Reply to Referee Report #2

I would like to thank the referee for reading my paper and providing concrete comments and feedbacks which will help me improve and revise my paper. However, my responses to the points raised by the referee are as follow.

1. After the Asian crisis of 1997, many emerging countries, especially Asian countries, started to accumulate international reserves as a lesson learned from the crisis. It is obvious that such a behavior has resulted in growing global imbalances, which directly or indirectly contributed to the housing bubbles in the US leading to the global crisis after 2007 (Caballero and Krishnamurthy, 2009). Many economists after the crisis have moved towards analyzing the US crisis showing some sort of herd behavior. If we just look at the current crisis and adopt the policy of rewinding the global imbalances, it seems to impact the banking system of emerging countries, which means another crisis in emerging countries. In this context, the contribution of my paper is to look at the banking system of those countries, which were serious affected by the Asian crisis, amidst reserve accumulation by their central banks. That crisis was a turning point for reserve accumulation. Although many emerging countries of Asia are not in crisis and have adopted flexible exchange after 1997, they have been accumulating international reserves massively. Such an accumulation successfully helped them to weather out the adverse impact of the current global crisis of 2007. Hence, the banking system of these countries were found least affected by the current global crisis because of having the cushion of international reserves and the domestic liquidity generated by it. As my paper found out, since international reserve accumulation could generate domestic liquidity in the banking system, it even supports to maintain domestic financial stability in addition to external stability. Hence, the relevancy of reserve accumulation has increased because of the volatile capital flows and volatile exchange rate. There is no strong lender of last resorts available in the current state of asymmetric international monetary system. However, in revision, the contribution of the paper will be spelled out more clearly.
2. Related to the first point, the motivation of the paper is obviously to see the impact on the banking system. Experience and evidence have shown that the current global financial system is prone to various types of risks such as currency, flight, fragility, contagion and

sovereignty and interplay among those risks (see Grabel, 2003). In this context, a stock of foreign currency reserves provides a necessary international liquidity for self-insurance i.e. “the key to self-protection” (Feldstein, 1999), since local currencies cannot take over such a role in international payments. For this, Ocampo (2007) argues that foreign currency reserves act as a collective insurance against a balance of payments crisis, when there is a lack of effective mechanism for macroeconomic policy coordination. Feldstein (1999), Rajan (2008) and Banchs and Mollejas (2010) also view that the holding of foreign currency reserves appears to be essential in the world of the asymmetric monetary system for emerging and developing countries, because of a lack of credible international lender of last resort and monetary cooperation at the regional level. The financial stability role of international reserves is also highlighted by Stiglitz and Greenwald (2010), Obstfeld et al.(2010), Hviding et al.(2004), and Jeanne (2007). Moreover, the foreign currency reserves can also play an important role as “lender of last resort” in foreign currencies and the mitigation of terms of trade shock (Aizenman, 2006). Some studies such as Rodrik and Velasco (1999), Edwards (2004), and García and Soto (2004) found that the probability of capital account reversal declined with the holding of sufficient foreign exchange reserves. It is observed that countries, with a large foreign currency reserve, are less likely to be the object of a currency attack (Feldstein, 1999; Cheung and Qian, 2009). Along their line, my paper has established a channel through which international reserve accumulation can maintain financial stability, which is through helping to increase domestic liquidity in the banking system. This type of motivational factors will be clearly mentioned while revising the paper.

3. As regards the Ho and MaCauley (2009)'s paper, they examined credit growths and reserve accumulation in a dozen Asian countries by just plotting average bi-variate relationship between these two variables in one section of their paper. There is no detailed econometric model and methods in their study.
4. Since there are not many studies directly related to my paper, I just incorporated Ho and MaCauley (2009)'s paper. However, it could not be good comparable for my paper. Moreover, a paper by Mohanty and Turner (2006) is also somehow related to our but this also just provides some descriptive statistics without any econometric models. Obviously, if one looks at the balance sheets of the banking system, most important variables are

deposits, credits and liquidity. Other variables could be capital and non-performing assets of the banking system. But, the major variable from the banking system, which could generate up and down in the economy, is the private sector credits. And, the variable important for sustainability and stability of the banking system is liquidity. It has been proved that disappearance of liquidity easily generate financial instability and crisis in the economy. Hence, after the recent crisis of 2007, the new regulation has imposed to have a higher liquidity requirement for the banking system because capital adequacy ratio didn't prevent the financial system from being illiquid.

5. With regard to theoretical foundation, I have presented the balance sheet linkage between central banks and the banking system. Although it is not explained explicitly, which I will do in revision, such a linkage can be easily linked to the Theory of High Powered Money. In revision, I will employ this theory and replace section 2, although there are quite the same in a basic sense. In my knowledge, I do not know any other theories in this regard despite being an important area for research. I would welcome any suggestions for this.
6. NDA in section 3 stands for net domestic assets of central banks. It will be clarified in revision.
7. I chose those 5 countries which were seriously affected by the Asian crisis of 1997, which changed the behavior of reserve accumulation. On the other hand, these countries are highly bank-based. My interest is to look at the changing behavior of the banking system in the countries which were affected by the crisis to examine their behavior in the post crisis period. However, this study could be extended to other countries, which is my future research agenda.
8. I will explain the hypothesis more clearly by linking with the theory in revision.
9. The Stationarity test will be done and presented in revision and random effects will be also shown for comparative purposes if necessary.
10. Regarding the endogeneity issue, I think that international reserve accumulation by the central bank could be taken as an exogenous variable for the banking system. Reserve accumulation occurs through current account surplus and capital inflows, which could be exogenous behavior for the banking system. Since foreign currencies are not used domestic payments, these finally end up with the central banks, after increasing the balance sheet of the banking system. According to the Intertemporal theory of current

account and Keynes' National Income Identity, the current account is considered to be affected by savings and investment, and budget deficit, not by the banking sector's behavior. And, according to Theory of Carry Trade and Uncovered (as well as Covered) Interest Rate Theory, capital inflows are influenced by interest rate differentials (Baillie and Chang, 2011 and Brunnermeier et al. 2009), not by the balance sheets of the banking system. Based on the classical theory, however, one can argue that saving and investment depend on interest rates set by the banking system. But, considering the current practice of monetary policy, and based on the New Keynesian Theory and Post Keynesian views, it can be assumed that the interest rate is highly influenced by monetary policy decisions. On the other hand, it is true that once the foreign currencies enter into the economy, it comes to the banking system first. The banking system cannot deny it because of being an important part of the payment system in the economy. Hence, I think that endogeniety may not be a serious problem in my estimation. In case of endogeneity, one can think of estimating a VAR model, which could be done, but we need the data in a higher frequency to increase the sample size. Since we are considering annual data in terms of ratio of GDP, the paucity of data may hinder the application of VAR. In this line, I will response the endogeneity issue in the text in revision.

1. Finally, once again I would like to thank the referee for pointing out areas for improving the paper. I will revise the paper to incorporate many points raised by the referee.

References:

Aizenman, J. (2006). International reserves management and the current account. NBER Working Paper 12734.

Baillie, R.T., Chang, S.S., 2011. Carry trades, momentum trading and the forward premium anomaly. Journal of Financial Markets 14, 441–464.

Banchs, A. G. and Mollejas, L. M. (2010). International monetary asymmetries and the central bank. Journal of Post Keynesian Economics, 32(3):467–496.

Brunnermeier, M.K., Nagel, S., Pedersen, L.H., 2009. Carry trades and currency crashes, in: NBER Macroeconomic Annual 2008. University of Chicago Press. volume 23.

Caballero, R. J. and Krishnamurthy, A. (2009). Global imbalances and financial fragility. American Economic Review: Papers & Proceedings, 99(2):584–588.

Cheung, Y.-W. and Qian, X. (2009). Hoarding of international reserves: Mrs Machlup's wardrobe and the Joneses. Review of International Economics, 17(4):824–843

Edwards, S. (2004). Thirty years of current account imbalances, current account reversals and sudden stops. IMF Staff Papers, 51(10):1–49.

Feldstein, M. (1999). A self-help guide for emerging markets. Foreign Affairs, 78(2):93–109.

García, P. and Soto, C. (2004). Large hoardings of international reserves: Are they worth it? Central Bank of Chile Working Papers No.299, pages 1–45. Retrieved from http://www.bcentral.cl/estudios/documentos-trabajo/pdf/dtbc299.pdf.

Grabel, I. (2003). Averting crisis? Assessing measures to manage financial integration in Emerging Economies. Cambridge Journal of Economics, 27:317–336.

Ho, C. and McCauley, R. (2009). The domestic financial consequences of reserve accumulation: Some evidence from Asia. In Rajan, R. S., Thangavelu, S., and Pariduri, R. A., editors, Exchange Rate, Monetary and Financial Issues and Policies in Asia, pages 117–153. World Scientific, Singapore.

Hviding, K., Nowak, M., and Ricci, L. A. (2004). Can higher reserves help reduce exchange rate volatility? IMFWorking Paper WP/04/189. Retrieved from http://www.imf.org/external/pubs/ft/wp/2004/wp04189.pdf.

Jeanne, O. (2007). International reserves in emerging market countries: Too much of a good thing. Brookings Papers on Economic Activity, 1:56–79.

Mohanty, M. S. and Turner, P. (2006). Foreign exchange reserve accumulation in emerging markets: what are the domestic implication? BIS Quarterly Review, pages 39–53. Retrieved from http://www.bis.org/publ/qtrpdf/r_qt0609f.pdf.

Obstfeld, M., Shambaugh, J. C., and Taylor, A. M. (2010). Financial stability, the trilemma, and international reserves. Journal of Macroeconomics, 2(2):57–94.

Ocampo, J. A. (2007). The instability and inequities of the Global Reserve System. DESA Working Paper, 59.
Retrieved from http://www.un.org/esa/desa/papers/2007/wp59_2007.pdf.

Rajan, R. S. (2008). Monetary and financial cooperation in Asia: Talking stock of recent on-goings. International Relations of the Asia-Pacific, 8:31–45.

Rodrik, D. and Velasco, A. (1999). Short-term capital flows. In Annual World Bank Conference on Development Economics. The World Bank.

Stiglitz, J. E. and Greenwald, B. (2010). Towards a new global reserve system. Journal of Globalization and Development, 1(2):1–26