Do We Really Know that
Currency Crises are Macroeconomic?

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Original idea of Krugman (1979):

- Demonstrate that sluggish macroeconomic behavior consistent with sudden crises
- Contrast between slow deterioration of fundamentals and discrete loss of reserves bound together by no (expected) arbitrage condition
- Many different models of fundamentals
  - Subsequent “generations” of models add different sluggish phenomena: political vulnerability stemming from macroeconomic conditions, weak banking systems, etc.
Basic Idea of this Talk

• Ask “Do We Really Know that Currency Crises are (mostly) Macroeconomic Phenomena?”
  
  o Question if there is substantive evidence that macroeconomic forces consistently help predict vulnerability to currency crises
Analogy in Tranquility

- Meese and Rogoff on floating exchange rates
  - Macroeconomic fundamentals do not help predict exchange rates
    *ex ante* better than random walk at horizons up to two years
  - Interpretation is that existing fundamental models are
    sufficiently poor as to be valueless, not that macroeconomics is
    ultimately irrelevant
Corresponding Question for Currency Crises

• Are extreme changes in exchange rate levels *ex ante* predictable on the basis of macroeconomic fundamentals?

• Important question, since these are often switches in exchange rate regimes.
  
  o Political and economic consequences of regime switches often high

  o Perhaps these were unavoidable in part simply because of difficulty of identifying crisis vulnerability
• Much work has gone into developing “Early Warning Systems” for currency crises, both academic and IFIs

  ○ New IMF department
Evidence

• Macroeconomic phenomena reasonably unhelpful in forecasting crises
  
  o Explaining time-series variation is difficult; early warning systems predict poorly out of sample

• Similarly difficult to explain cross-sectional incidence of crises
  
  o Hard to explain why some crises spread and others do not
  
  o Note: separate issue from “channels” debate (trade vs. financial)
Anecdotal Evidence

• No commonly accepted set of macro fundamentals to assess vulnerability to attacks currently exists, for low-inflation countries
  
  o Each new wave of currency crises seems to prompt new generation of currency crisis models

  o Macroeconomic fundamentals differed wildly across Asia 1997 somewhat across Europe 1992, Latin America 1994
“Signals Approach”

(Kaminsky-Reinhart and co-authors)

• Variables which “signal” when they exceed threshold

• Choose variables to minimize noise/signal ratio for ex-post crisis prediction

• Approach has many choice variables => fit is better in-sample than out-of-sample (probability threshold, event window, variable set, etc.)

• Results seem reasonably unstable, sensitive
“Exchange Market Pressure Approach”

(Eichengreen-Rose and co-authors)

- Probit Models also have many choices (weights of EMP, event threshold, exclusion window, variables in EMP, choice of regressors, etc.)

- Again, results are not robust
• Still, little evidence that either crises or “events” have substantial macroeconomic differences

  o Table 2, Figure 2 in original Eichengreen et al

  o Figure 7 in Eichengreen et al (1995); Table 2

  o Table 1 in Frankel and Rose (1996): poor predictive fit, even using in-sample forecasting
Time Series Forecasting: Most Crises are Unexpected.

- Berg and Pattillo (1999): Asia was essentially unpredictable using three different models

- Tornell on Asia: a number of small changes necessary to transform Sachs, Tornell, and Velasco Mexico model into model for predicting Asian crisis
Cross-Sectional Incidence: How do Currency Crises Spread?

- Why do some crises spread into regional crises?
  - EMS ‘92/’93; Mexico ’94; Asia ‘97

- Why do some crises spread into international crises?
  - Russia ‘98

- Yet many crises appear idiosyncratic, despite all expectations.
  - Brazil ‘99
  - Czech Republic ‘97
Few contagion models show evidence of macroeconomic fundamentals

• Some embedded in models with weak fundamentals
  
  o Eichengreen-Rose (1999) Table 1: weak macro (even after selection)

  o Glick-Rose Table 2

• Other models analyze channels without any model of incidence

  o Forbes
Summary and Conclusion

• Macroeconomic variables simply do not help predict currency crises very much out of sample
  
  o Mechanical early warning systems do not work very well

• Macroeconomics is similarly unhelpful in explaining why certain currency crises spread, while others do not
  
  o Possible to trace channels of crises that do spread
  
  o Bigger question: why do some crises spread and others remain idiosyncratic?
Making Progress

- Perhaps currency crises are more analogous to stock-market breaks than conventional models; micro-structural phenomena are important during periods of “high tension”

- What accounts for market vulnerability? Perhaps micro-structure

- Theory is ahead of empirics in modeling currency crises