Golden Straightjacket or Golden Opportunity? Sovereign Borrowing in the 19th and Early 20th Centuries

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What incentives did the classical gold standard provide for its maintenance? How did the benefits of the gold standard help it to be come a central piece of macroeconomic policy in the pre-World War I era? While the gold standard provided a variety of benefits to governments and societies, such as monetary restraint and the facilitation of trade flows, this article focuses on the impact of the gold standard on sovereign borrowing. I argue that the classical gold standard regime served as both a constraint and an opportunity for governments, in a way similar to present-day currency boards, or to Economic and Monetary Union. While the gold standard privileged external adjustment over nations' internal conditions, it also allowed governments to access international capital markets at lower rates of interest. The paper begins with a discussion of the impact of the gold regime on sovereign borrowing. Next, I provide specific evidence regarding the impact of the gold standard, using fiscal policy data, archival materials, and secondary sources. I then discuss briefly the implications of this evidence for government policy choices over exchange rate regimes and domestic economic institutions. The paper concludes with a discussion of investors' attitudes regarding the gold standard, as well as comparisons with the contemporary era.

What incentives did the classical gold standard provide for its maintenance? How did the benefits of the gold standard help it to be come a central piece of macroeconomic policy in the pre-World War I (WWI) era? While the gold standard provided a variety of benefits to governments and societies, such as monetary restraint and the facilitation of trade flows,[1] this article focuses on the impact of the gold standard on sovereign borrowing. I argue that the classical gold standard regime served as both a constraint and an opportunity for governments, in a way similar to present-day currency boards, dollarization or Economic and Monetary Union (EMU). Because it required automatic adjustment in response to balance of payments imbalances, as well as the free flow of capital and goods, the gold standard privileged external commitments over nations' internal conditions. Governments' monetary policy autonomy was surrendered in service to the gold standard regime.[2] At the same time, however, commitment to the gold standard allowed governments to access international capital markets more easily; gold convertibility appeared to signal sound government finances, as well as future debt servicing capacity.[3]

Because financial market participants viewed credible commitments to the gold standard as insulating them from exchange rate and inflation risk,[4] sovereign borrowers in peripheral gold standard nations paid lower rates of interest, all other things equal, than sovereign borrowers in

[1] Eichengreen and James 2002, p. 1. Also see Broz 2002, Helleiner 2003, Reti 1998.

[2] Eichengreen 1992, Obstfeld and Taylor 1998, von Mises 1912/1953. Bordo and Schwartz 1994 point out that the system allowed for opt-outs in cases of well-understood, exogenously-generated shocks.

[3] Bordo and Schwartz 1994.

[4] Eichengreen 1996, Turner 1991.

non-gold standard nations.[5] Therefore, even though financial market participants did not always impose strong constraints on governments in the form of loan conditions, their preference for the gold standard indirectly constrained national governments. Moreover, the capital market benefits of the gold standard should serve to shape governments' preferences over its maintenance. For instance, as governments came to rely on foreign capital flows, or as they oriented their borrowing toward foreign sources, they became less inclined to abandon their hard exchange rate peg.

In Section I, I discuss the general impact of the gold regime on sovereign borrowing. Section II provides specific evidence regarding the impact of the gold standard, drawn from case studies, fiscal policy data and archival materials. In Section III, I explore the implications of this evidence for governments' decisions to adopt the gold standard, and for national economic institutions. The article concludes with a discussion of investors' attitudes regarding the gold standard, as well as comparisons with the contemporary era.

I. The Gold Standard and International Capital Markets

How did the gold standard affect sovereign lending, both in terms of the overall structure of the industry, and in terms of the treatment of particular nations by sovereign lenders? To begin, the gold standard regime is linked inextricably with financial internationalization in the late nineteenth century. The maintenance of the gold standard relied on free flows of capital across national borders; this, in turn, facilitated the growth of international capital markets. There is some debate regarding which came first, financial internationalization or the gold standard. While the conventional wisdom is that the gold standard facilitated the growth of capital

[5] Bordo and Rockoff 1996, Bordo and Schwartz 1994, Ferguson 1999, Obstfeld 1998, O'Rourke and Williamson 1999, Salter 1951.

markets, Bordo and Flandreau suggest the reverse, particularly in the European core. Financial integration led governments of financially mature nations to adopt the gold standard, and the gold standard then "provided a stable environment that contributed to the development of deep and liquid money markets."[6] In the periphery, the relationship between financial integration and the gold standard was different: once international capital markets grew, peripheral nations came to realize the market-based benefits of adopting gold.

As financial markets became more integrated, they offered a variety of benefits, particularly to the capital-poor economies in the periphery. Capital from Britain, France and Germany could compensate for current account deficits, facilitate government revenue smoothing, and fund infrastructure projects. The latter purpose was particularly important for economic development; 39 percent of loans to Latin America in the 1850-1875 period funded public works, while 44 percent funded debt refinancing. For some debtor nations, including Canada, Australia and Argentina, borrowing on international capital markets funded up to half of domestic capital investment.[7]

Merchant banks and private investors were willing to lend to many peripheral nations, because investment allowed for diversification and high returns, as well as for strong growth opportunities.[8] But economic and political information about these nations often was difficult to obtain, and not necessarily reliable. While reputations regarding past behavior provided some guidance,[9] investors also required information about borrowers' future prospects. To address

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[6] Bordo and Flandreau 2001, p. 5.

[7] Marichal 1989. Also see Bloomfield 1968, O'Rourke and Williamson 1999.

[8] Clemens and Williamson 2000 argue that when prospects for growth (measured by education, natural resources, and demography) in the periphery were high, investment followed.

[9] Tomz 2001.

this problem, investors relied upon merchant banks (as intermediaries), and upon the exchange rate regime as an information shortcut. Adherence to the gold standard suggested reduced currency risk, as well as government tendencies toward fiscal and monetary discipline. Provided that commitments to the gold standard were credible, then, adherents to the gold standard should have easier access to international capital markets.

Therefore, peripheral nations had an external, market-based incentive to adopt and to retain the gold standard, despite its associated constraints. Nations in the periphery found that they either had to limit their foreign borrowing (which limited their public investment opportunities), or they had to employ the "super-hard fixed exchange rate" of the gold standard.[10] In terms of the international economy, the gold standard may have offered the greatest benefits to those with the weakest credit: it wasn't the Netherlands or Sweden that needed the gold standard to convince financial markets of their credibility. It was Argentina, Mexico and Greece.

Moreover, for such countries, the gold standard regime was largely exogenous. Peripheral governments were not crucial to the success of the regime, but their livelihood depended on their external sectors.[11] The ability of peripheral governments to succeed in international capital markets was somewhat contingent on their currency commitments.[12] Although other factors drove the ultimate decision regarding whether or not to remain on gold, market credibility was a powerful force.[13] Over time, however, the importance of external financial markets may have paled – as Polanyi suggested it eventually would – to the demands of domestic constituents.

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[10] Bordo and Flandreau 2001, p. 65.

[11] Martín Aceña and Reis 2000.

[12] Eichengreen 1996; Taylor, forthcoming.

[13] Bordo and Rockoff 1996, Broz 2002.

In this way, the gold standard commitment is analogous to the conditionality inherent in International Monetary Fund (IMF) agreements: in return for a seal of approval from international capital markets, governments agree to implement a certain set of policies.An IMF agreement is often seen as a constraint on government autonomy, compelling governments to do things they would not otherwise do; but, in reality, governments often have an independent interest in reform. The problem for these governments is heterogeneity of interests: while some groups in society favor the reforms implied in IMF stand-bys, other groups do not. IMF conditionality succeeds only when the former group triumphs politically.[14] So it is with the gold standard: nations benefited from adherence to it, through improved capital market access; these same nations also bore political costs as a result of their exchange rate commitments.

The gold standard offered other benefits to governments,[15] which also contributed to its emergence and persistence. For some scholars, the gold standard's primary importance lies in its function as a domestic commitment device, binding policymakers to certain macroeconomic behaviors.[16] Bordo and Kydland admit, however, that the international aspect of the standard was an important motivation to adopt gold, particularly for the "countries that were relatively less developed and therefore depended on access to international debt markets."[17] Moreover, the international benefits of the gold standard served to make domestic commitments to it more credible: defection had not only domestic, but also international, costs.

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[14] This account draws on Drazen 2001. Also see Vreeland 2003.

[15] The gold standard also exposed peripheral nations – more so than developed nations -- to global financial disruptions. See Fritsch and Franco 2000, Reis 2000.

[16] Bordo and Kydland 1996. Also see Gallarotti 1994.

[17] Bordo and Kydland 1996, p. 64.

A central question, then, is the extent to which market participants did, in fact, offer better borrowing terms to gold standard countries. Additionally, given the hypothesized role of the gold standard in providing investors with information regarding currency risk and macroeconomic policies in peripheral countries, we should also observe other behaviors in pre-WWI capital markets. These include the following:

1. *Nations that adhere to the gold standard will have greater access to international capital markets, at lower rates of interest. All else equal, gold standard adherence will have lower interest rates, longer debt maturities, more public sector access to credit, and larger current account deficits. This effect should appear cross-sectionally, as well over time (as nations join the gold standard regime).*

2. *Given the utility of the gold standard commitment as an information shortcut, investors will be more willing to lend to new, gold standard borrowers than to new, non-gold standard borrowers. Bond issues by gold standard adherents also may be larger, all else equal.*

3. *Sovereign lenders and private investors will use adherence to the gold standard as an information shortcut. Adherence should be taken to signal sound government finances, as well as future debt servicing capacity. Therefore, we expect less discussion of investment risk in lending episodes involving gold standard adherents.*

4. *Where countries adhere to the gold standard, sovereign lenders also should make fewer demands regarding specific policies to guarantee repayment. For instance, investors will rarely insistence on public debt administrations or domestic legislation regarding customs revenues.*

II. The Impact of the Gold Standard: Empirical Evidence

In this section, I evaluate the above expectations. General studies of the pre-WWI period suggest that financial openness was quite high, and that accessing global capital markets allowed nations to achieve balances in their payments. Over time – and as the gold standard became more widespread – average current account deficits grew. These were offset by capital account surpluses. Average current account positions, which indicate the amount of borrowing (deficits)

or lending (surpluses) from abroad, reached a higher level in 1914 than at any time since.[18] Additionally, as more nations joined the gold standard in the early twentieth century, a gradual narrowing of interest rate spreads on government bonds occurred: the rates paid by peripheral nations grew closer to those paid by core borrowers.[19] Likewise, Bordo and Rockoff's evidence suggests that the gold standard functioned as a "seal of approval" in international credit markets.[20] Sovereign borrowers that adhered to the gold standard paid lower rates of interest, all else equal, than did non-gold standard borrowers. Peripheral nations with a consistent record of adherence to the standard paid, on average, approximately 100 basis points (one percent) more than the rate on British consols. Governments with less consistent commitments to the gold standard paid higher rates of interest.[21] Investors' use of the gold standard then served to create incentives against defection from gold.

Indeed, governments appeared aware of the link between gold and favorable access to credit. Brazil, for instance, used its 1960 entry onto gold as a means of reassuring domestic business and international capital that economic stability had been restored after a period of price appreciation.[22] Interestingly, however, on the basis of savings-investment statistics, strict gold

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[18] Obstfeld 1998. Also see Held et al 1999.

[19] Obstfeld and Taylor 2002.

[20] Bordo and Rockoff 1996. The nine nations analyzed are Australia, Brazil, Canada, Chile, Italy, Portugal, Spain and the US.

[21] Obstfeld and Taylor 2002 report similar findings, with an approximately 80 basis point differential between gold standard adherents and other peripheral nations. Also see Garcia-Iglesias 1999; his study is based on six European countries (Denmark, Italy, Norway, Portugal, Spain, and Sweden) during the 1880-1914 period and, specifically, on the 1890 crisis.

[22] Fritsch and Franco 2000. On Latin American governments and the gold standard, see Fishlow 1985.

standard adherents do not seem to have attained a markedly greater level of financial openness than non-adherents.[23] The impact of the gold standard on capital flows, then, may be more in terms of the price of access (interest rates, time to maturity of debt), than in the quantity of inflows.

The flip side of greater market access for gold standard adherents was reduced access for nations that suspend their participation in the fixed currency regime.[24] The reasons for suspensions also mattered to financial market participants: where departures from the gold standard were due to well-understood, externally-rooted crises, markets reacted less severely.[25] Market participants might punish governments for reversing their currency commitments, but punishments were less severe when countries were perceived as "fair-weather" (defaulting only in bad times) rather than "lemon" (always defaulting) adherents.[26]

This suggests, as well, that there may not be a one-to-one relationship between gold standard adherence and improved capital market access. The external pressures on governments' commitments to gold, as well as the credibility of the commitments, mediate the impact of currency commitment on borrowing costs. Joining the gold standard regime could be a means to improve market access in the medium to long-term, but in the short term, credit could remain expensive.[27] We can expect that the decrease in sovereign risk premia gained by adopting the gold standard was, for a time, offset by an increase capturing the risk of withdrawal from the gold standard. Put differently, while investors' worries about currency fluctuations were reduced,

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[23] Bordo and Flandreau 2001, p. 12.

[24] See O'Rourke and Williamson 1999.

[25] Bordo and Schwartz 1994.

[26] Tomz 2001.

[27] Bordo and Flandreau 2000.

their concerns about breaking of the hard currency peg grew. On occasion, these latter concerns could generate speculative pressures against weaker currencies.[28] For instance, in an exception to the "gold buys credibility" pattern, Italy did not seem to gain lower interest rates via the gold standard. Rates on Italian government bonds crept upward while Italy was on gold (between 1884 and 1894), but fell toward British consol rates later in the period.[29] Investors likely noted the inconsistency between a stated commitment to gold and the laxity of fiscal policy. I now turn to more specific evidence regarding the treatment of peripheral nations during the gold standard era.

Existing Country Studies. Country studies of peripheral nations underline the importance of international investment to economic development, and the contribution of the gold standard to attracting such investment. Argentina's long economic boom, for instance, was financed largely via foreign investment, mostly from Britain. This capital funded a variety of infrastructure projects, as well as direct investments in a variety of sectors. On the eve of the First World War, nearly half of Argentina's capital stock was foreign-owned.[30] Argentina did access international capital markets prior to returning to gold, in large part because of its economic prospects; but its access was enhanced, after 1900, by its return to gold.

Similarly, if we look at the extent to which national investment is financed by foreign rather than by domestic sources, we should find that the proportion of foreign investment increases with adherence to the gold standard. Although cross-national data on net total

[28] Eichengreen 1996 argues, however, that investors in the pre-WWI era usually acted as a stabilizing, rather than as a destabilizing, force. Bloomfield 1963 makes a similar argument. In the contemporary era, destabilizing speculative pressures are the norm.

[29] Garcia-Iglesias 1996.

[30] Taylor (forthcoming).

investment and net foreign investment are not widely available, Gregory's study of Russian foreign investment confirms this expectation.[31] In the 1880s, very little foreign investment entered Russia; investment was funded almost entirely by domestic savings. In 1897, Russia joined the gold standard; and during1897 to 1901, approximately twenty percent of investment in Russia was financed via foreign sources. By 1913, foreign investment financed approximately 40 percent of all industrial investment in Russia. Gregory notes the contrast between the pre-gold and the gold era: prior to 1897, approximately 6 percent of net investment was financed by foreign capital. After currency convertibility, the average doubled to 12 percent of net investment.

The role of gold also is emphasized in studies of peripheral nations that broke their links to gold. For instance, by never rejoining the pre-war gold standard regime after its 1883 suspension, Spain limited its access to international capital markets. It remained "to a large extent isolated from the world economy."[32] Spain's currency fluctuated markedly during the 1880s and 1890s and, especially when fiscal and monetary discipline was weak, interest rates remained high. In 1885, yields on long-term Spanish bonds were 473 basis points over British consols, and 394 basis points over French government bonds. By 1900, the Spanish-British spread was smaller, but still significant at 158 basis points. Put simply, "foreign capital ceased coming in the last twenty years of the century because the country went off the gold standard."[33] Likewise, after abandoning gold convertibility in 1891, Portugal had great difficulty accessing

[31] Gregory 1982, pp. 129-130.

[32] Until about 1890, however, Spain's currency did not lose value, most likely because of Spain's positive trade balance and its fiscal discipline (Martín Aceña 1994, 2000). Also see O'Rourke and Williamson 1999. They note, however, that a lack of commitment to the gold standard does not fully explain variations in capital flows.

[33] Martín Aceña 1994, p. 159.

foreign capital markets. A combination of exchange instability and fiscal laxity was to blame.[34] Furthermore, Rodriguez estimates that, in the 1872-1900 period, two thirds of the spread (approximately 300 basis points) between British and Chilean government bonds can be explained by currency risk.[35] Investors worried much more about the lack of commitment to gold than about default.

A final example of the link between capital market access and gold standard commitment is Japan, which (like Russia) joined the standard in 1897. More than any other policy change during the Mejii era (such as the creation of a central bank and the development of a modern constitution), the adoption of gold affected Japan's access to international capital markets. For investors with low levels of information, commitment to the gold standard was the most appealing information shortcut. Investors did not need to know the details of how monetary or fiscal policy was made, provided they knew of a credible commitment to gold. Using data on sovereign debt traded in London during the 1870-1914 period, Sussman and Yafeh[36] find that Japan's commitment to gold decreased investors' perceived risk, allowing Japan to borrow more cheaply. With the lowering of rates, Japan increased its use of international capital to finance domestic investment.

Moreover, even as the total amount of debt issued abroad by Japan increased, interest rates remained low. The reduction in investment risk that flowed from the gold standard persisted, even in the face of increased default risk. Japan also was able to borrow at longer maturities: Japan's first government bond (1870) had a maturity of 10 years. Bonds issued after

[34] Reis 2000.

[35] Rodriguez 2000.

[36] Sussman and Yafeh 2000.

1897, however, had maturities as long as 60 years. Investors not only assumed, as a result of the gold commitment, that inflation and exchange rate risk were low, but also that these conditions would persist over the longer term. This sort of debt management allowed Japan to insulate itself from short-term capital market volatility: with longer-term debt, it was required to refinance less often.[37] The Japanese government likely anticipated these positive consequences; in 1897, the *Economist* posited that Japan chose the gold standard because it wanted to improve its access to credit markets.[38]

Furthermore, there is an interesting contrast between Japan and Russia. Adoption of the gold standard increased foreign capital flows to each country. But the cost of capital decreased only in Japan. Russia benefited via greater flows; Japan benefited via greater flows *at lower interest rates*.[39] This difference may reflect the differences in the credibility of the two nations' gold standard commitments. Indeed, when Japan sought money on international markets in the run-up to and aftermath of the Russo-Japanese war, merchant bankers did not even question (or mention) the nation's commitment to gold. Rather, they viewed Japan as an established and creditworthy borrower, and were willing to extent large sums at favorable rates of interest.[40] On the other hand, investors sometimes *did* question Russia's commitment to gold. In 1905, many foreign investors were worried that Russia would carry out a large devaluation, or that it would return to a floating exchange rate. In response, a good deal of these investors fled to western

[37] On the tradeoffs associated with debt management policy, see AUTHOR.

[38] This paragraph draws on Sussman and Yafeh 2000.

[39] Sussman and Yafeh 2000.

[40] AUTHOR.

Europe. With the 1906 international loan to Russia, the gold commitment gained credibility, and many investors returned.[41]

Data on government bond yields reinforce the linkage between gold commitments and capital market access. Among peripheral nations,[42] interest rate differentials (defined as the difference between UK consol yields and benchmark government bond yields) are markedly higher for non-gold standard adherents. Figure 1 displays the average annual interest rate differential, from 1870-1913, for peripheral nations. Throughout the period, there is a distinction between adherents and non-adherents. The contrast between gold standard adherents and non-adherents is most pronounced before 1885, but even at the end of the pre-WWI period, when most nations were on gold,[43] the gold standard is associated with cheaper access to capital. In 1913, non-adherents' yields average 1.93 percent over UK yields, whereas gold adherents average a 1.02 percent premium. The impact of the gold standard is evident even without controlling for policy outcomes that usually affect investment risk, such as inflation, government debt, and government deficits.

Insert Figure 1 here.

The Gold Standard and Fiscal Positions. Another implication of Section I is that the gold standard should facilitate inflows of capital, both for private investments and for public purposes. In order to assess this expectation, I employ data on government revenues and

[41] Bloomfield 1963.

[42] This excludes Austria, Belgium, Denmark, France, Germany, the Netherlands, Norway, Spain, Sweden, the UK and the US. Data are drawn from Global Financial Data (www.globalfindata.com), and cover a total of 33 nations.

[43] In 1870, six of the 24 nations included in Figure 1 are on gold. By 1885, 18 nations are on gold, while 13 are not. In 1913, 22 of 29 nations (for which interest rate data are available) are on gold.

expenditures,[44] presented in Mitchell (various years). These data range from the 1850s until the First World War, for up to 32 countries.[45] For a subset of countries, Mitchell also provides data on national revenues and expenditures, so that it is possible to calculate the government budget balance (surplus or deficit) as a percentage of GDP. For the majority of cases, however, only data on overall budget totals (not scaled to income) are available.

I divide the sample into gold standard and non-gold standard countries, [46] and calculate the average fiscal deficit for each group. For the entire 1850 to 1914 period, there is a pronounced difference between countries, with non-adherents having a higher average fiscal balance. For gold standard countries, the average budget balance/GDP amount is 0.15 percent (n=216), a small surplus; for non-gold standard countries, the average budget balance/GDP is 8.24 percent (n=73), a much higher level of surplus. When the sample period is limited to 1880 to 1914, the difference is more pronounced: gold standard countries exhibit an average fiscal balance/GDP of 0.17 percent (n=199), and non-gold standard countries average a striking 15.86 percent surplus (n=24). Rather than prohibiting the running of looser fiscal policies, then, the gold standard appears to facilitate it. Governments that committed to gold, thereby reducing

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[44] Another means of assessing these expectations would be to look at savings-investment correlations. Also see Taylor (forthcoming).

[45] Countries include Argentina, Australia, Austria-Hungary, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, Cuba, Denmark, Dominican Republic, Egypt, Ecuador, Finland, France, Germany, Greece, Italy, Japan, Mexico, Netherlands, Norway, Panama, Peru, Portugal, Russia, Sweden, Switzerland, the UK, the US, and Uruguay.

[46] I rely on the list of gold standard countries and years presented in Lawrence H. Officer, "Gold Standard," at www.eh.net/encyclopedia/officer.gold.standard.php. France, Germany and the UK are excluded from my calculations. I also remove Brazil from these calculations, because its fiscal balance numbers are so large throughout the period.

investors' currency risk, were able to borrow to sustain fiscal deficits, or, at least, much smaller fiscal surpluses.

I also use the more broadly available budget balance measure to assess the occurrence of budget deficits over time in the two groups of countries. Although these data do not account for the size of the deficit or surplus, they do indicate the frequency of deficits. For the 1857 to 1914 period, Mitchell's data contain 313 instances of government deficits (negative balances), and 1359 surpluses. Sorted by year, deficits are most common in the 1890s and 1900s.[47] Deficits also are more common among gold standard countries. Figure 2 displays the difference, by year, in the percentage of countries that are on gold and run budget deficits, and the percentage of countries that are not on gold and run deficits.[48] After 1875, deficits are always more common among gold standard nations than among others. In some years, such as 1887, this difference is negligible. In many other years, however, the difference is substantial. In 1890, 50 percent of gold standard nations run deficits, but only 20 percent of non-gold standard nations do. Similarly, in 1901, 48 percent of gold standard nations run deficits, compared with 25 percent of non-gold standard nations. By the eve of WWI, the difference narrows, as only a few nations in the sample remain off the gold standard.

Insert Figure 2 here.

Another aggregate measure of international capital flows is British lending to government and private borrowers overseas. Using Stone's (1999) data, I calculate the percentage of capital exports to a given country, in a given year, as a percentage of total British capital exports. I then sum these percentages for gold standard adherents and non-adherents. These totals vary

[47] Deficits occur in 24 percent of cases between 1890 and 1899, and in 33 percent of cases between 1900 and 1913.

[48] By year, the total number of nations (out of 29) with deficits ranges from zero to thirteen.

markedly over time: in 1875, 58.6 percent of British capital exports flowed to non-gold standard nations. By 1913, only 5.3 percent of British outflows were destined for gold standard non-adherents. Figure 3 displays the trend toward greater investment in destinations with gold standard commitments. Part of this trend, of course, involves the rising popularity of the gold standard on the eve of the First World War; by 1910, only four of 25 nations in this sample were not on gold. But the effects of the gold standard manifest themselves much earlier. Even before 1880, gold standard adherents attracted the majority of British capital exports, while they account for only ten of 25 nations in the sample. This pattern persists throughout the next thirty years.

Insert Figure 3 here.

These data suggest that the gold standard provided concrete external benefits to governments. Although adhering to gold standard commitments constrained governments, it also allowed them to finance more easily their expenditures and deficits.[49] For some peripheral nations, the international capital market was a crucial source of fiscal policy and balance of payments assistance, and the gold standard facilitated this assistance.[50] These findings are consistent with a more moderate view of the constraints imposed by the international gold standard,[51] as well as with the choice of some contemporary developing nations to commit strongly pegged (e.g. currency board) exchange rate regimes, despite the obligations they impose.

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[49] Fiscal deficits *could* damage gold standard commitments, particularly if governments responded to them by printing money.

[50] Also see Martín Aceña and Reis 2000.

[51] E.g. Held et al 1999. For a more stringent view of the constraints, see Polanyi 1944.

Archival Evidence. Discussions of lending by investment bankers should reflect an attention to currency commitments, as well as to default and exchange rate risk more broadly. An analysis of sovereign debt issues indicates that British and American banking houses demanded evidence of the willingness and ability to pay, as well as information about current government revenues and expenditures.[52] Governments that issued low-risk assets, or that had strong economic prospects, gained better loan terms and were not required to provide security for their loans or to alter their domestic policies and institutions. These governments could solicit bids for sovereign issues from a range of banks , improving their market access.[53] Higher-risk borrowers with poor track records, on the other hand, were likely to receive less favorable terms. Higher-risk new borrowers might fare slightly better, as merchant banks were anxious to establish an exclusive relationships.[54] As in the contemporary era, though, the borrowers with the most room for maneuver were those with the lowest risks: those who could prove that they did not need financing had the easiest time getting it.[55]

In this section, I draw on archival materials from five merchant banks: N. M. Rothschild, Baring Brothers, J.P. Morgan, Morgan Grenfell, and Hambro and Sons. Each of the five banks was a major actor in merchant banking and government finance prior to the First World War.[56] The archival materials from Baring Brothers are the most complete; the collection contains extensive records of correspondence, organized according to proposed and actual bond issues.

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[52] Also see AUTHOR.

[53] This parallels lending to developing nations in the l970s: as international banks sought to increase their market shares, interest rate spreads narrowed dramatically. Cohen 1986, Devlin 1989.

[54] On the difference in market treatment between unproven borrowers and better-known borrowers, see Tomz 2001.

[55] Mauro et al 2000.

[56] For descriptions of the banks' activities, see Carosso 1987, Ferguson 1999, Orbell 1985,

The archival materials for the other banks are sparser and less systematic. The analysis is weighted toward issues made in London, the major capital market of the pre-WWI era. The total market value of government bonds traded in London in 1875 was £3 billion (approximately 2.73 percent of British GDP), and £4 billion (2.2 percent of British GDP) in 1905.[57] Activity in the London market can be taken as broadly representative of (although possibly less politicized than) activity in other markets. In fact, many sovereign debt issues negotiated in London were carried out simultaneously in Amsterdam, New York, Paris and other markets.

Anecdotally, we observe an intense concern with default risk, and, therefore, with credible commitments to macroeconomic and exchange rate stability, in many cases of lending during the 1880-1914 period. Particularly after periods of defaults, as in the 1880s, investors were not willing to lend freely.[58] Rather, they were responsive only to borrowing governments with "fresh vitality or important resources awaiting the steam shovel, the locomotive, the plow or the mining shaft."[59] Investors' desire to fund productive investments, with a greater likelihood of prompt repayment, is reflected in the distribution of British capital in 1913. Approximately twenty-five percent of this capital funded loans to national and state governments, 41 percent was invested in government-issued railway securities, and the remaining 24 percent funded "other productive investments."[60] Moreover, there was a positive relationship between interest rate premia and government debt/GDP levels. [61] While this relationship is non-linear –

[57] Calculated from data in Mauro et al 2000, p. 7. Also see Platt 1986.

[58] Tomz 2001.

[59] Russia, for instance, benefited from its economic prospects. See Feis 1930. Similarly, Kingstone 1999 argues that contemporary developing nations with large markets are less constrained by financial market pressures.

[60] Data are calculated from Feis 1930, p. 27.

[61] Flandreau et al 1998. Their analysis covers 14 European nations, from 1880 to 1913.

suggesting that market discipline only occurred as debt reached high levels – it indicates concern with default risk.

Another reflection of investors' concerns with default risk was their insistence on the creation of public debt administrations, the purpose of which was to provide security for investors in the event of default. For example, in Turkey, the Ottoman Public Debt Administration was created in the early 1880s to assure debt payments in the face of continued large budget deficits.[62] The Debt Administration controlled the government salt and tobacco monopolies; stamp, spirits and fishing taxes; the tax on raw silk production; any excess customs from rate increases; and the annual tribute due from Bulgaria. Creditors' consent was required for any changes in tax laws that would reduce revenues; as the government contracted new debts, additional revenues were put under the Debt Administration's control. Likewise, Balkan nations – also characterized by high levels of default risk – maintained access to capital markets by promising control over revenues to their creditors.[63] In Greece, this included supplementary measures designed to keep public finances healthy. And, in 1909, when considering a loan to Honduras – which had previously defaulted – J. P. Morgan insisted that customs revenues secure the loan *and* that the U.S. government collect these revenues.[64] Although recent scholarship questions the extent to which investors accounted for risk in the pre-war period,[65] there is compelling evidence that default risk was often quite salient.

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[62] See Lindert and Morton 1990, Suter 1992 on Turkey's problems of fiscal mismanagement.

[63] Feis 1930.

[64] Carosso 1987. Ultimately, the loan was not issued, because neither government ratified the formal loan treaty.

[65] Lindert and Morton 1990 find that, in the 1850 to 1973 period, investors charged risk premia to sovereign borrowers; but these ex ante premia did not capture sufficiently ex post risk. For a contrasting view, see Tomz 2001.

There also evidence that investment bankers were concerned with currency risk and commitments to the gold standard. Developing nation loans rarely were issued in home currencies; rather, they were denominated in gold, sterling, dollars, or some other international currency. As a result, Baring's agents routinely asked governments for information not only about their levels of outstanding debt, but for the currency denomination of that debt. When dealing with Cuba in 1903 and 1904, these agents took pains to underline to the government the fact that any loan would be denominated in US dollars, and that this obligation would stand, regardless of Cuba's currency arrangement.

Borrowing in foreign currencies allowed peripheral nations to access international capital markets more cheaply, but it also made more salient the threat of default; the same is true for contemporary developing nations.[66] Foreign currency-denominated borrowing also gave governments additional reasons to remain on gold, and gave investors reason to question governments' commitments to gold. When a national currency bought a fixed amount of gold (and, therefore, dollars and pounds), debt repayment was less uncertain and less costly for governments. But when a nation devalued its currency, or when it had a floating exchange rate, it had more difficulty meeting its foreign currency-denominated obligations. Such nations had to rely on re-financing loans, or on higher export earnings to generate foreign exchange. Even where loans were denominated in gold or sterling, then, the commitment to gold played a central role in investors' calculus.

To take an example, in its 1903-1904 loan negotiations with Cuba – which exemplifies a low-income developing nation, attempting to access international capital markets for the first time – Barings' repeatedly informed the Cuban government that a loan would require a specific

[66] See Author, Missale 1999.

guarantee of customs revenues. Barings also reminded the Cuban government that the bond and interest were to be repayable in gold: "in the event of any change taking place in the nature of the legal currency in Cuba, it is important that it should be made clear that this will not affect the service of the Loan."[67]

Additionally, the purpose of a few of the loans was currency reform, with an eye toward joining the gold standard regime. In 1904, for instance, Baring and J. P. Morgan underwrote a loan issue to Japan, totaling £20 million. This loan was to help guarantee the convertibility of Japan's currency – to buttress its foreign exchange reserves and to cement its 1897 commitment to gold. Contemporary commentators noted that the terms of the loan were quite onerous, but that the loan was worth these constraints: "this loan will give peace of mind to businessmen dealing with Japan, because the currency will remain stable."[68]

Using a set of sovereign lending episodes for which complete or partially complete files exist, I compiled a database of lending episodes. This database covers 22 sovereign borrowers, during the 1880-1914 period. This database includes 70 cases; in eleven cases, loans ultimately were not issued, because negotiations broke down at some stage in the process. All of the case materials contain – to different degrees – discussions of the proposed issue, correspondence between merchant banks and governments, correspondence among participating banks, and information regarding the final terms of the loans. I coded several dimensions of the loans, including their terms (amount duration, interest rate spread, currency denomination, and issue price); their discussion of willingness and ability to pay (including the mention of government

[67] Baring Archive 200090, November 6, 1903 letter from Baring to Vanderlip.

[68] Japan Weekly Mail, May 14, 1904, p. 69.

finances, the pledging of security, and other promises made by borrowing governments); the salience of inter-bank competition for loans; and the existence of pressures from home country governments.

Table 1 contains summary statistics, in terms of the interest rates, interest rate spreads (defined as the difference from the London bank rate), amount and duration. Of these loans, forty-seven are denominated in British sterling, eleven are denominated in gold, and eight are denominated in U.S. dollars or other currencies. Of the 70 loans, 45 involve countries that were gold standard adherents at the time; 25 involve non-adherents. The purposes of loans vary, with the most popular the refinancing of existing debt (29 cases) and railways and other infrastructure (20 cases). Other purposes included short-term advances (5), currency reform (5), military operations (5), and social policy (2).[69] The majority of these loans are, in Fishlow's terminology, for "revenue" rather than "developmental" purposes.[70]

Insert Table 1 here.

The overall picture that emerges is one in which bankers often attempt to guarantee repayment of the principal and interest. In over half (37) of the cases, government debt and deficits are discussed during the negotiation process. More than half of the loan prospectuses[71] on file contain information regarding past and current government revenues, as evidence of governments' abilities to service their debt. In approximately half (33 of 67) of the lending episodes, the borrowing government pledged some sort of security for the loan; the most popular form of security was customs duties (20 cases), followed by other taxes and revenues (10 cases),

[69] Forty-four of the case files included a discussion of the loan's purpose. Some loans had two purposes.

[70] Fishlow 1985.

[71] Loan prospectuses exist for 23 lending episodes.

then general revenues (5 cases) and revenues from state monopolies (5 cases).[72] In one-third of the "security" cases, the borrowing governments also promised to make monthly or semi-annual deposits of funds, to cover interest payments, to either the lead bank or its designated agent. In six of the "non-security" cases, governments pledged to make annual payments into a sinking fund, used eventually repay the principal.[73] In three other "non-security" cases, governments promised to refrain from future borrowing for a specified period of time.[74]

To what extent are the loan terms, the pledging of security, and the concerns with ability and willingness to pay related to borrowers' credit quality, home government pressures to lend, competition among investment banks, and the exchange rate regime? To begin, there is a substantial negative association between interest rate differentials and the pledging of security for a loan. For loans with pledges of security, the average interest rate differential is 1.75 percent (n=32); for loans without such promises, the average differential is 0.64 percent (n=27).[75] Where credit quality was low (as indicated by high differentials), lenders were more likely to tie loans to particular government revenues.

Additionally, in the ten cases in which home governments pressured banks to extend loans, average interest rate differentials are lower (0.95 percent, versus 1.28 percent for the remaining cases), the average duration of loans is longer (32 years, versus 24.8 years), and the average loan amount is larger (£24.7 million, versus £10.6 million). Although none of these

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[72] Some loans included two forms of security.

[73] Sinking funds also were used with four of the loans with pledges of security.

[74] These promises were made in eight cases total.

[75] This difference is significant at a 95 percent confidence level. For lending episodes with yield data, the average yield for loans without security is 4.35 percent (11 cases); for loans without security, the average yield is 5.86 percent (22 cases).

differences is significant at a 95 percent level of confidence – owing in large part to the small number of "government pressure" cases – they do suggest that, where home governments have political reasons to encourage borrowing, borrowers face looser terms.

In the six cases containing mention of a high (rather than a moderate or low) level of competition among investment banks, the average interest rate spread is 0.83 percent, compared with the overall sample mean of 1.23 percent. On the other hand, where investment banks display an overt concern with their reputation vis-à-vis individual investors, borrowers pay higher interest rate spreads (1.53 percent, in 10 cases, versus 1.17 percent, in 51 cases). Concern with reputation appears to be associated with a greater desire to compensate for investment risks.[76]

Most importantly, the currency denomination of loans and the nation's exchange rate regime are associated with their terms, suggesting that denomination in gold transferred risk from investors to borrowing governments, much as foreign currency denomination does today. In terms of currency denomination, the mean interest rate differential for gold-denominated loans (n=41) is 1.17 percent, compared with 1.34 percent for loans denominated in pounds, dollars, and other currencies (n=20).[77] Gold-denominated loans also were larger, averaging £13.56 million (compared with £10.74 million).[78] Furthermore, the pledging of security for the loan was

[76] These differences are not significant at a 95 percent confidence level.

[77] There is not, however, a significant difference in differentials between gold standard and non-gold standard nations. This reflects the fact that other factors, such as fiscal policy and government debt, also influence interest rate differentials.

[78] Loans, however, average £16.9 million for non-gold standard sovereign borrowers, and £10.5 million for gold standard sovereign borrowers. Perhaps this difference is due to the fiscal discipline that sometimes resulted from a gold standard commitment.

more common for non-gold loans (62 percent of cases) than for gold-denominated loans (44 percent of cases).

Similarly, in terms of exchange rate regime, 58 percent of loans involving non-gold standard countries involved pledges of security, compared with 44 percent of loans involving gold standard countries. Twenty-eight percent of loan negotiations involving non-gold standard loans included provisions for deposits of revenues (to be used as security in case of default), compared with nine percent of negotiations involving gold standard countries. Moreover, some archival materials note the level of competition for loan issuance among investment banks; this competition tends to be more intense when borrowers are gold standard adherents, again reflecting their appeal to investors. And non-gold nations were more likely to be asked to promise to refrain from future borrowing for a certain period of time than were gold standard nations. To a noticeable extent, then, gold standard commitments were taken as a signal of ability and willingness to pay. Governments that were constrained by their gold standard commitment were less likely to face the additional constraints of pledging security for a loan (e.g. customs revenues, or deposits into a sinking fund) or promising not to borrow in the future.

Loan durations, however, were substantially shorter for gold-denominated loans (19 years versus 41 years), and for gold standard borrowers (22 years versus 33 years), suggesting perhaps that lenders worried that sovereign borrowers' commitments to the gold standard, or at least their commitments to repay loans in gold, were subject to change in the long-run. Of course, it was possible to denominate loans in gold without joining the gold standard regime, just as it currently is possible to issue dollar-denominated loans without dollarization.

III. Implications for Government Policy Choices: Costs, Benefits and Incentives

The above evidence suggests that, particularly in the periphery, governments had strong incentives to adopt and maintain the gold standard. The adoption of gold also had consequences for other political and economic institutions, such as debt management. In this section, I explore briefly the relationship between the gold standard's external financial benefits and governments' decisions to adopt or maintain the currency regime, as well as the connection between the gold standard and domestic economic institutions.

To what extent were governments attuned to the benefits of the gold standard? Although we should be careful not to – just because of the gold standard's impact – assume that governments realized its functional benefits, some evidence suggests that they did. Before WWI, many governments, especially in peripheral areas, relied heavily on global capital markets. Sovereign debt was significantly and positively related to interest rate spreads in the periphery, although not in the core.[79] Therefore, peripheral borrowers with higher debts could expect to pay more to borrow, but a gold standard commitment allowed them market access nonetheless. In core countries, Obstfeld and Taylor's evidence suggests that the gold standard was even more of an enabling device: once core nations had convinced markets of their commitment to gold, their fiscal policy did not seem to affect their treatment in financial markets. In fact, even some peripheral nations were able to remain on gold without tremendous constraints; although Portugal was on gold from 1854 to 1891, they were not nearly as disciplined fiscally as standard accounts of the gold standard might lead us to expect.[80]

[79] Obstfeld and Taylor 2002.

[80] Reis 2000.

Furthermore, private capital flows also could enhance peripheral governments' ability to maintain their gold standard commitments, in that they allowed governments to match current account deficits with capital account inflows from core nations. These capital account surpluses ameliorated pressure for longer-term balance of payments adjustment,[81] and for debt reduction via monetary expansion. For instance, Portugal's large-scale fiscal deficits prior to 1891 were sustainable because Portugal could routinely access international capital markets.[82] And, in Chile, during 1882-1894, there was strong debate between those advocating currency convertibility and those favoring the maintenance of paper money. The former group's advocacy of a stable currency was based on its benefits for domestic business (in terms of stability of expectations), and on international attitudes regarding Chile.[83] We might predict, therefore, that sovereign borrowers with higher levels of current or anticipated debt were more likely to retain the gold standard. We might also expect that sovereign borrowers with shorter average times to maturity of debt were more likely to retain the gold standard, as they worried about "facing the markets" in the near future.[84]

At the same time, however, governments sometimes chose between breaking their gold standard commitments and making domestic economic reforms. For instance, improving the efficacy and breadth of domestic taxation was sometimes the alternative to abandoning commitments to gold.[85] In some cases, governments chose the latter; we can expect that these

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[81] Held et al 1999.

[82] Reis 2000.

[83] Rodriguez 2000. On Spain, see Martín Aceña 2000.

[84] See Missale 1999.

[85] For instance, see Martín Aceña and Reis 2000, on Colombia and Brazil. On Chile's sustained high interest rates, even after the adoption of gold in 1895, see Bordo and Flandreau 2000.

were governments less in need of external finance. We can also expect that choosing the latter course became more frequent as domestic political participation expanded.[86] Similarly, we can imagine that export industries might prefer devaluation to the maintenance of gold parity, as this would increase their international competitiveness. Where export industries were strong politically, governments might forego the gold standard's benefits. More generally, the nature and degree of a nation's external trade openness should influence its choices over exchange rate regimes.[87]

Governments' efforts to commit to and to maintain the gold standard regime also should affect the nature of domestic economic institutions. Just as today, governments that are integrated into international capital markets make a variety of choices regarding the methods by which they attain credibility (e.g. through independent monetary institutions), the ways in which they structure public debt (in terms of its maturity structure and currency denomination), and the extent to which they issue debt (rather than rely on taxation). These choices should vary between gold standard adherents and non-adherents. For instance, governments that wanted to make credible gold standard commitments could create more politically independent fiscal and

[86] For accounts of domestic political pressures and gold standard commitments, see Broz 2002, Simmons 1994.

[87] For instance, nations that were more reliant on tax revenue from trade (rather than taxes on income or land) had incentives to maintain some level of trade openness. Adopting the gold standard would help facilitate trade and, therefore, provide higher levels of tax revenue. For the 1870-1892 period, gold standard adherents received, on average, 43.8% of their tax revenue from customs taxes. Non-adherents, on the other hand, averaged 16.5% of total tax revenue from customs taxes. The latter group relied more heavily on income, land and excise taxes. Data on taxation are taken from Flora (1983), and include 10 European nations. Also see Broz 2002.

monetary institutions, as a means of solving time inconsistency problems.[88] But, because governments would want to avoid large gold outflows in response to concerns about the credibility of currency commitments, gold standard adherents might face *fewer* functional incentives to develop independent fiscal or monetary institutions. These institutions would be substitutes for economic discipline, but perhaps rendered unnecessary by the gold standard.

In terms of debt management policies, peripheral governments could borrow at short or long maturities, and they could denominate their debt in local currency, international currency (dollars or pounds), or gold. Joining the gold standard circumvented the latter choice, in that government debt was immediately tied to gold. For countries not on gold, however, the currency denomination choice remained. Governments had a hard time issuing debt in local currencies, as investors appeared to prefer lower exchange rate risk and higher default risk (the gold standard) to lower default risk but higher exchange rate risk (non-gold standard). As governments' borrowing increased, so did the need to borrow in foreign currencies, so that "the share of gold debt was an increasing function of total indebtedness for a number of peripheral countries."[89] At the same time, however, tying repayment of obligations to an international currency, or to gold, created additional constraints on governments. If local exchange rates fell, these foreign-denominated obligations became more onerous; extensive foreign-currency denominated debt rendered some developing nations quite vulnerable to financial crises.[90]

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[88] Along these lines, Polanyi (1944) suggests that the "rigid economy of the period," generated by the "axiomatic" requirements of the gold standard, produced a "uniform world pattern of monetary and representative institutions." (pp. 252-253).

[89] Bordo and Eichengreen 2001, p. 32.

[90] Bordo and Flandreau 2001.

These governments, then, were pushed to reconsider their larger exchange rate choices: they could float their currency and borrow less, or they could maintain a gold commitment and bear the associated costs. In some ways, this larger choice is analogous to the current one faced by developing nations. In emerging market economies, foreign currency denomination often is a necessity: governments that cannot attract investment in domestic currencies must issue debt in foreign currencies.[91] As a nation's exchange rate deteriorates, investors are less willing to buy local-currency debt, and the percentage of foreign currency debt will increase. The need to maintain a strong currency, which will aid in the eventual repayment of debts, becomes even more salient for these nations.

With adherence to the gold standard, pre-WWI governments were able to avoid choices regarding foreign currency denomination. Rather, they could concentrate on other debt management issues, such as where to borrow (at home or abroad), and at what maturities. This article provides mixed evidence on whether a gold standard commitment allowed for longer-term borrowing. Japan was able to lengthen its debt maturity after its adoption of gold; but the overall pattern of archival cases suggests that gold-denominated or gold standard country loans were of shorter average maturity than other loans. Adopting gold contributed to the ability to borrow long, but this ability also depended on the credibility of the commitment to gold, and on a nation's overall economic prospects.

IV. Investor Attitudes Regarding the Gold Standard

Finally, private investors' ideas regarding the gold standard were an important part of the connection between the standard and the behavior of sovereign credit markets. Implicit in the

[91] Alternatives to foreign currency denomination, with greater implications for government policy autonomy, include currency boards and dollarization. See Alesina and Barro 2001, Williamson 1995.

discussion above is an assumption that market participants believed that the gold standard was the most appropriate exchange rate policy in peripheral nations. This is analogous to contemporary investors' views regarding exchange rates: developing nations must choose between a floating rate and a very hard currency peg.[92] While it is reasonable to assume that most pre-WWI investors preferred the gold standard regime, especially in the periphery, it also is useful to consider the sources of change or variation in investors' attitudes.

One source of variations in investors' attitudes is changing macroeconomic conditions: changes in ideas about appropriate economic institutions are tied to events in the world economy, as well as to evolving attitudes regarding the balance between political and economic considerations. As the domestic political costs of the gold standard became more evident, for instance, private investors might be inclined to change their views regarding the appropriateness, or at least the feasibility, of commitments to gold. Alternatively, as the Argentine case of 2001 demonstrates, in the face of financial crises, investors might revise their views on the value of hard peg exchange rate commitments.

Another source of variation in investors' views is heterogeneity; while this article has focused on portfolio market investors (specifically, government bond holders), other sorts of investors were involved in pre-WWI capital markets. In terms of instruments, bonds and equities were the rule of the day.[93] But foreign direct investment was not absent in the late nineteenth century, and it began to increase sharply during the early twentieth century. In 1890, British direct investment in Latin America exceeded holdings of bonds there; this investment, however,

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[92] Fischer 2001.

[93] Edelstein 1982, Lipsey 1999. The long-standing scholarly consensus is that portfolio flows dominated pre-WWI era, accounting for perhaps 90 percent of total international flows.

was concentrated in Argentina, Mexico and Brazil.[94] By 1913, 46 percent of British investment in Latin America was direct investment in private industry, 38 percent was in government loans, and the remaining 16 percent was portfolio investment in private industry.[95]

Shorter-term investors (i.e. bondholders) benefited from the gold standard, as it served to reduce inflation and currency risk. Given this, we might expect to see members of the international financial community advocating continued maintenance of the gold standard, and perhaps pressuring their governments and central banks to assist developing nations in the maintenance of their gold standard commitments. On the other hand, some longer-term investors were hurt by the gold standard. Its deflationary bias had terms of trade effects, which were particularly deleterious to commodity producers. For instance, the US deflations between 1891 and 1897 helped to generate fierce Populist opposition to gold and the policies it required.[96] These deflations could harm export markets, or peripheral economies that served as a production bases for direct investors. Alternatively, views on the appropriate level and fixity of the exchange rate might have fallen along sectoral lines, as Frieden suggests.[97] For example, in Portugal, manufacturers opposed the restoration of gold convertibility at par (after 1891). They worried about exchange rate instability, but they also wanted to keep foreign goods expensive in domestic markets.[98] These possibilities suggest that support for the gold standard might not have been constant across international investors; the financial orthodoxy of gold was limited, perhaps, to a certain type of financiers, or to certain periods.

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[94] Lipson 1985. Also see Stone 1977, Twomey 2000.

[95] Stone 1977, p. 698.

[96] Obstfeld and Taylor 2002.

[97] Frieden 1991.

[98] Reis 2000.

V. Conclusion

This article explores the implications of the gold standard for sovereign borrowing, particularly in terms of the ability of governments to access credit markets, and the costs of that access. As such, it provides a rationale for the adoption and maintenance of the gold standard, particularly in the periphery. It also presents additional implications of the gold standard-sovereign debt connection for governments' attitudes regarding the exchange rate, for the structure of domestic economic institutions, and for investors' preferences over exchange rates.

There are many similarities between government-financial market relations today and those during the pre-WWI era. For instance, sovereign borrowers with strong economic prospects and unblemished credit histories, or sovereign borrowers with political importance, pay the lowest rates of interest and are least subject to bankers' involvement in their domestic affairs. Commitments to an international currency regime further serve to limit governments' courses of action, but also reduce investors' risk. When pleasing international investors is of paramount concern to political elites and key domestic groups, then, developing country governments should be most likely to commit to fixed currency regimes. When, however, these international commitments generate increased domestic costs, or when access to international capital markets is no longer an overriding concern, we might expect governments to abandon these external commitments.

Along these lines, the gold standards' benefits could disappear in the face of external economic shocks. This occurred in Chile in 1898; because of the structure of the economy and the nature of the banking system, external financial difficulties quickly spawned a domestic economic downturn.[99] The Chilean case is not wholly unlike that of Argentina in recent years:

[99] Rodriguez 2000, p. 203.

given the currency board arrangement, the Argentine government could not bail out ailing banks, and the country's export economy was hurt by the Brazilian real's depreciation from January 1999. These events increased the domestic costs of the currency board, contributing to its ultimate demise. The more general lesson is that fixed exchange rate commitments can become problematic in the face of exogenous (e.g. Latin America) or asymmetric (e.g. EMU) shocks; such shocks reduce the financial market-based benefits of fixed currency arrangements.

Moreover, contemporary governments may find themselves more constrained by international capital markets than did pre-WWI governments. The needs of governments – in terms of the range of programs for which they sought funds – were more modest before WWI. Governments prior to the First World War usually were not concerned with redistributive aims.[100] The increased importance to governments of domestic politics implies that, while emerging market governments would like to provide some sort of "seal of approval" to potential sovereign bondholders, they have a more difficult time doing so.[101]

On the international side, developing country governments may be more subject to financial market pressures that have little to do with their own behavior. A recent comparison of sovereign debt issues in emerging markets in the 1870 to 1913 period with similar issues from the 1992-2000 time frame,[102] finds greater volatility in contemporary than in 1870-1913 emerging markets. While financial crises, associated with sharp rises in sovereign risk premiums, were not unheard of before WWI, they were far more common in the 1990s. Global crises, in which nearly all emerging markets experienced sharp jumps in sovereign spreads, are a particular

[100] Bayoumi et al 1996.

[101] Bordo and Rockoff 1996.

[102] Mauro 2000 et al. The 1870-1913 sample consists of either eight or fourteen nations, depending on the specification, and the 1992-2000 sample includes ten nations, all Brady Bond issuers.

phenomenon of the contemporary era. Furthermore, whereas country-specific events were the usual correlates of changes in interest rates before WWI, global events were the more common cause in the 1990s. In such an environment, governments have great incentives to attempt to provide investors with seals of approval, but they may have a more difficult time doing so. The lessons of the gold standard, then, may be even more difficult for contemporary governments to deploy.

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Table 1: Summary Statistics, Sovereign Lending Episodes

	Mean	N	Minimum	Maximum
Interest Rate	4.76	61	2.75	6.0
Interest Rate Spread	1.23	61	-2.0	4.0
Loan Amount, £millions	12.76	60	0.31	80.0
Loan Issue Price (par=100)	91.64	38	77	101
Loan Duration, years	25.69	32	1	75
Loan Yield[a]	5.36	35	2.79	7.5

[a] Yield is calculated by dividing the interest rate by the issue price. Because of data availability, this measure is available for only 35 cases.

Figure 1: Average Interest Rate Differentials, Peripheral Nations

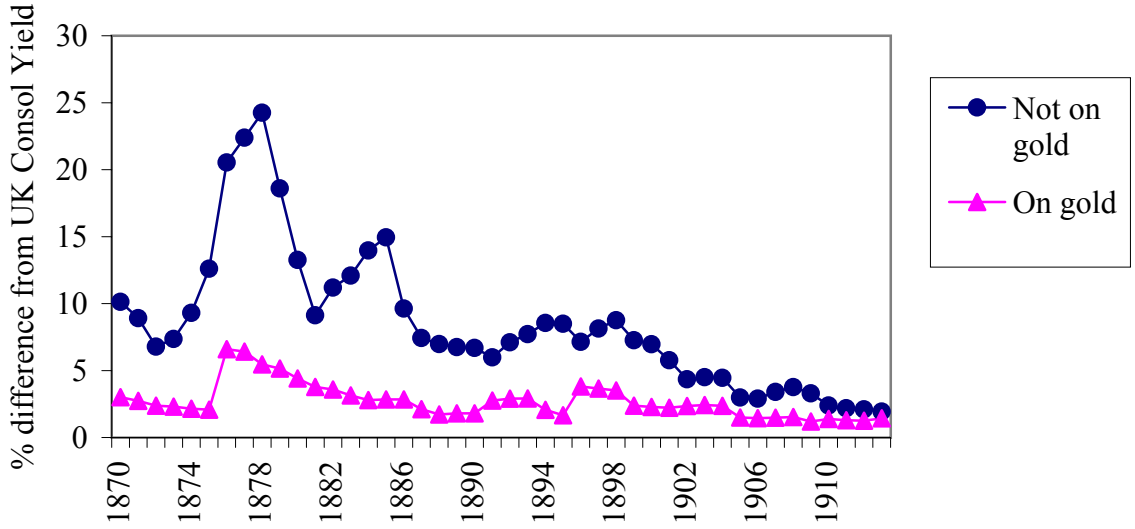

Figure 2: Difference between Percent of Countries on Gold Standard with Deficits, and Off Standard with Deficits

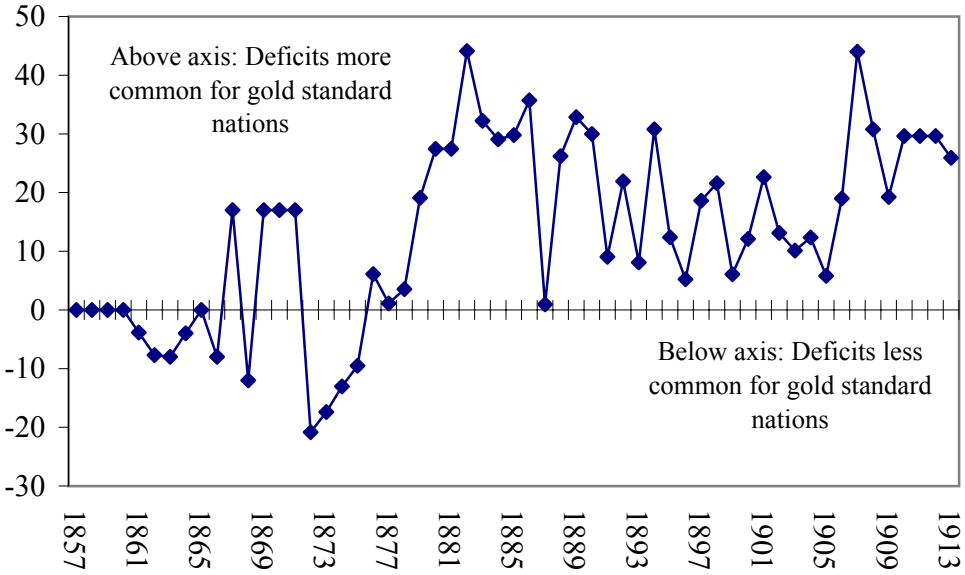

Figure 3: Percentage of total UK capital outflows to gold standard and non-gold standard nations