

Discussion of Rasmus Fatum and James Yetman's paper

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The objective of the paper by Fatum and Yetman (F-Y hereafter) is to provide empirical evidence on whether the accumulation of international reserves by the central bank will lead to increased risk-taking by the private sector.

Why might such risk-taking come about? To the extent that international reserves provide free insurance to domestic economic agents against the risk of not being able to secure foreign exchange in the market during a crisis, the resulting moral hazard environment may lead these agents to accumulate more risk.

Such an outcome was debated in Sweden during the Great Financial Crisis. At one point the Riksbank borrowed international US dollar reserves to provide dollar liquidity to Swedish commercial banks, which had accumulated foreign currency exposures that they could not cover in the interbank market when this market froze during the early stages of the crisis. The then Deputy Governor Lars Nyberg pointed out that this amounted to a subsidy to the banks: "This cost is essentially an insurance premium, in which the banks are the insured party and in which the general public has so far paid the premium."² Note that in this episode it seems that commercial banks' foreign exchange exposures were build up in anticipation of bailouts by the Riksbank. In other words, risk-taking took place before the accumulation of reserves, but it nevertheless hints at a possible link between official international reserve holdings and risk-taking in the private sector. Hence the importance of the undertaking by F-Y in this paper.

To study the possible links between reserve accumulation and risk-taking, the authors adopt an event-study methodology whereby "events" are defined as days when changes in official international reserves are announced, and the empirical tests are based on comparing the value of indicators of risk-taking immediately before the event with their value immediately after the event. A systematic increase in the indicator of risk-taking after an announcement of an increase in international would suggest a causal relationship.

After a very thorough search using various proxies for risk-taking and conducting numerous robustness checks F-Y fail to find a robust and systematic relationship between reserve accumulation and their proxies for risk-taking. What can explain their results?

One possible explanation would be: because there is no relationship.

Could there, however, be another explanation for the inability of the empirical tests to discover a relationship between official international reserves and private sector risk-taking? I will propose six possibilities that could be the basis for further empirical exploration, five of which relate to the measurement of reserve accumulation, and one which suggests a slight modification of the indicator of risk-taking.

¹ The SEACEN Centre.

² Speech given on 17 May 2011 and accessed from http://www.riksbank.se/Upload/Dokument_riksbank/Kat_publicerat/Tal/2011/110517e.pdf.

Possible reasons for a lack of relationship, and some suggestions for extending the empirical tests

1. Does adding to “excessive” reserves provide additional insurance. Are there diminishing marginal effects?

Consider a central bank that has already accumulated a stock of reserves large enough to provide insurance against considerable risk-taking in the private sector. Would the accumulation of additional reserves lead to additional risk-taking of the same marginal magnitude, or might there be diminishing (or, alternatively, increasing) marginal impact? To test for this possibility, one could interact the variable indication that reserve accumulation has taken place with the size of the existing stock of reserves.

2. Dealing with traditional reasons for accumulating reserves

Traditionally authorities are thought to accumulate reserves to cover risks associated with exposure to fluctuations in trade or the access to international capital markets. This has led to defining reserve adequacy in terms of import cover (conventionally expressed as a minimum of three months) or in relation to the size of short-term external debt (the Greenspan-Guidotti rule of 100% cover). The effect on risk-taking of reserve accumulation by a central bank that has inadequate reserves based on these criteria would surely be different from the effect of reserve accumulation by a central bank that already has adequate reserves, which is thus accumulating “excessive” reserves that could more easily be used to bail out risk-taking by the private sector.

As in the previous case, there would a non-linear effect of reserve accumulation on risk-taking, and it could be captured by a threshold measure whereby the effect would only be present once the reserve level has exceeded the measure of adequate reserves according to the traditional reasons for holding international reserves.

3. Does the way reserves are accumulated matter?

Some authorities may accumulate reserves as a conscious policy to reach a level of reserves they consider adequate to deal with possible drains resulting from sudden export shortfalls or capital outflows. Others, however, build up (or draw down) reserves as a by-product of the pursuit of other policies. A clear example of an institution that falls into the second category is the Hong Kong Monetary Authority, which operates a currency board system in which changes in international reserves are completely endogenous to the evolution of the current and capital account balances of the economy and to valuation effects on the existing stock of reserves. To a first approximation, this does not depend on the HKMA’s assessment of what constitutes an adequate level of reserves.

In other cases, reserve accumulation may also be the consequences of the pursuit of other objectives. Central banks that manage their exchange rate may on occasion accumulate reserves in the process of countering what they perceive to be disruptive capital flows, even if they consider their reserve level to be adequate.

It is possible that reserve accumulation that is a by-product of other policies has a different impact on risk-taking in the private sector than accumulation that is the result of a deliberate move on the part of the central bank. If so, it would be useful to try to separate the two in the empirical analysis, possibly, as a first step, by conducting

the tests separately for countries that are classified as having fixed, or heavily managed, exchange rates on the one hand, and those that have freely floating exchange rate regimes on the other.

4. Is it reserve accumulation that matters, or is it the stock of international reserves?

Consider a central bank that has a large stock of international reserves, a stock that is considerably higher than a level based on “needs”. Suppose this central bank is running down its reserves in a particular period. Would this be a sign for the private sector to scale back on risk-taking because the central bank is walking away from providing insurance? I would argue not, if the level of reserves is still large enough to be used for assisting the private sector should the central bank so decide.

According to this argument, it is the level of reserves held by the central bank and not the act of accumulating or drawing down reserves that matters for private sector risk-taking, and it is much more difficult to deal with empirically than the case where it is accumulation that matters. The event-study methodology used by F-Y would probably have to be replaced by an empirical model of risk pricing where the level of reserves can have a potential role. This would have to be left for a separate paper.

5. Do banks assume that the central bank will come to the rescue irrespective of the current level of reserves since the central bank may be able to borrow reserves?

Recall the example from Sweden in the beginning of these comments. The Swedish central bank apparently believed it was necessary to help Swedish commercial banks by borrowing USD funds in the international capital markets that the banks could no longer access during the Great Financial Crisis. This appears to be a situation where the increase in international reserves comes after and not before the risk-taking of the private sector. In other words, it is the perceived willingness of the central bank to engage in a bailout that matters, and the level of reserves it holds on its balance sheet does not appear to be the determining factor. As in the previous case, investigating this possibility empirically is beyond what F-Y set themselves as a task.

6. Measuring the change in the variable that serves as a proxy for risk-taking

The methodology used by F-Y relies on indicators of risk-taking that are measured as a zero-one variable: zero if there is no change in the indicator from immediately before the announcement of a change in international reserves, and one if the change in the indicator suggests an increase in risk-taking. This way of measuring the presence of risk-taking gives no weight to the size of the change in the indicator.

It would seem to be a simple matter to weight the change in the observations so that larger positive changes in the indicator would get more influence in the statistical tests.

Final remarks

The paper by Fatum and Yetman deals with an important issue for the evaluation of the costs and benefits of official reserve accumulation. They have carried out a very

careful empirical investigation designed to determine whether such reserve accumulation leads to increased risk-taking in the private sector.

After conducting numerous robustness checks, they conclude that there is little systematic evidence that such a link exists. This is an important finding, but one that could be further investigated to ensure that it is warranted. In these comments, I have made some suggestions for additional robustness tests that could be tried in follow-up research. In the meantime, the conclusion of the Fatum and Yetman is worth repeating: "Our results suggest that there is no large effect of reserves accumulation on risk-taking."