

# Exchange Rate Regimes

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# Road-Map

1. Measurement Issues
2. What do the Data Say
3. Causes of Regimes
4. Consequences of Regimes
5. Conclusion

# **Note: Regimes, *not Transitions***

- Much work (not covered) on:
  - Crises (single or “twin”)
  - Crashes
  - Devaluations
  - Flotations, etc

# I: Exchange Rate *Classifications*

- *Bad old days*: IMF used official policy
  - Big Problem: *de jure* systems of exchange rate classification do not cohere well with actual *de facto* behavior
    1. Many say they *fix* but actually *float* (via black-market/dual exchange rates)
    2. EMs with “fear of floating” say they *float* but *don’t*

# So New Classifications Proliferate

- Differ by Inclusiveness:
  1. What? (exchange rates? Reserves?)
    - Official or market prices?
    - Number of regimes varies: 2/4/5/15
  2. How?
    - Price durations?
    - Cluster Analysis?
    - Price Divergence?
  3. Who?
  4. When?

# 3 Popular *De Facto* Classifications

- Levy-Yeyati and Sturzenegger
  - Cluster Analysis on Exchange Rates and Reserves
- Reinhart and Rogoff
  - Black Market Rates
- Shambaugh
  - Nominal exchange rate movements (of *official* rates)

# Poor Coherence

	IMF	Levy-Yeyati & Sturzenegger	Reinhart & Rogoff	Shambaugh
IMF	100%			
Levy-Yeyati & Sturzenegger	59%	100%		
Reinhart & Rogoff	59%	55%	100%	
Shambaugh	68%	65%	65%	100%

# Actually, *Very* Poor Coherence

A country changes its regime:

- Every 5 years according to LYS
- Every 20 years according to RR

Canada

- Officially, floating since 1970
- RR: *never* floating
- LYS: 9 switches in 1974-2004
- Ex: 1990: Canadians say they float (so does LYS)
  - But RR = narrow crawl; Shambaugh = peg



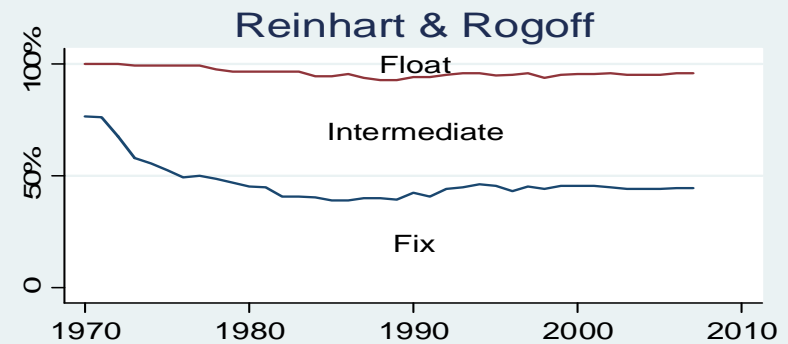
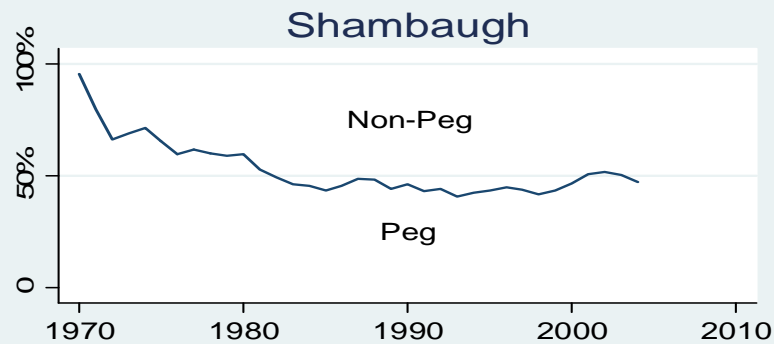
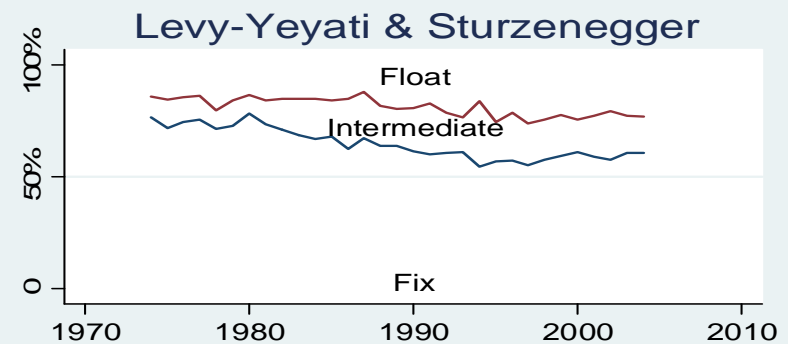
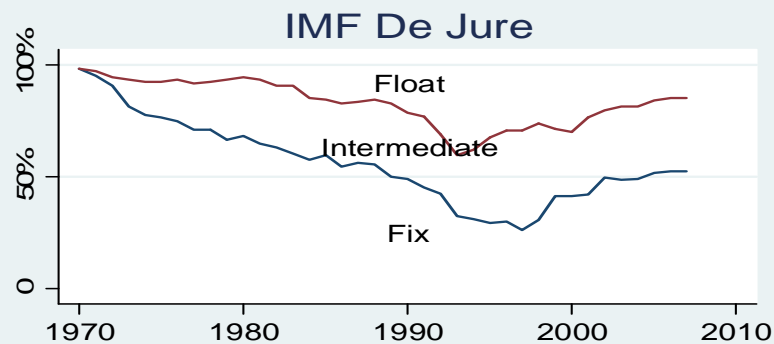
# Message

- Don't rely on any single system!
  - Do different systems simply measure different things ?
    - The usual warm bath
      - ... or is a cold shower appropriate?
      - Scary that one can't say whether a country is fixed or floating with confidence
- Perhaps ... move away from *Exchange Rate* regimes to *Monetary* regimes?
  - Fixed exchange rate is a monetary policy; floating isn't

# II: Importance

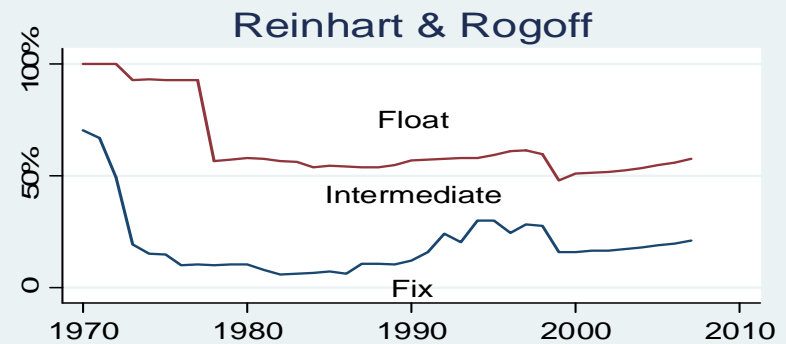
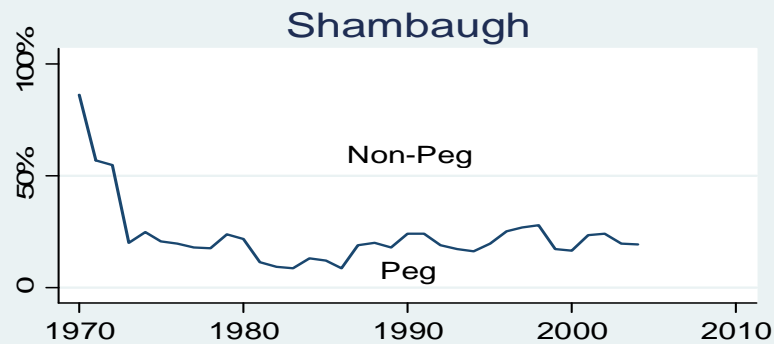
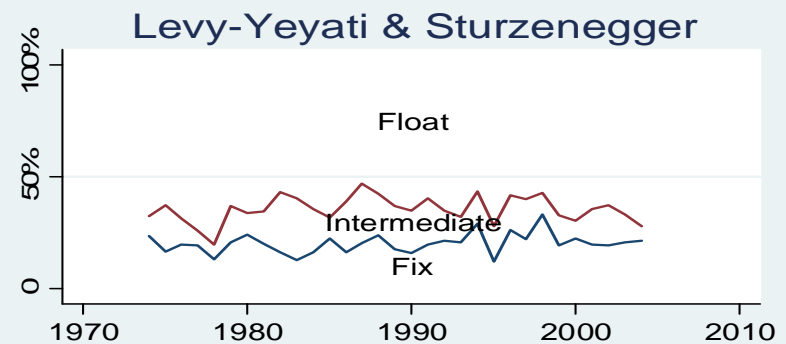
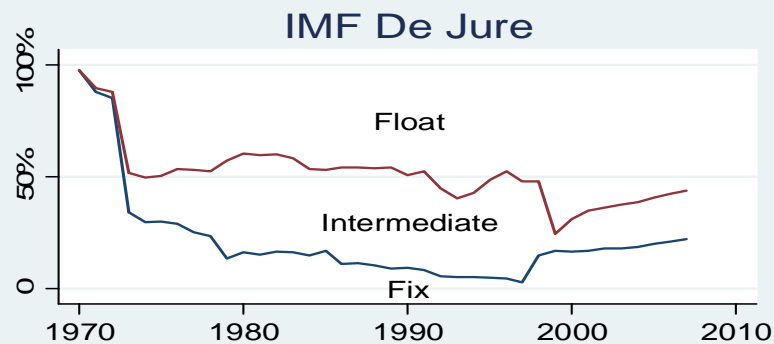
## Many *Countries* are Fixed

Exchange Rate Regimes over Time  
Distribution of Countries by Regime



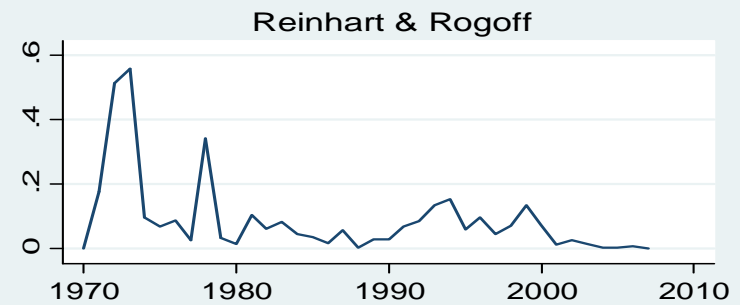
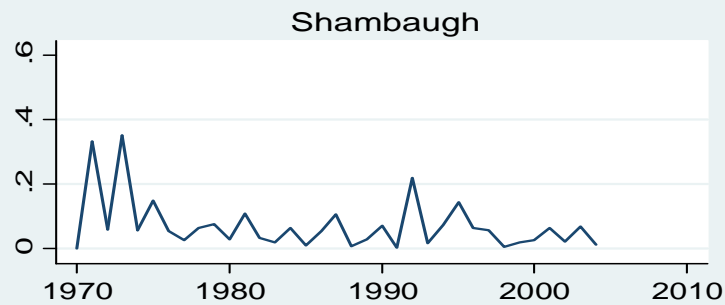
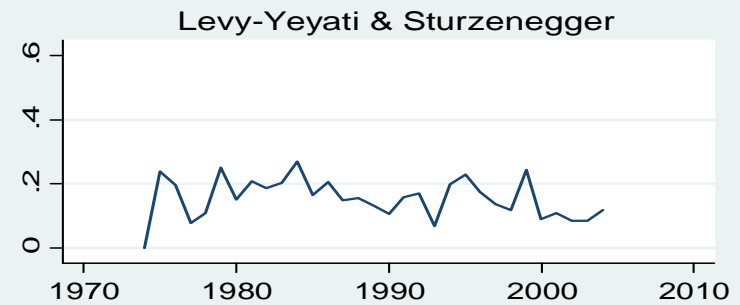
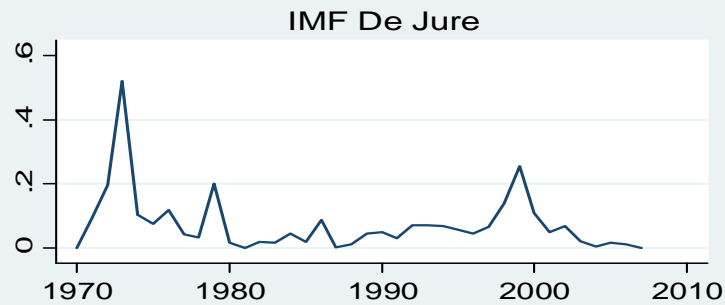
# But Not Much *GDP* in Fixers (ditto FX volume)

Exchange Rate Regimes over Time  
Distribution of GDP by Currency Regime



# Regimes are Becoming Durable

Exchange Rate Regime Switches over Time  
Proportion of Global GDP in Economies with Changing Regimes



# This Especially True of IT

- Inflation-Targeters float, more or less cleanly
- No IT regime has failed to date
  - Durability a stark contrast to fixes

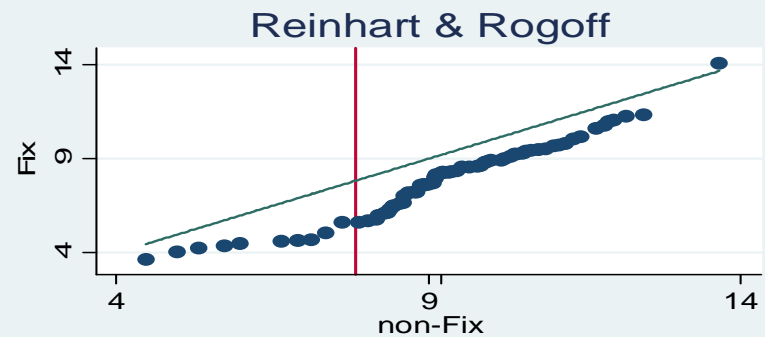
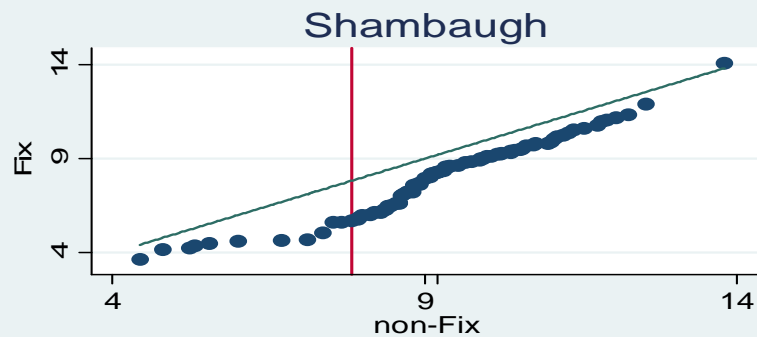
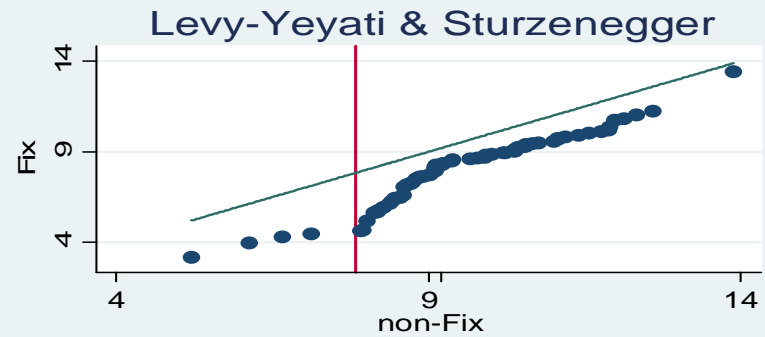
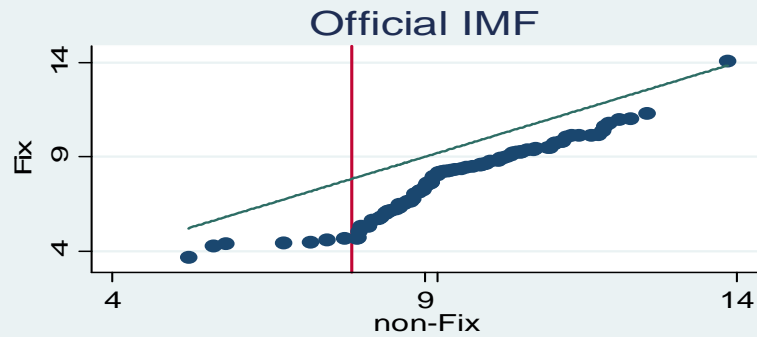
# III: Who's What?

## Does Size (Population) Matter?

- Many fixers are small.
- But: many small economies
  - Berkeley California has population > 49 (/237 ) “countries and other entities” in CIA’s *World Factbook*
  - Many included in the various exchange rate classifications
- No doubt that smallest economies of the world do not float
  - Many don’t have own currencies
  - 95 of CIA’s listed “countries” do not have national currency
- Easy to overstate; countries do not have to be large before creating a floating currency
  - Small floats include: the Seychelles (population 88,000 in June 2010), Tonga (123,000), and Sao Tome and Principe (176,000).

# Quantile Plots of Size

Size of Fixers and non-Fixers  
Quantile Plots of logs 2004 PWT 6.3 Population



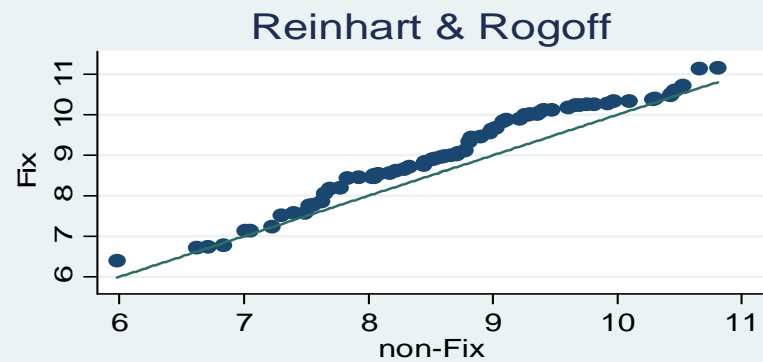
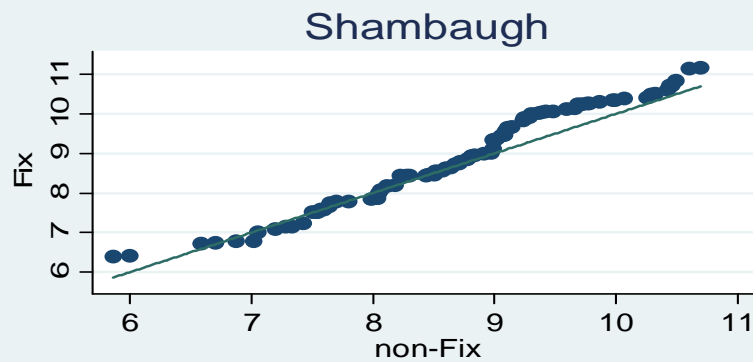
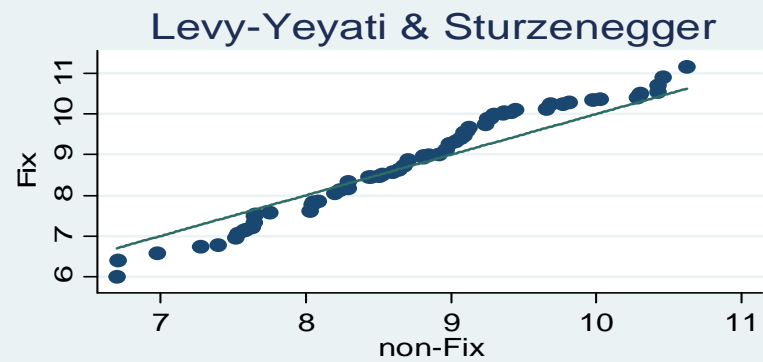
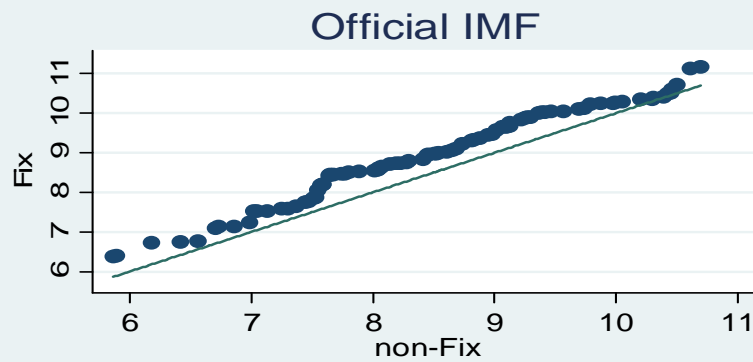
# Size Matters only at Left-Tail

- Size Matters *much* less at 2.5 million
  - 135 countries
- Size Matters *not at all* beyond 10 million
  - 75 countries



# Income? No Effect

Income of Fixers and non-Fixers  
Quantile Plots of log 2004 PWT 6.3 Real GDP per capita



# Other Stylized Facts, 1

## 1. Only Two *Anchors* for Fixes

- Dollar (66 fixers); Euro (27)

## 2. *All Large Rich, Quasi-Rich Economies Float*

- Large: Dollar, Yen, Euro,
- Medium: UK, Canada, Australia, Switzerland, ...
- EMs: Brazil, India, Indonesia, Korea, Mexico, Russia, and Turkey
- China is exception

# Other Stylized Facts, 2

## 3. *Regions Differ*

- Sub-Saharan Africans tend to fix
- Central Europeans, Asians do not

## 4. *Oil Exporters Fix*

- Especially OPEC members in Gulf

# Other Stylized Facts, 3

## 5. *Small Financial Centers Tend to Fix*

- Mostly Small

## 6. *Inflation Targeters Float*

- Often Very Cleanly

## 7. Nominal Exchange Rate Volatility is Real

- Mussa

# IV: *Causes of Exchange Rate Regime*

- Theory #1: “Sources of Shocks” (Mundell)
  - Countries with real shocks should float
  - Financial shocks implies fix
- Stockman (2000) “the evidence supporting the predictions of these models is only slightly better than the evidence for cold nuclear fusion”

# Another Theory: Credibility

- Fixed nominal exchange rate transparent easily monitored monetary anchor
  - Import credibility by fixing to Fed/Buba
- Tornell and Velasco: fiscal indiscipline eventually undermines most fixes
  - Float: easier to monitor, faster punishment, better discipline
- So credibility arguments theoretically *ambiguous*
  - Is exchange rate constraint different from other constraints (e.g., Inflation Targeting)?

# Bad Argument: Friedman

- “The argument for flexible exchange rates is, strange to say, very nearly identical with the argument for daylight savings time. Isn’t it absurd to change the clock in summer when exactly the same result could be achieved by having each individual change his habits? All that is required is that everyone decided to come to his office an hour earlier, have lunch an hour earlier, etc. But obviously it is much simpler to change the clock that guide all than to have each individual separately change his pattern of reaction to the clock, even though all want to do so. The situation is exactly the same in the exchange market. It is far simpler to allow one price to change, namely the price of foreign exchange, than to rely upon price changes in the multitude of prices that together constitute the internal price structure.”
- But we adjust clocks *only twice a year by exactly one hour*
  - Floats are *volatile*
  - Might adjust times *if clocks had to be adjusted daily, different amounts*

# Microeconomic Arguments

- Facilitate Trade
  - Size? Possible if Hedging Risk difficult (LDCs)
- Deepen Micro-Structure of FX market?
  - Deepen liquidity
    - But many rich countries (Denmark, HK) fix
    - Little intervention outside FX (stocks, bonds)



# Shameful Empirics

- No Time-Series Understanding
  - OK since most determinants sluggish; timing hard
- No Cross-Country Success Either
  - Very small countries, autocracies , former colonies, financial centers, oil exporters fix
  - Little of the cross-country variation explained though; nothing robust
- An Embarrassment!

# ***V: Consequences of Regimes***

- *Mussa Fact*: Floating regimes have more nominal and real exchange rate volatility
  - Banal? Perhaps
  - Frightening? Yes: *only* observable, sensible, robust fact

# For International Finance

- Some evidence that *UIP deviations* are smaller during fixes (still exist)
- Weak evidence on *PPP/LOOP deviations*

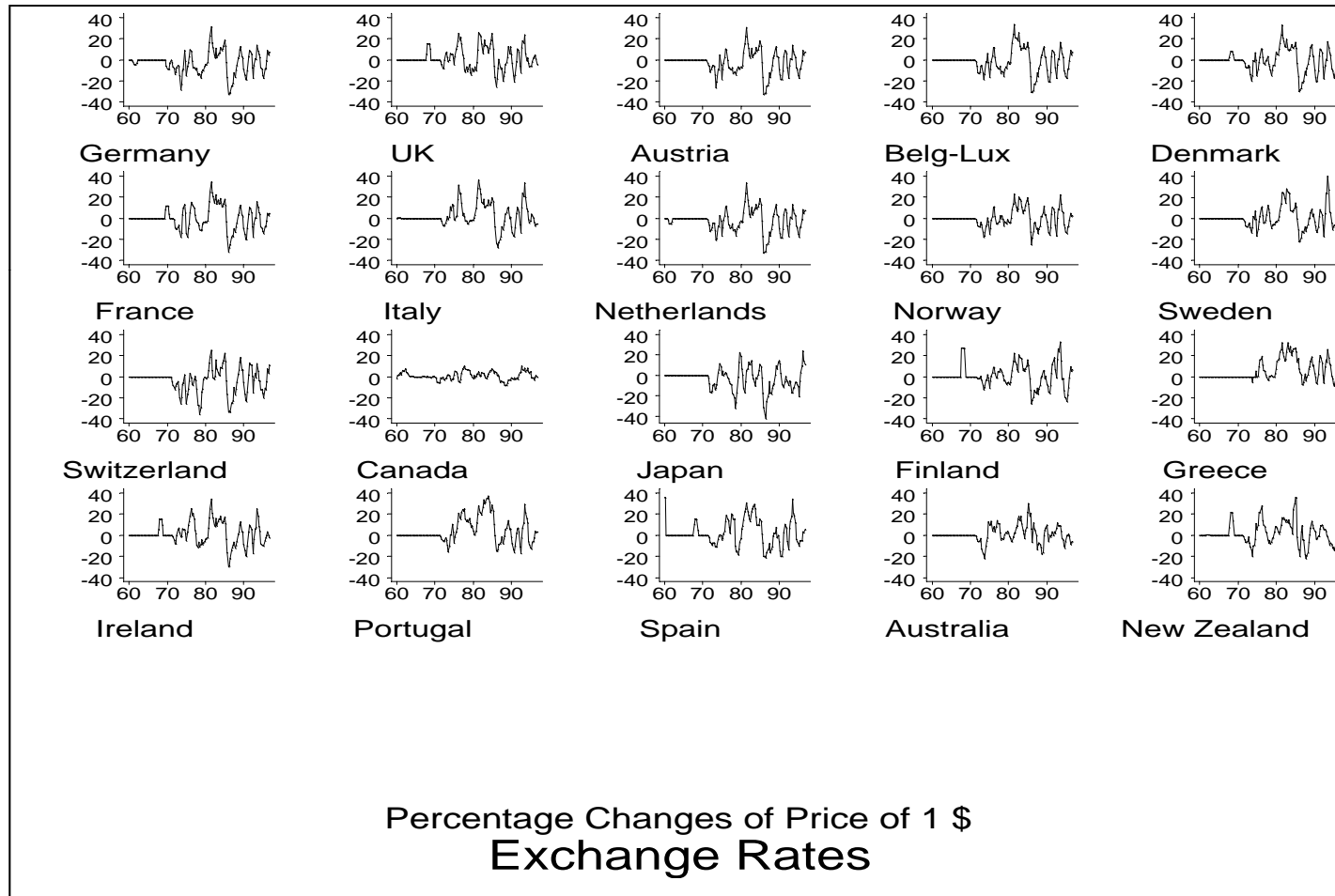
# ***Growth Consequences of Regimes***

Classification	Narrow Crawl	Wide Crawl	Float	Falling
Official IMF	.8* (.3)	.5 (.4)	.2 (.5)	
Reinhart and Rogoff	-.3 (.4)	-1.0* (.5)	.5 (1.2)	-4.3** (.6)
	Intermediate	Float		
Levy-Yeyati and Sturzenegger	-1.5** (.4)	-.5 (.4)		
	Non-Peg			
Shambaugh	.3 (.3)			

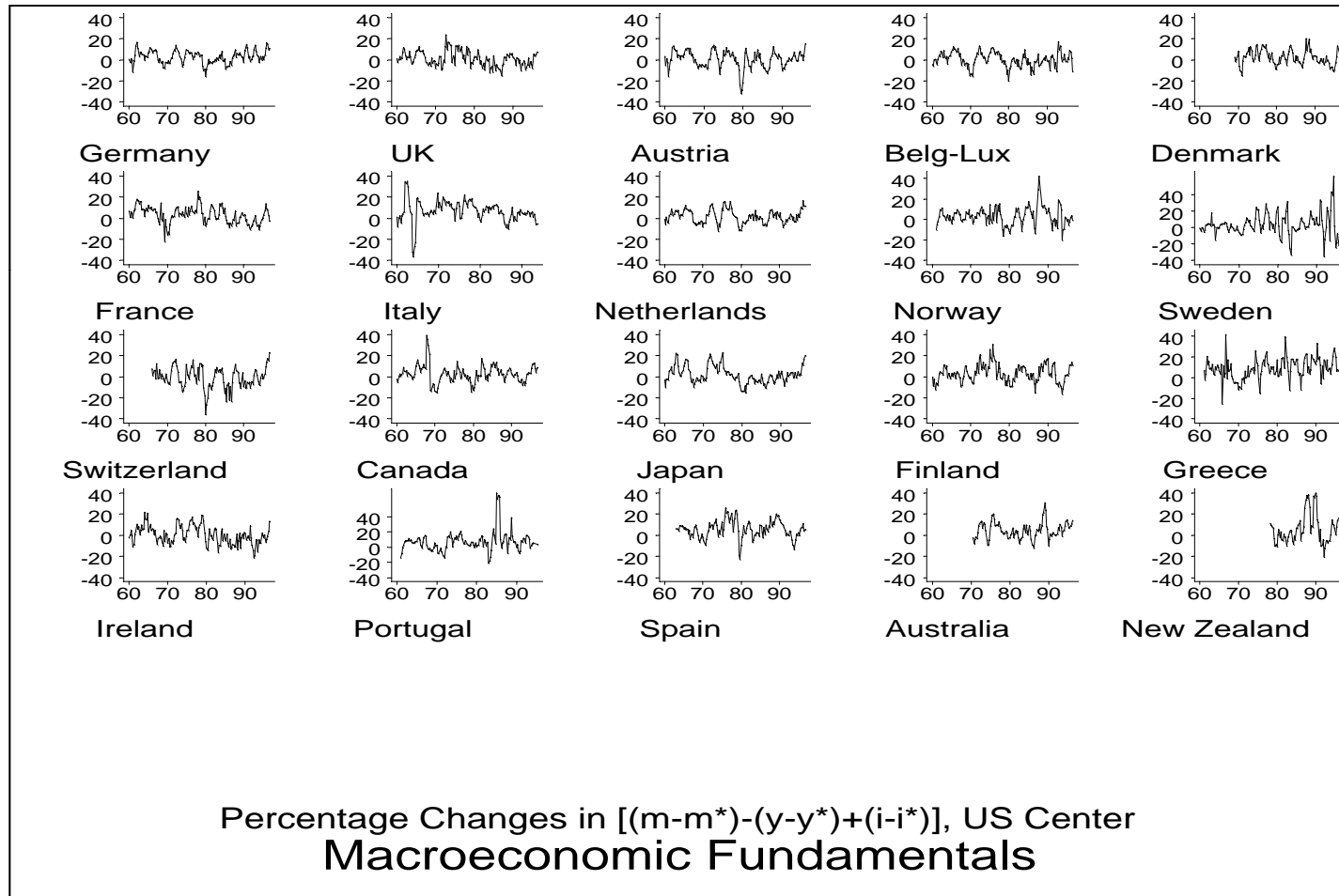
# *Inflation* Consequences of Regimes

Classification	Narrow Crawl	Wide Crawl	Float	Falling
Official IMF	-9.1** (2.1)	2.7 (3.6)	8.8 (6.3)	
Reinhart and Rogoff	.4 (2.4)	.8 (3.1)	7.9 (4.3)	62.** (9.6)
	Intermediate	Float		
Levy-Yeyati and Sturzenegger	18.4** (3.1)	3.5 (1.9)		
	Non-Peg			
Shambaugh	7.3** (1.8)			

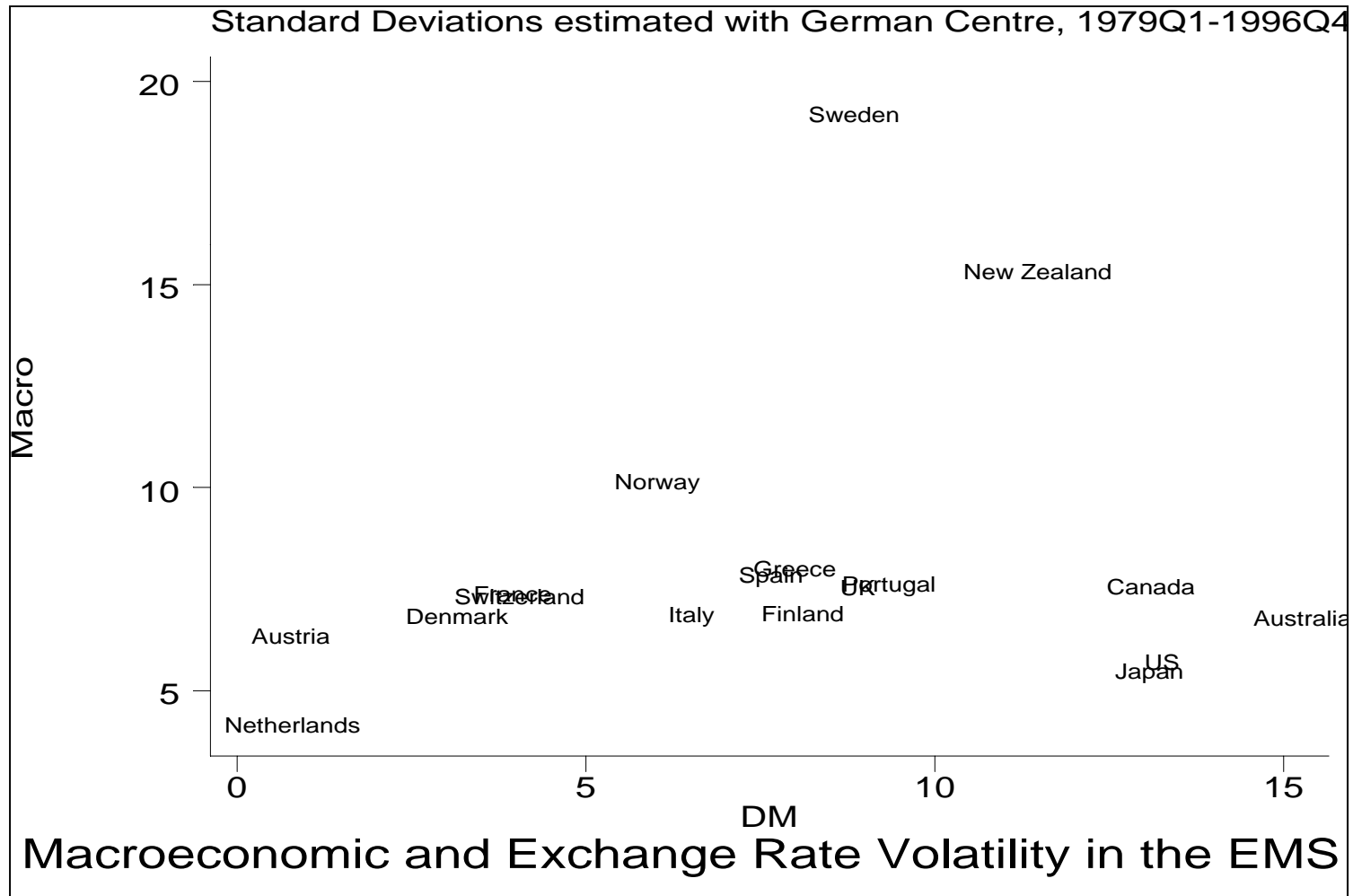
# Volatility: Exchange Rates over Time



# Macro Fundamentals over Time



# The Cross-Sectional Evidence





# Quick Summary of Consequences

- No Real Effects
  - Reasonable; monetary neutrality
- Unclear Inflationary Consequences
- Also: no effect on volatility (second-moments)
  - Except nominal/real exchange rates [Baxter-Stockman (1989); Flood-Rose (1995)]

# VI: Summary

- Exchange Rate an important asset price
- Distinctive because volatility fluctuates unlike other asset prices (stocks, bonds): a) clearly;  
b) because of government
  - Seems like good *prima facie* motivation to study
  - Especially since volumes *very* high

# Is this Question Really Worth Asking?

- Countries with similar income, size, openness, institutions choose different regimes:
  - Singapore vs. Hong Kong
  - Denmark vs. Sweden vs. Finland
  - Costa Rica vs. Panama
- No convergence, few apparent causes, no clear consequences

# Conclusion:

## Exchange Rate Regimes are *Flaky*

- Caring about exchange rate regimes is akin to caring about whether you prefer coffee or tea
  - Could potentially trace causes
  - Could be measurable consequences
  - Topic of great *academic* interest