FEDERAL RESERVE BANK *of* NEW YORK

Emerging Market Corporate Leverage and Global Financial Conditions

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Summary of paper

- Alter and Elekdag (AE) address the question: Are more accommodative global financial conditions associated with increased corporate leverage in the EMEs?
  - Leverage = Total non-equity liabilities/total assets (TLTA)

AE investigate in detail:

- Role played by certain country-specific characteristics in leverage
- The channels through which global FC may influence leverage
  1. Increased capital flows to EMEs
  2. Lower domestic interest rates in the EMEs
  3. Easing of financial constraints within the EMEs

- This research agenda helps to distinguish between global versus firm-specific factors and between global financial conditions versus other global factors, such as growth or commodity prices.

Methodological summary and results

- Empirical setup involves annual panel regressions with ~400k firms
- Conclusions: Yes, global financial conditions are associated with growth of EME corporate leverage:
  - Decrease in U.S. rates increases leverage (100 bp decrease in U.S. shadow rate -> 9 bp increase in leverage ratio per year)
  - Greater impact for financially-constrained firms
  - Enhanced impact with more open capital accounts and more rigid exchange rates

Firm-level leverage growth

1. TLTA
2. Total liab. to total equity
3. Total assets to total equity

Monetary conditions

1. U.S. shadow rates
2. Global shadow rates

Controls & Other

Firm specific:

1. profitability, size, tangibility
2. financial dependence

Macro:

1. Country conditions (e.g., country risk)

Other:

1. firm fixed effects
2. time, country-time, sector-time fixed effects
3. interactions for monetary conditions-financial constraints and the same for country traits

Comment 1: Scope for country-specific detail

- Very rich dataset should allow for deeper discussion linking global FC on leverage within individual countries
  - Topic for future research: role for institutional environments…particularly corporate governance…in explaining firm capital structure and leverage dynamics."

- Robustness of inclusion/exclusion of China is interesting—Chinese firms comprise ~1/2 of the data set

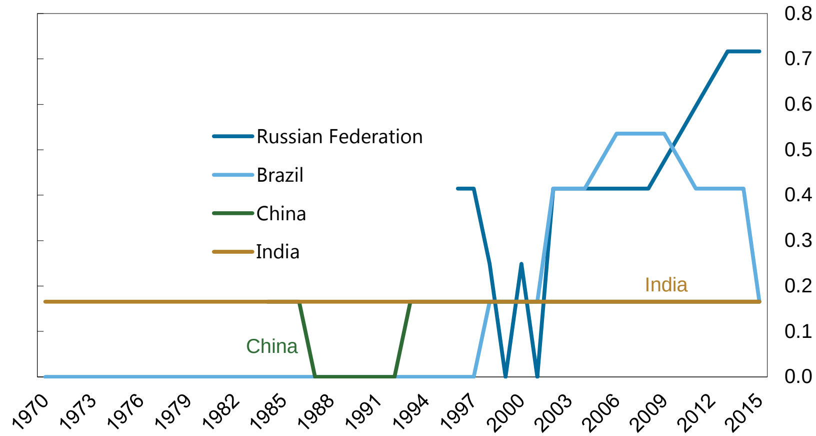
Panel A.

Country	N	in %
Argentina	729	0.2
Brazil	2,833	0.7
Bulgaria	8,393	2.0
Chile	158	0.0
China	209,381	49.1
Colombia	11,472	2.7
Croatia	7,055	1.7
Hungary	11,474	2.7
India	2,754	0.6
Indonesia	335	0.1
Kazakhstan	119	0.0
Lithuania	2,313	0.5
Mexico	902	0.2
Pakistan	149	0.0
Peru	437	0.1
Philippines	1,044	0.2
Poland	24,342	5.7
Republic of Korea	48,985	11.5
Romania	15,729	3.7
Russian Federation	45,933	10.8
Serbia	6,571	1.5
Turkey	4,150	1.0
Ukraine	21,156	5.0
Venezuela	17	0.0
Total	**426,431**	**100.0**

Global FC's role for leverage buildup in China

- China's capital account is both closed and open, simultaneously
  - *De jure* measures of financial openness show very little openness, and essentially no change over decades
  - *De facto* openness paints a much different picture
  - Gross flows are large, enforcement and implementation of capital controls varies over time and circumstance

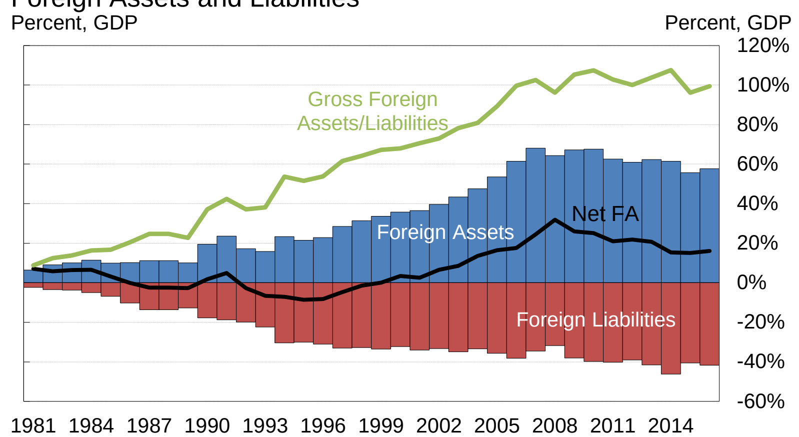
BRICs: Chinn-Ito Capital Account Openness Index
De Jure openness, Index: [0,1] -> least to most open



Source: Chinn, Menzie D. and Hiro Ito (2006). "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," *Journal of Development Economics,* Volume 81, Issue 1, Pages 163-192 (October).

- Did monetary policy abroad contribute to leverage build up in China, including by smaller, private, more financially-constrained firms?

China: International Investment Position
Foreign Assets and Liabilities



Source: Lane and Milessi-Ferretti (2007, 2013), PBOC, CEIC
Note: Data from 2004-2016 is from national sources.

- The results are also relevant for the perennial policy debate in China over capital account openness and exchange rate rigidity

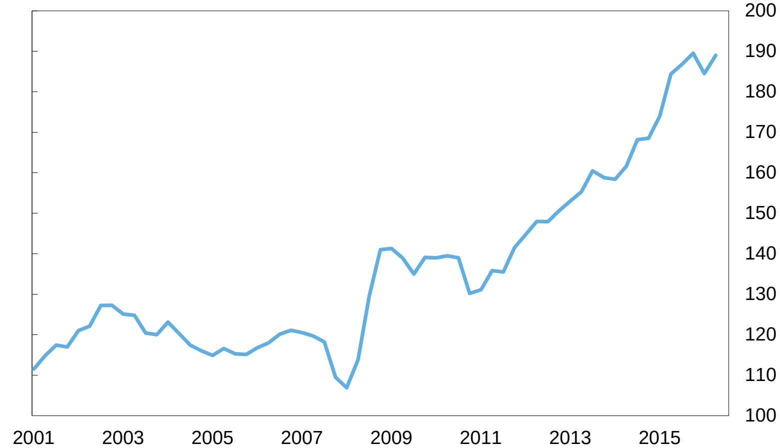
Comment 2: Capital flows and country risk

- Relevant to the debate over the surge in capital flows to EME corporates, and attendant well-documented risks

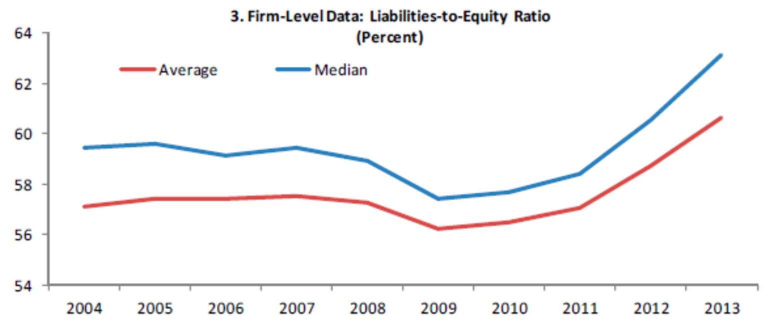
- Surge in EME debt has been a concern in the post-GFC period, of which non-financial private corporate debt (NFPC) has been an important driver

- Capital flows driven by “push-pull” factors:
  - “Pull” (borrower country) factors include borrower economic performance; capital account openness; “country risk”.
  - “Push” (global) factors include, inter alia, growth and monetary policy in the advanced economies, level of global risk
  - AE contributes to this analysis by showing that global FC increase *leverage* at the firm level as well as *flows*

EME: Credit to nonfinancial sector
% of GDP



Source: BIS, Haver



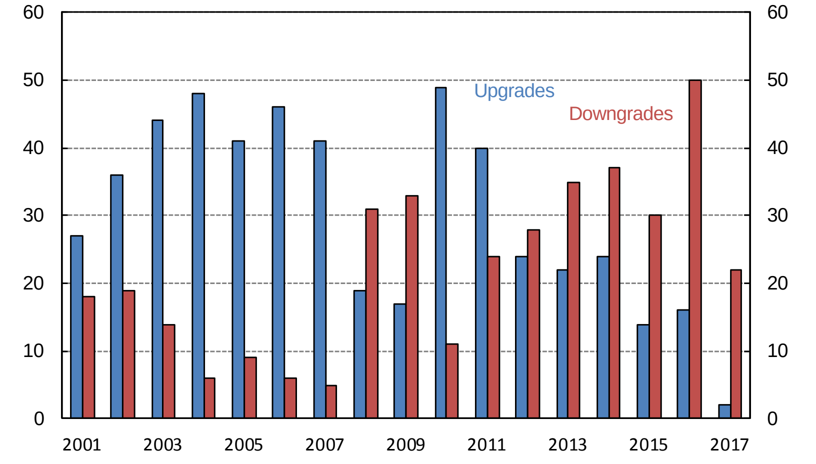
Sources: Bank for International Settlements; Dealogic; IMF; Orbis; and authors’ calculations.

Note: The selected emerging markets are presented in Appendix Table 1.

Push-pull influences on firms' capital structure?

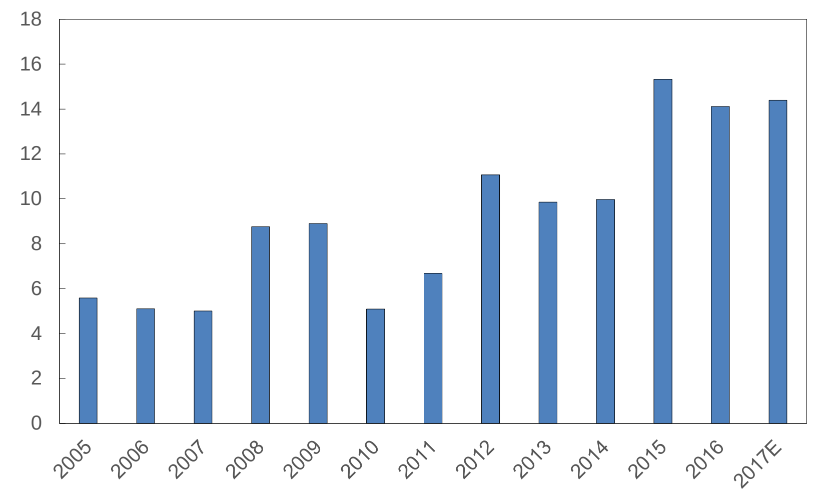
- There is evidence that "push" (global) factors became more prevalent post-GFC, less of a role for "pull" (borrower country) factors
  - Avdjiev et all (2017)*; IMF GFSR October 2015
  - Does AE's firm-level data provide additional evidence for a greater role for global FC (push) in the post crisis period?
- A secular deterioration in country risk has been evident since 2011, proxied by sovereign ratings
- Capital flows to the EME generally were quite robust, despite apparent weakening in "pull" factors
- AE's paper suggests that MP in the advanced economies contributed somewhat to increase in the risky leverage witnessed in the EMEs

Sovereign Rating Actions (EMEs)
Number of agency upgrades and downgrades*



*Moody's, S&P, and Fitch, as of 8/31/2017. Bars show the sum of the number of countries with positive or negative ratings actions during year shown. Countries with ratings actions by more than one agency are counted more than once..

EME Market Corp. Debt With ICR < 1
% of nonfinancial corp. debt



Source: IMF GFSR April 2017 Fig. 1.15.

*Stephen Avdjiev, Leonardo Gambacorta, Linda S. Goldberg, and Stefano Schiaffi (2017) "The shifting drivers of global liquidity", BIS Working Paper 644, June 2017

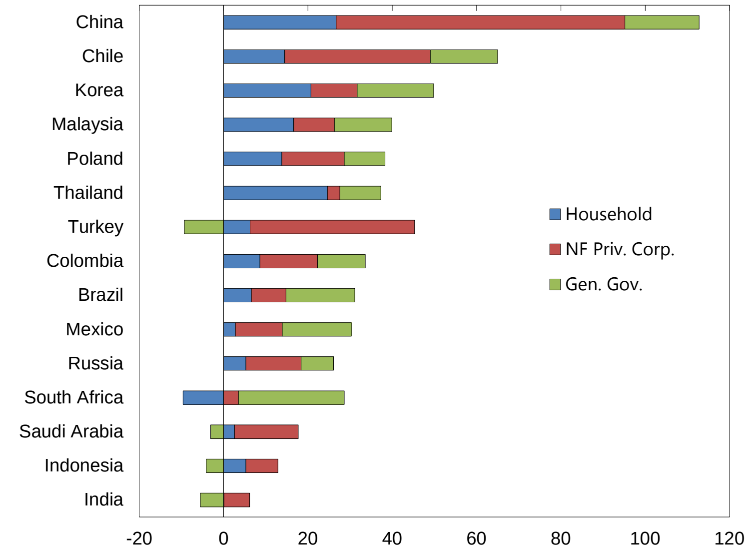
Conclusion: Debt increase is heterogeneous

- Increase in EME corporate leverage comes through both domestic and external borrowing channels, and is quite heterogeneous

- China is a major driver of the story
  - Aggregate EME nonfinancial credit has increased by ~$31tr since GFC, of which nearly $18tr was to the corporate sector
  - About 80% of the increase in corp. debt was in China
  - Chinese corporate debt is primarily domestic currency and owed to domestic creditors
  - Other EME's have greater external creditor and FX denomination

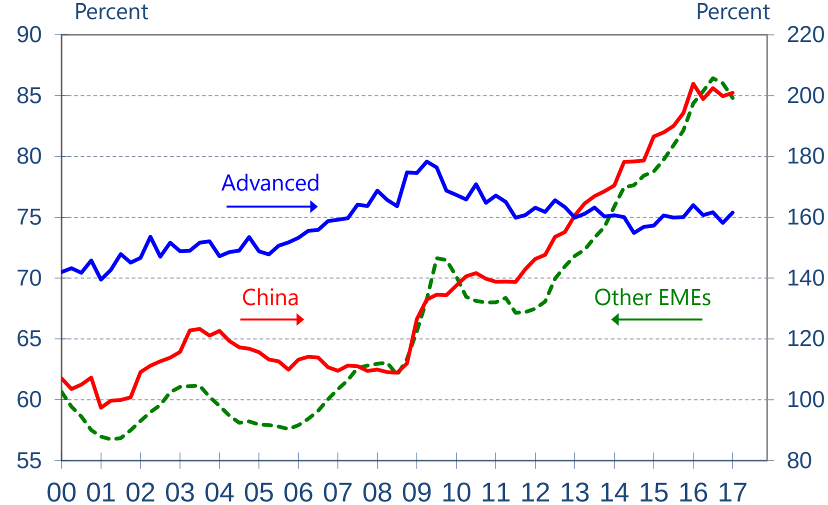
- AE suggest that an important area for future research includes role of institutional and corporate governance leverage dynamics. It may be useful to augment econometric work with case studies as well
  - Firms in selected countries in the gas & oil, materials, construction, metals sectors show "at risk" leverage increases
  - Unclear degree to which commodity super-cycle, domestic macro policies, and/or corporate governance issues influenced leverage versus global financial conditions in individual countries

EMEs: Credit to non-financial sector
Change 2007 - 2017, % of GDP



Source: BIS, Haver.

Credit to Private Nonfinancial Sector (% GDP)



Sources: BIS, IMF.

Thank you.