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Addendum 1 to the CRI Technical Report, (Version: 2012, Update 1)

Changes to Relative Size computation

This write-up serves as an update to the Technical Report (Version: 2012, Update 2, forthcoming) and documents the changes to the Relative Size computation that have been implemented as of the June 2012 calibration that was first used for the probability of default (PD) data from the market close of June 12, 2012.

Relative Size

Relative size is one of the firm-specific variables used for the probability of default (PD) computation. It is measured as the logarithm of the ratio of the market capitalization of each firm to the median market cap of all firms in the economy. The CRI's calculation of relative size is described in Section 2.1 of the Technical Report.

For the calibration data set, the median market cap of firms in an economy for each month-end includes the market cap from the last trading day of each firm in the month. If a firm does not trade in a particular month, the firm's market cap is not included in the median. For certain economies many firms are illiquid and the median market cap experiences large variations due to the change in composition of firms rather than the market value of the firms. Another problem is data quality at the beginning of the historical sample: if a data provider starts including the market cap for a large number of firms in one month compared to the previous, there can be a large jump in the median market cap.

To avoid this problem, we now use a combination of the economy's stock index and the economy's median market cap as the divisor in the Relative Size variable:

1. We choose a recent month t_0 where there is a more complete set of firms in the economy that have trading activity, and calculate the ratio r_{t_0} of the economy's median market cap to stock index value at the end of the month. The stock index used is indicated in table A.2 of the Technical Report.
2. For each month, the divisor for the Relative Size variable of firms in the economy is taken as the month-end stock index multiplied by r_{t_0}.

This change regularizes the Relative Size computation and improvements are seen in the accuracy ratio (AR) of some economies, especially for short horizons between one and 12 months. For example, the one month AR for India was previously 0.633 and is now 0.655.