Cross-Country Causes and Consequences of the Crisis: An Update
by Andrew Rose and Mark Spiegel

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Can we design an “Early Warning System” based on the experience of countries during this crisis?

How did the crisis transmit? Should we look beyond the classical channels such as trade and finance?

RS (2010a,b,c): Investigate both questions

Clearly this is an important research agenda!
Big Picture Questions

1. Can we design an “Early Warning System” based on the experience of countries during this crisis?

2. How did the crisis transmit? Should we look beyond the classical channels such as trade and finance?

- RS (2010a,b,c): Investigate both questions
- Clearly this is an important research agenda!
What do they do in this paper?

- An update of the first paper
- Investigate the effect of many macroeconomic variables—vulnerability indicators—on the severity of the 2008–2009 crisis
- A non-result: No general pattern among 100+ countries that survives robustness; we still do not know which countries were hit hard (lower growth 2008–2009)
- Big blow to the “Early Warning System” idea
Overall Impression

- I think they have done everything possible within the realm of using cross-country data
  - 7 different measures for cross-country crisis intensity
  - 8 potential causes for the crisis that has been shown to have a significant effect for other researchers
  - 6 different country samples, check outliers
  - Different estimation strategies

- Big service to profession: Andy’s website! (all data is there)
Overall Impression

- I use their data set and also failed to generate a robust result for different samples with OLS.

- If OUR AIM is to make generalizations using 100+ countries about this crisis, we simply cannot.
Are we asking the right question?

- Do we really want to explain the intensity of the crisis for the developed world and emerging markets based on the same variables most of which are highly correlated?

- Clearly pre-conditions for the crisis were different; conditions for the U.S. and the EU do not describe other countries

- And we really want to understand rich countries this time around!
Why is this important?

Results are very sensitive to the sample (table 5a); some robust results broke down here

- This can be due to the fact that the determinants of the crisis differ across developed and developing world

- Or because there is a small sample bias
Multicollinearity and Micronumerosity

- Micronumerosity: “not having a lot of data”
  - Arthur Goldberger’s book, A Course in Econometrics
- Multicollinearity and micronumerosity:
  - Big standard errors; the effects of different variables are highly uncertain.
  - High $R^2$, high correlation between independent variables, low t-stats, low precision.
Indications of Multicollinearity and Micronumerosity: Table 5a

Table 5a, last row:
- Drop oil, poor, financial centers (which kills the only robust variables so far: Current Account and Regulation)
- Coefficient on “Current Account” go from 0.2 to 0.3; standard error go from 0.08 to 0.15
- Similar effect for “Credit Market Regulation”
- Overall R² stays at 0.37, when none of the variables are significant
- Observations go down from 75 to 41; not enough to identify the effect of 6 different variables in this regression
What can be done?

- More observations
- It would be good to report partial $R^2$ for every sample to gauge the explanatory power
- A Monte Carlo exercise: generate random fake data with actual data’s mean, std dev...run simulations 1000 times, see how many times you reject the null
- Beaton, Rubin, and Barone, 1976: SIMILAR IDEA, create perturbated data by adding noise to actual data and run simulations and measure rejections
What about crisis transmission?

- In their companion cross-sectional work they investigate the effect of financial linkages on crisis transmission and find no effect.
- It is hard to separate out the common shock (all developed countries asset markets hit) versus contagion from the U.S. via financial linkages.
- In a recent paper (Kalemli-Ozcan, Papaioannou, Perri) we show that conditional on the common shock, countries with higher BANKING linkages to the U.S. suffer more in terms of volatility; their synchronization increases.
What have we learned?

- This is a great paper that provides comprehensive data and insight on the issue.
- We learned that we cannot get a robust result in 100+ country sample for “the” determinant of the crisis.
- Should we take this result at its face value that we cannot provide an early warning system?
- Or maybe we do not have a result since we simply not have enough observations to get a definite answer for the rich countries?

- Highly correlated variables + low number of observations ⇒ high uncertainty, low precision.
As economists we like to prove the obvious; this time round we seem to be failing even in that.

Empirical macroeconomists generally blamed to be bad at proving things.

But I think we have a major disadvantage of having low degrees of freedom compared to applied micro economists.

Maybe one alternative to answer macro questions is to look at disaggregated/micro data from different countries.