

Is Bigger Always Better?
Optimal Foreign Reserve Management in Emerging Economies

By

Yu-chin Chen and Sebastian Fossati *

Abstract

A key lesson brought forth by the Asian financial crisis in 1997-98 is that prudent management of a country's asset and liability positions can help reduce a country's vulnerability to sudden withdrawals of foreign capital, and that it may even prevent such withdrawal from happening in the first place. As such, many post-crisis countries have taken up a fervent interest in the management of their international reserves and external debt positions. In particular, the rapid stockpiling of foreign reserves in several East Asian countries has attracted significant international attention and policy debates. It raises the question of whether such high level of reserve holdings is optimal for the particular countries, and also creates concerns for other emerging economies about whether they should follow suit.

While large reserve accumulations may stem from precautionary motives, especially in countries with conditional access to international capitals and excessive short-term liabilities, reserve-holding may incur substantial costs.¹ Rodrik (2006), for example, estimates the cost of excess reserves – defined as the amount of reserves beyond what is required to satisfy three months of imports – to be up to one percent of developing countries' GDP.

What motivates some countries to engage in such a costly policy? In addition, why have reserve holdings shown such a dramatic increase in some regions but not others? And why do they happen now and not before? Traditional models may justify different equilibrium levels of reserves, yet they cannot adequately explain the ten- to twenty-fold increases observed recently in

* Corresponding Address: Department of Economics, Box 353330, University of Washington, Seattle, WA 98195-3330. Email: yuchin@u.washington.edu and sfossati@u.washington.edu.

¹ See, for example, Aizenman and Marion (2003), Aizenman, Lee and Rhee (2004), or Li and Rajan (2005), for a discussion of the precautionary motives for reserve accumulation.

some East Asia countries.² In this paper, we develop a game-theoretic model with asymmetric information and consider the signaling role of reserves. We show that in a framework where countries with differing unobservable fundamentals compete for international capitals, some of the observed patterns discussed above will emerge even if reserves are assumed to offer no intrinsic value. In our model, international investors face uncertainty about the real returns of their investment, both with regard to the sustainability of the exchange rate value and country-specific risks. We find that, under plausible conditions, an exogenous increase in one country's reserve stock can induce a regional expansion in reserve holdings. In addition, a shock to the return risk premium demanded by investors, if it is large enough, can result in a substantial increase in reserve holdings, fitting the pattern we observed in post-crisis East Asia.

² Aizenman and Marion (2003), for example, identified a significant increase in reserve holdings in East Asia since 1997 that cannot be explained by the same factors that explain demand before the Asian crisis.