

Characterizing Capital Controls

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Monetary Policy Options for Small Open Economies

The Bank of Korea, The Korea Institute for International Economic
Policy, & The Peterson Institute

Capital Controls: What and Why

What

- Differential treatment of residents & non-residents.
- Administrative: Outright prohibitions, Reporting or Licensing requirements
- Market-Based: Taxes (e.g. Tobin Tax, Brazil's IOF), URR (Chile)

Why

- Macro Prudential: focus on inflow controls, Surges, Asset Price Booms, Appreciation (Klein "Gates" vs. "Walls" *BPEA* 2012)
- Trilemma and Monetary Autonomy (Klein & Shambaugh "Rounding the Corners of the Policy Trilemma" *AEJ: Macro* 2015)

Changing Views on Capital Controls

- **Early 1990s:** Benefits of capital account liberalization

“Capital Controls: An Idea Whose Time has Passed” Rudi Dornbusch, 1997.

- **Late 1990s, early 2000s** EMEs began to re-introduce capital controls

Rogoff, “These days, everyone agrees that a more eclectic approach to capital account liberalization is required.” *Finance and Development*, Dec. 2002

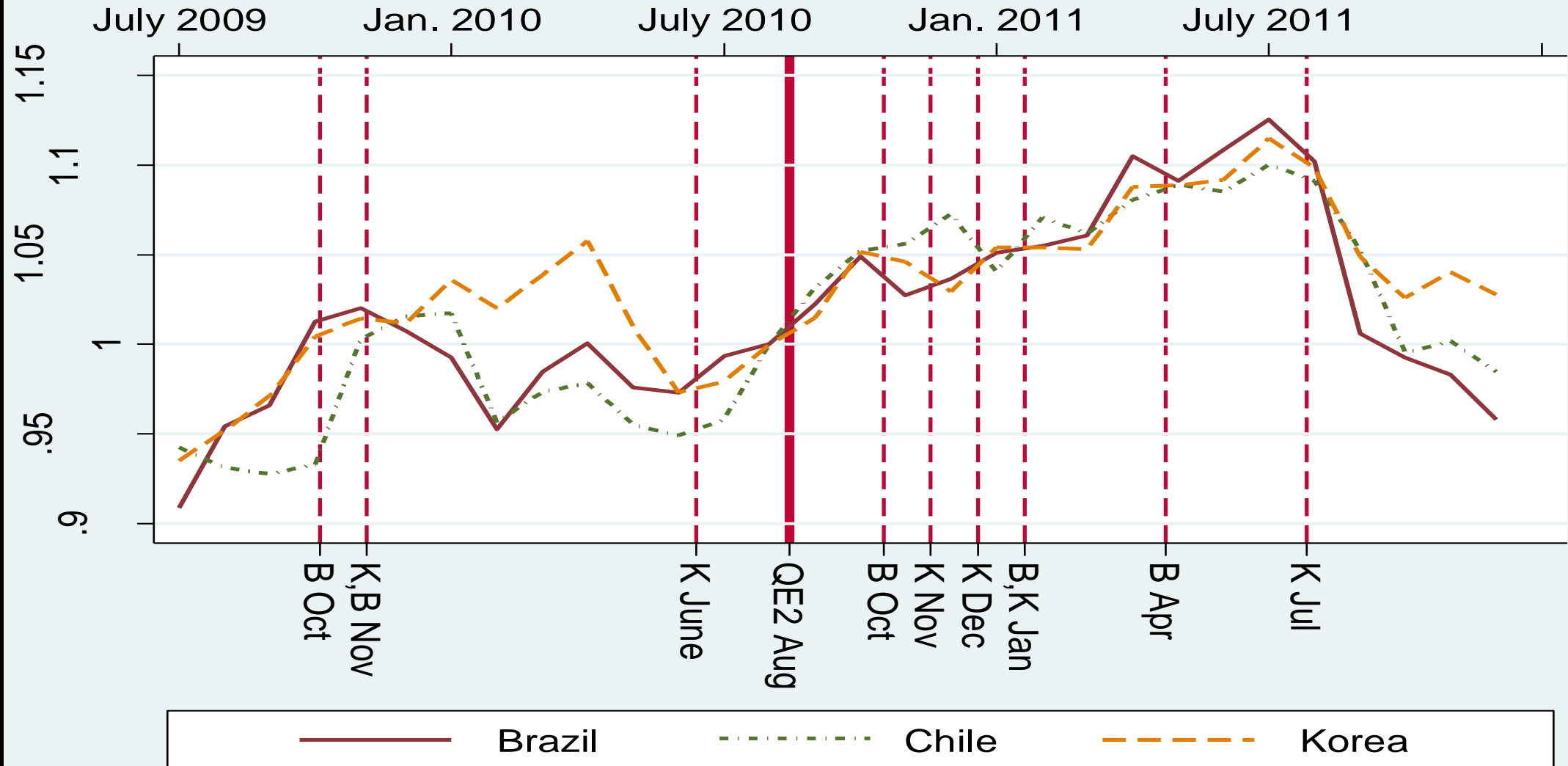
- **Crisis** QE2 & EM apprec., inflow controls (Mantega “Currency Wars” 2010)
- **Jeanne, Subramanian, Williamson (2012) PIIE** “properly designed, they might even be a regular instrument of economic policy.”
- **IMF Staff Notes (2010, 2011).** Capital Controls as a “Last resort”
- ***The Economist* “The Reformation:** A disjointed effort by the IMF to refine its thinking on capital controls,” April 7, 2011

Gates vs. Walls (Klein *BPEA* 2012)

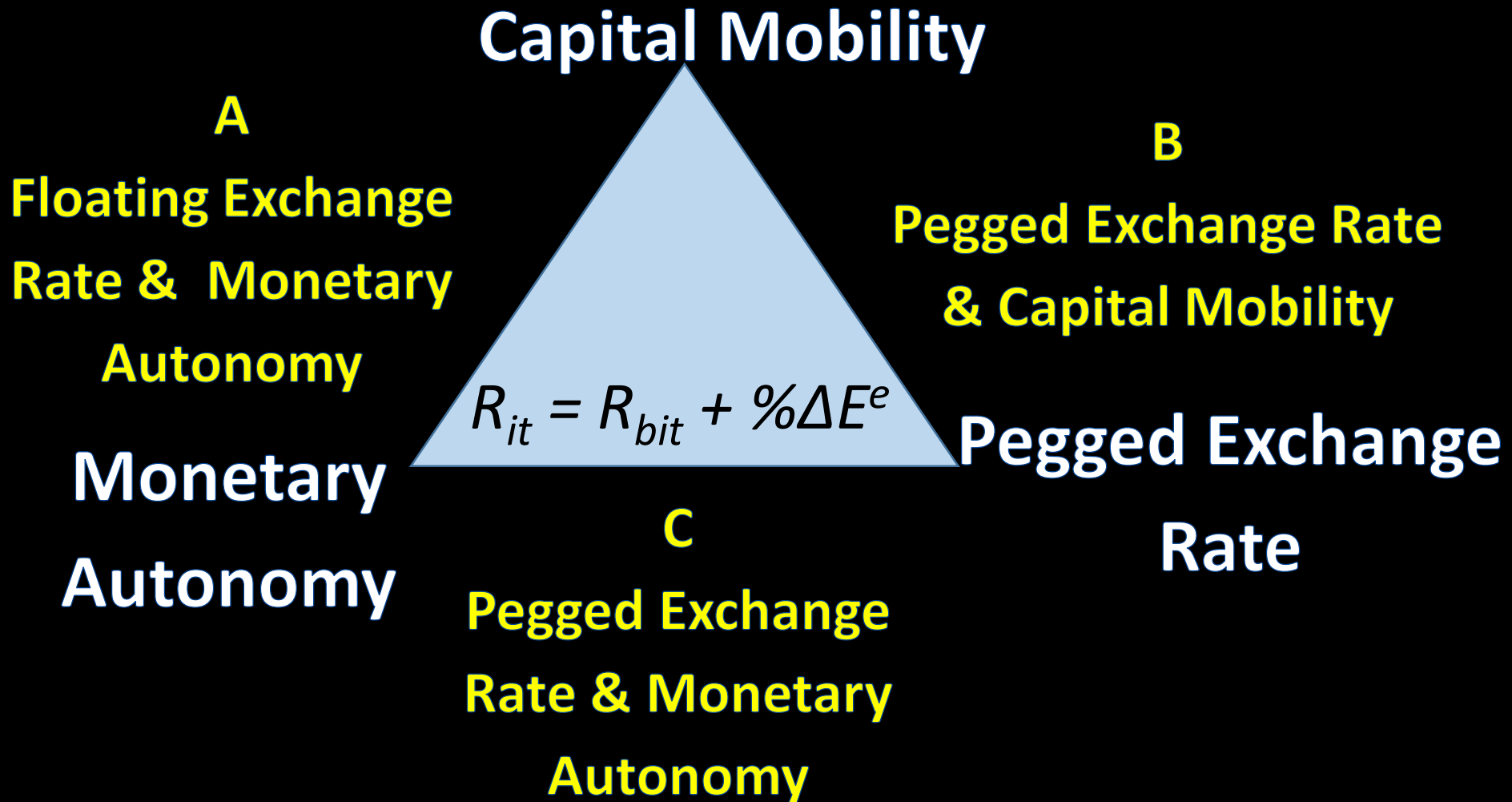
- Distinguish between Long-Standing (e.g. China) & Episodic (e.g. Brazil)
- **Gates may be less efficacious than Walls**
- Evasion more likely if investment in surveillance, reporting and enforcement.
- Recognition lag; Implementation lag
- **Benefits of Gates rather than Walls**
- Procyclical
- More narrowly targeted
- **Practical discussion** centers on episodic control. Can be levied, removed. Theory more supportive of Gates than Walls.
- **Efficacy Arguments** often based on long-standing, not episodic

Nominal Exchange Rates and Gates 2009 - 2011

Figure 2: Inflow Controls and Exchange Rates Around QE2



Monetary Autonomy and The Policy Trilemma



Gates, Walls and Monetary Autonomy

Table 1

Monetary Autonomy Across Exchange Rate and Capital Control Categories

	Open	Closed Gate	Wall
$\Delta r_{base,t}$ (Peg)	0.69*	0.54*	0.45*
(s.e.)	(0.08)	(0.15)	(0.19)
$\Delta r_{base,t}$ (Non-Peg)	0.10	-0.05	0.35*
(s.e.)	(0.17)	(0.13)	(0.16)
Peg – Non-peg	0.56*	0.58*	0.10
(s.e.)	(0.19)	(0.17)	(0.24)
No. of obs.	410	527	234

Dependent Variable is $\Delta r_{i,t}$

* = Significant at 95 percent level of confidence or higher

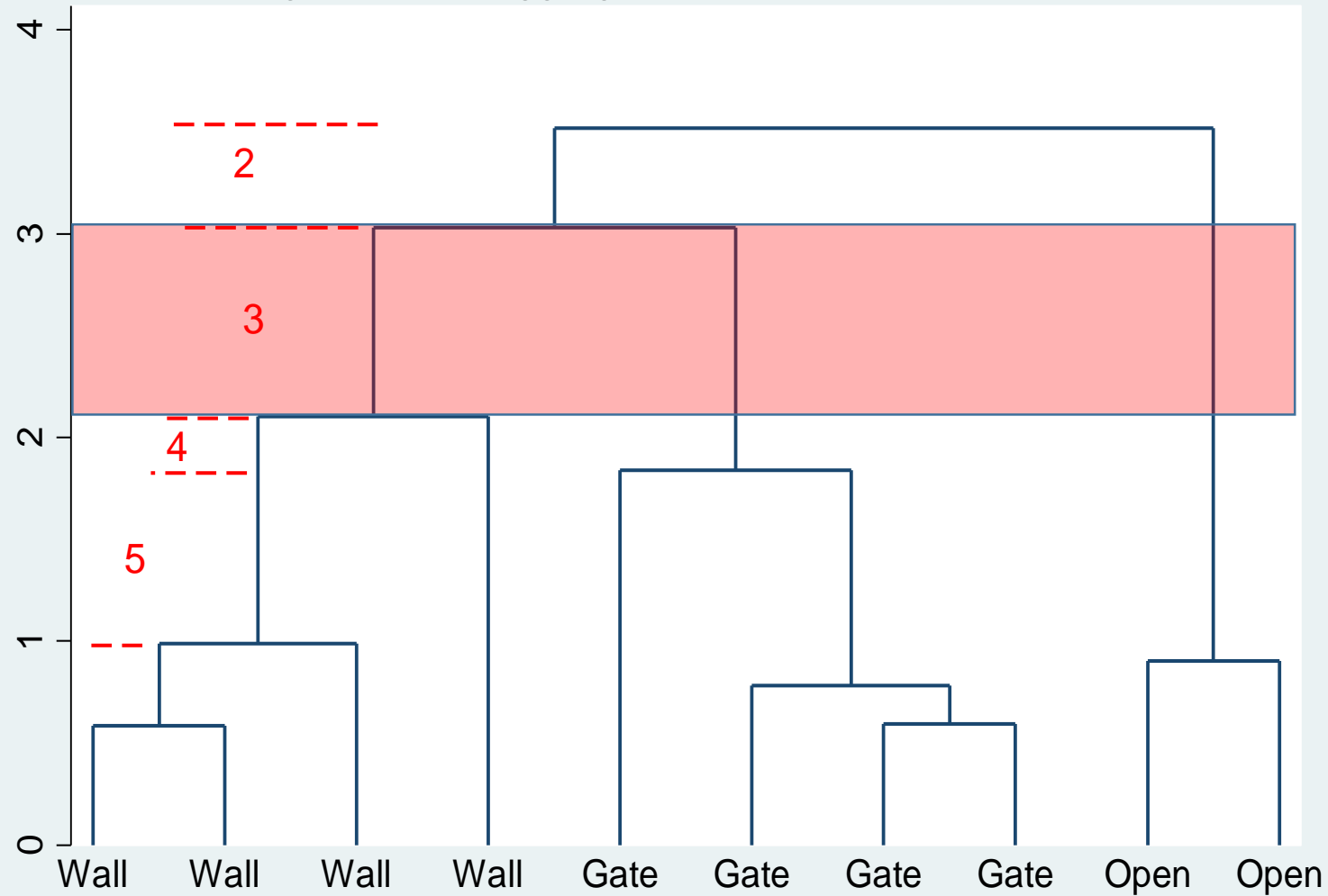
From Klein and Shambaugh (2015), Table 5A.

Classifying Countries' Capital Control Categories

- FKRSU Data (AREAER): 97 Countries, 1995 – 2013. Each 0/1
- **Money Market (mm)**: Maturity ≤ 1 yr, e.g. certificates of deposit, treasury bills, comm. papers, interbank dep., repurchase agreements.
- **Bonds (bo)**: original maturity of more than one year.
- **Equities (eq)**: Shares, other securities if not DI.
- **Collective Investments (ci)**: Share certificates, registry entries, other collective investment, e.g. mutual funds, investment trusts.
- **Financial Credits (fc)**: Credits other than cc, including banks, e.g. Personal or for Financial Investment
- **Commercial Credits (cc)**: Linked with trade in goods or services
- **AGGREGATE FOR EACH COUNTRY: AVERAGE, No. of SWITCHES**

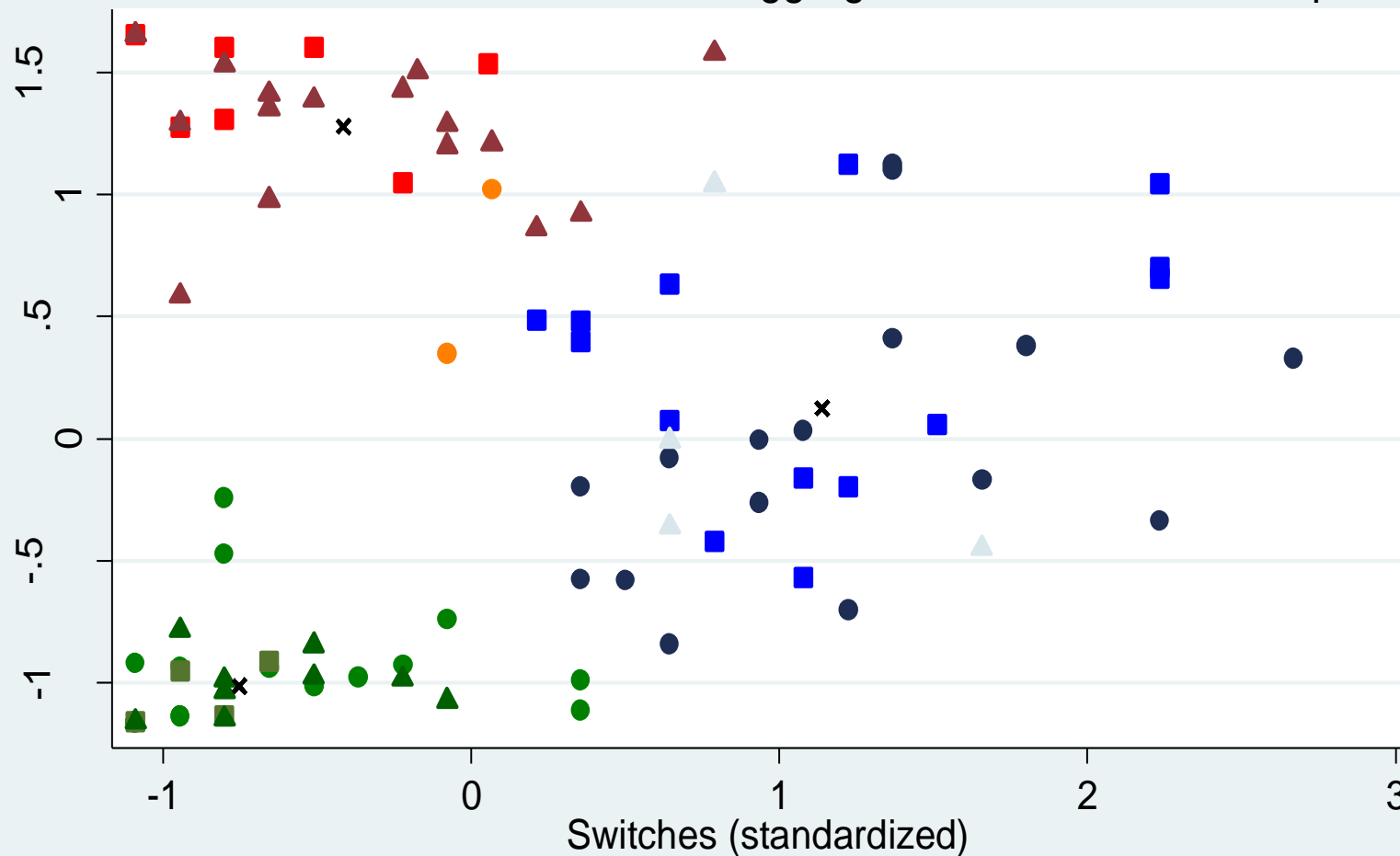
How Many Categories? Dendrogram

Figure 3: Dendrogram Based on Average and Switches
Using Six-Asset Aggregate Indicator of Capital Controls



Placing Countries in Categories: Cluster Analysis

Figure 4: Categorizing Capital Controls: Gates, Walls, Open
97 Countries Based on 6 Asset Aggregate for 1995 - 2013 Sample



Income Groups: High = Circle; Upper Middle = Square; Lower = Triangle; X = Centroid
Green = Open; Blue = Gates; Red = Walls

Table 2

Capital Control Category Countries

<u>Open</u> <u>(37)</u>	Austria, Brunei Darussalam, Canada, Costa Rica, Denmark, Egypt, El Salvador, Finland, Georgia, Greece, Guatemala, Hong Kong, Ireland, Italy, Japan, Latvia, Mauritius, Netherlands, New Zealand, Nicaragua, Norway, Oman, Panama, Paraguay, Peru, Qatar, Singapore, Spain, Sweden, Switzerland, Uganda, United Arab Emirates, United Kingdom, United States, Uruguay, Yemen, Zambia.
<u>Gate</u> <u>(33)</u>	Argentina, Australia, Bahrain, Belgium, Bolivia, Brazil, Bulgaria, Chile, Colombia, Cyprus, Czech Republic, Dominican Republic, Ecuador, France, Germany, Hungary, Iceland, Indonesia, Israel, Jamaica, Kazakhstan, Korea, Kyrgyz Republic, Lebanon, Malta, Mexico, Nigeria, Poland, Portugal, Romania, Russia, Slovenia, Turkey.
<u>Wall</u> <u>(27)</u>	Angola, Bangladesh, Burkina Faso, China, Cote d'Ivoire, Ghana, India, Iran, Kenya, Kuwait, Malaysia, Moldova, Morocco, Pakistan, Philippines, Saudi Arabia, South Africa, Sri Lanka, Swaziland, Tanzania, Thailand, Togo, Tunisia, Ukraine, Uzbekistan, Venezuela, Vietnam.

Table 3
Country Characteristics by Capital Control Category

	Capital Control Category		
	Open	Gate	Wall
GDP per capita	\$31,035	\$20,1239	\$10,422
GDP	\$885 b.	\$661 b.	\$719 b.
Population	26.2 m.	42.1 m.	130 m.
Dom. Cred. /GDP	0.94	0.78	0.55
Trade/GDP	0.87	0.81	0.82
Peg Proportion	0.41	0.29	0.45
Peg Exclude Euro	0.28	0.17	0.45
(no. of countries)	(27)	(24)	(26)
No. of Countries	34	31	26

Table 4

Cross-Section Estimates of Determinants of Capital Control Categories

Estimation	OLS		Multinomial Logit			Ordered Logit
	Average	Switch	W vs. O	W vs. G	G vs. O	
Ln(GDP/capita)	-0.21**	0.004	-2.40**	-2.16**	-0.24	-1.51**
(s.e.)	(0.04)	(0.004)	(0.45)	(0.60)	(0.45)	(0.34)
Ln(GDP)	0.10**	-0.001	1.21**	0.98**	0.22	0.57**
(s.e.)	(0.02)	(0.003)	(0.37)	(0.36)	(0.23)	(0.19)
Ln(D.C. /GDP)	-0.03	-0.006	-0.44	-0.06	-0.38	0.04
(s.e.)	(0.05)	(0.006)	(0.57)	(0.57)	(0.49)	(0.38)
Ln(Trade/GDP)	0.20*	-0.002	2.61*	1.99*	0.62	1.42*
(s.e.)	(0.08)	(0.009)	(1.03)	(0.99)	(0.73)	(0.61)
Peg (Excl. Euro)	0.19*	-0.016	2.65*	3.67**	-1.02	1.29*
(s.e.)	(0.09)	(0.009)	(1.07)	(1.15)	(0.93)	(0.66)
Constant	-1.06	0.068	-19.63*	-15.27	-4.37	6.39
(s.e.)	(0.76)	(0.080)	(9.42)	(9.10)	(6.74)	(5.58)
Constant(2)						8.38
(s.e.)						(5.61)
Adj. or Pseudo R ²	0.33	-0.01	0.25			0.18
No. Obs.	91	91	91			91
	<i>average, switches as defined in text</i>		W=Wall, O= Open, G=Gate As compared to more open			Ascending O / G / W

For Partial Correlation of Characteristics with Capital Control Categories:

- Walls differ from Gates & Open.
- Gates do not differ from Open.

Pecking Order: Most Evident for High Income

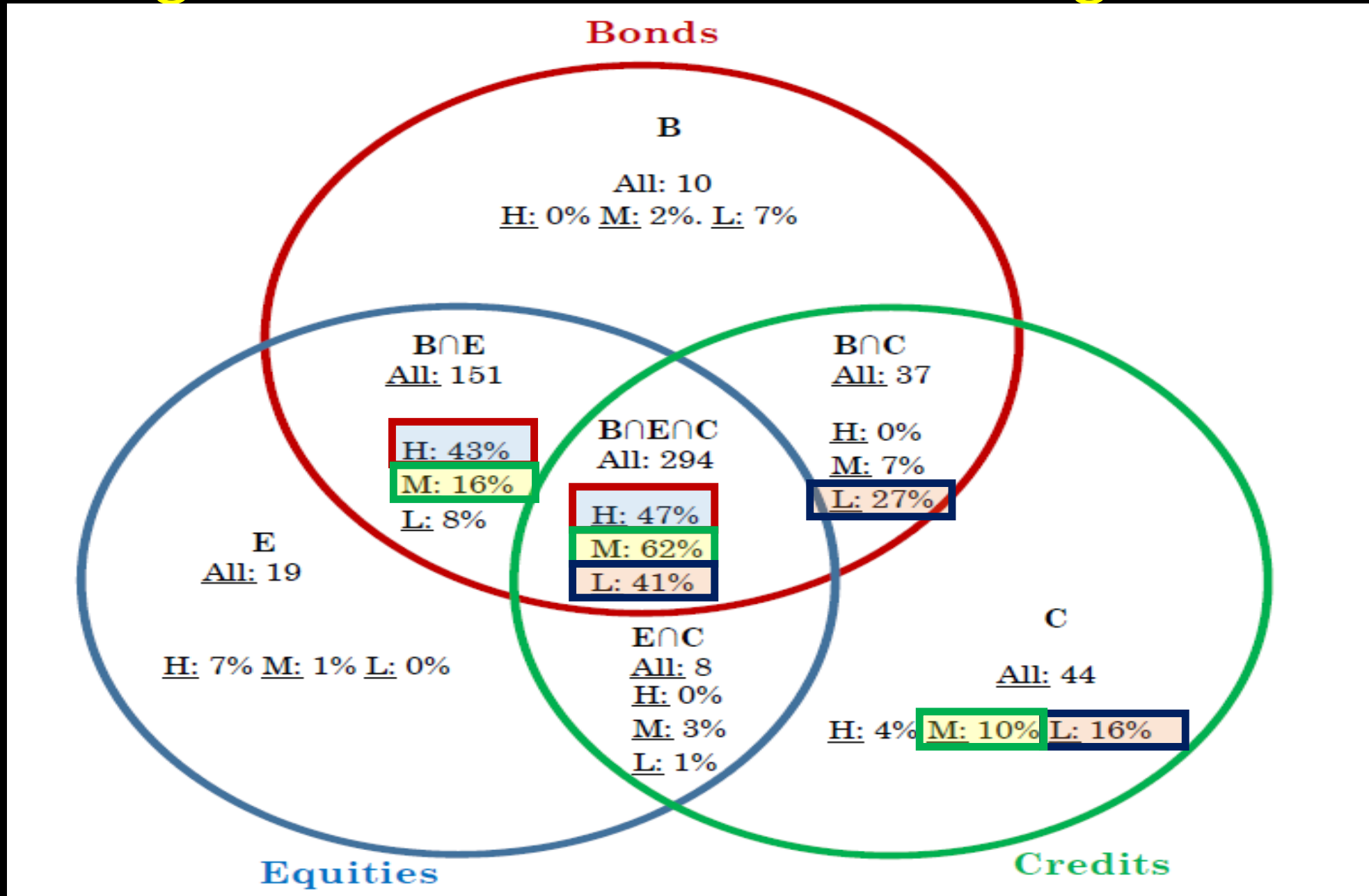


Table 5: Statistics for the Pecking Order for Gate Countries

Income	% of Total Controls			% of Years with Any Controls			
	Bonds	Equities	Credits	B only	B&(B∩E)	B&E&(B∩E)	(B∩E∩C)
All	37%	35%	28%	2%	29%	32%	52%
High	38%	41%	21%	0%	43%	50%	47%
UM	35%	33%	32%	2%	18%	19%	62%
LM & L	38%	23%	39%	7%	15%	15%	41%

Statistics for 33 Gate countries, 19 years (1995 – 2013).

No. Countries: 16 High Income, 13 Upper Middle (UM), 4 Lower Middle & Low (LM&L)

% of Total Controls: Relative to total number of controls for each category

% of Years with Any Controls: Relative to years in which any control in place

B only = Controls only on Bonds

B&(B∩E) = Control on Bonds Alone or On both Bonds and Equities

B&E&(B∩E) = Control on Bonds Alone or Equities Alone or On both Bonds and Equities

(B∩E∩C) = Controls on All Three Asset Categories in that Year

Conclusions

- Capital Controls now more widely accepted as a policy tool
- Important difference in efficacy between Gates and Walls
- Classifying into Open / Gates / Walls shows Walls countries
 - Walls countries poorer
 - Walls countries have higher trade
 - Walls countries more likely to peg
- Pecking order holds for High Income countries, less so for Upper Middle Income, Not for Lower Middle & Low Income