

Re-examining exchange rate regimes in Asia after the global financial crisis

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Questions

What happened with Asian exchange rate regimes?

- Was there acute exchange rate inflexibility pre-Asian-crisis?
- After the Asian crisis, did Asia go right back to pre-crisis pegging? (*Fear of Floating*)
- In the years after the Asian crisis, has Asia embarked on a 'Bretton-Woods-II' world of USD pegging rooted in competitive exchange rate mercantalism?
- Has Asia shifted away from a USD focus towards either EUR or JPY in exchange rate pegging?
- Has the global financial crisis of 2008 led to modifications in the exchange rate regime in Asia?

Methodology

How might we approach these questions?

- 1 A database of the *de facto* exchange rate regime
- 2 Observe how exchange rate flexibility changed over the years.

Problems of measurement

- Some databases exist for the *de facto* exchange rate regime
- Identification of fixed and float is relatively easy.
- But how to quantify flexibility of intermediate regimes?
- ‘The fine structure of pegged exchange rates’
- How to identify dates when flexibility changed?
Need for sound statistical inference.

Old workhorse: the exchange rate regression

$$d \log \left(\frac{\text{INR}}{\text{CHF}} \right) = \beta_1 + \beta_2 d \log \left(\frac{\text{USD}}{\text{CHF}} \right) + \beta_3 d \log \left(\frac{\text{JPY}}{\text{CHF}} \right) + \beta_4 d \log \left(\frac{\text{DEM}}{\text{CHF}} \right) + \epsilon$$

Interpretation:

- Hong Kong: $\beta_2 = 1, \beta_3 = \beta_4 = 0, R^2 = 1$
- Floating rate: $R^2 \approx 0.4$

Recent advances

Zeileis, Shah, Patnaik, 2008:

- 1 Extend the econometrics of structural change for OLS (Perron & Bai)
- 2 An estimation strategy for identifying dates of structural breaks in the exchange rate regression
- 3 For each country, this yields:
a set of dates, and
a measure of the exchange rate flexibility then prevalent.

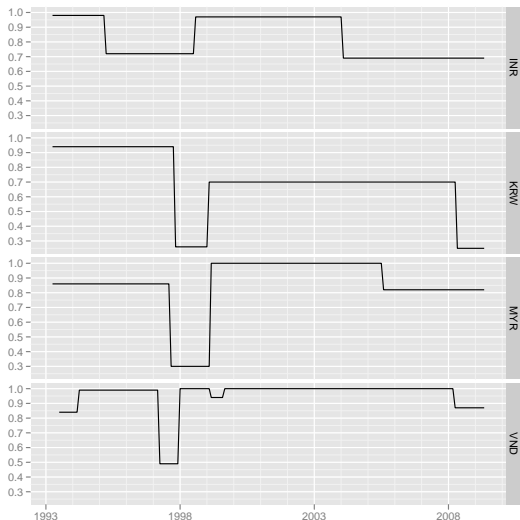
Example: Korea

Start	End	USD	DUR	GBP	JPY	σ_e^2	R^2
1991-01-11	1997-10-17	1.05	-0.04	-0.01	0.03	0.15	0.94
		22.28	-1.73	-0.55	1.79		
1997-10-24	1999-01-08	0.40	0.01	0.42	0.28	4.20	0.26
		1.18	0.08	1.03	2.35		
1999-01-15	2008-03-28	0.66	0.28	0.09	0.26	0.72	0.70
		16.87	3.25	1.96	8.25		
2008-04-04	2009-05-29	0.33	0.46	0.18	-0.26	4.10	0.25
		1.43	1.44	1.28	-1.54		

Example: India

Start	End	USD	DUR	GBP	JPY	σ_e^2	R^2
1991-01-11	1998-08-21	0.90	-0.01	0.02	0.02	0.46	0.79
		11.43	-0.34	0.71	0.81		
1998-08-28	2004-03-19	1.00	0.01	0.01	0.01	0.08	0.97
		59.13	0.47	0.70	0.84		
2004-03-26	2009-05-29	0.70	0.31	0.13	0.00	0.65	0.70
		14.88	3.67	2.94	0.06		

The key idea: time-series of R^2 across structural change



Data resources

The 16 countries that we examine:

India	Pakistan	Sri Lanka	Nepal
Bangladesh	Bhutan	China	Taiwan
Hong Kong	Korea	Thailand	Vietnam
Malaysia	Singapore	Indonesia	Philippines

Weekly returns data on currencies, from 1/1/1991 to 31/5/2009 for most currencies, but starts at 1/1/1993 for some countries.

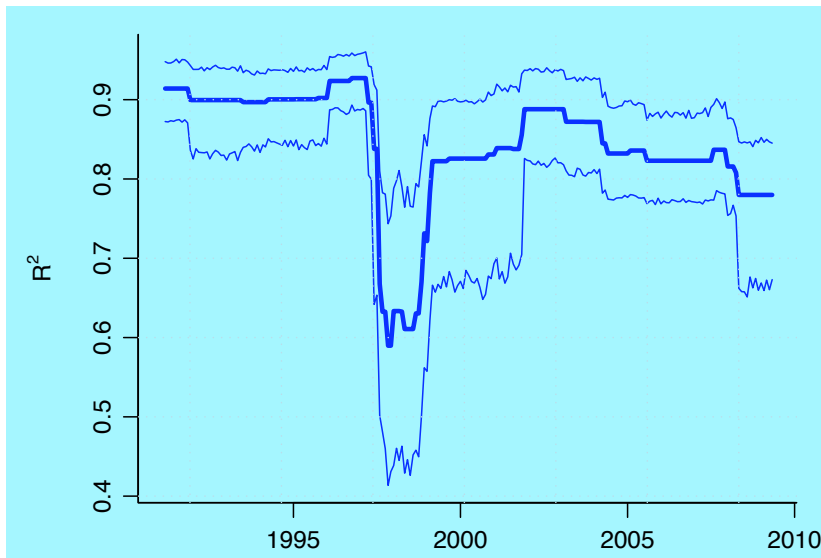
Estimation strategy

- 1 For each country, apply the method of ZSP to identify break dates
- 2 For each point in time, compute summary statistics across the countries of :
 - R^2
 - USD coefficient
 - EUR coefficient
 - JPY coefficient.
- 3 Bootstrap inference for these summary statistics; use adjusted bootstrap percentile method.

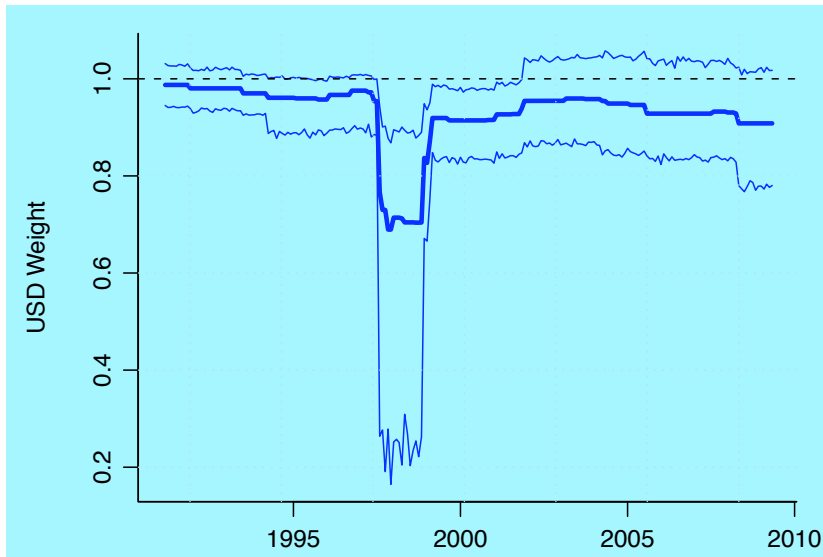
We will report location estimators for Asia; of course the stories for individual countries will vary.

Results

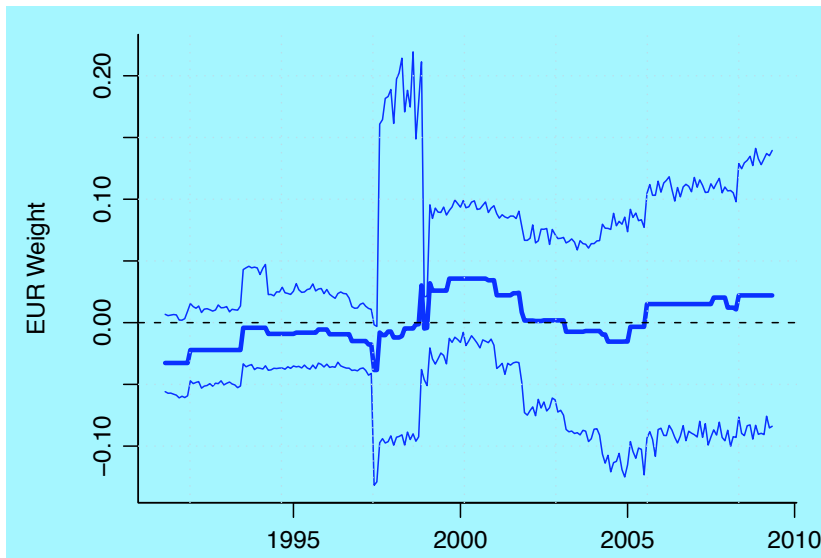
Exchange rate flexibility



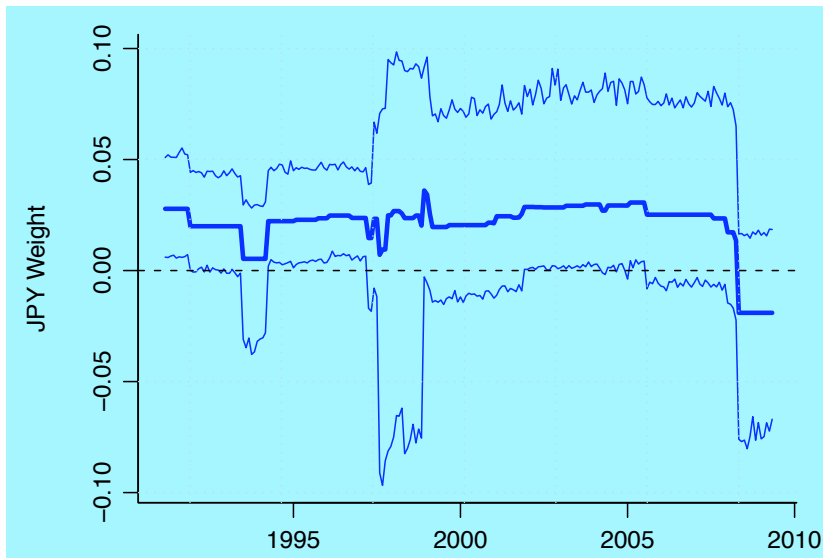
A shift away from USD pegging?



Rise of the Euro?



A nascent yen bloc?



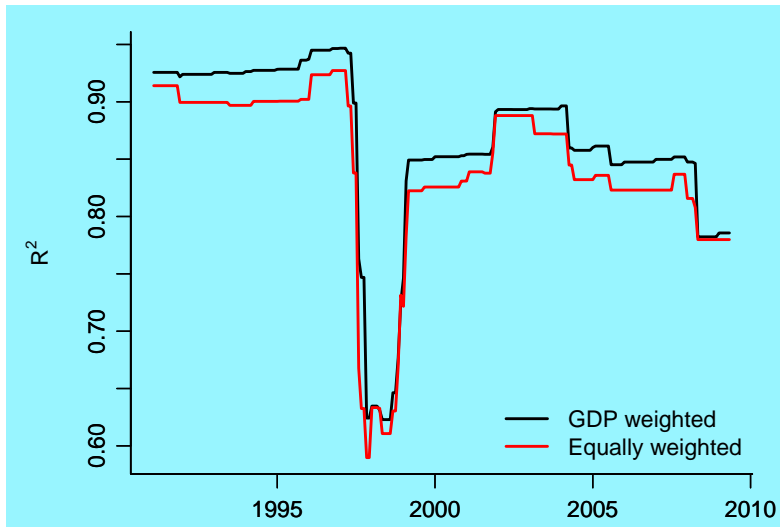
Key findings

- Confirm acute incidence of USD pegging pre-Asian-Crisis
- After Asian crisis, Asia did return to high inflexibility (*fear of floating*), but not quite the pre-crisis situation.
- In the following years, there was a short period with acute inflexibility (*Bretton-Woods-II*).
- But after that, exchange rate flexibility has dropped a little. BW-II may have started subsiding.
- No shift away from USD : only greater flexibility about a *de facto* peg to the dollar.

Robustness checks

- 1 GDP weighted instead of equally weighted
- 2 Alternative location estimators: trimmed mean
- 3 Do these results for the overall Asia also hold for ASEAN?

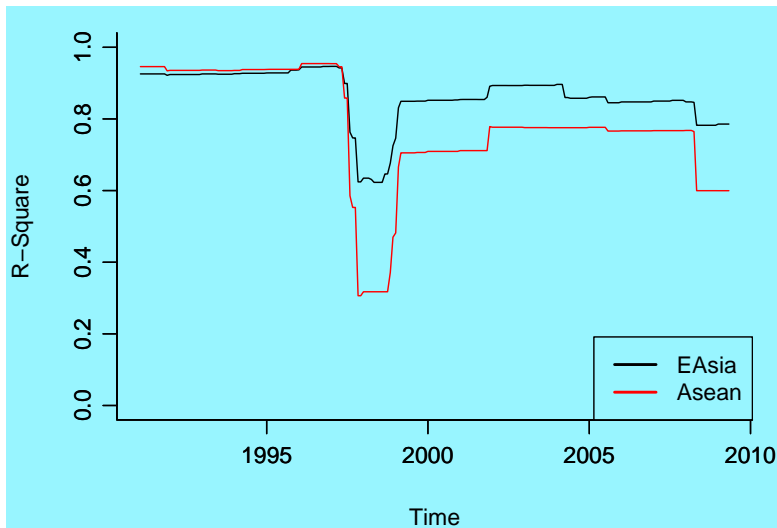
Exchange rate flexibility: equal weights vs. GDP weights



Exchange rate flexibility: trimmed mean vs. ordinary mean



Exchange rate flexibility: ASEAN vs. full Asia



Conclusion

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No. What has happened is greater flexibility with a primarily USD peg.

Thank you.