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FOREIGN LENDING IN THE INTERWAR YEARS:
THE BONDHOLDERS' PERSPECTIVE

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FOREIGN LENDING IN THE INTERWAR YEARS: THE BONDHOLDERS' PERSPECTIVE

1. Introduction

The developing-country debt crisis bears a striking resemblance to previous episodes in which international capital markets were disrupted by outbreaks of sovereign default. The current crisis was preceded by rosy forecasts of the prospects for developing-country loans, followed by a pessimistic revision of expectations and an abrupt collapse of lending. In all these respects it recalls the debt crisis of the 1930s and its 19th century predecessors. The onset of debt-servicing difficulties in the 1980s coincided with a worldwide recession, severe real interest rate shocks, a dramatic decline in primary commodity prices and resurgent protectionism in the creditor countries, once again paralleling the situation in the 1930s. The alternative approaches proposed for dealing with the crisis -- ambitious global schemes for restructuring debtor-creditor relationships, either through some form of debt relief or through the establishment of an international entity to buy up outstanding debt, versus the "muddling through" approach of case-by-case negotiation -- both have antecedents in proposals considered by interwar policymakers.1/

The parallels have directed the attention of historians and economists to the history of foreign lending and default.2/ Many have focused on the historical track record of different kinds of overseas loans, which offers a rich lode of information about how the international capital market has worked. It sheds light both on the origins of debt crises and on alternative strategies for resolving them. On the issue of origins, there is, for example, the question of whether the capital market has discriminated adequately between good and bad credit risks. Any answer must rest on comparisons of ex post returns with ex ante spreads. Obviously, the

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only loans for which we can calculate ex post returns are those from earlier historical periods by now fully repaid or liquidated. On the issue of resolution, there is the question of how capital losses on nonperforming loans have been shared between debtors and creditors. Several observers of the current crisis have been inclined to use historical experience as a benchmark or precedent when assessing how much debt relief or what concessional rescheduling might be considered equitable by all parties (viz. Williamson, 1987). Also on the issue of resolution is the question of whether countries which lapse into default find it particularly difficult to regain access to the international capital market subsequently. Answering this question requires a measure of the severity of default, and the realized rate of return has obvious appeal.

Historical rate of return calculations have a history of their own. Even before World War II, observers such as Madden et al. (1937) and the editors of the South American Journal had begun to report holding period returns on foreign bonds floated in the 1920s. But their estimates have limited value since they contain no information on the terms of debt settlements in the 1940s and 1950s. Subsequently, there have been three major studies of the rates of return realized on foreign loans. Michael Edelstein (1977, 1972) estimated realized returns on British home and foreign portfolio investments in the 40 years prior to World War I. He found that foreign investment paid in the sense that realized returns on foreign bonds consistently exceeded returns on domestic portfolio investments. Although the accuracy of Edelstein's estimates has not been challenged, there are grounds for questioning their applicability to the 20th century. While default recurred sporadically during the age of high imperialism, there was no single debt crisis comparable to the global disruptions of the 1930s or

the 1980s. It seems unlikely that estimates for periods of global crisis would yield such favorable results. Moreover, the rates of return accruing to British investors may have been more favorable than those realized by their foreign counterparts. British foreign investment was directed heavily toward infrastructure and export-generating projects, U.S. railway bonds serving as the prototypical example. French and German lending, in contrast, was more heavily oriented toward governments engaging in costly military expeditions or otherwise needing to finance budget deficits (Fishlow, 1985). Default was more prevalent on these French and German loans, which suggests that the returns well may have been lower.

A recent study by Lindert and Morton (1987) sheds some light on this question. Lindert and Morton estimate realized rates of return on bonds floated between 1850 and 1970, following each issue from initial sale to final settlement or to the end of 1983. They limit themselves to sovereign debt and to ten major borrowers: Argentina, Australia, Brazil, Canada, Chile, Egypt, Japan, Mexico, Russia and Turkey. Like Edelstein, Lindert and Morton find that foreign lending paid. They estimate the overall real internal rate of return for the entire period to have averaged 2.7 per cent for their four Latin American borrowers and 2.4 per cent for the six other countries. Both realizations exceed the returns on creditor-country government bonds purchased contemporaneously and fall only marginally short of alternative investments in the securities of U.S. corporations. A surprising aspect of Lindert and Morton's findings is that foreign investments appear to have outperformed domestic investments between 1915 and 1945, when foreign default was most prevalent, but not between 1850 and 1914. This conclusion may be a consequence of their concentration on sovereign debt at the expense of

portfolio lending to foreign municipalities and corporations, and of their focus on a subset of 10 debtor countries.

In Eichengreen and Portes (1986), we reported an attempt to provide a more comprehensive picture for the interwar period. We computed realized rates of return on samples of dollar and sterling bonds floated in the 1920s on behalf of not just foreign governments but states, provinces, municipalities and corporations. Our estimates revealed that the performance of loans to sovereign governments differed radically from that of loans to other foreign borrowers. The nominal own-currency internal rate of return on dollar loans to sovereigns exceeded five per cent; dollar loans to state governments yielded three percentage points less, loans to foreign corporations less still. While average returns on sterling loans were considerably higher, the variation across loans to different entities was strikingly similar; on average, loans to sovereigns significantly outperformed loans to other foreign borrowers. We conjectured that the superior performance of loans to sovereigns compared with loans to municipalities and corporations reflected the greater scope available to negotiate with national governments, especially when they evinced an interest in re-entering the international capital market, than with foreign corporations that might go into bankruptcy or out of existence in times of economic hardship or war. We argued that the superior performance of sterling loans was due to a combination of factors: the direction of British lending (oriented disproportionately toward the Empire and Commonwealth, in contrast to U.S. lending to Germany and South America), more active intervention on behalf of the bondholders by the British government, and more effective representation of their interests by the British Corporation of Foreign Bondholders.

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Our previous estimates were subject to three limitations. First, they extrapolated from a relatively small sample of 50 dollar and 31 sterling issues. However representative of average experience, that sample was too small to shed much light on variations across borrowing countries. Second, they covered the years 1923-1930 (1924-1930 in the case of dollar bonds). Our sampling strategy was to span the period of large-scale foreign lending, which reached a peak in 1927. There is reason to suspect that rates of return were somewhat higher in the immediately preceding years, however (see Mintz, 1951). Third, our calculations did not incorporate repurchases at depressed market prices of defaulted foreign bonds. It was not uncommon in the 1930s for governments in default to use their available foreign exchange to repurchase their obligations at a discount. Creditors who sold back their bonds at market prices typically received only partial repayment of loan principal; for this reason our previous calculations may have overstated the realized rate of return.

This paper revises and extends our previous analysis of rates of return on foreign loans in an effort to surmount these limitations. It analyzes a larger sample of 250 dollar bonds and 125 sterling issues, covering the years 1920-1929.3/ Internal rates of return are adjusted for repurchases of discounted foreign bonds. While the estimates display a number of interesting differences from those in Eichengreen and Portes (1986), a consistent story emerges. And the larger sample enables us to paint a richer picture of interwar experience with foreign loans.

2. Methodology

We adopted basically the same strategy for calculating realized rates of return on sterling as on dollar bonds, although differences in the materials available on the operation of the two national capital markets dictated some

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differences in implementation. For Britain we constructed estimates for all 125 overseas bonds offered for subscription in London between 1920 and 1929 and listed by the Stock Exchange Yearbook. No corporate issues were listed. For the U.S. we drew a stratified sample of 250 foreign dollar bonds issued in the 1920s from the list of 1,468 such bonds compiled by the U.S. Department of Commerce and published in its Handbook on American Underwriting of Foreign Securities (see Young, 1931). That sample was stratified along three dimensions: year of issue, destination of capital (Europe, North America, Latin America, Far East), and type of borrower (government versus corporate). After combining tranches of single loans listed separately and eliminating stocks mislabeled as bonds, we were left with 207 dollar issues.

We then tracked interest payments and repayment of principal, computing own-currency nominal realized internal rates of return. (We also calculated real rates of return and expressed the return on sterling loans in dollars.) When bonds were converted or replaced by successor issues in the course of negotiations over defaulted loans, those successor bonds were treated as parts of the initial issue in the rate of return calculation. When domestic currency, blocked balances or scrip was issued in lieu of foreign exchange (as in the case of German bonds outstanding in the 1930s), we included these restricted payments in the rate of return calculation only at the point where they could be converted into foreign currency.4/

An important extension of our earlier estimates was the incorporation of repurchases of bonds by the borrower at prevailing market prices. Our procedures for dollar and sterling bonds differed. For dollar loans we first assumed that any bonds extinguished during a period of default were repurchased at market prices. Information on the value of bonds still outstanding is reasonably complete for most issues, although occasionally we

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were forced to interpolate due to the absence of information for some years. For dollar loans not in default, we assumed that repurchases took place at either market price or par as specified in the bond covenant, at whichever was lower when the choice was the borrower's. For sterling loans the necessary information was not readily available; hence we constructed two rate of return estimates under the alternative assumptions that capital repayments took place at market price and at par.

3. Summary of Results

Table 1 summarizes the results. The nominal internal rate of return (weighted by the value of the loan) is almost exactly four per cent for dollar bonds, roughly five per cent for sterling bonds (4.98 per cent when repurchases are assumed to have taken place at market price, 5.18 per cent when they are assumed to occur at par). These results conform broadly to our principal findings in Eichengreen and Portes (1986): first, British overseas investors did better than their American counterparts; second, for British investors overseas lending paid better than contemporaneous domestic investments, while the opposite was true for Americans.[5]/

The gap between the returns on sterling and dollar bonds is smaller than in our previous study, due principally to our upward revision of the estimated return on dollar loans floated in the 1920s. Although the larger and more reliable sample utilized here may contribute to the difference, the revision is due mainly to two other factors: first, the extension of the period encompassed by the sample backward from 1924 to the beginning of the decade (when loans bore higher interest rates), and greater success in tracking the returns on loans to foreign corporations (German corporations in particular) through World War II and the postwar period.

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The difference made by moving from nominal to real internal rates of return is surprisingly small. In the case of the dollar bonds, for instance, the return rises from 4.0 to 4.8 per cent (when the GNP deflator is used).6/ The average real return exceeds the average nominal return because as late as 1941 the price level remains lower than in the 1920s. But the overall difference between real and nominal returns is minimized by the rise in prices thereafter. Similarly, converting sterling investments and returns into dollars as they accrue to derive dollar-denominated rates of return to investors in bonds floated in London makes relatively little difference to the results.

An important factor contributing to the higher average return on sterling bonds is the lower incidence of default. Only 18 per cent of the value of the sterling bonds in our sample lapsed into default, compared with 46 per cent of the dollar bonds. In addition, it is tempting to ascribe part of the difference to the severity of default and to the subsequent ability of British and American investors to recover. Table 2 confirms that this is an important part of the story. There the rate of return is regressed on a constant term and a dummy variable for default. (As in every regression we report, all variables are weighted by the value of the issue.) The constant terms can be interpreted as the average return to bonds on which interest payments were never suspended, the slope coefficient as the average loss due to default. The cost of the average default in terms of the realized internal rate of return is considerably greater on dollar than on sterling loans (4.3 per cent versus 1.7-2.7 per cent).

To what extent are the calculations affected by the innovation of incorporating repurchases of defaulted bonds at depressed market prices? To shed light on this question, we recalculated the internal rates of return on

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dollar bonds under the hypothetical assumption that all repurchases took place at par. In a small number of cases, the change in the internal rate of return was quite large. A dramatic illustration is the case of Hungary: the internal rate of return on Hungarian Land Mortgage Institution bonds rises from -7.7 per cent to 2.5 per cent when it is assumed that all repurchases took place at par. For the British and Hungarian Bank it rises from -13.6 per cent to 1.5 per cent, for the City Savings Bank from -12.8 per cent to 1.0 per cent, for the European Mortgage and Investment Bank from -14.4 per cent to 1.4 per cent. But the impact on the overall rate of return on bonds in the sample is surprisingly small. Assuming no repurchases below par, the internal rate of return on the entire sample of dollar bonds rises only from 4.00 to 4.96 per cent, and the internal rate of return on those bonds which lapsed into default rises from 1.64 to 3.58 per cent.

4. Further Results

In this section we disaggregate our estimated internal rates of return by year of issue and by region and type of borrower. This reveals considerable variation in the performance of different categories of loans. A first distinction already evident in Table 1 is between dollar loans to governments and to corporations. From the borrowers' perspective the former performed almost twice as well, as measured by the internal rate of return. These results reinforce the findings of Eichengreen and Portes (1986), although the differential between government and corporate issues was even larger there.

A second important distinction is between loans to different regions. In the case of dollar bonds, the best performing loans were those extended to countries in the Far East (principally Australia and Japan), followed closely by loans to Canada. These were followed at a distance by loans to European

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borrowers, with Latin America bringing up the rear. These results are
similar for sterling bonds. The best-performing sterling loans are those
granted to Japan and Dominion Governments. These are followed by loans to
European borrowers, with loans to Latin America again bringing up the rear.
In Table 3 we disaggregate further by region and test for the significance of
the differentials, regressing the internal rate of return on a vector of
dummy variables for the location of the borrower. The internal rate of
return on loans to the omitted alternative, Germany, is picked up by the
constant term. Consider first the dollar bonds. The average return on
dollar loans to Germany, 1.4 per cent, is very low relative to the
alternatives. Only loans to Central America yielded less (but insignifi-
cantly so). The internal rates of return on loans to the countries of South
America and Eastern Europe were only slightly higher (1.7 and 2.5 percentage
points respectively). Investors in bonds issued on behalf of borrowers in
other regions did significantly better. The internal rate of return on loans
to Western Europe did best of all, followed closely by Australia and at a
distance by Japan.

The results for the sterling bonds are basically consistent. Absent any
British loans to Central America, the three worst performing regions are
Germany, South America and Eastern Europe, just as in the case of dollar
bonds. But where dollar loans to Eastern Europe and South America did
slightly better than dollar loans to Germany, in the case of sterling loans
they did slightly worse. Most of the difference is due to the superior
performance of sterling bonds issued on behalf of German borrowers relative
to dollar bonds for Germany (with internal rates of return of 3.6-4.4 and
1.1 respectively). This contrast points to the importance of differences in

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the ability of creditors of different nationalities to recover from defaulting German borrowers.

Table 4 disaggregates loans by years. The earliest year is the omitted alternative picked up by the constant term. In the case of dollar bonds, realized returns decline significantly from their immediate post-WWI highs, reaching their nadir in 1927. This was also the finding in Eichengreen and Portes (1986) using the pilot sample of 50 bonds. A number of authors (viz. Mintz, 1951) have argued that the quality of foreign bonds issued in the United States deteriorated over the course of the 1920s, a larger proportion of the loans issued in the second half of the decade being of questionable quality and lapsing into default once the Great Depression struck. Our results suggest a modification to this standard interpretation, implying if anything that loan quality improved in 1928-29. If there were no changes in loan quality over the course of the decade, one would expect negative coefficients on later years on the grounds that loans issued relatively late had fewer years to receive interest before interruptions to debt service set in starting in 1931. Thus, the rise in the internal rate of return on dollar bonds issued after 1927 is striking. The coefficients on years for the sample of sterling loans accord more closely with the conventional characterization of loan quality. These achieve their largest negative values in 1928-29.

Finally, Tables 5 and 6 disaggregate by type of borrower, where loans to national governments is the omitted alternative picked up by the constant term. In the case of dollar bonds, loans to national governments do better than loans to all the alternatives, significantly so in every case at the 90 per cent confidence level. The lowest rates of return are those on loans to foreign banking institutions, followed by loans to municipalities. The

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results for sterling bonds are rather similar. Loans to national governments outperform loans to foreign municipalities. They are outperformed by two categories of loans with no American equivalent, namely British-guaranteed foreign loans (which appear under the name British Funds) and loans to the Dominions and Colonies.

5. Evidence From Ex Ante Bond Pricing

From the constant terms in Table 2 above, the yield to maturity on continually serviced dollar loans exceeds the yield on continually serviced sterling bonds by half a percentage point, as if investors in dollar bonds recognized their greater risk ex ante and demanded compensation. But did they discriminate adequately? The standard approach to this question is to regress ex ante spreads on foreign loans on a vector of borrower characteristics that proxy for default risk (see Edwards, 1986; Eichengreen, 1987), and to see whether proxies for risk are correlated with ex ante spreads in the anticipated direction. We estimated such equations for subsamples of our dollar and sterling bonds for which the required information on country characteristics could be obtained, including five types of explanatory variables: a measure of the magnitude of the debt (scaled by exports to take into account variations in country size), a vector of variables for the type of loan (national, municipal or corporate), a vector of variables for years to take into account variations in international capital market conditions, dummy variables for countries as a measure of borrower's reputation, and measures of current economic policy in the borrowing country.

It was not possible to obtain information on all the independent variables used in modern analyses, such as GNP or investment and savings ratios. But just as these variables for the 1920s are unavailable to modern investigators,

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they were unavailable to contemporary investors and hence could not be used in pricing foreign bonds. The standard indicators of policy stance upon which interwar lenders relied were foreign trade and public finance statistics.7/ The argument was that a balance-of-trade surplus should have been related negatively to the required rate of return on bonds, since the larger the surplus the greater the export receipts available for debt service. Similarly, a government budget surplus should have been negatively associated with the required rate of return, since any budget surplus could be used to retire public debt and thereby to reduce the overall debt burden. In the estimates to follow, the trade surplus is scaled by imports and the budget surplus is scaled by government expenditures. Data are taken from League of Nations sources.8/

Results are reported in Table 7. For the dollar bonds, the dependent variable is the spread of the yield to maturity over the U.S. long-term [Treasury] bond yield. The omitted alternatives are 1920, Germany and national government bonds. The spread varies considerably with a mean of 2.6 and a standard deviation of 1.1.9/ Of the coefficients on type of loan, only that on loans to corporations differs significantly from the omitted alternative (loans to national governments) at standard confidence levels. This can be taken as evidence of investor sophistication insofar as returns on dollar loans to corporations performed less well than loans to governments ex post. Interestingly, it contrasts with Edwards's (1986) finding for the 1970s of no discernible difference between loans to different categories of borrowers.

The coefficients on years indicate little tendency of the spread to widen or narrow over time, as one would expect if foreign lending tended to come into or fall out of fashion.10/ According to the region dummies, the

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best bond-market reputation was enjoyed, not surprisingly, by Canada, followed by the Central American republics and Western Europe. Both Canada and the countries of Western Europe had nearly unblemished records of servicing their foreign debts, while the small Central American republics economically or politically dependent on the U.S. had little choice in the matter.11/ Conversely, the nations of Eastern Europe were required to pay the largest risk premia. These geographical variations are further evidence of bondholder sophistication, insofar as the pattern of ex post returns suggests that these regional variations in risk premia were justified. In contrast, the risk premium attached to German loans seems surprisingly small in retrospect. Larger premia were demanded not only on loans to South America and Eastern Europe but to Australia and Japan. The relatively small risk premia charged Germany, the leading borrower of American funds, and a number of the larger South American republics raise questions about whether bondholders discriminated adequately between good and bad credit risks.

The coefficients on the trade and budget balances speak to this question. While both variables have the anticipated negative sign, only the government budget deficit as a share of expenditure differs significantly from zero at conventional confidence levels. These results differ somewhat from those in Eichengreen (1987) using grouped data, where neither the budget nor trade surpluses had a statistically significant association with the risk premium, providing stronger support for the hypothesis that current economic developments had an impact on the cost of borrowing.

In summary, the first column of Table 7 provides mixed support for the hypo- thesis that American bondholders considered readily-available indicators of the current macroeconomic situation when determining the price at which to lend. The

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charitable interpretation is that reputation dominated current economic conditions in the bondholders' decision-making process.

The results for sterling loans are consistent with those for dollar bonds, although the relatively small number of bonds for which information on the trade and budget balances could be obtained limits the degrees of freedom. There is more evidence than for the dollar loans that significant shifts in attitudes toward overseas loans occurred over time. In particular, 1924, the year of the Dawes Loan to Germany, was the occasion when overseas lending was viewed as particularly risky. Other than the years toward the beginning of the decade, when British foreign lending remained at extremely low levels, the risk premium was lowest in 1927, one of the two interwar years in which British foreign lending was highest. As with the sample of dollar loans, high risk premia were charged the Eastern European countries, while Latin America, Greece and Germany stood in the middle, and the Dominion countries and Japan enjoyed the lowest costs of borrowing. The trade- and budget-balance variables are insignificant, suggesting that while British lenders exercised some discrimination among countries, current economic variables appear to have had relatively little impact.

The problem with the standard approach upon which this analysis is based is that investors, when pricing foreign bonds, could have taken into account other information on country risk not available to the econometrician. Insofar as bondholders could have taken such information into account, it is never possible to conclude definitively that they discriminated inadequately among alternative borrowers. An alternative approach is to utilize information on ex post returns to test whether bondholders made systematic errors. The model we utilize is from Eichengreen (1987). Its first element is the definition of the return on risky loans:

(1) $i_r = i_f + \gamma s$

where i_r is the required rate of return on risky loans, i_f is the risk free rate and s is default risk (so γs is the risk premium). Ex ante (of default) the return on risky loans exceeds that required:

(2) i(ex ante) = i_r + βs

where i(ex ante) is the ex ante return The ex post return differs from that required by investors by their expectational error ε:

(3) i(ex post) = i_r + ε

Substituting and solving for the ex post return yields:

(4) i(ex post) = $[(b/\gamma)/(1+\beta/\gamma)]$ i_f + $[1/(1+\beta/\gamma)]$ i(ex ante) + ε

If investors' expectations are unbiased, ε has mean zero, and a regression of ex post on ex ante returns should yield a positive intercept and a positive slope coefficient.

Estimating this equation separately for the samples of dollar and sterling bonds yields the results in Table 8. The intercept is positive, and significantly so at the 95 per cent confidence level for both the dollar and sterling bonds. But in both cases the slope coefficient is negative and significantly so at the 90 per cent confidence level. This can be taken as evidence that investors systematically underestimated the likelihood of default risk. For example, if instead of eq. 3, the expected value of the ex post return does not equal the risk-free rate but falls below it by a margin that increases with default risk (the ex post return takes the form i(ex post) = ir + ε - αs), then it is possible for ex post returns to bear a negative relationship to ex ante spreads. Thus, these results suggest that

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investors incompletely incorporated differential default risk into the spreads they demanded of foreign borrowers.

6. Interpretation

With the widespread defaults of the 1930s, international lending as conducted in the 1920s came to be seen as an unmitigated folly. The reaction was particularly violent in the United States, where investors had suffered the most extensive losses on foreign bonds. "A general sigh of resolve was to be heard over the United States: never again should we lend or invest our money in foreign lands."12/ The Senate convened an investigation of whether financial intermediaries had systematically misled gullible American investors.13/ The Glass-Steagall Act forcing commercial banks to divest their securities operations was one product of these deliberations.

Our quantitative review of interwar experience provides a more nuanced view of the performance of foreign loans. A first point worthy of note is that the performance of dollar loans is not wholly representative of creditor-country experience. British foreign investors did considerably better than their American counterparts. More strikingly still, even American investors ultimately reaped an adequate return on loans to foreign governments. In contrast to loans to foreign corporations and municipalities, which ultimately yielded significantly less than comparable domestic investments, the realized internal rate of return on dollar loans to foreign governments (4.64 per cent) exceeded the average nominal yield on U.S. Treasury bonds for the decade of the 'twenties (4.09 per cent). Admittedly, 4.64 per cent was significantly less than the ex ante return on foreign government loans. But if Treasury bonds are used as the basis for comparison, the risk premia charged ex ante were more than sufficient to

compensate American investors for the danger of default on foreign government loans.

In this light, the American reaction against lending abroad might seem like an overreaction. Explanations are not hard to find, however. Any losses relative to the rate of return specified in the bond covenants are bound to be resented by bondholders. Often, it was evident that interest would be restarted and principal would be repaid only at the end of a lengthy process of negotiation. The most violent reaction occurred in the early 1930s, when considerable uncertainty surrounded the ultimate date and terms of settlement. Not only was the uncertainty disquieting, but some investors had reason to doubt that they possessed the longevity to see the successful conclusion of negotiations. And once loans to foreign corporations and municipalities are added to loans to central governments, any paradox dissolves, since overall the average return on U.S. foreign bonds was clearly inferior to the return on contemporaneous domestic investments.

There are two plausible hypotheses to explain the superior performance of sterling versus dollar bonds and of loans to central governments versus loans to other foreign entities: differing degrees of investor sophistication at the lending stage, and different institutional arrangements at the settlement stage. That the prevalence of default was much greater on dollar than on sterling bonds is consistent with the notion that the London market more successfully discriminated between good and bad credit risks. American investors took up the lion's share of the German and South American bonds that experienced the most serious defaults. It is tempting to link this behavior to differences in the experience of institutional investors in the two markets. By the 1920s London had accumulated more than half a century of experience with large-scale foreign lending. For New York, in contrast,

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foreign borrowing rather than foreign lending had been the rule prior to 1913. The transformation of the U.S. from a net foreign debtor to a net creditor and the emergence of New York as an international financial center had been telescoped into the five short years spanned by World War I. British investment houses with valued reputations to protect might well hesitate to put their stamp of approval on risky overseas loans, while their American counterparts, as new entrants to this market who had not yet acquired the same industry-specific investment, had less to lose if risky loans turned out badly but much to gain from generous commissions.[14]/

This interpretation has considerable appeal. Yet our analysis of the ex - ante spreads over risk-free returns required by British and American investors yields no evidence of a greater degree of sophistication on the part of the former. If anything, the straightforward argument on the basis of the econometric results is that investors in dollar bonds paid closer attention to the trade performance and public finances of the borrowing country when calculating required ex ante returns. It is possible, of course, that interest rates are an adequate measure of investor sophistication. A higher interest rate increases the burden of debt service and thereby raises the probability of default; there may be no interest rate that clears the market, and credit rationing may result. The evidence of sophistication may be that British investors allocated a smaller proportion of their foreign bond portfolios to German and South American loans despite seemingly attractive interest rates. This interpretation, unfortunately, is difficult to distinguish from clientele effects. For reasons of tradition, long-standing contacts and politics, Britain's Colonies and Dominions, with the notable exception of Canada, all continued to rely heavily on the London market for finance. However aggressively American issue houses wished to

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compete, they often faced insurmountable obstacles when attempting to float dollar bonds on behalf of Australia or New Zealand, for example. The same political influences that channeled this business toward London mitigated against default, ensuring that the returns on these loans remained favorable.

The other explanation for differential performance of British versus American and sovereign versus other debt is differential facility in negotiating settlements once default occurred. In Britain, the mechanism through which negotiations took place was the Corporation of Foreign Bondholders (CFBH).15/ Founded in 1868, by the 1930s the CFBH had come to be recognized universally as the representative of British bondholders. As reorganized in 1898, the Council of the Corporation was comprised of representatives of the bankers, of business, of private and institutional bondholders, and of the Stock Exchange and the Bank of England. A unified coalition of creditors, the CFBH could all but guarantee that a country which failed to offer a settlement acceptable to the bondholders would be excluded from the new issue market.

In the United States the situation was very different. When the debt crisis struck, there was no standing committee representing American bondholders. Instead, ad hoc committees were established to settle individual defaults. This approach had several disadvantages. Issue-specific committees had higher administrative costs than an ongoing organization. Allegedly, competing committees were established by questionable individuals lured by generous commissions into preying on ill-informed bondholders, while rival committees might be played off against one another by representatives of the debtor. Ad hoc committees sometimes lacked ties with the financial establishment and were unable to threaten credible sanctions against future flotations. The situation doubtless

improved once the Foreign Bondholders Protective Committee (FBPC) came into operation in 1933, but this new organization did not quickly attain the cohesiveness and authority of the CFBH.

One factor enhancing the effectiveness of the CFBH and operating independently to improve the terms of settlement on sterling bonds was government intervention in debtor-creditor negotiations. Officially, the British government regarded debt default as a private matter and found it convenient that there existed a bondholders' committee to which investors could be referred. In fact, there was considerable coordination of effort between government and the CFBH. To conclude that the two worked hand in glove would be incorrect, since they had rather different priorities. Nevertheless, the CFBH could turn to the diplomatic corps for logistical support, and sometimes, as with Germany's suspension of debt service in 1933, the government might intervene directly with foreign authorities. The U.S. stance differed radically. The Roosevelt Administration and the banks long remained suspicious of one another. Relations between Washington and the FBPC remained distant. With the rise of diplomatic tension in Europe, the Roosevelt Administration and Cordell Hull in particular saw the reconstruction of international trade as one of the few potentially stabilizing influences over the international scene. The Reciprocal Trade Agreements Act of 1934, for example, was seen as a way for the U.S. to exercise leadership over this process. Government intervention on behalf of the bondholders was effective only when backed up by the credible threat of trade sanctions, as in the British, Swiss and Dutch cases. Given the priorities of the U.S. administration, such threats were at best incredible, at worst counterproductive.

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7. Extensions

In this paper we have illustrated various uses to which information on realized rates of return on foreign lending can be put. There is considerable scope for further work. We attach priority to a pair of questions with obvious relevance to the current debt crisis. First is the question of whether default and terms of settlement affected subsequent ability to borrow. Preliminary work reported in Eichengreen (1987) suggests relatively little relationship between the incidence of interwar default and post-World War II capital market access. But the realized rates of return reported here provide the basis for construction of a more refined measure of the extent of default that might be used in further analysis of the issue. Second is the question how suspensions of debt service affected economic performance in the borrowing country. This is not merely the question of whether countries which defaulted were unable to borrow. In addition, such countries may have found it difficult to obtain trade credit or have faced discriminatory treatment of their exports by creditor countries. Alternatively, resources previously transferred abroad in the form of interest and amortization might be diverted to domestic uses, perhaps stimulating the recovery of investment. Addressing this issue requires an adequate measure of resource flows, one convenient summary statistic of which is the internal rate of return.

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FOOTNOTES

1. Global schemes range from the Baker Plan to encourage concerted bank lending, to the Kenen Plan to have the IMF or another entity buy existing debt at a discount and pass the benefits along to the debtor countries, the Bradley and Sachs plans under which the banks would directly forgive a portion of developing country liabilities and the Dornbusch Plan to permit countries to service their debt in domestic currency. Cline (1987), Feldstein (1987) and Fischer (1987) provide critiques of the alternative proposals.

2. By now, the literature is quite large. The tendency of the market for foreign loans to be characterized by alternating waves of optimism and pessimism has been argued by Fishlow (1985). The translation of these expectations into alternating periods of large- and small-scale foreign lending is documented by Cairncross (1953) and is integral to the literature on the Kuznets Cycle (for example, Thomas, 1973). The parallels between the circumstances surrounding the debt crises of the 1930s and the 1980s are emphasized by Diaz-Alejandro (1983) and Eichengreen and Portes (1986, 1987). Interwar antecedents to current proposals for dealing with the crisis are reviewed by Eichengreen (1988).

3. Detailed descriptions of the construction of these estimates are available in two unpublished working papers which underlie this article: on the dollar bonds see Eichengreen and Werley (1988); for the sterling bonds see Portes (1987).

4. Admittedly, the assumption that domestic currency or scrip had a shadow price of zero is strong. In the case of Germany, such balances could be used for domestic travel or purchase of consumer goods, although not to acquire real estate. It is hard to know the appropriate shadow exchange rate to impute to these balances, however. Fortunately, the impact on estimated rates of return is not pronounced. Eichengreen and Werley (1987) re-estimate the returns on dollar loans to Germany imputing a shadow value of 0.5 to blocked balances and find that the difference is minor.

5. Table 5, p.627 of Eichengreen and Portes (1986) reports yields on alternative domestic investments. For example, U.S. yields ranged from over four per cent on high grade municipals to nearly six per cent on Baa corporate bonds, while yields on British public debt ranged from four to 4 1/2 per cent.

6. The GNP deflator for the United States is taken from Historical Statistics of the United States through 1970 and from the World Bank's World Tables thereafter.

7. One contemporary investment manual, by Madden and Nadler (1929), instructed investors to consider trade and budget balances and natural resource endowments (see pp. 83, 96-97). A sequel (Madden, Nadler and Sauvain, 1937, p.207) mentioned also the position of the central bank and the debt of the government.

8. Details on these sources are provided in Eichengreen (1987).

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9. These characteristics of the spread are consistent with those reported by Eichengreen (1987) using grouped data from Lewis (1938). There the standard deviation was 1.2, although the spread was only 0.5 because it was calculated as the yield relative to the return on Baa bonds rather than relative to the long-term Treasury bond rate.

10. This is in contrast to the analysis on grouped data in Eichengreen (1987), where there was some tendency of the spread to rise over the course of the 1920s, as if investors recognized the increasingly risky nature of foreign loans.

11. Under the provisions of the Hay-Bunau Varilla Treaty of 1904, the U.S. was permitted to intervene in Panama to preserve order and to supervise the expenditure of government loans placed in the U.S. Under the Platt Amendment, the U.S. was entitled to object to "improvident or otherwise objectionable fiscal policy" in Cuba. The Dominican Republic was under U.S. military administration until 1924, and thereafter the U.S. retained the right to object to changes in Dominican tariffs and public debt. Haiti was under U.S. martial law from 1916 to 1931. Angell (1933), pp.8-27.

12. Feis (1950), p.1.

13. See U.S. Senate (1932).

14. See the discussion in Kuczynski (1932).

15. This section draws on Eichengreen (1988) and Eichengreen and Portes (1988).

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Table 1

Summary of Realized Rates of Return
(in percentage points)

	Dollar Bonds	Sterling Bonds Variant 1	Sterling Bonds Variant 2
Overall IRR	3.99	5.18	4.98
Europe	3.24	4.15	3.64
North America	5.13	5.18	5.18
Latin America	3.06	3.00	1.44
Far East	5.96	5.75	5.59
Government	4.64	—	—
Private	2.54	—	—
Dominion/Colonial	—	5.41	5.39

Source: see text.

Table 2

The Impact of Default on Realized Returns

(Standard Errors in Parentheses)

Dollar Bonds

$$IRR = 5.97 - 4.33 \text{ DEFAULT}$$
$$(0.25) \ (0.45)$$

N = 207   S.E. = 5.06

Sterling Bonds

Variant 1

$$IRR = 5.47 - 1.71 \text{ DEFAULT}$$
$$(0.14) \ (0.33)$$

N = 125   S.E. = 1.40

Variant 2

$$IRR = 5.44 - 2.70 \text{ DEFAULT}$$
$$(0.16) \ (0.39)$$

N = 125   S.E. = 1.66

Notes: Weighted least squares regressions.

Source: See text.

Table 3
Rates of Return by Region of Borrower

Standard Errors in Parentheses
Omitted Variable is Germany

DEPENDENT VARIABLE	Dollar Bonds IRR	Sterling Bonds Variant I	Sterling Bonds Variant II
WEIGHTED CONSTANT	1.12 (1.03)	4.38 (0.68)	3.61 (0.79)
CENTRAL AMERICA	0.34 (3.01)	–	–
SOUTH AMERICA	2.38 (1.26)	-1.03 (0.85)	-2.17 (0.99)
AUSTRALIA	4.85 (1.46)	0.89 (0.70)	1.65 (0.82)
JAPAN	5.08 (1.37)	1.23 (0.91)	1.69 (1.06)
WESTERN EUROPE	3.71 (1.11)	0.53 (0.87)	1.20 (1.02)
EASTERN EUROPE	0.92 (2.06)	-2.12 (1.07)	-2.16 (1.25)
NORTH AMERICA	3.96 (1.11)	0.80 (2.33)	1.57 (2.72)
AFRICA	–	1.27 (0.76)	2.01 (0.89)
SOUTHEAST ASIA	–	1.61 (0.79)	2.31 (0.92)
R-squared	0.61	0.22	0.34
S.E. of Regression	5.87	2.06	1.63

Table 4

Rates of Return by Year of Issue

Standard Errors in Parentheses
Omitted Variable is 1920

DEPENDENT VARIABLE	Dollar Bonds IRR	Sterling Bonds Variant I	Sterling Bonds Variant II
WEIGHT	8.11 (0.47)	6.38 (0.54)	6.31 (0.68)
1921	-0.91 (1.13)	–	–
1922	-2.88 (0.59)	-0.48 (0.79)	-0.65 (1.00)
1923	-1.79 (1.44)	-0.69 (0.65)	-0.67 (0.82)
1924	-2.81 (0.81)	-1.23 (0.62)	-1.24 (0.78)
1925	-3.15 (1.08)	-1.24 (0.66)	-1.22 (0.83)
1926	-2.73 (0.65)	-1.40 (0.76)	-2.05 (0.97)
1927	-10.07 (0.72)	-1.16 (0.61)	-1.23 (0.77)
1928	-3.76 (0.59)	-2.18 (0.69)	-2.79 (0.87)
1929	-8.50 (0.90)	-2.50 (0.77)	-2.64 (0.98)
R-squared	0.80	0.14	0.14
S.E. of Regression	4.23	1.47	1.87

Note:

Table 5

Rates of Return on Dollar Loans by Type of Borrower

Dependent Variable is Weighted IIR
Omitted Variable is National Government
Standard Errors in Parentheses

WEIGHTED CONSTANT	5.81
	(0.27)
STATE GOV.	-2.27
	(0.86)
MUNICIPALITY	-2.45
	(1.82)
NATIONAL BANK	-5.44
	(2.03)
OTHER BANK	-9.04
	(2.08)
CORPORATION	-3.21
	(0.52)
R-squared	0.66
S.E. of Regression	5.41
207 Observations	

Table 6

Realized Rates of Return on Sterling Loans
By Type of Borrower

Omitted Variable is Foreign Stocks and Bonds
(National Governments)
Standard Errors in Parentheses

	Variant I	Variant II
WEIGHTED CONSTANT	4.48 (0.29)	3.73 (0.36)
BRITISH FUNDS	0.44 (1.10)	1.18 (1.34)
DOMINION, PROVINCIAL or COLONIAL CENTRAL GOVERNMENTS	0.94 (0.33)	1.67 (0.41)
DOMINION, PROVINCIAL or COLONIAL LOCAL GOVERNMENTS	0.98 (0.80)	1.70 (0.97)
FOREIGN GOVERNMENTS	−0.74 (0.92)	−1.08 (1.12)
R−squared	0.081	0.15
S. E. of Regression	2.20	1.82

MIRR: Internal Rate of Return (IRR) calculated on the assumption that capital repayments took place at market prices where those sere lower than par.

PIRR: IRR calculated on the assumption that all capital repayments were made at par.

Table 7
Determinants of Spread Over Risk-Free Rate
Dependent Variable is Spread

| | Dollar Bonds | | Sterling Bonds | |
	Coefficient	S. E.	Coefficient	S. E.
CONSTANT	2.61	0.31	0.63	0.35
VALUE/EXPORTS	−0.07	0.24	0.0007	0.0007
MUNICIPAL	0.11	0.18	−	−
STATE	0.07	0.17	−	−
CORPORATE	0.76	0.16	−	−
NATIONAL BANK	0.04	0.34	−	−
OTHER BANK	0.14	0.28	−	−
DOMINION ETC. CENTRAL	−	−	−0.27	0.60
DOMINION ETC. LOCAL	−	−	1.25	0.69
FOREIGN GOVERNMENTS	−	−	0.80	0.69
TRADE SURPLUS	−0.20	0.25	−0.56	0.40
BUDGET SURPLUS	−0.80	0.40	−0.12	0.41
1921	−0.12	0.26	−	−
1922	0.04	0.25	−	−
1923	−0.01	0.36	−0.20	0.48
1924	0.17	0.29	−0.02	0.34
1925	0.19	0.27	0.13	0.39
1926	0.40	0.26	−0.11	0.31
1927	0.38	0.26	−0.21	0.31
1928	0.07	0.27	0.03	0.30
1929	0.06	0.28	−	−
WESTERN EUROPE	−0.73	0.18	0.62	0.62
EASTERN EUROPE	1.21	0.26	1.44	0.66
CANADA	−1.38	0.19	−0.41	0.53
CENTRAL AMERICA	−0.79	0.29	−	−
SOUTH AMERICA	0.50	0.21	0.38	0.67
JAPAN	0.05	0.36	0.26	0.60
AUSTRALIA	−0.91	0.45	−	−
GERMANY	−	−	0.29	0.67

Note: for dollar bonds 1920 is the omitted year, while for sterling bonds 1929 is omitted. The omitted countries are Germany for dollar bonds and Australia for Sterling bonds.

R-squared	0.69	0.91
S.E. of Regression	0.006542	0.3876
Number of Observations	207	43

Table 8

Relationship Between Ex Ante and Ex Post Returns

Standard Errors in Parentheses

Dollar Bonds

Ex Post Return = 6.44 − 0.418 Ex Ante Return
(1.60) (0.243)

S.E. = 4.76

Sterling Bonds (Variant 1)

Ex Post Return = 7.15 − 0.36 Ex Ante Return
(0.87) (0.15)

S.E. = 1.51

Sterling Bonds (Variant 2)

Ex Post Return = 8.43 − 0.62 Ex Ante Return
(1.08) (0.19)

S.E. = 1.88

Notes: Weighted least squares regressions.

Source: See text.

Table A.1
All Central Government and Dollar Bonds Guaranteed by the Central Government

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1920	EU	Kingdom of Norway	20	8	8	8.27
1920	EU	Gvmt. French Republic	100	8	8	8.18
1920	EU	Italy	9.975	6.5	7.13	6.26
1921	EU	Denmark	30	6	6.5	6.41
1921	NA	Canadian Northern Railway	25	6.5	6.8	6.68
1921	LA	Uruguay	7.5	8	8.2	5.91
1921	LA	Chile	24	8	8.21	9.22
1922	EU	Norway	18	6	6	5.67
1922	EU	Paris–Lyon–Med Railway	40	6	7.45	8.80
1922	EU	Yugoslavia	15.25	8	8.4	3.19
1922	NA	Dominion of Canada	100	5	5	4.99
1922	NA	Newfoundland	6	5.5	5.4	3.87
1922	LA	Argentina	27	7	7.25	6.74
1922	LA	Chile	18	7	7.48	2.09
1922	LA	Bolivia	29	8	8	-1.54
1922	FE	Netherlands East Indies	60	6	6.48	5.97
1923	EU	Austria	25	7	8	6.65
1923	FE	Netherlands East Indies	25	5.5	6.57	6.11
1924	EU	French National Mail Steamship	10	7	7.8	5.97
1924	EU	Switzerland	30	5.5	5.7	5.58
1924	EU	Sweden	30	5.5	5.5	5.18
1924	EU	Hungary	9	7.5	8.85	2.76
1924	NA	Canadian National Railways	50	5	5.03	5.09
1924	LA	Argentina	30	6	6.35	5.82
1925	EU	Denmark	30	5.5	5.5	5.00
1925	EU	Mortgage Bank of Denmark	22	6	6.05	4.99
1925	LA	Peru	7.5	7.5	7.75	6.43
1926	EU	Belgium	50	7	7.5	7.52
1926	NA	Dominion of Canada	40	4.5	4.65	4.41
1926	LA	Argentina	16.9	6	6.1	5.49
1926	LA	Panama National Bank	1	6.5	6.47	1.15
1927	EU	Central Bank of Agric. Germany	30	6	6.36	0.18
1927	EU	Central Bank of German State	5	6	6.4	0.94
1927	EU	Danish Export Credit Committee	3	4.5	4.9	4.08
1927	EU	Estonia	4	7	7.4	2.53
1927	LA	Bolivia	14	7	7.12	-4.82
1927	LA	Costa Rica Pacific Railroad	1.8	7.5	7.5	1.74
1928	EU	Denmark	55	4.5	4.8	4.53
1928	NA	National Transcontinental Ry	65	4.5	4.6	4.66
1928	LA	Panama	12	5	5.2	4.01
1928	LA	Republic of Colombia	35	6	6.35	2.18
1928	FE	Oriental Development	19.9	5.5	6.24	4.56
1929	LA	Mortgage Bank of Chile	20	6	6.6	-0.26

TOTAL ISSUED   1170.825

Table A.2
All State and Local Government Dollar Bonds Including Government Guaranteed

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1920	NA	Nova Scotia	0.5	6	5.78	5.72
1920	NA	Ontario	6.8	6	7.2	6.36
1920	NA	Manitoba	0.75	6	7.5	6.44
1920	NA	Ontario	5	6	5.21	5.13
1920	NA	Ottawa	1.409	6	6.34	6.08
1920	NA	Ottawa	0.357	6	6.55	6.34
1921	NA	Manitoba	1	5	7.38	6.44
1921	NA	Saskatchewan	3	6	6.15	6.18
1921	NA	British Colombia	3	6	5.99	5.74
1921	NA	British Colombia	1	6	7.5	6.56
1921	NA	Winnipeg Water	0.15	5.5	5.2	5.19
1921	NA	City of St. Boniface	0.4	6	6.5	3.83
1922	NA	St. James City	0.4	6	6.5	3.68
1922	NA	Alberta	3.5	5.5	5.75	5.42
1922	NA	S. Vancouver	0.885	5	4.9	4.94
1922	NA	Saskatchewan	2.64	5	5.05	4.99
1922	NA	New Westminister	0.4	6	6.06	6.04
1922	LA	City of Sao Paulo	4	8	8	3.34
1923	NA	Winnipeg	1	5	5.2	5.09
1923	NA	Alberta	4.8	5	5.2	4.87
1923	LA	Ceara, Brazil	2	8	8.02	-2.78
1924	NA	Westmount	0.2	5	4.9	5.17
1924	NA	British Colombia	3.0423	5	5.05	5.02
1924	NA	Nova Scotia	1.5	5	4.7	4.79
1924	NA	Barnaby District BC	0.25	5.5	7.23	5.78
1924	LA	Medellin, Colombia	3	8	8.19	9.07
1925	EU	Rhine-Main-Danube Corp.	6	7	7.35	1.32
1925	EU	Dusseldorf	1.75	7	7.32	1.69
1925	EU	Duisberg	3	7	7.3	2.95
1925	EU	Bremen State	15	7	7.65	1.39
1925	NA	Quebec	15	4.5	4.65	4.33
1925	NA	Saskatchewan	2.25	4.5	4.8	4.65
1925	NA	Ontario	21	4.5	4.75	4.74
1925	LA	City of Barranquilla, Colombia	0.5	8	8.12	4.32
1926	EU	Anhalt State	2	7	6.9	-4.12
1926	EU	Saxon Public Works	15	6.5	7.24	-1.07
1926	EU	Prussia	20	6.5	6.92	2.35
1926	EU	Styria, Austria	5	7	7.75	7.37
1926	NA	Saskatchewan	2.5	4.5	4.85	4.80
1926	NA	Province of Quebec	7.5	4.5	4.6	4.62
1926	LA	Buenos Aires Province	4.2	7	7.15	5.80
1926	LA	Buenos Aires Province	10.6	7	7.3	5.39
1926	LA	Buenos Aires Province	24.121	7	7.4	5.97
1926	LA	Montevideo	5.171	6	6.5	2.09
1927	EU	Nuremburg	5	6	6.5	-0.90

1927	EU	Saarbruecken Mortgage Bank	1	6	6.2	0.02
1927	NA	Manitoba	6.449	4.5	4.85	4.77
1927	NA	Ontario	24	4.5	4.6	4.61
1927	NA	Quebec Province	4	4.5	4.5	4.50
1927	NA	Alberta	3.875	4.5	4.88	4.28
1927	NA	Alberta	1.275	4.5	4.8	4.44
1927	NA	Nova Scotia	12.37	4.5	4.47	4.41
1927	LA	Tucuman, Argentina	2.1225	7	7.5	6.03
1927	LA	City of Cordoba	4.67	7	7.1	2.64
1927	LA	Dept. of Antioquia	4	7	7.6	0.65
1927	LA	Pernambuco State, Brazil	6	7	7.2	-0.02
1927	LA	Callao Province, Peru	1.5	7.5	7.6	2.50
1927	FE	Brisbane	7.5	5	5.26	3.99
1928	EU	Warsaw	10	7	7.95	1.58
1928	EU	Silesia	11.2	7	7.94	0.95
1928	EU	Antwerp	10	5	5.4	5.16
1928	EU	Oslo Gas and Electric	6	5	5.3	5.44
1928	NA	Winnipeg	1.7	4.5	4.59	4.40
1928	LA	City of Buenos Aires	3.396	6	6.1	5.79
1928	LA	Province of Buenos Aires	41.101	6	6.25	4.58
1928	LA	State of Rio Grande Del Sul	23	6	6.96	-1.95
1928	LA	Dept. of Antioquia	4.35	7	7.29	-0.06
1929	NA	British Columbia	6.417	4.5	4.8	4.90
1929	NA	Manitoba	3.495	5	5	4.93
1929	NA	Harbor Commission of Montreal	19	5	5	4.90
1929	NA	Montreal	14	4.5	5	4.76
1929	LA	Chilean Consolidated Municipal	15	7	7.5	-0.24

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                    TOTAL ISSUED              463.9958
                    AVERAGE IRR
0.034618
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Table A.3
All Private Dollar Bonds

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1920	EU	Solvay and Cie Belgium	10	8	8	6.19
1920	NA	Canadian Western Steamship	0.85	7	8.5	11.27
1920	NA	Shawinigan	4	7.5	8	8.51
1920	NA	Riordon	6.5	8	8.1	3.39
1920	LA	Cuba Railroad	1.7	7	7.5	7.11
1921	NA	Border Cities Hotel	0.85	7.5	7.5	4.18
1921	NA	Shawinigan	6	6	6.75	7.71
1921	LA	Cuba Railway	4	7.5	7.55	4.66
1922	EU	United Steamship Denmark	5	6	6.5	6.04
1922	NA	Nova Scotia Tramways	1.5	7	7.34	9.13
1922	NA	Firestone	1.5	7	7.1	7.36
1922	NA	Fort William Paper	2.1	7	7	6.48
1922	LA	Paulista Railway	4	7	7.1	7.07
1923	NA	Continental Paper	0.75	6.5	6.55	6.91
1924	EU	Intl. Power Securities France	4	6.5	7	7.26
1924	NA	Thomsen and Clark Timber	1	7	7	6.48
1924	LA	Cuba Northern Railway	1.68	6.5	6.75	6.17
1925	EU	Westphalia United Elec.	7.5	6.5	7.62	8.06
1925	EU	Hamburg Electric	4	7	7.65	2.51
1925	EU	Hamburg-American Line	6.5	6.5	6.56	5.99
1925	EU	August Thyssen	12	7	7.35	7.38
1925	EU	Siemens and Halske	5	7	7.65	6.79
1925	EU	Burmeister and Wain Copenhagen	2	6	6.8	3.08
1925	NA	Victoria Lumber	1.5	5.5	5.6	5.32
1925	NA	National Grocers	2	6.5	6.6	5.92
1925	NA	Canadian Bakeries	0.8	6.5	6.5	5.92
1925	LA	Andian National Corp., Colombia	10	6	6	6.09
1925	FE	Ujigawa	14	7	7.9	6.99
1926	EU	Consol. Hydroelectric Wirtembe	4	7	7.6	2.43
1926	EU	Stettin Public Utilities	3	7	7.55	-6.19
1926	EU	Good Hope Steel	10	7	7.8	3.09
1926	EU	Leonhard and Tietz	3	7.5	7.8	-0.58
1926	EU	Rheinelbe Union	25	7	7.55	1.92
1926	EU	European Mortgage Co., Hungary	7.348	7.5	7.8	-1.77
1926	EU	Fiat	10	7	7.69	6.79
1926	EU	Hungarian Land Mortgage Inst.	3	7.5	7.9	-7.67
1926	NA	Powell River Pulp and Paper	4	5	5.04	4.64
1926	NA	Asbestos Corp.	2.6	6	6	2.51
1926	NA	Canada Paper	2	6	6.15	6.23
1926	NA	Port Alfred Pulp and Paper	1.175	6.5	6.5	5.92
1926	NA	Manitoba Paper	4	6.5	6.5	7.59
1926	NA	Gatineau Power	72	5	5.4	5.73
1926	NA	Fort William Paper	3.5	6	6.13	8.00
1926	NA	St. Anne Paper	5	6.5	6.5	6.01
1926	LA	Mortgage Bank of Colombia	6	7	7.4	-1.41
1926	LA	Cuba Northern Railways	0.4	5.5	5.6	4.96
1926	LA	Cuba Railway	1.376	6	6.06	2.01

Year	Region	Name				
1927	EU	International Match, France	50	5	5.125	−7.85
1927	EU	Natl. Central Savings, Hungary	1.5	7.5	7.5	−10.57
1927	EU	Deutsche Bank	25	6	6.1	−0.30
1927	EU	United Steel Works	10.815	6.5	6.7	1.11
1927	EU	Norwegian Hydro Electric	20	5.5	5.85	5.39
1927	EU	Isarco Hydroelectric	5	7	7.6	4.18
1927	EU	Meridionale Electric	11.95	7	7.35	4.60
1927	NA	Investment Bond and Share	4	5	5	5.14
1927	NA	United Securities	3.6	5.5	5.5	4.89
1927	NA	Murray Bay Paper	2	6.5	6.5	5.87
1927	NA	United Grain Growers	3.75	5	5.3	4.41
1927	NA	Power Corp. of Canada	5	5	5.1	5.39
1927	NA	Queens Hotel	1.25	6	6	5.68
1927	LA	Mortgage Bank of Colombia	3	7	7.23	−1.81
1927	LA	Cuba Northern Railways	20	5.5	5.65	0.33
1927	FE	Shinyetsu	7.65	6.5	7.07	5.53
1928	EU	Brown Coal	2	6.5	7.05	0.38
1928	EU	Unterelbe	5	6	6.55	−0.74
1928	EU	Vesten	1.75	7	7.2	2.87
1928	EU	Isotta Fraschini	1.75	7	7.35	6.40
1928	EU	Allgemeine Elektricitats	15	6	6.5	2.26
1928	EU	Ruhr Chemical	4	6	6.7	0.39
1928	EU	Koholyt Corp. Germany	4	6.5	6.75	0.32
1928	EU	British and Hungarian Bank	1.5	7.5	7.6	−1.59
1928	EU	City Savings Bank	1.75	7	7.35	−1.83
1928	EU	Europ. Mort. & Invest., Hungary	13	7	7.3	−14.35
1928	EU	Rudolph Karstadt	15	6	6.3	−2.31
1928	NA	Canadian Power and Paper	2.5	5	5	2.04
1928	NA	Shawinigan	10	4.5	4.6	4.43
1928	NA	London Canadian Investment	6	4.5	4.5	4.70
1928	NA	Howard Smith Paper	7	5.5	5.57	5.76
1928	NA	Aluminum Ltd.	20	5	5	4.78
1928	LA	Bank of Colombia	2	7	7.5	−2.78
1928	FE	Tokyo Electric	70	6	6.8	6.31
1929	EU	Prussian Electric	4	6	6.75	−0.74
1929	EU	Harpen Mining	10	6	6.93	1.45
1929	EU	Ernesto Breda	5	7	7.4	3.03
1929	EU	Kreuger and Toll	50	5	5.12	−2.83
1929	EU	Foreign Power Securities	5	6	6	5.03
1929	NA	Dominion Tar and Chemical	4	6	6	6.12
1929	NA	Montreal Tramways	2.5	4.5	5.15	4.92
1929	NA	Consolidated Investment Corp.	15	4.5	4.5	3.61
1929	NA	Dryden Paper	1.5	6	6	5.69
1929	NA	Simpsons	10	6	6	5.80
1929	NA	McCall Frontenac Oil	9.88	6	6	7.74

TOTAL ISSUED   761.774

AVERAGE IRR   2.5244

BRITISH FUNDS (1)

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1923	CW	Sudan Gvt. Guaranteed Stk.	3.763	4.50	4.84	0.0491 (0.0497)*
1927	CW	Palestine Gvt. Guaranteed Stk.	4.475	5	4.97	0.0495
1928	CW	Tanganyika Gvt. Guaranteed Stk.	2.07	4.5	4.66	0.0478

DOMINION, COLONIAL, PROVINCIAL GOVERNMENT SECURITIES (2)

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1921	CW	Ceylon Gvt.Insc. Stk.1936-51	6.213	6	6.19	0.063
1921	CW	S.Africa (Union of) Stk.1930-40	11.0	6	6.25	0.0647
1921-22	CW	Australian Gvt. Reg.Stk.1931-41	15.0	6	6.23	0.065
1921-22	CW	New S.Wales Gvt. Insc.Stk.1930-40	10.0	6	6.21	0.062 (0.0626)*
1922	CW	Victoria Gvt.Stk. 1930-40	4.0	5.5	5.56	0.0525 (0.0528)*
1922	CW	W.Australia Gvt. Insc.Stk.1935-45	4.0	5	5.15	0.0517 (0.0522)*
1922	CW	India Gvt.Stock 1932	22.5	5.5	5.8	0.0602 (0.0624)*
1923	CW	S.Africa (Union of) Insc.Stk.	13.0	5	5.02	0.0814
1923	CW	S.Australian Gvt. Reg.Stock	5.65	5	5.05	0.0508
1923	CW	Jamaica Gvt. Insc.Stk.	0.67	4.5	4.79	0.05
1923	CW	New S.Wales Gvt. Insc.Stk.1935-45	11.0	4.5	4.76	0.0515
1923	CW	Newfoundland Insc.Stock	0.423	5	5.18	0.053

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1923	CW	New S.Wales Gvt. Insc.Stk.1932-42	4.0	5	5.08	0.0482
1923	CW	Victoria Gvt. Insc.Stk.	14.0	5	5.04	0.0473 (0.0474)*
1923	CW	New Zealand Gvt. Insc.Stk.1933-43	4.0	4	4.35	0.0496
1923	CW	W.Australia Insc.Stk.1935-65	3.0	4.5	4.74	0.0488 (0.0506)*
1923	CW	Nigeria Gvt. Insc.Stk.1963	5.7	4	4.54	0.0467
1923	CW	Tasmania Gvt. Reg.Stk.	1.15	5	5.05	0.0476
1924	CW	S.Rhodesia Insc.Stk.	3.0	5	5.1	0.0525
1924	CW	New S.Wales Gvt. Insc.Stk.	22.0	5	5.07	0.0512
1924	CW	Australian Gvt. Reg.Stk.1935-45	22.0	5	5.18	0.0515
1924	CW	W.Australia insc.Stk.1935-45	2.0	5	5.1	0.0515 (0.0521)*
1924	CW	N.Zealand Gvt. Insc.Stk.1944	7.362	4.5	4.74	0.0475
1924	CW	Queensland Gvt. Insc.Stk.1940-60	18.229	5	5.07	0.0503
1924	CW	S.Africa(Union of) Insc.Stk.1940-60	2.0	5	5.02	0.0502
1924	CW	Australia Gvt. Reg.Stk.1940-60	6.0	4.75	4.87	0.0488
1925	CW	S.Africa(Union of) Insc.Stk.	23.0	5	5.02	0.0514
1925	CW	Gold Coast Gvt. Insc.Stk.	4.628	4.5	4.79	0.0475
1925	CW	Newfoundland Gvt. 1949 Bonds	1.395	5	4.99	0.0498
1925	CW	New Zealand Gvt. Insc. Stk.1945	7.0	4.5	4.76	0.0527

1925-26	CW	New S.Wales Insc.Stk.1945-65	14.5	5	5.1	0.0514 (0.517)*
1925 (26/27)	CW	Victoria Gvt. Insc.Stk.1945-75	11.905	5	5.09	0.0506 (0.0507)*
1925 (26/27/28)	CW	S.Australia Gvt. Reg.Stk.1945-75	7.639	5	5.1	0.0504 (0.0509)*
1925 (27/28)	CW	W.Australia Gvt. Insc.Stk.1945-75	7.0	5	5.11	0.0506 (0.0512)*
1926	CW	New Zealand Gvt. Reg.Stk.	6.0	5	5.08	0.0501
1926	CW	Newfoundland Gvt. Bonds 1951	1.027	5	5.05	0.0522
1926-27	CW	New Zealand Gvt. Insc.Stk.1946	12.894	5	5.04	0.0487
1927	CW	Australia Com/wlth Gvt.Reg.Stk.	72.115	5.0	5.19	0.0583
1927	CW	Nigerian Gvt. Insc.Stk.1947-57	4.25	5	5.0	0.0502
1927	CW	Kenya Gvt. Insc.Stk. 1948-58	5.0	5	5.02	0.0504
1927	CW	New S.Wales Gvt. Insc.Stk.1947-57	17.995	5.25	5.29	0.0524
1928	CW	New Zealand Gvt. Insc.Stk.	11.225	4.5	4.76	0.0491
1928	CW	Newfoundland Gvt. Bonds 1953	2.055	5	5.0	0.05
1928	CW	India Gvt. Loan Stk.1958-68	17.5	4.5	4.93	0.0536
1928	CW	Kenya Gvt. Insc. Stk.	3.5	4.5	4.73	0.0489
1928	CW	Fiji Gvt. Insc.Stk.1946-53	0.765	5	4.95	0.0419
1929	CW	New Zealand Gvt. Insc.Stk.1948-58	19.228	4.5	4.74	0.0491
1929	CW	New Zealand Gvt. Insc.Stk.1935-45	10.14	5	5.1	0.0540
1929	CW	Newfoundland Gvt. Bonds 1954	1.233	5	5.1	0.0547

DOMINION AND COLONIAL CORPORATION STOCK (3)

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1921	CW	Calcutta Port Deb.1931-51	1.0	7	7.0	0.07
1922	CW	Calcutta Port Deb.1952	1.25	6	6.0	0.0596 (0.06)*
1923	CW	Rangoon(City of) Debentures	0.3	5.5	5.58	0.0578
1923	CW	Wellington City Antecedent Liab.	0.34	5.25	5.3	0.0533
1923	CW	Calcutta (Port of) Debentures	1.0	5	5.15	0.056
1923	CW	Calcutta Impr.Trust Deb.1953	0.7	5.5	5.88	0.0593
1923	CW	Auckland Harbr Brd 20-yr Deb.1943	0.2	5	5.05	0.0508
1924	CW	Calcutta(Port of) Debentures	1.0	5	5.56	0.056
1924	CW	Karachi Port Trust Deb.1954	0.333	5.5	5.7	0.0571
1924	CW	Auckland Electric Power Brd Deb.1945	0.25	5	5.15	0.0517
1924	CW	Brisbane Water Supply Sewerage Stk.1949	1.0	5	5.32	0.0516 (0.0558)*
1924	CW	Brisbane Tramwy Trst Insc.Stk.1944-54	1.5	5.25	5.3	0.0535
1925	CW	Perth Deb.1950	0.187	5	5.21	0.053
1925	CW	Pretoria Insc.Stk.1953-57	0.7	5	5.05	0.0508
1925	CW	Wellington City Deb.1949-50	0.33	5	5.1	0.051
1926	CW	Auckland City Loan 1959	0.5	5.25	5.3	0.0531
1926	CW	Auckland City Loan 1959	0.4	5	5.15	0.0516
1926	CW	Auckland Electr. Power Brd Loan 1946	0.25	5	5.15	0.052

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1927	CW	Port Elizabeth Corp. Redeem.Stk.1962	0.35	5	5.05	0.0527
1927	CW	Cape Town Redeem.Stk.	1.0	5	5.08	0.0508
1927	CW	Sydney Deb. 1953	2.0	5.25	5.28	0.0529
1928	CW	City of Wellington Debentures	0.063	5	5.1	0.0529
1928	CW	Melbourne and Metr. Brd of Wrks Insc. Stk.1948	1.0	5	5.15	0.0517
1928	CW	Melbourne Hrbr Trust Commissioners Deb.1948	1.0	5	5.18	0.0525 (0.053)*
1928	CW	Sydney City Deb.1954	2.0	5.25	5.33	0.0531
1928	CW	Wellington City Deb.1964	0.15	5	5.08	0.0509 (0.051)*
1929	CW	Montreal City Reg.Stk.1969	2.149	4.5	4.86	0.0518

FOREIGN BONDS (4)

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1921	LA	San Paolo State Stlg Bonds 1921	2.0	8	8.29	0.04 (0.0495)*
1921	EU	Norwegian Gvt. Loan 1921	4.0	6	6.82	0.0697 (0.07)*
1922	LA	Chilean Gvt. Loan 1922	1.657	7.5	7.89	0.0284 (0.042)*
1922	LA	Peruvian Gvt. Guano Loan 1922	1.25	7.5	7.89	0.055 (0.063)*
1923	EU	Roumanian Ext. Loan 1923	2.5	4	5.97	0.0468
1923	FE	Dutch East Indies 40-yr Ext.Snkg Fnd	5.0	6	6.13	0.061
1923	LA	Argentine Gvt. Port of cptl bonds	4.601	5	5.55	0.0593 (0.068)*
1923	EU	Finland Loan	1.0	6	6.67	0.0656
1923	FE	Dutch East Indies Gvt. Loan 1933-62	6.0	5	5.43	0.0609
1924	EU	Czechoslovak Stlg Loan 1922	2.05	8.0	8.3	0.0841
1924	EU	Greek Gvt. Refugee Loan	10.0	7	7.95	0.0276
1924	FE	Japan Gvt. Stabil.Loan	25.0	6	6.86	0.0531 (0.0563)*
1924	FE	Siamese Gvt. Stlg Bonds	3.0	6	6.28	0.0656
1924	EU	German Ext. Loan Stlg Bonds	12.0	7	7.6	0.052 (0.0546)*
1926	LA	Chilean Gvt. Loan	2.809	6	6.38	0.0103 (0.027)*
1926	EU	Westphalia(Province) Stlg Loan	0.835	7	7.11	0.0408
1926	EU	Hamburg(State of) Stlg Bonds	2.0	6	6.42	0.0289 (0.0325)*

1926	EU	Bulgaria Settlement Loan	2.4	7	7.61	−0.0568 (−0.0389)*
1926	LA	San Paolo State Waterwrks Loan	2.5	7	7.29	0.0107 (0.0243)*
1926	EU	Kingdom of Belgium Stlg Bonds	8.5	7	7.45	0.0731
1926	FE	Tokyo Loan	6.0	5.5	6.59	0.0522 (0.0555)*
1927	LA	Rio de Janeiro (State of) Stlg Bonds	1.891	7	7.22	0.0114
1927	EU	Free City of Danzig 20-yr stlg bonds	1.9	6.5	7.14	0.0194 (0.0405)*
1927	EU	Italian Credit Cons. 10-yr bonds	0.5	7	7.18	0.0716 (0.0754)8
1927	EU	Estonia Republic Bonds	0.7	7	7.41	0.0258 (0.0281)*
1927	LA	Brazil Stlg Bonds	8.75	6.5	7.1	0.037 (0.0425)*
1927	EU	Italian Credit Cons. 20-yr bonds	1.1	7	7.25	0.0696 (0.0708)*
1927	EU	Poland Republic Stlg Bonds	2.0	7	7.6	0.0299 (0.0428)*
1928	EU	Greek Gvt. Stlg Bonds	4.071	6	6.59	0.0206 (0.0266)*
1928	LA	Minas Geraes (State of) Stlg bonds	1.75	6.5	6.7	−0.0045 (−0.0116)*
1928	LA	Chilean Gvt. Stlg bonds	2.0	6	6.28	0.0196 (0.0343)*
1928	EU	Greek Gvt. Public Wrks Stlg bonds	4.0	6	6.74	0.0232 (0.0252)*
1928	LA	San Paolo State Stlg bonds	3.5	6	6.35	−0.062 (−0.0125)*
1928	LA	Peruvian Stlg bonds	2.0	6	6.59	0.0114 (0.0154)*
1929	EU	Roumanian Stab. and Dev. Loan	2.0	7	7.95	−0.104 (−0.0935)*
1929	LA	Chilean Gvt. Stlg Loan	2.0	6	6.35	−0.079 (−0.0496)*

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FOREIGN CORPORATION STOCKS (5)

YEAR	REGION	ISSUE NAME	AMOUNT	COUPON	YIELD TO MATURITY	IRR
1924	EU	Amsterdam(City of) Stlg Loan	2.5	5.5	5.7	0.0613
1925	EU	Danzig(Municipality of)Stlg bonds	1.5	7	7.78	0.0479 (0.0632)*
1927	LA	City of Santos Consolidated Stlg Loan	2.26	7	7.22	0.0173
1927	EU	Berlin Stlg bonds	3.5	6	6.09	0.0189 (0.0294)*
1927	EU	Dresden Stlg bonds	0.6	5.5	6.01	-0.0896 (-0.0125)*
1928	EU	City of Cologne 25yr stlg bonds	1.15	6	6.28	0.0235 (0.031)*
1928	EU	City of Munich Stlg bonds	1.625	6	6.38	0.0177 (0.0402)*
1928	LA	Nictheroy(Brazil) Guaranteed stlg bonds	0.8	7	7.25	-0.0014 (0.0134)*
1928	EU	Saarbrueken(City of) 25-yr stlg bonds	1.0	6	6.38	0.0401 (0.0488)*
1929	EU	City of Abo(Finland) 30-yr stlg bonds	0.5	6.5	6.88	0.0737

NOTES:

Loan types (2) and (5) refer to loans granted to central governments.
Loan types (3) and (4) refer to loans granted to municipalities.

(^{1}) Total face value of issue in million pounds sterling.
(^{2}) Nominal interest rate, in %.
(^{3}) Effective interest rate based on issue price, in %.

* Repayments of principal outstanding can be undertaken by purchases at or under par or by drawings at par. The figure within the brackets assumes annual repayments of principal are made at par. The other assumes repayments at market prices, if less than par, otherwise at par.

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