Capital Flows, Exchange Rate and Long-term Economic Growth[1]

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A common argument often advanced in favour of capital account liberalization is that capital would flow from industrialized countries, where capital has low marginal returns, to developing countries, where its relative scarcity implies high marginal returns. This phenomenon should relax the foreign exchange constraint of developing countries running large current account deficits. In other words, capital account liberalization was expected to delink investment from domestic savings, allowing developing countries' investment rates to exceed their savings rates, leading to increased growth.

However, since the early 1980s there have been several waves of large capital flows to developing countries, but not one resulted in a growth miracle. On the contrary, large waves of capital inflows often ended in financial crises.[3] This misfortune is largely due to the short-term nature of many of these flows which creates maturity mismatches and raises the risk of sudden capital flow reversals.

Doubts about de-linking investment from domestic savings, however, first arose with the findings of Martin Feldstein and Chalres Horioka, which came to be known as Feldstein-Horioka puzzle.[4] They have found high correlation between domestic saving and investment ratios. Empirical studies have also found that most, if not all, countries that managed to achieve high growth rates were net creditors, not net borrowers, meaning that they were saving more than investing domestically, and that their current accounts were in surplus.[5] As shown in Figure 1, the relationship between the current account surplus and growth rates has been positive.[6] All fast growing countries that were revelry called "miracle economies", from Botswana to China, had a considerably positive current account. Before the slowdown of growth since the mid-1980s Japan looked very much like Botswana, Malaysia and Singapore – current account of over 2 % of GDP annually and growth of GDP per capita of over 4% a year in the 1950s-70s.

Figure 1: Average annual growth rates of GDP per capita and average current account balance, 1970-2013

Average current account balance as a % of GDP and average GDP growth rates, %, in 1970-2013
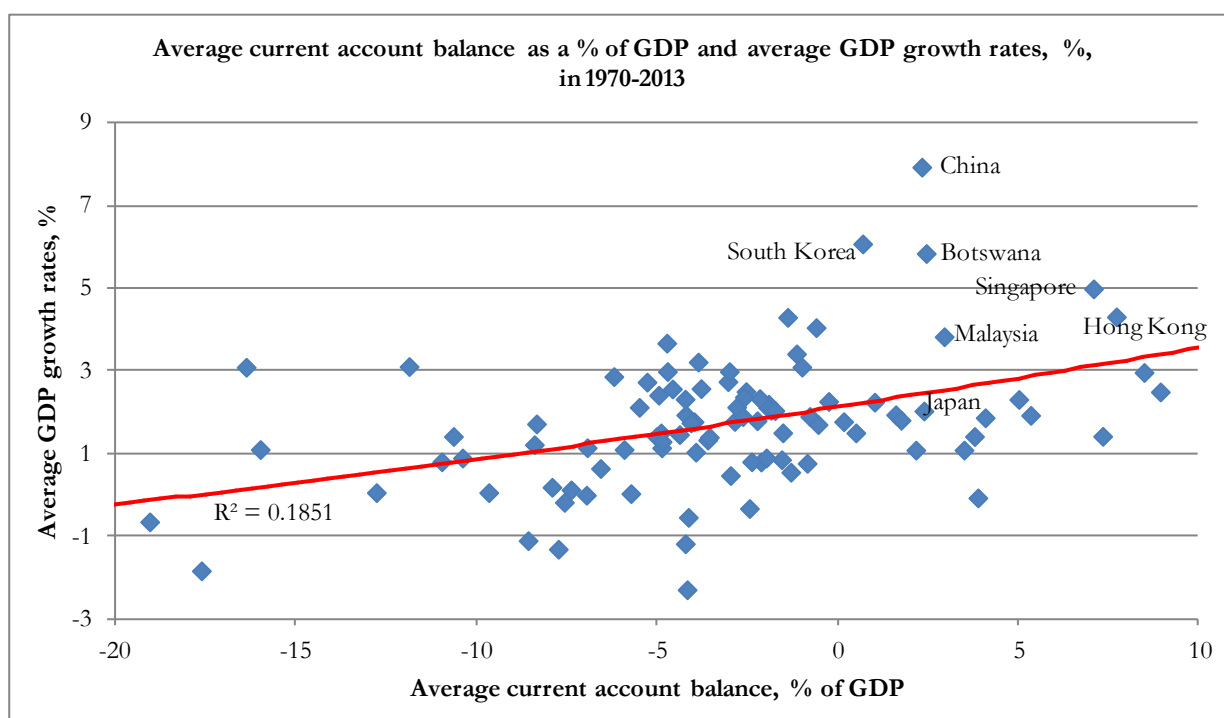
Source: UN DESA calculations based on World Bank World Development Indicators, IMF Balance of Payments; various years

In the financing gap models, current account deficits determine the amount of foreign capital inflows needed to balance the balance of payments (see endnote 4). In the absence of capital inflows, countries are forced to devalue which makes imports expensive and exports cheaper so that the trade balance improves. Since the liberalization of capital account episodes of surge in capital inflows have led to appreciations of exchange rates, especially in many emerging economies that drove down demand for the country's exports and increased imports, leading to a negative current account and currency crises.

In the early 2000s, however, several emerging market countries maintained both positive current and capital accounts. Central banks intervened in the foreign exchange market, keeping exchange rates from appreciating through building international reserves. China is the most often cited case, but a number of countries witnessed this phenomenon in some years, though only four large developing countries (with population of more than 50 million) – China, Bangladesh, Thailand and Myanmar – did so over a 15 year period (see Figure 2).

Countries in the upper left-hand quadrant of Figure 2 display the typical text-book phenomenon – current account deficits matched by capital account surplus. Countries (Nigeria and Russia) in the lower right-hand quadrant are suffering from resource curse; they have capital account deficits that are financed by current account surplus. When the current account surplus is not enough to finance capital outflows, forced devaluation of the currency occurs, often in the form of currency crises. The periodic overvaluation of their currencies caused by large foreign capital inflows associated with their resource sector, a typical case of "Dutch disease", implies the loss of competitiveness of their tradable sector.

As the balance of payments must be equal to zero, twin surpluses reflect a build-up in international reserves, while twin deficits reflect the opposite. The build-up of reserves usually entails opportunity costs in terms of missed investments or consumption opportunities,[7] but it may also help to support export-oriented development model.

Figure 2: Average current account balance and capital flows to large developing countries (% GDP 2000-2014)
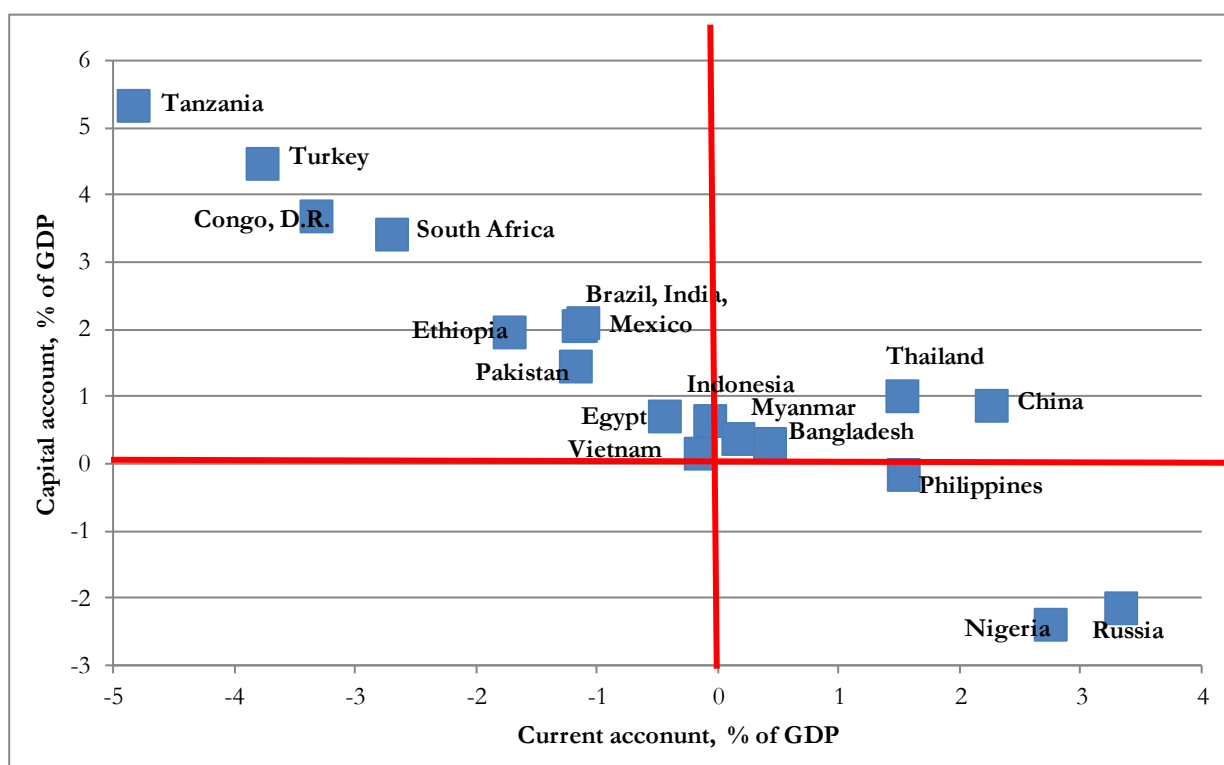

Source: IMF Balance of Payments; various years

One of the reasons for savings to exceed investment in rapidly growing countries is the policy of intervention in the foreign exchange market to maintain competitiveness as an integral part of their export-oriented industrialization strategy. Accumulation of foreign exchange reserves allows countries to maintain an undervalued foreign exchange rate in order to stimulate exports. The growth of exports, in turn, stimulates the economy, creating a virtuous circle of high saving and investment rates.[8]

Exchange rate as an instrument of industrial policy

There is considerable debate about the efficacy of industrial policy, in particular policy instruments, such as tax rebates and subsidies, or government procurements, that try to pick the "winners". These policy instruments are vulnerable to capture by interest groups and can lead to rent-seeking. Critiques of industrial policy often point to the failures mainly attributable to rent-seeking and the difficulties of picking the winners.

However, as the experience of successful countries shows, the use of exchange rate as an industrial policy instrument can avoid these pitfalls. Exchange rate affects the entire economy as it applies uniformly providing stimuli to all producers of tradables at the expense of real wages (consumption) and non-tradables. To be able to use an undervalued exchange rate as an effective industrial policy tool, however, countries need to be able to accumulate foreign exchange reserves and manage it judiciously.

Figure 3: Foreign exchange reserves of BRICS countries, billion dollars, left scale except for China shown on the right scale
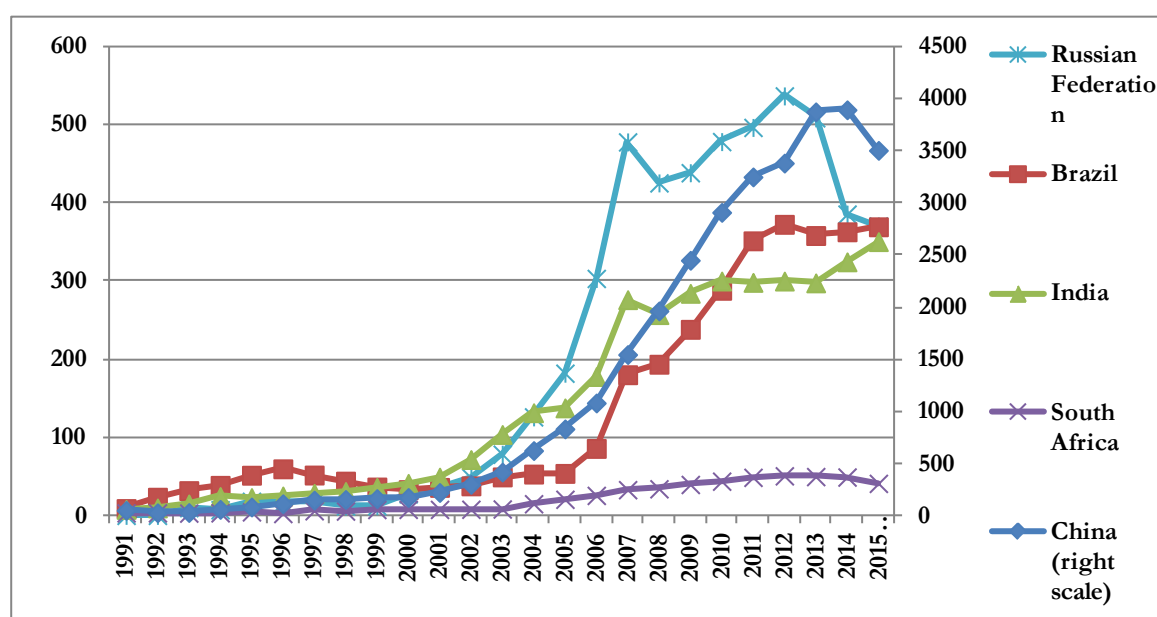
Source: World Bank, World Development Indicators; various years

As Griffith-Jones and Ocampo[9] observe, the rationale for the accumulation of foreign exchange reserves "is usually found in either one of two explanations: the "competitiveness" (or, in more pejorative terms, "mercantilist") and the "self-insurance" motives.

This mercantilist view that undervaluation of exchange rate via accumulation of foreign exchange reserves is in fact an industrial policy – aimed at promoting export oriented growth by benefiting the producers of tradables and exporters at the expense of the producers of non-tradables and importers – is gaining support in the literature.[10] If there are externalities from export and production of tradables (industrialization, development of high tech sectors), undervaluation of the exchange rate resulting from the accumulation of reserves provides a subsidy to these activities and this subsidy is automatic, i.e. does not require a bureaucrat to select possible beneficiaries.

In short, this is a non-selective industrial policy promoting export and production of tradables that seems to be quite efficient especially in countries with high corruption and poor quality of institutions. Thus, accumulation of reserves and undervaluation of the exchange rate may be good for long term growth.

The formal model demonstrating how the accumulation of reserves can spur growth, as well as the empirical evidence, is presented in the cited paper by Polterovich and Popov (2004). It is also shown that accumulation of reserves leads to disequilibrium exchange rate, which in turn causes the increase in export/GDP and trade/GDP ratios, which stimulates growth.

There is strong evidence that accumulation of reserves can spur long-term growth in developing countries, although not in rich countries.[11] If all countries use these policies, all will lose, and, on top of that, for developed countries this policy does not work. But for developing countries it works, and there are good reasons, why these countries should have sufficient policy space to use this tool to promote catch up development.

It remains to be said that the policy of reserve accumulation is often considered to be self-defeating because in order to avoid inflation (that would eat up the impact of devaluation on real exchange rate) it is necessary for the monetary authorities to carry out sterilization policy, i.e. to sell government bonds in order to neutralize the impact of purchases of foreign

currency on money supply. But sales of government bonds lead to higher interest rates that in turn attract capital from abroad that contribute to increase in foreign exchange that again should be sterilized, which creates a vicious circle. That is why economists talk about "impossible trinity" – a country cannot maintain at the same time an open capital account, managed exchange rate and independent monetary policy. But many developing countries exercise control over capital flows (China and India would be prime examples) and even without such a control, capital mobility – especially for large economies – cannot be considered perfect.

In practice, as the statistics shows, the accumulation of foreign exchange is financed through government budget surplus and debt accumulation, but not through money printing. That is to say, most countries that accumulated reserves rapidly exhibited low inflation, and low budget deficit (or budget surplus), but increasing holdings of government bonds by the public (see Polterovich, Popov, 2004).[12s]

[1] Based on Chapter III of the World Economic Situation and Prospects, 2016, UN-DESA (http://www.un.org/en/development/desa/policy/wesp/index.shtml; Chapter III: http://www.un.org/esa/ffd/publications/wesp-2016.html)

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[3] Krugman, Paul. Finance mythbusting, third world edition. Nov 10, 2009. – Paul Krugman's blog: http://krugman.blogs.nytimes.com/2009/11/09/finance-mythbusting-third-world-edition/

[4] Feldstein, Martin; Horioka, Charles. "Domestic Saving and International Capital Flows", Economic Journal 90, 1980, pp. 314–329, http://www.jstor.org/stable/2231790?origin=crossref

[5] The investment rate can be held back despite high saving rates when countries face a binding foreign exchange constraint. The saving rate eventually falls to equate with the investment rate. See Thirlwal's survey of literature, Thirlwal, A.P. (2011) Balance of Payments Constrained Growth Models: History and Overview, http://ftp.ukc.ac.uk/pub/ejr/RePEc/ukc/ukcedp/1111.pdf). To overcome this constraint, countries such as Japan, Republic of Korea and lately China chose export oriented development models. For a comprehensive discussion of the East Asian growth model, see ESCAP (2014), Asia and the Pacific: A Story of Transformation and Resurgence, http://www.unescap.org/resources/asia-and-pacific-story-transformation-and-resurgence

[6] The relationship is significant, even after controlling for the level of development:
y = 0.85*** Ycap + 0.08**CA + 1.06,
          (3.07)   (2.19)
N=91,   R2 = 0.23, robust standard errors, T-statistics in brackets below, where
y –annual average growth rates of per capita GDP in 1970-2013, %,
Ycap – logarithm of per capita PPP GDP in 2000,
CA – average current account to GDP ratio in 1970-2013, %.

7 See Haddad, Mona & Cosimo Pancaro (2010). Can real exchange rate undervaluation boost exports and growth in developing countries? Yes, but not for long; voxeu 8 July, http://www.voxeu.org/article/can-real-exchange-rate-undervaluation-boost-exports

[8] Polterovich, V. & V. Popov (2004). Accumulation of Foreign Exchange Reserves and Long Term Economic Growth. – In: Slavic Eurasia's Integration into the World Economy. Ed. By S. Tabata and A. Iwashita. Slavic Research Center, Hokkaido University, Sapporo, 2004.

[9] Griffith-Jones, Stephany & José Antonio Ocampo. (2010). Sovereign Wealth Funds: A Developing Country Perspective. May 2010. Foundation for European Progressive Studies. Http://www.jeanjaures.org/content/download/14006/134854/file/1005_SovereignWealthFunds_SGJ_JAO.pdf

[10] Dollar, D. (1992). Outward-oriented developing economies really do grow more rapidly: evidence from 95 LDCs, 1976-1985. – Economic Development and Cultural Change, Vol. 40, No. 3, April, pp.523-44; Easterly, W. (1999). The Lost Decades: Explaining Developing Countries Stagnation 1980-1998; World Bank; Polterovich & Popov (op. cit.); Rodrik, D. (2008). The Real Exchange Rate and Economic Growth. In Brookings Papers on Economic Activity, Fall, pp. 365–412; Bhalla, Surjit (2012). Devaluing to Prosperity. Misaligned Currencies and Their Growth Consequences. Peterson Institute for International Economics; Greenwald, B., Stiglitz, J. (2013). Learning and Industrial Policy: Implications for Africa. In Stiglitz, J., Lin, J., Patel, E. (Eds). The Industrial Policy Revolution II. Africa in the XXI century. IEA. Palgrave MacMillan.

[11] The resulting equation suggests a threshold relationship:
GROWTH = CONST. + CONTR. VAR. + Rpol (0.10 – 0.0015Ycap75us)
R^2 = 56%, N=70, all variables are significant at 10% level or less, where

GROWTH – annual average growth rates of GDP per capita in 1975-99, and control variables are population, population density, initial level of GDP per capita in 1975, and population growth rates;

Rpol - policy induced accumulation of reserves, i.e. accumulation of reserves above the level required by objective circumstances (computed as the residual from the equation that explains the increase in the level of reserves to GDP in 1975-99 by PPP GDP per capita in 1975, average ratio of trade to PPP GDP in 1975-99 and the increase in the ratio of trade to GDP in 1975-99 in percentage points).

It turns out that there is a threshold level of GDP per capita in 1975 – about 67% of the US level: countries below this level could stimulate growth via accumulation of FOREX in excess of objective needs, whereas for richer countries the impact of FOREX accumulation was negative (Polterovich & Popov, 2004). These results are by and large consistent with Haddad & Pancaro (2010; op. cit.).

[12] Formally, the following identities hold:
$$\Delta M = \Delta FOREX + \Delta B_{CB}$$
$$BD = \Delta B_{CB} + \Delta B_P$$
$$\Delta FOREX = \Delta M + BS + \Delta B_P,$$

where $\Delta FOREX$ – increase in foreign exchange reserves, ΔM – increase in money supply, BS – budget surplus (BD – budget deficit), ΔB_P – increase in bonds held by the public, ΔB_{CB} - increase in bonds held by the central bank. The last identity implies that the increase in foreign exchange reserves can be financed by the increase in money supply, i.e. inflation tax on everyone (ΔM), budget surplus (BS), accumulation of government debt held by the public (ΔB_P).