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ABSTRACT

Old Sins: Exchange Rate Clauses and European Foreign Lending in the 19th Century

This Paper challenges a popular explanation for 'original sin' – the default prone borrowing of long term debt in foreign exchange by emerging markets – that emphasizes the lack of credibility and commitment of governments that prevents them from borrowing in their own currency. Basing our account on the history of emerging market borrowing in the nineteenth century, we offer an explanation based on historical path dependence. We document that almost all IPO's of governments in foreign markets were in foreign exchange, or with foreign exchange clauses, independent of those countries' institutional features. We show that a small number of countries could circulate debt denominated in their own currency in secondary markets, again irrespective of their constitutional set-up. We argue that market liquidity can explain both phenomena. Having an internationally circulating currency allows countries to circulate their debt in secondary markets. Going for an IPO in a large financial centre is an attempt to tap the greater liquidity of that centre's money market and currency. It makes perfect sense to borrow then, in that centre's currency. The evolution of vehicle currencies and liquid money markets has more to do with historical evolution of trade, going back to medieval times, rather than with institutional reform. Escaping from original sin requires that the country emerge as a leading economic power – a rare historical event, reserved for the US of the nineteenth century and Japan of the twentieth century.

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1. The origins of original sins

Recent emerging market crises have shown that the combination of foreign currency denominated debts and exchange crises can be explosive: exchange crises lead to financial crises through the increased burden of external liabilities. As a result, countries that have debts denominated in foreign currencies tend to exhibit some reluctance in using exchange rate as an adjustment device to its full possible extent, displaying what has become known as a "fear of floating". Foreign currency denominated debts are not randomly distributed throughout the world. They predominate in the liabilities of less developed nations of Asia and Latin America, which tend to be precisely those with the highest risk to run into a serious exchange rate crisis. The so-called Original Sin Hypothesis describes this phenomenon and its implications: some countries just do not issue debt denominated in their own currency, and as a result, the array of exchange rate strategies available to them is typically smaller than that available to the Western World.

One popular explanation for the Original Sin emphasizes expectations. Some countries just do not have a sufficient record to borrow in their own currency. The market would then ration them, or would give terms that would deter them from borrowing in their own currency. From a policy point of view, the response to these problems would be institutions building: a strong credibility record, an independent central bank, the rule of law and protection of property rights would be what is needed to establish a record that would in turn enable to borrow in one's own currency.

This paper challenges this popular, 'expectations driven', interpretation of Original Sins. We use history as a guide, and find it a particularly appropriate one, especially when it comes to institutions since these are typically exogenous in the short run and endogenous in the longer run. Moreover, there is indeed a striking parallel between the crises of the 1990s and those of the 1890s. As a matter of fact, the 1890s crises in Argentina, Brazil or Portugal all began with an exchange crises which triggered a default or near default through the governments liability exposure to exchange depreciation. Like today, a number of emerging nations had borrowed in gold or set a fixed exchange rate for the coupon, which led to defaults. Bordo and Flandreau (2001) argue that this situation, just like today led to a measure of "fear of floating" especially among emerging markets and was a factor explaining the spread of the gold standard as a fixed exchange rate system.

In providing a historical perspective on the emergence of 'original sin' problems, we discuss what were the historical determinants of the ability of a country to borrow internationally, long-term, and in its own currency in the 19th century? We focus on Southern and Eastern European

countries, as well as Latin America. In order to address these questions we had to construct, from original sources, a data base on foreign bonds and exchange rate clauses. We surveyed both London and Paris to make sure that the phenomena we discuss were not specific to one single market. We also surveyed foreign lending before the classic 1880-1914 period to make sure this was not purely a 'gold standard' phenomenon. The stylized facts we establish thus cover a wide array both in time and space. The empirical challenge of classifying exchange rate clauses was not trivial either. We know fairly little about these exchange rate clauses which seem at first a highly technical and possibly secondary topic. Thus, one needs to document the record of exchange rate clauses in the past, providing a careful discussion that will enable to identify who used them, when, and how?

The evidence we collected points to two, related, facts concerning the emergence of 'original sin': the first, distinguishes between primary market foreign bond issue and secondary market trading in foreign bonds. Using this distinction, we document that, starting in the nineteenth century, owing largely to the Rothschild banking company who mandated them, exchange rate clauses were related to initial public offerings, IPOs, of foreign bonds in the major financial centers. Almost all IPOs which were issued exclusively in London or Paris, *regardless of country of origin* were denominated in Pounds or Francs. *Thus, these exchange rate clauses were not a result of credibility concerns*. We then proceed to show that some countries' bonds, denominated in their domestic currencies were traded or held in foreign markets. This rules out simple explanations that emphasize lack of sophistication among investors, nominal illusion etc.

What may explain these two phenomena? Our hypothesis is that currency liquidity is the underlying cause of our findings. Owing largely to trade finance, some currencies emerged as vehicle currencies commanding international liquidity. As a corollary, states that had internationally accepted currencies could also circulate their debt instruments in secondary markets: having a liquid money market enabled them to issue the debt in their country in the first place. Agents were willing to hold foreign debt instruments issued by states that had leading currencies, because they knew that they could always cash the coupons or the bonds and convert the proceeds into their domestic currency, at a low cost, though not necessarily at a fixed rate. On the other hand, governments whose currencies did not enjoy a vehicle currency status, faced steep premiums if they sought to borrow in their own currency, and this led them to rely on fixed exchange rate clauses. Once they had issued in the financial center's own currency, their bonds would have been able to trade almost everywhere, since all other centers quoted that center's currency and were willing to hold assets denominated in that currency. Even those governments that enjoyed a vehicle currency status could, at times, borrow in foreign financial centers,

presumably because they expected to face lower rates than they would have had to pay at home. We infer that when they attempted to tap foreign centers, their own-currency denominated money markets would have charged them a higher rate. Alternatively, these governments wanted to reap the benefits of liability diversification. Therefore, borrowing at a liquid financial center where the local-currency money markets is cheaper, in that center's currency, makes perfect sense.

In sum, the ability to circulate internationally bonds denominated in your own currency was related to the status of your currency in terms of international liquidity. Going for an IPO in a foreign financial center in your own currency was going to cost more than borrowing in that center's currency, and all the more so if you had a 'junior' currency. The result was, and we think still is, that countries with less developed money markets displayed an exclusive reliance on foreign exchange clauses, while countries with 'senior' currencies went further towards achieving liability diversification. To support this alternative interpretation of Original Sins, we are able to show that there exists a near perfect correlation between the existence of a foreign exchange market and a secondary foreign debt market denominated in domestic currencies; Some countries enjoying a substantial foreign circulation for their domestic bonds were not countries of particularly sound macroeconomic or political record. 'Problem nations' such as Russia, Spain, or Austria-Hungary could circulate their domestic debts abroad thanks to their well developed and well connected financial system. By contrast currency clauses prospered when the country's currency was very rarely (if at all) used abroad, such as the case of reputable countries such as Denmark, Sweden, or Norway. Finally, countries with international currencies (such as France or Germany) also occasionally tapped foreign markets.

Our interpretation places international money markets at the center of the stage. Since the existence of foreign exchange markets was deeply rooted in trade history, sometimes going back to medieval times, its appears that our explanation of Original Sins, in contrast with the credibility argument, focuses on history. Thus, while institutions and reforms help agents form expectations about future behavior, path dependency has played a much more significant role in selecting the countries which were to suffer from original sin. Only a major change in countries' ranking in the world trade order (which might have been the outcome of institutional change, for better of for worse) can change these outcomes.

The remainder of the paper is organized as follows. In section 2 we discuss the prehistory of original sin and focus on London early issues 1825-50 offering our explanation for why IPOs had be in foreign exchange. In section 3 we take a look at London and Paris in 1883, *Fenn's Compendium* (13th edition of 1883) for London and more heavily relying on Courtois' *Manuel des Fonds Publics* (8th edition of 1883) for Paris and document the variety of borrowing

practices, and show who circulated debt at domestic currency and who did so in foreign currency. In section 4 we look at Russia, a large and fairly typical borrower from the European periphery with substantial issues (with and without specie clauses) in Paris, London and other financial centers. These sections point to a number of hypotheses regarding the determinants of currency clauses in international borrowing which are at odds with credibility, commitment or institutional reform hypotheses for original sin. We tie the knots in section 5, Section 6 concludes.

2) The prehistory of foreign exchange clauses.

By the late nineteenth century, gold clauses, or clauses that fixed the coupon in terms of some gold related unit, had become pervasive. They were a standard feature of the financial packages to which borrowing governments were subjected when they sought to tap the international capital market. We reproduce below a 'typical' bearer's bond issued in 1912 by the Chinese government. As can be seen, the coupon was stated in sterling, francs, marks, rubles and yens - all gold or gold exchange currencies at that date.

This highly polarized system emerged from a much more varied setting whose origins can be found in the 18th century. Finance, by its very nature, has always tended to internationalize. The first financial markets that emerged, such as Amsterdam or later London quickly became international markets. European investors compared the various centers when making a decision to invest and borrowers looked at alternative sources of finance. Not a single country, not even England could be said to have been an exception to that rule: it is commonly argued that until the Napoleonic Wars England was a net borrower of capital, largely from Amsterdam (Bordo and White (1991), Brezis (1995) Neal (2000) and Oppers (1993)). This import of capital could take two forms. Either British securities initially issued in London found their way to Amsterdam, or the British government went directly there to raise funds (O'Brien).

With Amsterdam's occupation by the French, London emerged as the world's leading financial market of the 19th century. Capital flew there and Continental securities ended up in London, encouraging their listing and trading in the London Stock Exchange. A typical list of these bonds included those of: Austria, France, Holland, Naples, Portugal, Russia, Spain. Just like British bonds in Amsterdam, these bonds had been issued in their country of origin and were traded in London as a secondary market. European investors thus looked at the various markets as a whole and could shift their balances from one place to the other. The London Times of the early 1800s supplied its readers with frequent reports on the quotations of foreign bonds in their

respective home stock markets and in other financial centers. Conversely, in a fashion that replicated what had happened for Amsterdam, a number of governments began issuing directly in London, and in that case they denominated their issues in the local currency. The London House of Rothschild is generally credited for having introduced Sterling bonds to the British capital market.[2] With their five branches in Europe (Frankfurt, London, Paris, Vienna, and Naples), the Rothschilds were in the unique position to act as intermediaries for these operations, and especially, in facilitating the cashing of coupons in local currencies.[3] The benchmark issue was the Prussian 5% loan of 1817, and it was followed by other similar contracts. In some cases, the currency clause could be introduced later as a further facility for investors who had already become accustomed to given securities. For instance, on October 9, 1821 The London Times reports that Spanish bondholders traded as secondary debt in the LSE complained that they could not cash their coupons in London.[4] Rothschild agreed to act as an agent to the Spanish crown and soon thereafter, Spanish debt was issued in sterling too. The result of these individual experiences was a mix of sterling clauses or double denominations illustrated in Table 2.1. In some cases, Russia and France, the coupon was stated in terms of a foreign currency (fixed exchange rate clause), sometimes, Austria, Naples, and Russia, it was stated in terms of the metallic parity of the domestic currency (specie clause).[5] The specie clause generally came with a fixed exchange rate clause, but there could be fixed exchange rate clauses without specie clauses.

The 1820s, following Britain's return to gold, saw a large increase in London foreign lending. Most of the European powers borrowed there to reconstruct their economies and public finances. Latin American colonies and newly independent countries also rushed to raise capital. For the first time in European financial history, there was a deluge of new issues in one financial center, comprising a large variety of grades of borrowers - from mighty European powers to the emerging markets of Latin America. Sterling clauses became a routine feature of new London issues, and were significantly applied to all Latin American securities issued in those years.

Just as Britain had followed the practices of Amsterdam, the financial markets of the Continent that expanded after 1830, such as Paris or Brussels, followed the British example. As these markets became important providers of international capital (Cameron (1967)) an

[2] Ferguson (1998), p. 124-5.
[3] Ibid., p. 6.
[4] Most of the debt issued abroad necessitated the operation of cashing the coupons abroad too. One important development of the nineteenth century was the coupon cashing services provided for bondholders of foreign debt. However, for some issuers there remained no designated coupon cashing agency in London. According to the Investors Monthly Manual of 1885, this was the case for all Austrian and some French, Dutch, Portuguese and Spanish bonds.
[5] . Monetary unions such as the Latin union that combined the adoption of a common denomination with that of a common standard introduced the possibility of hybrid products.

increasing number of foreign securities began being traded, while outright introduction on these markets typically displayed currency clauses as an entry badge. Similar arrangements became widespread, since most European markets tended to be international. One outcome of this development was the considerable variety of fixed exchange rate clauses. Owing to the variety in underlying monetary regimes that prevailed until 1873 on the Continent, we find along the gold or gold related clauses (when countries borrowed in London), bimetallic clauses (when countries borrowed in Paris), and silver clauses (when countries borrowed in Amsterdam). A measure of correspondence existed between the monetary standard of the borrowing country and that of the lending market. Countries such as (silver standard) Austria were often found to have gone to (silver based) Amsterdam or Hamburg. Similarly, one of us argued elsewhere (Flandreau (2000)) that one force that drove the making of the Latin union in 1865 was the desire by France's satellites to attract French capital. Italy, for instance, or earlier Belgium, tapped the Paris market (there again, through the agency of Rothschild Frères) and was induced to include franc clauses: this currency then became a natural basis when these nations considered adopting a new monetary regime, as part of their newly acquired independence.

Table 2.1

Foreign bonds traded in London, May 21st, 1821

Country	**Yield**	**IPO**	**Currency**	**Exchange rate clause**	**market Yield**
Austria	5%		Silver	Silver	6.6%
Columbia	6%	IPO	Sterling	Sterling	7%
Denmark	5%	IPO	Sterling and Marks Banco	Sterling/ Marks Banco	5.9%
France	5%		Francs	25.2 F to 25s.	5.7%
Naples	5%	IPO	Ducats	No	7.3%
Prussia	5%	IPO	Sterling	Sterling	5.8%
Russia	6%	IPO	Rouble	11.5d. per 1 Rouble	7.3%
Russia	5%	IPO	Silver Rouble	Silver	6.5%
Spain	5%		Dollars	No	8%
Spain	5%	IPO	Sterling	Sterling	8%

In other cases borrowers tried to take advantage of several foreign markets at once. If these markets had different monetary standards, issuers then set their coupon in terms of both gold and silver units. Table 2.1 reports one London traded Danish bond whose coupons were reported as cashable in both Gold Sterling and Silver Mark Banco of Hamburg. These 'bimetallic' clauses meant an implicit fixed exchange rate between the two metals. This fixed rate could differ from the actual gold-silver exchange rate, creating scope for arbitrage opportunities in the cashing of coupons. However, as long as French bimetallism ruled the exchange rate between gold and silver countries (Flandreau 1995, 2002), the near complete stability of the gold-silver exchange rate limited this opportunity.[6]

The transition of the main capital exporting countries to the gold standard in the 1870s dramatically simplified the matter. Silver clauses were generally suspended. In the case of silver fixed exchange rate clauses, this occurred as a natural result of the countries in whose currencies these clauses had been stated shifting to the gold standard (this was the case of Dutch Florins or Marks Bancos clauses): former silver clauses were now gold clauses. In the case of silver specie clauses (which related the coupon to the currency's silver parity) the suspension of silver coinage meant that at some point paper became better than silver as was the case in Russia and Austria-Hungary, for instance: former silver clauses were basically eliminated. From that point on, new clauses became typically gold (specie clause) or gold related (fixed exchange rate clauses). A side effect of the emergence of the gold standard was thus a dramatic simplification in the variety of coupons clauses that could be found on the market with all clauses being, on the eve of WWI gold or gold related, as argued at the opening of this section.

In order to begin our enquiry into the sources of exchange rates clauses, it might be useful to start from the explanations we find in contemporary sources. At a very broad level, the intuition was that they 'improved the market's willingness to lend'. This interpretation is put forward by Ferguson when he argues that, as underwriters of the Prussian and subsequent sterling denominated bonds, the Rothschilds must have assumed that they could sell them more easily if they were denominated in Pounds. When we dig slightly deeper to get a better grasp of the rationale behind the alleged improved marketability, we find reference to two main interpretations. The first focuses on nominal income illusion. McCulloch's *Dictionary* from 1837, allocates numerous pages to explanations and tables assisting in the calculation of annuities' values (also present values). Computations are made in the understanding that his readership holds only Sterling coupons as no mention is made of foreign currency denominated coupons.

[6] . There were also cases when the exchange rate clause was conditional upon the place where the coupon was cashed or the nationality of those who cashed it as was the case for Spain after 1821.

Lévy would latter claim that French investors were reluctant to "put in their portfolio any bond whose nominal income would not be stable" (Lévy (1901). Thus the coupon clauses would have to be understood as (possibly irrational) conditions imposed on borrowers by powerful groups of lenders.[7] The second interpretation focuses on risk aversion and information asymmetries. According to various contemporary authorities such as Lévy (1901), French investors were "cautious" and "badly informed when it comes to exchange rates". Similarly, de Block (1889) motivates the exchange rate clauses in Russian bonds as a necessary incentive, given the country's lack of 'credibility'.

One may advance some arguments against the nominal income illusion explanation. The period between the end of the French wars and the stabilization of the pound in 1821 was characterized by violent fluctuations between Sterling and continental currencies. However, we know that this did not prevent British investors from buying continental securities. Similarly, the collapse of silver currencies and the suspension of silver specie clauses left investors in France and Netherlands with large amounts of Austrian securities whose dividends, formerly paid in silver, were now paid in paper. Yet there is evidence (Courtois (1883)) that these paper bonds remained much in vogue within the French public. This implies a probably greater sophistication than contemporary statements imply. Nevertheless, the existence of sophisticated bond holders does not rule out the existence of less sophisticated ones. Having wanted to tap a larger pool of investors (which would have reduced the borrowing rate) may have prompted underwriters to adopt sterling clauses.

Regarding the excess risk aversion or asymmetric information argument, we may discuss the Latin American lending boom in London in the 1820s. As shown in Table 2.2 (adapted from Dawson (1990)), the many uncertainties relating to the issues by countries and colonies that had no credit history to speak of, did not result in borrowing rates much higher than those accorded to established European powers. In the lending bubble of the 1820s, Latin American countries followed suit and issued bonds in Sterling in London. Thus, exchange rate clauses emerged not in order to enhance credibility or signal commitment or macroeconomic stability. The bond mania of the 1820s and its swift collapse show that this was not the case at all[8]. The amount of Latin

[7] . As described by a number of historians (Lévy-Leboyer (1965), Cameron (1968)), during the early nineteenth century there emerged a large class of individual bondholders – as distinct from bond traders and underwriters – to whom the bond issued were sold. These got organized in England in bondholders associations in the 1840s, and these association came with a number of requirements. Fixed exchange rate clauses would thus be similar to this other conditions described by McCulloch (1837), according to which countries issued bonds with dividends paid bi-annually typically January and July and March and September (or April to October) to allow bondholders for quarterly income flow.

[8] Dawson (1990) reports on a bond issue of a fictitious country by the name of Poyais!

American loans floated in the London market was almost 22 Million Sterling, slightly higher than the 20 Million Sterling floated at the same time by European borrowers.[9] If credit risk or information asymmetry had been an issue, the boom would thus have never occurred in the first place.[10] That it occurred anyway suggests that the currency clauses must have had other sources than credibility problems.

Table 2.2

Latin American loans (all in Sterling) raised in London – 1820s

Country	**Year**	**Yield**	**Yield at issue**
Brazil	1824	5%	6.6%
	1825	5%	5.9%
	1829	5%	9.2%
Buenos Aires	1824	6%	7%
Chili	1822	6%	8.6%
Colombia	1822	6%	7.1%
	1824	6%	6.8%
Guatemala	1825	6%	9.5%
Mexico	1824	5%	8.6%
	1825	6%	6.9%
Peru	1822	6%	6.8%
	1824	6%	7.3%
	1825	6%	7.7%

Source: Dawson (1990).

At this stage, our brief survey of the history of fixed exchange rate clauses shows that these clauses do not seem to have been a mandatory step for a given security to become 'international'. Rather, they seem to have been tightly associated with a very specific kind of operation: namely, new foreign issues. In the next section we go deeper in this issue and establish what turns out to be according to us the iron rule of fixed exchange rate clauses: fixed exchange rate clause were always a companion of foreign Initial Public Offerings.

[9] Of course, Latin American issues were equal to the entire stock, whereas for European countries they were only marginal loans.

[10] ; Moreover, it could be emphasized that Latin American countries had no "fear of floating" and issued in Sterling without worrying about their ability to pay in Sterling. To their demise, neither did investors show any concern over this issue. Most of the Latin American debt ended in default or arrears.

3) A London and Paris snapshot: primary markets, secondary markets, and specie clauses

Having examined the early history of foreign exchange clauses, we move on, towards the last quarter of the nineteenth century, when we conveniently have two sources from two centers of international lending, London and Paris. These sources allow us to study in more detail the portfolios of international investors, at a given time and to gauge the secondary markets for these assets. Examining the secondary markets therefore, complements our view of the primary market discussed above. This snapshot, from 1883, allows us to establish that there was nothing new under the lending sun and that the trends started in the 1820s prevailed throughout the nineteenth century.

For Paris we use the 8th edition of Courtois' Manuel des Fonds Publics (1883), an investors' handbook, which is a convenient source for exchange rate clauses.[11] First, unlike other French sources, such as the annual Manuel des Agents de Change, Courtois' book is extremely specific and careful when it comes to currency denominations. The Manuel, meant to inform investors, at a given date, on the entire array of investment opportunities, goes beyond the official market (or "Parquet") in Paris or the provinces (such as Lyon or Bordeaux), to list other relevant stocks. These include the securities listed in the parallel markets in France (known as the "Coulisse") as well as foreign markets. Indeed, for wealthy Europeans, the relevant market was not their local one but a network of financial centers where they could, with the agency of investment banks, and increasingly commercial banks, purchase foreign securities. A casual list of these foreign markets is provided by Courtois: it comprises "London, Berlin, Brussels, Hamburg, Frankfort, Madrid, Rome, Florence, Saint-Petersburg etc". [12] The inclusion of such places as Madrid, Rome or Saint-Petersburg is intriguing, and we shall return to it later. For London we use a similar source, Fenn's Compendium which lists all the foreign public debts of nations that circulated in London.

Using these sources we proceeded, country by country, and compiled the information relevant for the bonds listed. This included the unit in which the coupon was paid, the market(s) where the bond was initially issued (primary issues), and the market(s) where it was mostly traded (secondary markets). We then grouped these countries according to the exchange rate clause criteria into three groups: I – only with exchange rate clauses. II - those with both domestic

[11] . Courtois happened to be the first chief economist of Crédit lyonnais research department (see Flandreaau, 1998).
[12] . Principaux fonds cotés à Londres Berlin, Bruxelles, Hambourg, Francfort, Madrid, Rome, Florence, Saint Petersbourg, etc." (p. vi)

currency and exchange rate clauses. III – countries who issued bonds with no exchange rate clauses. The results are presented in Table 3.1. Perhaps unsurprisingly, the evidence suggests that groups II and III are much smaller than group I. More interestingly, this table suggests that the breakdown was working along geographical, rather than institutional, lines: those countries in groups II and III , for which at least some domestic currency issues were found, are typically European nations, regardless of their "institutional" or macroeconomic performance. Moreover, they even include countries that would not a priori qualify as featuring in the top league. Countries like Austria and Russia for instance, had a number of well known problems in the mid 1880's - the least one being a floating exchange rate. By contrast, well behaved countries such as the Scandinavian group, for all their gold convertibility, parliamentary system, division of power, thrift, and protestant ethic, featured, alongside the troubled regimes of Latin America in the first group and in the gallant company of the United States, whose bonds that "mattered" for English and French investors had all gold or Sterling clauses.[13]

A more careful examination of the evidence suggests a finer characterization of the evidence. When we break the bonds data according to the place of initial issue an interesting feature emerges. Tables 3.2.1 and 3.2.2 list the bonds according to place of issue. Looking first at countries that issued in their domestic markets (Table 3.2.1) we find that these are predominantly members of groups II and III: Dutch bonds denominated in Florin were primarily issued in Amsterdam. German bonds, issued in German financial centers, were Mark (earlier Thaler) denominated. The same would hold for Belgian, Swiss, British, etc. bonds. For these issuers, the "main" market was typically the national financial market. In practice (as illustrated by their presence in Courtois' list of "relevant stocks") these bonds found their way (officially through their inclusion in the "cote officielle" or through some other way) to the French market and London market (or to some other market that was important to French investors). In other words, domestic currency bonds usually had a large and active secondary market in other leading financial centers.

[13] . Interestingly, Courtois goes a long way to explain that because of the Act of July 14 1870 and the suspension of silver coinage of 1873, the dollar coupon has to be understood as being gold payable, barring a return to bimetallism – "an unlikely event according to American men of finance": "Nous disons en or: pour être plus exact, il faudrait dire en or ou en argent. En effet l'engagement pris par la loi du 14 juillet 1870 dit en, monnaie métallique ayant cours légal à ce moment (à cemui de la promulgation de la loi). Or l'argent cessa d'avoir cours légal en 1873. Tant que la faculté libératoire ne luis era pas rendue, ce sera l'or seul qui pourra rembourser les trois emprunts [...] Mais si l'argent rentrait dans ses anciens droits, rien ne dit que le trésor fédéral ne rembourserait pas en monnaie d'argent de préférence à la monnaie d'or. ce serait son droit au moins. Cependant, l'opinion, en amérique, chez les hommes de finances, est qu'il n'usera pas de ce droit dans cette hypothèse. p. 97

Table 3.1 Countries and exchange rate clauses in 1883

Group I: Only exchange rate clauses	Group: II Mixed	Group III: Only domestic currency
Europe: Denmark, Finland, Greece, Hungary, Norway, Poland, Romania, Sweden. *Latin America:* Argentina, Bolivia, Brazil, Chile, Columbia, Costa-Rica, Dominican Republic, Ecuador, Guatemala, Haïti, Honduras, Mexico, Paraguay, Peru, Uruguay, Venezuela. *Africa and Middle East:* Egypt, Liberia, Turkey, Tunisia, Transvaal. *English Speaking and Dominions*: USA, Canada, Australia, New Zealand, India, Other British colonies. *Asia*: China, Japan	*Europe:* Austria, Italy, Portugal, Russia, Spain, [France]	*Europe:* Germany, [Belgium], Great Britain, Holland [Switzerland]

Brackets for cases that have some ambiguity. Belgium and Switzerland, as part of the Latin Union have a French Franc based Franc. France is included in the mixed list because the 5% indemnity loan issued in 1871 included a fixed exchange rate clause for payments made in London. The gold clause for the French indemnity loan is not reported by Courtois. Portugal has one issue whose status we need to double check.

The reverse picture holds for the countries of group I: foreign currency denominated instruments of these countries were issued in the foreign centers whose currency had been used as unit of denomination. Table 3.2.2 lists the countries who issued bonds denominated in foreign currencies. As can be seen, there is virtually a perfect correlation between the currency denomination and the market, or markets, where the Initial Public Offering took place. Thus, most Argentinean, Brazilian and Chilean bonds were initially introduced to the market by London houses, or houses with a London branch, and were Sterling denominated. Similarly, those issues that took place in several foreign markets at once had their coupon payable at a fixed exchange rate in all their "primary" markets. The long list of illustrations include the Greek 5% 1880 loan issued both in Paris and London, the Norwegian 4.5% 1878 issued in London, Paris and Hamburg, or the Russian 5% 1866 issued in Paris, London and Amsterdam. These had, respectively, their coupon paid in Sterling and Francs (Greece), Sterling, Francs and Marks (Norway), Franc, Sterling and Dutch florin (Russia).

This feature stands as the rule which also extends to cases of issues that were issued mainly abroad but also had a small domestic issue component. In such cases, the loan was typically denominated in the specie counterpart of the domestic currency. Illustrations of this kind of arrangement are provided by the Argentinean "hard Dollar" gold peso loan of 1872, the Brazilian

gold milreis loan of 1879, the Italian gold lira rentes of the 1850s and 1860s, the Swedish 4% loan of 1880, and so on.[14] This finding echoes the views in Flandreau [1999] according to which the financial market played an important role in spreading the use of certain monetary standards – The French or the English one – and thus causing the emergence of currency areas – such as the Franc based Latin Union of the Sterling Gold Standard. In effect, it seems that for some countries, getting access to a given foreign capital market while retaining a share of the issue at home meant a de-facto tying of its currency to that of the foreign market it had targeted.

It is important to emphasize that we did not find any exceptions to these rules. Moreover, our finding may shed some light on some apparent puzzles: for instance, the reason why France ended up in group II owing to the Sterling clause that was included in the indemnity loan of 1872. As the story goes, the French government decided to do so in agreement with Rothschilds, in order to insure the success of the operation (Say, 1871, Kindleberger 1992). Given the enormous size of the issue, officials had sought to tap directly both Paris *and* London, rather than issue in Paris and let London investors use their intermediaries to purchase French securities in their "home" market. The result was a Franc issue with a fixed Sterling exchange rate: thus, once again, the currencies of the Initial Primary Offer had been used.

That currency clauses had much to do with Initial Public Offers can also be illustrated by looking at the intermediate category. There, we find a number of countries (such as Italy, Russia, or Austria) that are typically thought of as belonging to the European "periphery". For these countries (of which several floated) we find evidence of important holdings in the London and Paris markets. The case of Austrian "silber rentes" is interesting. Initially issued with a silver clause in both Vienna and Paris (at a time when the French currency was bimetallic thus also silver related) they certainly illustrate the IPO effect. Yet, once silver depreciated and its coinage was suspended in Austria, the rentes were tantamount to a paper bond. Yet it appears that they retained a large foreign market (Courtois mentions that they were much in vogue in Paris): a clear evidence that having a paper currency and paper bonds did not ban countries from foreign capital markets. The cases of Italian and Russian paper bonds (respectively the 1849 and 1850 Italian bonds and the Russian 1864-66 and 1877-1879 interior 5% paper bonds) illustrate a similar mechanism: while these bonds had originally been issued in domestic markets (thus explaining their denomination in lira or paper Roubles) they found their way to Paris (and London) as a secondary market and were actively traded there. Thus again while on the one hand the currency

[14] According to Flandreau [1999], the currency clauses played an important role in the making of the Latin union, as countries sought to tie their unit to the French currency as a preliminary stage to get access to the French capital Market.

of denomination is the currency of the Initial Public Offer nothing seems to have prevented – at least for a subgroup of European countries – the development of an off shore market in domestic denominated debt. Moreover, as the case of Russian bonds issued in 1890 (found in the Annuaire Statistique des Agents de Change) shows, some peripheral countries could undertake foreign issues without gold clauses — provided that domestic institutions be prepared to assume a leading role in the process.[15]

Table 3.2.1 International securities issued in Own Market (selection)

Germany

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Secondary Market	Other Secondary Market	Underwriter
German Empire								
Bearer's bonds	1877	251	4%	Marks	Berlin	Berlin	Paris	-
Prussia								
4.5 % consols	1869	523	4.5%	Thalers/Marks	Berlin	Berlin	Paris	-
4% consol ides	1877-78	1159	4%	Marks	Berlin	Berlin	London, Paris	-
Bade								
4% 1867	1867	24	4%	Thalers/Marks	Berlin	Berlin	Paris	-
4% 1875	1875	30	4%	Marks	Berlin	Berlin	Paris	-
4% 1878	1878	92	4%	Marks	Berlin	Berlin	Paris	-
Bavaria								
4% 1875	1875	15	4%	Marks	Berlin	Berlin	Paris	-
4% 1879	1879	38	4%	Marks	Berlin	Berlin	Paris	-
4% 1866	1866	48	4%	Marks	Berlin	Berlin	Paris	-
Oldenburg								
4% consols	1873	14	4%	Marks	Oldenburg	Oldenburg	Paris	-
Saxe								
3% 1876	1876	342	3%	Marks	Berlin	Berlin	Paris	-
Wurtemberg								
4% 1881	1881	168	4%	Marks	Frankfort	Frankfort	Paris	-

[15] The 1890 issue involved three issues, the first – the 2nd tranche of a 4% "gold" loan with coupon payable in Franc – was worth 300 million Francs. The second – the 3rd tranche of the same loan – was worth 370 million Francs. The third – a 4,5% loan – was actually a paper Rouble loan whose IPO was taking place in Paris. It was worth 75 million paper Roubles or about 300 million Francs of the time. Upon more careful scrutiny however, it appeared that the bulk of the issue had taken place in Saint-Petersburg with a Russian bank as main underwriter.

Netherlands

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter
2,5% perpetual	n.a.(*)	n.a.	2,5%	FLORINS P. B.	Amsterdam	Amst.	London, Paris	-
3% perpetual	n.a.	n.a.	3,0%	FLORINS P. B.	Amsterdam	Amst.	London, Paris	-
4% perpetual	n.a.	n.a.	4,0%	FLORINS P. B.	Amsterdam	Amst.	London, Paris	-
4% 1878	1878	43	4,0%	FLORINS P. B.	Amsterdam/Paris	Amst.	Paris, London	Paribas

(*) The perpetual rentes were issued at various dates by the government on the domestic market according to financial needs.

Belgium

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter
Rentes 2,5%	-	-	2,5%	Belgian Francs	Brussels, Paris	Brussels	Paris	Rothschild frères, Sté générale
Rentes 3%	-	-	3,0%	Belgian Francs	Brussels, Paris	Brussels	Paris	Rothschild frères, Sté générale
Rentes 4% (1st series)	-	-	4,0%	Belgian Francs	Brussels, Paris	Brussels	Paris	Rothschild frères, Sté générale
Rentes 4% (2nd series)	-	-	4,0%	Belgian Francs	Brussels, Paris	Brussels	Paris	Rothschild frères, Sté générale

Table 3.2.2. International Securities issued in Foreign Markets (selection)

Latin America

Argentina

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Secondary Market	Other Secondary Market	Underwriter/coupon
Federal Govt								
6% 1866-68	1866-68	3	6%	Sterling	London	London	Paris, Amsterdam	Baring, Hope
6% 1871	1871	6	6%	Sterling	London	London	Paris	Murrieta
6% Hard Dollar	1872	23	6%	Gold Peso	London, Buenos A.	London		Stern(*)
6% chemins de fer	1880	2,45 £	6%	£/FF	London Paris	London, Paris		Murrieta, Cptoir d'Esc. Paribas
Province of Buenos Aires								
6% 1824	1824	1	6%	Sterling	London	London		Baring
6% 1870	1870	1	6%	Sterling	London	London		Murrieta
6% 1873	1873	2	6%	Sterling	London	London		Baring
6% province de Buenos Ayres	1882	2	6%	Sterling	London	London		Baring
Province of Santa Fe								
7% 1874	1874	0	7%	Sterling	London	London		Murrieta
Province of Entre Rios								
7% 1872	1872	0	7%	Sterling	London	London		Murrieta

(*) coupon paid in Buenos Ayres

Bolivia

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
6% 1872	1872	2	6%	Sterling	London	London		Lumb, Wanklyn & Cy

Brazil

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
4,5% 1852	1852	1	4,5%	Sterling	London	London		N M. Rothschild
4,5% 1858	1852	2	4,5%	Sterling	London	London		N M. Rothschild
4,5% 1860	1860	1	4,5%	Sterling	London	London		N M. Rothschild
4,5% 1863	1863	4	4,5%	Sterling	London	London		N M. Rothschild
5% 1865	1865	7	4,5%	Sterling	London	London		N M. Rothschild
5% 1871	1871	3	5,0%	Sterling	London	London		N M. Rothschild
5% 1875	1875	5	5,0%	Sterling	London	London	Paris	N. M. Rothschild, Rothschild Frères
4,5% Gold '1875'	1879	52	4,5%	Gold Milreis	Brazil	London		N. M. Rothschild

Chile

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/ coupon
3% 1842	1842	1	3%	Sterling	London	London		Baring
4,5% 1858	1858	2	4.5%	Sterling	London	London		Baring
7% 1866	1866	1	7%	Sterling	London	London		Morgan
6% 1867	1867	2	6%	Sterling	London	London		Morgan
5% 1870	1870	1	5%	Sterling	London	London		Morgan
5% 1873	1873	2	5%	Sterling	London	London		Oriental Bank Corporation
5% 1875	1875	2	5%	Sterling	London	London		Oriental Bank Corporation

Colombia

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/ coupon
4,75% 1873	1873	2	4,8%	Sterling	London	London		London and County Banking Company

Paraguay

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
8% 1871	1871	1	8%	£	London	London		Robinson, Fleming & Cy
8% 1872	1872	2	8%	£	London	London		Robinson, Fleming & Cy

Peru

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
6% Loan 1869	1870	12 £	6%	£/Francs	Paris London	Paris London		Sté Générale/Henry Shröder
5% Loan 1869	1872	37 £	5%	£/Francs	Paris London	Paris London		Sté Générale/Henry Shröder

Venezuela

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
4% 1881	1881	3	4%	Sterling	London	London		CFBH (*)

(*) defaulted. Coupon paid through arrangements with the Council for Foreign Bondholders

Asia

China

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
China 8% 1874-75	1874-76	1	8%	Sterling	London	London		HSBC
China 1877	1877	2	8%	Sterling	London	London		HSBC

Japan

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
9% 1870	1870	1	9%	Sterling	London	London		Schröder
7% 1873	1873	2	7%	Sterling	London	London		Oriental Bank Corporation

Europe

Greece

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
5% 1878	1878	1	5%	Sterling	London	London		Ionian Bank
5% 1880	1881	120	5%	Franc Sterling	Paris London	Paris London	Grèce	Comptoir d'Escpte, Baring, National Bank of Greece, Banque de Constantinople, Crédit Industriel de Grèce

Portugal

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other 2nd Mkt	Underwriter/coupon
3% 'exterior'	1852-1880	60	3%	£	Paris, London	Paris, London	-	Crédit lyonnais,Portuguese financial commission
3% 'interior'	n.a.	n.a.	3%	FF, £	Paris, London, Lisbon	Paris, London, Lisbon	-	n.a.
5% 1876	1876	8	5%	FF, £, FL PB	Paris, London, Amsterdam, Lisbon	-	-	Sté de dépôts en Comptes Courants, Lippman, Rosenthal and Cy, Portuguese Financial Commision, Portuguese Treasury
5% 1879	1879	38	5%	FF, £, FL PB	Paris, London, Amsterdam Lisbon	-	-	Marcuard, Comptoir d'Escompte, Lippman, Rosenthal and Cy, Portuguese Financial Commision, Portuguese Treasury
5% 1881	1881	103	5%	FF, £, FL PB	Paris, London, Amsterdam Lisbon	-	-	Marcuard et Comptoir d'Escompte, Lippman, Rosenthal and Cy, Portuguese Financial Commision, Portuguese Treasury

Denmark

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
4% 1850-61	1850-61	0.4	4%	Sterling	London	London		Hambro
4% 1862	1862	0.66	4%	Sterling	London	London		Hambro

Norway

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
4,5% 1874	1874	23	4,5%	Marks	Berlin Hamburg Copenhagen	Berlin Hamburg Copen.	-	Warschauer Norddeutsche Bank Privat-Banken i Kjobenhavn
4,5 1876	1876	1	4,5%	£	London	London	Paris	Hambro
4,5% 1878	1878	2	4,5%	£ (Mark)	London Berlin	London Berlin	Paris	Hambro, Norddeutsche
4% 1880	1880	1	4,0%	£ (Francs, Marks)	London Paris Hamburg	-	-	Hambro, Comptoir d'Escompte, Norddeutsche

Sweden

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
4% 1852	1852	0	4,0%	£	London	London		Dent, Palmer and Cy, London
5% 1868	1868	1	5,0%	£	London, Stockholm	London, Stockholm	-	Raphael & Sons, London.
4, 5% 1875	1875	27	4,5%	Marks	London (Berlin ?)	London (Berlin ?)	-	Erlanger, London
4,5% 1876	1876	2	4,5%	£	London Stockholm	London Stockholm	-	Hambro , London
4% 1878	1878	2	4,0%	£(Fr)	London Paris	London Paris	-	Hambro, Sté de dépôte en compte courants
4% 1880	1880	4	4,0%	£ (Kr, Mark, Fr)	London, Stockholm, Paris, Hamburg and Frankfort	London, Stockholm Paris Hamburg and Frankfort	-	Hambro, Paribas, Norddeutsche bank, Bethmann, Erlanger, Ricksguldkontoret and Scandinavska credit actieboilaget

North America

Canada

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
6%	varied	4	6%	£	London	London		Baring, Glyn, Mills, Currie & Cy
5% consol	1860	6	5%	£	London	London		Baring, Glyn, Mills, Currie & Cy
4% 1868	1868	6	4%	£	London	London	Paris	Baring, Glyn, Mills, Currie & Cy
4% 1874	1874	12	4%	£	London	London	Paris	Baring, Glyn, Mills, Currie & Cy

United States (only Federal and Mass)

Designation	Date	Amount (millions)	Interest Rate	Currency	Place of Issue	Main Market	Other Secondary Market	Underwriter/coupon
Federal Govt								
6% 1881		n.a.	6%	$ or	??			
5% 1881			5%	$ or	??		Paris	
4,5% 1891			4.5%	$ or	London	London	Paris	
Massachussetts								
1866, 5%		0,83	5%	Sterling	London	London		Baring
1868, 5%	1868	0,61	5%	Sterling	London	London		Baring
1870, 5%	1870	0,62	5%	Sterling	London	London		Baring
1871, 5%	1871	0,62	5%	Sterling	London	London		Baring
1871, 5%	1871	0,30	5%	Sterling	London	London		Baring
1873, 5%	1873	0,12	5%	Sterling	London	London		Baring
1875, 5%	1875	0,31	5%	Sterling	London	London		Baring
1875, 5%	1875	0,27	5%	Sterling	London	London		Baring

Table 3.3

Foreign bonds traded in London, Fenn's Compendium 1883

Country	**Yields**	**Currency**	**Exchange rate clause**
Austria	5%	Paper	No
Austria	5%	Silver	Silver/Florins
Austria	4%	Gold	Gold
Belgium	2.5%, 3%, 4%	Francs	25 Francs to Sterling
Brazil	4.5%, 5%	Sterling	Sterling
France	3.5%	Francs	25 Francs = 1 Sterling
France	4.5%	Francs	No
German	4%	Marks	
Holland	2.5%, 4%	Florins	Silver
Hungary	5%	Silver	10 florins = 1 Sterlng
Hungary	6%	Gold	10 florins = 1 Sterling
Italy	5%	Lire	25 Francs = 1 Sterling
Mexico	6%	Dollars	No
Mexico	6%	Sterling	Sterling
Portugal	3%	Sterling	Sterling
Russia	5%	Sterling	Sterling
Russia	5%	Silver Roubles	Silver
Russia	5%	Paper Roubles	No
Russia	5%	Silver Rouble	Sterling, Francs, Florins,
Russia	5%	Silver Rouble	125 Roubles = 20 Sterling
Spain	5% Conversion	Sterling	Sterling
Spain	3%	Pesetas	No
Sweden	4%	Sterling	Sterling
United States	3%, 4%, 4.5%	Dollars	No
US Mass.	5%	Sterling	Sterling
US Virginia	5%	Sterling	Sterling
US Virginia	6%	Dollars	No

4) A Russian case study.

Russia provides a very interesting case study of the evolution and functioning of the foreign bond market in London and Paris. Russian bonds were traded in London since the end of the Napoleonic wars and comprised one of the largest foreign bond holdings in London throughout the nineteenth century. In 1875 Russian bonds comprised 6.5% of total foreign bonds in the

London market and in 1905 that figure was doubled to 11.7%.[16] By any measure, Russia was at the time a relatively "backward" country: although it was a European military power, it lagged behind other European powers in terms of economic growth, as well as commercial, and maritime development. Its political regime was the most autocratic in Europe, and of a quasi feudal nature until the 1860s when serfdom was finally abolished! In terms of institutional development, and especially in view of the variables listed in the introduction, Russia would rank very low on a contemporary European scale. Its currency nominally a bimetallic one was most of the time inconvertible with paper Roubles and copper petty currency (Copecs) dominating in daily transactions. Thus, in almost every respect Russia then, as Russia now was an "emerging" market which should have suffered from the Original Sin.

However, as alluded to above and as will be detailed bellow, this was hardly the case. Russia issued bonds in various currencies and financial centers: From St. Petersburg to London, Paris, Amsterdam, Hamburg, Berlin and Warsaw – in Sterling, Francs, Florins, Marks, and Roubles – gold, silver and paper. Its bonds had exchange rate clauses, metallic clauses and no clauses altogether. Table 4.1 lists the Russian bonds found in London and Paris, a list that while is impressive is probably not exhaustive.

The heterogeneity exhibited in Table 4.1 may suffice to refute any simple minded hypothesis of the Original Sin, a few additional facts may make our case stronger. One Original Sin hypothesis suggests a "lemons" story whereby no domestic debt is issued because the creditors know that the government will renege on it. Table 4.1 shows this was not the case for Russia. The second hypothesis suggests that the domestic market for debts is small compared to the foreign one. Table 4.2 shows the ratio of domestic to foreign bond issues for Russia for selected years. The Table shows that the domestic debt proportion was actually significant, suggesting that credibility at home was not the issue. Rather than a credibility story we can suggest a liquidity story - that given available domestic savings, Russia could borrow on better terms abroad.

Three additional anecdotes from Russian borrowing add an interesting flavor to our story. In 1841 the Russian "Commission of Amortisement" is reporting[17]:

"..But by deducting the sum of 476,526 Roubles 22 13/14 Copecs of silver, on which the Treasury had made a profit on the exchange, a means adopted as the basis for foreign payments, the committee received in fact 18,822,317 Roubles 72 1/14 Copecs…"

[16] Based on the Investor's Monthly Manual, which probably understates Russian bonds known to be held in London that did not appear in its listing.
[17] London Times, 24 July 1841.

The Russian Treasury gained some 2.5% profit on the exchanges – while a fixed exchange rate clause provided a floor for the investor, if the Rouble appreciates (rare, but not impossible event) the issuer has a nice gain at the investor's expense. This anecdote suggests that some borrowers had risk aversion and money illusion when it came to fixed exchange clauses.

A second story relates to a Russian loan of 50 Million silver Roubles from 1855, at the midst of the Crimean war. The London Times reports:

"In June 1854, an attempt was made to raise a loan of 50,000,000 silver Roubles in Russia itself, but the experiment was not so successful that it is likely to be repeated. As matters now stand, it is evident that Russia has no chance of raising money in foreign countries and her internal resources are so little developed that she cannot hope to obtain much at home" (The Times, 14 September 1854)

Lo and behold, a year later we find the following report:

"The statement that the house of Mendelssohn which is amongst the first banking establishments in Berlin, has been allowed by the Prussian government to open subscriptions in that capital for the attempted Russian loan of 50,000,000 of Roubles…has been received with surprise amounting almost to disbelief. The readiness of Prussia to assist in every way the prolongation of the war… it is alleged that one third of it will be offered in Berlin, one third in Hamburg and the other in Amsterdam. As far as the last city is concerned, after the intimation already put forth by the Dutch government, it may be presumed that the operation can only be a covert one… although the lowness of the price seems to be intended as a compensation …..(of) more than 10 percent." (The Times, 14 December 1855)

The story told above shows that, because of a lack of internal resources and a political situation being obviously hostile to Russian loans in London, Russia had had to go to find other foreign markets. With Prussia and the Netherlands as possible options, it had found itself including a silver clause (the currency of these markets) and was thus able to borrow at the cost of a 50 basis point increase in long term interest rates. Echoing the findings of Sussman and Yafeh (2000) for Japan, institutions played a secondary role in lending risk premiums during wars and political instability.

Finally, the story of the 1857 Imperial railway bond can shed light on the IPO reason behind exchange rate clauses. The 4.5% 1857 Imperial railway bond was converted in 1899 into a 4% bond. Attached to these bonds we found the following statement:[18]

[18] In the Russian bonds collection at the School of Russian and Slavonic Studies, University of London.

For silver Ruble bonds in London Paris and Amsterdam the "company abandoning to these 3 places the right given by art 26 of the statutes of altering the rate of exchange after the 10th year… "

The bonds could have been converted at the old exchange rate (1857) or the current exchange rate "payable in Russia at sight rate of the Rouble on London."

This finding suggests that exchange rate clauses were sometimes temporary, for the first ten years after which redemption by drawing used to start. Therefore, the exchange rate clause mattered usually for the first years since issue, a finding that lends support to our IPO story. Apparently, bondholders found this arrangement a disadvantage and we can only speculate that at their demand, the Russian government decided to forego its right to alter the exchange rate clause after ten years. Furthermore, during the frequent conversions and redemptions, the exchange rate question became an issue even in bonds with fixed exchange rate clauses.

To conclude, the experience of Russian borrowing during the nineteenth century, does not seem to support the main Original Sin hypotheses. Rather, it conveys a more traditional story of foreign borrowing affected by political and military difficulties and the lack of sufficient resources at home. The exchange rate clauses seem to be therefore related to an IPO story – borrowing abroad, via the main international underwriters had these clauses attached to it. More important, secondary Russian debt, issued in St. Petersburg in paper Roubles found its way to London and Paris even though it had no exchange rate clause attached to it. Finally, wars and internal instability affected borrowing premiums more than exchange rate clauses.

Table 4.1

Russian Bonds in London and Paris

Year	Name and Yield	Currency	Place of Issue	Coupons
1821	6%	Rouble	St. Petersburg	11.5d. per Rouble
1821	5%	Silver Rouble	St. Petersburg	Silver
1822	5%	Silver	St. Petersburg	3s 1d. per Rouble in London. Current rate in St. Petersburg
1822	5%	Sterling	London	Sterling
1824	5%	Silver Rouble	Amsterdam	No
1827	6%	Paper Rouble	St Petersburg	No
1827	6%	Silver Rouble	St Petersburg	Payable in paper at the current price of silver
1827	6%	Gold Rouble	St Petersburg	Payable in paper at the current price of gold
1827	6%	Florins	Amsterdam	Florins
1831	4.32%	Paper Rouble	St Petersburg	No
1840	4%	Silver Rouble	St Petersburg, Amsterdam, Warsaw	Silver
1841	4%	Silver Rouble	Amsterdam	Silver
1844	4%	Silver Rouble	St Petersburg	Payable in paper at the current price of silver
1847	4%	Silver Rouble	St Petersburg	Payable in paper at the current price of silver
1849	4.5%	Sterling	London, Paris	Sterling
1855	5%	Silver Rouble	Berlin, Hamburg, Amsterdam?	Silver
1857	4.5%	Silver Roubles	London, Paris, Amsterdam	Sterling, Francs and Florins, none after 1867.
1859	3%	Sterling	London, Berlin	Sterling, Thalers (6,75 to Sterling) and Marks (20.25 to Sterling)
1859	5%	Paper Roubles	St. Petersburg	No
1860	4.5%	Sterling, Florins	London, Amsterdam	Sterling, Florin
1861	5%	Paper Roubles	St. Petersburg	No
1862	5%	Sterling, Francs, Roubles	London, Paris	Sterling, Francs, Florins
1864	5%	Sterling, Florins	London, Amsterdam	Sterling, Florins
1864	5%	Paper Rouble	St. Petersburg, Berlin	No
1866	5%	Paper Rouble	St. Petersburg, Berlin	No
1866	5%	Sterling, Florins	London, Amsterdam	Sterling, Florins
1867	4%	Sterling, Francs, Florins	London, Paris, Amsterdam	Sterling, Francs, Florins
1869	4%	Sterling, Francs, Florins	London, Paris, Amsterdam	Sterling, Francs, Florins
1869	5%	Papers Roubles	St. Petersburg	No
1870	5%	Sterling, Francs, Roubles	London, Paris, St. Petersburg	Sterling, Francs, Roubles

1871	5%	Sterling, Francs, Roubles	London, Paris, St. Petersburg	Sterling, Francs, Roubles
1872	5%	Sterling, Francs, Roubles	London, Paris, St. Petersburg	Sterling, Francs, Roubles
1873	5%	Sterling, Francs, Roubles	London, Paris, St. Petersburg	Sterling, Francs, Roubles
1875	4.5%	Sterling	London, Paris	Sterling
1876	5%	Paper Roubles	St. Petersburg	No
1877	5%	Sterling, Francs, Florins, Marks	London, Paris, Amsterdam, Berlin	Sterling, Francs, Florins, Marks
1877	5%	Paper Roubles	St. Petersburg	No
1878	5%	Paper Roubles	St. Petersburg	No
1879	5%	Paper Roubles	St. Petersburg	No
1880	4%	Metallic Roubles	St. Petersburg	Gold, Current rate.
1880	4.5%	Gold Roubles	Paris, St. Petersburg	Gold
1881	5%	Paper Roubles	St. Petersburg	No
1881	4.5%	Silver Roubles	St.Petersburg, Warsaw	Silver
1887	5%	Marks	Berlin	Marks
1889	5%	Paper Rouble	St. Petersburg	No
1889	3%	Gold Roubles	St. Petersburg	Gold
1889	4%	Gold Roubles	St. Petersburg	Sterling, Francs, Marks, Florins, Current Roubles
1891	3%	Gold Roubles	?	Gold
1893	4%	Silver Bonds	St. Petersburg	Silver
1894	4%	Sterling	London	Sterling
1894	4%	Gold Roubles	?	Gold
1894	4%	Roubles	?	1 Sterling = 9.45 Roubles

Table 4.2

Ratio of Russian Debt held at Home

(millions of silver Roubles)

Date	**1827**	**1841**	**1866**
Home	263	115	207
Foreign	389	103*	441
Total	652	218	648
Ratio of Home debt	40%	55%	32%

Source: London Times

* Excluding Dutch loans (77 million florins)

5) Tying the strings: IPOs, secondary markets and liquidity

Our examination of the history of the British and French capital markets of the nineteenth century and the Russian case study leads us to conclude that there was little correlation between exchange rate clauses and macroeconomic stability or institutional reforms that foster commitment of governments towards bondholders. Some European countries that would not have passed the criteria of reputable policies are able to issue in their own currency – a prime example is Russia (others include Spain, Portugal, Austria, etc.). For other, way more reputable countries (most notably the Scandinavian) we could not find evidence of anything else, in foreign markets, than Sterling debts. Some reputable countries such as France and the United States have to, occasionally, include gold clauses when they attempt to sell their debt abroad. Which patterns may account for this phenomenon? Obviously there cannot be a simple linear relation between domestic institutions and policies and ability or willingness to issue domestic debts abroad.

First, the most important distinction to make is between primary debt issues for which we draw the analogy of IPOs and secondary market listings and transactions for which we draw the analogy of cross-listing. Our evidence shows that the history of the international bond markets started out with countries issuing debt in their own currency, in their own stock markets. That debt was then either held or subscribed to by foreign residents and bankers, or found its way, as the outcome of international capital settlements, to foreign financial centers. The bonds were in turn cross-listed with the home financial center, as local investors realized that they could take advantage of mutually profitable exchanges. Once this point was reached, it became also possible to directly issue abroad domestic debts, and this is where foreign exchange clauses came into the picture. As English, French, Dutch and German bankers competed against each other on the right to offer subscriptions of foreign debt, the Rothschilds (who dominated European finance with the aid of a European wide branch system that covered 5 financial centers simultaneously) came out with a formula which proved tremendously successful, and was adopted not only by the disreputable countries of Latin America, but also by a number of leading powers: they suggested to include foreign exchange clauses when new issues were floated. Thus foreign exchange clauses appear to have little to do with reputation, but a lot to do with the market mechanism. Whatever the borrower, issuing abroad meant issuing in the currency of the market in which the issue was taking place. We call this the IPO puzzle: that the foreign issues of reputable countries displayed fixed exchange rate clauses is all the more puzzling when we realize that these countries' domestic currencies denominated securities that had no fixed exchange rate clauses, had found

their ways to the portfolios of residents of the precise market that appeared to 'request' a fixed exchange rate clause when IPO occurred.

The theoretical solution to the IPO paradox which we put forward here emphasizes the role of liquidity, at both the domestic and international level. It also rests on a distinction between necessary and sufficient conditions for the convenient trading, in given financial centers of given foreign securities. For a given security to reach cross-listings status, it is required, by definition, that this security had been primarily issued in a domestic stock exchange or money market. Then, in order to circulate abroad, a further requirement is to provide for a low cost means of cashing the coupons. Otherwise, dealing in foreign securities remains too costly and their holding will always be dominated by that of other local instruments. This means that investors must have access to a foreign exchange market in order to convert the coupon into domestic currency. This also means that various transaction costs must be reduced through financial progress: a considerable improvement of international finance in the 19th century was, from that respect the standardization, after the 1820s, of procedures to cash the coupon where bonds were held or traded, either through the intervention of international bankers, or through the creation of off shore government agencies.[19] From this perspective, fixed exchange rate clauses with their accompanying financial technology dramatically simplified the process: the experience of Latin American countries borrowing in the 1820s suggests that issuing in Sterling enabled countries (quite apart from matters of solvency and commitment) to get access to London resources. Thus while having a money market or a stock exchange was a *necessary* condition for a country to issue debt in its own currency at home, issuing in a foreign currency was a *sufficient* condition for raising capital in the corresponding country (for the right price).

This would imply that countries that had minor currencies (in that they were traded in a limited number of foreign centers), or which suffered from poor or underdeveloped local money markets could typically not achieve cross listing, since they do not even meet the necessary conditions for their domestic securities to internationalize. For these countries, there was no other choice than to issue directly in foreign markets and include foreign exchange clauses, since not including foreign exchange clauses would mean that foreign investors would suffer big losses when cashing their coupons. For those countries with major currencies and money markets, the formal issue of new securities was in general unnecessary, since all what was needed was to issue domestically and then provide the financial technology that would ensure the smooth purchasing

[19] . This introduced an important element of geography in the story. It seems that being close to the financial center made it easier to for foreign debts to get cross listing, since the cost of cashing coupons was reduced. Thus for a British investor cashing Dutch coupons in Amsterdam, via mail, or courier was less costly than cashing a coupon in New York.

of the bonds and later efficient cashing of the coupon. At the same time, these countries could in some cases find their own money markets illiquid, or not sufficiently liquid given the amounts they wanted to borrow. In this case, they had no other choice than formally tap foreign markets, and thus purchase the liquidity services that issuing in a foreign currency could secure.

To support our interpretation, we provide evidence on the international status of a large number of currencies in the late 19th century, and seek to relate it to the predictions of the model we put forward in the previous discussion. It has long been known that some currencies are more equal than others. The debate about original sin may be seen as a remake of an old controversy. In a classic paper, Peter Lindert (1968) identified that on the eve of World War I there existed a limited list of « key currencies » which were held as reserves by official monetary institutions. These currencies included most prominently and probably quite unsurprisingly, the Pound, Franc, and Mark. Foreign exchange was held in the form of private bills bearing typically at least two to three signatures generally issued in the normal course of trade finance and then endorsed by bankers as they circulated. The bills were then payable in some given financial center where they would eventually be cashed. Before being cashed, however, they had an international circulation as these bills were held by merchant banks who used them as a tool of choice to transfer funds from one market to the other one. Bills, rather than gold or silver where thus the main instrument for international settlement. In effect, when Germany collected the indemnity on France, it insisted to be paid not in gold or silver, but in a mixture of British, Dutch, and German bills. In sharp contrast McCulloh (1837) reports in his entry for Rio De Janeiro that "There are no commercial or discount banks in any part of Brazil."

The similarity between the restricted number of countries that could issue bonds denominated in their own currency and the number of "key currencies" led us to decide that the question should be explored more carefully. Specifically, our intuition was that a precondition for the existence of an (secondary) off shore market for domestic currency denominated debt was the availability of exchange facilities that would enable investors to price and possibly cover their foreign exchange exposure. The key non manageable risk that one faces when holding foreign bonds denominated in a foreign currency comes from the possible inability to trade the long term bond in exchange for short term assets in that currency.

If this story is true, there should be a close link between the availability of bills of exchange markets on the one hand, and the clauses attached to long term contracts. And as a matter of fact, we know that there were NO markets for bills of exchange denominated in some currencies. Table 6.1 shows the list of currencies quoted in London and Paris around the mid nineteenth century. As can be seen, the lists of financial centers, quoted in Paris and London, overlap to a

very large extent. But they are also striking in that they seem to incorporate a strong regional bias with a vast predominance of European centers. Rio de Janeiro, the London exception, would in effect disappear from the foreign exchange list in the 1850s. The inclusion of given currencies in the list does not seem to have been caused by reputation: in effect, it appears that those hardly trustworthy countries, such as Russia, Spain, Portugal, or possibly Italy do appear in both the Paris and the London lists. By contrast, some trustworthy currencies, such as the Scandinavian, are not in the list. We find that this evidence is consistent with the one reported in the other sections of the paper.

In order to go beyond this impression, we began collecting information on what were the foreign exchange centers that were quoted in a large list of countries, comprising both European, and American (US, Brazil) nations. This enabled us to construct an index of the main financial markets of the time, ranking countries according to their occurrence in other countries' lists of financial centers (Figures 6.1.a to d).

Table 6.1

Exchange centers quoted in Paris and London

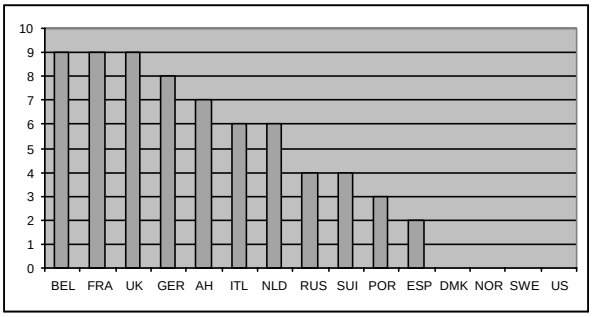
Paris (1850)	***London (1844)***
Amsterdam, London, **Hamburg**, (**Berlin**), (Augsburg), **Frankfort**, **Madrid**, **Cadiz**, (**Bilbao**), **Lisbon**, **Oporto**, **Genoa**, **Leghorn**, **Naples**, (**Venice**), Milan, **Palermo**, **Messina**, **Antwerp**, (Basel), **Vienna**, **Trieste**, **Saint-Petersburg**	**Amsterdam**, Rotterdam, Paris/France, **Hamburg**, **Frankfurt**, **Berlin**, **Madrid**, **Bilboa**, **Cadiz**, Barcelona, **Oporto**, **Lisbon**, **Genoa**, **Venice**, **Leghorn**, **Naples**, **Palermo**, **Messina**, **Antwerp**, **Vienna**, **Trieste**, **Saint**.-**Petersburg**, Rio de Janeiro

Source: Paris: Cours authentiques. London: The Economist. Within brackets (.) for Paris, means no activity. (*) In effect 1812. (**) due to a clearing arrangement among Italian financial centers. An Italian "payments in gold" is also reported. Rome not yet part of Italy. Bold letters in 1850 underline markets that are both quoted in Paris and London

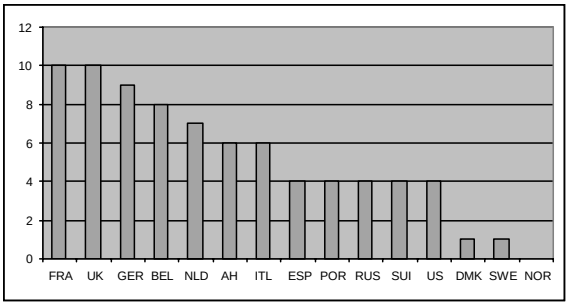
Several features are important. First, it appears that the three tier system described in our discussion of exchange rate clauses is noticeable here as well. Aside the restricted group of leading currencies that were traded almost everywhere (those of the UK, Belgium, France, Germany and the Netherlands), we do find a group of intermediary nations which, interestingly, overlap with "group II" identified in section 3 : Austria-Hungary, Russia, Italy, Spain, Portugal. And again, we also find a large list of nations (not reported here) that were quoted nowhere. These include the Latin American nations, as well as Asian countries, but also a number of British colonies which where all found to be unable to issue in their own currency.

Figure 6.1.a to d. Number of countries where a given currency was quoted

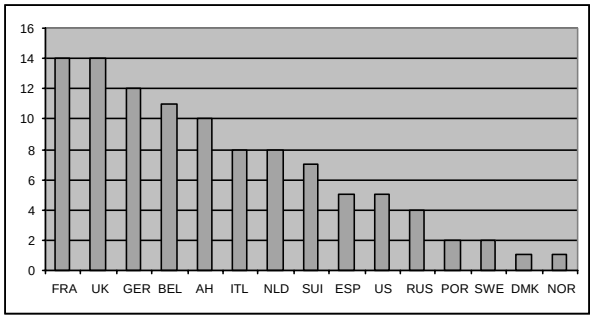
6.1.a.1880



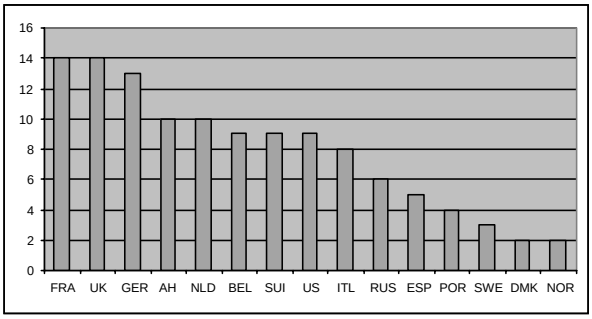
6.1.b. 1890



6.1.c. 1900



6.1.d. 1910



The conclusion we draw from that is that – at least for the 19th century – the possibility to develop a foreign market for the domestic debt is not related to institutional factors as the original sin story would predict. Rather, it has to do with the functioning of underlying money markets. This conclusion follows naturally our assertion, backed by our findings, that currency clauses in the 19th century were an IPO phenomenon rather than a strict requirement of investors. It now seems obvious now that countries that were able to develop a secondary market for their domestic currency denominated public liabilities in foreign centers were precisely those with intense foreign exchange relations with the rest of the world.

At the heart of the Original Sin issue lies the question whether it is *necessary* for some countries to issue with fixed exchange rate clauses, and whether this necessity could be related to inappropriate macro policies or institutions which appropriate reform could fix. Our findings stand as a challenge to this notion. We do not find that countries' commitment and macroeconomic stability were important factors. The latter played a role in pricing the securities,

not in their listing on the stock exchange and their existence in portfolios. By contrast, we found that, in the 19th century, the existence of a liquid domestic market and a liquid foreign market for foreign exchange was a *necessary* condition for achieving cross listing status. Conversely, the absence of such market institutions was a *sufficient* condition for forcing domestic authorities to include foreign exchange clauses when floating loans in the international bond market. As for countries which had well developed market institutions, accessing the more liquid market to obtain a lower borrowing rate went hand in hand with borrowing in that center's more liquid currency. And this is what determined, at any given point in time their borrowing policies.

7 . Concluding Remarks

Our foray into the nineteenth century's international bond market, the precursor of the modern global financial market, suggests that original sin has little explanatory power. Instead, we document that exchange rate clauses of all sorts were essentially an IPO story – when countries attempted to float debt primarily in a foreign financial center, they had to do it either in that center's currency or include exchange rate clauses. In doing so, they tapped the resources of a more liquid market that could supply them with their borrowing needs at a lower costs than their home market would have. Floating a debt in a major currency, in a major financial center such as London, also enabled the issuer to tap resources of the entire European wide network of financial markets that were willing to trade Sterling denominated assets. However, this did not preclude the listing and trade in domestic currency denominated debt that was primarily issued at the home country. While we investigated only government bonds in this paper, the same rationale should also apply to private companies bonds

Foreign investors did trade and hold domestic currency denominated bonds, without exchange rate clauses, of some countries that would fail the institutional or political maturity credibility test, but not of all countries. We hypothesized and were able to show, that this was made possible because of an underlying foreign exchange markets with bills of exchange. The existence of these markets, however, was independent of institutional or credibility issues. They owed their existence to the network of trade relations that emerged in the early modern era – an era when issues of original sin had little impact. Thus, the strong trade relationship between Britain and Portugal (immortalized by Ricardo's famous comparative advantage example), which fostered the bills of exchange market, allowed Portuguese bonds, denominated in Reis, to be held in London, it was certainly not owing to Portugal's sound public finances or modern property-

right-enhancing institutions. Institutions were perhaps a good predictor for future economic development, but afforded no immediate substantial change in the home money market liquidity. Liquidity was achieved by the transforming the national currency into a key currency. The status of key currency was path dependent on historical trade and trade finance relations and in some cases political and military finance. Entering and exiting from the exclusive club of vehicle currencies was a very protracted historical process. For the Twentieth century, the rise of the United States and Japan is a positive example, the Russian and Eastern Bloc adoption of communism is an example to the contrary. Path dependence and persistence could also matter a lot as illustrated by the experience of Amsterdam and Brussels, by the late 19th century no longer predominant commercial powers, but still retaining their status of vehicle currency. The evidence for the U.S. in charts 6.1 a to d shows its rise from a junior status (right hand side of figure a) to a more senior status (middle category) in 1910. If we were to continue this chart for after the post WWI, one would probably see the U.S. dollar displacing the Mark and Franc (but probably not Sterling) in many markets. This rise is closely associated with the rising role of the United States in the world economy and finance.

Our story suggests that the European experience of the 19th century is a clear indication that financial development and political development need not go hand in hand. Having said that, it remains that countries which issued debt in foreign currency were exposed to a default induced by an exchange rate crisis, and thus understandingly display a fear of floating. However, the policy implication we draw from this analysis is that sound macro policy and protection of property rights would be insufficient in alleviating that problem – only emerging as a large economy with large trade flows such as the Yen in the post second world war – may solve the problem. Put differently, had a country such as Bhutan successfully adopted modern institutions and adhered to the Maastricht treaty parameters for years, would any investor be willing to hold Ngultrum denominated bonds?

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