6
Integrated Pricing Model in China

6.1 RiskCalc China*

6.1.1 Data description
The data source for the RiskCalc v3.1 China model is the Moody’s Analytics CRD, which acquired the financial statement data of Chinese firms from data vendors. The default data are manually collected from publicly available channels.

6.1.1.1 Definition of default
In general, when building RiskCalc models, we seek to collect all credit events where economic loss occurred. We also include all defaults that are consistent with the Basel definitions, provided that the information is available on these defaults. However, when building a specific PD or internal rating model, for various reasons we probably cannot collect all possible types and all possible cases of defaults. The RiskCalc China v3.1 model was built with publicly available default information. The default data is comprised mostly of bankruptcy cases, with a small number of non-bankruptcy, missing-payment type defaults. We have made a number of modelling choices to reflect default types beyond bankruptcies and missing-payments that are not captured in our data at this time.

6.1.1.2 Data exclusions
Excluded companies As in other RiskCalc v3.1 models, we exclude certain types of companies because the financial statements or characteristics of these firms differ from the typical firms in our development sample. The following types of companies are not included in the data:

- Firms without complete financial statements – We require that a financial statement has a non-missing net income number and
positive total assets and sales numbers. The sample includes all firms large enough to produce financial statements in compliance with local accounting standards. Less than 1% of the sample firms have assets smaller than US$100,000.

- **Financial Institutions** – The balance sheets of financial institutions (banks, insurance companies, and investment companies) exhibit higher leverage than the typical firm. The regulation and capital requirements of these institutions differentiate them from other firms. Therefore, they are excluded from the database.

- **Real Estate Development Companies** – The annual accounts of real estate development and investment companies provide only a partial description of the dynamics of these firms and, therefore, their likelihood to default. This is because their financial health often hinges on a particular development.¹

- **Public sector and non-profit institutions** – Government agencies’ default risks are influenced by the states’ or municipalities’ unwillingness to allow them to fail. As a result, their financial results are not comparable to other private firms. Non-profit financial ratios are different from for-profit firms, particularly with regard to variables relating to net income.

*Excluded financial statements*  We conducted plausibility checks of financial statements, such as assets not equal to liabilities plus net worth, and financial statements covering a period of less than 12 months. If errors are detected, those statements are excluded from the analysis.

### 6.1.1.3 Descriptive statistics of the data

**Overview of the data**  Table 6.1 presents the data counts. The sample covers 809,776 financial statements for 304,830 firms, and 2094 defaults. **Figure 6.1** presents the distribution of financial statements and defaults by year in the development sample. The sample covers the time period ranging from 2003 to 2009.

**Robustness of the data**  When building a model, we need to examine potential database weaknesses. Not only does the database need to cover a large number of firms and defaults, but the defaults also need

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of firms</th>
<th>Number of defaults</th>
<th>Number of statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003–2009</td>
<td>304,830</td>
<td>2,094</td>
<td>809,776</td>
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