Exchange Rate Management and Crisis Susceptibility: A Reassessment

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*The views expressed in this presentation are those of the authors and do not necessarily represent those of the IMF, its Executive Board, or its management.

Choice of regime: a perennial issue

As countries become more developed, they should be moving away from intermediate regimes, towards greater flexibility of the exchange rate—or in some cases towards a hard peg - Stanley Fischer

- Conventional wisdom: Bipolar prescription
  - Adopt hard pegs or floats, avoid the middle
- What has changed?
  - Collapse of Argentina's CBA
  - Crisis in Emerging Europe
  - Volatile capital flows
  - Shift toward managed floats

But how much management is too much?

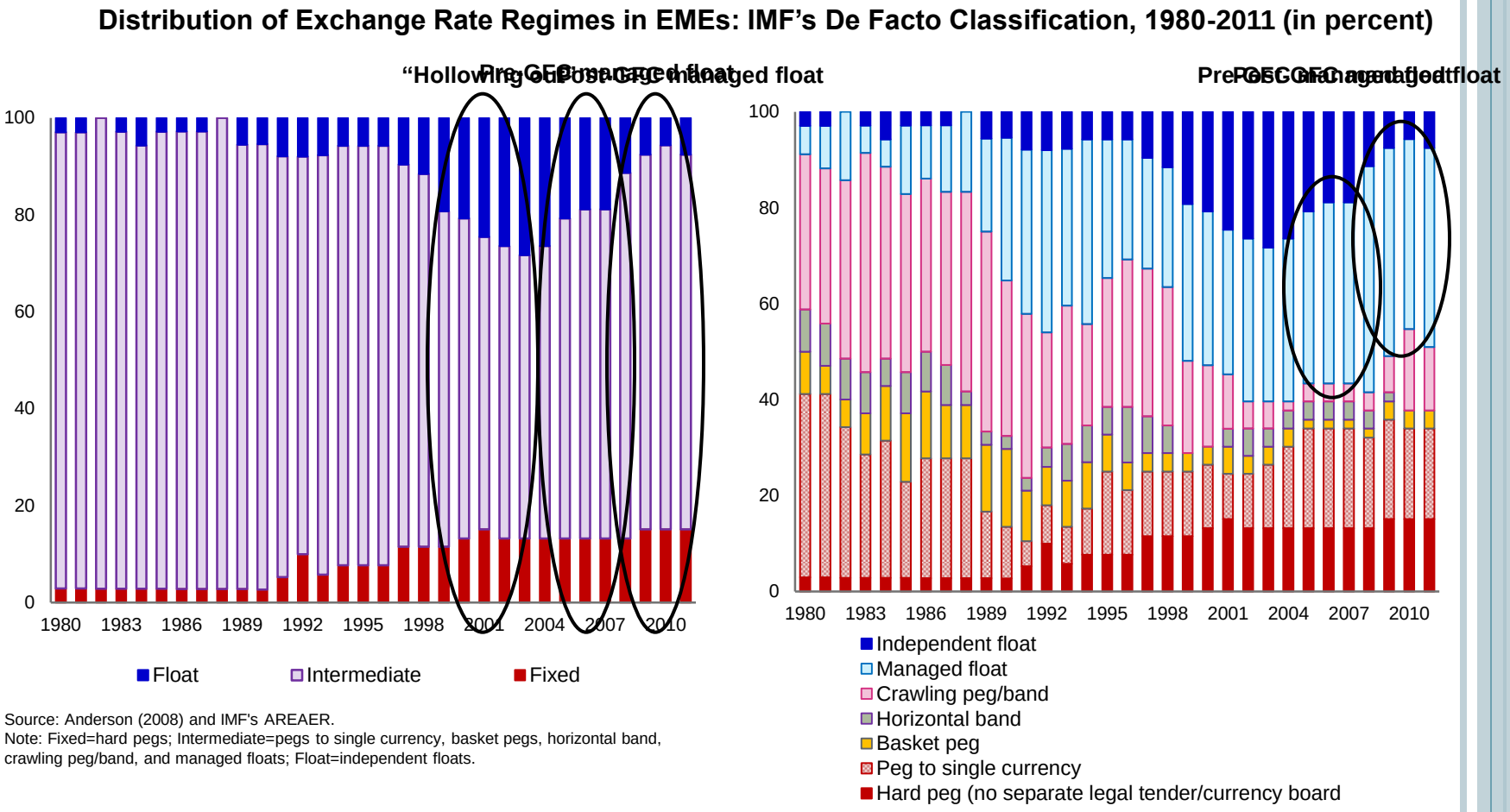
- Existing literature provides limited guidance
  - Fischer (2001, 2008) put "managed floats" at the safe pole
  - Others put them with intermediate regimes (e.g., Eichengreen, 1994; Obstfeld and Rogoff, 1995; Frankel, 1999; Masson, 2000; Rogoff et al., 2004)
  - Rogoff et al. (2004) find managed floats to be significantly *more* prone to financial crisis than free floats

Two issues with bipolar prescription

- At the hard end, are hard pegs prone to crisis (including growth collapses)?
- At the soft end, where to draw the line between safe and risky management of the exchange rate?

Trends in Regimes

Countries switch regimes more often than not…



Source: Anderson (2008) and IMF's AREAER.
Note: Fixed=hard pegs; Intermediate=pegs to single currency, basket pegs, horizontal band, crawling peg/band, and managed floats; Float=independent floats.

- Bipolar hypothesis does not hold as a positive prediction
  - Based on transition probabilities, managed floats likely to be the dominant regime for EMEs in the long run

Exchange Rate Regimes and Crisis Vulnerability

Why are less flexible regimes riskier?

- Impede external adjustment
  - Build up dangerous imbalances: currency and debt crises
  - Regaining competitiveness requires deflation: growth collapses
- Implicit exchange rate guarantee
  - Encourage foreign borrowing: currency and debt crises
  - Open FX limits: FX lending to unhedged borrowers
- Sterilization costs of intervention: credit creation/bubbles
- Exchange rate peg suppresses inflation: permit lax fiscal policy
- Vulnerabilities may interact and amplify each other
  - Growth declines can worsen debt sustainability and impair bank asset quality
  - Greater foreign borrowing can lead to large swings of the ER in a sudden stop
  - But sharp currency movements can strain unhedged domestic balance sheets and result in private sector debt crises and growth collapses

But the type of crisis may vary across regimes

- E.g., high cost of exiting a hard peg may engender policy discipline and credibility, making currency crises less likely
- But the very determination to maintain the parity means that growth crises are more likely!
- Important to go beyond the traditional currency and banking crises and also consider other types of crisis such as debt crises and growth collapses

VULNERABILITIES AND CRISES: A SNAPSHOT

Vulnerabilities and Crisis in EMEs: IMF's De Facto Classification, 1980-2011
(In percent)

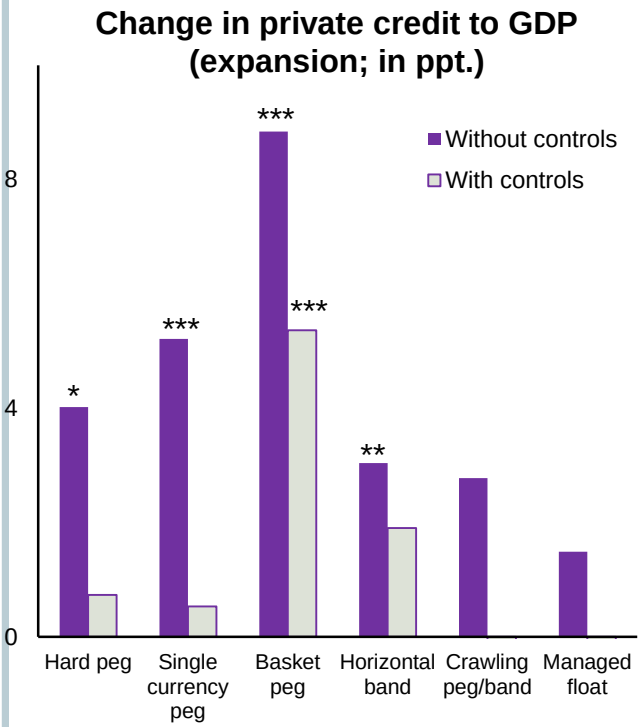
	Financial vulnerabilities			Macro vulnerabilities		Crisis[a]			
	Credit boom[b]	**Foreign borrowing**	**FX lending**	**Fiscal balance**	**REER deviation**	**Bank**	**Currency**	**Debt**	**Growth**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Hard pegs	**6.1**	**14.3**	**58.9**	**-2.7**	**0.3**	**3.0**	**1.0**	**2.0**	**10.5**
Intermediate	**2.4**	**9.4**	**36.1**	**-3.6**	**0.2**	**4.7**	**5.2**	**1.9**	**4.4**
Peg to single currency	3.5	12.3	34.9	-4.6	0.9	3.6	5.2	2.8	6.9
Basket peg	8.8	10.7	49.2	-1.9	-0.2	5.4	1.1	1.1	8.3
Horizontal band	5.1	9.9	44.5	-4.5	0.6	7.0	2.8	1.4	3.4
Crawling peg/band	1.1	8.3	35.1	-3.4	0.8	7.4	7.4	2.3	3.1
Managed float	1.2	8.0	35.4	-3.5	-0.7	2.7	4.9	1.5	3.3
Independent float	**0.8**	**7.3**	**29.4**	**-3.2**	**-1.6**	**1.2**	**2.4**	**0.6**	**3.8**

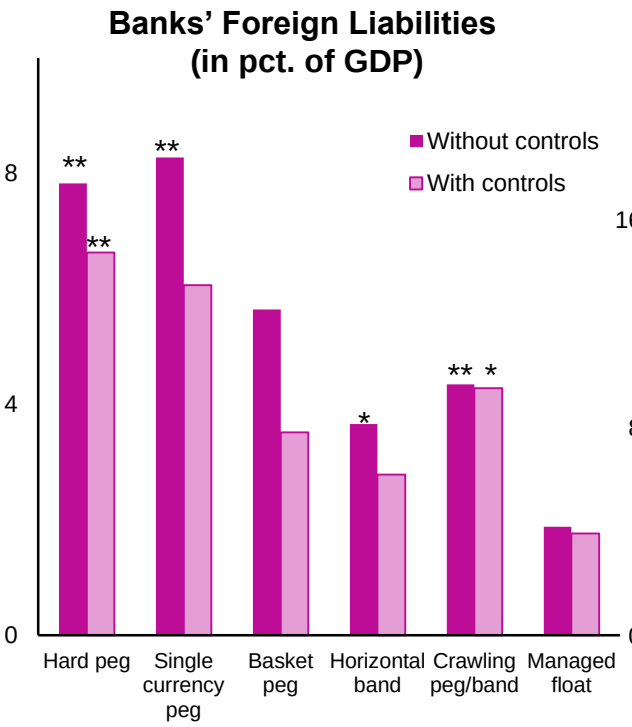
Notes: Source for bank, currency, and debt crises is Laeven and Valencia (2012). Growth collapses are defined as hose that are in the bottom fifth percentile of growth declines (current year relative to the average of the three previous years), and correspond to a fall in the growth rate of real GDP of about 7.5 percentage points. Regimes are lagged one period.
a/ In percent of exchange rate regime observations.
b/ In percentage points.

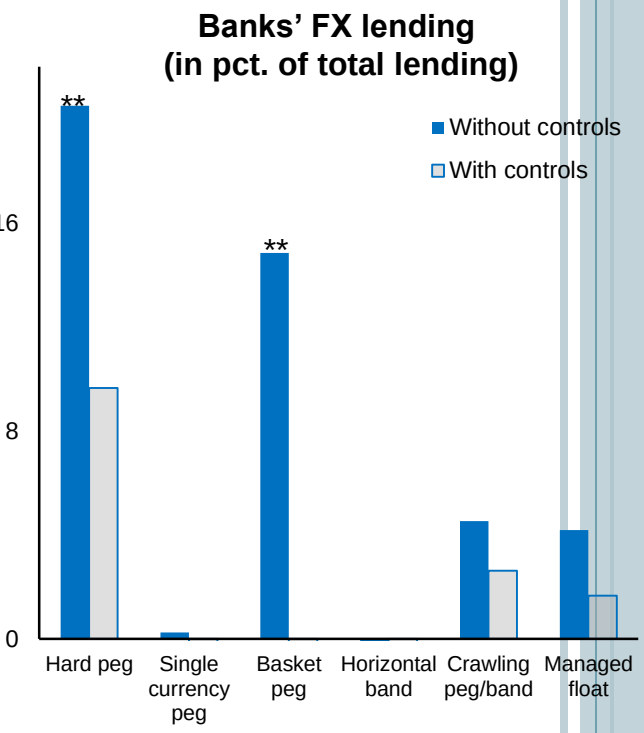
- Hard pegs: greater vulnerabilities and REER overvaluation, but lower frequency of banking and currency crises (than intermediate regimes); high incidence of growth collapses
- Managed floats: lower vulnerabilities and fewer crises than other intermediates

Estimation Results

Financial vulnerabilities are higher under less flexible regimes…including under hard pegs

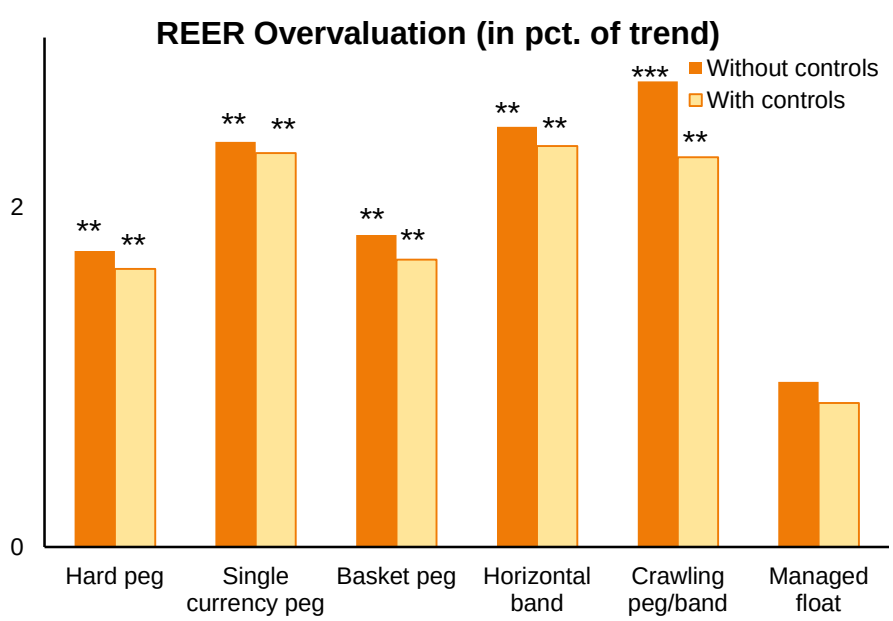


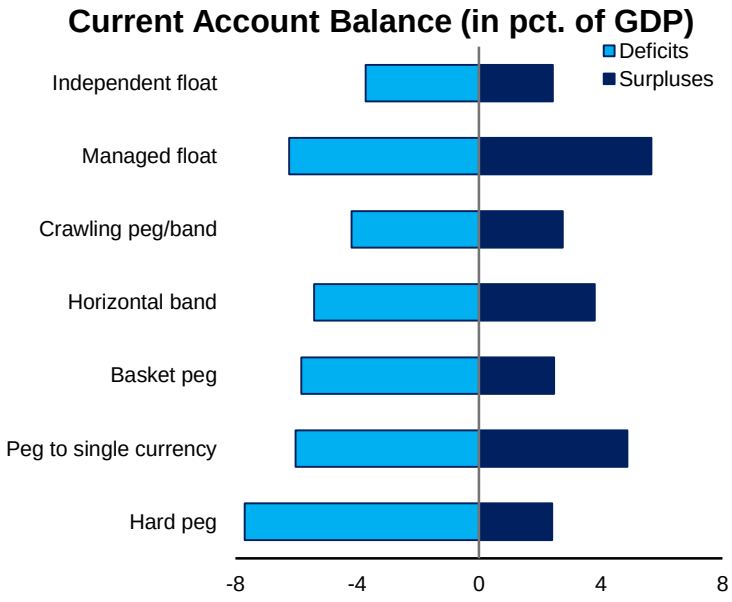




Note: Without controls includes real GDP per capita, region-specific and time effects. With controls adds real GDP growth, inflation, initial credit/GDP, net capital flows/GDP, bank foreign liabilities/GDP in the left panel; real GDP growth, REER deviation from trend, private credit/GDP in the middle panel; and real GDP growth, inflation, net capital flows/GDP, bank foreign liabilities/GDP right panel. Reference category is free float. ***, **, and * indicate statistical significance at 1, 5 and 10 percent levels, respectively.

Overvaluation is also higher under less flexible regimes and external adjustment is more difficult





Note: Without controls includes real GDP per capita, region-specific and time effects. With controls adds real GDP growth, inflation, trade openness, net capital flows/GDP in the left--hand panel. Reference category is free float. ***, **, and * indicate statistical significance at 1, 5 and 10 percent levels, respectively. Right-hand panel depicts the average surplus and deficit under different regimes in our sample.

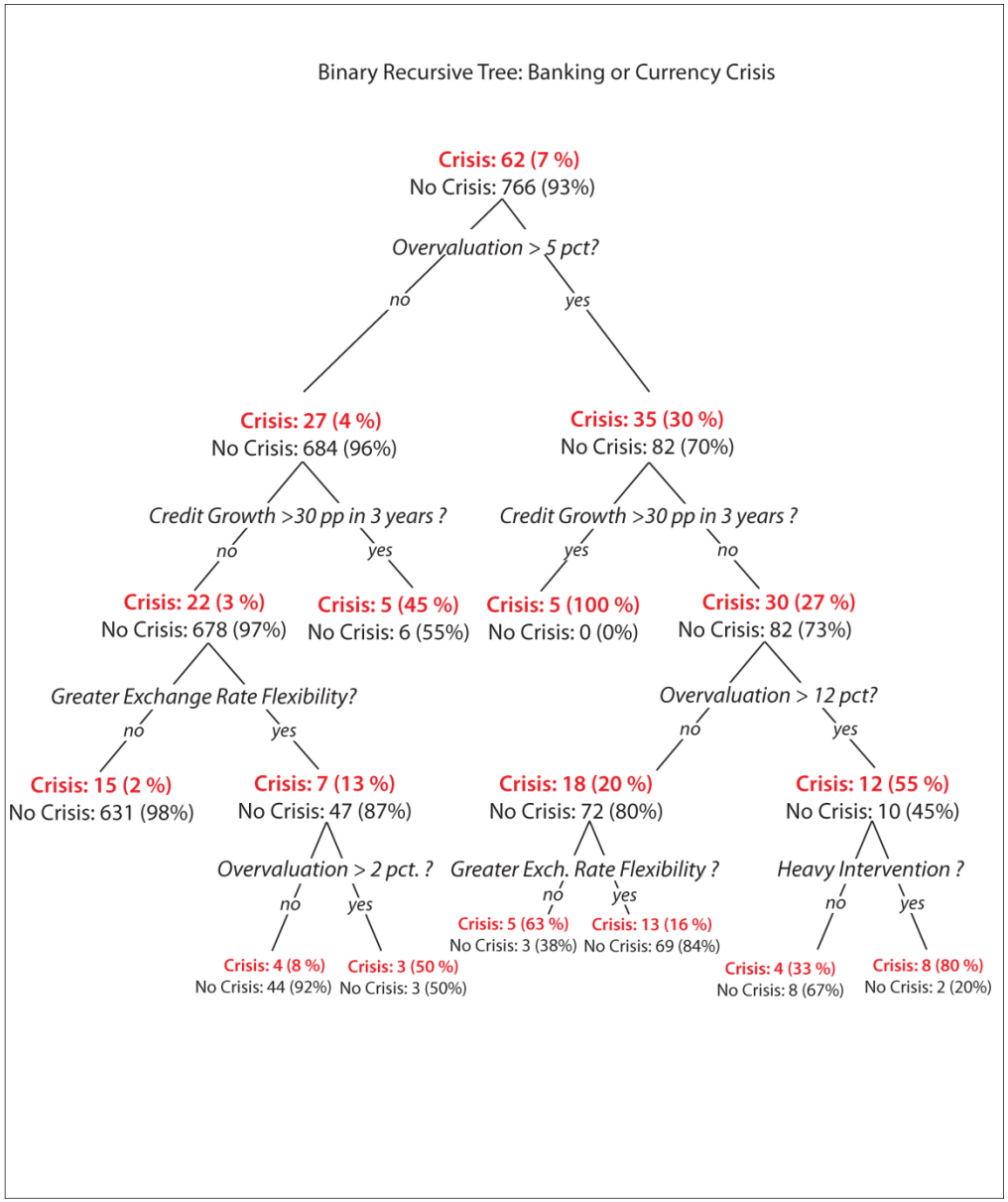
What about crisis susceptibility?

- Banking and currency crises
  - Basket pegs, bands, crawls significantly more prone to banking crises than floats
    - Estimates remain significant (for bands and crawls) when macroeconomic and financial vulnerabilities are included
  - Crawls significantly more likely to experience a currency crisis than floats (but mainly because of overvaluation)
  - Surprisingly, hard pegs are not more prone to banking/currency crisis than managed/free floats despite scoring worse on financial and macro risk indicators
- Sovereign debt crisis and growth collapses
  - Statistically insignificant differences between regimes for probability of debt crisis
  - But hard, single currency, and basket pegs are all more prone to growth collapses than managed or pure floats (even after controlling for other types of crises)
    - Likely because of loss of the nominal exchange rate as an adjustment mechanism

Are the results robust?

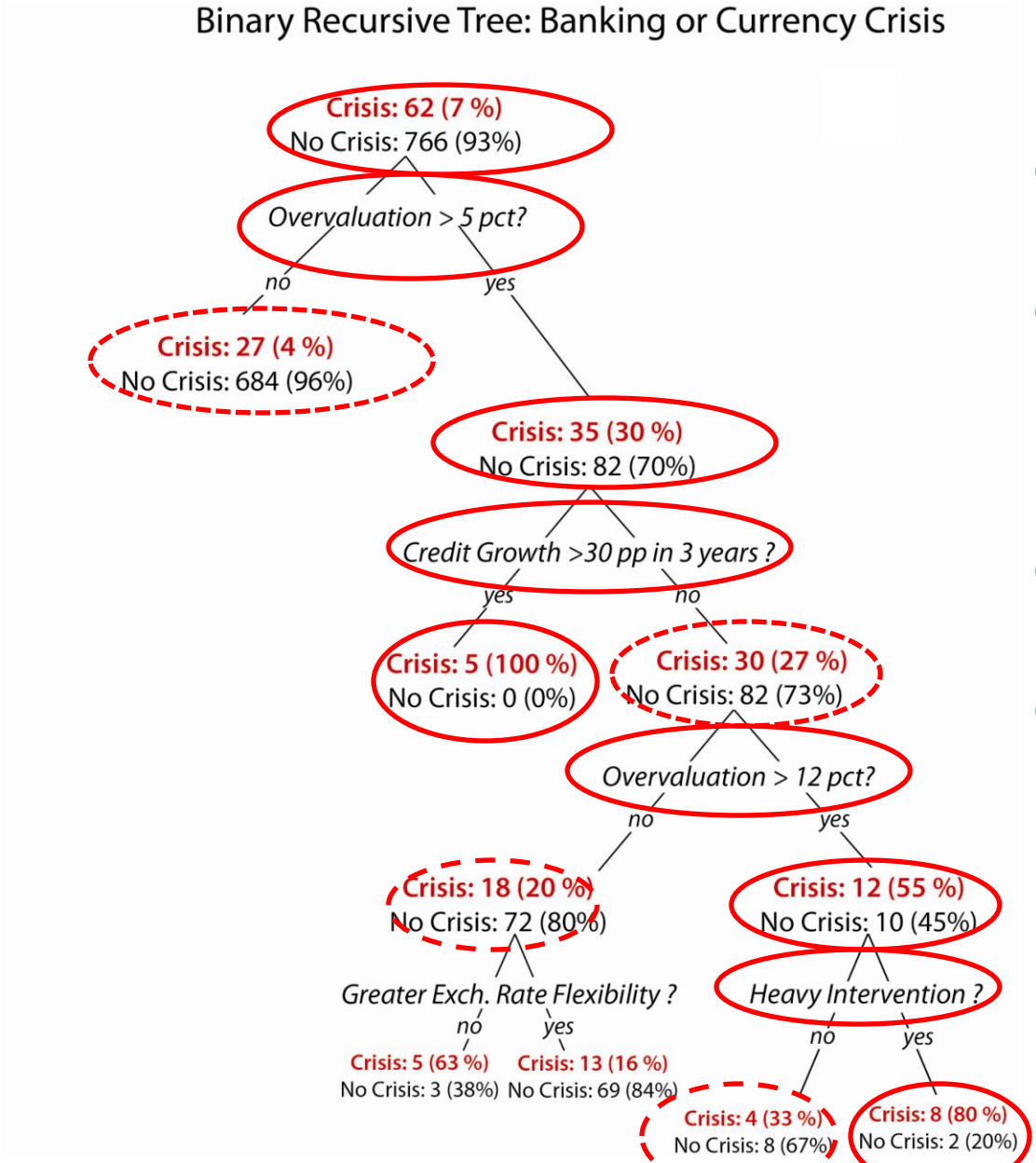
- Yes, for different specifications and endogeneity concerns
- And across different (de jure and Reinhart & Rogoff) classifications for less flexible regimes generally
- But inconsistent for "managed floats"
  - Banking crisis are significantly *more* likely than free floats under both de jure and RR classifications
  - Why? Most "managed floats" in de jure and RR classifications are coded as other less flexible intermediate regimes in IMF's de facto classification
  - "Managed float" is a nebulous category, with different meanings
    - Fischer (2008): "How should one classify heavily managed exchange rate regimes that are in principle flexible, but where the authorities intervene frequently and extensively?"

Where to draw the line?



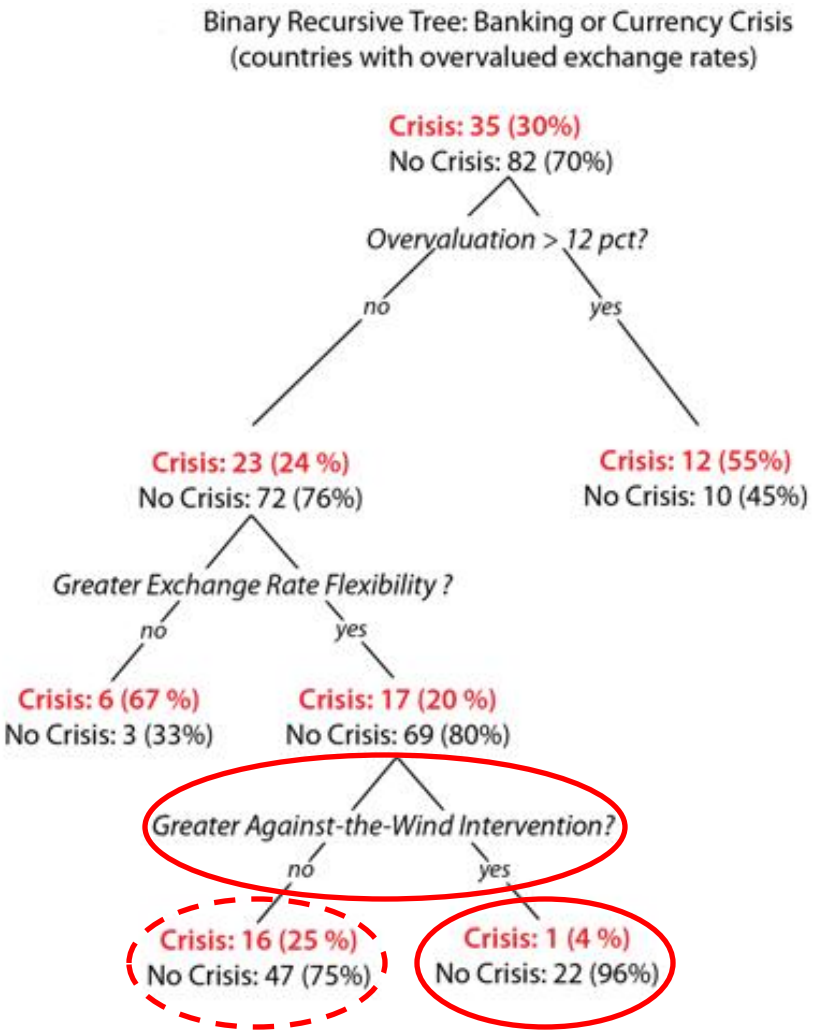
- Binary Recursive Tree
  - Allows for arbitrary interactions and threshold effects (e.g., exchange rate flexibility)
  - At each node, finds the variable and threshold that best discriminates (minimizes type I and type II errors) between crisis and non-crisis observations
  - Branching continues until penalty for tree complexity exceeds predictive gain

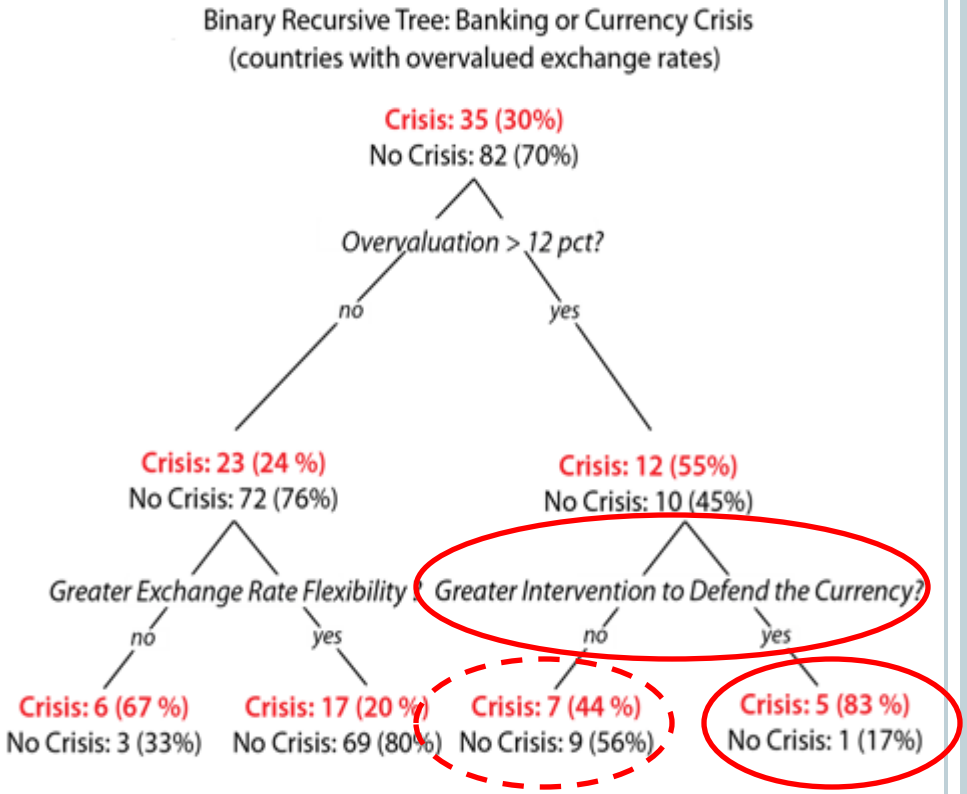
Where to draw the line?



- No simple dividing line (e.g., by NER flexibility)
- Complex interaction between overvaluation, financial vulnerability, NER flexibility, intervention
- Neither IMF nor RR regime classifications enter the tree
- Heavy intervention, greater crisis risk

Is intervention good or bad?





Conclusion

- Consistent with the bipolar prescription, free floats are the least vulnerable to crisis in EMEs
- But security of the hard end of the bipolar prescription appears to be largely illusory
  - Hard pegs exhibit significant macroeconomic and financial vulnerabilities
  - High costs of exiting such regimes imply that these vulnerabilities typically do not translate into banking or currency crises
  - But do make them more susceptible to growth crises
- What about managed floats?
  - "Canned" classifications provide contradictory results
  - No simple dividing line between safe and risky managed floats
  - What matters is whether the central bank intervenes to prevent overvaluation, and refrains from defending an overvalued exchange rate
- Practical challenges remain for managed floats:
  - Need to assess in real time whether capital flows are likely to be temporary or persistent
  - Whether the exchange rate is overvalued relative to its equilibrium value

Whatever exchange rate system a country has, it will wish at some times that it had another one

Stanley Fischer, 1999