Assessing Corporate Sector Vulnerabilities

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This chapter discusses how the nonfinancial corporate sector in Indonesia was affected by the 2008–09 global financial crisis and recovery. It then uses contingent claims analysis to assess how vulnerable the corporate sector is going forward. Results suggest that losses from corporate defaults in Indonesia are expected to be manageable. Banks also appear able to absorb deteriorating credit conditions, but credit risks need careful management. Further improvements in corporate governance, credit resolution practices, and the judiciary could help reduce the risk perception investors have of Indonesian firms and their costs of doing business.

The spillovers from the global crisis affected the income and balance sheet positions of Indonesian firms, raising corporate sector vulnerabilities. The financial and corporate sectors were hit hard in 2008 and early 2009 by the increase in global risk aversion and the sharp drop in commodity prices. The damage from the crisis was evidenced by the collapse of equity prices, the jump in the estimated corporate default probability, and the increase in the yields on dollar-denominated corporate debt. The default by a large conglomerate caused market confidence to deteriorate further and accentuated capital outflows and pressures on the rupiah. Despite the resilience of the Indonesian economy—achieving growth of 4.5 percent and 6.0 percent in 2009 and 2010, respectively, the Indonesian corporate sector faces continued risks given the weakened global economic environment and uncertainties about the strength and sustainability of the ongoing recovery.

Corporate sector distress could exert pressure on banks’ profit margins and capital positions. Loans account for about 80 percent of total banking assets and more than 45 percent of loans are channeled to the nonfinancial corporate sector. This chapter seeks to quantify the potential adverse feedback loop between the corporate and financial sectors. To assess the expected losses from corporate defaults and their spillovers to the banking sector, the chapter relies on contingent claims analysis.
Assessing Corporate Sector Vulnerabilities

BACKGROUND

Indonesia’s corporate sector entered the global financial crisis in robust health (Figure 7.2). Indonesian companies had, over time, reduced their vulnerabilities.

- **Corporate leverage declined sharply after the 1997–98 crisis.** The debt-to-assets ratio (market capitalization weighted average) dropped below 20 percent in 2007, down more than 25 percentage points from its peak in 1998. Indonesian firms also compared favorably from an international perspective. Among 10 comparator emerging-market countries, Indonesia exhibited the second lowest corporate leverage ratio in 2008, reflecting higher reliance on own funds and lower relative dependence on bank and bond financing.

- **In the run-up to the global crisis, Indonesian companies showed strengthened capacity to repay obligations.** This capacity was demonstrated by the rising interest coverage ratio, defined as net income relative to interest expenditures.

- **Profitability indicators were among the highest in emerging-market countries.** With the average rate of return on assets reaching 12 percent in 2008, firms in Indonesia were the most profitable, after those in India, among 10 comparator countries.

- **Indonesian firms had built up their liquidity before the global financial crisis and were able to withstand reduced access to foreign funding.** The average current ratio was higher than 2, indicating that firms had twice as much liquid assets (including inventories) to service short-term liabilities.

- **Foreign exposure of Indonesian firms was the lowest in emerging-market countries.** In 2008, foreign assets as a percentage of total assets were below 5 percent on average in Indonesia, compared with about 50 percent in Mexico and more than 25 percent in the Republic of Korea.

In addition, Indonesia had addressed many of its structural weaknesses and vulnerabilities that led to the financial crisis in 1997. Post-Asian-crisis restructuring measures were broadly based and affected all areas of economic activity.

- **Indonesian firms have been able to diversify their sources of funding.** They have reduced their dependence on foreign borrowing and increased self-financing (through retained earnings) as well as expanded their reliance on equity and bond financing, supported by the development of the domestic securities market.

- Corporate governance has improved, although weaknesses remain. Improvements in corporate governance are reflected in a less concentrated ownership structure, strengthened financial supervision, and more transparent financial reporting and disclosure following the adoption of basic international reporting standards. During the 1990s, the corporate ownership structure was heavily concentrated in a few families with nontransparent relationships with the government and with banks. Many large corporate groups owned banks that lent intragroup in excess of regulatory limits, and misreporting was widespread. Currently, legal lending limits apply for both connected...
Assessing Corporate Sector Vulnerabilities

and nonconnected parties, and violators of the limits are subject to sanctions and may be subject to criminal prosecution.1

• *The institutional environment has improved significantly.* Many shortcomings in the legal and judicial systems for settlement of contractual disputes and application of a viable bankruptcy regime have been addressed, although weaknesses remain. Political reform to decentralize power has complemented improvements in financial regulation and supervision, helping reduce vulnerabilities stemming from close corporate-political ties. A trend toward improved regulatory quality, compliance with the rule of law, and control of corruption is clearly apparent according to the World Bank’s governance indicators (Figure 7.3). However, these indicators still compare unfavorably with those in neighboring countries.

• *The reduction of the state-owned enterprise sector* following a privatization program has also contributed to decreased perceptions of risk and instability.

Banks have also diversified their loan portfolios, thereby reducing credit risks. The exposure of banks to the corporate sector has declined sharply. The share of bank loans to the corporate sector is now less than 45 percent of total bank loans at end-2010, from higher than 60 percent in 2001. This is in line with the average in Asia (Figure 7.4). Loans to small and medium enterprises (SMEs) account for about

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1The legal lending limit for nonconnected parties is 20 percent of bank capital for an individual debtor and 25 percent for one group of debtors. The legal lending limit for connected parties is 10 percent of bank capital.
11 percent of total banking sector loans or about a quarter of loans to the nonfinancial corporate sector. Although Indonesian SMEs had borrowed heavily in several episodes in the past, beginning in 2005, credit growth to the SME sector decelerated toward more moderate rates. As a result, SME creditworthiness has improved and the perception of SME vulnerabilities has declined. SMEs were the first to be turned away for bank credit at the peak of the financial turmoil, when large firms looked to domestic banks for funding. However, credit to SMEs rebounded strongly just after the peak of the crisis, whereas sequential growth of credit to large
firms was negative for some time. The default by a large conglomerate in 2008, difficulties faced by some large companies exposed to derivative contracts, and higher legal risk resulting from collection uncertainty could explain why banks are increasingly directing credit to SMEs at the expense of large corporations.

Despite the significant improvements over the last decade, several pockets of vulnerability remain (Figure 7.5).

- The aggregate-level analysis presented above masks important differences between individual firms. For some listed companies, net income does not exceed interest payments, pointing to a level of distress that is not sustainable over the long term. Companies with interest coverage ratios below 1 are sometimes referred to as technically bankrupt because they can only survive by drawing upon their cash reserves or other liquid assets.

- Although aggregate leverage indicators have improved significantly, about a quarter of listed companies have debt ratios higher than 40 percent of assets, compared with 20 percent on average.

- Furthermore, some sectors appear to be overextended. The median debt ratios in manufacturing, mining, transport and telecommunications, and wholesale trade are well above the median debt ratio for all sectors. The manufacturing sector, in particular, accounts for more than 20 percent of all the corporate sector nonperforming loans (NPLs) in the banking industry.

- Concentration risk remains important. The system on the whole is heavily exposed to a small number of borrowers, with the top 25 borrowers accounting for 25 percent of system loans and close to 30 percent or more of total loans for some of the largest domestic banks and foreign-owned branches.

Other key risks to the corporate sector relate to the underlying strength of global demand and to external liquidity conditions. Although these risks have diminished significantly since mid-2009, further cyclical declines in exports and domestic demand would have a negative impact on corporate earnings. Another bout of global risk aversion could also lead to financing pressures and debt-rollover difficulties. In such a case, SMEs would be under more significant stress, given their more-limited financing options. In addition, the risk of a sharp reversal in capital flows leaves the rupiah vulnerable to depreciation pressures. Firms that are more vulnerable to depreciation risks are those with significant unhedged foreign currency borrowings (large conglomerates), those with large domestic revenue bases, and those with significant foreign currency–denominated input costs (processors of imported raw materials). Nevertheless, natural hedging is large because commodity exporters account for much of the foreign currency borrowing. International borrowing by the corporate sector has declined from almost two times reserves in mid-1997 to 47 percent more recently. However, the level of borrowing as a proportion of reserves remains one of the highest in the region (Table 7.1).
Ruiz-Arranz

Agriculture: 5%
Mining: 2%
Manufacturing: 23%
Construction: 5%
Trade, restaurant and hotel: 27%
Transportation, warehouse and communications: 6%
Social services: 4%
Business services: 6%
Others: 22%

Banks’ Nonperforming Loans by Sector (Percentage of total)

Interest Coverage Ratio

- Bottom 25 percent of companies
- Median
- Top 25 percent of companies

Debt to Assets

Median Debt to Assets

Bottom 25 percent of companies — Median — Top 25 percent of companies

Sources: CEIC Data Co., Ltd.; and IMF, Corporate Vulnerability Utilities database.

Figure 7.5 Corporate Sector Vulnerabilities

TABLE 7.1 International Claims on Corporate Sector (Percentage of international reserves, excluding gold)

<table>
<thead>
<tr>
<th>Period</th>
<th>Indonesia</th>
<th>Korea, Rep. of</th>
<th>Malaysia</th>
<th>Philippines</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997:Q2</td>
<td>195.4</td>
<td>93.1</td>
<td>61.8</td>
<td>70.3</td>
<td>131.5</td>
</tr>
<tr>
<td>2006:Q3</td>
<td>56.0</td>
<td>20.0</td>
<td>24.9</td>
<td>43.1</td>
<td>18.7</td>
</tr>
<tr>
<td>2010:Q3</td>
<td>46.6</td>
<td>8.4</td>
<td>11.0</td>
<td>32.1</td>
<td>54.6</td>
</tr>
</tbody>
</table>

EXPECTED LOSSES FROM CORPORATE DEFAULT AND THE IMPACT ON THE BANKING SECTOR

This section uses contingent claims analysis (CCA) to estimate the likely impact of the 2008–09 global economic downturn on Indonesian corporations and the banking system. Under this approach, the risk of default is related to the probability that the value of a firm’s assets will fall below the value of its liabilities. This, in turn, depends on two factors: firm leverage (debt relative to the market value of its equity) and uncertainty about the value of firm assets. Increases in either of these factors increase the probability that a firm will default. With this and other information, expected default probabilities 1 year ahead can be calculated using the CCA framework.

The CCA is a risk-adjusted balance sheet framework in which equity and risky debt of a corporation or financial institution derive their value from assets. The total market value of the assets of a firm or bank at any time is equal to the market value of equity and risky debt. Asset values are uncertain and in the future may decline to the point that debt payments on scheduled dates cannot be made. Debt is “risky” because there is a chance of default. In CCA, the equity and risky debt can be valued using finance techniques, that is, formulas for implicit call and put options whose values are derived from assets, uncertainty of assets, and the promised debt payments. The value of risky debt is equivalent to the default-free debt minus the expected loss resulting from default. In CCA, the value of the equity is computed as the value of an implicit call option and the value of the expected loss from default can be modeled with an implicit put option. The risk-adjusted balance sheet components can be calibrated by using forward-looking information from the equity market and information from the balance sheet to define the default barrier. The implied market value of assets and implied asset volatility are inferred from the market and balance sheet information; credit risk indicators, for example, default probabilities and credit spreads, can then be calculated.

CCA-type models, such as Moody’s KMV CreditEdge model, use a modified Merton framework to estimate expected default frequencies (EDFs) and other risk indicators and are useful for vulnerability and credit risk analysis. The EDFs are calculated daily for all banks and financial institutions, as well as for firms, that are traded on the stock exchange. To get an indication of the trends in risk in a sector, such as the corporate sector or banking sector, the median EDF for the sector can be calculated (EDF of the median institution).

Expected default probabilities increased markedly after September 2008, but remained within historical confines and were back to precrisis levels as of 2010 (Figure 7.6). The median expected 1-year default probability for listed firms in Indonesia (derived from Moody’s KMV implied credit default swap spreads) increased from 0.6 percent in mid-2008 to 3.6 percent in early 2009, before falling back below 1 percent in early 2011. Despite the magnitude of the shock from the crisis, default probabilities did not increase much beyond earlier episodes of stress, providing evidence of the corporate sector’s improved soundness. However, for firms at the 75th percentile of the distribution, the risk of default reached
almost 12 percent in March 2009. The increase in default probabilities was triggered by the collapse of share prices and rising volatility as well as by tighter financing conditions and increased rollover risks. Looking at this in a different way, before the crisis started (July 2007), only a small fraction of firms (accounting for 2 percent of total assets) had a default risk one year ahead that exceeded 5 percent. By October 2008, this proportion had increased to 10 percent. By January 2011, the share of distressed corporate assets were only slightly above precrisis levels.

Expected default probabilities for Indonesian corporations remain above those of other economies in the region. The risk of default of Indonesia’s most vulnerable firms remains at about 5 percent, compared with 1–3 percent in the rest of the Association of South-East Asian Nations (ASEAN) and the Republic of Korea (Figure 7.6). Default risks vary widely across industries within Indonesia. In the recent past, the default probability of the median textile firm has reached 20 percent, compared with less than 1 percent for the corporate sector as a whole. Other industries that display above-average default probabilities include steel and metal products and paper.

The higher risk perception of Indonesian firms is also reflected in their credit ratings. The share of Indonesian firms with D or C ratings by Standard & Poor’s (S&P) is about 25 percent of all listed companies, the highest in the region, although such firms account for a larger share of assets in Korea and Malaysia (Figure 7.7). Furthermore, the share of firms with an AAA rating remains low compared with other ASEAN countries. Nonetheless, AAA firms in Indonesia
Assessing Corporate Sector Vulnerabilities

account for a growing share of total assets (20 percent). Fitch raised Indonesia’s sovereign debt rating from BB to BB+ in January 2010 with a positive outlook in February 2011. This will help support the improvement of other sectors’ credit ratings.

Expected losses from corporate defaults in Indonesia remain limited relative to GDP (Figure 7.8). The stock-listed corporate sector is estimated to incur losses amounting to about 2.75 percent of total corporate sector liabilities, based on equity price data as of January 2011. This compares with 2.25 percent of total corporate sector liabilities for Asia as a whole, 2.25 percent for the newly industrialized countries in Asia (Hong Kong SAR, Korea, Singapore, and Taiwan Province of China), and 1.25 percent for industrial Asia (Australia, Japan, and New Zealand). Nevertheless, given the small size of the corporate sector in Indonesia relative to the average in Asia, losses are expected to be contained when measured by proportion of GDP. Indeed, losses are estimated at about 0.3 percent of GDP in Indonesia, compared with 1.25 percent of GDP for Asia as a whole, and 2.5 percent for the newly industrialized economies (NIEs) in Asia. These loss

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2 The value of expected loss due to default can be modeled with an implicit put option and can be estimated using information from Moody’s KMV implied credit default swap spreads and expected default probabilities inferred from market and balance sheet information. \( \text{Loss} = \text{LGD} \times \text{RNDP} \times \text{Bexp}(-rt) \), where \( \text{LGD} \) is the loss given default (which is one minus the recovery rate), \( \text{RNDP} \) is the risk-neutral default probability, \( B \) is the default barrier, \( r \) is the risk-free rate, and \( t \) refers to the time period.

Source: Moody’s KMV.

Figure 7.7  S&P Ratings on Corporate Sector, January 2011
Calculations are based on historical recovery rates of nonperforming loans, which for Indonesian listed companies are about 35 percent.

Corporate losses from defaults are expected to be larger in small and medium companies and in the tradable sector. Breaking down the sample of listed companies by size shows that most of the losses are expected to be experienced by small and medium firms. Losses are also expected to be somewhat larger in the tradable sector. The most vulnerable industries appear to be chemicals; oil, gas, and mining; and telecom.

The impact of corporate losses on the banking system, as measured by the NPL ratio, is expected to be among the greatest in the region, but still manageable (Figure 7.9). Corporate losses calculated above are multiplied by the current stock of performing loans to the corporate sector to obtain the expected increase in bank losses stemming from banks’ exposure to the corporate sector. Estimates suggest that new bank write-downs could reach 1.25 percent of total bank loans. Such write-downs would bring banks’ cumulative losses (existing provisions plus expected new write-downs) to 4.25 percent. This compares with 2 percent in industrial Asia and not quite 3 percent in the NIEs. Because the banking sector in Indonesia is much smaller than that in other countries, corporate losses that

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3 Companies with market capitalization below the median are defined as small, those between the 50th and 90th percentiles are classified as medium, and those above the 90th percentile are defined as large.

4 To obtain these numbers, the ratio of corporate losses to total corporate liabilities is multiplied by the outstanding stock of bank credit to firms (net of provisions).
may seem modest as a share of GDP will have a much larger impact on Indonesian bank capital. Nonetheless, banks in Indonesia would be able to absorb the expected increase in NPLs because of their strong initial capital positions relative to the minimum Basel requirements.

Corporate and bank losses estimated here are likely to be undervalued given the limited data coverage. The estimates presented above need to be treated with caution. They include only those bank losses that stem directly from defaults on loans to listed companies. In particular, the estimates exclude losses from loans to the household sector, which account for about 45 percent of bank loans, as well as most of the loans to the SME sector. As a result, the impact on bank balance sheets is likely to be underestimated, especially if SMEs have higher default risks than the average Indonesian listed company.

**SUMMARY AND POLICY IMPLICATIONS**

Having reduced macroeconomic and financial vulnerabilities over the decade since 2000, Indonesia’s corporate sector was able to withstand the impact of the 2008–09 global financial crisis. Going forward, losses from corporate defaults are expected to increase the banking sector NPL ratio by only about 1.25 percent. With a systemwide capital adequacy ratio of 17 percent, the impact on banks’ capital positions will not be significant. Nonetheless, losses stemming from consumer credit and SMEs could represent a more sizeable blow to banks’ capital. Although the aggregate impact on banks appears manageable, individual banks with large exposures to vulnerable sectors or to consumer loans could be negatively affected.

Forward-looking information from the equity market suggests a less rosy picture than the one implied by balance sheet data alone. Indonesia compares favor-
ably with other countries as measured by leverage, profitability, and liquidity ratios. However, expected default probabilities—inferred from the market value of assets, debt, and the volatility of these assets—indicate that firms in Indonesia are more vulnerable than firms elsewhere in Asia. The higher risk perception in Indonesia seems to be associated with institutional and governance factors.

In this regard, further improvements in bankruptcy procedures and enhancements to the rehabilitation of troubled borrowers could increase recovery rates and minimize the impact of corporate losses on the banking system. Despite the passage of improved bankruptcy laws in Indonesia after the 1997–98 Asian crisis, recovery rates remain below 20 percent. According to the World Bank’s Doing Business Indicators, Indonesia exhibits the lowest recovery rates in the region, except for the Philippines (Figure 7.10). In addition, the inefficient legal system and weak creditors’ rights lead to lengthy court proceedings. Bankruptcies in Indonesia are estimated to take between 5 and 6 years to be resolved, compared with less than a year in Japan. Out-of-court procedures could have an important role in the short and medium term to speed up restructuring and liquidation cases. However, Indonesia lacks an established informal work-out system, which would help in the rehabilitation of borrowers with viable business but who are unable to service their loans because of sudden or short-term liquidity or demand problems. Currently, even though the law provides for rehabilitation, it is hardly ever used because of the lack of judicial support. Ultimately, therefore, improving the judiciary should be a key priority. The lack of independence, predictability, accountability, and qualification of the courts has implications for the cost of lending and the cost of doing business.

Strengthening banks’ risk-management strategies could further contribute to containing the increase in NPLs. In the same vein, regulatory forbearance to promote lending to SMEs should be avoided.

The implementation of regulations on early restructuring of performing loans could be strengthened. It is important to ensure that such restructuring aims to restore the debtor’s repayment capacity in full, including its ability to repay the principal. Collecting supervisory information on repeatedly restructured loans and restructured loans that migrate to NPL status could be a way to better monitor asset quality. Moving forward, regulators must ensure that banks have adequate credit underwriting policies.

![Bankruptcy Procedures: Time to Complete](image)

![Bankruptcy Procedures: Recovery Rate](image)

**Figure 7.10** Bankruptcy Procedures
The coverage of the Credit Information Bureau (SID) could be improved and expanded. Information collected covers just 30 percent of total debt, and only 10 finance companies report credit information because data submission is mandatory only for commercial banks and big rural banks. Other shortcomings of the system include the following: (a) many borrowers have more than one identity; (b) banks do not inform customers that they will be providing information to SID and that they can check their credit report with Bank Indonesia; (c) other credit behavior, such as payment of utilities, is not collected; (d) system hardware and software need to be upgraded; and (e) a clear medium-term business plan does not exist for many borrowers.

Registering a new company is a lengthy and tedious process and should be streamlined. Company formation in Indonesia is a complex procedure, requiring transactions with several government bodies: the Ministry of Law and Human Rights, the Ministry of Trade and Industry, the Ministry of Manpower, and the Capital Investment Coordinating Board. Up to 95 percent of all businesses outside the Jakarta province are not formally registered. Additionally, very little updated information is available on any company. No follow-up occurs on the submission of financial statements and yearly filings with the registrar of companies. Enforcement and resource capacity at the Ministry of Law and Human Rights is scarce. Lenders rely on information provided by the borrowers instead of counter checking with information provided at the registrar of companies. Also, the lack of updated information on the directors and owners for unlisted companies makes it impossible to identify related parties or companies. Thus, the cost of lending must factor in all this uncertainty and lack of transparency. According to the Doing Business Report published by the World Bank, it normally takes 4 to 6 months for a foreign investor to incorporate a company in Indonesia, whereas company incorporation in Singapore can be completed within one working day.

The lack of a “graduation process” is an obstacle to becoming a publicly traded company. Although the formal process to produce an initial public offering (IPO) is well documented in Indonesia, little guidance is provided about the transformational process by which a company changes from a private to a public firm. The IPO graduation process can be considered to be a restructuring phase during which a company starts the groundwork for becoming a publicly traded company. During this process, a company reexamines its organizational procedures and policies and makes necessary changes to enhance corporate governance and transparency. Most important, the company develops an effective growth and business strategy that can persuade potential investors that the company is profitable. To further encourage firms to go public, consideration should be given to the use of temporary fiscal incentives, by which newly listed companies would benefit from a reduction in the corporate tax rate.

Despite gains in the quality of the institutional framework, corporate governance and financial reporting could be further improved. The perception is widespread among market participants that companies’ financial accounts are not
reliable and that audited reports are of poor quality. Requiring audits to be performed by reputable accounting firms could lead to improvements in the quality and comparability of disclosures.

Finally, more sustained efforts at gathering and disseminating information on the soundness of the corporate sector, including foreign exchange exposures, could foster investor confidence and reduce Indonesia’s risk perception. This was evidenced during the peak of the 2008–09 crisis, when uncertainty about the extent of foreign exchange exposure in the corporate sector accentuated the volatility of the exchange rate and bond spreads. In the medium term, financial deepening would help improve the liquidity of corporate bonds, further limiting volatility of spreads.
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