

Discussion on 'The impact of rising emerging market corporate debt on underlying credit risk' - Wing Chan, Olga Dodd and Madhu Kalimipalli

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Aim and contribution of the paper

- The paper focuses on how post-crisis leverage by emerging market firms impacted their underlying credit risk.
 - ▶ EM corporate debt went up from 73% of GDP at the end of 2007 to 107% (or 127% including shadow banking debt) by end-2014.
- Using financial and balance sheet data of 350 firms from 23 emerging markets over 2002-2015, the paper shows that in the post-crisis (2010-2015) period, leverage increased the PD of these firms and lowered the DTD.
 - ▶ Leverage however has little effect on CDS spreads, while it is associated with higher PD and lower DTD.
 - ▶ There is selection bias in the case of DTD, but not for the other two risk measures.

Main Comments

- **Leverage definition:** while data clearly show that post-crisis debt has increased every year (2010-15), the leverage ratio remains largely flat around 20% between 2010-15 (Table II, panel A).
- **Crisis definition:** Figure 2 (or Table 3) - 2007 looks more like a pre-crisis year as far as emerging bond markets are concerned: CDS spreads and CDS volatility in 2007 was still low; PD was quite low and DTD reasonably high.
 - ▶ In 2007, distress was slowly becoming apparent in developed markets but its contagion to emerging market corporate bonds was not felt until 2008. Hence it might be more prudent to keep 2007 as pre-crisis and define 2008-09 as crisis year.
- How PD gets significantly influenced by leverage when PD is derived from CDS?

$$S = \ln(1 - P) \frac{R - 1}{t}$$

- S is the spread expressed in percentage terms (not basis points)
- t are the years to maturity
- R is the recovery rate in percentage terms

Some suggestions

- Potential endogeneity problem has been partly dealt with via Heckman 2-step strategy. Given small T (2002-2015), a **dynamic panel** (GMM) could be used addressing any endogeneity in a dynamic sense.
- As **R&D-intensive firms** tend to benefit from high leverage (Nemlioglu and Mallick, 2017), one could hypothesise that credit risk of these type of firms will not be higher due to leverage.
 - ▶ Considering industry dummies alone may not capture the innovative capacity of firms in an industry. Thus aggregating R&D spending in each industry can help reflect the innovativeness of a sector that could reveal some heterogeneity in the sample.
- How about considering **credit rating** of these 350 firms? High leverage may not be a problem for firms with investment grade rating.
- ▶ Nemlioglu, I. and Mallick, S. K. (2017), Do Managerial Practices Matter in Innovation and Firm Performance Relations? New Evidence from the UK. *European Financial Management*, 23: 1016-1061.

Minor Points

- **Data for PD and DTD:** CRI is a good source, but it often creates problem when merging this with financial data of the respective firms due to absence of common identifiers. How this issue has been resolved, and which identifier has been used to merge this with the financial information of 350 firms across countries?
- On Page 12, section 4.4: leverage and firm level volatility variables standalone significantly impact credit risk. Financial firms can have higher distress as opposed to non-financial firms
 - ▶ For financial firms, leverage can be significant in the CDS equation.
- Figure I shows the trending up of the post-risis corporate leverage (2007-10). At the same time we witness a drop in several key financial variables measuring the financial health of the firms including return on sales (ROS), return on assets (ROA), Q ratio, price to book (PTBV) and interest coverage ratios in the post-crisis (i.e. 2007-10) period.

Further Notes

- On Page 2: "The impact of growing leverage was influenced by commodity price slump and local currency depreciation."
 - ▶ Not all emerging markets are impacted the same way by commodity prices. Some are net commodity exporting and some are in deficit. The paper might be biased in favour of commodity importers due to data selection (India being 21% of the total).
- On page 2: "Increasing foreign currency denominated debt along with weakening local currency accompanied by dimmed global market outlook can increase the debt burden for the underlying issuers."
 - ▶ Yes, but only when debt burden is calculated in local currency terms for unhedged portion of debt for these issuers. There may be cases where these external debts are hedged either through natural means (exports, foreign operations) or through synthetic means (cross currency swaps, FX Forwards).

Minor Points

- Questions:
 - ▶ On Page 11, section 4.3: monthly time-series regressions are run using three credit risk proxies i.e. CDS spreads, PD and DTD. Why time-series regression was used as opposed to panel regressions that can control for firm-specific heterogeneity?
 - ▶ Why Crisis dummy/leverage has not been used as an additional independent variable in the regression? - normally, both constituents of the interaction term should be included in the regression!
- It is very likely that a number of profitability/performance variables might be highly correlated.

Concluding Remarks

- Examining the credit risk effects of post-crisis corporate leverage of emerging market firms is an interesting and promising issue, and the econometric analysis has been well-executed.
- The incremental leverage effects on firm-level credit risk are most prominent in the Asian and Latin American regions.
- More could be done to explore the mechanisms further as to how/why leverage significantly influences PD (but not CDS spreads) when PD is linked to CDS spread.