

## **Firms' Financial Soundness and Access to Capital Markets. Evidence and Data Issues**

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TWELFTH ESCB EMERGING MARKETS WORKSHOP

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\*THIS PRESENTATION IS THE EXCLUSIVE RESPONSIBILITY OF THE AUTHOR AND DOES NOT NECESSARILY REFLECT THE OPINION OF BANCO DE ESPAÑA, OR THE EUROSISTEM.

INTERNATIONAL AFFAIRS

# OUTLINE

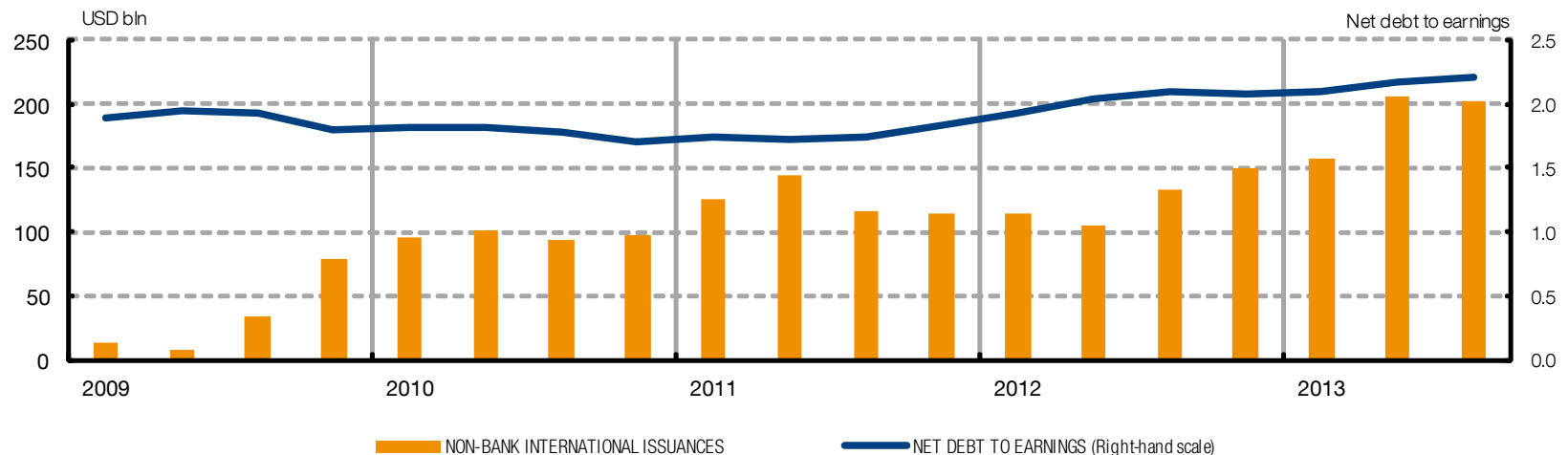
1. Motivation
2. Data issues. Database on bond issuances and firms' balance-sheets
3. Firms' access to international markets
4. Further research and work ahead

[Appendix. Other results]

# MOTIVATION

- International markets transition towards market-based financing. Financial disintermediation and search for yield stand as drivers.

## FINANCIAL DESINTERMEDIATION AND LEVERAGE



SOURCE: Chui, Fender, and Suskho (2014); and BIS Debt Securities by Nationality.

- The process is attracting attention, not least since leverage/vulnerabilities seem to increase in emerging economies non-financial corporations (IMF (2014 A, 2014 B)), FSB-SCAV (2014)

## MOTIVATION

- Unsurprisingly, research/analysis on bond issuances is burgeoning. New stylized facts:
  - Size: large debt issuances, by nationality (Shin (2013, 2014)), McCauley, Upper and Villar (2013).
  - Features: maturities are lengthening (Shin (2014), Gruic, Hattori and Shin (2014)); Dollar funding still dominates (Gruic and Wooldridge (2013))
  - Regional studies: Latin America (IADB (2014))
- But many questions remain open. In particular, those related to issuers' balance-sheet features.
- Why? They require joint information on firms' access to capital markets, and also on their balance sheets. Hitherto, there was no such information.

## CONTRIBUTIONS

1. Construct a database containing information on bond issuances and firms' balance sheets.
  - Our initial sample includes 13,199 bonds, issued by 2,773 firms, of 36 emerging economies, in the period 2000-2013.
  - Bonds issued at international and local markets; Rated/non-rated bonds, public/private placements.
  - Balance-sheet variables: leverage, ROA, interest coverage ratio, current ratio, CAPEX investment. There is information available for listed and non-listed firms.
2. Using this database, we depict firms' access to capital markets, investigating their balance-sheets and financing conditions during the period 2000-2013.

## DATA ISSUES. DATABASE ON BOND ISSUANCES AND FIRMS' BALANCE-SHEETS

- We collect this information in two steps: 1) obtain bond-level information on non-financial corporations' issuances in local and international markets, 2) for each company tapping capital markets, we get its balance-sheet information, if it is available.
- Methodological decision: Non-financial corporations bond issuances, by country of risk. Rationale: account for issuances by financial vehicles incorporated overseas.

### EXAMPLES OF BONDS ISSUED BY FINANCIAL SPECIAL PURPOSE VEHICLES

Company Name	Parent Company	Country of Incorporation	Country of Risk	CUSIP	Amount (USD bln)
Petrobras Global Finance BV	PETROBRAS - PETROLEO BRAS-PR	Netherlands	Brazil	71647NAF6	3.5
Lukoil International Finance BV	LUKOIL OAO	Netherlands	Russia	EJ6431419	1.5
Gazprom Neft OAO Via GPN Capital SA	GAZPROM NEFT OAO-CLS	Luxemburg	Russia	EJ9515473	1.5
Russian Railways via RZD Capital PLC	RUSSIAN RAILWAYS JSC	Ireland	Russia	EJ6158582	1.3
AngloGold Ashanti Holdings PLC	ANGLOGOLD ASHANTI LTD	Isle of Man	South Africa	03512TAD3	1.3
Metalloinvest Finance Ltd	METALLOINVEST HOLDING CO OAO	Ireland	Russia	EJ8456547	1.0
SABIC Capital II BV	SAUDI BASIC INDUSTRIES CORP	Netherland	Saudi Arabia	EJ8456547	1.0

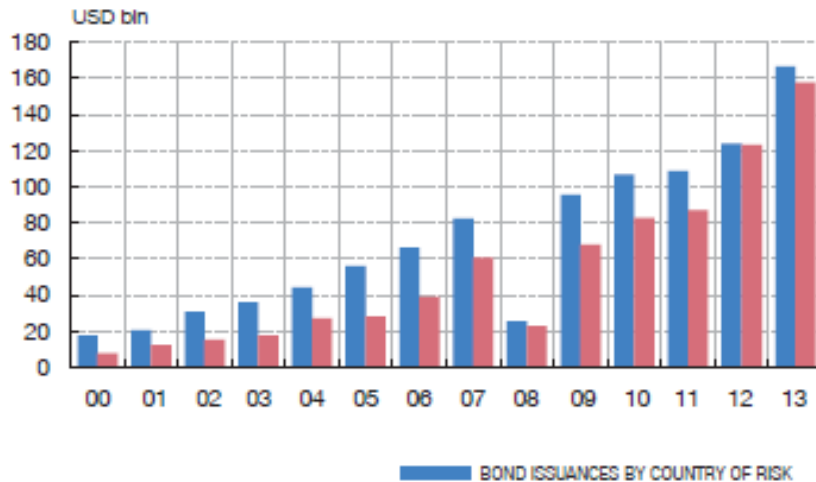
SOURCE: Bloomberg

# DATA ISSUES. DATABASE ON BOND ISSUANCES AND FIRMS' BALANCE-SHEETS

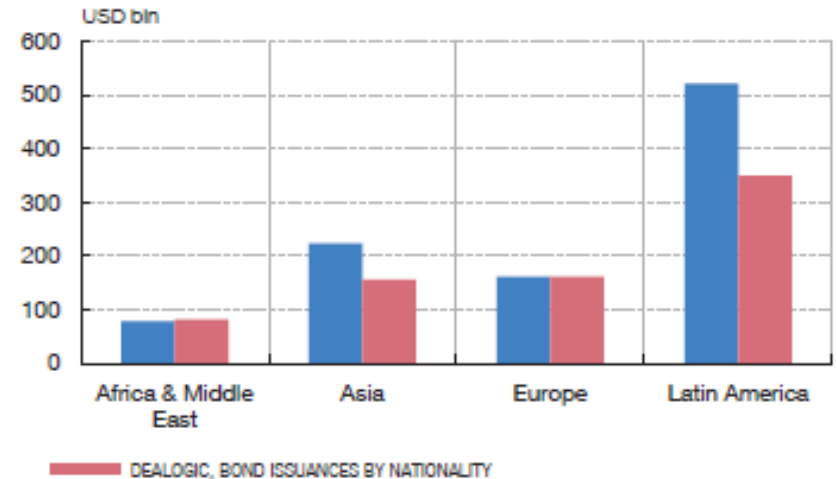


- How good is our bond information? Volume issued is larger than the one obtained with Dealogic. We have unrated bonds, private placements, local and international markets (full population of bonds?)

2.1 AGGREGATE BY YEAR



2.1 AGGREGATE BY REGION



SOURCES: Bloomberg and Dealogic.

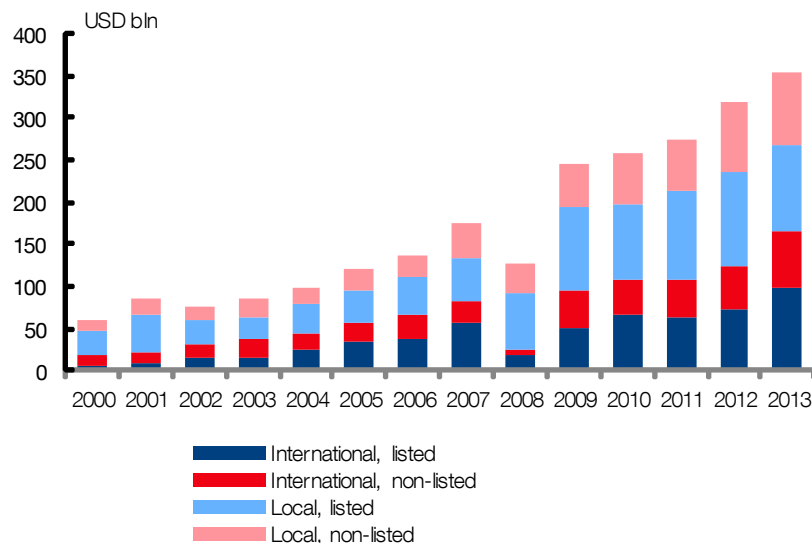
# DATA ISSUES. DATABASE ON BOND ISSUANCES AND FIRMS' BALANCE-SHEETS



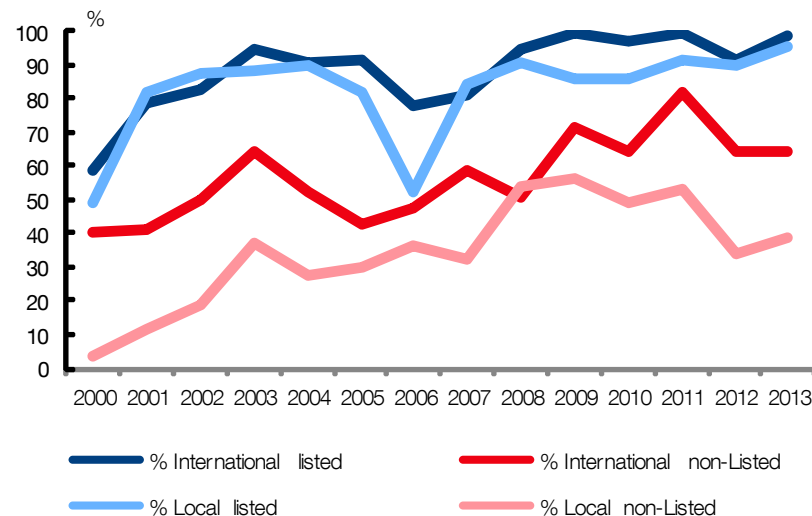
•How good is our balance-sheet coverage? Uneven. Very good for international deals and listed companies. Data gaps in unlisted firms, and local markets. Random sample, or systematic bias?

## FIRMS' BOND ISSUANCES. BY MARKET OF ISSUANCE AND MARKET STATUS

A. VOLUME ISSUED. BY MARKET STATUS



B. BALANCE-SHEET COVERAGE (% OF TOTAL VOLUME)



SOURCE: Bloomberg and owns elaboration.



# FIRMS' ACCESS TO CAPITAL MARKETS. INTERNATIONAL MARKETS. METHODOLOGY



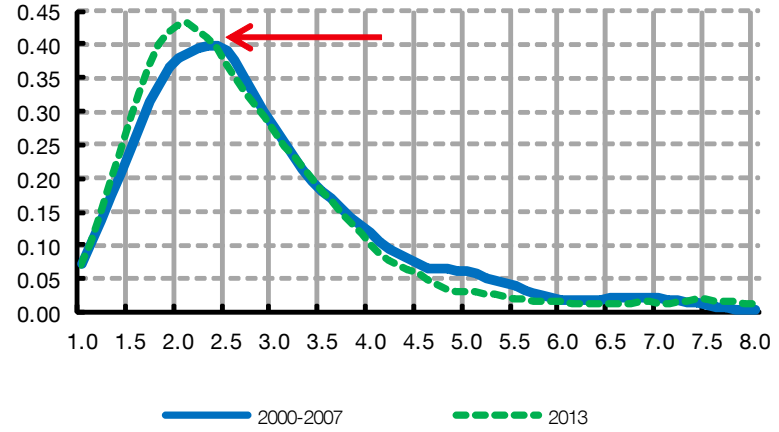
- Research question:
  - How do firms tapping international bond markets in year 2013 compare [in dimension Y] with those firms issuing overseas in year X?
  - How are their financing conditions [bond feature Z] in year 2013 compared with those in year X?
- For Y: leverage, ROA, ICR, Current ratio; and Z: yield, spread, maturity
- Methodology:
  - Descriptive evidence [median, interquantile range]
  - Non-parametric analysis –Kernel estimation

$$\hat{f}(x) = \frac{1}{nh} \sum_{i=1}^n K\left(\frac{x_i - x}{h}\right) = \frac{1}{n} \sum_{i=1}^n w_i$$

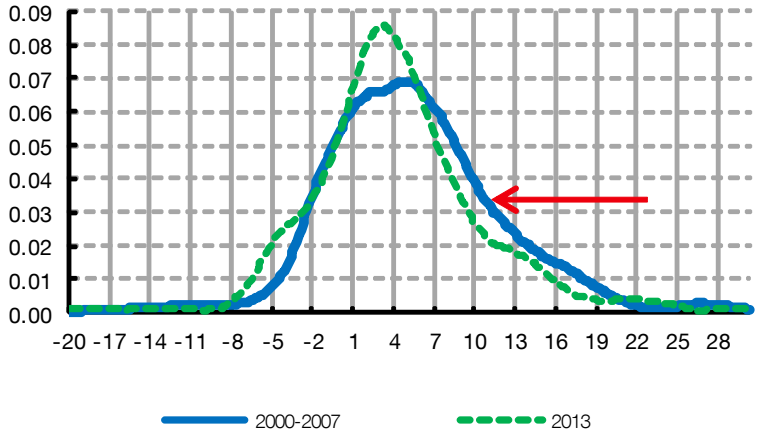
# FIRMS' ACCESS TO CAPITAL MARKETS. INTERNATIONAL MARKETS. FIRMS' FINANCIAL SOUNDNESS



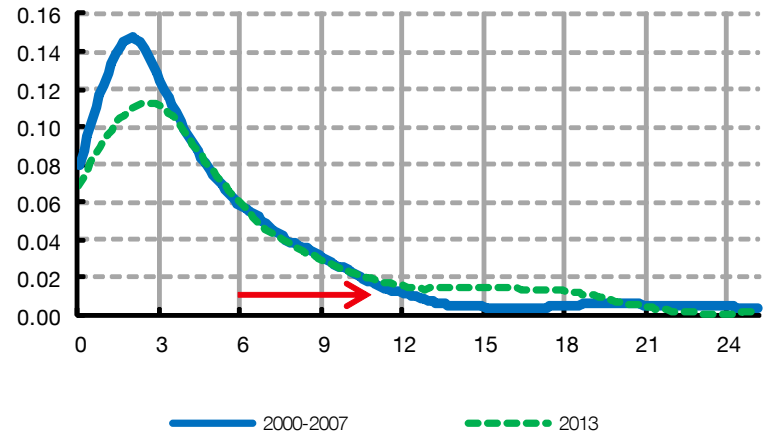
LEVERAGE SLIGHTLY DECREASES



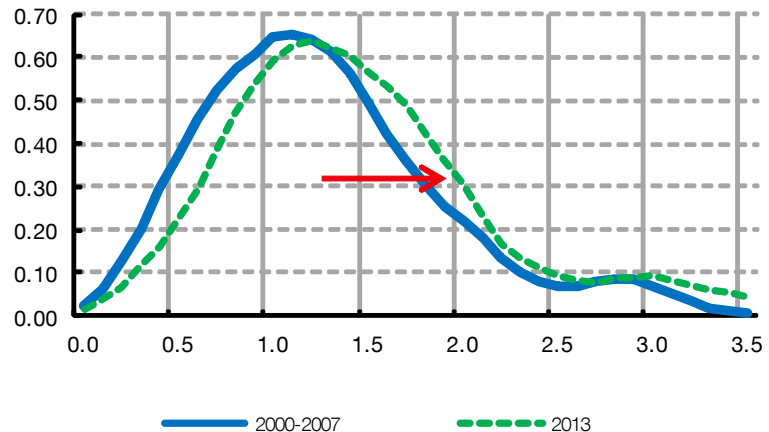
ROA SHOWS SOME DETERIORATION



ICR IMPROVES



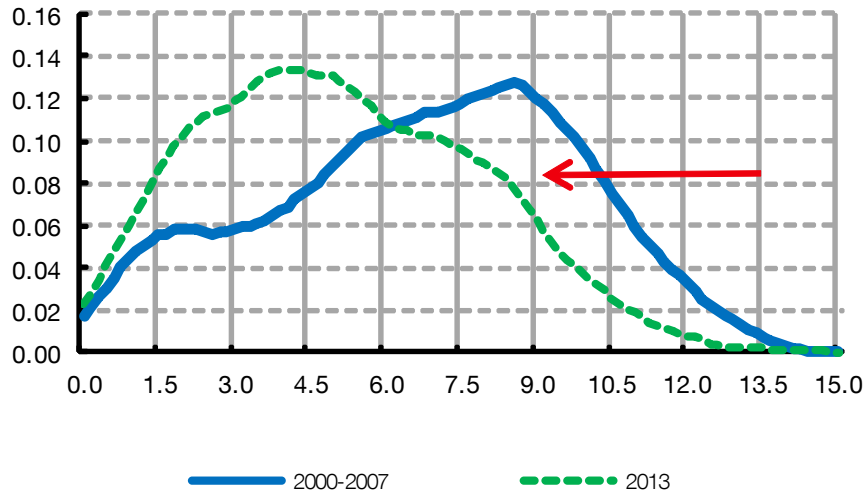
CURRENT RATIO IMPROVES



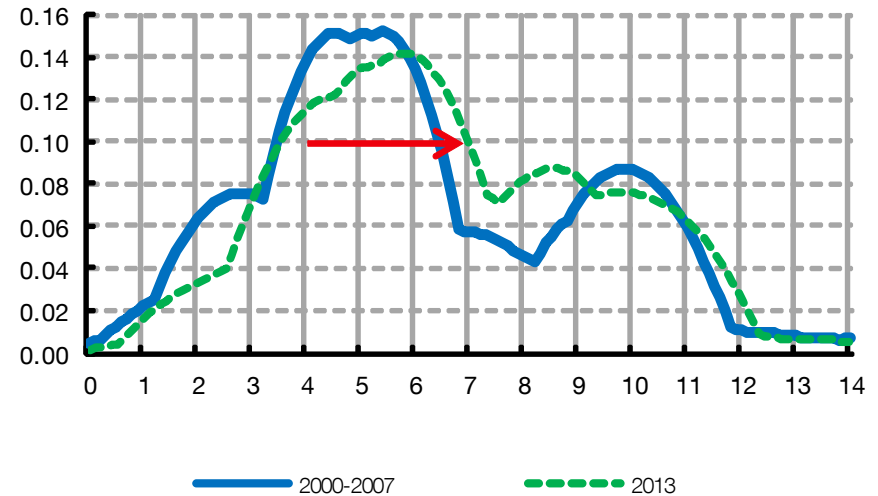
# FIRMS' ACCESS TO CAPITAL MARKETS. INTERNATIONAL MARKETS. BOND FEATURES



COUPONS DECREASE



MATURITY INCREASES



## •Bottom line:

- Firms' balance sheet have changed, but are not more overstretched.
- However, they have easier access to capital markets (consistent with previous research, Shin (2013, 2014), Turner (2014))
- Further analysis: “Pockets of Risk”, Domestic Markets, New Issuers.

## IMPLICATIONS AND FURTHER RESEARCH

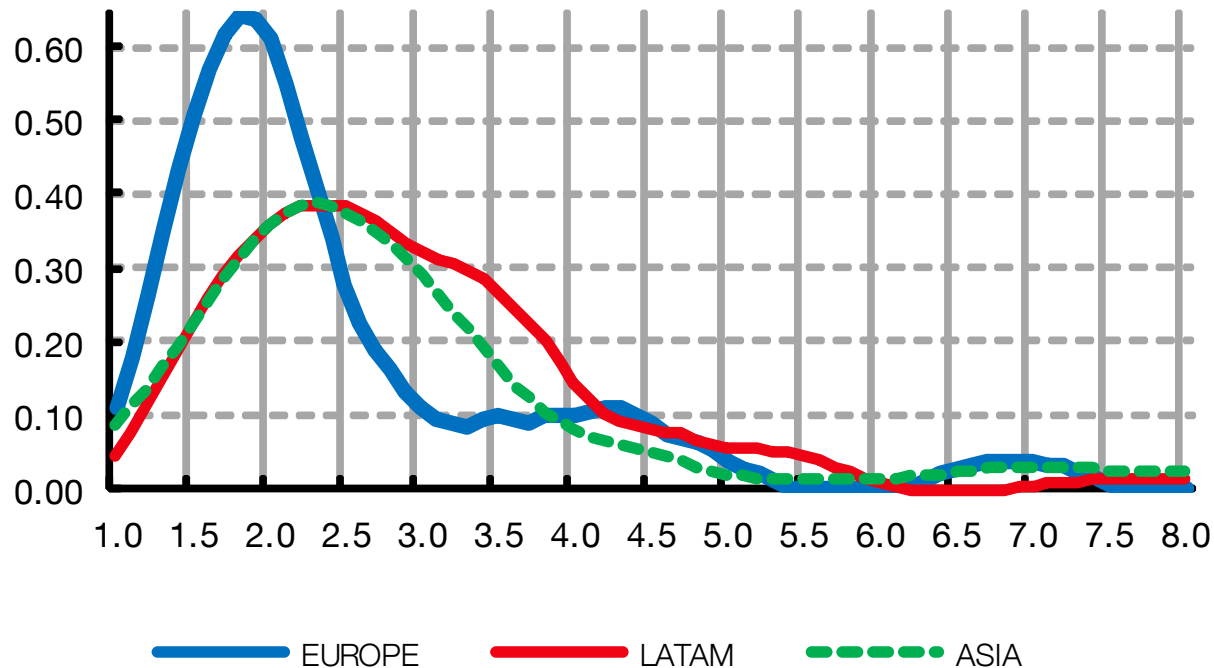
- Implications:
  1. Firms' access to international markets is easier than before the crisis – coupons, tenors.
  2. Process seems driven by global factors –is this a healthy development, reflecting the end of credit rationing in international markets? does it reflect a transition from global banks to markets? Is it search for yield?
  3. Lenders are not exposed to more credit risk than in past; though, they are more exposed to market risk (duration).
  4. Is it possible to reconcile this evidence with NFC rising leverage? other lenders, perhaps domestic banks, can suffer an adverse selection problem.
- Many questions remain open. Investigating some of them requires joint information on firms' access to capital markets and balance-sheets.

## IMPLICATIONS AND FURTHER RESEARCH



- Robustness. Test if these shifts are statistically significant. Stochastic dominance. Are the results general? Are there sectoral or regional patterns? Preliminary evidence

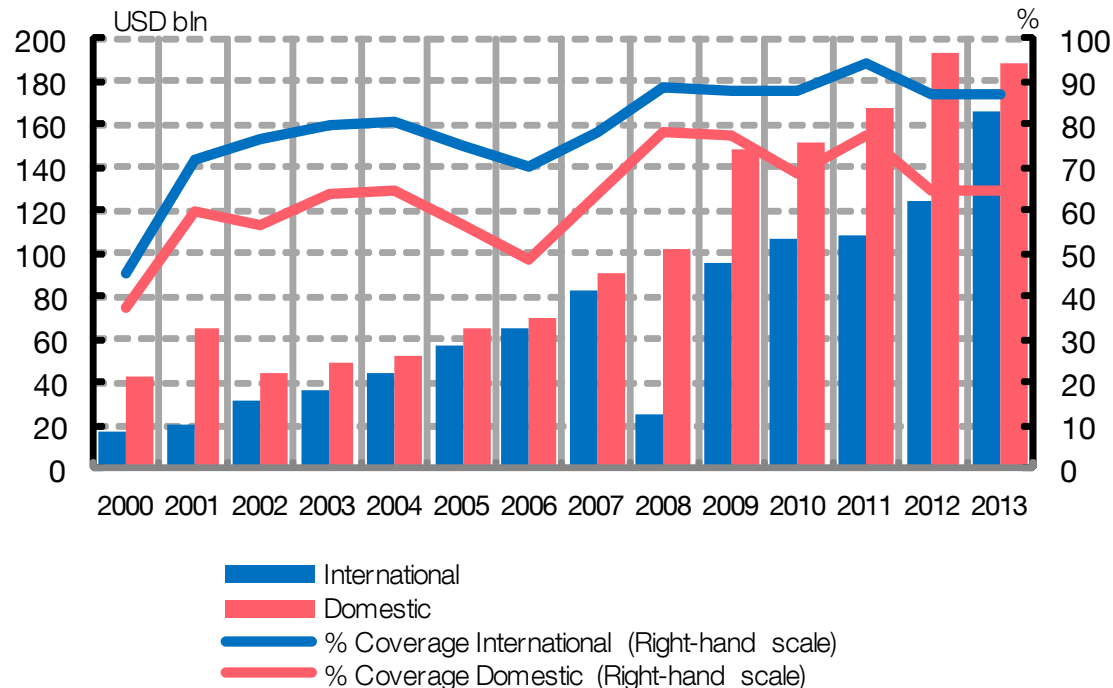
EUROPEAN FIRMS SHOW LOWER LEVELS OF LEVERAGE



## IMPLICATIONS AND FURTHER RESEARCH

- Local markets have experienced a remarkable development after the crisis. Does it have to do with foreign investors? Are international and local markets still different, in the post crisis environment?

BALANCE-SHEET DATA COVERAGE OF DOMESTIC ISSUERS





THANK YOU

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Eurosistema

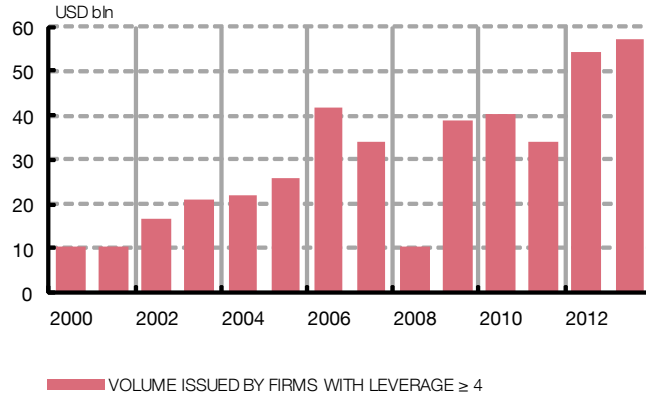
INTERNATIONAL AFFAIRS

# APPENDIX. TAIL RISKS ON THE RISE

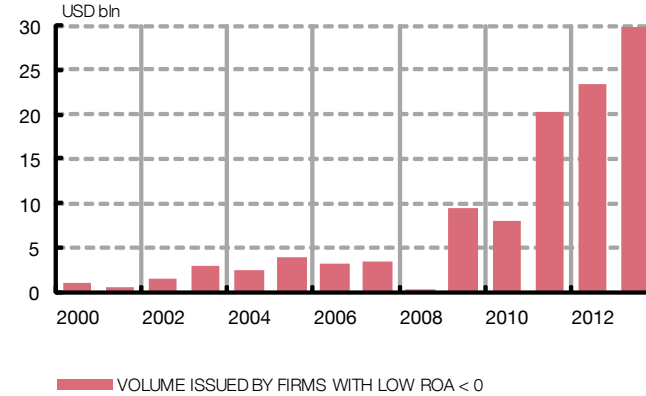


## TAIL RISK, VOLUMES ISSUED BY WEAK FIRMS

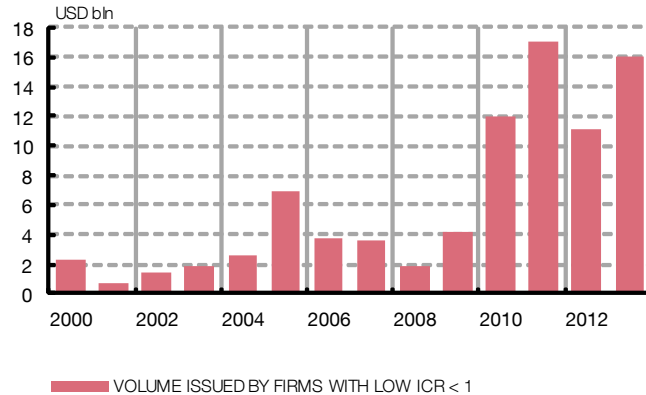
VOLUMES ISSUED BY HIGHLY LEVERAGED FIRMS



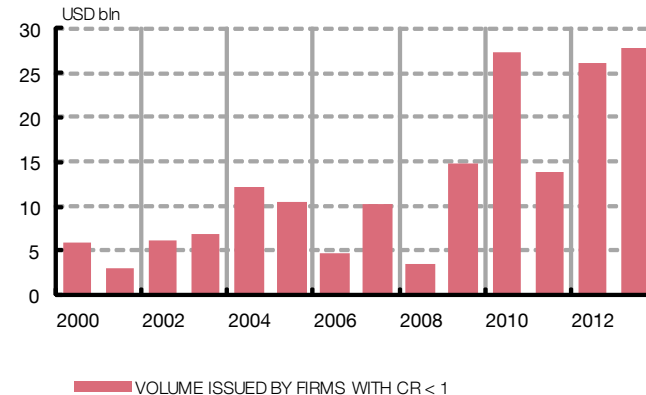
VOLUME ISSUED BY FIRMS WITH LOW ROA



VOLUME ISSUED BY FIRMS WITH LOW ICR



VOLUME ISSUED BY FIRMS WITH LOW CURRENT RATIO



SOURCE: Bloomberg.

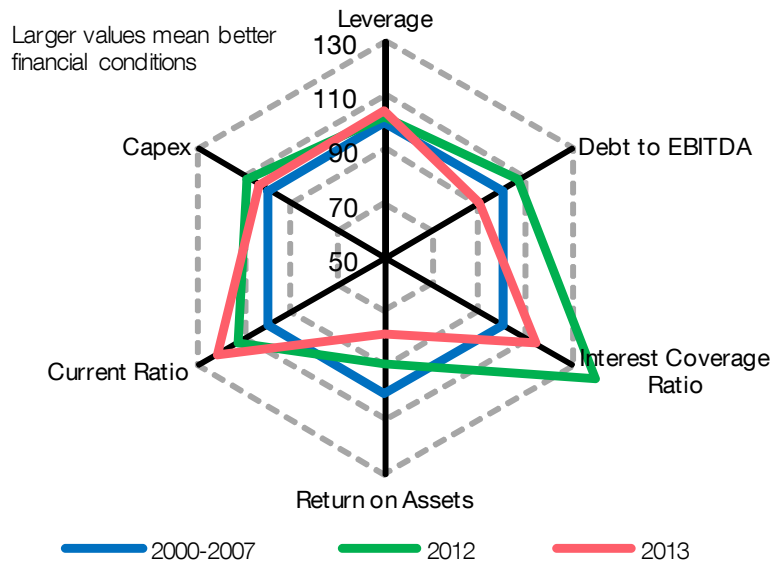


# APPENDIX. JOINT ANALYSIS. OVERALL, FIRMS TAPPING MARKETS ARE NOT WORSE

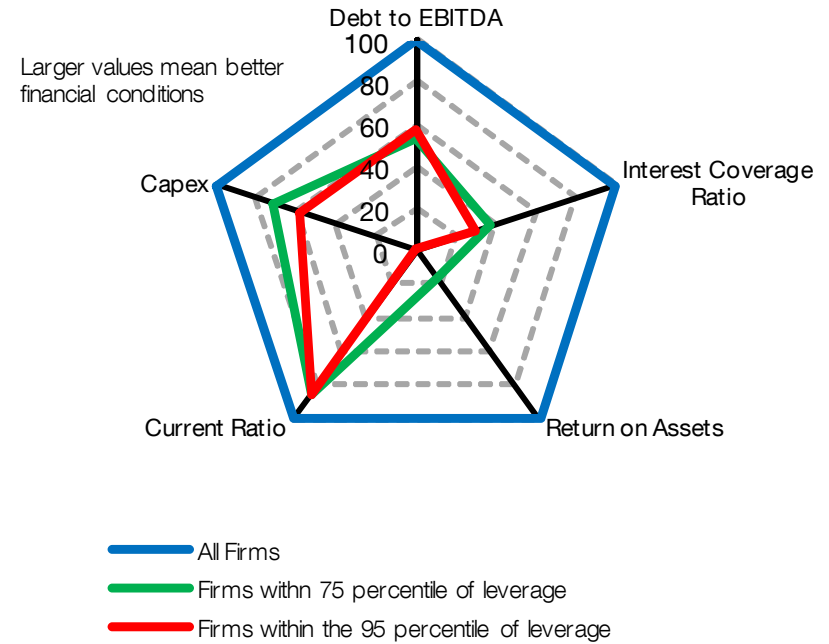


## JOINT ANALYSIS OF FINANCIAL CONDITIONS

FINANCIAL CONDITIONS RELATIVE TO PRE-CRISIS LEVELS



FINANCIAL CONDITIONS OF HIGHLY LEVERAGED FIRMS

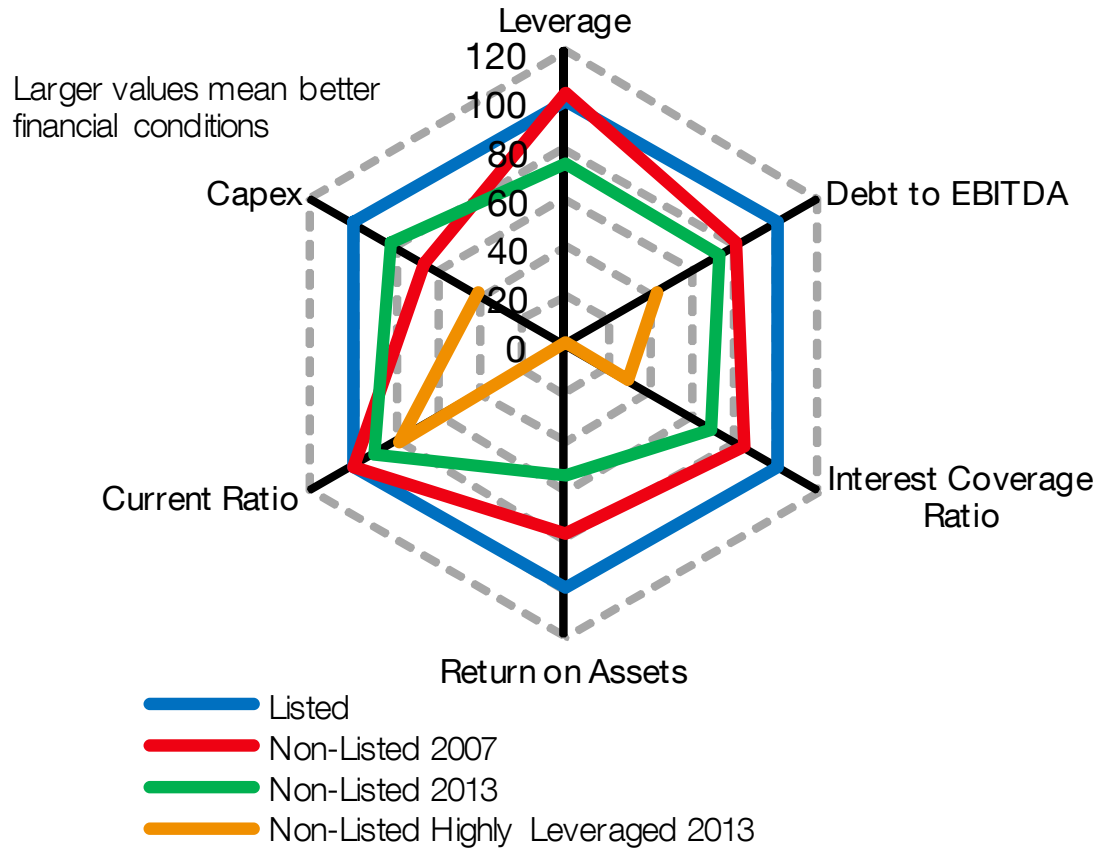


SOURCE: Bloomberg.

# APPENDIX. POCKETS OF RISK? NON-LISETED FIRMS HAVE MORE OVERSTRECHED BALANCE-SHEETS



RELATIVE FINANCIAL CONDITIONS OF NON-LISTED FIRMS

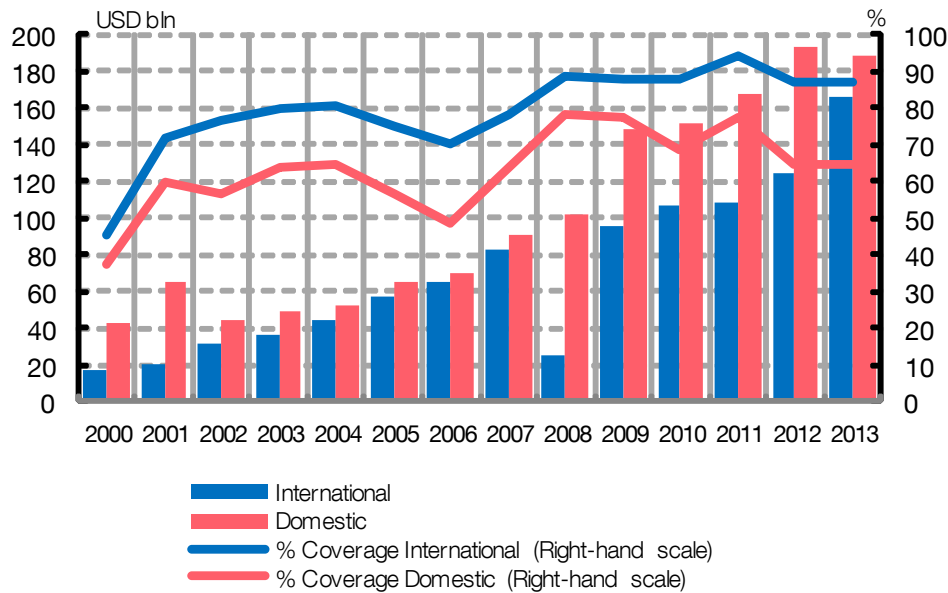


# APPENDIX. POCKETS OF RISK? FIRMS TAPPING LOCAL MARKETS ARE WORSE –BUT BETTER THAN IN PAST

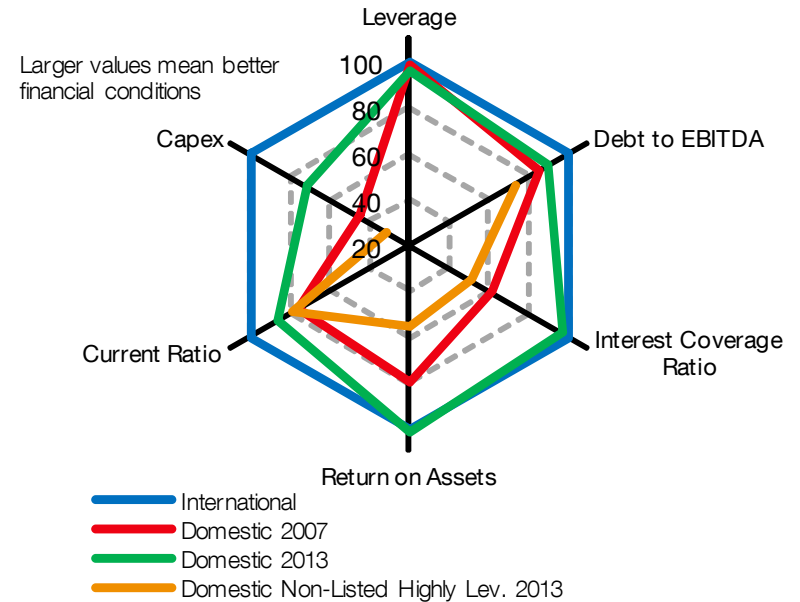


## DOMESTIC ISSUERS: COVERAGE AND FINANCIAL CONDITIONS

BALANCE-SHEET DATA COVERAGE OF DOMESTIC ISSUERS



RELATIVE FINANCIAL CONDITIONS OF DOMESTIC ISSUERS



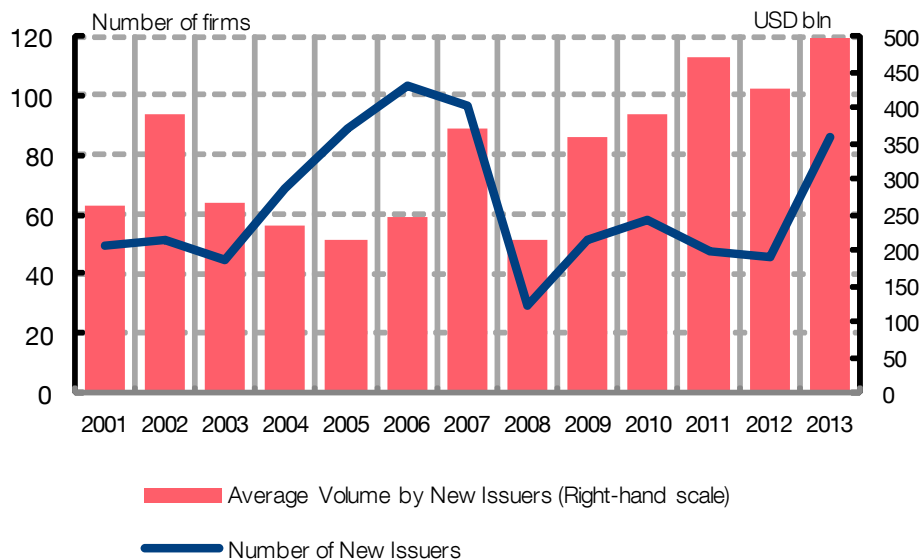
SOURCE: Bloomberg.

# APPENDIX. POCKETS OF RISK? NEW ISSUERS ARE BETTER THAN EXISTING ISSUERS.

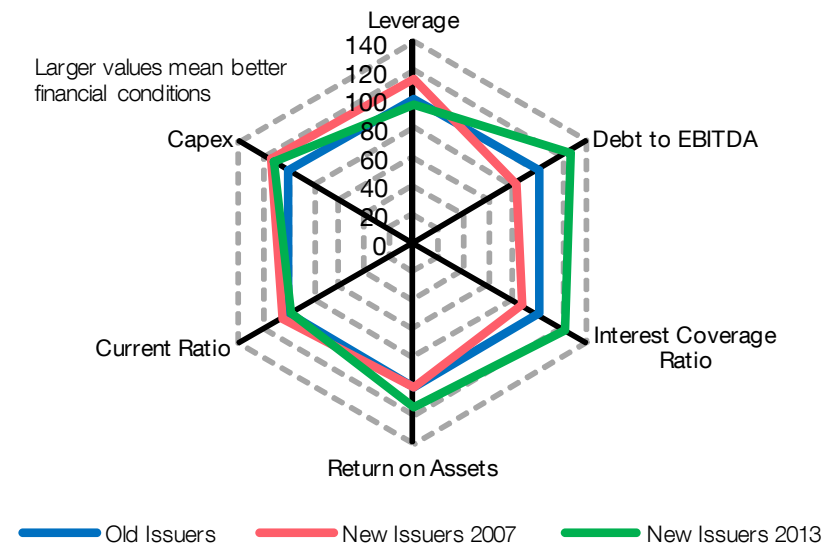


## NEW ISSUERS: COVERAGE AND FINANCIAL CONDITIONS

NEW ISSUERS OF INTERNATIONAL BONDS



RELATIVE FINANCIAL CONDITIONS OF NEW ISSUERS

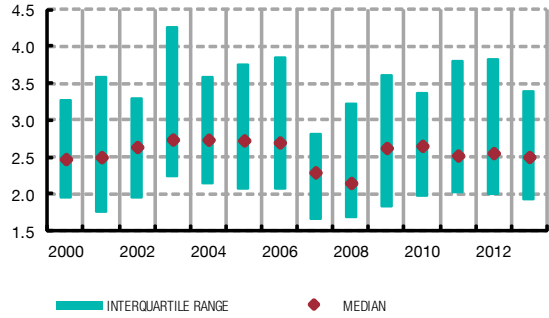


SOURCE: Bloomberg.

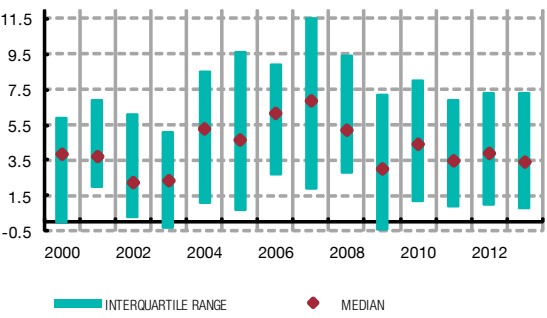
# APPENDIX. BALANCE-SHEET FEATURES.



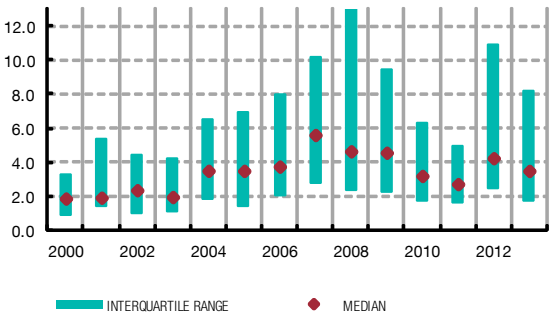
LEVERAGE



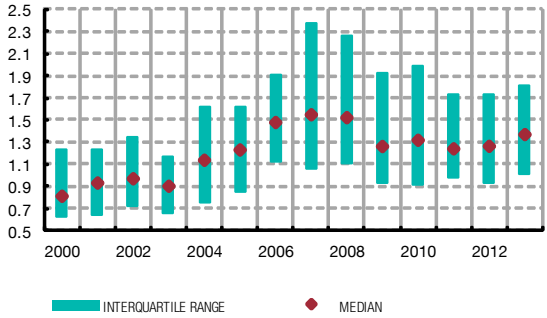
RETURN ON ASSETS (ROA)



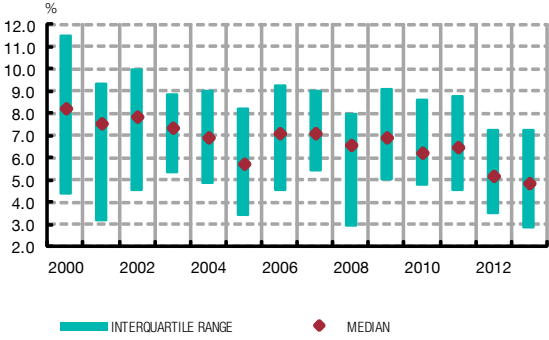
INTEREST COVERAGE RATIO (ICR)



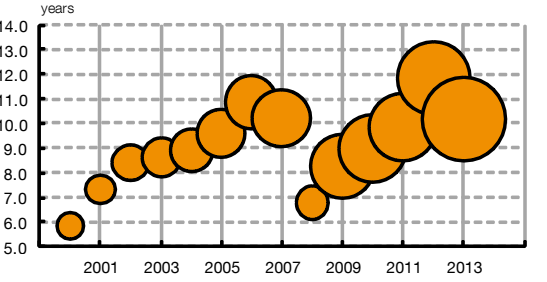
CURRENT RATIO



COUPON



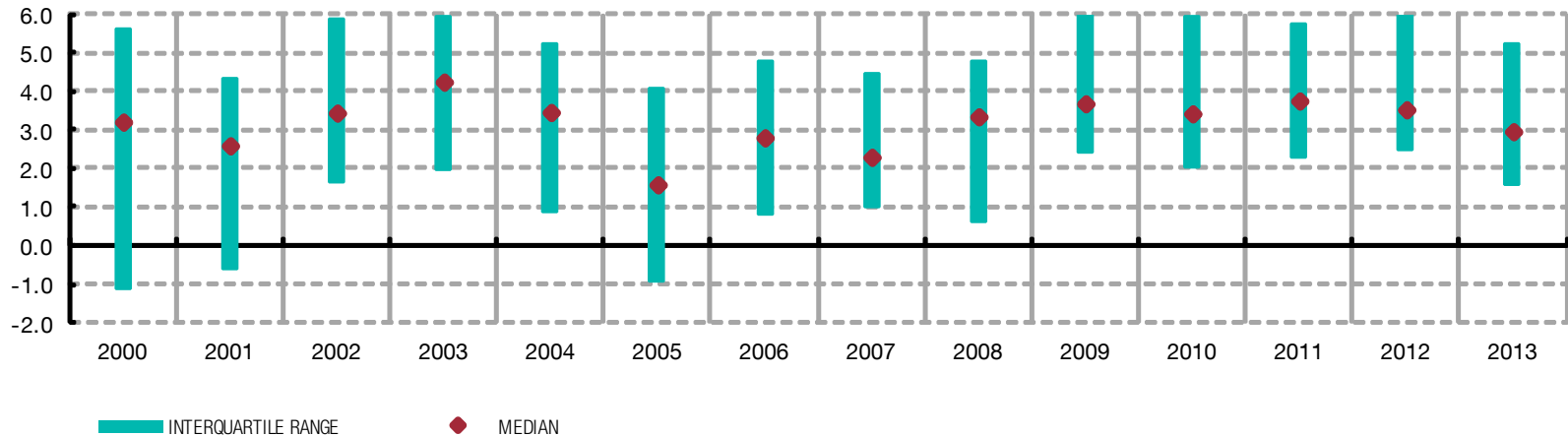
MATURITY (WEIGHTED AVERAGE)



INTERQUARTILE RANGE MEDIAN



## BOND SPREAD FOR INTERNATIONAL ISSUANCES DENOMINATED IN USD



- Spreads reached the lowest values before the financial crisis and have increased after that period. This is in contrast with yields, which reached their all-time low in 2013.
- The fall on coupons does not seem to be related to lower credit risk but to global factors.

## FIRMS' ACCESS TO CAPITAL MARKETS. INTERNATIONAL MARKETS. METHODOLOGY



- **Objective:** investigate firms' access to international bond markets over time, by looking at firms' balance-sheet metrics. Comprehensive coverage for firms tapping international markets (although more representative for listed firms)...

### BALANCE-SHEET SOUNDNESS. METRICS

CONCEPT	VARIABLE	OBSERVATIONS	
		Firms	As % of amount issued
Leverage	Total assets to common equity (leverage)	1,001	73.33
Profitability	Return on Assets	868	65.82
Debt service capacity	Interest Coverage Ratio	1,010	74.68
Long-term prospects	CAPEX -capital expenditures	724	57.77
Solvency	Debt to EBITDA	1,037	77.80
Liquidity	Current ratio	1,052	77.32

SOURCE: Bloomberg and own elaboration.

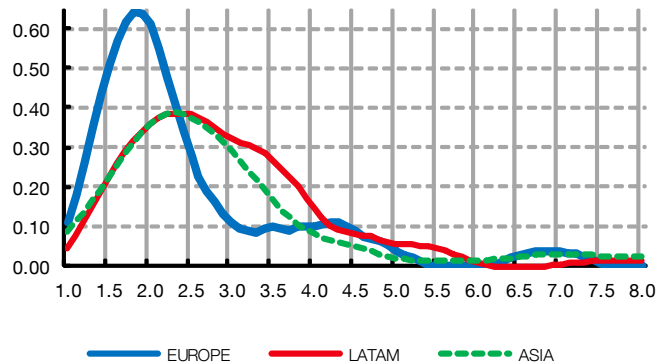
- ...and bonds features (yields, spreads, maturities).

# IMPLICATIONS AND FURTHER RESEARCH

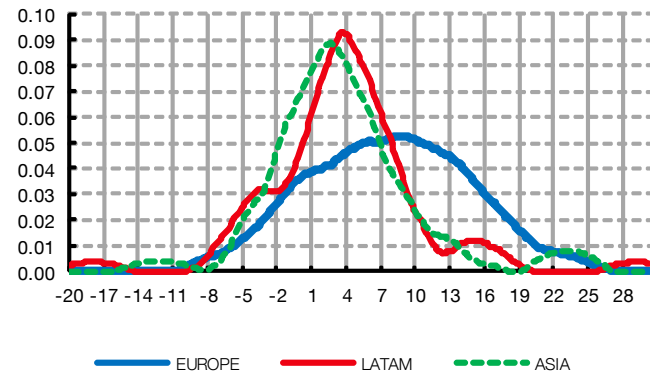


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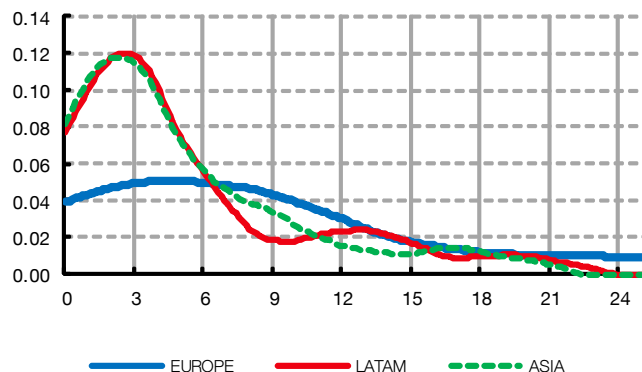
ESTIMATION FOR LEVERAGE



ESTIMATION FOR ROA



ESTIMATION FOR ICR



ESTIMATION FOR CURRENT RATIO

