BANK FOR INTERNATIONAL SETTLEMENTS

Investing in emerging markets: How do global investors differentiate between sovereign risks?

Eli Remolona, Marlene Amstad and Jimmy Shek

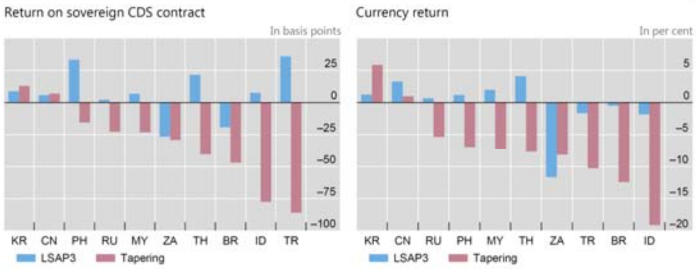
U.P. School of Economics
Diliman, Quezon City, 30 October 2014

The views expressed are our own and do not necessarily reflect those of the BIS

Analysis by alliteration: reactions of asset prices in emerging markets

The "Fragile Four," "Sorry Sixth" and other emerging markets

LSAP3 versus tapering



[1] LSAP3 is defined as the period between 13 September 2012 and 22 May 2013 while Tapering is defined as the period between 22 May 2013 and 18 December 2013

Sources: Markit; national Data; BIS calculations.

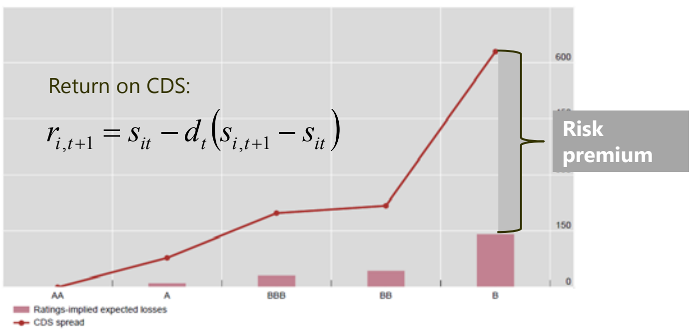
The tug-of-war between "push" and "pull" factors

- Fratzscher (2012): Global "push" factors drove capital flows in 2008 but country-specific "pull" factors drove flows in 2009-2010
- Forbes and Warnock (2012): Surges and stops related to "global risk," domestic factors less important
- Remolona, Wu, Scatigna (2007, 2008): Sovereign CDS spreads are mostly risk premia, which are driven by risk aversion
- Longstaff, Pan, Pedersen, Singleton (2011): Factor model shows excess returns on sovereign CDS compensate for global risk; hardly any country risk premium
- Rey (2013): Global financial cycle = VIX

Decomposing sovereign spreads: What drives CDS returns?

Expected loss versus sovereign spreads

Based on defaults within 5 years of rating, Moody's and Standing and Poors, in basis points.



Source: Remolona, Wu, Scatigna (2007)

Choosing our sovereigns

- Emerging markets: no consensus definition
  - IMF's emerging or developing economies; or World Bank's low and middle-income countries; or
  - Constituents of Barclays, JP Morgan, Markit or Merrill Lynch emerging-market government bond indices;
  - But exclude frontier markets, with stock of debt below USD 10 billion or long-term sovereign credit rating below BB/Ba;
  - Availability of sovereign CDS contracts
- Advanced economies: focus on reserves
  - Currencies in SDR with sovereign bond market capitalisation above USD 1 trillion
  - Currencies with share above 1% of global reserves according to COFER
  - In euro area, sovereigns with markets above USD 1 trillion

We end up with 28 sovereigns -- 18 emerging markets in four regions, 10 advanced economies

BR Brazil	CN China	CZ Czech Republic	AU Australia
CL Chile	HK Hong Kong SAR	HU Hungary	CA Canada
CO Colombia	ID Indonesia	PL Poland	FR France
MX Mexico	KR Korea	RU Russia	DE Germany
PE Peru	PH Philippines	TR Turkey	IT Italy
		ZA South Africa	
	SG Singapore		JP Japan
	TH Thailand		NZ New Zealand
			SE Sweden
			GB United Kingdom
			US United States

Summary statistics of CDS spreads

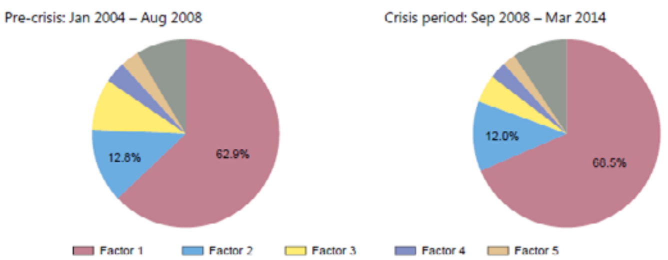
End-of-month data, in basis points, break based on Quandt-Andrews test

Pre-crisis (Jan 2004-Aug 2008)	All (28)	Latin America (5)	Emerging Asia (7)	Eastern Europe (3)	Other (3)	Advanced Econ (10)
Average	75.0	156.9	99.6	89.8	145.0	5.6
Average change	-0.2	-2.4	0.2	-0.2	-0.1	0.3
Standard deviation of change	22.2	38.5	19.1	18.6	31.8	2.8
Average correlation between changes	0.47	0.59	0.69	0.59	0.41	0.42

Crisis (Sep 2008-Mar 2013)	All (28)	Latin America (5)	Emerging Asia (7)	Eastern Europe (3)	Other (3)	Advanced Econ (10)
Average	138.9	150.9	145.1	209.6	223.5	80.1
Average change	-0.2	-1.0	-1.5	0.6	-1.6	1.0
Standard deviation of change	45.7	41.3	57.5	54.4	71.8	21.1
Average correlation between changes	0.67	0.92	0.83	0.79	0.83	0.58

How many factors drive returns on sovereign risk?

Common factors driving sovereign CDS spreads



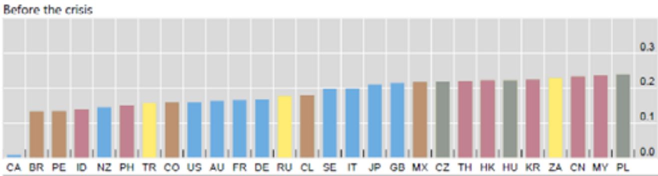
What drives the price of sovereign risk?

The main driving factor in CDS returns (cumulative), VIX

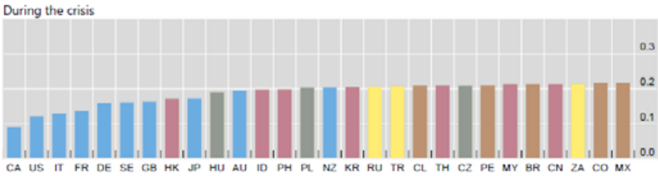
Behind 1st factor: Investors do seem to differentiate

Loadings on first common factor before and during crisis

Before the crisis



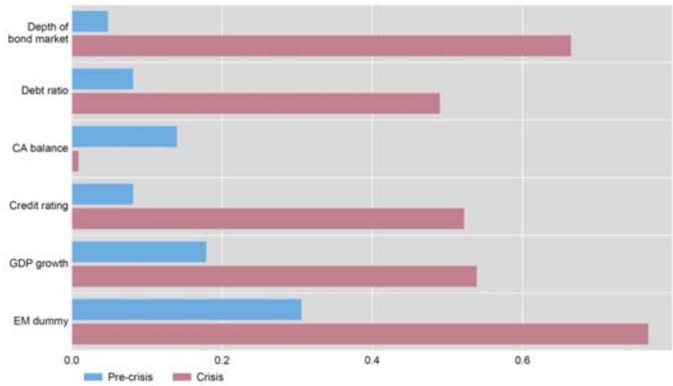
During the crisis



[1] Economies are listed in order of the loadings on the first factor for CDS spread changes.

Behind 1st factor: How do they differentiate?

Absolute values of unconditional correlations between loadings and fundamentals, pre-crisis period and crisis period



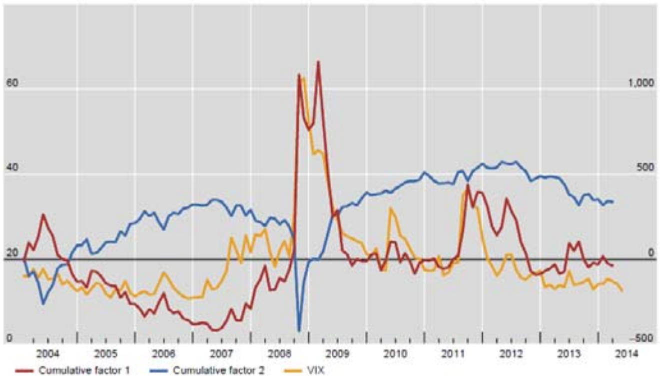
How do investors differentiate?

Dependent variable is loading on first factor; three best fitting regressions with two fundamentals at a time

	Pre-crisis			Crisis		
DEBT RATIO				-0.0001		
p-value				0.5013		
CURR ACCT	0.0009					
p-value	0.6055					
SOV RATING			0.0094 ***			
p-value			0.0037			
GDP GROWTH					0.0019	
p-value					0.4056	
MARKT DEPTH		0.0005 ***				-0.0001
p-value		0.0230				0.2161
EM DUMMY	0.0290	0.0765 ***	0.0985 ***	0.0483 ***	0.0468 ***	0.0409 ***
p-value	0.1389	0.0061	0.0011	0.0001	0.0002	0.0026
Observations	28	28	28	28	28	28
R-bar-2	0.0317	0.2071	0.3052	0.5646	0.5688	0.5833

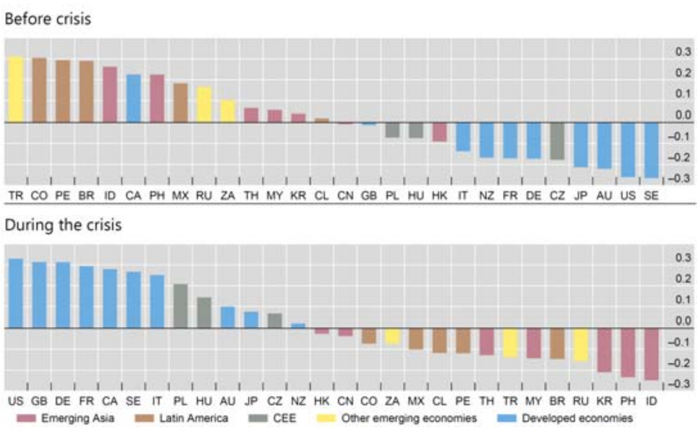
A second factor also matters

Two factors in CDS spread movements (cumulative), VIX



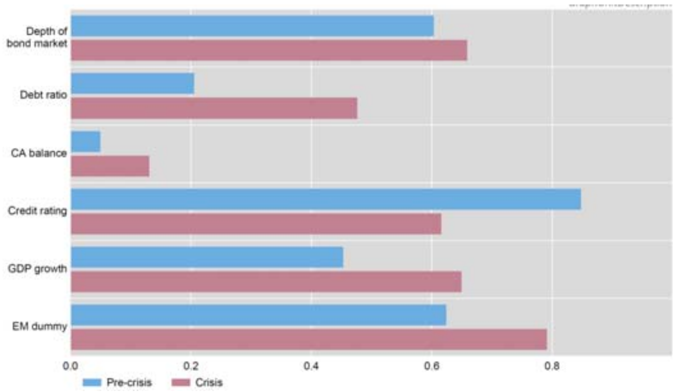
Behind 2nd factor: Again investors do seem to differentiate

Loadings on second common factor before and during crisis



Behind 2nd factor: How do they differentiate?

Absolute values of unconditional correlations between loadings and fundamentals, pre-crisis period and crisis period



How do investors differentiate?

Dependent variable is loading on second factor; three best fitting regressions with two fundamentals at a time

	Pre-crisis			Crisis		
DEBT RATIO						
p-value						
CURR ACCT	0.0018					
p-value	0.6339					
SOV RATING	-0.0368 ***	-0.0348 ***	-0.0422 ***	0.0067		
p-value	0.0000	0.0000	0.0000	0.4544		
GDP GROWTH						-0.0230 *
p-value						0.0573
MARKT DEPTH		-0.0002			0.0005	
p-value		0.6199			0.3097	
EM DUMMY			-0.0605	-0.2746 ***	-0.2583 ***	-0.2446 ***
p-value			0.3858	0.0003	0.0008	0.0002
Observations	28	28	28	28	28	28
R-bar-2	0.6988	0.6990	0.7052	0.6053	0.6128	0.6515

The rise of asset managers and index tracking

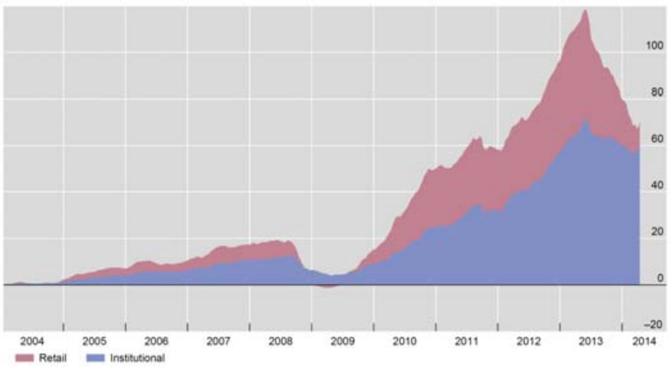
Top 10 banks and asset managers, assets and AUM in USD trillions

Banks	Assets
ICBC	2.8
Mitsubishi UFJ	2.7
HSBC	2.7
Deutsche	2.6
Credit Agricole	2.6
BNP Paribas	2.5
JP Morgan Chase	2.4
Barclays	2.4
CCB	2.2
Bank of America	2.2
Total	25.2

Asset manager	AUM
BlackRock	3.8
Allianz/PIMCO	2.4
Vanguard	2.2
State Street	2.1
Fidelity	1.9
AXA	1.5
JP Morgan Chase	1.4
BNY Mellon	1.4
BNP Paribas	1.3
Deutsche	1.2
Total	19.3

Are retail investors behind the 2nd factor?

Flows into emerging markets through bond mutual funds, cumulative changes since Jan 2004, in billions of USD



Not a tug-of-war but a division of labor

- Investor risk appetites and country-specific fundamentals divide up the work
  - Risk appetites explain movements over time
  - Fundamentals explain cross-sectional sensitivity
- Asset price dynamics changed in September 2008, perhaps for good
- First factor drives 63%-68% of returns
  - More important during crisis; highly correlated with VIX
  - Investors differentiate largely by whether sovereign is an “emerging market,” especially during crisis
- Second factor explains 12%-13%, even during crisis
  - Investors used to differentiate by sovereign rating
  - Now they do so by whether sovereign is an “emerging market”