

# Minding the gap in Asia: foreign and local currency ratings

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## Introduction

As governments embrace the goal of developing local currency bond markets as an alternative to inflows of foreign capital,<sup>3</sup> rating agencies now commonly assign a domestic currency rating to sovereigns in addition to a foreign currency one. In Asia, 18 major sovereigns with foreign debt ratings now have a domestic currency rating from a major rating agency. Usually the domestic rating is higher, reflecting the presumed greater ability and willingness of sovereigns to service debt denominated in their own currency. However, the gap between the two ratings is uniform neither across borrowers nor across agencies.

The distinctions between local and foreign currency ratings are likely to have increasingly important implications for the development of capital markets globally and in Asia in particular. The degree to which rating policies favour a particular currency of denomination might provide significant incentives in terms of investor acceptance and market pricing. Rating policies might reinforce government policy initiatives and regulations as well.<sup>4</sup>

In this paper, we first provide a comparative overview of domestic and foreign currency ratings globally and in Asia in particular. Asian credits are similar to the global sample in terms of both the newcomer status of local currency ratings and the tendency for the local/foreign currency rating gap to be largest in the lower investment grade/upper non-investment grade region. However, differences of opinion among rating agencies regarding the relative creditworthiness of local and foreign currency obligations are quite pronounced in Asia. Within a linear regression framework, we then examine the determinants of the difference between local and foreign currency ratings, and find evidence that differences among agencies are driven by distinctions in their overall rating policy rather than a distinct Asian factor per se. Other than the paper of Trevino and Thomas (2001), ours is

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<sup>3</sup> While the first Asian Bond Fund invested in dollar-denominated debt, East Asian central banks announced in late 2004 the launch of a second fund with a mandate to invest in domestic currency denominated bonds. See the press statement of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP), 16 December 2004.

<sup>4</sup> For the most part, regulations that key off agency ratings make little distinction between foreign and domestic currency rated claims. Those exceptions that do exist favour domestic currency ratings and/or domestic currency claims. For instance, under the standardised approach of Basel II, a new capital adequacy framework for banks, in the case of foreign currency exposures to multilateral development banks whose convertibility and transfer risk are "considered by national supervisory authorities to be effectively mitigated", the domestic currency rating may be used for risk weighting purposes instead of the foreign currency rating (see Basel Committee on Banking Supervision (2004)). In addition, the framework gives national authorities the general discretion to apply even lower risk weights to their banks' exposures to sovereign (or central bank) domestic currency obligations, which is not the case with foreign currency obligations.

the first to empirically estimate the determinants of the local and foreign currency gap for sovereign credits.

## Foreign and local currency ratings

Over the past few decades, the business of providing sovereign ratings has grown considerably. As of 1985, only 15 countries obtained credit agency bond ratings to borrow in international capital markets. Most of these countries were rated AAA; less financially strong countries relied on bank finance or privately placed bonds. However, over the past 15-20 years, countries at the lower end of the credit quality spectrum have relied increasingly on bond markets, and obtained a credit rating for that purpose.

Initially, most of the new sovereign ratings applied to foreign currency debt, as sovereigns apparently felt little need to obtain a rating for domestic currency obligations. But sovereigns gradually moved to having domestic currency ratings, a likely reflection of efforts to increase the investor base for domestic currency bonds (Tables 1 and 2).

Pretty much the same story holds with Asian ratings. Among Asian sovereigns, only Japan and Australia had foreign currency ratings as of 1975, but more than half of the 18 Asian sovereigns had a foreign currency rating by 1990. And although none had a local currency rating before 1990, the catch-up is now complete, which parallels the global rating phenomenon (Tables 1 and 3).

## What might drive the rating gap?

Rating agencies often give higher ratings to the domestic currency obligations of sovereign states than to their foreign currency ones. This is a global phenomenon: for instance, the average gap between Standard & Poor's local and foreign currency ratings was 0.7 notches globally in late 2004, while the Moody's gap was 0.4 notches. Differences are often justified in terms of the sovereign's ability to tax and appropriate domestic currency assets, which is often judged to be greater than in the case of foreign currency assets. In addition, while the sovereign must generate foreign exchange to repay foreign currency debts, it can print money to meet domestic currency obligations (see, for example, Fitch Investors Service (2003)).<sup>5</sup>

Following this logic, constraints on the sovereign's ability to print domestic currency would tend to reduce the justification for a rating gap. Prime examples would be sovereigns that use the currencies of foreign countries, such as Panama and El Salvador. The countries of the euro area are also special cases; here the delegation of monetary policy to the ECB has greatly diminished the distinctions drawn between local and foreign currency debt.<sup>6</sup> Countries

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<sup>5</sup> Another frequently cited justification for notching is that the incidence of default on local currency debt has been lower than that on foreign currency debt (S&P (2003)). However, this is usually based on the default statistics, which include defaults on bank debt. As for the cases of default on rated bonds, the limited default experience to date suggests that it is not obvious that default on foreign currency bonds tends to precede or be more likely than that on domestic currency bonds (see Packer (2003)).

<sup>6</sup> Though there was a difference of approach over whether foreign currency ratings should be upgraded or domestic currency ratings downgraded, the major rating agencies eliminated or narrowed outstanding domestic/foreign currency rating gaps for euro area countries ahead of and during the transition to the euro (for further discussion, see McCauley and White (1997)).

whose local currency obligations are held by foreigners may also have smaller rating gaps. In these countries, it is the local banking system, rather than the sovereign, that must hedge foreign investments in local currency denominated sovereign debt, and the government may be unwilling to print money if that would impose substantial costs on the banking system. More generally, the frequent existence of significant political costs to high levels of inflation should limit the applicability of the “printing press” argument for high domestic currency ratings.

Another possible exception would be if foreign currency issuance is small relative to the total debt outstanding of a sovereign. After all, one of the underlying principles of sovereign debt analysis is that sovereign risk always depends on the willingness as well as the ability to pay. Given a small enough burden, the sovereign might conceivably make an extra effort to avoid default on foreign currency obligations. It is likely that the relatively small size of the international bonds of emerging market countries in the early 1980s explains why the default experience on bonds at that time was rather limited, despite a range of bank loan restructuring programmes.

Another factor influencing the size of the gap is a purely technical one: there is no rating higher than AAA (Aaa) in the rating agencies’ symbology. The additional credit standing that a foreign currency AAA credit might gain by being denominated in domestic currency is unobservable. In addition, countries that are AA+ can only be raised by one notch, and so forth. Notching should thus become more pronounced and frequent as the foreign currency rating drifts downwards from AAA and AA, which is in fact what we generally observe both globally and in Asia. Little surprise, then, that countries such as Malaysia and the Philippines have marked notching relative to highly rated Singapore, Australia and New Zealand, which have little to no room for a notching-up on their domestic currency obligations.

On the other hand, it appears that the gap peaks in the mid-grade rating category BB. For instance, according to Standard & Poor’s, 83% of all rated sovereigns in the BB category in late 2004 had domestic currency obligations that were rated at least one notch higher than foreign currency obligations (Table 4). By contrast, the relative advantage of domestic currency obligations was much smaller for countries that are further below investment grade; only 27% of countries in the B category enjoy a rating gap. For its part, Standard & Poor’s posits that low-rated countries face risks, such as high degrees of social and political stress, that would also impair their ability to keep servicing domestic obligations in circumstances where foreign currency debts were allowed to default (S&P (2002)).

Asia does follow the same global hump-shaped pattern in the distribution of rating gaps, as is evident in Table 4. The propensity for rating gaps to exceed one notch is noticeable in the A range, where two out of three sovereigns - Korea and Malaysia - have large gaps. Meanwhile, Indonesia has one of the lowest ratings among Asian sovereigns and gets only a single one-notch improvement in the local currency rating from only one of the rating agencies.

## **Differences among the rating agencies**

There are surprisingly sharp differences among the rating agencies with respect to the frequency at and degree to which domestic obligations are given favourable ratings. In particular, Moody’s tends to notch up its domestic currency rating much less frequently than the other agencies; for instance, in November 2004 it gave a higher domestic currency rating on only 30% of its rated universe of sovereigns, compared with 44% for S&P (Table 5).

Moody's also assigned a higher foreign currency rating than domestic currency rating in four cases,<sup>7</sup> with a relatively small proportion of outstanding foreign currency debt relative to foreign exchange reserves always cited as a reason (see Moody's (2003c,d)). By contrast, S&P did not assign a higher foreign currency rating to any sovereign, while Fitch assigned a higher foreign currency rating only in the case of Japan.

Consistent with this global finding, Asian countries see far less notching from Moody's than from Standard & Poor's (Table 6). In fact, the differences are starker in the case of Asia: the average gap between S&P's foreign and local currency ratings was 0.9 notches in Asia, even wider than the 0.6 notch gap for non-Asian countries (Table 6). At the same time, Moody's actually notched Asian countries in the other direction, on average, with a mean Asian gap of -0.3 notches compared to a gap of 0.5 notches for non-Asians. This pattern, that the Asia subsample shows an accentuation of the differences in notching policies among the agencies, has held since 1995, when Asian sovereigns began to receive foreign and local currency ratings widely. In the regression analysis to follow, we explore possible reasons why this may be the case.

## Regression analysis

The previous sections present the stylised facts that, in the case of S&P ratings, there is more likely to be a gap between the foreign currency and domestic currency ratings if a country is in Asia, and that such a gap is likely to be larger if a country is in Asia rather than elsewhere. In the case of Moody's, rating gaps in Asia are smaller than elsewhere. Are these facts simply the by-product of different observable endowments among the Asian economies versus elsewhere, which might tend to magnify both the gap and the agency differences, given the agencies' respective rating technologies? Or rather, might there be an unobserved factor common to Asia that is driving the results, reflecting rating agency biases and/or omitted variables?

## Previous literature

According to general descriptions of the rating process by the rating agencies themselves (see Moody's (2003a, 2004) and S&P (2002, 2004), sovereign local and foreign currency ratings are based on a wide array of quantitative and qualitative factors that are intended to capture political risk, income and economic structure, growth, monetary policy, budgetary and public debt management, and external liquidity and debt. However, quantitative studies of ratings - such as Cantor and Packer (1996), Moody's (2003b) and Borio and Packer (2004) - find that most of the variance in Moody's and S&P ratings can be explained by a relatively small number of variables. Typically, the debt burden itself, default history, per capita income and economic growth are important as indicators of a country's wealth and ability to pay, and indices of political risk are also important, presumably because they proxy for willingness to pay.

Partly because they have been around longer, the literature is more developed with regard to the determinants of foreign currency ratings. Specifically, Cantor and Packer (1996) found that per capita income, inflation, external debt, economic development, and default history were particularly strong predictors of foreign currency ratings. A weaker relationship existed between sovereign ratings and GDP growth and the fiscal balance, and there was no statistical relationship between ratings and the external balance. Moody's (2004) found that

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<sup>7</sup> The four countries are India, Lebanon (one notch), Turkey (two notches) and Japan (five notches).

per capita income, debt/exports, growth, external transfer risk, and government effectiveness explain 91% of the variation in its own foreign currency ratings. In addition to many of the above-listed variables, Borio and Packer (2004) also found corruption perceptions to have significant explanatory power in predicting variation in a panel of foreign currency ratings.

The examination of the determinants of local currency ratings includes another study of Moody's (2003b), which found that government debt/government revenue, per capita income, growth, and government effectiveness explained 87% of the variation in Moody's local currency ratings. In a study of the gap between local and foreign currency ratings, which used a probit methodology, Trevino and Thomas (2001) looked at many of the variables discussed above and also added measures of the term structure of bank debt, a country's share of bank lending, bank commitments, bank borrowing/ deposits, reserves and IMF credit usage, rating agency dummy variables, and regional dummy variables. The authors found regional and rating agency biases present even after the inclusion of these variables.

## Methodology

To address our questions about what is driving the prevalence and magnitude of rating gaps in Asia and globally, we estimate regression models for the foreign currency ratings of Moody's and S&P, the local currency ratings of each agency, and the gap between the foreign currency and local currency ratings. We also estimate a set of regressions where the left-hand side variables are the differences between Moody's and S&P's local currency ratings, foreign currency ratings, and notching gaps. In each of our regressions, we use a fixed effects specification and examine the Asian countries' fixed effects for evidence of an unobserved common factor.

We proceed by identifying 61 variables that reflect political risk, default history, external debt burden, macroeconomic performance, and government financial management, and we collect annual data on these variables for the 101 countries that have both foreign currency and local currency ratings at either S&P or Moody's from 1995 to 2003.<sup>8</sup> Ratings are recoded numerically with AAA and Aaa equal to 1, AA+ and Aa1 equal to 2, and so on. Each end-year rating is assumed to be the function of explanatory variables from that same year, and the candidate explanatory variables are listed in Table 7. In many cases, these variables may capture overlapping aspects of ability and willingness to repay foreign or local currency debt, so we pare the list of variables in each regression by identifying subcategories of variables that may capture the same concept. These subcategories are also listed in Table 7.

We start by fitting a regression model to S&P foreign currency ratings. Within each subcategory of variables, we test the fit of each variable separately. For example, we start by testing the fit of each of the CPI-related variables. If no CPI variable is significant at the .10 level, we proceed to the GDP growth subcategory, leaving out a CPI variable. In cases where only one CPI variable is significant, we retain it while testing GDP growth variables. In cases where several CPI variables are separately significant, we include them together in the regression to see whether they are robust to one another's inclusion. We then eliminate variables that are not robust according to t-statistic, and retain robust CPI variables while testing GDP growth variables. After moving through all subcategories in this way, we then eliminate variables that are no longer statistically significant at the .10 level to arrive at the final S&P foreign currency specification. Hausman tests in nearly every specification suggest

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<sup>8</sup> The sample criteria are that a country must have a foreign currency rating and a local currency rating from either S&P or Moody's at any time between 1995 and 2003, and all economic, political, and financial indicators must be available from the sources listed in Table 7.

that fixed effects rather than random effects are present, so we retain a fixed effects specification for consistency throughout. F-tests in every regression specification confirm the importance of the fixed effects. All regressions are estimated in SAS with two-way (cross-sectional and time-series) fixed effects, and we require countries to have more than one time-series observation in each regression.

We follow the same procedure for Moody's foreign currency ratings, except that the starting point is the final S&P specification, for convenience. We first eliminate variables that are not significant for Moody's, and then move through the subcategories again, testing candidate variables in the same way as we did in fitting the S&P model.

Our starting point for the S&P (Moody's) local currency rating specification is the S&P (Moody's) foreign currency specification. The starting point for the S&P (Moody's) rating gap specification is the union of variables in the S&P (Moody's) foreign currency and local currency specifications. Similarly, the starting point for the S&P-Moody's foreign currency (local currency) rating difference specification is the union of variables in the S&P and Moody's foreign currency (local currency) rating specifications.

### **Rating regressions**

The final regressions of S&P and Moody's foreign currency ratings on full sets of explanatory variables are shown in the first two columns of Table 8. In both regressions, all of the explanatory variables are significant at the .05 level and take the expected signs. Per capita GDP is significant at both agencies, with higher levels of income leading to better ratings. While higher per capita GDP may well imply higher costs associated with default, this variable is also likely to proxy for other indicators of development and creditworthiness. M2/reserves is also significant at both agencies, and this variable captures monetary volatility, excess monetary liquidity, and reserve volatility, so that greater variation in this ratio leads to a worse foreign currency rating. Investment is significant at both agencies and has the expected interpretation: higher rates of investment should generate the ability to repay debts. Overall political risk is an important determinant of both agencies' ratings; higher levels of political risk are associated with worse ratings. The importance of political risk is underscored by the fact that an additional source of political risk is significant in each agency's ratings, with control of corruption associated with better S&P ratings, and regulatory quality associated with better Moody's ratings. Finally, the time elapsed since the last default on foreign currency obligations is also important at both agencies, with longer periods without default associated with better ratings.

The most obvious difference between the agencies' foreign currency rating methodologies is in the treatment of debt and external vulnerability, two critical components of foreign currency ratings. Standard & Poor's appears to focus on total public sector indebtedness, with higher public debt/GDP ratios resulting in worse ratings. It also considers exchange rate regime, with pegged and managed floating regimes penalised by half a notch. The significance of the exchange rate regime variable highlights the view that rigid exchange rates may be a direct constraint on debt servicing capacity; if governments must use reserves to defend a currency, less foreign exchange remains available for debt servicing. By contrast, Moody's appears to weight more directly the net external debt burden, as a fraction of exports.

Adding country-specific fixed effects to the regression improves the fit, as all of the cross-sectional fixed effects are significant. It is noteworthy that although the average of the fixed effects in both the S&P and Moody's regressions implies ratings for Asian sovereigns that are 1.4-1.5 notches better on average than for other countries, there is enough variation within the country fixed effect coefficients that an F-test cannot reject the hypothesis of no difference between Asian and non-Asian countries. Thus, higher credit ratings in Asia can be explained more on the basis of better fundamentals in Asian countries and country-specific factors than the result of an "Asia factor".

Regressions of the local currency ratings of each agency on the explanatory variables are presented in the final two columns of Table 8. All variables are significant at the .05 level and all coefficients take the correct signs. As in the foreign currency rating regressions, per capita GDP is an important explanatory variable for both agencies. Public debt/GDP is now significant for both agencies as well. However, while Moody's appears to weight more heavily in its assessments the variables of economic growth and M2/reserves, S&P appears to weight many more additional variables, including inflation, investment, political risk, control of corruption, exchange rate rigidity, the nominal exchange rate change, and the time elapsed since the last local currency default. The relative parsimony of the Moody's regression bears out the agency's own finding that most of the variation in its local currency ratings can be explained with just a few variables (Moody's (2003b)).

The local currency regression results are consistent with our earlier findings regarding Asian foreign currency ratings. While the average Asian fixed effect is 1.1-1.2 notches better than that of non-Asian countries, this difference is not statistically significant, so we conclude that better average Asian local currency ratings tend to be driven by fundamentals and country-specific effects rather than an "Asia factor".

One of the drawbacks of the above approach to discerning differences in rating agency methodology is the fact that the agencies have rated different sets of countries over time, and it may be these differences in samples, rather than differences in methodology, that drive the regression results. To control for this effect, we impose the requirement that the S&P and Moody's samples be the same and rerun the regressions (Table 9). The explanatory variables from the foreign currency rating regressions are highly robust, with all variables still significant at the .10 level and all coefficients remaining at roughly the same order of magnitude. The Moody's local currency regression is also robust to the sample change. The S&P local currency regression is slightly less robust, with three variables becoming insignificant when we change the sample: the investment, political risk score, and exchange rate rigidity variables are no longer significant at the .10 level.

### Rating gap regressions

Next, we report the results of regressions of the gap between local and foreign currency ratings of S&P and Moody's on the explanatory variables (Table 10, first two columns). Our convention is that a positive gap means that the local currency rating is better than the foreign currency rating. Among the variables, inflation, M2, and M2/reserves are important determinants of the gap between foreign and local currency ratings at both agencies. High inflation tends to lead to a smaller gap between ratings, consistent with high levels of inflation eroding the creditworthiness of the sovereign across the board and thus diminishing the relative safety of local currency obligations. The positive coefficients on the change in M2 or M2/reserves suggest that monetary expansion is initially associated with relatively safer local currency obligations, though the negative coefficients on the volatility of the same variables suggest that this effect has diminishing marginal returns, perhaps for the same reason that high inflation is associated with a diminished rating gap.

Some variables explain rating gaps for Moody's rating only. Per capita GDP is significant in the Moody's regression, with higher levels of income associated with smaller rating gaps. This variable may well be picking up the fact that sovereigns with the best foreign currency ratings cannot enjoy a rating gap because they are already at the top of the rating scale, though it is not clear why such an effect would only hold for Moody's. Saving is also significant in the Moody's regression, with higher saving rates permitting larger rating gaps. When a sovereign can tap a large pool of local savings, Moody's may view it as easier for the sovereign to roll over local currency debt and avoid default. Public debt/GDP leads to smaller rating gaps in the Moody's regression, which suggests that Moody's views very heavy debt burdens as making default more likely on all debt, regardless of currency. Real effective exchange rate overvaluation also leads to larger gaps at Moody's, and this may illustrate the

fact that it is expensive to maintain an overvalued exchange rate, and using foreign exchange to defend a currency reduces the availability of foreign exchange for repaying debt.

A few variables enter uniquely into the S&P gap regressions as well. For instance, the measures of regulatory quality and import cover lead to larger rating gaps in the S&P regression, while the time elapsed since local currency default narrows the gap. The latter result perhaps indicates that S&P is more likely to view longer default-free periods as an important sign of creditworthiness on all obligations, which should diminish any foreign-local currency differential.

In the gap regressions, the fixed effect for Asian countries is even more muted than it was in the simple foreign and local currency rating regressions. Both the Moody's and S&P regressions suggest that the average expected Asian rating gap is nearly equal to the expected gap in other countries. This finding supports the view that the different degree of "notching" in Asia between local and foreign currency ratings can be better explained by broadly applicable fundamentals than by Asia-specific factors.

### **Rating difference regressions**

The regressions discussed above suggest that the rating agencies may weight variables differently when they assess foreign and local currency creditworthiness. In order to further investigate how the rating agency methodologies differ, we regress the difference between S&P and Moody's foreign currency ratings, and then the difference between their local currency ratings, on the explanatory variables, with the results reported in the final two columns of Table 10. Here, our convention is that positive differences imply a better rating by Moody's.

As in the gap regressions, inflation, M2, and M2/reserves are important determinants of the differences between the agencies' foreign and local currency ratings. S&P tends to weight inflation more heavily as a negative factor in local currency ratings, but relatively less heavily as a negative factor for foreign currency ratings. S&P also tends to weight monetary expansion less heavily as a negative factor for both foreign and local currency ratings. Additionally, control of corruption, domestic debt/GDP, budget revenue/GDP, short-term debt/GDP, exchange rate changes, and time elapsed since default all appear to be weighted significantly differently across the agencies.

Two final findings are that while average Asian fixed effects do not provide assistance in predicting differences between Moody's and S&P foreign currency credit ratings, there is a significant Asian effect in the difference between S&P and Moody's local currency ratings. That is, S&P's Asian local currency rating are significantly better than those of Moody's, even after controlling for differences in rating methodology.

### **Conclusion**

This paper has analysed the patterns of the foreign and local currency ratings of S&P and Moody's both in Asia and globally, with a particular emphasis on whether ratings and the gaps between foreign and local currency ratings are driven by the same factors in Asia as elsewhere in the world, and whether the different rating agencies take the same approach to ratings and gaps. We find that rating gaps in Asia can be explained by many of the same factors that drive gaps globally, and that the evidence for an Asia-wide effect on ratings is slim.

The local-foreign currency rating gaps of both agencies can be partly explained by inflation, M2, and M2/reserves, but we also find evidence of a divergence across the rating agencies

in methodology. Namely, the gaps of S&P appear to depend more heavily on regulatory quality, import cover, and time elapsed since default, while the gaps in Moody's ratings are better explained by per capita income, saving, public debt/GDP, and the real effective exchange rate overvaluation. At the same time, an Asia factor may help to explain the difference of local currency ratings between agencies, since S&P's local currency Asian ratings are significantly better than those of Moody's even after controlling for differences in methodology.

As domestic bond markets grow in importance, understanding local currency sovereign ratings and what makes them different from foreign currency ratings will become increasingly important. This paper suggests that there are important differences in the way rating agencies view the relationship between foreign and local currency ratings, a fact that could have implications for investors and regulators alike.

Table 1  
**Domestic and foreign currency sovereign ratings**

Number of Asian sovereigns in parentheses

	New foreign currency ratings	New domestic currency ratings
	Number of sovereigns	
Pre-1985	15 (3)	0 (0)
1986-90	22 (8)	2 (0)
1991-95	20 (3)	32 (7)
1996-2000	55 (4)	65 (9)
2001-04	17 (0)	20 (2)
Total	129 (18)	119 (18)

Note: Sovereigns are deemed to have a rating if one of the three major agencies has a rating outstanding. The United States did not receive a foreign currency rating until 1992.

Sources: Fitch Investors Service; Moody's Investors Service; Standard & Poor's.

Table 2  
**The credit quality of newly assigned sovereign ratings**

	New foreign currency ratings	New domestic currency ratings
	Median rating	
Pre-1985	AAA	...
1986-90	A	AA+
1991-95	BB+	AAA
1996-2000	BB	BBB
2001-04	B+	B+

Note: Sovereigns are deemed to have a rating if one of the three major agencies has a rating outstanding.

Sources: Fitch Investors Service; Moody's Investors Service; Standard & Poor's.

Table 3

**Local and foreign currency credit rating of  
selected Asian economies, November 2004**

	S&P		Moody's		Fitch		R&I	
	LC	FC	LC	FC	LC	FC	LC	FC
Australia	AAA	AAA	Aaa	Aaa	AAA	AA+	AAA	AA+
China	BBB+	BBB+	–	A2	A	A–	–	A
Hong Kong SAR	AA–	A+	Aa3	A1	AA+	AA–	AA	AA–
India	BB+	BB	Ba2	Baa3	BB+	BB+	–	BBB
Indonesia	B+	B	B2	B2	B+	B+	–	B
Japan	AA–	AA–	A2	Aaa	AA–	AA	AAA	AAA
Korea	A+	A–	A3	A3	AA–	A	–	A–
Macau SAR	–	–	A1	A1	–	–	–	–
Malaysia	A+	A–	A3	Baa1	A+	A–	–	A–
Mongolia	B	B	–	–	–	–	–	–
New Zealand	AAA	AA+	Aaa	Aaa	AAA	AA+	AAA	AA+
Pakistan	BB	B+	B2	B2	–	–	–	–
Papua New Guinea	B+	B	B1	B1	B+	B	–	–
Philippines	BBB–	BB	Ba2	Ba2	BB+	BB	–	BBB–
Singapore	AAA	AAA	Aaa	Aaa	AAA	AAA	AAA	AAA
Taiwan, China	AA–	AA–	Aa3	Aa3	AA	A+	–	AA
Thailand	A	BBB+	Baa1	Baa1	A–	BBB	–	BBB+
Vietnam	BB	BB–	–	B1	BB	BB–	–	–

Note: LC refers to local currency rating, and FC to foreign currency rating.

Sources: Fitch Investors Service; Japan Rating and Investment Information, Inc (R&I); Moody's Investors Service; Standard & Poor's.

Table 4

**Domestic vs foreign currency rating  
gaps by rating, November 2004**

Asian countries in parentheses

S&P foreign currency rating	No difference	Domestic currency debt rated higher by exactly one notch	Domestic currency debt rated higher by more than one notch
	Number of sovereigns		
AAA	18 (2)	0	0
AA	8 (2)	2 (1)	0
A	7 (0)	8 (1)	5 (2)
BBB	2 (1)	6 (0)	6 (1)
BB	3 (0)	11 (2)	4 (1)
B	18 (1)	4 (2)	1 (1)

Note: Ratings indicate the broad letter grade category, eg AA stands for credits rated AA+, AA and AA-.

Source: Standard & Poor's.

Table 5

**Domestic vs foreign currency rating gaps, November 2004**

Asian countries in parentheses

	Moody's	S&P
	Number of sovereigns	
4-notch differential	-	-
3-notch	6 (0)	8 (0)
2-notch	7 (0)	8 (4)
1-notch	15 (2)	31 (6)
No difference	62 (10)	59 (6)
-1-notch	2 (0)	-
-2-notch	1 (1)	-
-3-notch	-	-
-4-notch	-	-
-5-notch	1 (1)	-
Total	94 (14)	106 (16)

Sources: Moody's Investors Service; Standard & Poor's.

Table 6

**Notching of local currency credit rating  
of Asian economies, November 2004**

	<b>S&amp;P LC/FC gap</b>	<b>Moody's LC/FC gap</b>	<b>Fitch LC/FC gap</b>	<b>R&amp;I LC/FC gap</b>
Australia	0	0	1	1
China	0	–	1	–
Hong Kong SAR	1	1	2	1
India	1	–2	0	–
Indonesia	1	0	0	–
Japan	0	–5	–1	0
Korea	2	0	2	–
Macau SAR	–	0	–	–
Malaysia	2	1	2	–
Mongolia	0	–	–	–
New Zealand	1	0	1	1
Pakistan	2	0	–	–
Papua New Guinea	1	0	1	–
Philippines	2	0	1	–
Singapore	0	0	0	0
Taiwan, China	0	0	2	–
Thailand	2	0	2	–
Vietnam	1	–	1	–
<i>Average</i>	<i>0.94</i>	<i>–0.33</i>	<i>1.00</i>	<i>0.60</i>
<i>Average (ex Japan)</i>	<i>1.00</i>	<i>0.00</i>	<i>1.14</i>	<i>0.75</i>

Note: LC refers to local currency rating, and FC to foreign currency rating.

Sources: Fitch Investors Service; Japan Rating and Investment Information, Inc (R&I); Moody's Investors Service; Standard & Poor's.

Table 7

**Explanatory regression variables**

Category	Subcategory	Variables
Macroeconomic	Inflation	Inflation over 1 year, 5 years and 10 years Log inflation over 1 year, 5 years and 10 years
	GDP	Log per capita GDP Per capita GDP GDP growth 1-year rate GDP growth 3-year rate GDP growth 3-year average annual rate
	Monetary	M2: 1-year, 5-year, 10-year, % change M2: log 1-year, 5-year and 10-year change M2: 1-year, 5-year and 10-year volatility M2: log 1-year, 5-year and 10-year volatility
	Monetary/liquidity	M2/reserves: 1-year, 5-year, 10-year, % change M2/reserves: log 1-year, 5-year and 10-year change M2/reserves: 1-year, 5-year and 10-year volatility M2/reserves: log 1-year, 5-year and 10-year volatility
	Saving/investment	Saving/GDP Investment/GDP
	Political	Political
Government finance	Government finance	Public debt/GDP Fiscal balance/GDP Budget revenue/GDP Domestic debt/GDP Government debt/revenue
External position	Debt	Net debt/GDP Net debt/exports Gross debt/exports Gross debt/GDP Short-term debt/reserves Short-term debt/GDP Import cover
	Exchange rate	Nominal exchange rate 1-year change Real effective exchange rate, % deviation from LT average (JPMorgan Chase) IMF exchange rate regime dummy variable (pegs and managed floats are coded as 1)
	Default	Years since foreign currency default Log years since foreign currency default Years since local currency default Log years since local currency default

Sources: Transparency International; Political Risk Services' *International Country Risk Guide*; Kaufmann et al (2003); EIU; Datastream; Standard & Poor's; JPMorgan Chase.

Table 8

**The determinants of Moody's and S&P's  
foreign and local currency ratings**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
Dependent variable								
R-squared	.9949		.9961		.9879		.9951	
F-test of significance of fixed effects, p-value	<.0001		<.0001		<.0001		<.0001	
Hausman test, fixed/ random effects, p-value	.0068		.1642		.0026		.0004	
Degrees of freedom	329		235		358		340	
Independent variables	<b>Coeff</b>	<b>t-stat</b>	<b>Coeff</b>	<b>t-stat</b>	<b>Coeff</b>	<b>t-stat</b>	<b>Coeff</b>	<b>t-stat</b>
<b>Macroeconomic</b>								
Inflation, log 1-yr					0.366	3.930		
Inflation, 1-yr								
Inflation, log 10-yr								
Per capita GDP, log	-3.016	-7.870	-2.231	-5.360	-1.752	-3.170	-0.985	-2.950
GDP growth, 3-yr avg							-0.093	-3.460
M2, 10-yr % chg								
M2, log 10-yr % chg								
M2, 1-yr log volatility					0.334	2.600		
M2, 5-yr volatility								
M2/reserves, 5-yr log volatility	0.463	2.680	0.908	4.950			0.734	4.840
M2/reserves, log 10-yr % chg								
M2/reserves, 1-yr volatility								
M2/reserves, log 5-yr % chg								
Investment	-0.053	-2.970	-0.083	-4.210	-0.064	-3.000		
Saving								
<b>Political</b>								
Political risk score	-0.034	2.560	-0.030	1.970	-0.045	-2.630		
Regulatory quality			-1.418	-6.300				
Control of corruption	-1.264	-4.120			-1.466	-3.700		
<b>Government finance</b>								
Public debt/GDP	0.041	7.040			0.072	9.690	0.037	7.300
Domestic debt/GDP								
Budget revenue/GDP								
<b>External</b>								
Net debt/exports			0.004	2.420				
Short-term debt/GDP								
Import cover								

Table 8 (cont)

**The determinants of Moody's and S&P's  
foreign and local currency ratings**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>External (cont)</b>								
Exchange rate rigidity	0.493	2.580			0.584	2.510		
Exchange rate, 1-yr chg					-0.012	-3.320		
Real effective exchange rate								
Years since foreign currency default, log	-0.346	-2.910	-0.236	-2.790				
Years since local currency default, log					-0.661	-2.110		
Years since local currency default								
<b>Time-series fixed effects</b>								
Year 1995							-0.143	-0.580
Year 1996	-0.197	-0.650	0.013	0.040	-0.854	-2.330	-0.151	-0.610
Year 1997	-0.031	-0.110	0.482	1.650	-0.613	-1.790	-0.049	-0.230
Year 1998	-0.255	-1.400	0.376	1.960	-0.461	-2.070	0.195	1.220
Year 1999	-0.298	-1.810	0.224	1.240	-0.154	-0.730	0.023	0.160
Year 2000	-0.196	-1.230	0.121	0.710	-0.237	-1.150	0.035	0.250
Year 2001	-0.244	-1.580	0.158	0.950	-0.123	-0.590	-0.003	-0.020
Year 2002	-0.341	-2.380	-0.259	-1.590	-0.327	-1.760	-0.029	-0.220
<b>Cross-sectional fixed effects</b>								
Argentina	42.066	11.990	36.030	9.340	30.755	6.210	20.740	6.650
Australia	38.690	10.100	29.766	7.150	27.594	5.110	8.888	2.590
Austria					24.271	4.310	7.661	2.100
Bahrain	37.817	10.290			26.200	5.090		
Barbados								
Belgium					21.543	3.750		
Bolivia			31.343	10.230				
Botswana	35.650	11.300			25.630	5.710	12.167	4.310
Brazil	39.252	11.950	34.015	9.460	27.670	5.950	19.606	6.750
Bulgaria	35.604	11.350	33.375	10.180	26.324	6.060	17.419	6.340
Canada	36.597	9.060	29.884	7.130	24.147	4.270	7.431	2.060
Chile	37.966	11.700	32.059	9.160	26.727	5.840	12.227	4.190
Colombia	33.313	10.380	26.989	7.660	23.193	5.430	11.423	4.040
Costa Rica	39.463	11.870	33.270	9.380	30.149	6.480	16.238	5.480
Croatia	36.586	10.760	32.284	8.980	23.328	4.780	13.537	4.480
Cyprus	37.123	9.760	31.503	7.860	23.764	4.450	11.859	3.480
Czech Republic	36.820	10.910	31.375	8.690	23.978	4.950	11.826	3.910

Table 8 (cont)

**The determinants of Moody's and S&P's  
foreign and local currency ratings**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
Denmark	38.360	9.380	29.897	6.880	26.363	4.600	7.895	2.150
Dominican Republic	38.269	12.400	32.239	9.560	30.655	6.800	18.846	6.970
Ecuador	38.642	12.060	34.761	10.510	25.128	5.550	19.327	6.970
Egypt	30.896	10.180	29.295	9.540	19.215	4.590	11.276	4.250
El Salvador	35.873	11.580	29.702	8.800	24.268	5.580	14.114	5.200
Estonia	36.972	11.500	29.650	8.300	27.612	6.030	12.079	4.190
Finland	36.491	8.890	27.110	6.100	26.513	4.700	6.196	1.690
France	34.486	8.610	27.636	6.530	22.736	4.050	7.248	2.010
Germany	35.456	8.850			24.001	4.270	7.269	2.010
Greece					23.261	4.310	9.722	2.800
Guatemala							16.280	6.170
Hong Kong SAR	42.158	11.200			32.084	6.070		
Hungary					24.702	5.080		
Iceland	41.818	10.380	31.264	7.140	27.720	4.870	8.048	2.230
India	31.870	12.330			21.837	6.190	15.682	7.020
Indonesia	32.841	11.540	29.574	9.980	23.548	5.990	17.839	7.220
Ireland	37.489	9.390			26.707	4.770	8.711	2.450
Israel	37.226	9.370	32.177	7.990	21.479	3.870	10.981	3.090
Italy	33.010	7.990	29.440	6.960	19.251	3.340	7.742	2.100
Jamaica	35.997	10.120	34.626	10.150	22.921	4.660	11.676	3.760
Japan	34.617	7.990	31.204	7.300	20.567	3.390	7.603	1.980
Jordan	34.562	10.920	32.587	10.230	22.675	5.220	15.437	5.550
Kazakhstan	35.176	11.550	28.188	8.300	26.046	6.260	14.228	5.450
Kuwait	37.615	10.110			25.484	4.810	14.352	4.270
Latvia	36.325	11.560	30.374	8.870	25.933	5.850	12.829	4.590
Lebanon	35.836	9.370	36.395	10.130	22.581	4.370	15.976	4.760
Lithuania	36.458	11.320	31.195	8.930	26.082	5.790	13.767	4.790
Malaysia	35.989	11.030	31.147	9.020	24.230	5.350	12.750	4.400
Malta	36.123	9.870			23.025	4.490	13.197	4.050
Mauritius							12.026	4.140
Mexico	39.169	11.620	32.694	9.030	27.604	5.880	15.226	5.130
Moldova							18.243	7.750
Mongolia	37.041	11.780			24.691	5.480		
Morocco	33.859	11.220	30.190	9.710	22.095	5.310	14.429	5.420
Netherlands	37.108	9.170			26.405	4.710	7.186	1.990
New Zealand	37.625	10.050	28.299	7.000	26.987	5.130	8.080	2.400

Table 8 (cont)

**The determinants of Moody's and S&P's  
foreign and local currency ratings**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
Nicaragua			30.400	10.390			14.347	5.670
Norway	39.149	9.610			28.197	4.910	9.101	2.490
Oman	40.673	11.660	32.591	8.510	31.162	6.520	16.078	5.180
Pakistan	30.697	11.400	28.556	9.950	21.952	6.060	17.578	7.520
Panama								
Papua New Guinea	32.810	11.660			22.335	5.810	15.894	6.590
Paraguay	37.156	12.600			27.770	6.800	18.626	7.290
Peru	36.977	12.040	32.898	10.050	28.206	6.640	15.282	5.620
Philippines	32.411	11.240	29.233	9.850	21.378	5.350	13.338	5.330
Poland	36.635	11.040	30.687	8.630	25.441	5.450	11.975	4.030
Portugal	34.721	9.280			23.997	4.550	8.481	2.540
Qatar	40.000	9.770			26.635	4.650	14.710	4.040
Romania	38.991	12.850	34.770	10.550	29.474	6.930	20.244	7.560
Russia	35.430	11.070	32.009	9.180	24.258	5.310	17.049	6.140
Senegal					24.887	6.810		
Singapore	35.674	8.950			23.292	4.100	7.136	1.990
Slovakia	37.991	11.490	32.044	8.990	25.251	5.370	12.211	4.160
Slovenia	37.127	10.310	30.644	7.890	23.436	4.510		
South Africa	35.953	11.180	29.310	8.460	24.724	5.500	11.810	4.120
Spain	35.348	9.100	28.584	7.000	24.312	4.530	7.837	2.270
Sweden	37.393	9.120			24.457	4.180	7.650	2.080
Switzerland	39.128	9.490			28.306	4.950	8.411	2.280
Thailand	33.952	10.990	30.294	9.300	24.058	5.640	12.422	4.540
Trinidad	37.049	10.550	32.732	8.840	24.834	5.090	13.992	4.500
Tunisia	34.659	11.100			22.762	5.280	13.575	4.920
Turkey	38.494	11.610	33.704	9.780	28.213	6.090	19.083	6.490
Ukraine	34.907	12.320	30.390	9.840	26.194	6.530	20.564	8.480
United Kingdom	37.322	9.360	29.444	7.000	26.323	4.720	8.137	2.300
United States	37.749	9.170			26.569	4.640	8.305	2.260
Uruguay	38.842	11.300	33.406	9.030	28.855	6.010	16.581	5.370
Venezuela	39.969	11.910	34.759	9.520			21.854	7.350
Vietnam					22.940	6.270		
<i>Asia average</i>	35.473	3.31 <sup>1</sup>	29.931	3.57 <sup>1</sup>	24.272	4.55 <sup>1</sup>	11.963	2.93 <sup>1</sup>
<i>Non-Asia average</i>	36.897	3.47 <sup>1</sup>	31.457	3.58 <sup>1</sup>	25.381	4.85 <sup>1</sup>	13.124	3.07 <sup>1</sup>

<sup>1</sup> Standard deviations are given for the average Asian and non-Asian fixed effect. Asian countries are shaded.

Table 9

**The determinants of Moody's and S&P's foreign  
and local currency ratings, common sample**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
Dependent variable								
R-squared	.9954		.9959		.9880		.9947	
F-test of significance of fixed effects, p-value	<.0001		<.0001		<.0001		<.0001	
Hausman test, fixed/ random effects, p-value	.0209		.1801		.0026		.0010	
Degrees of freedom	219		220		269		274	
Independent variables	Coeff	t-stat	Coeff	T-stat	Coeff	t-stat	Coeff	t-stat
<b>Macroeconomic</b>								
Inflation, log 1-yr					0.308	2.830		
Inflation, 1-yr								
Inflation, log 10-yr								
Per capita GDP, log	-2.711	-5.950	-2.121	-4.980	-2.375	-3.510	-0.873	-2.280
GDP growth, 3-yr avg							-0.084	-2.700
M2, 10-yr % chg								
M2, log 10-yr % chg								
M2, 1-yr log volatility					0.311	1.920		
M2, 5-yr volatility								
M2/reserves, 5-yr log volatility	0.713	3.230	0.995	4.970			0.909	4.910
M2/reserves, log 10-yr % chg								
M2/reserves, 1-yr volatility								
M2/reserves, log 5-yr % chg								
Investment	-0.069	-3.000	-0.086	-3.920	-0.029	-0.940		
Saving								
<b>Political</b>								
Political risk score	-0.046	-2.760	-0.029	-1.820	-0.024	-1.090		
Regulatory quality			-1.497	-6.400				
Control of corruption	-1.140	-2.750			-0.972	-1.960		
<b>Government finance</b>								
Public debt/GDP	0.045	6.770			0.073	7.730	0.040	6.430
Domestic debt/GDP								
Budget revenue/GDP								
<b>External</b>								
Net debt/exports			0.004	2.480				
Short-term debt/GDP								
Import cover								
Exchange rate rigidity	0.787	3.230			-0.005	-0.020		

Table 9 (cont)

**The determinants of Moody's and S&P's foreign  
and local currency ratings, common sample**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
Dependent variable								
Independent variables	Coeff	t-stat	Coeff	T-stat	Coeff	t-stat	Coeff	t-stat
Exchange rate, 1-yr chg Real effective exchange rate					-0.012	- 2.800		
Years since foreign currency default, log	-0.325	-2.430	-0.221	-1.790				
Years since local currency default, log					-0.660	- 1.720		
Years since local currency default								
<b>Time-series fixed effects</b>								
Year 1995								
Year 1996	-0.215	-0.600	0.059	0.190	-1.545	- 1.270	-0.214	-0.260
Year 1997	-0.058	-0.180	0.516	1.730	-0.973	-1.370	-0.248	-0.500
Year 1998	-0.213	-0.930	0.456	2.240	-0.646	- 2.370	0.220	1.220
Year 1999	-0.443	-2.170	0.255	1.380	-0.262	- 1.100	0.044	0.280
Year 2000	-0.266	-1.350	0.158	0.900	-0.272	- 1.180	0.071	0.460
Year 2001	-0.148	-0.780	0.196	1.150	-0.200	- 0.860	0.042	0.280
Year 2002	-0.263	-1.470	-0.177	-1.060	-0.376	- 1.830	-0.025	-0.170
<b>Cross-sectional fixed effects</b>								
Argentina	39.570	9.620	34.692	8.830	35.235	5.710	19.210	5.350
Australia	36.199	8.100	28.422	6.690	30.294	4.550	7.289	1.850
Austria								
Bahrain								
Barbados								
Belgium								
Bolivia								
Botswana					28.629	5.140	10.885	3.360
Brazil	37.071	9.640	32.753	8.940	30.491	5.300	18.052	5.390
Bulgaria	33.426	9.130	32.276	9.680	29.534	5.510	15.930	5.020
Canada	33.786	7.190	28.552	6.680	26.811	3.860	5.802	1.390
Chile	36.166	9.590	31.014	8.710	29.023	5.160	10.972	3.280
Colombia	30.443	7.980	25.606	7.110	27.059	5.160	9.520	2.910
Costa Rica	37.060	9.570	32.133	8.910	33.356	5.830	14.695	4.300
Croatia	34.400	8.690	31.170	8.530	26.913	4.430	12.095	3.470
Cyprus	34.230	7.720	30.211	7.390	27.498	4.170	10.130	2.580
Czech Republic	34.822	8.830	30.308	8.260	27.211	4.490	10.487	3.020

Table 9 (cont)

**The determinants of Moody's and S&P's foreign  
and local currency ratings, common sample**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
	Coeff	t-stat	Coeff	T-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
Denmark	35.246	7.400	28.507	6.430	29.739	4.230	6.134	1.450
Dominican Republic	35.755	9.780	31.099	9.060	34.246	6.050	17.399	5.580
Ecuador	36.262	9.650	33.006	9.680	28.911	5.110	17.471	5.420
Egypt	28.747	8.190	28.293	9.050	22.728	4.400	9.921	3.220
El Salvador	32.775	8.880	28.547	8.290	27.874	5.150	12.751	4.080
Estonia	35.197	9.110	28.555	7.850	30.841	5.380	10.684	3.220
Finland	32.920	6.830	25.521	5.610	29.454	4.250	4.067	0.960
France	31.425	6.750	26.284	6.100	26.562	3.840	5.439	1.310
Germany					27.516	3.970	5.412	1.300
Greece								
Guatemala								
Hong Kong SAR								
Hungary								
Iceland	38.791	8.250	29.821	6.680	30.811	4.400	6.394	1.540
India					24.524	5.590	14.530	5.620
Indonesia	30.931	9.260	28.535	9.460	27.729	5.720	16.397	5.730
Ireland					30.222	4.380	6.914	1.680
Israel	34.039	7.380	30.900	7.530	25.650	3.780	9.224	2.240
Italy	29.818	6.220	28.038	6.500	23.316	3.290	5.695	1.340
Jamaica	33.626	8.170	33.567	9.650	26.204	4.280	9.918	2.740
Japan	31.765	6.340	29.971	6.900	23.786	3.180	5.841	1.300
Jordan	32.440	8.840	31.549	9.740	25.674	4.770	13.920	4.310
Kazakhstan	33.312	9.310	27.003	7.820	28.948	5.470	12.862	4.280
Kuwait					29.824	4.550	12.824	3.320
Latvia	34.623	9.380	29.303	8.410	29.186	5.220	11.496	3.580
Lebanon	33.029	7.470	35.215	9.610	26.295	4.100	14.101	3.600
Lithuania	34.212	9.080	30.055	8.460	29.583	5.260	12.306	3.720
Malaysia	33.847	8.910	30.055	8.550	27.586	4.950	11.355	3.400
Malta					26.762	4.200	11.673	3.110
Mauritius								
Mexico	37.193	9.390	31.509	8.550	31.178	5.360	13.861	4.040
Moldova								
Mongolia								
Morocco	31.872	9.110	29.185	9.230	25.134	4.870	13.006	4.230
Netherlands					29.605	4.310	5.326	1.280
New Zealand	35.111	8.040	26.992	6.540	29.325	4.520	6.439	1.670

Table 9 (cont)

**The determinants of Moody's and S&P's foreign  
and local currency ratings, common sample**

Agency	S&P		Moody's		S&P		Moody's	
	Foreign currency rating		Foreign currency rating		Local currency rating		Local currency rating	
Dependent variable								
Independent variables	Coeff	t-stat	Coeff	T-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
Nicaragua								
Norway					31.563	4.460	7.284	1.730
Oman	38.029	9.320	31.326	8.000	34.929	5.960	14.607	4.100
Pakistan	28.435	9.000	27.448	9.390	25.254	5.660	16.048	5.920
Panama								
Papua New Guinea					25.262	5.310	14.443	5.180
Paraguay					31.890	6.350	17.309	5.880
Peru	35.454	9.880	31.861	9.560	31.107	5.970	14.024	4.480
Philippines	30.846	9.170	28.249	9.360	23.465	4.760	11.988	4.140
Poland	34.677	8.970	29.568	8.180	28.262	4.880	10.558	3.090
Portugal					27.063	4.140	6.578	1.700
Qatar					30.920	4.380	12.818	3.040
Romania	36.963	10.400	33.667	10.040	33.541	6.370	18.908	6.140
Russia	33.202	8.820	30.807	8.690	28.237	4.940	15.516	4.840
Senegal								
Singapore					25.594	3.650	5.476	1.320
Slovakia	35.933	9.310	30.909	8.520	28.566	4.830	10.749	3.180
Slovenia	34.746	8.280	29.469	7.470				
South Africa	33.759	8.970	28.144	7.990	27.465	4.970	10.311	3.130
Spain	32.397	7.180	27.208	6.490	27.726	4.220	5.962	1.490
Sweden					27.250	3.790	5.706	1.350
Switzerland					31.229	4.460	6.731	1.580
Thailand	32.163	8.920	29.257	8.840	26.611	5.060	11.044	3.510
Trinidad	34.435	8.380	31.531	8.370	28.781	4.790	12.344	3.440
Tunisia					25.662	4.790	12.084	3.800
Turkey	36.244	9.370	32.518	9.250	31.240	5.420	17.487	5.150
Ukraine	32.890	9.850	29.594	9.320	29.730	5.920	18.295	6.480
United Kingdom	34.690	7.480	28.127	6.550	29.196	4.270	6.513	1.590
United States					29.777	4.260	6.786	1.600
Uruguay	36.342	9.060	32.170	8.540	32.392	5.510	15.040	4.230
Venezuela	37.592	9.500	33.532	9.020				
Vietnam								
<i>Asia average</i>	32.980	3.89 <sup>1</sup>	28.783	3.56 <sup>1</sup>	26.418	5.67 <sup>1</sup>	10.480	3.39 <sup>1</sup>
<i>Non-Asia average</i>	34.401	3.95 <sup>1</sup>	30.279	3.68 <sup>1</sup>	28.944	5.99 <sup>1</sup>	11.373	3.57 <sup>1</sup>

<sup>1</sup> Standard deviations are given for the average Asian and non-Asian fixed effect. Asian countries are shaded.

Table 10

**The determinants of gaps between foreign  
and local currency ratings, Moody's and S&P**

Agency	S&P		Moody's		S&P-Moody's difference		S&P-Moody's difference	
Dependent variable	Foreign-local currency rating gap		Foreign-local currency rating gap		Foreign currency rating		Local currency rating	
R-squared	.8981		.8659		.6900		.8804	
F-test of significance of fixed effects, p-value	<.0001		<.0001		<.0001		<.0001	
Hausman test, fixed/ random effects, p-value	.0006		.0782		.0116		.0002	
Degrees of freedom	319		199		170		128	
Independent variables	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>Macroeconomic</b>								
Inflation, log 1-yr	-0.174	-2.730					0.159	2.180
Inflation, 1-yr			-0.028	-3.440				
Inflation, log 10-yr					-0.107	-1.690		
Per capita GDP, log			-2.608	-5.030				
GDP growth, 3-yr avg								
M2, 10-yr % chg					-0.001	-3.350		
M2, log 10-yr % chg			0.100	1.970				
M2, 1-yr log volatility								
M2, 5-yr volatility	-0.011	-1.890					0.110	1.790
M2/reserves, 5-yr log volatility								
M2/reserves, log 10-yr % chg	0.101	3.150					-0.072	-2.040
M2/reserves, 1-yr volatility			-0.006	-2.970				
M2/reserves, log 5-yr % chg					0.089	2.680		
Investment								
Saving			0.073	3.210				
<b>Political</b>								
Political risk score								
Regulatory quality	0.509	2.950						
Control of corruption					-0.791	-2.350		
<b>Government finance</b>								
Public debt/GDP			-0.010	-1.740				
Domestic debt/GDP							0.033	3.000
Budget revenue/GDP					0.050	1.680	-0.041	-2.160
<b>External</b>								
Net debt/exports								
Short-term debt/GDP					0.000	1.850		
Import cover	0.079	2.510						
Exchange rate rigidity								
Exchange rate, 1-yr change					-0.006	-2.770		

Table 10 (cont)

**The determinants of gaps between foreign  
and local currency ratings, Moody's and S&P**

Agency	S&P		Moody's		S&P-Moody's difference		S&P-Moody's difference	
	Foreign-local currency rating gap		Foreign-local currency rating gap		Foreign currency rating		Local currency rating	
Dependent variable								
Independent variables	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>External (cont)</b>								
Real effective exchange rate			0.018	2.460				
Years since foreign currency default, log								
Years since local currency default, log	-0.567	-2.220						
Years since local currency default					-0.248	-4.500		
<b>Time-series fixed effects</b>								
Year 1995			0.501	1.990			-1.328	-4.840
Year 1996	1.228	6.650	0.338	1.390	-1.797	-3.810	-1.212	-4.470
Year 1997	1.078	6.090	0.325	1.560	-1.589	-4.060	-1.193	-4.800
Year 1998	0.852	5.170	0.330	1.900	-1.366	-3.920	-0.844	-4.230
Year 1999	0.468	3.040	0.109	0.690	-0.977	-3.310	-0.734	-3.840
Year 2000	0.485	3.170	-0.087	-0.580	-0.672	-2.990	-0.706	-3.710
Year 2001	0.358	2.450	-0.175	-1.160	-0.381	-2.110	-0.570	-2.990
Year 2002	0.232	1.660	-0.313	-2.210	-0.088	-0.570	-0.404	-2.140
<b>Cross-sectional fixed effects</b>								
Argentina	0.759	1.310	22.009	4.600	3.046	3.640		
Australia	2.238	1.880	25.821	4.840	25.155	4.470		
Austria	0.584	0.470	25.302	4.520			1.402	1.280
Bahrain	1.590	1.560						
Barbados	3.833	3.940					-2.826	-3.420
Belgium								
Bolivia	3.358	2.450			42.320	4.290		
Botswana	-0.087	-0.060						
Brazil	2.769	3.530	19.932	4.550	1.767	1.420		
Bulgaria	3.047	2.420	18.875	4.590	20.894	3.940		
Canada	2.265	1.790	25.789	4.610			-0.696	-0.670
Chile	5.189	3.750	23.424	5.150	47.390	4.510	-1.081	-1.870
Colombia	7.109	4.430	23.118	5.440	46.876	4.410	-1.425	-2.150
Costa Rica	3.064	2.240			46.742	4.730	-0.117	-0.220
Croatia								
Cyprus	2.330	2.350	23.800	4.630	9.962	3.890	-1.451	-1.590
Czech Republic								

Table 10 (cont)

**The determinants of gaps between foreign  
and local currency ratings, Moody's and S&P**

Agency	S&P		Moody's		S&P-Moody's difference		S&P-Moody's difference	
	Foreign-local currency rating gap		Foreign-local currency rating gap		Foreign currency rating		Local currency rating	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
Denmark	2.371	1.720	26.125	4.610			0.613	0.510
Dominican Republic	-3.019	-8.150			1.003	1.470		
Ecuador	2.741	4.550	19.607	4.600			-0.402	-0.470
Egypt	3.853	3.200	20.960	5.120	18.724	4.160		
El Salvador	1.481	2.880	19.790	4.880	2.073	2.650	-0.156	-0.350
Estonia	0.155	0.190	20.124	4.540	4.253	2.940		
Finland								
France	0.626	0.640	25.154	4.520			0.992	0.880
Germany	0.318	0.310					1.911	1.850
Greece	3.866	2.680	26.046	5.020	41.298	4.310		
Guatemala	3.722	2.620			44.976	4.490	0.138	0.310
Hong Kong SAR	2.185	1.750						
Hungary			22.387	4.700	37.821	4.430		
Iceland	4.079	3.530					2.739	3.390
India	3.778	3.370					-3.384	-4.790
Indonesia	3.437	3.080	17.240	4.420	14.085	4.290	-0.394	-0.510
Ireland								
Israel	3.645	3.430	24.928	4.590	13.686	4.260	-2.407	-2.120
Italy	1.443	1.370	25.481	4.500	11.850	3.470	-1.920	-1.330
Jamaica	2.726	2.680	22.972	4.960	10.595	4.390		
Japan	0.341	0.310	24.686	4.140				
Jordan	4.157	3.850	18.214	4.240	13.281	4.110		
Kazakhstan								
Kuwait	0.923	1.360						
Latvia								
Lebanon	0.349	0.280	21.571	4.460				
Lithuania								
Malaysia	3.851	3.830	21.163	4.530	10.913	4.260	-1.115	-1.790
Malta	2.794	2.840						
Mauritius			22.501	4.880				
Mexico	5.713	4.190			44.597	4.540	-0.948	-1.630
Moldova			16.644	4.650				
Mongolia	0.288	0.460						
Morocco	4.212	3.970	17.415	4.260	11.801	4.370		
Netherlands	1.679	1.090					-0.247	-0.200

Table 10 (cont)

**The determinants of gaps between foreign  
and local currency ratings, Moody's and S&P**

Agency	S&P		Moody's		S&P-Moody's difference		S&P-Moody's difference	
	Foreign-local currency rating gap		Foreign-local currency rating gap		Foreign currency rating		Local currency rating	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
<b>Cross-sectional fixed effects (cont)</b>								
New Zealand	1.681	1.430	24.492	4.770	24.177	4.550		
Nicaragua			16.783	4.540				
Norway	1.547	1.300	25.300	4.420			2.152	1.990
Oman	2.625	1.930					1.399	2.090
Pakistan	4.206	3.730	15.497	4.370	12.046	3.820	-3.639	-5.560
Panama					23.914	4.290		
Papua New Guinea	3.835	4.010					-1.978	-2.350
Paraguay	5.162	3.620						
Peru	3.440	2.460	21.425	5.220	44.160	4.430		
Philippines	4.878	4.530	17.575	4.470	13.998	4.420	-2.444	-4.350
Poland	4.145	3.510	22.285	4.890	22.124	4.810	0.019	0.040
Portugal	0.947	1.080	23.108	4.570	5.684	2.970	-0.139	-0.140
Qatar	1.983	2.110	23.922	4.120	6.494	3.130	-0.242	-0.310
Romania	3.788	2.830	19.746	4.770	29.041	4.210	-0.782	-1.080
Russia								
Senegal								
Singapore	-0.171	-0.180						
Slovakia								
Slovenia	3.348	4.250			3.548	2.550		
South Africa	4.522	4.510	22.469	5.060	7.579	2.670	-0.385	-0.560
Spain	2.369	1.490	23.931	4.480			0.613	0.780
Sweden	1.151	1.310	27.070	4.780			1.363	1.140
Switzerland	1.498	0.940						
Thailand	4.821	3.540	20.095	4.620	43.601	4.430	-1.826	-3.010
Trinidad	3.407	3.410			9.245	3.940		
Tunisia	4.940	4.750						
Turkey	2.416	1.960	19.034	4.130	20.297	4.570	-1.379	-1.430
Ukraine	0.766	1.250	16.151	4.210	0.485	0.440		
United Kingdom	1.086	0.820	25.085	4.610			1.207	1.360
United States	1.551	1.120					0.662	1.310
Uruguay	3.325	2.420	21.675	4.670	44.227	4.540	-0.595	-1.020
Venezuela			19.667	4.290	0.016	0.020		
Vietnam								
Asia average	2.597	1.01 <sup>1</sup>	21.581	4.74 <sup>1</sup>	21.988	4.93 <sup>1</sup>	-1.857	0.60 <sup>1</sup>
Non-Asia average	2.579	1.04 <sup>1</sup>	21.883	4.70 <sup>1</sup>	20.109	4.61 <sup>1</sup>	-0.176	0.75 <sup>1</sup>

<sup>1</sup> Standard deviations are given for the average Asian and non-Asian fixed effect. Asian countries are shaded.

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