

**Discussion of:
“Optimal Foreign
Reserves:
The Case of Croatia,”
by A. M. Ceh and I. Krznar**

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Introduction

- This paper provides a careful and sophisticated analysis of a very practical problem for any central bank
 - What is the optimal level of international reserves?
 - How to balance resource costs of holding more international reserves vs. welfare costs of being unprepared for a foreign exchange crisis?
- This is a new field and set of issues for me, and my discussion consists mainly of a set of clarifying questions
 - New terms: sudden stop and mother bank

Summary of Paper

- Facts about GDP growth and reserve holdings
 - Comparison of actual reserve holdings with alternative simple rules of thumb (pending formal optimality analysis)
- Accounting identities linking absorption with GDP on the product and income side

Summary (continued)

- The model with t-accounts and identities before and during the “sudden stop”
 - Households
 - Banking sector
 - Government
- Solution of model
 - Calibration
 - Results with Alternative parameters
- Model goes beyond previous literature by introducing explicit dynamic analysis

Results: Crucial Role of “Mother Banks”

- Foreign-owned banks play crucial role in Croatian banking system now, in contrast to crisis period of 1998-99
- Current Croatian reserve holdings far higher than necessary if mother banks act as lenders of last resort
- Actual reserves roughly equal to optimal level if mother banks do not play that role
- Actual reserves too low if there is a significant probability of a crisis in 2008 >> 1998 crisis
- A strong point of paper: extensive sensitivity analysis (see pp. 25-29)

Basic Question: Why Did 1998/9 Crisis Occur?

- To assess possibility of a new and greater sudden stop, we need more insight into 1998/9: What happened and why?
- Run on a domestic bank *Dubrovacka Banka*? Was this an idiosyncratic issue with this single bank that spread through a contagion effect?
- Or, like Thailand in 1997, was there a fundamental current account problem? (Thailand tied to dollar appreciation)

No Insight on Probability of a Future Larger Crisis

- Thailand-like contagion effects from nearby non-Euro countries?
- What are risks of a domestic bank run?
- No consideration that post-1999 arrival of mother banks make a domestic bank run less likely
 - In itself, arrival of mother banks is a vote of confidence in future stability of Croatian financial system
- Paper treats probability of a future crisis as independent of behavior of mother banks, but very existence of mother banks make a future crisis less likely

Analogies to Recent Bank Runs?

- Northern Rock in UK?
- Bear Stearns, subprime lenders in US?
- What is condition necessary for a domestic bank run to cause an international crisis?
 - What was the connection in 1998/9?
- Overall, paper's assumption of a probability of 0.1 (once-in-decade crisis is arbitrary and without foundation, just like Greenspan "three months of imports" rule

Interplay International Reserves & Domestic Bank Run

- Why does a domestic bank run become an international crisis?
 - Authors must be assuming that the bank run takes the form of withdrawal of foreign deposits
 - What if run consists only of withdrawal of domestic deposits, as in UK Northern Rock
- Symmetric question: how do international reserves protect against a domestic bank run (authors assume that the domestic bank run involves withdrawal of foreign deposits)

Motivation of Mother Banks

- Paper tends to present taxonomies of outcomes. Outcomes A, B, C, D depending on behavior of mother banks and likelihood of future crisis
- Not enough analysis of *likelihoods*
- Mother banks
 - Vote of confidence
 - Reputation effect spillover to other countries if not LOLR
- Future crisis: mother banks make less likely, greater integration of Croatia into European economy than ten years ago

More About the Possibility of a Future Crisis

- More about future crisis: with Thailand analogy, why doesn't paper discuss recent and prospective behavior of Croatian current account?
- Future crisis: What is condition of neighboring non-Euro countries, possibility of contagion from them?

Opportunity Costs of International Reserves

- Opportunity costs = difference between interest rate paid on country's liabilities ($r + \delta$) minus lower return received on reserves (r)
- The cost is measured by difference between euro long-term and short-term rates
- How is this related to domestic differential?
- Questionable assumption that long-term bonds issued to finance reserves become worthless after a stop
 - But if economy recovers in long run, why don't long term bonds regain their value?

Other Motivations for Holding Reserves?

- Paper treats the avoidance of welfare losses in a future sudden stop as the only reason to hold reserves?
- What about short-run stabilization of the exchange rate? Doesn't every country need reserves for that purpose?

Compare: OC of Holding Reserves for China

- By holding excess reserves, China prevents an appreciation of its own currency
- Thus major welfare cost is that artificially low exchange rate makes imports more expensive and exports less expensive
- Usual welfare analysis of free trade say that Chinese lose
- But China is not in a long-run competitive equilibrium. Government cares about creating jobs in export sector. Changes assessment of welfare cost

Smaller Questions

- P. 19, calibration measures output loss by comparing trend growth of nominal GDP vs. 1999:Q2 growth of nominal GDP
 - But why not real GDP? Didn't the devaluation raise inflation and thus the difference between nominal and real GDP growth?
- P. 1, what does it mean to call Croatia a “dollarized” economy? Exchange rate is set vs. the euro, not dollar. Aren't reserves held in euros, not dollars?

Conclusion

- These questions doubtless reflect my own lack of familiarity with this field, at least in part
- This paper identifies the big issues relevant for Croatian reserve holdings, the mother banks and probability of a future sudden stop
- But too much of the paper is a taxonomy of outcomes, and too little consists of discussion of the motivation of the mother banks and the relation of current conditions to those in 1998/9. Is a future crisis possible at all, and how would it occur?