How “Original Sin” was overcome: the evolution of external debt denominated in domestic currencies in the United States and the British Dominions 1800-2000.

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1. Introduction

The recent spate of emerging market crises in Asia has focused attention on balance sheet problems as a key source of instability (Larain and Velasco 2001). Many emerging countries today have difficulty in borrowing domestically long-term and are unable to borrow abroad (both sovereign and corporate debt) in terms of their own currencies, consequently to access foreign capital markets they need to borrow in dollars. As discussed in several papers in this volume this state of affairs is often attributed to the absence of sound and credible fiscal policy and monetary policies and financial underdevelopment.

In the face of a currency crisis a depreciating domestic currency leads to insolvency as firms and governments are unable to service their dollar debts. In addition the inability to rollover short-term debt increases the prospects for default. This inability to borrow abroad in terms of domestic currency and to borrow domestically long-term Eichengreen and Haussmann (1999) refer to as “Original Sin”. The only solutions to the problem they posit are to attain the financial maturity and fiscal probity required to have a nation’s debt denominated in domestic currency, the imposition of capital controls, dollarization or a currency union with an advanced country.

The problem of ‘Original Sin’ also plagued many of the emerging countries in the previous age of financial globalization, the half century preceding World War I. In that era, the peripheral countries of Europe, the Americas and elsewhere had to borrow in Sterling (or francs or guilders) denominated bonds or else have gold clauses in order to access loans from London (Paris or Amsterdam). The gold clauses protected the lender against currency risk. They also may have served as a commitment mechanism (Bordo and Flandreau 2003).
In the face of the worldwide financial crises of the 1890’s, events not too dissimilar from those of the 1990’s, a number of countries e.g. Greece and Portugal defaulted on their external debt. The solution for the emergers such as these countries, then like today, was to either adopt a super hard peg, i.e. amass close to 100% gold reserves as was the case in Austria-Hungary and Russia, or abstain from borrowing abroad, as was the case for Portugal and Spain.

In sharp contrast to the emerging countries’ experience, the advanced countries today do not have the currency mismatch problem. Their external debt, denominated in foreign or domestic currency, is readily held abroad. Nor is their domestic debt primarily short–term. This also was the case for a number of advanced countries before 1914. Eight advanced countries had their bonds listed on the London Stock Exchange in their own currencies – the U.K., France, Netherlands, Belgium, the United States, Germany, Denmark and Switzerland (Bordo and Flandreau 2003)\(^1\). Today the list has expanded to 25 countries most of which are in the OECD, with the peripheral additions of South Africa, Hong Kong and Singapore.

A number of questions arise from this evidence including: what factors determine membership in the club of countries who are free from “Original Sin”? What do countries have to do to enter this club? Is entry permanent or transitory? Under what circumstances does entry occur – in the face of big shocks like World War I or as part of a gradual evolution? Did countries free themselves from one component of ‘Original Sin’ e.g. domestic debt maturity and not the other? Finally, does the inability of a country to issue

\(^1\) Although, according to Flandreau and Sussman (2002) Table 2.3 three of these (France, Denmark and the U.K.) had gold clauses on their debt during certain periods. They also include Austria, Italy, Russia and Spain in a group that had bonds issued in their own currencies in London and Paris but also had gold clauses. The U.S. as we discuss below also had coin and gold clauses.
external debt in terms of its own currency i.e. to overcome “Original Sin” necessarily make it vulnerable to crises because of a currency mismatch?

This paper attempts to provide some answers to these questions by conducting an historical case study of a group of countries that successfully entered the club and completely overcame the problem of “Original Sin” by the third quarter of the twentieth century. The group consists of several former colonies of Great Britain: the United States, Canada, Australia, New Zealand and South Africa. We trace out the debt history (both internal and external debt) in the nineteenth and twentieth centuries.

We treat the United States separately (in section 2) from the Dominions (section 3) because its experience differed considerably from the common experience of the other four countries. The U.S. government was able to issue and market dollar bonds abroad by the beginning of the nineteenth century. However the amounts issued were small. Also U.S. sovereign debt usually had gold clauses until 1933. States and corporations only completely borrowed in dollars by the late nineteenth century and always with gold clauses until the gold standard was finally abandoned. The U.S. never had a serious problem issuing debt long-term.

The Dominions largely shifted to domestic currency external sovereign debt after 1973. Previously they had borrowed in Sterling and after World War I increasingly in U.S. dollars. However all these countries issued domestic debt in terms of their own currencies by World War I and their reliance on external debt therefore was quite limited. Finally like the U.S., the Dominions rarely had difficulty in issuing long-term debt.

In section 4, we consider the factors that may explain the evolution of the U.S. and the Dominions to a state free of original sin. The factors we emphasize for the common movements across the five countries include: sound fiscal institutions,
credibility of monetary regimes, financial development and big shocks such as the World Wars. The differences in evolution between the U.S. and the Dominions we attribute to the attributes of a key currency, which the U.S. possessed and the others did not, to membership in the British Empire and to U.S. independence.

Section 5 concludes with the insight that although none of these countries really was completely free from ‘original sin’ in both the senses stressed by Eichengreen and Haussman, they really were not vulnerable to the types of risk creating financial crises that faces today’s emergers. Our five countries had all developed institutions by the mid twentieth century which greatly reduced their vulnerability.
2. The United States

Today the United States is home to the world’s largest financial center. Debt is mainly issued at home in dollars by domestic players. Dollar assets issued by US entities are readily held abroad. Nearly all other countries issue some liabilities in US dollars as well. Below we document the two aspects of original sin: ability to issue debt in domestic currency; maturity of domestic debt.

The US only completely gained its ability to issue debt in dollars free of any type of gold-indexing or fixed exchange rate clauses in the 1930s. Foreign willingness to hold these domestic currency assets free from any fixed constraints has no doubt increased since the 1930s. However, evidence on maturities shows that private companies, like the federal and state governments have been able to issue debt long-term domestically since the 1780s. Still, there is evidence that there were significant changes in the length of these maturities typically associated with episodes of financial turmoil. The US has certainly graduated from original sin. The question is when did it do so?

Federal Government

Until the early part of the 1790s, American finances were in a shambles. The issue of paper currency “the continentals” to finance the Revolutionary war led to high inflation and extensive depreciation of the dollar. By the end of the Revolutionary war in 1783 the US position in terms of debt to revenues ranked among the worst of the sovereigns in Europe – comparable to Spain, the Kingdom of Poland and lesser German states.

Dutch financing helped the country out early on. One of the first foreign loans the US placed was backed by France and sold in Amsterdam. Thus much of the early public
debt during and after the American Revolution was denominated in Dutch florins and issued in Holland.

The US increasingly relied on domestic dollar loans with gold clauses beginning in the 1780s but Alexander Hamilton’s funding plan, part of a comprehensive financial package set the stage for the successful issuance of dollar denominated debt. Hamilton’s funding plan created approximately $65 million in domestic debt, and at the same time provided for borrowing of $12 million in Dutch florins. In the event, only $8 million Dutch bonds were issued, and they were paid off, according to schedule, between 1800 and 1810. These were the last foreign currency denominated bonds issued by the U.S. for over a century until the late 20th century.

Foreign currency denominated debt outstanding had become a relic by the time of the Louisiana Purchase in 1803 (Tables 1 and 2). Debt issued abroad for this transaction was denominated in dollars but lenders had the option of repayment at the rate of £1stg = $4.44 or one French franc for each $0.40 issued. Over the period 1803 to 1853 the fraction of public debt held abroad declined somewhat (see Table 3). By this time whatever was held abroad was dollar denominated, but it always carried a fixed exchange rate clause.

Table 1 shows that by the late 1780s foreign creditors were willing to hold gold-indexed dollar denominated debt they came to acquire in secondary markets (Riley, 1980). Through the end of the 1790s, the total amount purchased is estimated to be about $7-$10 million where it remained until at least 1803.

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2 The Dutch loans were continuously serviced and Dutch investors received full value on principal. This reflected the Treasury’s belief in the benefits of future access to loans from the premier capital markets of the day. French and domestic holders did not receive interest on arrears and domestic holders were compensated in specie based on the face value of the bonds rather than the market value (Garber 1991).
In the early years of the country there is no evidence of short maturity structures at the federal level. We have data from Elliot (1968) on new issues between 1790 and 1843. Nearly all new issues up to about 1805 were payable ‘at the pleasure of the United States,’ and no new issue had a maturity of less than eight years. During periods of turmoil we do see maturities decline from these high levels. For instance around the War of 1812 bonds became redeemable in 12 years time. Some other evidence also suggests a slight relapse into sin. In 1841 and coming on the heels of international defaults by eight states, the first federal issue we see in the literature had a maturity of four years. This did not last long. Issues in 1842 and 1843 fell due in 21 and 10 years respectively.

From the Civil War to World War I

The United States suspended specie convertibility during the Civil War in January 1862 and did not resume until January 1879. ‘Greenbacks’ or federal legal tender fiat money operated as de facto fiat currency for the entire period throughout most of the US.

During the Civil War, the Union increased its debt by 30 times and the debt to GDP ratio reached nearly 50 percent. Most of this debt was issued at home. Wilkins acknowledges that only about ten percent of the Union debt ended up being held in Europe by 1864.

Despite the increase in the debt burden, the government continued to pay nearly all of its interest payments in gold at the historical parity. But investors were wary since the legislation stating the method of paying interest and principal on loans fluctuated

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3 On the other hand, during the early 1830s the maturity of all outstanding debt was short and on the order of two to four years according to Elliot (1968). This is not a sign of the inability to market longer bonds. It reflected the fact that the US was on the verge of repaying its debt and had not issued any substantial amount of new debt after the mid-1820s. The national debt was virtually extinguished between 1833 until 1838.
(Dewey, 1920). The Loan Act of 1861 made no mention of how interest and principal would be paid. This debt, a small portion of the overall debt was effectively payable in the fiat currency of the time. How much of this was held abroad is unknown.

Debt authorizations between 1862 and March 1864 stated that interest and principal were to be paid "in coin". The government declared in June 1864 that interest was to be paid in coin but made no explicit statement on principal, and the issue of 3 March 1865 echoed this. Other issues had explicit gold clauses on the interest payments and left out any information on how the principal would be re-paid. Later issues declared interest and principal would be re-paid in the coin standard of the United States of America. This was the case throughout the late nineteenth century.

The maturity structure of the debt reveals no lack of confidence; maturities were never short term. Bonds took the names “10-40”s or “5-20”s. The government could redeem these bonds at its pleasure not before 10 years and not later than 40 years. There is no evidence of short-term treasury bills being issued although there were significant issues of un-funded debt in the form of a fiat currency.

To reassure markets, Congress approved "An Act to Strengthen the Public Credit" in March 1869. The act re-emphasized the American commitment to re-pay all outstanding debt in coin at a fixed rate. Again, in 1870, funding acts that authorized bond issues underscored the desire of the United States to repay all debt in legal tender coin of the country by stating that bonds were "redeemable at the pleasure of the United States…in coin of the standard value of the United States on said July 14th, 1870 with interest in such coin, from the day of their date…". Unfortunately, the inherent

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4 Curiously the original proposal was to sell debt abroad that would be payable in sterling, francs and thalers. Congress rejected this idea immediately leaving the U.S. to denominate its debt in dollars while paying at a fixed rate in terms of gold (see Wilkins (1869; n.154, 681).
ambiguity of the ‘in coin’ clause (see Table 4) and of not explicitly stating that debt was payable in gold would haunt the US until the 1890s.

The statement clause “payable in coin” could be interpreted as being prone to being re-paid in devalued coin such as silver. This is because there was always a chance that the US might have gone onto a silver-coin standard. If it had done so, interest would have been paid in silver which had depreciated by at least 150% against gold between 1870 and the mid-1890s.

These ambiguities suggest that creditors were nearly willing to accept debt in the domestic currency of the US whatever form it took. In fact silverites convinced congress to remove the gold clause from an 1895 issue. These bonds were successfully sold abroad (principally London) with a face value interest rate of 4% rather than the 3% a gold bond would have carried.

In 1880 the outstanding US federal debt included $1.17 billion in registered bonds and $537 million in coupon bonds. All were in US dollars with the above stipulations. A Congressional investigation concluded (by looking at the domicile of the registered bonds and asking the large New York banks where the coupons they were surrendering came from) that about $250 million – or 14% - were held by foreigners.

Doubt about the exchange rate regime was laid to rest in 1899 when the US enacted a law declaring gold to be the exclusive currency of the US. This led to the Gold Standard Act of 1900 which put the U.S. firmly on the gold standard. This and other propitious economic events allowed the US to avoid further controversy about how debt would be repaid and how it should be denominated. In any case, the US did not make too many new issues on foreign markets for a period after 1899, and the amount of federal debt held in foreign hands is said to have declined quite rapidly after 1899 (Wilkins
1989). As most federal debt came to be issued and held domestically the currency denomination aspect of original sin became less important.5

Nevertheless, until the abrogation of the gold clauses under Roosevelt in 1933 nearly all federal bonds carried a hard currency clause (Kroszner 1999). Still, debt was exclusively denominated in dollars, and after the devaluation debt was in fact re-paid in notes at the depreciated rate. To the extent that creditors could foresee such an outcome and had been willing to take on this risk upon purchase the US had graduated from original sin. However, a strict definition of original sin would require that a country could sell dollar debt unconditionally but according to Flandreau and Sussman (2002) very few other countries (including some advanced countries) did. The US obviously did not meet this criterion in 1933. Perhaps it is better to think of the US as just beginning to emerge from the state of original sin between the 1890s and the 1930s.

Maturities on new issues of bonds fell quite precipitously about 1931 with the deepening of the Great Depression. They apparently recovered by around 1935. The Financial Chronicle lists all new issues for each of the four years between 1932 and 1935. We have taken a weighted average of the new bond issues excluding un-funded debt in the form of T-Bills. This series shows that the average maturity was 2.56, 4.9, 5.8 and 12.3 in each successive year after 1932.

The downswing in 1932 represents a sharp departure from the past and possibly a momentary relapse into original sin. The loss and subsequent recovery of confidence in US sovereign debt also shows up in the weighted average of all outstanding debt between 1932 and 1935. In each year it was respectively, 12.2, 11.5, 11.8 and 15.3 years. It

5 The US went to the London Stock Exchange for 4 issues of debt in 1880 and 2 in 1900, but made 15 and 11 issues in New York during the respective years (Davis and Cull, 1994 p. 67).
appears that by 1935 markets were ready to lend on a long-term basis to the United States.

After World War II, the US continued to issue debt almost exclusively in domestic currency. Particularly in the 1970s, considerable amounts of this debt were held as official reserves by foreign governments. More recently private sector agents hold most of the foreign held debt.

The most noteworthy foray into the issue of foreign currency denominated debt was the Roosa bonds issued in the 1960s. These bonds, denominated in the principal European currencies were an attempt by the Treasury to stem the ongoing gold drain that dominated the Bretton Woods period. However, these bonds were issued in very limited amounts. A repeat of this type of issue was made in the 1970s and were referred to as Carter bonds.

The federal government has also maintained the ability to borrow long-term. Average maturities on the funded debt outstanding rose from about 9.2 years in 1966 to 21.5 years (Monthly Statement of the Public Debt Outstanding). One should also note however, that the funded debt as a proportion of the total marketable debt outstanding fell from about one-half in 1966 to one-fifth in 1985 and one-sixth in 1996.

States

State debt issues swamped federal government debt issues in terms of total amounts outstanding by the mid-nineteenth century. The States’ probity was more tainted than the federal government’s. Repudiations and defaults occurred first in the 1840s, then after the Civil War and again in the 1870s. This eventually led the states to impose their
own limits on borrowing. The effect was also to essentially curtail the ability to issue on foreign markets by the opening of the 20th century (Wilkins 1989).

States issued securities at home and abroad in the early nineteenth century for the purpose of building infrastructure and chartering state banks. Domestic issues which American and British banks often eventually placed abroad came denominated in dollars with gold clauses or fixed exchange rate clauses. At times they were simply denominated in pounds with a fixed exchange rate clause. Early foreign issues tended to be denominated in pounds sterling or other foreign currencies (Ratchford 1941). The success of these issues led dollar-denominated securities with gold clauses which were issued in the US to be transferred abroad by the 1840s. In addition it appears that most bonds were long-term—on the order of nine to ten year maturities or longer. The fact that not all issues were in dollars, particularly those made abroad suggests that the US states were not free from original sin in the prior to 1840.

After a wave of defaults in the early 1840s, states began to borrow afresh in the late 1840s. In the 1840s and 1850s it is said that not more than about 20% of all state debt was held abroad. Most of this was issued domestically and it is likely to have been dollar denominated with fixed exchange rate clauses or gold clauses. Ratchford (1941) claims that maturities on most state bonds were 30 to 40 years.

During the Civil War northern states issued mainly domestically. Massachusetts was an exception having nearly $2 million of sterling bounty bonds outstanding by 1866. The union states’ original bonds required payment in specie, but Ohio for example stopped paying in gold by 1863. If we believe Ratchford’s characterization of bonds during the Antebellum period, then maturities had fallen during the war. At this time they averaged nearly 20 years.
Southern states also tended to issue bonds at home, and made only a few attempts to take loans in London. When they did so the bonds often specified repayment in tradable goods such as cotton. Near the end of the war, most financing in the South was done through emissions of unfunded debt. Maturities on the funded debt were shorter than in the North and were about ten to twenty years.

Up to 1913 new state loans abroad were rare (Wilkins, 1989 p. 187). Uncertainty over the ability to service debt due to earlier defaults and the demand created by banking regulation in the US led there to be only two state bonds listed in London in 1899 (Wilkins 1989). Of two loans issued by Massachusetts on London in 1896 both were gold bonds. At home, debt was denominated in dollars but the evidence we have suggests that they must have carried a specie clause as a rule.

After World War I we have examined the Investor’s Review from London and have not been able to find any new issues abroad of states debts. It is of course possible that foreigners came to hold debts through the course of trade or by purchasing them in New York but we have been unable to locate any data on foreign holdings. What we do know is that nearly all debt continued to carry specie clauses until 1933 as Kroszner (1999) suggests. After this states are likely to have issued mainly on domestic markets. These would have to have been without gold clauses since these were banned by law. We have seen no evidence on the level of foreign holdings of these bonds during this period.

In terms of maturities, Ratchford reports that the median time until maturity of bonds between 1919 and 1938 was 15 to 20 years. Figure 1 taken from this source also
shows the percentage of debt maturing between 3.1 and 5 years was always very low. Interestingly this percentage increases dramatically during the Great Depression.

**Private Companies**

Foreign investment in the United States has a long history. Most notable was the massive influx of British and European portfolio capital during the nineteenth century. Railroads were often the most sought after bonds and they took the lion’s share of incoming capital, but investments went to other sectors as well. It is difficult to estimate how much of all outstanding debt foreigners held at any one time. Sparse data exist on the numerator and the denominator but not usually for the same years. In any case, it does not appear that any significant graduation from Original Sin came until the forced elimination of the gold clauses in 1933. Moreover, reliance on foreign capital markets was diminished---at least for the early years of the Bretton Woods period. To the extent foreigners hold corporate dollar denominated paper today it must be a fairly recent phenomenon.

The use of foreign markets and sterling debt begins in the 1850s when railroads first began to issue abroad. Later issues that were in dollars carried gold clauses. As late as the 1890s, American companies issued bonds on London both in sterling and in dollars as Table 5 shows. During and after the First World War, US companies tended to issue mainly in New York as European capital markets were perturbed and New York’s prominence was rising. Nearly all long-term corporate debt outstanding in the 1930s carried gold clauses (Kroszner 1999). After 1933 companies could not issue gold indexed...
debt by law in the US. Reliance on foreign markets also remained low immediately following World War II. Hence in the corporate sector, American companies have been relatively free of Original Sin since at least the mid-1930s.

**Summary**

The United States is a special case amongst our countries. Since the 1850s all players in the economy were able to issue debt denominated in US dollars (with gold clauses) that non-residents were willing to hold. The US maintained gold clauses, and usually honored them though not always. There may have been a probability that they would not be paid in gold which is important. We view this as an intermediate case. In terms of currency denomination the road to redemption was long however. Only in the 1890s did the US federal government come to issue a significant amount of debt with no gold clause. In the second meaning of original sin -- the maturity of debt -- we do see fluctuations that tend to suggest financial turmoil can put players on a shorter string. However maturities on funded debt and corporate paper have always been long by today’s LDC standards.

The US graduated from original sin for the most part behind the curtain of a number of large successive shocks including the Great Depression, World War II, and the Bretton Woods era. By the 1970s the US had largely purged itself of original sin. We examine the determinants of this transition more in Section 4.
3. The British Dominions.

This section discusses the debt history of Canada, Australia, New Zealand and South Africa, four settler economies that emerged from British colonies. With of course some idiosyncratic variations, the experience of these countries was remarkably similar: in the 19th and early 20th century they borrowed in London in sterling, but during World War I they were cut off from the London market and developed domestic markets where they issued relatively long term domestic currency denominated debt. In the interwar period, Australia and Canada issued in New York (US dollar denominated debt) but as many authors have noted, international capital flows remained small from World War I until the 1990s. Only in the last part of the 20th century, did these four economies begin to issue debt overseas in their own currency.

Thus far the story sounds as though the economies indeed suffered from ‘original sin’, and did so until very recently. As we show the story is more complex. Firstly, at all times, the maturity of the debt outstanding – the foreign currency/foreign issued debt and the domestic currency/domestically issued debt – was long relative to to-day’s standards. Secondly, with the possible exception of the 19th century experience, there were large and liquid domestic currency debt markets. Finally, these countries were relatively pure: they followed ‘sound’ monetary and fiscal policies and – as much as any other country – had stable financial institutions.

Pre World War I

All four economies were essentially gold standard economies throughout the period. In Australia and New Zealand the pound sterling was the official unit of account until the early 20th century, when local pounds were introduced (1909 for Australia and
1907 for New Zealand) which were at par with sterling. In Canada the dollar unit of account had the same gold content as the US dollar. The South African colonies used the pound sterling as their unit of account until 1920 when the rand was introduced. In each country/set of colonies private banks as well as the government issued convertible notes, typically with backing restrictions.

In the prewar period, governments borrowed primarily to finance infrastructure improvements. The data are most complete for Canada and show that over the period 1867 to 1914, over 90% of the funded debt outstanding was in the form of sterling liabilities (see Figure 2). For the other colonies the range was slightly lower (from a low of 70% in Australia to 90% (New Zealand)), but the bulk of borrowing was in the London market in all cases. Strikingly, there was a one-to-one correspondence between place of issue and denomination – this was sterling debt issued in London.

Borrowing in London had a significant financial advantage over domestic borrowing as borrowing costs were lower there. For example, interest rates on Canadian debt were about 4% in London compared to about 6% on the domestic market. This does not explain the denomination of the debt instruments. The commonwealth ties may have been significant in a couple of ways. Colonial public debt was often admissible to be held by trusts in the U.K. (see Ferguson (2002)). Also, the proceeds of debt issues were often

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7 The four colonies of Natal, Transvaal the Orange Free State and Cape Colony united in 1910 to form the Union of South Africa.

8 For example, the Canadian government could issue notes up to some limit with a 25% gold backing and over that limit with 100% gold backing; the note issue of private Canadian banks was required to be less than their paid-in capital, and there were at times reserve requirements.

9 We discuss here sovereign debt since we lack data on local government and private sector debts.

10 Canadian data come for the period 1867 to 1900 are from the Public Accounts, 1950/1, which lists debts owing in London and New York, with the implication that the debt is denominated in the place of issue. For the period 1900-2001 the data on unmatured federal debt are from CANSIM II series V151538, and for unmatured debt in foreign currency they are series V151547.
spent on capital goods to be imported from Britain, and loans were (indirectly) repaid with exports sold in Britain, the costs of currency mismatch were reduced.

The loans tended to be quite long term, 10 to 25 years, and the governments were aware of the benefits of these maturities. For example, in 1912 the Canadian Minister of Finance took comfort in the fact that only 2 issues would come due before 1930 (Field, 1914; 104).

**World War I and interwar**

The onset of World War I essentially closed the London capital market, and the response was similar in all four Dominions. The gold convertibility of the domestic currency was suspended (and not resumed until 1925) and governments raised funds domestically, essentially creating a domestic bond market. Foreign capital (at least for sovereign debt) would never regain to the same extent. Figure 2 shows the decrease in the share of outstanding debt issued overseas. (The very dramatic nature of the declines reflects the quick expansion of domestically issued debt to finance the war efforts.) In Canada the Victory Loans, although issued in Canadian dollars, had explicit gold clauses.

Each country followed slightly different policies in the interwar period and had different experiences during the Depression. Canada raised funds in New York in U.S. dollars in 1917 and in the 1920s all new issues overseas were in New York in US dollars (in contrast to the prewar overseas issues in London in sterling). There were new issues in the domestic markets also, but they were limited to rolling over the Victory Loans. Canada’s currency mismatch on the eve of the Depression might have left her exceptionally vulnerable. Interest on the public debt was about one third of government expenditures (high even relative to post World war II standards). In the early thirties the
Canadian government considered a depreciation but rejected such a policy not because it would imply an increase in the real value of external interest payments, but rather because such policies could lead to “a flight from the Canadian dollar through fear of deflation” and the belief that depreciation “would be ruinous alike to the credit and to the future development of this country” (cited in Bordo and Redish, 1990; 372).

The government’s protection lay in the extended maturities of the outstanding foreign debt, which meant that the immediate liabilities of the government were not large. In March 1932, the government had $1.34 billion in gold bonds outstanding, but only $34 million were due in the coming 12 months so that the combined interest and principal due in gold was only $93 million. A significant, but not fatal, sum in relation to exports, implying that depreciation would not impose a critical burden on the public purse.

Canada dramatically reduced its currency mismatch/gold liabilities by the Conversion loan of (March) 1931. By that loan, the government took advantage of the low interest rates of 1931 to roll over much of the outstanding Victory loans into 20 year bonds. In the process the gold clause was removed. While this may have been a shrewd prelude to the depreciation of October 1931, it seems unlikely: The government was not honoring the gold clause for domestic bond holders – the majority – anyway.

Throughout the period, the link between denomination of the debt and the liability of debt remained close. There were no foreign issues of Canadian dollar denominated bonds. However, there were Canadian dollar denominated domestic issues which were subject to the gold clause.

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11 The $1.34 billion includes $790 million in gold bonds in Canada, and the $93 million includes $36.67 million in interest due on those bonds. It is extremely unlikely that the government would have paid Canadians in gold. On occasions when gold had been demanded the government’s response that since gold could not be exported it was only worth its face value, and that a suit for damages would be rejected. The Ontario government asked Ottawa for help in halting the practice of Canadians sending their ‘gold’ coupons to US banks to receive interest there in the gold they would not be paid in Canada! See Bordo and Redish, 1990.
debt. Yet there was some intermediation. In 1948, a DBS survey of the Balance of Payments stated that an “appreciable total” of Canadian dollar denominated securities were held outside Canada, “even before the recent war”. These would have been bonds issued in Canada, and most likely bought by US insurance companies. Unfortunately the context does not help define “appreciable”!

Australia too developed its own debt market during World War I, and continued to issue domestically in the interwar period. One advantage of issuing at home in the late 1920s and early 30s was the lower face value interest rate on debt. The average face value rate in London and New York was about 4.86 while debt issued locally had an average face value interest rate of 3.8 percent (Yearbook of Australia, 1934; 405). Both the international and the domestic debt continued to be relatively long term. Table 6 shows that the average maturities ranged from about 10 years for the internally issued debt, to roughly 20 years for the externally issued debt.

As in Canada, Australia severed the link with gold during the Depression. On 5 January 1931 it devalued the Australian pound by 30 percent relative to sterling (see figure 3). This break with gold came almost nine months ahead of that of its principal external creditor, Great Britain. Observers argued in August 1931 that any further depreciation would have aggravated the government deficit due to the increase in the interest charges on external debt. Officials in Australia noted the benefit in lower interest payments when sterling was devalued in September 1931 (Yearbook of Australia, 1939).

By the 1930s financial commentators noted that Australia had accumulated one of the highest debt per capita ratios in the world at over £100. Luckily, Australia depended

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12 In addition the records show virtually no debate over the gold clause; the deputy minister of finance asked once for a list of loans with exact wording “in regard to the question of payment in gold” but the list
on commodity exports like wool which had a relatively moderate price fall. Recovery in the prices of wool by 1933 and large gold exports partially shielded Australia from a total catastrophe throughout the 1930s.

But policy-making was difficult and contentious during these years. Exchange rate policy was on the minds of policy makers in the 1930s because of the possibility of increased interest payments if Australia were to stop shadowing the pound. The liberal Premier of New South Wales proposed suspending payments on external debt. Nevertheless a more orthodox conversions process carried the day. After 1932, Australia engaged in a number of loan conversions in London, rewriting the contracts for over one quarter of all external debt. Exchange savings were large (Official Yearbook of the Commonwealth of Australia, 1933-34). These conversions stipulated payment in pounds sterling while external debt issued in the 1920s was to be paid in a fixed amount of gold. Conversions between 1932 and 1934 list savings in terms of exchange of 25 percent, corresponding to the depreciation of sterling from pre-Depression parity.

New Zealand cut the link to gold in 1929, much earlier than most countries during the Great Depression. The dependency on exports of primary goods was associated with a sudden onset of the crisis in this year. Nearly half of New Zealand’s debt was issued in London at this time and nearly all of this was held abroad and payable in sterling in London.\(^\text{13}\) Because of this increase in debt charges, the country was forced to devise various means of easing the burden.

\(^\text{13}\) By 1939 one figure suggests that for £17 million of debt outstanding issued in London (a part of the external debt) about £1.1 million were held by New Zealand institutions. Another reference in the New Zealand Yearbook of 1939 suggests that of £5.2 million of interest payments on debt issued in London about 2 % was payable in New Zealand to domestic holders of Sterling denominated debt.
The newly created central bank, the Reserve Bank of New Zealand, founded in 1933, first extinguished its domestic floating debt (treasury bills outstanding) by transferring government funds held in London to New Zealand. Later, a large forced conversion of the domestic debt occurred. Debt bearing interest at higher than four percent was converted to four or three and a half percent; dissenters were punished with a 33.3 percent income tax on un-converted debt. The total conversion covered nearly all of the domestic debt outstanding. In 1934 a conversion of externally issued debt was undertaken as well. In addition, under the Hoover plan for debt forgiveness, Great Britain refrained from demanding repayment of £24 million in war debts after 1931.

Some tabulations available also suggest that the average maturity until payment on New Zealand debt was slightly longer on debt issued in London (13.2 years) than on debt issued at home (12.5 years). The average face value of interest charges on debt in 1939 was however higher in London at 4.25 percent versus 3.44 on internal debt (New Zealand Official Yearbook, 1939-40).

The growth rate of the South African public debt during World War I was considerably less than that of the other British Dominions discussed here and, most likely as a result of that, the shift to a domestic bond market least marked in that country. But, the share of sterling debt in the debt of South Africa fell from 90% in 1910 to 70% in 1920 and 60% in 1930. The experience of South Africa during the depression was also somewhat anomalous, because of the increasing real value of the gold resource.

**World War II and Bretton Woods**
Throughout this period, the correspondence between currency of issue and place of issue remained strong, and as in World War I, government debt grew dramatically, and was funded domestically, leading to a further erosion in the share of the debt funded overseas.

The Canadian government continued to issue domestic debt in Canadian dollars, while New York issues were payable (at least optionally) in US dollars, and London issues were payable in sterling. But even more than before the war, there is evidence of Americans buying Canadian dollar denominated debt issued in Canada. By the end of 1946 it is estimated that about $600 million of such debt was held in the US, significantly more than the US$178 million in US$ denominated Canadian debt outstanding, but a negligible proportion of the $16.6 billion in C$ denominated Canadian debt outstanding.

Data on purchases and holding of Canadian debt by non-residents starts to become available after World War II, and we can trace the development of foreign holdings of Canadian debt by currency with some precision. The Canadian government did not issue very much debt during the Bretton Woods period, but Figure 4 shows that of the amount purchased by non-residents an average of 17% was denominated in Canadian dollars. There are no records of foreign issues of Canadian dollar denominated bonds, so that this represents bonds bought – notably by Americans – in Canada. Again insurance companies are highly represented amongst buyers.

Australia ran government budget deficits during most of the Bretton Woods period and also held a fixed exchange rate with sterling for most of the periods (see figure 3). Deficits averaged 3 percent of GDP from 1950 to 1972. The Australian currency was decimalized in February of 1966 and the Australian dollar replaced the Australian pound.
To fund the chronic public imbalances, Australia issued debt in many different foreign markets and as in Canada, the currency of denomination typically coincided with the place of issue. Debt was issued in sterling, US dollars, and to a lesser degree Swiss Francs, Canadian Dollars, Deutsche Marks, Dutch Guilders and Japanese Yen. The government attempted to use the depth of foreign markets in order to insure that adequate funding was available. It does not appear that any significant amount of debt sold overseas was denominated in Australian dollars during this period. Evidence on average maturity lengths is only available on domestic currency denominated nationally issued debt. The average maturity, which had fallen from 8.99 years in 1939 to 6.25 years in 1955, rose secularly to 10.3 years in 1972.

In New Zealand, the amount of government debt increased 7-fold during World War II, but the sterling/London indebtedness did not change, explaining the dramatic decline in the amount of outstanding debt issued overseas. The story in South Africa is similar, with a 10-fold increase in domestically issued, domestic currency debt, and a contraction in the sterling/London debt.

**Post Bretton Woods**

This period has seen radical innovations in the debt markets, so that by the end of the period, the use of derivatives has detached the currency of a liability from both its place of issue and its initial currency of issue. A key step in this evolution was the development of the Eurobond market. This market first developed in 1963 following the introduction of the U.S. interest equalization tax – designed to stem capital (and hence gold) outflows – which raised the cost of foreign borrowing in the U.S. Similar markets later developed for currencies other than the dollar. Eurobonds are generally bearer
bonds, are tax free, are underwritten by an international syndicate of banks and are sold mainly in countries other than that of the currency of denomination (Davis 1992).

In November 1974, the Bank of Canada amended the perennial title of Table 29 “Net new securities issues payable in foreign currency” by adding in parentheses “includes Canadian dollar issues placed in overseas markets”. This seems like an appropriate signal of Canada’s baptism: Figure 4 shows that beginning in 1974 there was a gradual increase in the amount of Canadian dollar denominated new issues purchased by non-residents. In the 1980s, non-resident purchases of new issues both in foreign currency other than the US dollar, and in Canadian dollars rose sharply. Portfolios saw the same transformation as the new issue market.

“In 1980, only 18% of Canadian bonds held by non-residents were payable in Canadian dollars, while 71% were payable in US dollars. By 1993, Canadian dollar bonds represented 43% of Canadian bonds held by non-residents, while the share of U.S. dollar bonds had fallen to 44%.”


A similar picture is painted by estimates from the Economic Council of Canada (1990; 72). They find that from the amount of Canadian bonds denominated in Canadian currency placed outside Canada and the United States rose from $5 million in the period 1963-70 (.5% of all Canadian issues placed outside Canada and the United States), to $4 billion (30%) in the period 1971-80, and to $16 billion (25%) from 1981-87.

Australia maintained a fixed peg and then a crawling peg against the US dollar after the collapse of the Bretton Woods system until December 1983 and then floated the
currency (see figure 5). The 1980s was in general a period of debt consolidation and heightened concern with the debt. Australia’s total foreign debt to GDP ratio was over 40 percent in the mid-1980s (Argy, 1995). During these years, the debt management strategy changed radically in an attempt to reduce the burden of the debt. Now that exchange rates were floating, volatility and average servicing costs could not be taken for granted. In addition the Australian market became deep enough to supply more funds for government borrowing needs, and the government has not issued any debt abroad since 1987. At that point in time, foreign currency denominated debt equaled about 30 percent of the total outstanding debt. By the early 1990s the gross debt to GDP ratio had fallen to 16 percent and the amount of foreign denominated debt outstanding was falling rapidly and by 1997 foreign currency denominated debt was a mere 1% of total debt. However, the government has used swaps and other instruments to increase its exposure to the US dollar as part of its diversification efforts (Johnson, 1997). It appears that some amount of US dollar exposure provides a hedge for other debt outstanding.

In terms of escaping the constraint of having to issue in foreign currencies it seems that most of the outcome can be explained simply by not having to look abroad for new sources of funding. A reduced demand for government debt and deeper local markets have combined to decrease the accumulation of foreign currency debt. It is interesting to note that domestic market size is highly related to foreign currency exposure at the public sector level. Very recently exchange rate movements and their ramifications on debt-servicing costs have also been decisive.

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14 Bond issues, with the exception of Federal government issues, were often placed in the Euro-bond market. (Bank of Canada, 1994; 43).
New Zealand pegged to the US dollar between 1971 and 1973 and then experimented with various forms of pegs before moving to a managed float in 1985. See figure 6. In 1989 the central bank of New Zealand gained substantial independence, and since then the overriding objective of monetary policy has been inflation control. These moves were accompanied by reforms in the labor markets to make wage setting more flexible and by fiscal reforms which trimmed central government deficits after a decade of large imbalances. New Zealand’s gross public debt to GDP ratio has fallen since the early 1990s from almost 50 percent to 32 percent.

New Zealand is still exposed to foreign currency liabilities. The ratio of external debt to internal debt is about 25 percent as of 2001. This is a large decline from the beginning of the 1990s when the proportions were almost equal. In 1993 roughly half of the external debt was issued in US dollars, while the rest was issued in other key currencies.

There is also some evidence that non-residents are willing to hold “internal debt” or bonds denominated in New Zealand dollars. Figure 7 shows that foreign holdings of New Zealand dollar denominated debt peaked around 1997 at 16 percent of the total internal debt. This is most likely a lower bound on holding however as not all foreign bondholders could be identified accurately in the registers.

In South Africa, the public external debt stayed low as a percentage of total public debt after 1970 although there is a slight rise in recent years (Figure 8). Corroborating this secular rise in domestic credibility or financial capacity we see in Figure 9 that maturity lengths are longer on domestically issued debt. This may in fact be a continuation of what was happening in the 1930s. It appears that credibility has its roots in the 1930s (as we have seen the maturity length increased slightly from 10.7 to 12.6
years for domestic debt between 1928 and 1937). \(^{15}\) Figure 10 shows that a significant percentage of South Africa’s total gross debt payable to non-residents (i.e., public and private) has been denominated in Rand since at least 1994. South African data also show that external debt has been issued in a number of different currencies since the 1960s.

What explains this change from the past? South Africa’s financial system is widely seen as one of the most sophisticated and mature markets in the world. Perhaps international investors are reassured by the liquidity of the markets there.\(^{16}\) It could also be that the story is similar to Australia where international investors hold Australian dollar debt as a hedge against inflation (Eichengreen and Hausman, 1999). Both countries are important commodity exporters, yet both have advanced financial systems. The similarities are ripe for further research.

**Summary**

The evolution of government borrowing in the British Dominions is easy to summarize. Prior to 1913, borrowing was almost entirely long term bonds issued in pounds sterling in the London market. During the war, domestic savings were tapped by the issue of domestic debt, denominated in domestic currency though often with a gold clause. The interwar period saw much of the domestic war debt rolled over, and at least in Canada, without a gold clause. Canada and Australia borrowed in the New York market, in US dollars. World War II again led to expanded domestic debt, and during the postwar/Bretton Woods period there was little access to foreign capital markets. The breakdown of Bretton Woods and growth in government borrowing in the 1970s led to an

\(^{15}\) This excludes a large amount of debt without a definite redemption date.
expansion of external debt and all the Dominions began issuing domestic currency debt, as well as that in many other currencies, overseas.

4. Some Explanations for the Patterns Observed

Initially we review the salient patterns observed in our case studies of debt history of the Anglo countries. Then we pose some explanations for the common patterns observed for the five countries and for some special features of the United States.

The Patterns in Evolution away from Original Sin

Across all five of our countries we see little evidence in the historical record of ‘original sin’ in the sense of an inability to borrow at long-term maturities whether domestically or abroad. There are a few episodes when maturities shortened, especially during the Great Depression, but these were the exception rather than the rule.

For ‘Original Sin’ in the sense of the inability to issue domestic currency denominated debt externally, none of the countries were completely free of it until the third decade of the twentieth century. The U.S. was the leader, it weaned itself from foreign currency (guilder) sovereign debt very early in the nineteenth century and dollar debt was listed in foreign exchanges with coin and gold clauses until the Great Depression. States and corporate debt followed a similar pattern of evolution from Sterling to dollar debt with gold clauses later in the nineteenth century.

Alternatively the development of external debt in Rand may reflect the evasion of capital controls which began during the Apartheid regime when extensive sanctions were imposed on South Africa, as South African firms and individuals moved their balances abroad.
The Dominions, led by Canada, borrowed externally in sterling exclusively until World War I, but developed domestic debt markets earlier. After the war, two patterns emerged: a decline in reliance on external debt and a shift in its currency of denomination from sterling to dollars. It was only after World War II and the breakdown of the Bretton Woods system with the advent of derivatives that these countries began issuing external debt in their currencies.

**Explanations**

We explore the factors that contributed to the changing patterns that we have discussed. While the data is not structured in a way that facilitates statistical techniques we have sufficient information to make some informed conjectures on some of the leading hypotheses posed in this volume as well as on other determinants. We initially consider several factors that can explain the common pattern of evolution away form original sin across the five countries. We isolate four factors: sound and credible fiscal institutions; credible monetary regimes; financial development; major shocks. We then discuss three factors that made the U.S. experience different from the Dominions: key currencies; the British Empire connection; U.S. independence.

**Sound and Credible Fiscal Institutions**

Corsetti and Mackowick (2002) suggest that weak public finances could lead governments to address imbalances with an inflation tax. Fearing this, agents avoid long-term, non-institutional domestic currency debt and hold only foreign currency debt. This was not the case in our five countries all of which had developed relatively sound fiscal institutions by the nineteenth century compared to today’s emergers.
The U.S. developed a sound fiscal base with Alexander Hamilton’s stabilization package. In 1790 Hamilton the Secretary of the Treasury from 1789 to 1795 put together one of the most successful financial programs in history. The package included four elements: funding the national debt, creation of a sinking fund, securing sufficient tax revenue, and creation of a national bank, the First Bank of the United States (Perkins 1994 Bordo and Vegh 2002). His program was based on the idea that domestic bond prices were a measure of the creditworthiness of a nation, and he attempted to increase that price through timely domestic interest payments, consolidation of all federal and state debt and “small-scale redemptions”. This improved the chances of garnering further domestic confidence and attracting more foreign loans at favorable terms. In addition a sinking fund was also established to “manipulate” the price of bonds in the open market and to enhance credibility. Finally, the whole package was secured by instituting a national tariff of 10% on import values as well as excise taxes to provide sufficient tax revenues to continuously service the debt. These policies succeeded in raising domestic bond prices, enlarging the domestic bond market and ultimately reinforcing the credibility of the foundling republic.

The Funding Act of 1790 and Hamilton’s ability put American credit on a trajectory to gain a strong international reputation. This Act, along with the Napoleonic wars, paved the way for a European interest in American securities. The wars made investments in the fledgling country look relatively more secure, and the Funding Act was a provision "to fulfill the engagements of the US in respect to foreign debt."

Hamilton’s plan was based on British precedent – the creation of a long-term bond market and permanent servicing with indirect taxes -- in the early eighteenth
century. Similar institutions were adopted by Canada (Bordo and Redish 2001) and the other British Dominions in the nineteenth century.

The principal exception to the story of fiscal probity was the U.S. States in the 1840s. Their defaults shut them out of foreign markets for an extended period (Wilkins 1989). These events did not help the progression to be free of original sin.

**Credible Monetary Regimes**

Jeanne (2002) suggests that agents favor foreign currency denominated debt when domestic monetary policy is not credible. Bad monetary policy increases the ex ante interest rate on domestic currency denominated issues. Likewise it might be argued that if policy were credible then these costs should disappear releasing countries from original sin.

The history of all five countries suggests that lack of credibility in the monetary regime was not an important factor in preventing countries from losing ‘original sin’. All the countries were part of the specie standard that prevailed until World War I. All credibly followed the rule of the maintenance of convertibility as paramount. The rule followed was contingent in the sense that credibility could be temporarily suspended in the event of a wartime emergency (Bordo and Kydland 1995).

The U.S. case was most interesting because the specie standard followed de jure until 1900 was bimetallic, leaving open the possibility of silver risk and hence the need for gold clauses. The U.S. remained on the gold standard until 1933 when Roosevelt abrogated the gold clauses. After World War II, the dollar (officially convertible into gold) became the key currency of the world and U.S. dollar debt was widely held abroad. This has continued with the demise of Bretton Woods and the advent of a fiat money
regime. Although the U.S. followed bad monetary policy in the Great Depression and in the Great Inflation of the 1970s neither the dollar or dollar debt was ever shunned.

Canada was on the gold standard from its origins as a British colony, with the Canadian dollar fully convertible into gold until 1914. Australia, New Zealand and South Africa were fully ‘sterilingized’ prior to the turn of the twentieth century and then turned to gold standard adherence with domestic currencies. These countries credibly adhered to the gold standard and followed the contingent rule during World War I. In the Bretton Woods years, all the Dominions except Canada followed the adjustable peg. Canada floated from 1950 to 1962 but followed a more stable monetary policy than the U.S., which suggests it may have continued to follow the contingent rule (Bordo 2001). In the immediate post Bretton Woods, all the Dominions had similar inflationary experiences to the other advanced countries and since the mid 1960s have learned to follow a fiat nominal anchor with low inflation.

**Financial Development**

Authors such as Chamon (2002) have emphasized that the inability to write complex agreements that hold the value of domestic currency denominated debt in the case of default and depreciation diminishes the size of the domestic currency debt market. Also Caballero and Krishnamurthy (2002), argue that financial under-development can lead to excessive hard-currency.

All five of our countries had significant financial development by the end of the nineteenth century. All of the countries had extensive banking systems and high ratios of M2 to GDP (Bordo and Flandreau 2003). The Dominions had nationwide branch banking
which encouraged financial stability. The U.S. had unit banks prone to runs and panics. In the Dominions, the banks were the dominant financial intermediary, supplemented by Insurance companies and Investment dealers (Davis and Gallman 2001).

In the U.S. in part because of the restrictions on branching and inter state banking which hobbled the size of bank assets, other financial markets and institutions such as commercial paper, stock markets and investment banks evolved to fill the gap. None of the countries had central banks before 1910. With the establishment of the Federal Reserve in 1914 and central banks for the Dominions established by the interwar period (Australia 1911, Canada 1934, New Zealand 1934, and South Africa 1920) this absence was corrected. In the U.S., the lack of a lender of last resort was only partially made up by alternative private arrangements (clearing house loan certificates) and Treasury actions. Banking crises were frequent. In the Dominions, large commercial banks served as the government’s fiscal agents and with the Department of Finance (e.g. in Canada), served as Lender of Last Resort. Banking crises were a rare event, with the principal exception of Australia in 1893.

Financial underdevelopment was unlikely to be a reason for ‘original sin’ in these countries. It took a major financial innovation -- the development of derivatives in the 1970s for the Dominions to issue external debt in their own currencies.

**Shocks**

The record for all five of our countries suggests that the major changes in patterns of evolution away from original sin occurred after major wars and other significant shocks. In the U.S. case, foreign holdings of dollar denominated debt rose rapidly after the Revolution and Hamilton’s revamping of the fiscal system between 1790 and 1803.
The Great Depression ended the gold standard and the gold clauses. Each successive exogenous shock partially revealed the ability and the will of the US to maintain the real level of debt payments. This process encouraged investors to hold dollar debt with or without gold clauses.

Similarly, in the Dominions World War I was the key event that led to the rise of domestic currency internal debt relative to external sterling debt and for Canada initially, the substitution of dollar external debt in place of sterling. Finally the breakdown of the Bretton Woods System with the advent of nominal floating and the end of capital controls set the stage for the development of the derivatives that led to the creation of international bonds in the Dominion currencies.

**U.S. Exceptionalism**

We posit that the U.S. was different from the other Anglo countries in its ability to abstain from loans denominated in foreign currencies and to have its securities listed in dollars in foreign markets. Several factors are responsible.

1. **Key Currencies**

The U.S. was different from the others because of its economic size and political importance. Moreover, although it was less dependent on international trade than the others its volume of trade and the network of international transactions was also an order of magnitude greater. Such factors have long been identified as the hallmarks of vehicle currencies which are used to invoice trade and financial contracts. Indeed Wilkins (1989) reports that in the nineteenth century domestically issued US debt often ended up abroad because agents viewed the assets as useful in international transactions.
The U.S. dollar did not fully emerge as a key currency until after World War I but by the end of the nineteenth century it was on a par with European currencies other than those of the core countries (Lindert 1969). Moreover the thick market externalities associated with the medium of exchange may have factored into the denomination of assets as is the case with the medium of exchange.

2. The British Empire

All of the areas we analyze were once British colonies, and for the countries besides the U.S. nearly all had special relationships with the British until very recently. Colonial status and special relationships entailed sundry institutional connections that might have made it simply more convenient to issue debt in sterling. Factors of importance include: the colonial stock acts and the trustee status described in Section 3; that three countries (Australia, New Zealand and South Africa) all used sterling until the twentieth century and it was legal tender in Canada; and that even if there was a financial crisis, colonial status could avoid the negative repercussions of balance sheet effects. Debtors and creditors could re-schedule debt more easily. If worst came to worst, government intervention could make debtors repay by rights guaranteed in the colonial stock acts; denomination in sterling facilitated accounting and eliminated day to day risk for British creditors.


From the very beginning the U.S. tried to avoid sovereign debt in foreign currencies, as evident in the following quote from Alexander Hamilton
“The Payment of interest and installments of principal of our foreign debt in the countries where it was contracted is found by experience to be attended with difficulty, embarrassment, some loss, and a degree of casualty which occasionally puts in jeopardy the national credit. Loans for reimbursement must be made beforehand, as the market suits, and necessarily involve double interest for a greater or less time. The procuring of bills to be remitted for payment of interest cannot be depended upon in coincidence with the periods of payment, which, co-operating with distance, renders inconvenient anticipations necessary. … If, therefore, the place of these could, with consent of the creditors upon an equitable indemnification to them for the transfer, be changed to the United States, the operation would be, in various lights, beneficial ……[proposal to convert all foreign debt to domestic debt] It could not be necessary to observe, except for the sake of dispelling jealousy or apprehension on the part of the creditors, that while the plan is experiment, and afterward, with regard to all who do not embrace it, [italics in original] everything is to proceed as heretofore, and as the contracts respecting the debt require.” (10th census v.7, p.334).

Moreover, as the country developed in the nineteenth century and financial markets expanded and deepened the states and corporations were able to fund much of their requirements in the domestic markets obviating the need for foreign debt regardless of the currency of denomination.

In sum, our survey suggests that few of the factors cited in the recent literature on ‘Original Sin’ in today’s emerging markets are relevant for the experience of the Anglo countries studied here. These countries had sound fiscal institutions, adhered to credible monetary regimes and were financially developed over a century ago. The key factor that seems to matter most for their progression from ‘Original Sin’ in the sense of issuing external debt in terms of their own currencies is a response to shocks - wars, the Depression and the collapse of Bretton Woods. The U.S. evolved at a much more rapid pace than the others. This we attribute to the global importance of the U.S. on the one hand and the special features of the British Empire on the other hand.

**5. Conclusion**

In conclusion we raise and answer some questions suggested by our study of the debt history of the five former British colonies. First, was there ‘original sin’ in the five countries? The answer is no in the sense that all countries studied issued long-term...
domestic debt from the earliest years of their experience. The answer is yes in the sense that until well into the twentieth century, their external debt was denominated in foreign currencies (the Dominions) or had gold clauses (the U.S.).

Second, how did they get free from original sin? The answer seems to be that it took big external shocks to eliminate the vestiges of original sin. For the U.S. the Revolutionary war set the stage for Hamilton’s fiscal miracle and the Great Depression ended gold clauses. For the Dominions it was World War I, which ended dependence on sterling debt and the demise of Bretton Woods that provided the derivatives that made it possible to issue foreign bonds in currencies with thin markets.

Third, did the presence of ‘original sin’ in the Anglo countries matter back then as much as it does for today’s emergers. The answer we posit is no. The five countries had sounder fiscal and monetary institutions than today’s emergers. Their financial policies were more credible (with the exception of the interwar period) and they were less exposed to the balance sheet risks of maturity mismatches because their debt was mostly long-term, and of currency mismatches because the amounts involved were relatively small.

This different experience is reflected in the incidence and severity of financial crises in the five countries over the past century compared to the emergers today. Of the four Dominions surveyed, the only country to have a serious crisis on the scale of the recent Asian crises was Australia which had a banking crisis in 1893, (Bordo and Eichengreen 1999, Delargy and Goodhart 1999)17. The U.S. of course had several serious banking crises between 1880-1914 and one twin crisis (1893). It also had the banking

17 New Zealand had a milder crisis in 1893 (Butlin 1960). South Africa also had a severe banking crisis 1889-1890 (Schuman 1938)
panics of the 1930’s. The Dominions also had a number of currency crises in both the
interwar and Bretton Woods periods, but all of these reflected overvaluation and the
inherited flaws of the Gold Exchange Standard and the adjustable peg regimes. None of
these crises however were associated with the balance sheet effects associated with recent
emerging market crises that induced debt crises and defaults. This record suggests that
while ‘original sin’ may have been present in our five countries it didn’t really matter.

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### Table 1: US Dollar Debt of the Federal Government Held Abroad

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal Amount of Dollar Denominated Debt Held Abroad (millions of dollars)</th>
<th>As a percentage of total debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1789</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>June</td>
<td>32.1</td>
<td>46%</td>
</tr>
<tr>
<td>1803</td>
<td>43.0</td>
<td>53%</td>
</tr>
</tbody>
</table>

Source: Wilkins (1989; 32, 36); Note: All dollar debt would carry a gold-index clause.
### Table 2: Nominal US Federal Government Debt Outstanding in Foreign Currencies

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal Amount of Foreign Currency Denominated Debt (millions of dollars)</th>
<th>As a percentage of total debt outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1789</td>
<td>11.7</td>
<td>21.6</td>
</tr>
<tr>
<td>1796</td>
<td>11.9</td>
<td>--</td>
</tr>
<tr>
<td>1804</td>
<td>5.7</td>
<td>3</td>
</tr>
<tr>
<td>1810</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Wilkins (1989; 35)

### Table 3: Amounts and Percentages of US Federal Debt held Abroad, 1789-1884

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount of Debt held abroad (millions of dollars)</th>
<th>Percentage of total public debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1789</td>
<td>15.7</td>
<td>29%</td>
</tr>
<tr>
<td>1803</td>
<td>48.7</td>
<td>56%</td>
</tr>
<tr>
<td>1828</td>
<td>19.1</td>
<td>33%</td>
</tr>
<tr>
<td>1853</td>
<td>27.0</td>
<td>46%</td>
</tr>
<tr>
<td>1880</td>
<td>249</td>
<td>12%</td>
</tr>
<tr>
<td>1881</td>
<td>150</td>
<td>7.5%</td>
</tr>
<tr>
<td>1884</td>
<td>100</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

Table 4 Various Issues of the United States Federal Government

<table>
<thead>
<tr>
<th>Issue</th>
<th>Year</th>
<th>Currency</th>
<th>Interest payable in/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 1/2% Funded</td>
<td>1876</td>
<td>Dollar</td>
<td>Payable in the coin standard of the United States</td>
</tr>
<tr>
<td>4% Funded</td>
<td>1877</td>
<td>Dollar</td>
<td>Payable in the coin standard of the United States</td>
</tr>
<tr>
<td>Three percents</td>
<td>1882</td>
<td>Dollar</td>
<td>Payable in the coin standard of the United States</td>
</tr>
<tr>
<td>4 1/4% loan of 1891</td>
<td>1891</td>
<td>Dollar</td>
<td>Payable in the coin standard of the United States</td>
</tr>
<tr>
<td>4% Loan</td>
<td>1895</td>
<td>Dollar</td>
<td>Payable in coin</td>
</tr>
<tr>
<td>3% Loan</td>
<td>1898</td>
<td>Dollar</td>
<td>Payable in gold coin</td>
</tr>
<tr>
<td>2% Thirty Year Bonds</td>
<td>1900</td>
<td>Dollar</td>
<td>Payable in gold coin</td>
</tr>
</tbody>
</table>

Source: Stock Exchange Official Intelligence.

Table 5 New Issues Of Selected US Private Companies in London, 1887-1896
## Table 6: Maturity Structure for States in Australia and the Commonwealth, 1932 and 1939.

<table>
<thead>
<tr>
<th>Year</th>
<th>Debt Payable by States in:</th>
<th>Debt Payable by Commonwealth and States in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>London</td>
<td>New York</td>
</tr>
<tr>
<td>1932</td>
<td>19.02</td>
<td>22.23</td>
</tr>
<tr>
<td>1939</td>
<td>19.38</td>
<td>16.28</td>
</tr>
</tbody>
</table>

Notes: Debt is payable in the currency of market where it is payable. Amounts are converted to Australian pounds in the original source. 1934 includes £79m of debt payable in London on an annual basis. For column 6 the figures exclude Australian £11m of debt redeemable at an indefinite date or at the treasurer's discretion. Sources: Commonwealth of Australia Yearbooks, 1933 and 1939.

**Figure 1.** Percentage of All US State Borrowing Falling Due between 3.1 and 5 years, 1919-1938
Source: Ratchford (1941) p. 274

Figure 2. Public Debt Issued Overseas in Foreign Currency as a Percentage of Total Outstanding Public Debt

Figure 3: Australia and Great Britain, Exchange Rates 1870-2000.
Source: Global Financial Database.

Figure 4: Non resident purchases of New issues by Currency of Denomination

Source: Statistics Canada,

Figure 5: Australia and United States, Exchange Rates 1950-2000.
Source: Global Financial Database.

**Figure 6: New Zealand and United States Exchange Rates 1950-2000.**

Source: Global Financial Database.

**Figure 7: Percentage of Internal Debt Held by Foreigners, New Zealand, 1989-2001.**
Source: Reserve Bank of New Zealand.

Figure 8: Percentage of Total Government Debt Issued in Domestic Currency and Foreign Currency, South Africa, 1900-2001

Source: Official Year-Book of the Union of South Africa and of Basutoland, the Bechuanaland Protectorate, and Swaziland (various issues) and Reserve Bank of South Africa.

Figure 9: Average Maturity of Marketable National Government Debt in South Africa, 1996-2001
Source: South African Reserve Bank.

**Figure 10: Debt Denominated in Rand as a Percentage of All Debt Payable to Foreigners, 1994-2001**