Seminar on Preventing and Managing Debt Crises to Promote Long Term Sustainability

Debt Structure and Vulnerabilities

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Debt Structure and Vulnerabilities

- Debt structure (e.g. currency and maturity composition) has important implications for:
  - Not only the disruptions caused by crises
  - But also for the frequency of crises through at least two "channels":
    - Increased vulnerability to shocks to ST rates and RER (rollover risks)
    - Through investor's confidence
- Debt structure can potentially be key to confidence crises (and possibly consequent debt crises):
  - Short-term debt and rollover risks: worsening perceptions of a country's (firm's) creditworthiness can quickly feed into higher interest costs (leading to vicious self-fulfilling circles), or even into an abrupt stop to new funding
  - Foreign-currency debt: if a decline in confidence is followed by outflows and a consequent XR depreciation, it can suddenly render a country (firm) illiquid or even insolvent

Debt Structure and Probabilities of Crises: Investors' confidence

- Sudden Stops (rater than debt crises per se) might be a good proxy for investors' confidence or attitude towards a particular country
- Does debt structure affect the probability of a sudden stop?
  - Even after controlling for fundamentals such as GDP growth, inflation, current account and fiscal deficits, TOT shocks, and world interest rates?
- Do public and private sector debt have similar effects on the probability of sudden stops?

Debt Structure and the Probability of Sudden Stops

Probability of a Sudden Stop based on Issuance Data

Sudden Stop Type:	Any					
Types of Bonds:	Domestic Private Sector	Domestic Private Sector	Foreign Private Sector	Foreign Private Sector	Foreign Public Sector	Foreign Public Sector
Percentage of FCU Bonds at Issuance	0.242	0.295	0.395	0.580	2.271**	1.991**
lagged	[0.251]	[0.257]	[0.305]	[0.464]	[0.937]	[0.954]
Average Maturity at Issuance	-0.0123	-0.00880	-0.0145	-0.0528	0.0178	0.00432
lagged	[0.0175]	[0.0179]	[0.0295]	[0.0449]	[0.0353]	[0.0369]
Amount Raised through Bonds		-1.108		1.459		6.262**
lagged		[1.438]		[2.396]		[3.151]
Constant	-1.518***	-1.534***	-1.716***	-1.809***	-3.668***	-3.462***
	[0.183]	[0.187]	[0.343]	[0.525]	[0.975]	[0.981]
Observations	618	611	607	391	314	299
Number of cnum	48	45	49	31	32	32

Source: Author's calculations based on Calderon and Kubota (2010). Standard errors are shown in brackets.*** p<0.01, ** p<0.05, * p<0.1

Debt Structure and the Probability of Sudden Stops

Probability of a Sudden Stop based on Outstanding Amounts

Sudden Stop Type:	Any				Inflow-Driven			
Bond Types:	Private Sector	Private Sector	Public Sector	Public Sector	Private Sector	Private Sector	Public Sector	Public Sector
Percentage of FCU Bonds	2.090*	2.133*	1.187**	1.027*	0.00484	0.170	1.756***	1.609**
lagged	[1.208]	[1.205]	[0.572]	[0.571]	[0.839]	[0.869]	[0.642]	[0.647]
Percentage of ST Bonds	-0.889	-0.950	0.248	0.107	0.516	0.267	1.337*	1.194
lagged	[1.194]	[1.188]	[0.720]	[0.722]	[0.815]	[0.837]	[0.772]	[0.774]
Total Outstanding Bonds		-0.155		-0.995*		-0.621		-0.775
lagged		[0.565]		[0.511]		[0.531]		[0.559]
Constant	-3.295***	-3.191***	-1.962***	-1.461***	-2.155***	-1.834***	-2.624***	-2.220***
	[1.108]	[1.149]	[0.310]	[0.363]	[0.451]	[0.517]	[0.405]	[0.451]
Observations	298	298	512	512	350	350	512	512
Number of countries	28	28	46	46	29	29	46	46

Source: Author's calculations based on Calderon and Kubota (2010). Standard errors are shown in brackets.*** p<0.01, ** p<0.05, * p<0.1

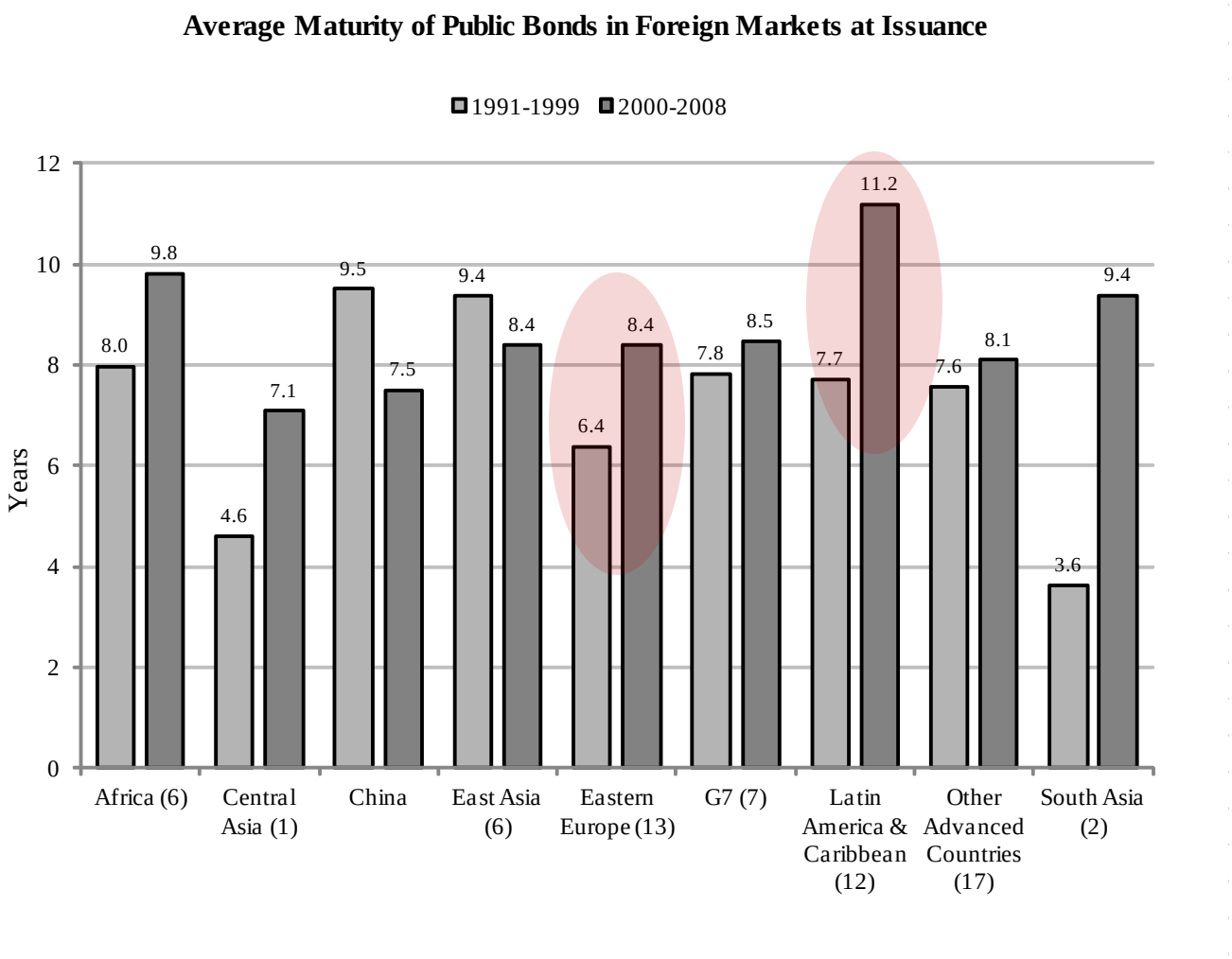
Public sector debt structure as perhaps a symptom rather than a cause…

- *Sovereign* debt structure appears to be the relevant one for the frequency of crises.
- Debt crises, although perhaps inefficient ex-post, are the only way to discourage defaults given its high costs (Dooley 2000, Dooley and Verma 2001)
  - In this view, ST and FCU debt can be optimal:
    - [creditors' perspective] It reduces moral hazard on the part of policy makers (Diamond and Rajan 2001; Chamon 2002; Jeanne 2000, 2004; Tirole, 2002)
    - [lenders' perspective] This debt is typically cheaper than the alternative (Broner, Lorenzoni, and Schmukler 2010)
  - Crisis-prone debt structures can be viewed as symptoms rather than causes of countries' inability to commit to good policies (i.e. lack of credibility in policies), which in turn can be the result of weak domestic institutions.

Public sector debt structure as perhaps a symptom rather than a cause…

- Among EMs, there has been well-known-improvements in macro-financial frameworks since the 1990s crises.
- Has this been accompanied by an improved debt structure?
  - There has been pro-active debt management practices of fiscal authorities in most notably LAC
  - This process was facilitated by a extremely benign external environment (abundance of savings) for most of the 2000s

EMs vs. HICs over the past 20 years:
Sovereign Bonds in Foreign Markets



Source: Didier and Schmukler (2011).

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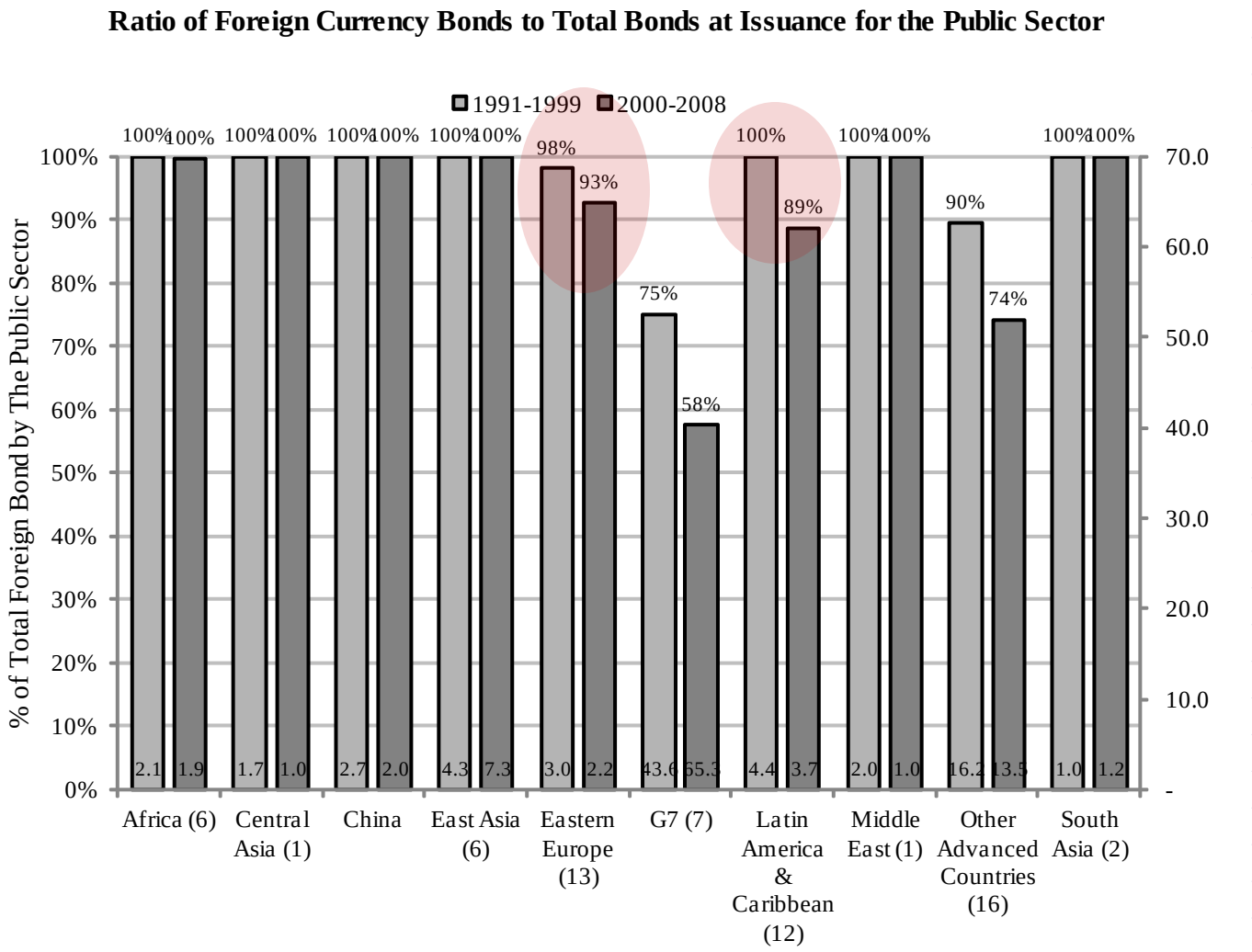

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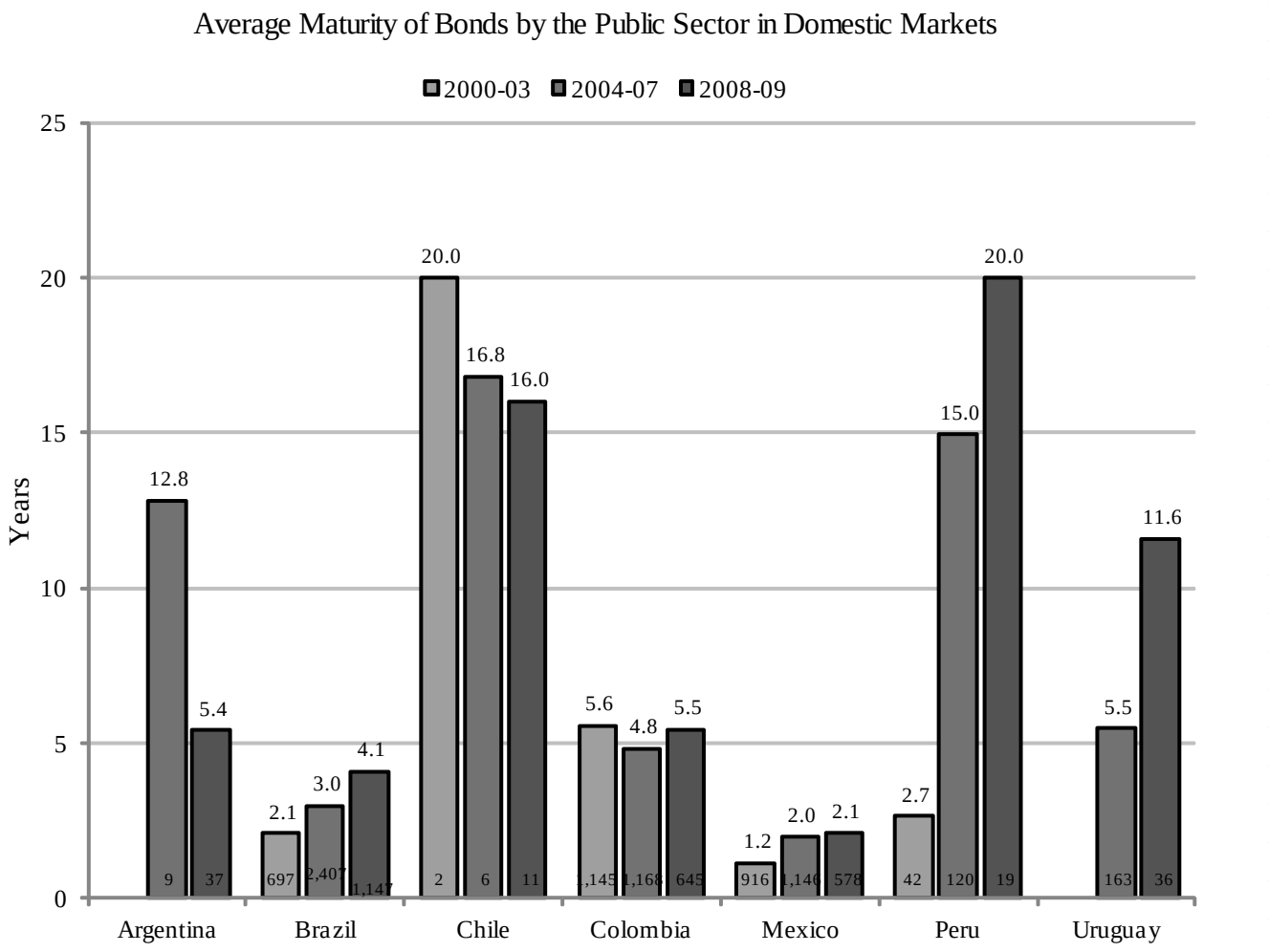
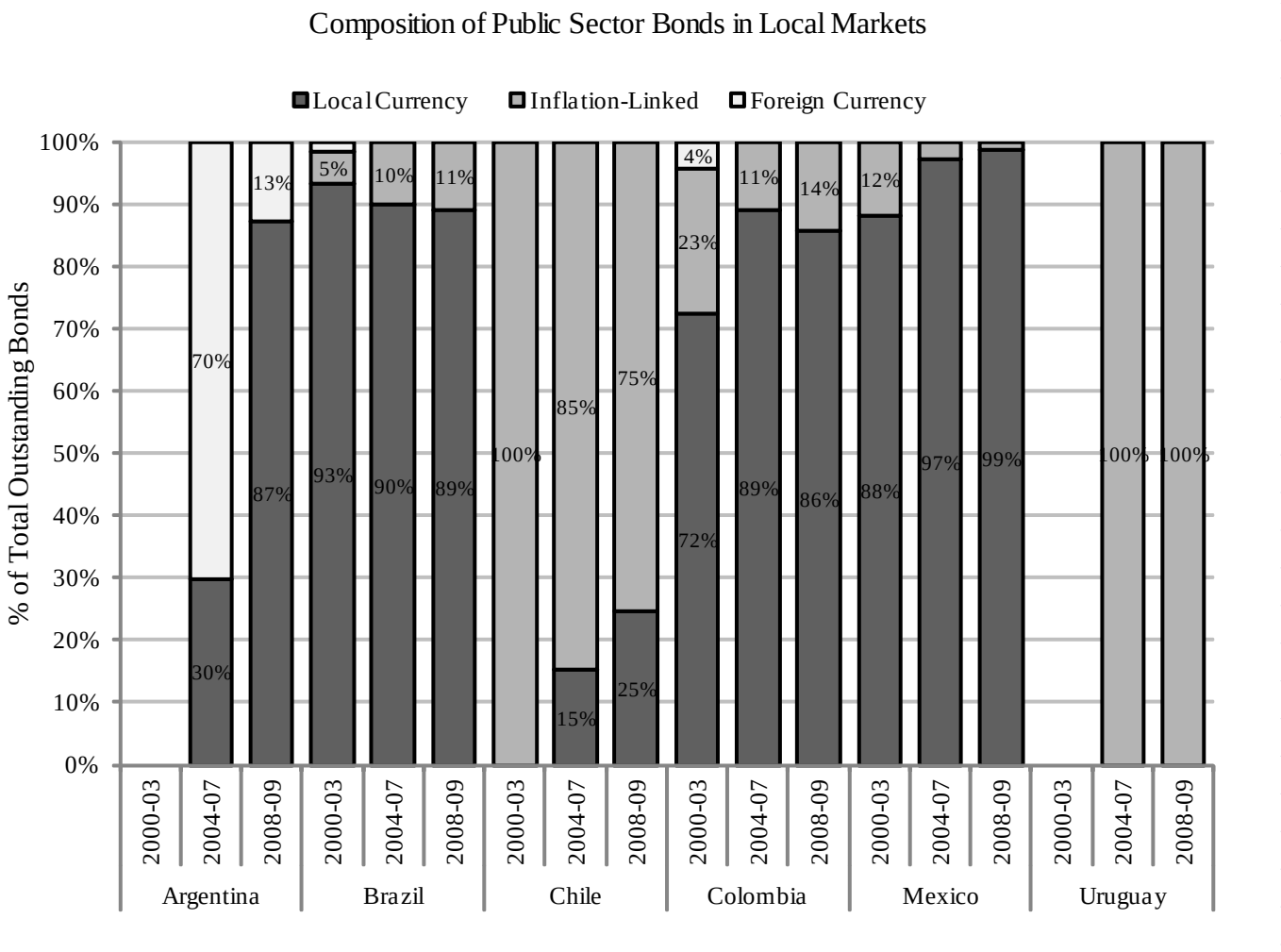
Sovereign Bonds in Local Markets across LAC



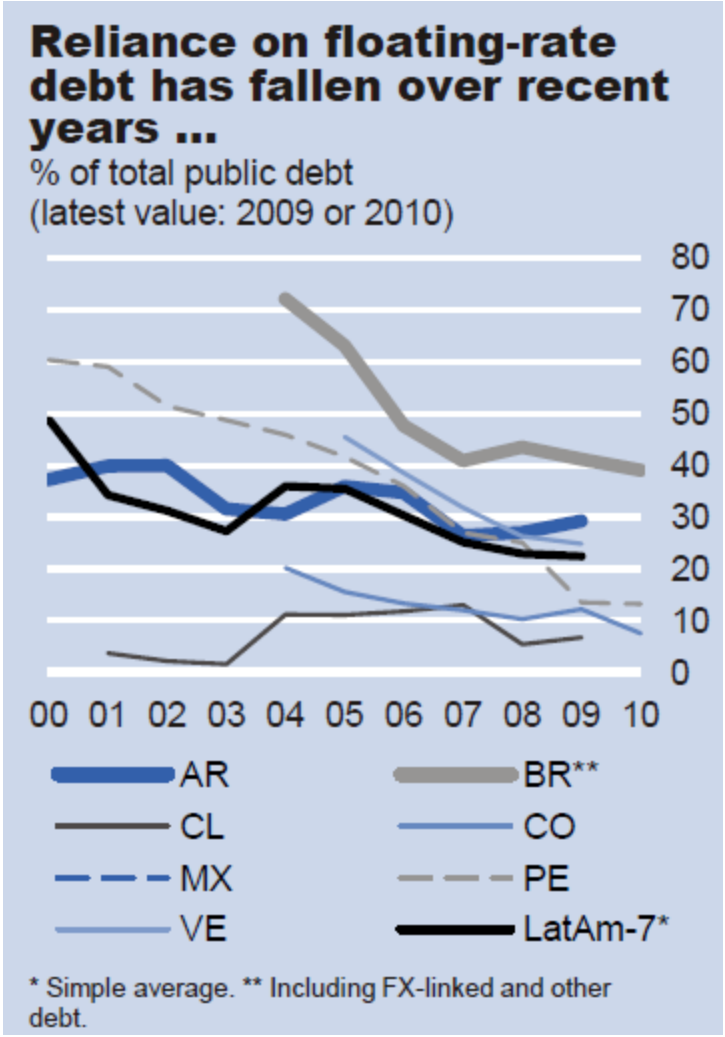
Source: Didier and Schmukler (2011).

Sovereign FCU Bonds in Local Markets across LAC



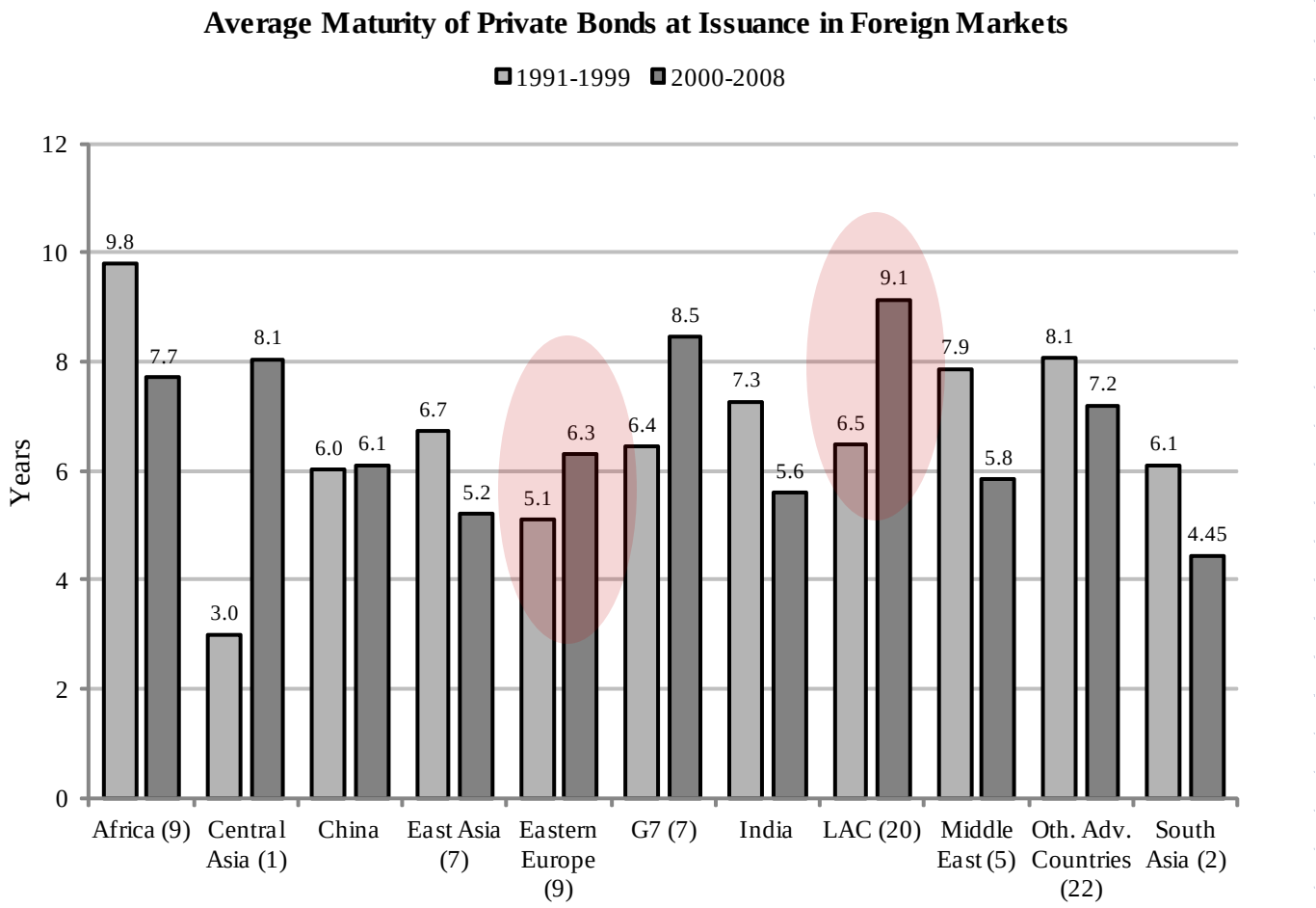
Source: Didier and Schmukler (2011).

Interest Rate Risks faced by Sovereigns in LAC



Source: Deutsche Bank (2011).

EMs vs. HICs over the past 20 years:
Private Sector Bonds in Foreign Markets



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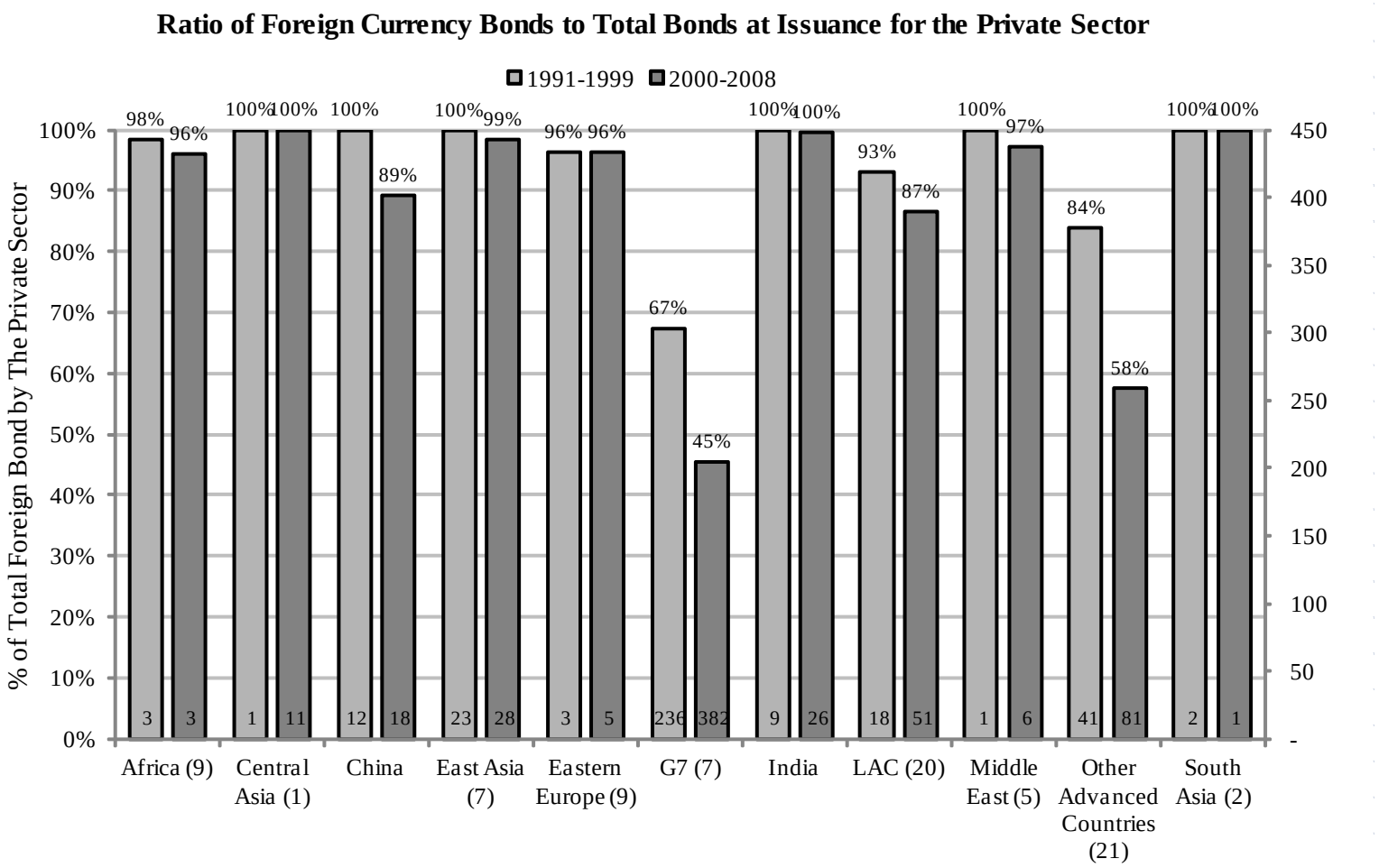
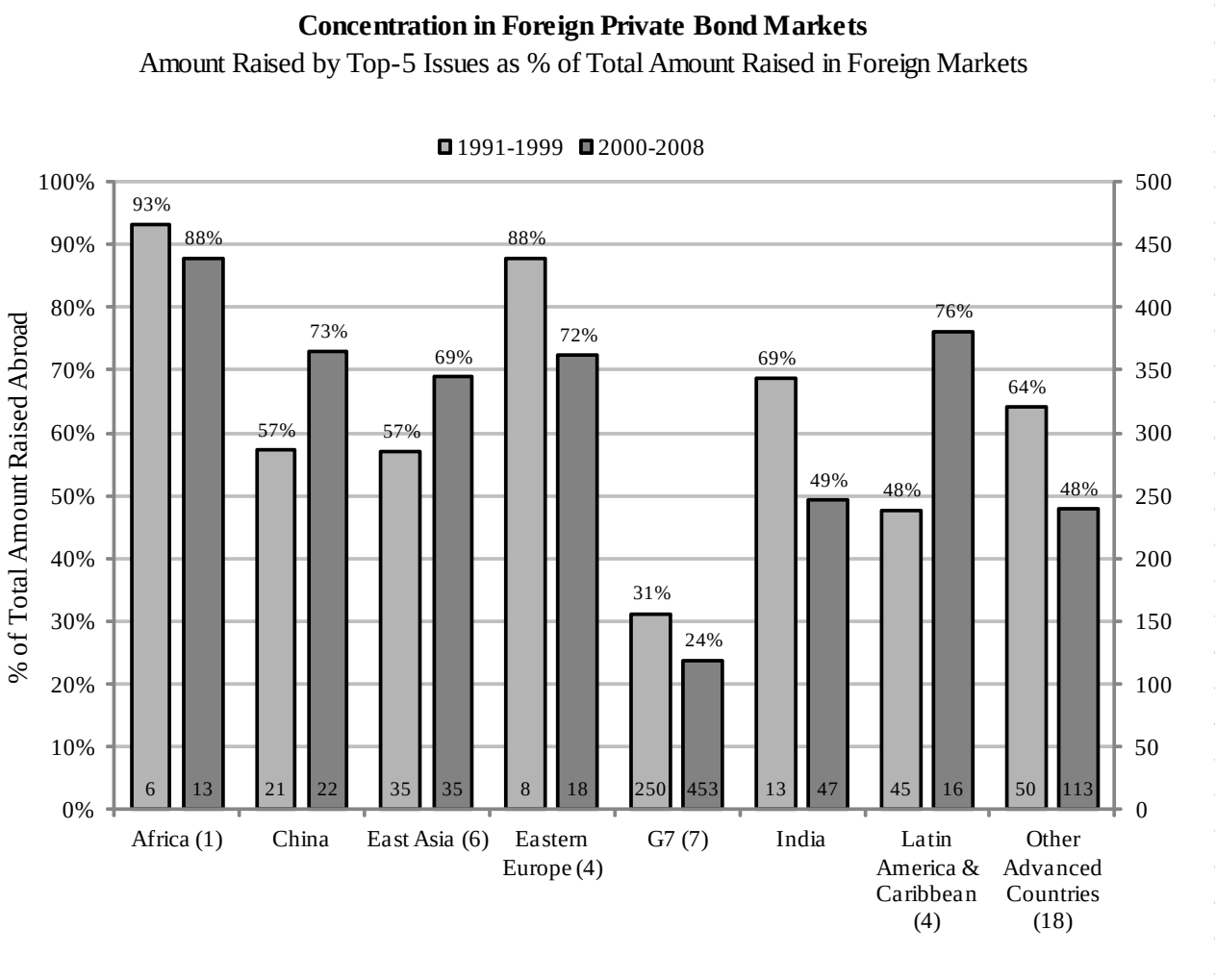


Source: Didier and Schmukler (2011).

Bond Markets Remain Small and Highly Concentrated



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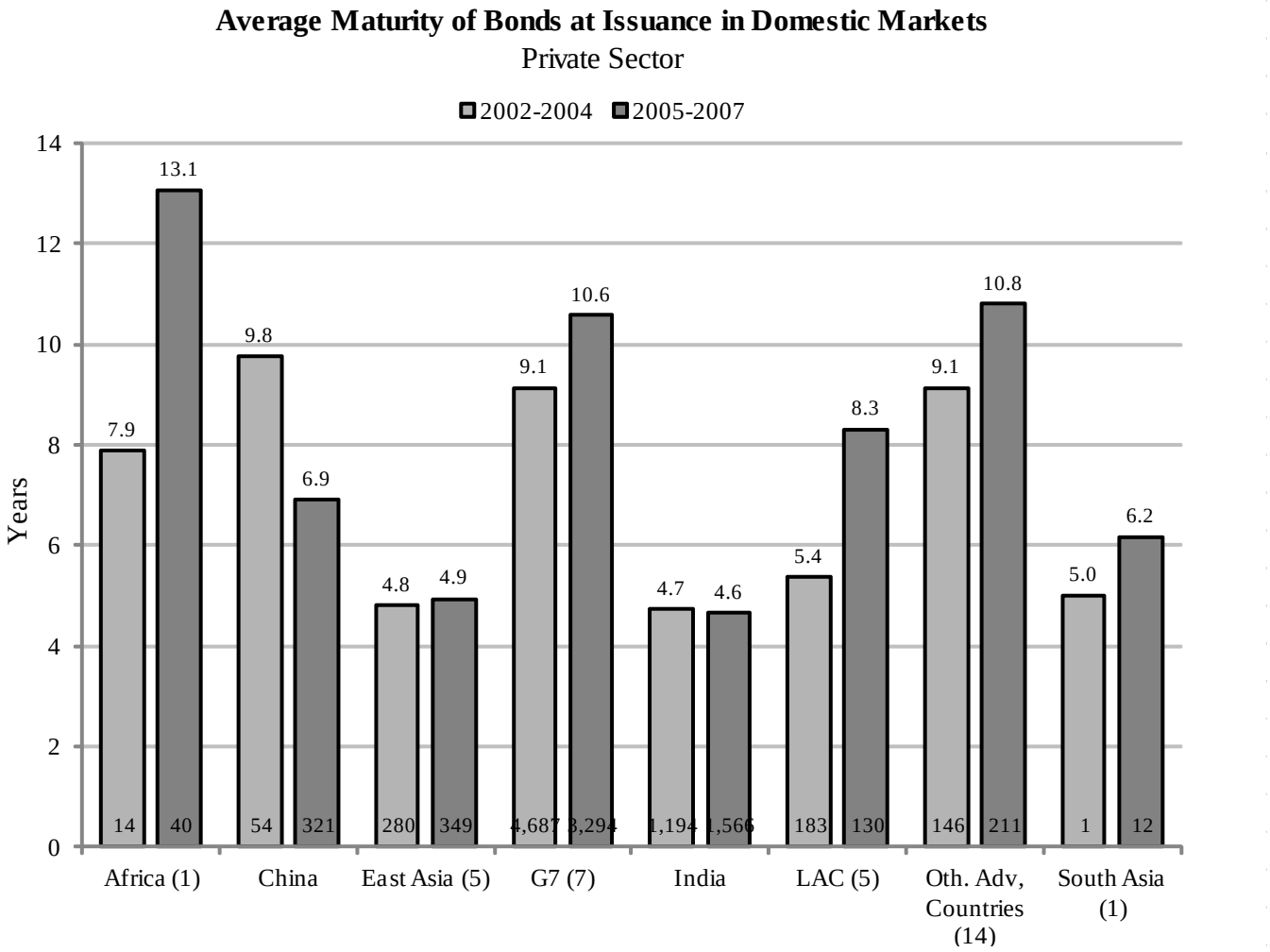
EMs vs. HICs over the past 10 years:
Private Sector Bonds in Domestic Markets



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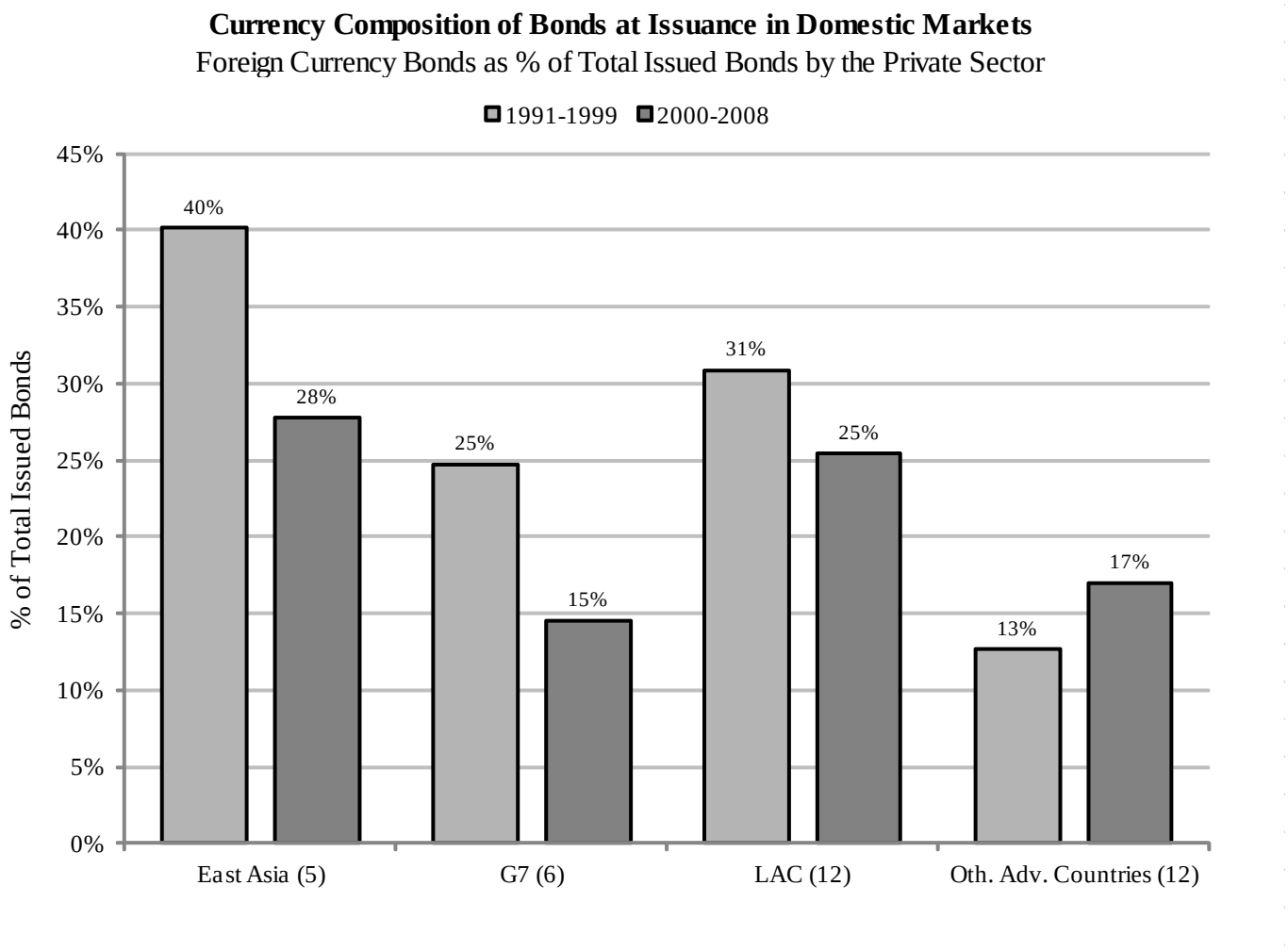


Source: Didier and Schmukler (2011).

Debt Structure during the Global Financial Crises:
The Importance of Public Sector Debt

- Despite improvements over the past decade, the global financial crisis was a reminder of the dangers of ST and FCU debt. As I started this discussion, debt structure has important implications for the disruptions caused by crises.

GDP Collapse during the Global Crisis

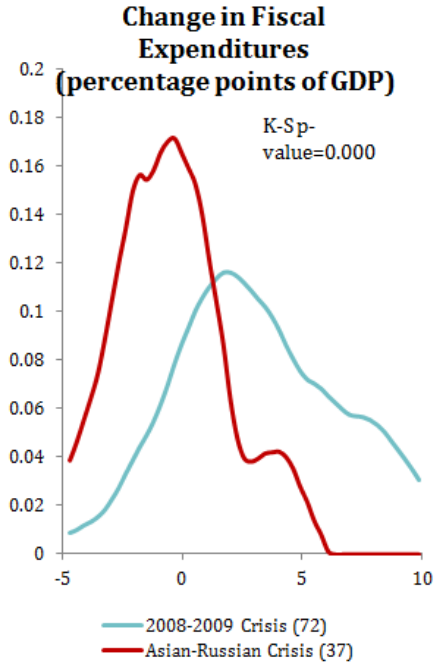
		Private Sector Bonds	Public Sector Bonds		Private Sector Bonds	Public Sector Bonds
	(1)	(2)	(3)	(4)	(5)	(6)
Log of GDP per Capita	2.275***	1.420	0.838	3.271***	1.003	0.217
	(0.588)	(1.238)	(0.599)	(1.048)	(1.238)	(0.771)
Financial Openness				-2.121	1.104	0.765
Log(Foreign Assets and Liabilities/GDP)				(1.946)	(1.816)	(0.769)
Loan Dollarization	7.733**			8.450**		
% of Total Loans	(3.420)			(3.517)		
Ratio of Short-Term Bonds		-0.497	6.284		0.0276	7.008
% of Total Bonds		(2.694)	(3.831)		(3.104)	(4.156)
Ratio of Foreign Currency Bonds		-0.150	10.07***		-2.682	9.841***
% of Total Bonds		(2.139)	(1.857)		(4.428)	(1.879)
Outstanding Amount of Bonds		-2.267	-6.979***		-2.402	-7.170***
		(1.882)	(1.351)		(1.963)	(1.428)
Observations	62	24	37	61	24	37
R-squared	0.183	0.141	0.536	0.205	0.164	0.555

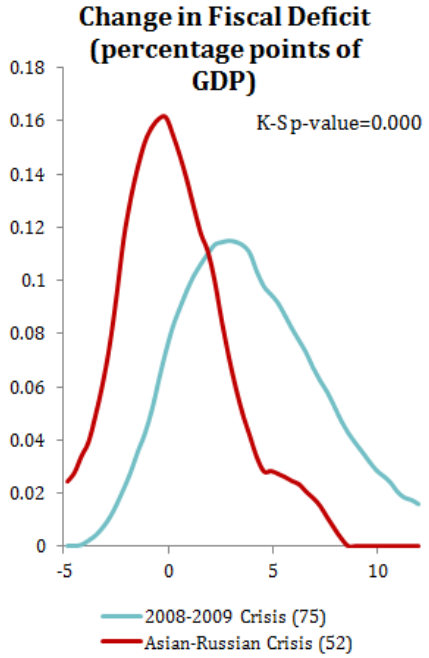
Robust standard errors are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Author's calculations based on Didier, Hevia, and Schmukler (2011).

Fiscal Policies in the Aftermath of Crises
Emerging Economies

- Didier, Hevia, and Schmukler (2011) argues that improved debt structure was one of the factors behind EMs resilience to the global financial crisis
  - Debt structure did not amplifying the external shock this time around
  - It even allowed some space for counter-cyclical fiscal policies





Source: Didier, Hevia, and Schmukler (2011).

Sovereign Debt Structure and Pro-cyclicality of Fiscal Policies

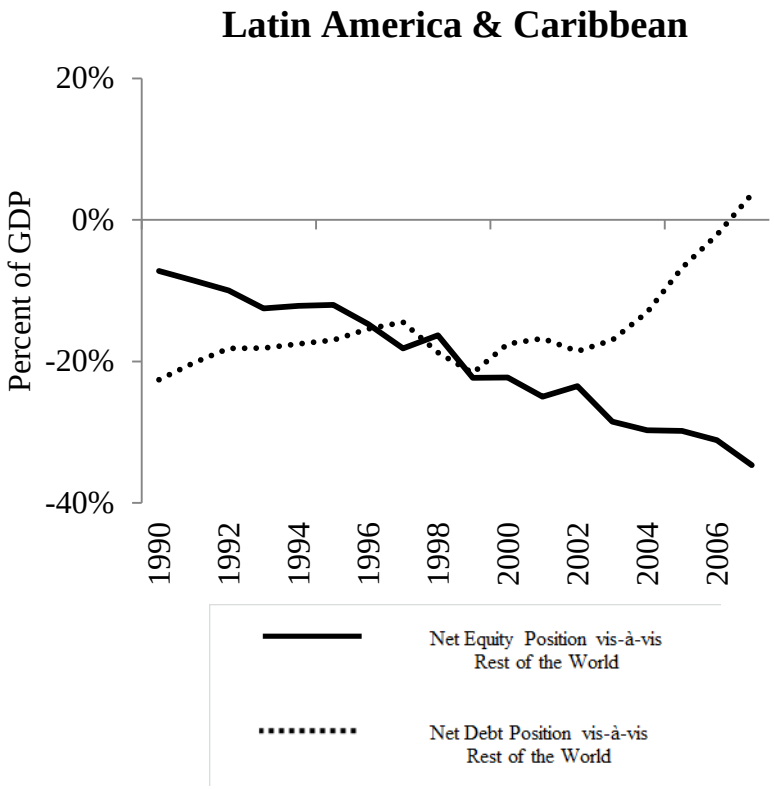
- While a debt structure tilted towards LT and LCU debt may allow for counter-cyclical fiscal policies, the opposite also holds.

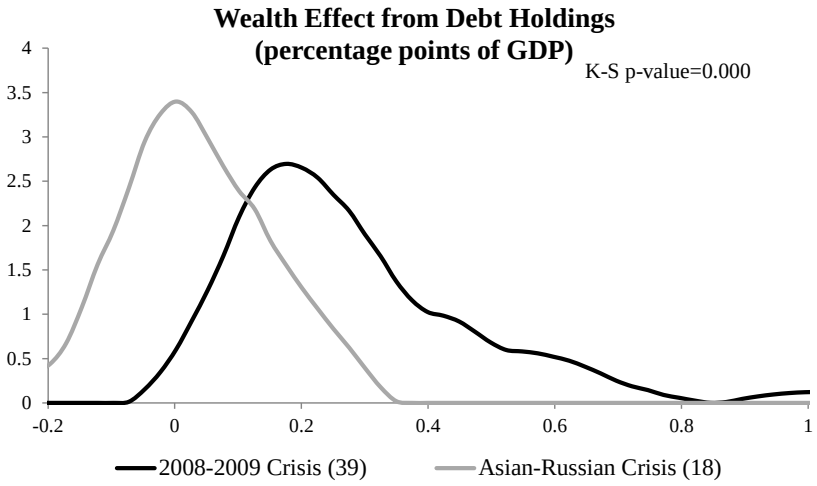
- The insipient development of LCU debt markets in LAC has been a welcome feature in this aspect, nonetheless LAC/EM countries should further develop counter-cyclical financial instruments.

- Sizeable fiscal interventions (thus increased debt levels), tight financing conditions in global capital markets for an extended period of time, and the uncertainty surrounding the exit from discretionary fiscal stimulus may pose a threat to debt sustainability
  - Not only debt structure, but size also matters

Structural Change in Foreign Liabilities

- At the same time, the structure of foreign assets ad liabilities has changed: LAC (along with other EMs) are not creditors in debt-type instruments





Source: Didier, Hevia, and Schmukler (2011).

In sum…

- Continuing to improve debt structure remains key in the road ahead
  - Reduce the likelihood of crises
  - Reduce the damages once a crisis hit
- This is particularly important for the public sector as their debt structure constrains countries' policy options in dealing with shocks
  - Limits to the ability do conduct counter-cyclical fiscal policies
  - Affects the scope for decreases in the debt burden through inflation
- As Reinhart and Rogoff put it on their book (This Time Is Different: Eight Centuries of Financial Folly):
  - *Although **private debt** certainly plays a role in many crises, **government debt** is far more often the unifying problem across the wide range of financial crises.*
  - This seems to be the case for not only debt size but also debt structure

In sum…

- Perhaps, now that (at least some) EM countries have (relative to their own past) more credible macro policies is the right time to think of alternative debt contracts that deal with moral hazard issues and are less costly for countries (perhaps with a less strong link to the pro-cyclicality of fiscal policies):
  - Bonds linked to Real-GDP Growth: can have a stabilizing force on debt/GDP ratios and come with additional benefits such as a reduced likelihood of debt crises and the reduced need for pro-cyclical fiscal policies
  - Inflation-linked bonds: costly to deviate from sound monetary and fiscal policies

Thank you