countries with central banks or direct government control of paper currency issue. For example, Bordo (1999: 6) defines it the following way: "Under a gold standard the monetary authority … fixes the price of gold in terms of national currency. By being willing to buy and sell gold freely at the mint price, the authority maintains the fixed price. There are no restrictions to the ownership or use of gold." For Eichengreen (1992: 21), countries where "money in circulation took the form mainly of paper, silver, and token coin … were on the gold standard in that their governments stood ready to convert their monies into gold at a fixed price on demand."

It is clear that Uruguay doesn't quite fit into the definitions of the gold standard mentioned above. Between July of 1890 and September of 1891, the country essentially had two currencies: one, fully convertible to gold, emitted by the Banco Comercial, the London and River Plate, the English Bank of the River Plate and the Banco de España y el Rio de la Palta, and another, the inconvertible notes of the Banco Nacional, which circulated at a discount. This situation could arise because the country had multiple currency issuing banks, something not contemplated in the definitions of the gold standard mentioned above.

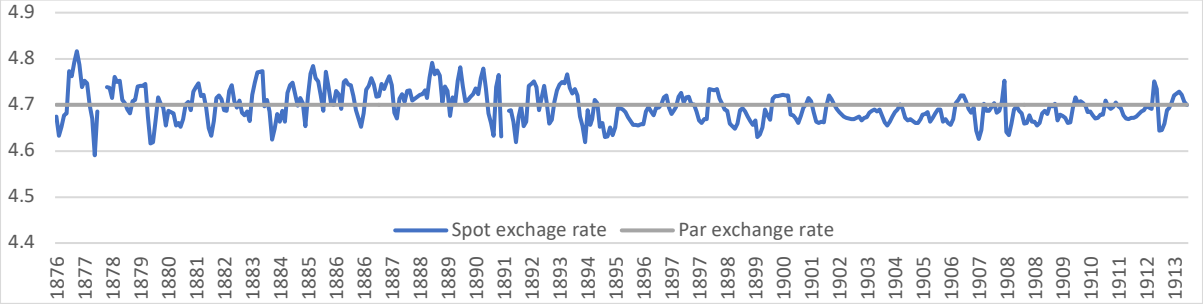
Flandreau and Zumer (2004: 37) categorize countries as being on the gold standard if their exchange rate remained within the gold points for at least six consecutive months within a given year.[176] Figure E.1 shows the monthly peso exchange rate for bills on London, that is, the peso price of a bill of exchange with a nominal value of one pound, payable in London,

[175] It is assumed that from this point on the government ceased to accept the notes for payment of taxes and use them for payment of salaries and other expenses. However, it is not completely clear from the sources if this is so.

[176] The gold points were the price at which it would have been cheaper to ship gold rather than purchase a bill of exchange, and form a band within which the exchange rate could fluctuate without triggering gold exports or imports. We do not know the exact position of the gold points for Uruguay in this period, as they are difficult to estimate, and likely varied over time.

from November of 1876 to December of 1913.[177] The original source of the data is the Montevideo Stock Exchange, which published the exchange rate daily.

Figure E.1: monthly exchange rate for bills on London, 1876-1913



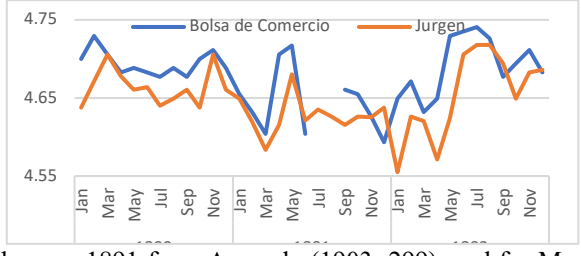
Sources: AEU and Boletín de la Bolsa de Comercio de Montevideo.

These figures, of course, refer to *convertible* paper currency; *not* the exchange rate for the inconvertible notes of the Banco Nacional, which would have been higher from July of 1890 onwards. However, it was the rate for convertible currency that was reported, not only in the Uruguayan financial press, but also the foreign publications. For example, the table "Foreign Rates of Exchange on London" published in *The Economist* always quotes the exchange rate for convertible currency for "Montevideo", even in the months after July of 1890. As can be seen in the graph, there was no particularly noticeable deviation in this exchange rate from July of 1890 to September of 1891. In fact, the exchange rate deviation was larger in the last years of the 1880s than during the crisis.[178]

The exchange rate for the Banco Nacional notes did deviate widely from parity. Figure E.2 shows this exchange rate (orange dotted line),[179] along with the exchange rate for convertible

[177] The data has been collected from the Boletín de la Bolsa de Comercio de Montevideo, the AEU and several newspapers. The actual figures published are for 3-month bills of exchange, and are quoted in pennies per peso. Here, I quote them in pesos per pound, and have converted them into a spot rate (see chapter 4 for detailed sources and the formula for conversion to a spot rate).

[178] There are two months, July and August of 1891, for which there is no information because the Montevideo Stock Market was closed. Could there have been a major exchange rate deviation in this period? Jurgen (1997: 300) presents data on the Uruguayan peso exchange rate for three months bills on London taken from the Economist that are slightly different from those taken from Uruguayan sources, but that have figures for July and August of 1891 (figure xx). They show the exchange rate remains stable in those months.

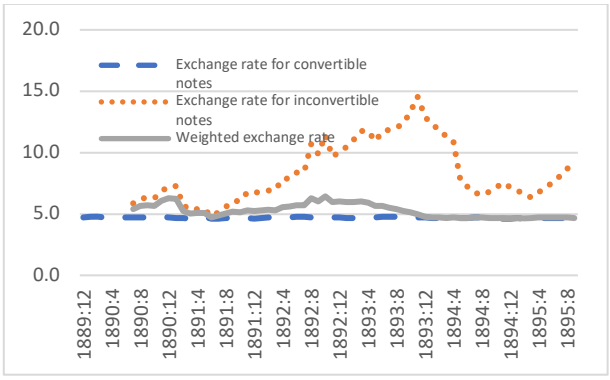


[179] Data for July, 1890 to February, 1891 from Acevedo (1903: 299), and for March, 1892 to September, 1895 from Artagaveytya (1944: 123). Gaps in the data have been interpolated arithmetically.

currency (blue dashed line) discussed above. It also shows a weighted average of the two exchange rates, which takes into account the proportion of each type of currency in the country's total note circulation.[180]

The exchange rate for inconvertible Banco Nacional notes rose to 7.2 pesos per pound (from a par value of 4.7 pesos per pound) in December of 1890. It then fell to 4.8 in June of the next year, as convertibility was about to be resumed. It then began a steady climb, reaching 14.6 in November of 1893. After 1893, the exchange rate fell to around 6 or 7 pesos per pound, as the number of inconvertible notes in circulation dwindled, and confidence that they would eventually be amortized rose.

Figure E.2: Exchange rates for convertible currency, inconvertible currency and weighted average, December 1889 – September 1895



Sources: see text.

Figure E.3: Percent deviation of weighted average of exchange rates, December 1889 – September 1895

Sources: see text.

[180] Total note circulation and that of the Banco Nacional for December of each year has been taken from the balance sheets of banks of issue, available in the AEU. Total and Banco Nacional note circulation for January to November have been interpolated from the December figures. Total note circulation likely fluctuated widely throughout the year, following the needs of the agricultural economy, and thus the figures presented here are a very rough estimate of actual currency proportions.

The weighted exchange rate followed a similar trajectory up to mid 1891, reaching 6.2 pesos per pound at the end of 1890. From the middle of 1890, it rose much less than the inconvertible exchange rate, due to the rapidly falling proportion of Banco Nacional notes in circulation. The weighted exchange rate peaked in October of 1892, at 6.4 pesos per pound, and then fell gradually, essentially converging with the convertible peso exchange rate by the end of 1893.

The percent deviation from par of the weighted exchange rate can be seen in figure E.3. This exchange rate was appreciated by over 10% for most of the months from September of 1890 to September of 1893. If the variation in the weighted average of the exchange rates of convertible and inconvertible currency is the criteria, it cannot be said that Uruguay was back on the gold standard before the end of 1893.

In summary, we have three different moments for which it could be said that Uruguay rejoined the gold standard after its exit in mid 1890. The first occurred by the end of July of 1890, which was the Uruguayan government's perspective, just over three weeks after exit. A second, which coincides with the official closing, and initiation of liquidation, of the Banco Nacional, in September of 1891, or 15 months after exit. And a third moment, when the variation of the weighted exchange rate converged with that of the convertible exchange rate, towards the end of 1893. The date selected depends on one's definition of the gold standard.