Are All Measures of International Reserves Created Equal?
An Empirical Comparison of International Reserve Ratios

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Summary

When commenting on the adequacy of an economy's international reserves, economists and policymakers often have in mind a certain normalizing factor such as the number of months of imports. Even a cursory glance at the recent literature, however, leads to several normalizing factors including GDP, money and capital flow that are deemed important for assessing the adequacy of international reserves. With a multitude of measures of adequacy, which one should we use?

In this study, we examine the similarities and differences of seven international reserve ratios that are mentioned in the recent discussion of the hoarding of international reserves. Our exercise is empirical, and the results allow us to compare facts to the anecdotal hype about international reserve accumulation.

Using available annual data of 174 economies since 1957, we examine the similarities and differences of seven international reserve ratios. While individual international reserve ratios display substantial variations across economies, they are associated with an economy's characteristics including geographic location, income level, stage of development, degree of indebtedness, and exchange rate regime. The association pattern varies across time and type of international reserve ratios. Interestingly, there is only limited evidence that Asian and non-Asian economies have significantly different international reserve hoarding behavior. Different international reserve ratios exhibit different persistence profiles, but the evidence of dependence on structural characteristics is rather weak.

Our results suggest that the inference about whether an economy is hoarding too many or too few international reserves depends on the choice of international reserve ratio. For instance, it is possible that an economy is deemed to have accumulated an excessive amount of international reserves according to one ratio, but only a moderate amount according to the other.

In general, the evaluation of an economy's level of international reserve holding depends on the choice of international reserve ratios as well as an economy's characteristics. The empirical findings buttress the complexity behind the discussion of the adequacy of international reserves and the challenges one may face in building a general theory of international reserves. An implication of our results for assessing the adequacy of international reserves is that, in paraphrasing Frankel (1999), no single international reserve ratio is right for all economies at all times.