KIEP

WORLD ECONOMY UPDATE

March 8, 2016 | Vol. 6 No. 6

Time to Rethink Monetary Policy in Emerging Economies: Touching the tip of an iceberg

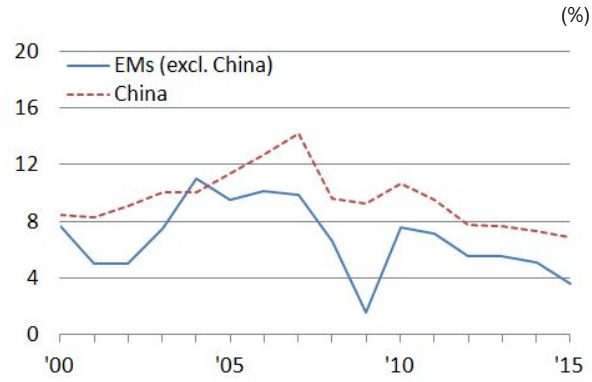
ISSN 2233-9140

LEE Il Houng President of Korea Institute for International Economic Policy (ilhoung@kiep.go.kr)
KIM Kyunghun Research Fellow, International Finance Team, Department of International Macroeconomics & Finance (khkim@kiep.go.kr)
KANG Eunjung Senior Researcher, International Finance Team, Department of International Macroeconomics & Finance (ejkang@kiep.go.kr)

The global economy appears to be trapped in a low growth state due to structural impediments that have accumulated over the last two decades. Since the global financial crisis, expansionary macroeconomic policies have provided only temporary relieve but fell short of fundamentally addressing the global demand deficiency. Authorities have gained some time through unconventional monetary policy (QE) but the latter is not without risks. The ongoing normalization in China with respect to investment growth and in the United States with respect to monetary policy should thus be regarded as necessary. Further delay would likely have tipped the balance from a net positive to a net negative effect on the global economy.

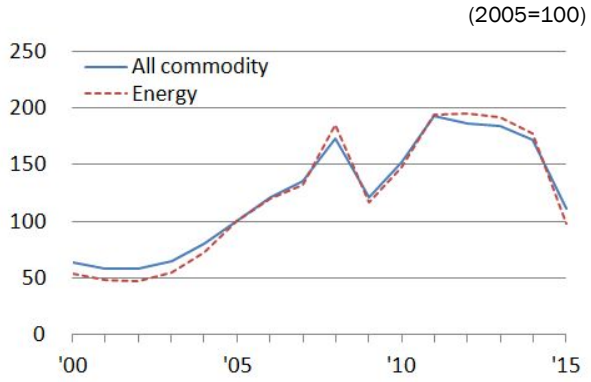
However, in the short run, there are costs. The slowdown in China played its role in the sharp drop in energy and commodity prices (along with global oil supply conditions), in trade and its associated investment flows. The termination of quantitative easing and the beginning of the rate hike in the United States is tightening liquidity conditions in emerging economies (EMs). The latter is adding burden on EMs who are already struggling to cope with the spillovers from slowing China. Furthermore, if global financial instability lingers on beyond the necessary correction, it could start exerting its own negative influence on the already weak recovery.

Chart 1. China and EMs growth rate



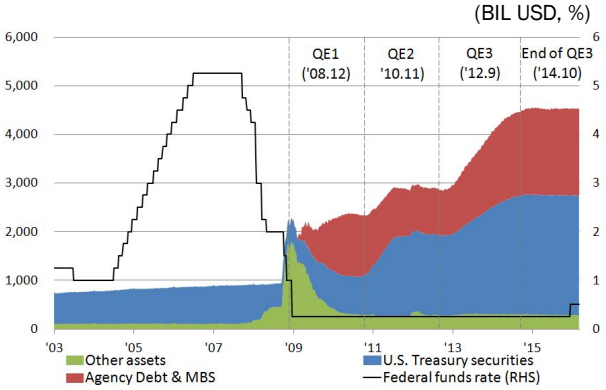
Note: EMs growth rate based on PPP.
Source: CEIC, IMF WEO.

Chart 2. commodity prices index



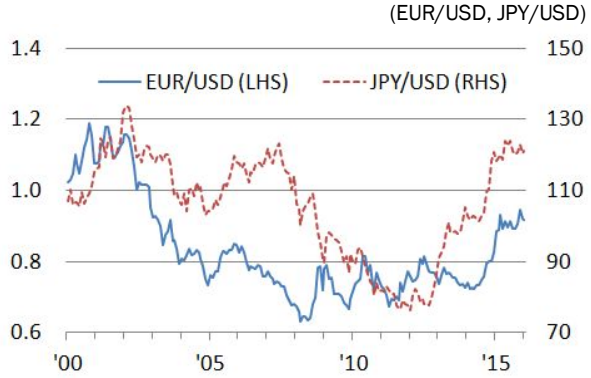
Source: IMF IFS.

Chart 3. Assets of the Federal reserve and federal funds rate



Source: FRB, Bloomberg.

Chart 4. Exchange rates

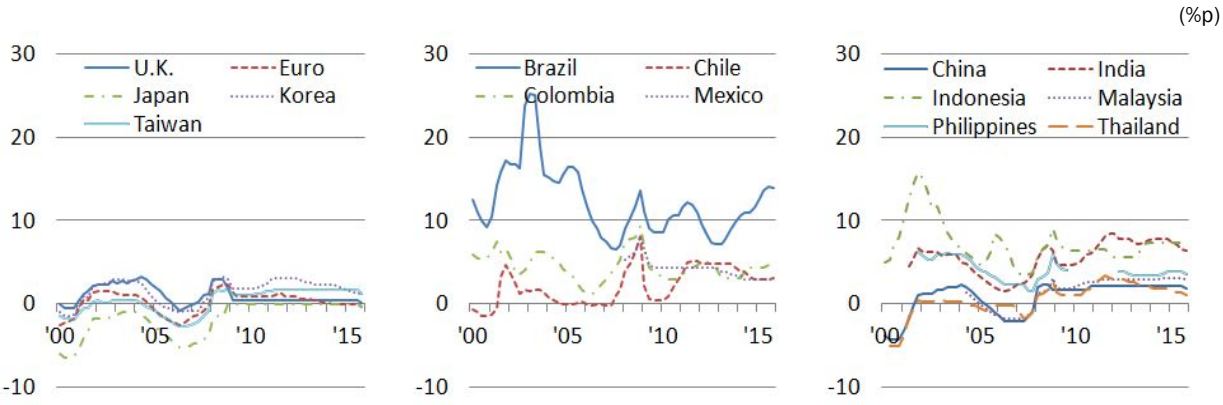


Source: IMF IFS.

This normalization process brings to surface an important policy challenge faced by emerging economies: the loss of monetary policy independence. Emerging economies, and/or small open economies without currency convertibility, have benefitted from ample global liquidity accompanied by strong global demand. While these flows also complicated their macroeconomic management, these challenges were overshadowed, at least prior to the global financial crisis, by robust economic growth. With economic activities slowing, the loss of an important policy instrument is hitting home. Irrespective of the policy regime, i.e., fixed exchange rate or inflation/monetary aggregate targeting, their interest rates are increasingly being influenced by those in advanced economies (plus individual country risk spread).[1] This is problematic as their business cycles are not necessarily synchronized with that of the United States.

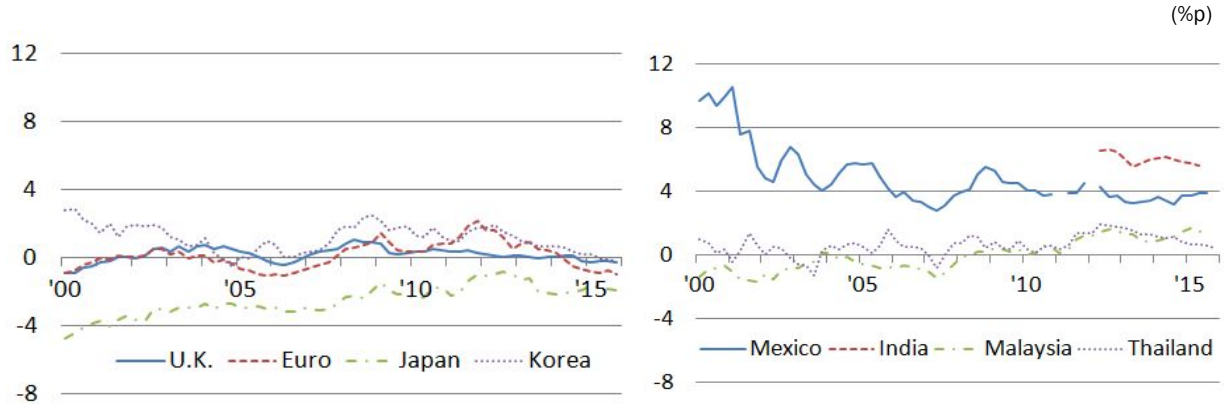
[1] Rose, A.K. (2014), "Surprising similarities: Recent monetary regimes of small economies," *Journal of International Money and Finance*, 49, 5-27 and Rey, H. (2015), "Dilemma not Trilemma: The global Financial Cycle and Monetary Policy Independence." NBER Working Paper.

Chart 5. Policy rate gap



Note: the difference between each country's policy rate and federal funds rate.
Source: IMF IFS and author's calculation.

Chart 6. Long term interest rate gap



Note: Difference between US and respective country's long term government bond yields
Source: IMF IFS and author's calculation.

An associated challenge is withstanding two withdrawal syndromes from normalization: to overcome the heavy reliance on the US and China's demand and to become resilient over volatile and tightening global liquidity condition. Although it is unclear to what extent the European Central Bank (ECB) and Bank of Japan's continued quantitative easing against the normalization efforts by the US will replace the US dollar in capital flows, certainly the end of QE in the US coincided with the weakening of the yen and the euro against the US dollar. Increasing volatility (as measured by VIX for example) is discomforting for EMs who are more exposed to large capital outflows than they were a decade ago under a patchy global financial safety net.

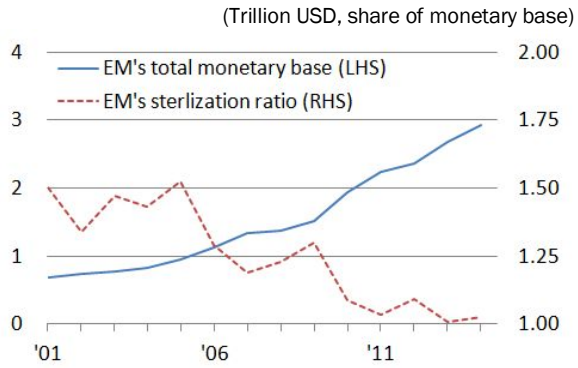
Capital flows and impact on EMs

Excessive liquidity expansion for a prolonged period in advanced economies has exacerbated EMs' problem. For example, total financial assets in the United States stood at US$29 tril-

lion 15 years ago (i.e., 2001). Last year, it reached US$59 trillion (or US$20 trillion and US$44 trillion, respectively, excluding assets held by the financial sector). This increase of US$30 trillion during this period may not look large to the US economy (an increase from 1.9 times US GDP to 2.4 times GDP), but the spillover is large for EMs, especially when measured against their GDP.

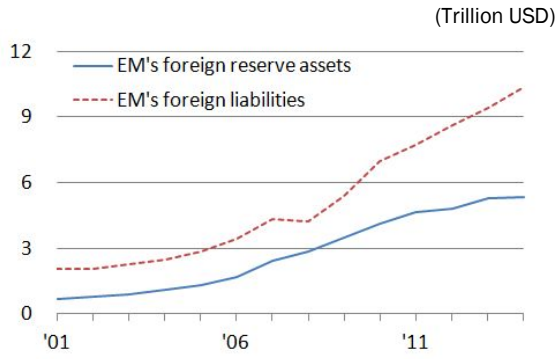
More specifically, foreign liabilities of key EMs[2] (accounting for about 2/3 of all emerging and developing economies) have increased from US$2.1 trillion to US$10.4 trillion. On the positive side, this represents globalization and trans-border resource allocation. However, it also means exposure to larger potential capital outflows. During the same period, their combined foreign reserve assets rose from US$0.7 trillion to US$5.3 trillion, contributing to more than 100 percent of their base money growth. Base money, in turn, rose from 20 percent of GDP to 31 percent of GDP during the same period.

Chart 7. EM's total monetary base and sterilization ratio



Source: CEIC and author's calculation.

Chart 8. EM's total foreign reserve assets and foreign liabilities



Source: CEIC.

Management of monetary aggregates in these countries takes place largely through sterilization operations. Sterilization (measure limited to sterilization using central bank bills and government bonds) as share of base money peaked in mid-2000s, but then declined during the post global financial crisis as EMs started to expand monetary aggregates as a countermeasure to economic slowdown. Those who have fallen most are Brazil, Indonesia, Mexico, and the Philippines. The increase in foreign liabilities and unwinding of sterilization of intervention imply that these economies are more exposed to foreign exchange shocks or rapid capital outflows.

Not always an efficient allocation of capital across borders

Proponents of capital account liberalization base their argument, rightly, on the need to promote efficient capital allocation across borders. Capital flows have played an essential role in supporting growth in developing economies. However, they are not always welcome in small open economies where they can not only destabilize but also displace or replace domestic capital. For example, capital inflows to a small open economy currently at internal and external balances may experience

[2] Brazil, Chile, China, Colombia, India, Indonesia, Malaysia, Mexico, Philippines and Thailand.

asset price bubble, bond price hike, or credit expansion requiring adjustments by domestic agents (see table below). In particular, inflows to a small open economy due to liquidity expansion in originating economy without underlying productivity differences (i.e., net savings) could induce a current account deficit in the recipient country inducing the capital to return to the originating country through a current account surplus. In this case, capital inflows will replace investment in the recipient country with corresponding increase in its foreign liability, undergoing potentially a costly adjustment, only to return to the original steady state. Potential 3 policy options are shown below as illustrative scenarios.

	Illutrative Scenario: Inflows to a country in Equilibrium				Balance Sheets of 10 Emerging Economies, 2001-2014 (in USD bn)			
	Balance of payments				Balance of payments			
	Current account	-100	①	Current account	Current account	1,836		Current account
	Capital account				Capital account			
	Non reserves			Foreign liabilities	Non reserves	-3,816	8,294	Foreign liabilities
			100	less FDI			4,012	less FDI
	Reserve assets				Reserve assets	-4,675		
	Banking system				Banking system			
	NFA	100	②③	NFA	NFA (Central B)	4,675		NFA
		-100	①		NFA (Deposit B)			
	NDA				NDA	4,871		
	NDC	100	②		NDC (Non-steril)	3,253		
			100	Deposits	Credit	196	4,012	Deposits
	Central bank	100	-100	①	Central bank	1,421		
	Financial system				Financial system			
	Nonresident		100	Nonresident	Nonresident		4,012	Nonresident
	Resident	①	-100	Resident	Resident		3,449	Resident
		②	100					
①	Exchange rate appreciation; current account deficit				Total inflows of $10.1 tr, of which $1.6 tr outflows via current account			
②	Non-sterilized intervention; credit expansion; asset price increase				Intervention $4.7 tr of which $1.4 sterilized; $3.8 tr investment abroad			
③	Sterilized intervention; 1/2 asset price increase				Total additional funding of $7.5 tr due to balance of payments inflows			

Suppose the recipient economy's output gap was zero prior to inflows. Then such inflows could lead to excess demand and fuel inflationary pressures. During this process, domestic investment will be partly substituted by foreign investment. In the case of sterilized intervention, impact on domestic economy will be small as capital inflows will simply be added to domestic financial assets without additional credit creation. In the case of non-intervention, the exchange rate will adjust, facilitating a corresponding outflow (either through the current account or capital account). Even then, there will be credit creation.[3] A reversal of such inflows will be costly to the recipient economy as it has to readjust to the lower level of credit after the credit boom from inflows (in part through inflation).

Aggregated data of the 10 emerging economies during 2001-2014 as shown above record a total inflows of US$10.1 trillion, of which about half were in the form of FDI. Total current account surplus amounted to US$1.8 trillion. Of the total inflows, US$4.7 trillion was absorbed as intervention by central banks and US$1.4 trillion sterilized, allowing the rest to be added to domestic credit (assuming multi-

[3] Increase in foreign liabilities in the International Investment Position due to capital inflows will raise domestic financial liabilities; and to the extent the central bank does not intervene, the initial increase in net foreign asset position in banks will be reduced with corresponding increase in domestic assets (and hence outflows) or declining domestic liabilities as exchange rate appreciates.

plier of 1 for sake of simplicity). The non-FDI components of foreign liabilities which would be tied to some type of local assets (i.e., the domestic currency counterpart of inflows) amounted to US$4.0 trillion. Thus, a total US$7.5 trillion increase in these 10 EMs' local assets were due to inflows from abroad. How much of this was excessive, i.e., beyond the amount needed to retain external and internal balance while attaining robust growth, is a difficult question to answer. However, US$7.5 trillion is about 150 percent of base money growth or 50 percent of GDP growth of these 10 emerging economies, which appears to be on the excessive side.

Synchronization of interest rates

The above paragraph highlights the dominance of capital flows in monetary policy management of emerging markets. How much to intervene and to sterilize is part of their monetary policy tools, that should complement the setting of their policy rates. The latter is heavily influenced by the US policy rate in an apparent move to reduce excessive short-term capital flows, but also because co-movement between long-term market rates in EMs and in the US is becoming stronger. In fact, this co-movement of interest rates is also weakening the relationship between interest rate differentials and the exchange rate as summarized in uncovered interest parity condition, i.e., $i - i^* = \dot{e}$.[4] Moreover, due to the increasing amount of foreign share in financial assets, long-term rate in the US also raises long-term rates in many emerging economies, not necessarily because the former granger causes the latter, but because they are becoming integrated.

In a similar vein, the level of the exchange rate in EMs are also increasingly being determined by market expectations on the US dollar, rather than through intervention or interest rate parity condition. For example, intervention in the foreign exchange market had less of an impact (i.e., statistically insignificant and also often with opposite sign) on the won/dollar rate than the US dollar index (e.g., US nominal effective exchange rate). That said, interest rate differential granger caused the won/dollar rate over the medium term, with a rise in the Korean interest rate relative to that of the US leading to an appreciation with a lag of about 7-8 quarters.[5]

Unsynchronized business cycle

Against increasingly synchronizing interest rates, business cycles are not showing similar convergence except among the US, the euro area, and the UK. Another group of countries that diverged moderately from the US growth cycle are Japan, Taiwan POC, and Korea, in that order.[6] Among emerging economies, none of the EMs tested[7] show convergence of their GDP cycle with that of the US. Moreover, business cycles in the BRICs are not only dis-synchronized, but also diverged substantially in level terms especially during the mid-2000s from the US growth cycle.

[4] EMs can, obviously, also prevent an appreciation arising from productivity increases that would also push up interest rate (cost of capital).

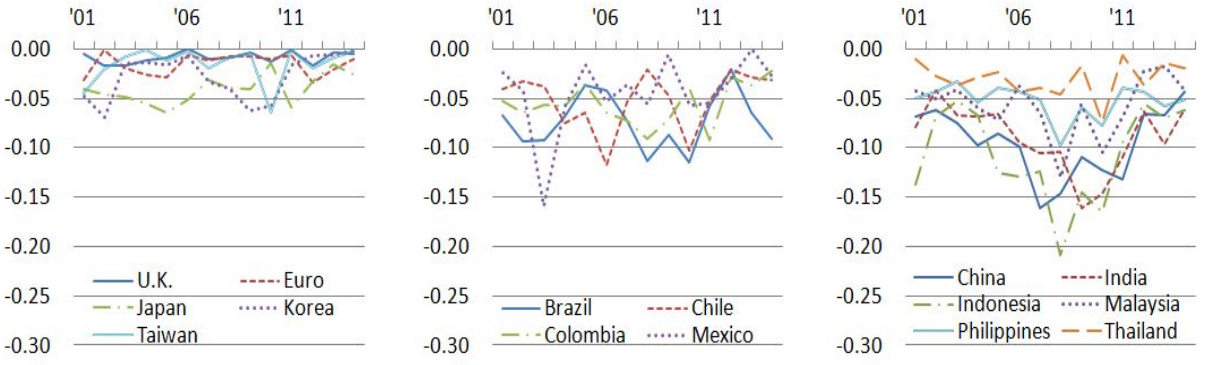
[5] This reflects continuous appreciation of the won over the last two decades (except for the two period—once after the dotcom bubble and the global financial crisis—whence it depreciated sharply) as its growth hovered above that of the US.

[6] Tested using simple correlation, Kalemli-Ozcan *et al.* (2013), "Global banks and crisis transmission," *Journal of International Economics*, 89(2), and Morgan *et al.* (2004), "Bank Integration and State Business Cycles," *The Quarterly Journal of Economics*, 119(4).

[7] Brazil, Chile, Columbia, Mexico, China, India, Indonesia, Malaysia, the Philippines, and Thailand.

Chart 9. Synchronization of business cycle

(Index)

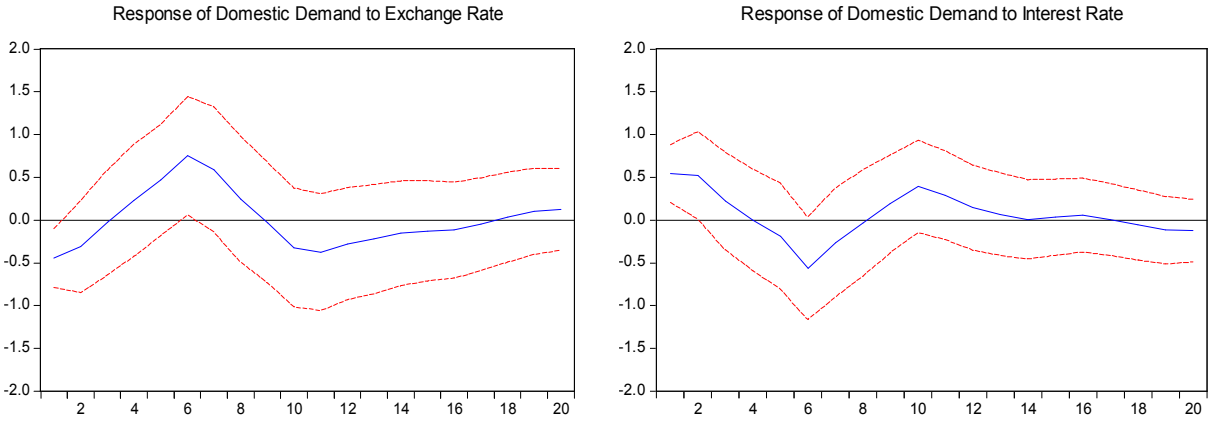


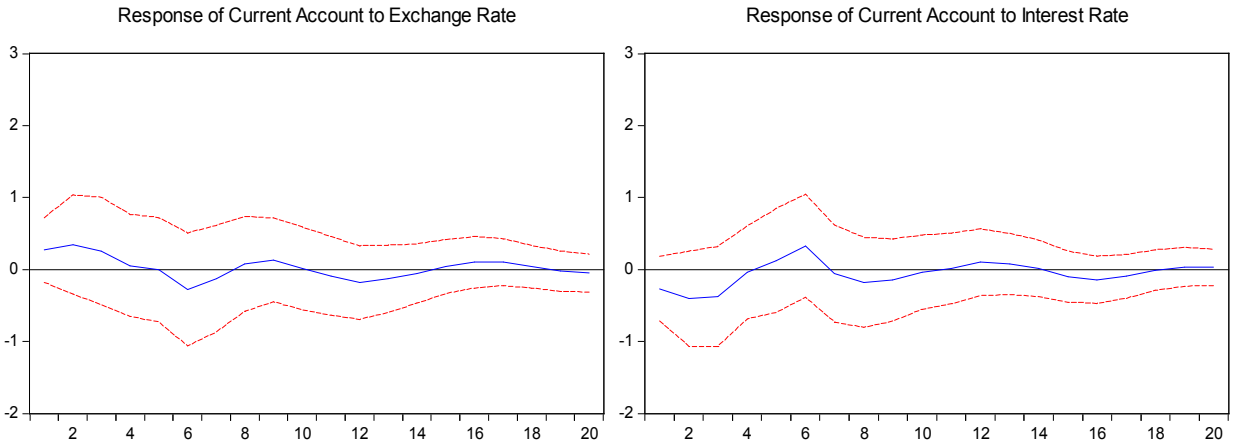
Note: Synchronization of business cycle is measured by the negative of divergence in growth rate, defined as the absolute value of GDP growth differences between each countries and U.S.

Source: Author's calculation using the Kalemli-Ozcan *et al.* (2013)'s methodology.

Lack of monetary independence should not be blamed, however, for the weakening economic activities in EMs. Although it is only a counterfactual conjecture, even if independence were to be gained, it is not clear to what extent it would be effective as a policy tool. This pessimism rests on the reality that the global economy is in the middle of a structural recession and not so much in a downturn of a transitory business cycle. For example, Korea's domestic demand has been very sluggish, contributing to growing current account surplus. Empirical tests show that neither interest rate reduction nor exchange rate appreciation or depreciation will have much of an impact on domestic demand. Thus, even with monetary independence, and active use of monetary policy (assuming Korea is not already in a liquidity trap), it is not obvious how much it can add value.

Chart 10. Impulse responses of current account and domestic demand to exchange rate and interest rate





Note: The VAR uses data from 2000Q3 to 2015Q3. The generalized impulse functions are calculated using the method described by Peasran and Shin (1998). The dashed lines indicate 95-percent confidence bands. Exchange rate, domestic demand and current account (normalized by GDP) are growth rates (year-on-year). The exchange rate is defined as Korean won/US dollar. The first difference of interest rates is used. Global GDP and terms-of-trade are included in the VAR but, not reported here.

Source: Author's calculation using the structural VAR.

Overcoming the limitations of monetary policy

Irrespective of when the global economy will recover from the structural recession, a more robust system has to be put in place now to provide EMs with a better way to manage their business cycle, and respond to overwhelming capital flows. Otherwise, they will continue to be handicapped in stabilizing output volatility and exposed to large swings in capital flows, and subject to liquidity crunch and output loss due to large exchange volatility.[8]

It is unlikely that advanced economies will hold back expansionary monetary policy just for the sake of EMs. Moreover, it is not clear that they should do so as optimal policy response in advanced economies, after all, will benefit everyone—although one could argue that ongoing monetary easing by some advanced economies during this time of structural recession is like being in a situation where one lacks drinking water during a flood. The challenge for EMs is how they should respond to these continued expansionary policies.

As a general principle, they should use whatever policy instruments work, placing priority on not creating inefficiency in financial intermediation across borders, while ensure both internal and external balance are attained or maintained. More specifically;

i) Choose either interest rate or exchange rate[9] or both as policy instruments (taking into account exogenous factors such as expectations on the US$ movements, terms of trade shocks, and financial uncertainties) with supporting quantity adjustment operations in liquidity, e.g., sterilization, that would work best in each situation;

ii) Continue to accumulate reserves as insurance and intervene to smooth volatility (taking

[8] See Aghion *et al.* (2009), "Exchange rate volatility and productivity growth: The role of financial development," *Journal of Monetary Economics*, 56(4).

[9] If the exchange rate is selected as policy instruments, one would need to define what "transparency" would mean in the currency market, which are usually shallow, lack hedging options, and the market often has more firepower than the monetary authority.

into account global and regional safety nets) recognizing that the threshold of reserves that would provide market confidence is asymmetric between times of stress and stability;

iii) Introduce capital flow measures and macro-prudential measures with a view to contain build-up of risks and bubbles in specific markets and asset types and to ensure external and internal balances are maintained.

In determining the right external balance target, one needs to be mindful of aging, global value chains, and financial market conditions. Aging would likely call for higher current account surplus than would otherwise be needed—something that may not have been properly captured when using any empirical analysis given data are all backward looking. The extensive global value chain will complicate attaining external balance as simply a change in the exchange rate might have unexpected consequences.[10]

Whatever the financial market conditions, the objective of regulations on capital flows should be to ensure optimal financial allocation across borders and efficient financial intermediation. Inflow of capital in excess of what one would normally consider as adequate for financial intermediation should be sterilized to prevent buildup of a financial asset bubble, held as a buffer in case of sudden reversal, or regulated to properly reflect risks. Often, it may be difficult to determine whether a bubble is taking shape in various markets. Perhaps an overall measure of liquidity that could be measured against GDP could be considered.

Capital flow measures

The increase in foreign liabilities of key EMs (countries as listed earlier) and the expansion of base money with lower ratio of sterilization of intervention in selected EMs imply that these economies are more exposed to sudden reversal of capital flows. To the extent that the minimum level of threshold of international reserves below which the market panics during a rapid outflows is asymmetric to when reserves are rising, total reserve assets of US$5.3 trillion in these countries are not necessarily adequate in respective countries, especially for all spectrum of possible magnitudes and speed of capital outflows.

Against this background, a review of capital control measures that would discourage destabilizing short-term flows relative to the stage of development of financial market and institutions in respective EMs would be useful.[11] Macro-prudential measures should not substitute prudent macroeconomic policy but targeted as necessary to ensure financial stability. These measures, however, should take into consideration how capital inflows are allocated among the various types of assets or whether they are displacing domestic investment. Overvalued stock market in advanced economies, for example, is likely to attract capital also into equity markets in EMs (push factor) raising price indices above the levels consistent with fundamentals.

While various studies argue capital control measures not to be effective, they have shown to be useful in changing the type of inflows ex ante. For example, the Korean authorities introduced a series of macro-prudential measures in 2010 in response to the rapid re-

[10] For example, various tests show the exchange rate (both nominal and real) has little impact on the current account in Korea.

[11] For example, Ostry *et al.* (2010), "Capital Inflows; the role of controls," IMF Staff Position Notes, points out that controls for macroeconomic reasons should be used for inflows in such a way that the exchange rate adjusts to permanent shocks.

versal of capital flows during the global financial crisis. These included imposing a cap on banks' foreign exchange derivative positions relative to their capital to curb banks' short-term external debt and currency mismatch from forward sales by companies. Also a macro-prudential stability levy (MSL) on non-deposit foreign currency liabilities was imposed on banks to reduce excessive short-term capital inflows. Finally, a withholding tax on foreign investors' earnings on government bonds (with differentiated rates depending on maturity) was introduced to reduce excessive short-term inflows into Korea's fixed income market. These measures had a definite positive impact on reducing short-term foreign liabilities (falling from 49 percent of international reserves in 2007 to 29 percent by 2015) at a time when total foreign liabilities rose by 20 percent.

Global financial safety net

Having an adequate global or regional financial safety net would reduce the dependence on reserve accumulation. This can partly be done through knitting fragmented regional financial safety nets with the global one as total firepower of each has shrunk relative to the size of global capital flows. Moreover, this network could be supplemented by currency swap with the Fed or the ECB, the main reserve currency issuers as well as among EMs. The above noted macro-prudential as well as capital flow measures could be part of an integrated system of the financial safety net. Better information on flows and products would be essential to preempt build-up of risks as well as mispricing of assets.

Furthermore, a multi-polar system with regional "localized currencies" (i.e., utilizing currencies for settlements among countries within a specified region) and currency swaps could also be considered which would distribute the risks among the partakers of such regional system. Such regionalization could start in Asia consisting of ASEAN+3 countries and use of the yen, which is already convertible, the Chinese yuan, the Korean won, and perhaps another one or two currencies. Use of selective currencies for regional trade will reduce the need to hold a large amount of US dollar reserves.

Moreover, national currency swap will also be helpful in spreading the risk among the regional countries as long as the collective reserves in convertible currencies are sufficiently large. This would also help these countries regain some independence in monetary policy. It will also strengthen the impact of monetary policy in the United States once these countries' currencies start to move more in tandem with one another as intra trade grows. KIEP