Regional Responses to Global Financial Instability: How to catch potential effects of South-South Regional Monetary Cooperation?

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Motivation

- Underdeveloped financial markets render developing countries and emerging markets particularly vulnerable to economic and monetary shocks (Aghion et al. 2009)
- Exchange rate volatility endangers economic development and growth much more in developing and emerging markets than in advanced economies (Loayza et al. 2007, Calvo/Reinhart 2002, Hausmann et al. 2000)

→ *Q: Is south-south regional monetary cooperation a monetary policy strategy that contributes to financial market development? If so, why and how?*

→ *H: South-south regional monetary cooperation contributes to stable intra-regional exchange rates which may support financial market development*

South-South Regional Monetary Cooperation (SSC)

- 'South': unable to borrow in own currency abroad
  ("original sin" hypothesis Eichengreen/Hausmann 1999, 2005, "conflicted virtue" McKinnon 2005)
- No major reserve currency (USD, EUR) involved
- Broad range of regional monetary cooperation arrangements

→ *Blind spot in conventional monetary integration theory*
   Optimal Currency Area Theory (Mundell 1961, 1973; Frankel/Rose 2002 and others)

→ *Suggested research approach: multimethod design*
   → *Quantitatively oriented analysis: dynamic panel estimation (3 steps)*
   → *Qualitatively oriented analysis: three case studies*

South-South Regional Monetary Cooperation (SSC)
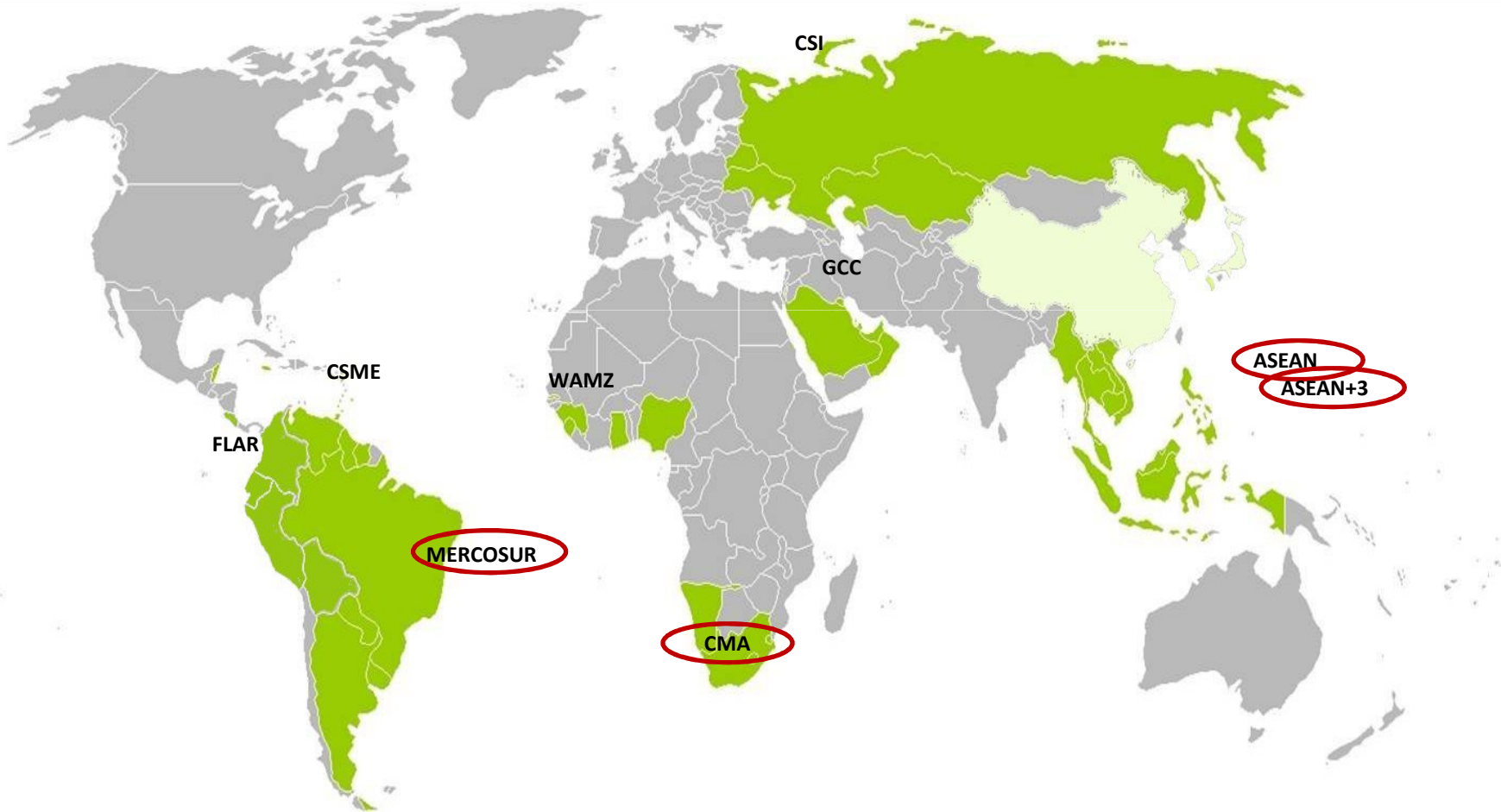
Three Cases

	CMA (1974/1976)	ASEAN/ASEAN+3 (1977/2000)	MERCOSUR (1990)
Non-Cooperation			x
Regional financial market development initiative		x	
Regional swap arrangement		x	
Regional liquidity fund		x	
Regional exchange rate arrangement	x		

Data

- Panel data set: 1960-2007; 90 developing countries and emerging markets (WB region classification); 5-year periods
- Sources: IMF's International Financial Statistics (2006), World Bank Development Indicators (2008)
- Explained variable:
  - Exchange rate volatility (1st step): standard deviation of mean annual depreciation rate based on monthly depreciation of bilateral nominal and real exchange rate to the US Dollar
  - Financial market development (2nd, 3rd step): credits by financial intermediaries to the private sector/GDP
- Explanatory variables:
  - SSC dummy (1st step): 1 - regional monetary cooperation arrangement without exchange rate cooperation; 2 - regional exchange rate arrangement ; 3 - regional currency is legal tender (alternatively SSC 'membership' dummy 0-1)
  - Exchange rate volatility (2nd step)
  - SSC*Exchange rate volatility (3rd step)
- Controls:
  - GDP, GDP p.c., trade openness (trade/GDP), capital account openness index (Chinn/Ito 2007), nominal shocks (5year stdev inflation rate), GDP p.c. growth

1. Step System GMM Estimation

System GMM Estimation		
Explained Variable Real Exchange Rate Volatility		
	1	2
L. Explained Variable	0.156	0.15
	[0.93]	[0.88]
SSC 0/1	**-18.254**	
	[2.14]**	
SSC 1-3		**-15.373**
		[1.94]*
Financial Openness	-2.701	-2.988
	[1.65]	[1.75]*
L.Trade Openness	11.504	10.097
	[1.74]*	[1.49]
L. GDP	0.782	0.652
	[0.71]	[0.61]
L. GDP p.c.	-4.663	-3.425
	[1.16]	[0.89]
L. Nominal Shocks	15.911	15.991
	[2.46]**	[2.33]**
Period Dummy	-0.964	-0.994
	[0.85]	[0.88]
Observations	296	338
AR(1)	0.015	0.016
AR(2)	0.519	0.535
Hansen Test Statistic (p value)	0.202	0.220
Instruments	58	59
Groups	78	78
Lags	2	2

Negative association between SSC and real exchange rate volatility

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%.
Robust t-statistics in brackets.

2. Step System GMM Estimation

System GMM Estimation		
Explained Variable: Domestic Credit/GDP		
	3	4
L. Explained Variable	0.718	0.741
	[4.42]***	[4.87]***
L. Real Exchange Rate Volatility	**-0.114**	
	[2.17]**	
L. Nominal Exchange Rate Volatility		**-0.413**
		[1.81]*
Financial Openness	1.594	1.59
	[0.86]	[1.13]
L. Trade Openness	43.565	34.861
	[3.72]***	[2.92]***
L.GDP per capita growth	0.952	0.914
	[0.66]	[0.85]
Period Dummy	-0.861	-1.292
	[0.70]	[1.27]
Constant	-159.142	-122.48
	[3.31]***	[2.67]***
Observations	362	378
AR(1)	0.194	0.212
AR(2)	0.227	0.186
Hansen Test Statistic (p value)	0.321	0.116
Instruments	43	43
Groups	84	86
Lags	all	all

Negative association between exchange rate volatility and financial market development

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%.
Robust t-statistics in brackets.

3. Step System GMM Estimation

System GMM Estimation						
Explained Variable Domestic Credit/GDP						
	5	6		7	8	9
L. Explained Variable	0.975	0.981	L. Explained Variable	0.955	0.837	0.875
	[16.18]***	[13.31]***		[7.58]***	[8.12]***	[6.68]***
SSC1-3*Real XR Volatility	-0.19		CMA*Real XR Volatility	-1.162		
	[2.52]**			[2.37]**		
Real Exchange Rate Volatility	-0.046		ASEAN*Real XR Volatility		-0.978	
	[0.94]				[2.55]**	
SSC1-3*Nominal XR Vol.		-1.093	MERCOSUR*Real XR Volatility			0.353
		[1.31]				[1.89]*
Nominal Exchange Rate Vol.		-0.889	Real Exchange Rate Vol.	-0.07	-0.041	-0.092
		[4.66]***		[0.90]	[1.11]	[2.41]**
SSC 1-3	-0.608	1.978	CMA	-13.951		
	[0.24]	[0.58]		[0.98]		
Financial Openness	1.514	0.843	ASEAN		-3.47	
	[1.67]*	[1.11]			[0.47]	
L.Trade Openness	1.865	2.753	MERCOSUR			7.224
	[0.87]	[1.32]				[0.86]
L.GDP per capita growth	2.07	1.348	Financial Openness	0.879	1.068	1.362
	[1.85]*	[1.23]		[1.03]	[0.93]	[1.31]
Period Dummy	0.265	-0.528	L.Trade Openness	12.249	14.108	14.612
	[0.42]	[0.80]		[1.55]	[2.44]**	[1.99]*
			L.GDP per capita growth	1.377	1.253	1.997
				[1.32]	[1.32]	[1.44]
			Period Dummy	-0.059	-0.348	-0.66
				[0.08]	[0.51]	[1.03]
Observations	340	350		325	325	325
AR(1)	0.143	0.123		0.122	0.19	0.158
AR(2)	0.316	0.402		0.393	0.865	0.263
Hansen Test Statistic (p value)	0.334	0.433		0.829	0.592	0.53
Instruments	56	56		60	59	59
Groups	78	80		75	75	75
Lags	all	all		1	1	1

Under the condition of SSC, exchange rate volatility reduces which may support financial market development

Case study analysis

- Influence of regional heterogeneity:
  - CMA : regional anchor currency with LOLR function
  - ASEAN/ASEAN+3: alternative of regional financial market development iniatives, regional multilateral financial institution
  - MERCOSUR: neither/nor

- Influence of economic context conditions of foundation:
  - CMA 1970s: colonial heritage
  - ASEAN/ASEAN+3 2000: Asian crisis 1997
  - MERCOSUR 1990s: ‚open regionalism'

- Ability to harmonize macroeconomic policy:
  - CMA : regional anchor currency orientation
  - ASEAN/ASEAN+3: joint financial market development initiatives, surveillance mechanisms, policy dialogue; informal anchor US Dollar
  - MERCOSUR: disparate macroeconomic policies

Conclusions

- Dynamic panel estimation: SSC associated with less regional exchange rate volatility which may support financial market development

  → *What are possible drivers?*

- Case study analysis: regional heterogeneity may support stabilized regional exchange rates and financial market development

  - Allowing to develop a regional anchor currency, regional lender of last resort function, relatively more diversified financial market (CMA)

  - Alternatively: regional financial market development initiatives, regional multilateral financial institution (ASEAN/ASEAN+3)

  - If neither one is in place, realizing possible stabilization gains and supportive effects for financial markets is difficult (MERCOSUR)

Thank you!

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