Discussion:
Early warning systems for currency crises: A multivariate extreme value approach

Phornchanok Cumperayot and Roy Kouwenberg

Discussant: Magdalena Pisa
University of Luxembourg and Maastricht University

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Introduction

- *Objective* is to evaluate the tail dependence between currency crisis measures and economic fundamentals. Also, the authors propose an alternative EVT approach for currency early warning systems.

- *Challenge* is to predict out of sample currency crisis, which is a rare/ extreme event.

- *Relevant* for authorities concerned with currency crisis prediction. The authors report which economic indicator is reliable and how to search for other reliable indicators that is those which are asymptotically dependent.

Contributions

■ *Big question*:   Are currency crisis and extreme movements in economic fundamentals linked?

■ Why is it *interesting*:

1) first study to *evaluate tail dependence* between currency crisis and economic fundamentals.

2) novel *global* early warning system which identifies *universal* economic indicators that underline currency crisis.

3) identifies the *poor performance* of currency crisis indicators due to lack of asymptotic dependence.

Main findings

1) Only two out of 18 economic indicators – real interest rate and real interest rate differential – are *asymptotically dependent* with the currency measures:

   - most of the indicators are asymptotically independent that is any relationship with the currency crisis disappears further in the tails.

   - it explains poor out of sample performance of standard economic indicators.

2) Those economic indicators for which tail dependence is high are better in predicting currency crisis.

3) Both the existing approaches and the proposed EVT approach perform poorly out of sample in predicting currency crisis.

Comments (1/4)

1) The authors *pool* economic indicators to evaluate their tail dependence with currency crisis measures:

   ■ are the economic indicators *standardized*/ transformed *per country*?
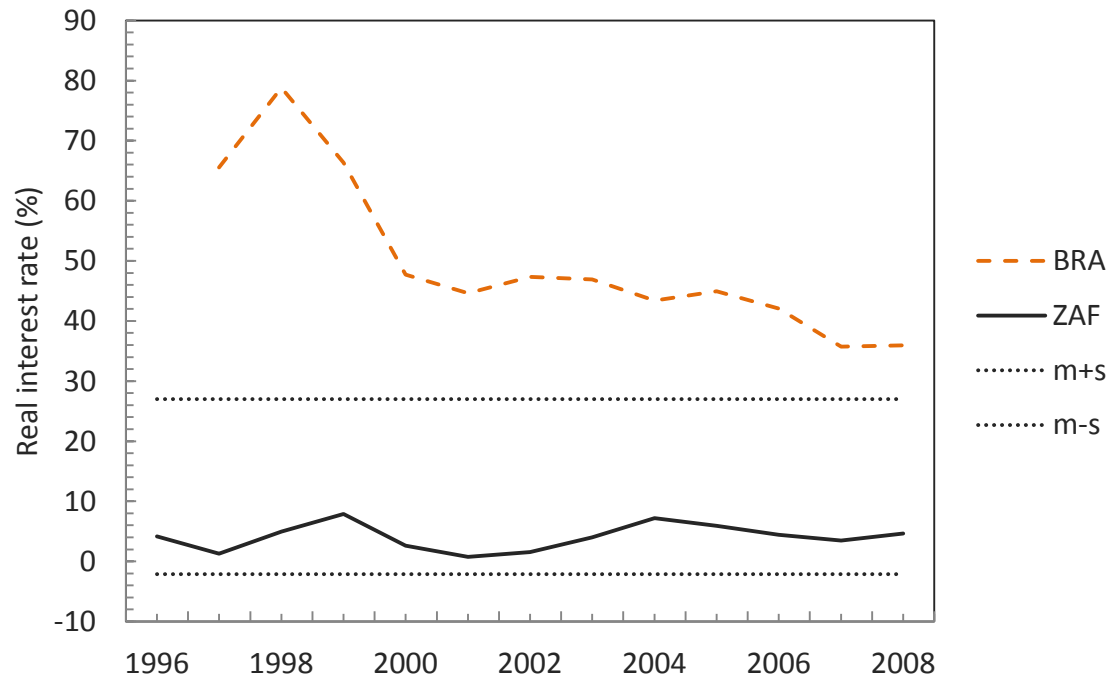
Comments (2/4)

1) Pooling – *cont*.

➡ i.e. emerging markets and South Africa vs. Brazil
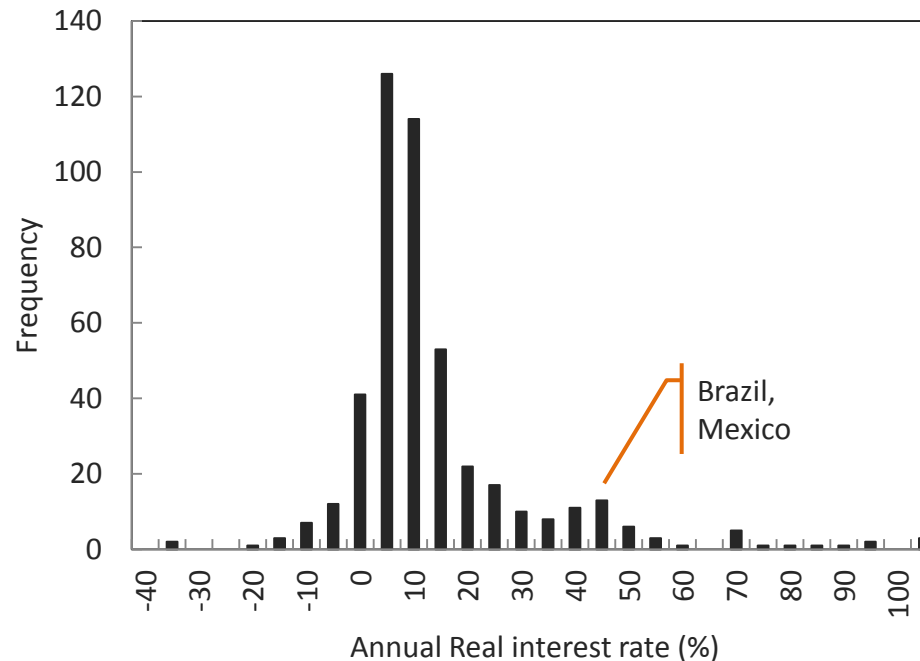
Source: Word Bank 1978-2008
Countries: Egypt, Indonesia, Israel, Malaysia, Pakistan, Philippines, Russian Federation, South Africa, Thailand, Zimbabwe, Hungary, Korea, Turkey, Argentina, Colombia, Ecuador, Paraguay, Uruguay, Venezuela, Brazil, Mexico

Comments (3/4)

1) Pooling – *cont*.

- *Caution*: something which may be extreme for South Africa/ Germany can be a regular outcome in Brazil.

- Was Brazil notoriously "warned" to be in danger? Were there other countries which notoriously contributed to the "false alarm" rate? Were there countries (maybe South Africa) in which crisis was notoriously not called?

- Is this something to worry about in the IMF data?

- Perhaps consider pooling countries with *same exchange rate regime* OR standardizing *comparable* (in terms of economic fundamentals) countries.

Comments (4/4)

2) Comparison of the proposed EVT method to Kaminsky, Lizondo, Reinhart (1998) was done only for one dimension, that is the *exchange rate return* dimension in which the proposed EVT method had the most success:

➡ A stronger claim would be that the proposed EVT method is superior in all dimensions (ER, EMP & REMP) to Kaminsky, Lizondo, Reinhart (1998).

3) Poor performance in the *out-of-sample test*: The authorities have the information about change in economic indicators in a real time (given appropriate time lag):

➡ Perhaps *updating* the time series, as the time goes by, could improve the poor out-of-sample performance?

Extension

1) The authors use single economic indicator for currency crisis prediction.

   ■ Similarly to *signaling approach* if an economic indicator has an extreme realization a signal is issued to warn about danger of currency crisis.

     This rather simplistic assumption ignores cases in which two or more economic indicators are high but not high enough to issue the signal separately.

   ➡ Is it the single economic indicator that carries the information or a *combination of those*?

   ➡ What about a *composite index* which would contain information from all the relevant economic indicators? i.e.:

$$I = (\text{Real interest rate}) \cdot (\text{Excess real M1 balances}) \cdot$$
$$1/(\text{Real bank deposits } (\Delta\%)) \cdot 1/(\text{Real exchange rate deviation})$$

Conclusions

- Interesting paper with promising analysis of the validity of early warning economic indicators.

- *Sad message*: the conventional and the EVT early warning systems fail.

- Contributions to:
  - *global* early warning systems for currency crisis.
  - a healthy critical look at the *reliability* of economic indicators used to identify a coming currency crisis.

- Policy relevant:
  - early identification of countries threatened by currency crisis which gives time to set *preventive measures* in place.