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The Samurai Bond Market

Frank Packer and Elizabeth Reynolds

Issuance in the samurai bond market has more than tripled over the past several years. Some observers have attributed this growth to a systematic underestimation of credit risk in the market. A detailed review of credit quality, ratings differences, and initial issue pricing in the samurai bond market, however, turns up little evidence to support this concern.

Foreign issuance of yen-denominated bonds in Japan has increased dramatically—from 1.6 trillion yen ($17 billion) in 1995 to 3.9 trillion yen ($36 billion) in 1996.[1] Purchases of these bonds, known as samurai bonds, amounted in 1996 to nearly one-quarter of foreign securities purchased by Japan, the world's largest supplier of excess savings. Recently, some observers have begun to question whether the surge in issuance stems from the market's systematic underestimation of credit risk.

This edition of *Current Issues* begins by reviewing the development of the samurai bond market over the past several years. We then investigate the chief concerns raised about the market's treatment of credit risk. First, we consider whether the elimination of Japan's minimum credit rating requirement has led to an especially rapid rise in issuance by high-risk borrowers. Second, we explore the concern that the ratings given to samurai credits by Japanese credit rating agencies—higher than the ratings assigned by U.S. agencies—may be misleading to investors. Finally, we examine whether the weak relationship between issuer credit risk and initial issue pricing in Japan's domestic corporate bond market holds true in the samurai bond market as well.

Our analysis of the samurai bond market's credit quality, ratings, and pricing practices reveals that these concerns may be overstated. Most of the growth in issuance is attributable to relatively high-quality borrowers, the samurai ratings of Japanese agencies are not particularly high compared with their ratings for domestic credits, and the initial issue pricing of samurai bonds appears to be highly correlated with measures of credit risk in the samurai sector. Overall, fears that the dramatic growth of samurai bond issuance reflects the market's persistent underestimation of credit risk seem hard to justify.

Market Profile

When sovereigns or other non-Japanese borrowers want to issue bonds denominated in yen, they can do so either in Japan or overseas. Samurai is the name given to yen-denominated bonds issued in the Japanese market by nonresidents and sold under domestic regulations. The other common form of yen-denominated foreign bond issuance is in the Euroyen bond markets, where the bonds are issued outside of Japan, typically in London.

Non-Japanese borrowers may choose to issue in a yen-denominated market to hedge against foreign exchange risk. They may also issue in yen-denominated markets with the intention of simultaneously swapping the issue into another currency, such as U.S. dollars, to take advantage of lower costs relative to direct issuance in the other currency. Lower costs may result from investor preferences that differ across segmented markets or from temporary market conditions that differentially affect the swaps and bond markets.[2]

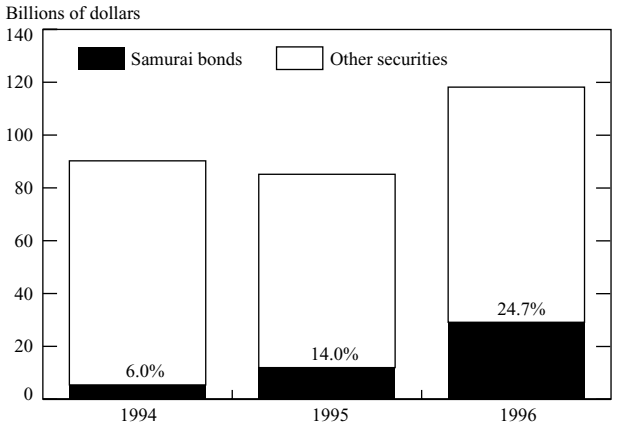
From the mid-1980s to the mid-1990s, annual issuance in the samurai market was considerably less than foreign issuance in the Euroyen market.[3] Since 1994, however, the samurai bond market has grown swiftly. In 1996, issuance was 3.9 trillion yen ($36 billion), up from 1.6 trillion yen ($17 billion) in 1995, and 1.1 trillion yen ($11 billion) in 1994. For the first time in twelve years, samurai issuance in 1996 exceeded yen-based foreign issuance in the Euromarket.[4] In terms of capital flows, samurai bonds have become a significant portion of foreign securities purchased by Japan, the world's largest creditor nation. In 1996, purchases (net of redemptions) constituted around 25 percent of the $118 billion of Japanese purchases of foreign securities, up from 6 percent in 1994 (Chart 1).

Many studies have shown that monetary policy in international creditor countries has accounted for a sizable share of international capital flow variation over time.[5] In Japan, the recent growth of the samurai market has been related to that country's low interest rates. The official discount rate has been 0.5 percent since September 1995. Longer term rates have also been low by postwar standards: initial issue rates on five-year financial debentures averaged 1.9 percent in the second half of 1995 and 2.2 percent in 1996. To Japanese investors seeking higher returns on their fixed-term investments, the yields offered by samurai bonds have looked very attractive compared with those of other fixed-income instruments available in Japan.[6]

The composition of investors and issuers in the market has changed as the market has grown. To date, the bulk of the increase in samurai issuance has been absorbed by individual investors. According to data released by the Bond Underwriters Association of Japan (1995-97), purchases of newly issued samurai bonds by Japanese individual investors represented 65 percent of all purchases in 1996, compared with 49 percent in 1995 and 34 percent in 1994. The samurai market has also attracted a widening range of borrowers. Among sovereigns in 1996, Argentina (Moody's: B1/Standard and Poor's: BB-) made its first samurai issue since the late 1970s. Mexico (Ba2/BB) came to the market for the first time since the peso devaluation of December 1994, and the Republic of Turkey (Ba3/B+) entered the market for the first time since 1994, when its credit rating had been much higher.[7]

As the number of individual investors and the range of issuers have increased, so have questions about the risk and pricing of samurai bonds. The argument is often made that the desire for higher yields has prompted many Japanese investors, particularly retail and small institutional investors, to take on credit risks they may not be prepared to analyze.[8] Moreover, there have been notable instances in the past when investors underestimated the credit risk of foreign bond purchases.[9] We now look in greater detail at the credit quality, ratings, and pricing of samurai bonds to investigate whether the concerns identified in this particular market are justified.

Chart 1
Japanese Purchases of Foreign Securities, 1994-96



Source: Bank of Japan.

Notes: Purchases are net of redemptions. Dollar amounts are calculated using the yearly average yen/dollar rate.

The Elimination of the Rating Requirement

The elimination of the minimum credit rating requirement for bond issuance has attracted attention as a factor in the samurai market's recent growth.[10] Before 1996, Japanese financial regulators limited credit risk by requiring a minimum credit rating of Baa3/BBB- for bonds to be issued in the Japanese market. In February 1995, Japan and the United States signed a financial services agreement that, among other things, accelerated the deregulation of the bond market in Japan (U.S. Treasury Department 1995). In accordance with one clause of the agreement, a minimum bond rating was no longer required as of January 1996.

The minimum rating requirement had not actually kept all samurai issuers with ratings below Baa3/BBB- out of the market. In 1994 and 1995, Moody's or Standard and Poor's rated one-tenth of issuance volume non-investment-grade, or below Baa3/BBB- (Chart 2). These issues had been permitted because they were rated Baa3/BBB- or above by one or more of the other rating agencies with official designation from the Ministry of Finance.[11] As in the United States, the official designation of a large number of rating agencies in Japan has tended to make regulatory requirements based on ratings less binding (Cantor and Packer 1994).

Still, the distribution of broad credit quality categories of samurai issuance has changed in the past year (Chart 2). Issuance by non-investment-grade borrowers in 1996 grew to 624 billion yen ($5.7 billion), slightly more than 17 percent of all issuance and 484 billion yen ($4.4 billion) greater than in 1995. More of the growth in the samurai bond market, however, was attributable to issuance by borrowers rated Aaa/AAA or Aa/AA by Moody's and Standard and Poor's. This category of top-rated borrowers issued 1.9 trillion yen ($17 billion) in 1996, more than 50 percent of all issuance and 1.2 trillion yen ($11 billion) greater than issuance in 1995.

What percentage of the total growth is the result of the elimination of the rating requirement? A review of credit ratings from all approved agencies shows that around 507 billion yen ($4.7 billion) of samurai bond issuance (ten issues) would not have been allowed in 1996 if the rating requirement had remained intact. By dividing this amount by the increase in 1996 issuance over that of 1995, we estimate that only 23 percent of the 1996 increase in samurai issuance volume was due to issuers specifically enabled by the deregulatory measure. Thus, substantial growth would have occurred even if the rating requirement had remained in place.

Differences in the Ratings of Japanese and U.S. Agencies

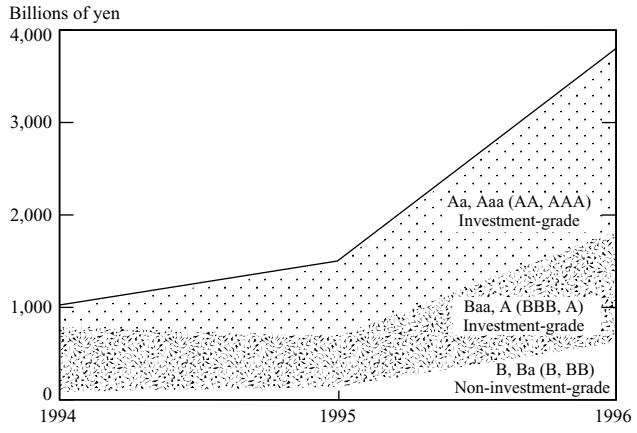
Another concern cited by many observers is the fact that investors may not fully appreciate the risk of the samurai issues because Japanese rating agencies rate samurai bonds higher than U.S. agencies.[12] Indeed, a comparison of the Japanese and U.S. ratings of specific samurai bonds reveals very large differences between the two sets of ratings. The National Bank of Hungary, one of the more frequent issuers in the samurai market, earned a rating of Ba1/BB+ from Moody's/Standard and Poor's during 1995 and 1996, but it received a rating of BBB+—a full three notches higher—from the Japan Credit Rating Agency.[13] Even greater differences are apparent in the ratings of other samurai issues: while Moody's rated an issue from the Republic of Greece in August 1996 Baa3, the Japan Bond Rating Institute gave it an A rating—four notches higher. And for its samurai issue in April 1996, Samsung Electronics' AA rating from the Japan Bond Rating Institute was five notches above its Moody's rating of Baa1.

These differences are not as unexpected as they may seem at first glance; Japanese credit rating agencies also rate domestic borrowers much higher on average than Moody's and Standard and Poor's (Hirai and Tomita 1996). Because of the persistent nature of the ratings differences, and the fact that Japanese regulatory authorities have eliminated the use of ratings to determine the eligibility of bond issuance, Japanese investors are unlikely to assume that the Japanese agencies' particular letter-grade ratings correspond to the same absolute level of default risk as the ratings of Moody's and Standard and Poor's. More likely, Japanese investors will consider the information provided by Japanese agency ratings about the *rank ordering* of default risk.

Are the ratings differentials between Japanese and U.S. agencies higher for samurai credits than for Japanese corporate credits? To answer this question, we examine the credit ratings of 60 samurai bond issues during 1995 and 1996 and of 236 Japanese issuers in the domestic bond market on November 1, 1996. Each samurai and domestic issuer in our sample had at least one rating from one of the three major Japanese rating agencies and one rating from either Moody's or Standard and Poor's. In the table, we report the mean difference between the average Japanese agency rating and the average rating of Moody's and Standard and Poor's for four categories of issuers: investment-grade and non-investment-grade samurai issuers and investment-grade and non-investment-grade domestic issuers.

As expected, all categories of issuers tend to have higher ratings from the Japanese agencies. For three of the four categories—investment-grade samurai issuers, investment-grade domestic issuers, and non-investment-grade samurai issuers—the average differential is around 2.5 ratings notches. For the 39 domestic non-investment-grade issuers, however, Japanese agencies on average rate nearly five notches higher than U.S. agencies.

Chart 2
Samurai Bond Issuance by Credit Quality, 1994-96



Sources: *International Financing Review* (1994-97); Bloomberg L.P.

Notes: An issuer's rating category is determined by its average rating from Moody's and Standard and Poor's; an average rating between categories is placed in the lower category.

Rating Differentials between Japanese and U.S. Agencies

	Samurai Issuers		Domestic Issuers	
Grade	Number of Jointly Rated Issues	Average Notch Differential	Number of Jointly Rated Issues	Average Notch Differential
Investment	46	+2.4	197	+2.6
Non-investment	14	+2.5	39	+4.8

Sources: Authors' calculations, based on ratings from Moody's, Standard and Poor's, Nippon Investors Service, the Japan Bond Rating Institute, and the Japan Credit Rating Agency.

Clearly, Japanese agencies do not rate samurai issuers exceptionally high relative to domestic issuers. Some of the concern over high Japanese ratings for samurai issuers likely reflects an underestimation of the role that credit ratings play in measuring *relative* as opposed to *absolute* credit risks. In fact, Japanese rating agencies rank samurai credits either similarly or conservatively when compared with the relative rankings of samurai credits by U.S. agencies. Thus, it is unlikely that Japanese rating agencies are responsible for the rapid growth of the samurai market.

The Pricing of Domestic and Samurai Bonds Compared

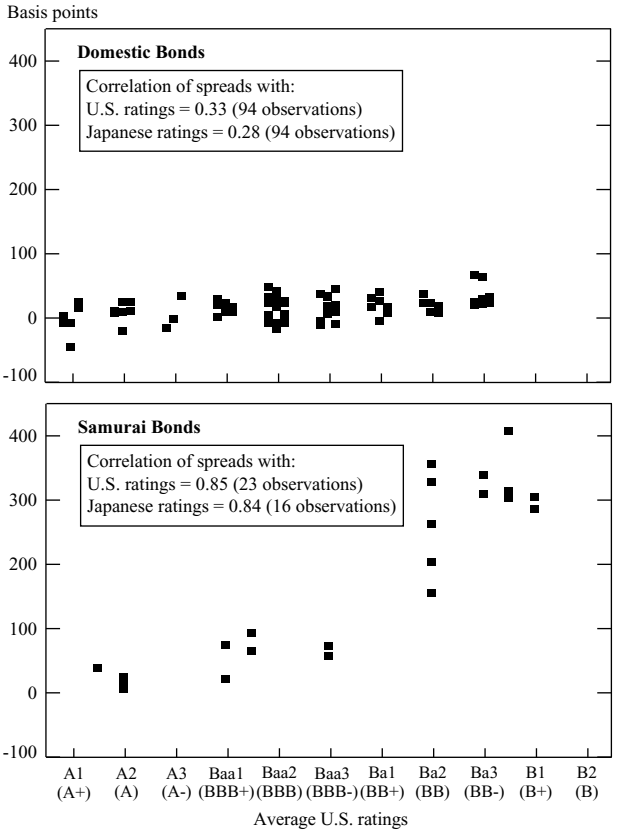
Pricing in Japan's domestic corporate bond market has not been closely correlated with issuer credit risk in the postwar era. This probably reflects the fact that Japanese investors have had little need to distinguish issuers by credit risk. When bonds have gone into default, the trustee bank responsible for the distribution of interest and monitoring of collateral (often the borrower's "main bank," which holds shares and sometimes is represented on the board of the company) has almost always bought up the defaulted bonds and absorbed the losses despite having no legal obligation to do so (Campbell and Hamao 1995).[14]

Are credit risks priced similarly in the samurai and domestic markets? To explore this question, we examine initial issue pricing for a sample of twenty-three samurai bonds and ninety-four Japanese corporate bonds issued in 1996, each of which had ratings from Moody's and/or Standard and Poor's.[15]

The top panel of Chart 3 presents the differences between the promised yield to maturity of Japanese domestic corporate bonds and the yield taken from the contemporaneous Japanese swap yield curve for the same maturity.[16] Measured in basis points, these differences represent the effective spreads over yen LIBOR that the issuers would pay if the obligations were swapped into floating-rate obligations. These spreads are plotted against the average credit ratings from Moody's and/or Standard and Poor's at the time of issuance. The bottom panel presents the same information for the sample of samurai bonds.

The top panel of the chart and its inset indicate that the rates paid by domestic issuers do not have a strong relationship with the credit ratings of either the U.S. agencies or the Japanese agencies. The correlation between the rankings of the bonds by yields and ratings, while positive, is fairly low for both the ratings of the U.S. agencies (.33) and the ratings of Japanese agencies (.28). These correlations suggest that credit risk—at least as measured by the credit ratings of the U.S. and Japanese agencies—is a relatively minor factor in the pricing of domestic corporate bonds.

Chart 3
Spreads of Selected Domestic and Samurai Bonds Issued in 1996
Bond Yield Minus Yen Swap Rate



Sources: Bloomberg L.P.; DRI/McGraw-Hill.

Notes: U.S. ratings on the horizontal axis are an average of Moody's and Standard and Poor's ratings. Japanese ratings are an average of the ratings assigned by the Japan Bond Rating Institute, Nippon Investors Service, and the Japan Credit Rating Agency. Data points in the top panel have been moved slightly to the right or left in order to show individual points more clearly, but each point corresponds to the whole rating. The measure of correlation is Spearman's rank correlation.

The bottom panel of the chart highlights a dramatic difference in the pricing of samurai bonds. Borrowers in the samurai market are paying considerably more than domestic borrowers of similar credit risk. All but one of the samurai bonds in the sample were issued at spreads greater than the mean of spreads for domestic bonds issued in the same (or the closest) rating category. Of the twenty-three samurai issues, eighteen were issued at spreads greater than every domestic bond with the same (or the closest) credit rating, including seventeen of the eighteen samurai issues with an average rating of Baa1/BBB+ or less from Moody's/Standard and Poor's.

Another distinctive pattern is that the gap between spreads paid by samurai and domestic borrowers grows as credit risk increases. For example, the mean spread of samurai bonds goes up by 233 basis points when we move from issues rated Baa/BBB by Moody's/Standard and Poor's to those issues rated Ba/BB, but it only rises 11 basis points for domestic bonds. This pattern—as well as the overall pattern of higher spreads at similar credit ratings—holds for Japanese ratings as well. The market's ranking of samurai credits is strongly correlated with the rankings of both the U.S. (0.85) and the Japanese rating agencies (0.84).

The different pricing pattern of samurai bonds may well reflect the absence of the implicit guarantees traditionally provided by Japanese banks in the domestic bond market. Samurai issuers are unlikely to have as close and multifaceted a relationship with Japanese banks as do Japanese corporate issuers. Perhaps for this reason, the bond purchasers may expect much less from the trustee bank in the event of default. Regardless of the reason for this gap, the samurai bond market appears to have preceded Japan's domestic corporate bond market in the development of pricing patterns that strongly differentiate issuers by credit risk.

Conclusion

Our review of the rapidly growing samurai bond market suggests that three concerns about the market's growth and treatment of credit risk may well be overstated. First, our look at the changes in the credit quality of bond issuance since Japan's elimination of the minimum rating requirement indicates that less than one-quarter of the 1996 growth in issuance can be explained by the deregulatory measure, while most of the growth is attributable to high-quality borrowers.

Second, our examination of credit ratings shows that, although Japanese rating agencies consistently rate samurai bonds much higher than their U.S. counterparts, their samurai ratings are not particularly high relative to their ratings for domestic credits. As long as investors are aware of the relative rankings of risk provided by the Japanese agencies, Japanese ratings cannot be responsible for the popularity of samurai issues.

Finally, our analysis of pricing practices suggests that the initial pricing of samurai bonds is strongly correlated with U.S. and Japanese agency rankings of credit risk. The observed pattern of pricing indicates that Japanese investors have required larger implied risk premia for samurai debt issues than for similarly rated domestic debt, and that these premia greatly increase as the borrower's credit rating declines. Thus, while initial issue pricing is only weakly correlated with credit risk in the domestic bond market, participants in the samurai bond market appear to be highly sensitive to credit risk when pricing new issues.

Notes

1. Dollar amounts are calculated using the yearly average yen/dollar rate.

2. See International Monetary Fund (1996, pp. 60-1) for a discussion of international bond issuance and the swaps market.

3. The samurai bond market is characterized by high direct costs of issuance compared with the Euroyen bond market. According to calculations of the Fuji Research Institute (1996), the total cost of fees for a samurai issue averages .78 percent of the issuance amount, compared with .28 percent in the Euroyen market.

4. Yen-based foreign issuance in the Euromarkets was 2.4 trillion yen ($22 billion) in 1996. We arrive at our figures by using yen-denominated bond issues of non-Japanese corporations (defined by nationality of the parent company) as reported in the *International Financing Review* (1994-97).

5. For a review of the literature, see Eichengreen (1996).

6. Roughly one-half of all samurai issues in 1996 were dual-currency bonds. Investors pay for these bonds and receive interest in yen, but bonds are redeemed in a foreign currency. The bonds generally carry higher coupon rates than similar straight yen bonds because the lower yen interest rates relative to other currencies imply expected yen appreciation, and the exchange rate used for redemption is usually the spot rate at the time of issuance. Our analysis does not address the exchange rate risk of dual-currency bonds.

7. The credit rating symbols of Moody's differ slightly from those used by Standard and Poor's. For example, Moody's Baa1, Baa2, and Baa3 correspond to Standard and Poor's BBB+, BBB, and BBB-. For a complete table of correspondences, see Cantor and Packer (1994).

8. See, for example, Moody's (1996) and International Monetary Fund (1996, pp. 97-9).

9. See Mintz (1951) for an analysis of U.S. investment in foreign bonds in the 1920s.

10. For example, Reuters (1996) reported that the elimination of bond eligibility standards has "open[ed] the door for foreign issuers [that] have low credit ratings but want to issue such bonds, and this has spurred the recent boom." See also *Asiamoney* (1996-97).

11. The ratings of three Japanese agencies and six non-Japanese agencies were certified for use in regulation. Throughout the rest of the paper, we refer to borrowers rated below Baa3/BBB- by Moody's or Standard and Poor's as non-investment-grade and other borrowers as investment-grade.

12. See, for example, International Monetary Fund (1996, p. 98).

13. Rating notches are the gaps between ratings. For example, the gap between A+ and A- is two notches; between A+ and BBB+, three notches.

14. To date, only in the case of the 1993 bankruptcy of Muramoto Construction has the trustee bank failed to bear the loss. Some have predicted that the weakened condition of banks and the fear of shareholder lawsuits will increasingly limit banks' flexibility in the case of defaulted bonds.

15. Dual-currency samurai bonds, bonds with a maturity greater than ten years, and bonds without a rating from Moody's or Standard and Poor's were eliminated from our analysis. Domestic bonds with a maturity of greater than ten years or with imbedded options also were eliminated. Because no samurai bonds with ratings of Aa3/AA- or higher from Moody's/Standard and Poor's were present in the resulting sample, we examined only domestic bonds with ratings of less than Aa3/AA- from Moody's/Standard and Poor's.

16. Swap yield curves tend to be placed at a modest (but variable) spread over the yield curve for government debt. For instance, on March 19, 1997, the two-, five-, seven-, and ten-year yen swap rates were quoted at spreads over the corresponding Japanese government bond of 34, 23, 27, and 18 basis points, respectively.

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