

Exchange Rates, Capital Flows and Monetary Policy: Lessons from Emerging Market Economies

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I. Introduction

Monetary policy transmission depends on the openness of the capital account and the exchange rate regime, which is commonly described as the 'trilemma'¹ from the Mundell-Fleming model that countries cannot simultaneously fix their exchange rate, have an open capital account and pursue an independent monetary policy. Only two out of these three objectives are mutually consistent. It has been a major challenge to monetary authorities in the advanced economies as well as the emerging economies and more recently, the frontier economies. The challenge however, gets perpetuated with financial globalisation that raises the risk of contagion, and exposes the vulnerability of emerging economies to financial instability caused by the effect of huge capital inflows and outflows on asset prices and credit supply.

International capital is highly volatile and very mean. There have been several reviews and empirical studies of the relationships of these variables, with evidence that fall into two major planks of:

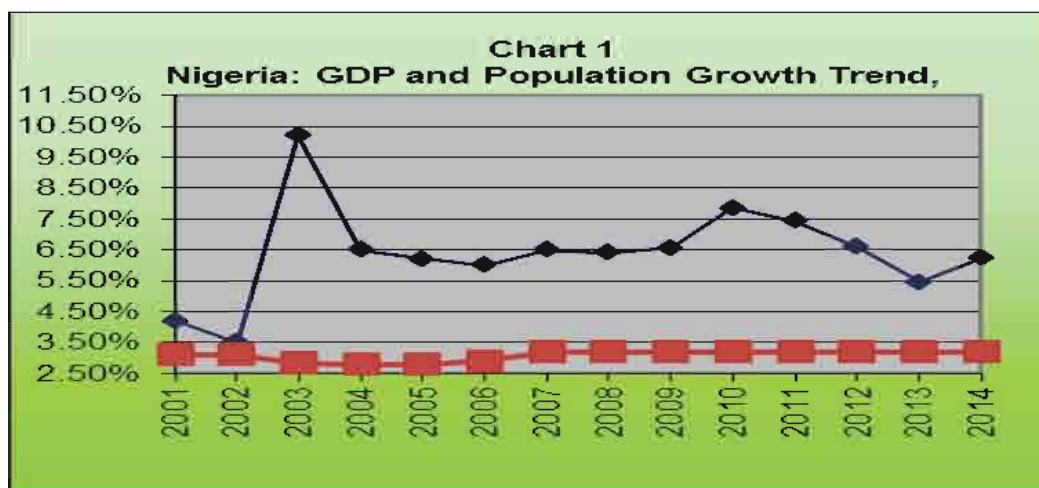
- a. Peculiarities of nations do not matter much to international capital flows, with evidence that the exchange rate regime and other local macroeconomic conditions show low correlations with capital movements. This is more evident among advanced economies, but there is weak evidence that pure exchange rate floats are more amenable to stability than the hard pegs or any of the intermediate regimes.
- b. Domestic monetary policy can indeed respond effectively to capital mobility, depending on the cocktail of instruments applied, including the unconventional capital controls. A strong case can be made however, for temporary controls irrespective of whether the exchange rate regime is pure float or hard peg.

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¹ The traditional 'trilemma' is choosing between free capital flows, a fixed exchange rate regime and independent monetary policy

Financial integration along with capital mobility has also posed a challenge in how foreign interest rates impact domestic rates, and thus having significant implications for capital flows. As such, the monetary policy stance of the advanced financial systems will have deep implications for the less developed systems. The monetary policy autonomy of central banks in the emerging economies has therefore, been questioned and become somewhat controversial, especially during financial and/or banking crises. The phenomenon of emerging and frontier economies attracting huge international capital during recovery and boom, and losing them rapidly during recession with accompanying difficulty of reviving credibility during slump invited a review of the trilemma debate to the dilemma argument.

Does exchange rate regime matter then? If it does, particularly in attracting international capital, should capital controls be introduced when the market appears unable to stabilise a financial system in contagion-induced turmoil? To what extent can a central bank of the impacted financial system claim autonomy of its monetary policy when international interest rates obviously impact domestic rates? Can capital controls be an independent instrument (aside from the traditional policy instruments) for reducing the impact of capital flows on domestic financial instability? Are there emerging economies that have succeeded with capital controls, and under what circumstances?



Source: National Bureau of Statistics, Nigeria

Table 1: Nigeria: Selected Development Indices

2013	GNI / capita	Life Expectancy (years)	School Enrolment (Primary)	Poverty Headcount	Access to Potable Water (rural)
Nigeria	2,710	52	85%	46.0%	49%
South Africa	7,190	56	102%	45.5%	88%
Ghana	1,770	61	109%	24.2%	81%
Egypt	3,140	71	113%	25.2%	99%
Mexico	9,940	77	105%	52.3%	91%
Indonesia	3,580	71	109%	11.3%	76%
Turkey	10,970	75	100%	2.3%	99%

Source: World Bank Development Indices, 2012/2013

The Nigerian economy recorded a robust growth that averaged an annual 6.4 per cent during 2001 to 2014 (Chart 1). This growth was non-inclusive, development indices worsened and inequality extenuated, with Nigeria falling into the global pattern of wealth concentration of 46 percent of global wealth in the hands of only one percent of world population!

The issues are: what role, if any, did international capital mobility played in these developments, especially leading up to the second half of 2008 and from 2014 up until the first quarter of 2015? Are there lessons for Nigeria from the experiences of emerging countries in dealing with the trilemma?

True independence of monetary policy means it is not dictated by the vagaries of the international capital market, which is difficult to attain when the capital account is open and there is full mobility of international capital. Independence is lost when fixed exchange rate is combined with full capital mobility, as increase in foreign interest rates can trigger rapid capital outflows and require currency devaluation to stem the 'tide'. A rise in the domestic interest rate will then become inevitable in order to adjust the current account. Credit becomes expensive and pressure on the exchange value of the domestic currency should ease. If the exchange rate regime is flexible and there is full capital mobility, the link between foreign and domestic interest rates becomes nebulous. There will then be need to apply a cocktail of instruments, some unconventional, to adjust the current account and balance the capital account in order to avoid the risk to growth and welfare.

This is the crux of the trilemma or what is also referred to in international finance parlance as the 'Holy Trinity'. It is ultimately about growth and welfare, and therefore implies that financial markets and trends in them should not be taken in isolation. In terms of trade-offs,

the critical choices transcend the conventional policy tools, final target and the policy anchor(s) in the domestic context, but also include variables that are international in nature. The direction of trade, the accounting and reserve currencies, as well as stocks and flows are also important.

This paper proceeds in four sections as follows. Section 2 gives a cursory summary of the literature on the 'trilemma-dilemma' that tend more towards the relevance of capital controls as an independent instrument in monetary policy irrespective of the exchange rate regime, while section 3 examines the evidence and effectiveness of the management of the process and relationships in emerging market economies (EME). Section 4 examines a country experience, while section 5 draws inferences for Nigeria and section 6 concludes with recommendations.

II. Summarised Literature and Stylised Facts

The increasing popularity and adoption of inflation targeting by most monetary authorities since the early 2000's has shifted more of policy attention to interest and exchange rates issues. Exchange rate regimes lie at or in-between the polar extremes of hard pegs and pure floats. Whether the regime adopted influences capital inflows has been subject of intensive research in international economics. Recent evidence suggests that susceptibility to risks associated with external shocks seem to be higher for hard peg regimes and less so for pure and 'managed' floats. The effectiveness of exchange rate regimes is also influenced by the state of the financial system, as banking or currency crisis raises the risks of hard pegs, whereas managed and pure floats have tended to perform better during crises.

Studies on emerging economies provide evidence of how well coordinated monetary policy can produce stable exchange rate in extreme situations of capital mobility. In some cases, there were controls to capital flows that lasted only with banking and/or currency crises, which seemed to reflect the low and high ebbs in the monetary policies of the advanced economies. This marked the reality of contagion and effect of globalisation, and raised the poser of "how can emerging economies protect themselves against the rich world's monetary policy?"² Some analysts however, argue differently that central bankers in the emerging market economies were merely using contagion as excuse for their 'incompetence'. Yet, it is difficult to disregard the facts that the Indian rupee lost 23 per cent against the US dollar between May and August 2013, at the same time that the Turkish lira lost 15.0 per cent and the Indonesian rupiah lost 16.0 per cent, all reflecting what the rich world was doing with their monetary policy.

² London Economist issue of August 31st 2013.

Until world attention was drawn to the quartet of Brazil, Russia, India and China (the BRICs) in the early 2000s by Goldman Sachs, not much of economic theory considered deviations from the traditional arguments for democratic economic management. The general thinking was that the market has the capacity for self-correction and thus interventions should be minimised, if they become inevitable and unavoidable. This classical *laissez faire* argument does not recognise the injurious nature of extremely mobile international capital whose large inflows trigger asset price bubbles and credit surfeit, and then the huge volume of toxic assets that ensue with rapid outflows. There is a new normal!

The central question is whether capital controls are desirable at all and under what circumstances in a world of increasing capital mobility. On its own, capital controls can become a disincentive by creating a perception of restriction on capital outflows and thus inhibit a country's access to fresh international capital inflows. Is this always so?

Saxena (2008) argues that if the capital account is closed, then domestic interest rates would transmit to domestic demand, irrespective of the exchange rate regime. However, if the capital account is open, then domestic monetary policy will be determined by the exchange rate regime and the degree of substitutability between domestic and foreign financial assets. Under a floating regime, monetary policy can work either through the interest rate and liquidity channel or through the exchange rate channel. Under the latter channel, the impact of monetary policy on aggregate demand is larger if domestic and foreign assets are substitutable, as policy induced changes in interest rates affect the exchange rate, which in turn affects output and inflation.

Saxena concludes that:

"Since emerging markets are moving towards higher capital mobility, they need to adopt a free floating exchange rate regime in order to gain any monetary independence. The econometric results from the paper indicate that although exchange rates have become more flexible in these economies, they are nonetheless not free floats and accordingly the interest rates of these economies do still respond to foreign rates to some degree. Nevertheless, the impulse response functions show a decreased response of domestic interest rates to changes in US interest rates since 2000, which might suggest that as these emerging economies gain credibility with their newer forms of monetary policies (a move away from fixed to flexible exchange rate regimes with inflation targeting), there may be further delinking between these interest rates."

Volatile capital flows have been extensively blamed for episodes of booms and busts in emerging markets. (Calvo,1998). As helpful as large capital inflows are in driving rapid growth in the financial markets of emerging markets, they have also been strongly fingered in the boom-bust cycles since the mid-1990s³ when they plunged those economies into

³ Mexico in 1994-5, East Asia in 1997, Russia in 1998, and Argentina in 2001.

chaos by constrained credit and out-of-control exchange rates. In a sequel, Calvo (2005) suggests that the conventional wisdom about such crises is strongly influenced by the experience of advanced economies, prompting an urgent search for cogent explanations, especially the role credibility plays in containing financial crises.

Where a country operates the pure float exchange rate regime, Farhi and Werning (2013) argue that:

"Without capital controls, optimal monetary policy responds by allowing a depreciation of the nominal exchange rate and an increase in the nominal interest rate. The rebalancing in the current account occurs by a drop in domestic spending."

The depreciation in nominal exchange rate should make imports more expensive and when complemented by costlier credit, will result in decrease in domestic spending. This ignores the rigidities peculiar to individual domestic markets that cause economic agents to behave irrationally. More expensive credits at times correlate with growth in credit volume, while demand for foreign currencies surges despite that they are more expensive! This irrationality also reflects in big government spending. They then made a clear case for capital controls, positing that:

"Optimal capital controls take the form of temporary subsidies on inflows and taxes on outflows to smooth out these responses. This mitigates the required depreciation of the exchange rate, the increase in nominal interest rate, the reversal in the current account, and of the drop in consumption."

They cite papers that provide a rationale for "prudential" policies that attempt to prevent excessive borrowing to include volatility of capital flows, especially "sudden stops". (Mendoza, 2010), models with financial frictions (Caballero and Krishnamurthy, 2004) that emphasise domestic and international collateral constraints that create inefficiencies and a potential role for intervention in international borrowing, even without nominal rigidities, and those that emphasise pecuniary externalities that work through prices in borrowing constraints (Bianchi and Mendoza, 2010; Bianchi, 2011; Jeanne and Korinek, 2010; and Korinek, 2011).

The real argument is beyond the typical financial crisis theory on emerging markets that focuses on fiscal deficits and debt sustainability within agreeable limits (which have been misleading in some instances), real currency devaluation and the role of the financial sector. Economies that kept strictly to the 2 to 3 per cent limit of fiscal deficit have not exhibited any resilience to banking or financial crisis better than those that did not. As well, debt sustainability that was thought to be strong indicator of credit worthiness has failed to provide a safe anchor in times of crisis. Equally, currencies have been devalued and re-devalued to no end, followed by redenomination in some cases, without any enduring effect on determined capital outflows! Even the state of the financial sector has been proven repeatedly as important but insufficient to stem capital flows during a crisis. For

instance, capital requirements were thought strong enough to keep financial institutions stable during any crisis, but experience (especially the recent Great Recession, 2008-2010) has proven the insufficiency of capital, bringing in a cocktail of requirements among which the strongest today is risk management.

There is growing emphasis on stocks rather than flows. While flows are important to track in terms of accretion to and decrease in stock, the absolute stock amount is even more important. The stock also has to be interpreted in many relative terms. For example, the stock of external reserves that supports the management of the exchange value of a currency may be 'huge' by all standards, but inadequate buffer when compared to trade flows (especially import bills for a net importer), GDP, population, etc. There was such experience in Nigeria during April to November 2008 when massive capital outflows rapidly depleted the external reserve buffer and warranted a 20 percent devaluation of the Naira by the Central Bank in December 2008.

In a more recent survey of the literature, Davis and Presno (2014) put the summary as:

"Rey (2013) and Forbes and Warnock (2012) show that capital flows into and out of emerging markets are largely driven by global factors. They both show that a measure of global risk is one of the main determinants of international capital flows. Meanwhile, country-specific characteristics are largely irrelevant for driving capital flows into and out of a particular emerging market economy. Reinhart and Reinhart (2008) argue that surges in capital inflows into emerging markets are associated with a higher likelihood of banking, inflation and currency crises, and contribute to economic and financial instability. Kaminsky, Reinhart and Vegh (2004) show that capital inflows are a primary reason for the procyclicality of fiscal and monetary policy observed in many emerging markets. Rey (2013) argues that since these foreign capital flows can lead to asset price bubbles, excess credit creation, and financial instability, capital controls or some tool of active capital account management is necessary in many countries. She argues that this cycle of capital inflows and outflows means that the classic "trilemma" of international finance is actually more of a "dilemma", and that "independent monetary policies are possible if and only if the capital account is managed." Klein and Shambaugh (2013) dispute this result and instead argue that a country with an open capital account can still gain considerable monetary autonomy by simply allowing its exchange rate to float."

The central argument of Ghosh, Ostry and Qureshi (2014) is that the choice of exchange rate regime is a major issue facing emerging market economies (EME), and the choice should be guided by its crisis susceptibility. The argument rests on the background of a statement by Stanley Fischer (1999) which they quote as:

"Whatever exchange rate system a country has, it will wish at some times that it had another one."

They find it strange that Fischer would argue later (in 2001) that the two extremes of pure floats and hard pegs are less vulnerable to shocks and crisis than the intermediate regimes (managed floats). On the one hand, resilient hard pegs are difficult to relate to conventional wisdom, and on the other, the economies (even the advanced ones) that practiced pure floats have also from time to time interfered as warranted by market turbulence or events. It is easy then to claim that there is no pure system in operation anywhere! This further made Ghosh et. al., (2014) to ask whether such interference can correctly be interpreted as intermediate systems. Since managed floats are more vulnerable, shouldn't EME learn 'how to float'?

Following the great recession of 2008-2010, some facts appear to stand out:

- a. In an era of globalisation and financial integration, whether an economy is advanced, emerging or frontier does not confer advantage over others in terms of the impact of financial crisis occurring at the same time as crisis in a sector to which the banking system is heavily exposed.
- b. The impact of financial crisis on the economy disregards the exchange rate regime.
- c. Terms of trade are important, but they are not strong enough to ameliorate the rapid capital outflows in a crisis situation.
- d. The stock of external reserves is a proven factor in dealing with the trilemma of exchange rates, capital flows and monetary policy.

Looking at the specific experiences of emerging market economies with respect to the trilemma should give further insight into the options that are open to Nigeria, and what the policy makers should be considering.

III. Emerging Market Economies (EME) Experience

Saxena (2008) reports that the EME have become more open on capital account and are following freer exchange rate policies. For example, on a scale of 3, the average index of capital mobility increased from 1.61 during 1975-99 to 2.59 between 2000 and 2006 for a group of 17 emerging economies in Asia and Latin America and including South Africa. The proportion of observations on exchange rate regimes classified as floating increased from 68.0 per cent to 73.0 per cent between 1975-99 and 2000-06. Against this background, she indicates that it would be interesting to see if any of the following plays out.

- a. Higher capital mobility has increased the impact of foreign interest rates on domestic rates;

- b. Floating the exchange rate helps reduce the impact of foreign interest rates on domestic rates.

The issues come clearer when the expected domestic interest rate link with the foreign interest rate is explored under the following four scenarios. Monetary policy is designated as MP.

	Fixed Exchange Rate	Flexible Exchange Rate	
Capital Immobility	1. No link	2. No link	← MP independence
Capital Mobility	3. Possible link	4. ???	
	↑ MP dependence	↑ MP independence (credibility induces delinking)	

- Scenario 1: Capital immobility in a fixed exchange rate system makes monetary policy independent, and thus domestic interest rate is not influenced by foreign interest rates.
- Scenario 2: With capital still immobile, monetary policy will remain independent even with flexible exchange rate system.
- Scenario 3: With full capital mobility under a fixed exchange rate system, rising foreign interest rates will trigger capital outflows and depreciation of the domestic currency. The safe thing to do to prevent depreciation would be to raise domestic interest rates. This establishes a positive link between domestic and foreign interest rates.
- Scenario 4: The link between domestic and foreign interest rates is not clear under full capital mobility and flexible exchange rate, as central banks intervene either to keep the exchange rate within the target band or to amass external reserves. This obfuscates the link.

Concluding, Saxena (2008) states that for the 24 emerging market economies she sampled⁴:

"The trilemma states that ... countries cannot simultaneously control their exchange rates and their interest rates. In order to gain monetary independence, countries either have to adopt a free float or impose full capital controls. Since emerging markets are moving towards higher capital mobility, they need to adopt a free floating exchange rate regime in order to gain any monetary independence ... although exchange rates have become more flexible in these economies, they are

⁴ Asia: CN = China; HK = Hong Kong SAR; ID = Indonesia; IN = India; KR = Korea; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; TW = Taiwan, China. Latin America: AR = Argentina; BR = Brazil; CL = Chile; CO = Colombia; MX = Mexico; PE = Peru; VE = Venezuela. Others: CZ = Czech Republic; HU = Hungary; PL = Poland; RU = Russia; SA = Saudi Arabia; TR = Turkey; ZA = South Africa.

nonetheless not free floats and accordingly the interest rates of these economies do still respond to foreign rates to some degree."

Furthermore:

"The econometric results from the paper indicate that although exchange rates have become more flexible in these economies, they are nonetheless not free floats and accordingly the interest rates of these economies do still respond to foreign rates to some degree. Nevertheless, the impulse response functions show a decreased response of domestic interest rates to changes in US interest rates since 2000, which might suggest that as these emerging economies gain credibility with their newer forms of monetary policies (a move away from fixed to flexible exchange rate regimes with inflation targeting), there may be further delinking between these interest rates. Indeed, several central banks have stated that inflation targeting has helped bring expectations of inflation down and the expectation channel is becoming stronger, whereby stronger anticipated effects of monetary policy require less aggressive interest rate changes. Such credibility will help monetary policy become more independent of external influences."

The above conclusion is at variance with the argument and inference of Helene Rey (2013) from the results of US data analysis and references to several studies cutting across advanced and emerging economies. She states:

"Whenever capital is freely mobile, the global financial cycle constrains national monetary policies regardless of the exchange rate regime.... Hence, the most appropriate policies to deal with the "dilemma" are those aiming directly at the main source of concern (excessive leverage and credit growth). This requires a convex combination of macroprudential policies guided by aggressive stress-testing and tougher leverage ratios. Depending on the source of financial instability and institutional settings, the use of capital controls as a partial substitute for Macroprudential measures should not be discarded."

More recent and wider scope by sample size (50 major EMEs over 1980-2011) is the study by Ghosh et. al., (2014) that provides the following:

"First, when it comes to financial vulnerabilities (rapid credit expansion; excessive foreign borrowing; FX-denominated domestic currency lending), and macroeconomic vulnerabilities (currency overvaluation; delayed external adjustment), less flexible intermediate regimes (pegs, bands, and crawls) are significantly more vulnerable than pure floats—but so are hard pegs. Second, intermediate exchange rate regimes as a class are indeed the most susceptible to banking and currency crisis, but de facto managed floats—a subclass within intermediate regimes—behave much more like pure floats, with significantly lower risks and fewer crises. The vulnerabilities under hard pegs however tend to be manifested in growth collapses rather than in banking or currency crises—perhaps because the high cost of exiting the regime makes the authorities reluctant to

abandon it, opting instead for long and painful adjustment. Third, at the soft end, we find that there is no simple uni-dimensional dividing line (e.g., according to nominal exchange rate flexibility) between safe floats and risky intermediate regimes. Rather, the key to avoiding crises is to ensure that the real exchange rate does not become overvalued—and what makes for a “safe” managed float is that the central bank intervene in the face of overvaluation pressures and refrain from intervening to defend an overvalued exchange rate.”

The critical question then will be whether the currency is overvalued at all, and how the central bank should respond to that. Is overvaluation established by reasons of the premium on the official exchange rate over the rate at the road side, or the purchasing power parity vis-à-vis the terms of trade? Does this consider the nature and structure of exports as well?

IV. Specific EME Country Experiences

IV.1 Singapore⁵

Foreign exchange intervention is directly pertinent in the conduct of monetary policy by the Monetary Authority of Singapore (MAS), whose monetary policy focus since 1981, is on the management of the exchange rate. The preference for exchange rate over interest rate as the instrument of monetary policy is predicated on the Singapore economy's small size (GDP of US\$297.94 billion in 2014 and number 36 globally)⁵ and its high degree of openness to trade and capital flows (40.0 per cent of domestic consumption goes on imports and trade was 300.0 per cent of GDP in 2011). This has helped a stable and predictable relationship between the exchange rate and price stability, as the intermediate and final targets respectively over the medium term.

Tee (2013) argues that the three major features of the exchange rate system have served as an effective anchor of price stability, keeping inflation low and stable over the past 30 years.

1. The basket feature indexes the rate (\$\$NEER, nominal effective exchange rate) to Singapore's major trading currencies, and not an individual currency.
2. The band feature sets upper and lower limits for the trade-weighted exchange rate, and

⁵ According to the International Monetary Fund (IMF) statistics for 2014, when Nigeria ranked 21st with GDP of \$594.26 billion. It requires a growth rate of 14.0 per cent in 2015 to dislodge Switzerland (\$679 billion economy) from the 20th position.

3. The crawl feature (slope of the band) indexes it as well to economic fundamentals. The slope of the policy band, as well as the level at which it is centred, is not disclosed. Moreover, the openness of the economy makes the exchange rate relatively controllable through direct intervention in the foreign exchange markets.

The corporate sector of the Singaporean economy is dominated by foreign multinationals that hardly borrow from the domestic credit markets and their borrowings are thus price inelastic, whereas capital mobility between offshore banks (denominated in foreign currencies) and domestic (Singaporean dollar) banking makes small changes in interest rate differentials capable of triggering rapid and huge capital movements! For the exchange rate however, changes in it can act directly to dampen imported inflationary pressures and indirectly to tackle domestic sources of inflation.

In essence, the exchange rate-based monetary policy allows the Singapore government to retain greater control over macroeconomic outcomes such as GDP and CPI inflation, and thus over the ultimate target of price stability. In addition, Singapore has complemented monetary policy with micro- and macroprudential measures to ensure overall price and financial stability in the economy. The Monetary Authority of Singapore (MAS) thus cedes control over domestic interest rates and money supply – all it worries about is how to dampen excessive interest rate volatility. As such, Singapore dollar interest rates are therefore largely determined by foreign interest rates and investors' expectations of the future movement of the Singapore dollar.

IV.2 Malaysia⁶

Malaysia was in a desperate situation in 1998 when she introduced capital controls – there were massive capital outflows and currency speculation that warranted depreciation of the ringgit by 40.0 per cent at a time the stock market took a shaving of some US\$140 million of its value. Raising interest rates to counter depreciation of exchange rate was bad news for growth because it will hurt businesses. The economy contracted by 2.8 percent in the first quarter of 1998. Amid accusing the world financial centres of conspiracy, Malaysia introduced the following controls:

- The ringgit was fixed at 3.8/US\$, which was 10.0 per cent higher than the rate at the time it was trading freely.
- All ringgit taken out were ordered repatriated within one month, although the deadline was later relaxed.
- Tight limits were imposed on capital transfers abroad by residents.
- Freeze on foreign direct investment (FDI) outflow for 12 months.

⁶ This was culled from the paper by Ong Chong Tee who was the Deputy Managing Director of the Monetary Authority of Singapore.

As speculative pressure eased on the ringgit, the government began spending on public works projects to boost domestic demand and stave off recession. All these were strictly motivated by the prime minister, because the central bank governor, his deputy and finance minister disagreed, and they all resigned!

But soon after the controls were imposed, the Kuala Lumpur Stock Exchange's KLSE index rose by 80.0 per cent as repatriated ringgit moved back into the market. Foreign reserves rose to US\$27 billion, or five months of import cover, from US\$20 billion in the four months after the controls were imposed. Economic growth came in at 5.4 per cent in 1999, rebounding from a contraction of 7.5 per cent in 1998.

By February 1999, the country started to ease the controls to avoid a run. Fresh capital inflows were subjected to shorter control periods, while there were taxes imposed on exiting portfolio investment. Foreign businesses operating in Malaysia did not worry about the cocktail of policies, which would strengthen the economy and thus support their business. The only worry was impeded access to international capital. The controls were lifted finally in July 2005, being in place for all of seven years.

More recently, the prime minister stated that Malaysia will not impose capital controls because its situation is not the same as it was during the crisis of 1997. With some US\$130 billion in reserves and small chance of default, Malaysia is in a strong position to weather the storm of rapid outflows being experienced. In a retrospective acceptance of the capital controls imposed in Malaysia in 1998, the International Monetary Fund (IMF) report on Malaysia in 1999 gave a clear pointer as to preconditions for capital controls, arguing that this was why it succeeded in Malaysia.

- The adequacy of foreign exchange reserves permitted the central bank to credibly fix the exchange rate. If it hadn't already possessed enough reserves to defend the ringgit, it might not have been able to prevent local savers to flee fearing a collapse in the new exchange rate regime.
- The fact that the Malaysian economy had relatively strong fundamentals when the controls were adopted and that the controls were accompanied by an economic reform program.
- The ringgit was somewhat undervalued at 3.8 ringgit to the dollar as other regional currencies were starting to strengthen, so there was less reason for people to evade the peg.
- The fact that the controls were so wide-ranging meant they closed a lot of possible loopholes.
- Strict implementation by the central bank and a disciplined banking system willing to obey the controls.
- Transparent and clear information about the controls, why they were imposed and how they would work.

This makes it obvious then that dealing with the trilemma is largely a function of the peculiar situation of each country and the commitment by all stakeholders to the changes required to stabilise the financial and re-energise growth.

IV.3 Other Emerging Economies

Strauss-Kahn (2010)⁷ stated that:

"Nations from Brazil to China are striving to restrain their currencies by selling them or applying capital controls as investors seek higher-yielding emerging market assets amid near-zero U.S. borrowing costs. Capital flooding into Asia may lead to excessive exchange rate moves, asset bubbles and financial instability."

Finance chiefs of emerging economies blamed monetary easing by advanced nations for pushing investment into their markets and stoking currency appreciation. Yet, the U.S. and Europe have been pressuring emerging countries to let their exchange rates appreciate to rebalance demand in the world economy. South Korea promised further measures to counter capital inflows triggered by "low" interest rates overseas, according to the Finance Minister Yoon Jeung Hyun. The authorities will act when "herd behaviour" causes sudden moves in the currency.

V. Major Inferences

From the preceding two sections, the following can be inferred:

1. Financial globalisation is making international capital increasingly mobile thereby heightening the risk of contagion.
2. There are disparate exchange rate regimes that theoretically, fall along a continuum from pure float to hard pegs, and the intermediate systems of the managed and 'dirty' floats (crawling peg), with several operational variants of each system. No country operates a pure float in the real sense of it.
3. Capital immobility makes the exchange rate regime adopted irrelevant, as it delinks the domestic interest rate from foreign interest rates and thus makes monetary policy independent.
4. A fixed exchange rate regime with full capital mobility presents a strong positive link between domestic interest and foreign interest rates, and has high vulnerability in times of financial and/or banking crisis.
5. In an open economy that allows full capital mobility, a flexible exchange rate system is more amenable to minimising vulnerabilities of massive capital outflows,

⁷ Dominique Strauss-Kahn, President, International Monetary Fund (Oct. 18 2010).

although there is no conclusive evidence to support a strong link between domestic and foreign interest rates.

6. Most EME have evolved from fixed exchange rate regimes to flexible regimes as their economies became more internationalised. The lessons of the early years of liberalisation and massive capital outflows during financial crisis have given credence to reforming their economies and financial systems, proving that capital controls over a well-defined period of time and in response to crises or destabilising events is productive.
7. Flexible exchange rate regime and full capital mobility creates credibility on the back of strong fundamentals that allow effective use of capital controls to manage financial and banking crisis.
8. Capital controls can exist side-by-side with conventional monetary policy instruments.
9. The boom-bust cycle can be moderate by aggressive stress-testing of and tougher leverage ratios for financial institutions.

VI. Conclusion and Recommendations

Whether the central bank is faced with the trilemma (fixed exchange rates, independent monetary policies and full capital mobility) or dilemma (full capital mobility and managed capital account) is largely a function of the exchange rate regime adopted. The more internationalised the financial system of an emerging economy is, the more attractive it becomes to international capital. This creates vulnerabilities that are best managed under flexible exchange rate regimes, as opposed to hard pegs or managed float systems.

There are however, hard lessons for Nigeria to take from the experience of the EME, and these go beyond the arguments surrounding the 'Holy Trinity' of central banking. These should indeed be regarded as preconditions (Adedipe, 2007) for the recommendations to follow, and they are:

1. Macroeconomic stability
2. Fiscal discipline
3. Strong and liquid financial system, both the money and capital markets
4. Minimal interest rate differential
5. Flexible exchange rate management regime
6. Robust external reserves
7. Fast growing GDP
8. Effective and efficient financial regulatory and supervisory framework.

Singapore and Malaysia were singled out for mention in country experiences, given their significant improvement in the annual 'Competitiveness Index' compiled by the World Economic Forum as well as the 'Doing Business' ranking by the World Bank and International Finance Corporation. For example, Malaysia improved significantly in the

doing business ranking from 24 in 2005 to 6 in 2014, while Singapore has topped doing business for nine years at a row from 2007 (its competitiveness index ranking improved from 5 in 2008/2009 to being among the top-three since 2009/2010). This no doubt, is one of the reasons the Singaporean and Malaysian economies are attractive to international capital, with the underlying factors listed out in Appendix.

In specific terms then, the Central Bank of Nigeria and other emerging/frontier economies that are faced with the trilemma should:

1. Introduce capital controls for defined period of time, not exceeding 12 to 18 months. Capital controls are inevitable unconventional instrument whenever a currency is under persistent pressure as a result of rapid capital outflows. This is irrespective of the exchange rate regime being pursued.
2. Fix the Naira exchange rate for the same 'control window', resisting every argument or suggestion of devaluation of the Naira. The pressure in the foreign exchange market is largely driven by speculation and demand that delinks from the trend in economic activities. Historically, devaluation based on premium on the official exchange rate has not produced any enduring benefit to the economy because the principal export products/produce are items on which the exporters have little or no control over the prices.
3. Strengthen regulatory oversight to ensure a disciplined banking system that ensures effective policy transmission.
4. Introduce tax incentives for capital inflows and a higher tax on outflows over the 12 to 18 months 'control window' to encourage capital inflows and discourage rapid outflow of international capital. Target FDI incentives to sectors that offer fast growth opportunities and development prospects that will make growth inclusive.
5. Encourage proper coordination of fiscal and monetary policies, putting emphasis on macroeconomic stability, fiscal discipline and advice to fiscal authorities to invest more in infrastructure projects.

Perhaps the greatest lesson from these experiences is that the respect for the theory and logic of international finance do not in any way preclude introducing capital controls during a crisis and keeping the exchange rate fixed. Once the economy and financial system stabilise and confidence of investors is regained, the controls should be eased gradually over a six-month period.

Appendix
Annual Ranking of Selected Countries

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Mexico	73	62	43	42	55	51	58	53	48	53	61
Nigeria	88	109	108	114	125	134	137	133	131	147	127
Indonesia	74	131	135	127	122	115	121	129	128	120	34
Turkey	93	84	91	60	63	73	59	43	71	69	45
Brazil	65	122	121	126	129	124	127	126	130	116	57
South Africa	42	28	29	35	34	32	34	35	39	41	56
Malaysia	24	25	25	25	23	23	21	18	12	6	20
Singapore	3	2	1	1	1	1	1	1	1	1	2
Ghana	n.a.	n.a.	82	87	97	77	67	63	64	67	111

Source: The Global Competitiveness reports by the World Economic Forum

The best ranked countries are reported to have:

1. Efficiency of goods and labour markets.
2. Sophistication of the business culture.
3. Impressive capacity for technological innovations of their companies.
4. Strong public and private institutions.
5. Macroeconomic stability
6. Longer term and broader competitiveness agenda.
7. Consistently reform and proactive in quick response to new economic realities.
8. Comprehensive, broad approach to reforms.
9. Inclusive – public sector agencies, private sector representatives and institutionalised reform at the highest levels.

References

- Adedipe, B. (2007). "Capital Account Liberalization: What Options for Developing Countries?", *CBN Executive Seminar*.
- Bianchi, Javier(2011). "Overborrowing and Systemic Externalities in the Business Cycle", *American Economic Review*, December, 101 (7), 3400–3426.
-and Enrique G. Mendoza (2010). "Overborrowing, Financial Crises and Macroprudential Taxes", NBER Working Paper 16091, June.
- Caballero, R. J. and A. Krishnamurthy (2004). "Smoothing sudden stops", *Journal of Economic Theory*, November 2004, 119 (1), 104–127.
- Calvo, G. A. (1998). "Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops", *Journal of Applied Economics*, November 1998, 0, 35–54.
- Calvo, G. A. (2005). "The Emerging Capital Markets in Turmoil: Bad Luck or Bad Policy", (MIT Press, 2005).
- Davis Scott and Ignacio Presno(2014). "Capital Controls as an Instrument of Monetary Policy", Federal Reserve Bank of Dallas, Globalization and Monetary Policy Institute, Working Paper No. 171, June.
- Farhi E. and I. Werning (2013). Dilemma not Trilemma? Capital Controls and Exchange Rates with Volatile Capital Flows. Paper presented at the 14th Jacques Polak Annual Research Conference Hosted by the International Monetary Fund Washington, DC—November 7–8.
- Forbes K. J. and F. E. Warnock (2012). Capital flow waves: Surges, stops, flight, and retrenchment. *Journal of International Economics* 88 (2012) 235–251.
- Fisher, S., (2001) "Exchange Rate Regime: Is the Bipolar view correct" *Journal of Economic Perspectives* 15, 3-24.
- Ghosh, A. R., J. D. Ostry and M. S. Qureshi (2014). "Exchange Rate Management and Crisis Susceptibility: A Reassessment", IMF Working Paper, WP/14/11, January 2014.
- Jeanne, O. and A. Korinek (2010). "Excessive Volatility in Capital Flows: A Pigouvian Taxation Approach", *American Economic Review*, May, 100 (2), 403–407.
- Kaminsky G. L., C. M. Reinhart, C. A. Végh (2004). When It Rains, It Pours: Procyclical Capital Flows and Macroeconomic Policies. The National Bureau of Economic Research (NBER) Macroeconomics Annual 2004, Volume 19. MIT Press.
- Korinek, A. (2011). "The New Economics of Prudential Capital Controls: A Research Agenda", *IMF Economic Review*, August 2011, 59 (3), 523–561.

Mendoza, E. G. (2010). "Sudden Stops, Financial Crises, and Leverage", *American Economic Review*, December 2010, 100 (5), 1941–66.

Reinhart C. M. and V. R. Reinhart (2008). *Capital Inflows and Reserve Accumulation: The Recent Evidence*. NBER Working Paper Series No. 13842.

Rey, H el ene (2013). "Dilemma Not Trilemma: The Global Financial Cycle and Monetary Policy Independence", *Institute for New Economic Thinking* (September)

Sexena C. Sweta (2008). "Capital Flows, Exchange Rate Regime and Monetary Policy", *BIS papers No. 35*, Pp. 81-102, January 2008.

Tee Ong, Chong (2013). "An Exchange-rate-centered Monetary Policy System: Singapore's Experience", *BIS Papers No. 73* (2013).