

# **Global Foreign Exchange Markets and Institution Building –**

## **The Case for Global Monetary Reform**

### **Abstract:**

The paper discusses the need for global monetary reform, especially to curb volatility and misalignment of exchange rates. Several proposals for global monetary reforms are discussed, especially target zones with sterilised central bank interventions. Although the proposals are old (but need to be updated), there is new theoretical and empirical support for these proposals from advances in exchange rate theory. Key pillars of defence of the full floating of the dollar-euro-yen forex markets are no longer tenable. It is proposed to start central bank currency cooperation of the Fed, the ECB and the Bank of Japan. The Tobin Tax should be included in a resuscitated target zone reform. Regulation of the largest financial market on the globe should be considered, at least systematic market surveillance. A new approach could start with several small steps in a new direction.

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## *1. Introduction*

As many have phrased, after the demise of the Bretton Woods system in the early 1970s, we arrived at a “non-system” of exchange rates. The loss of the old system, which accompanied and underpinned the “golden age” of the post-war era, was succeeded by the age of liberalization, in particular the transition to floating exchange rates among the dominant currencies. Western European currencies responded first with currency cooperation, then with a common currency. Most developing and emerging countries’ currencies are now either somehow pegged to the dollar or the euro or in some way following the idea of managed floating. There is widespread discomfiture and complaint about this non-system, especially from developing and emerging economies, which are seemingly often thrown into heavy boom-and-bust cycles of exchange rate tides or fear even “currency wars”. Despite a plethora of global liquidity, countries that urgently need hard currency to balance their trade have a hard time to access affordable foreign exchange. The quasi-monopolistic world currency, on the top of the global currency hierarchy seems to enjoy the “exorbitant privilege” of having national currency that is also the only truly global currency, which is embedded in a financial system with – at times – very negative external effects.

Despite many attempts to reconsider global monetary reform, serious concerns did not come up among the G7 countries. The status quo is tenaciously defended.

In this paper, I will briefly review the main empirical features of the present exchange rate system, with respect to the currencies of both advanced and emerging countries. This is followed by short conclusions from the long-standing debates on exchange rate theories which are seemingly unable to explain the actual exchange rate performance. Then several prominent conceptions for global monetary reforms are discussed, including why they were rejected. The upshot is a conclusion which calls for an attempt for currency cooperation between the two or three major currencies on the globe, based, firstly, on new insights from recent exchange rate theory advances, secondly, on a new valuation of the problems of a continued trend towards global floating, and thirdly, on false criticisms of proposals for reform. It is held that new institution-building for global monetary reform is indispensable to cope with financial globalization.

## *2. Experiences from four decades of floating exchange rates*

The trend towards floating exchange rates after Bretton Woods led to strong exchange rate volatility, long-standing misalignments and attempts for deliberate currency and monetary policy with real undervaluation or strong money creation forcing other countries to unwanted over-valuation; “currency wars” might be looming.

Reality after Bretton Woods differed markedly from the expectations of the floating exchange rate proponents. In contrast to stable real exchange rates in line with fundamentals, especially purchasing-power-parity (PPP), chaotic ups and downs occurred, up to more than 100 per cent, among the major currencies. Especially in the dollar-yen and the dollar-DM markets, we observe long super-cycles of appreciation and depreciation, unrelated to inflation differentials or interest rate parities, let alone PPP (see charts 1-4 in the appendix). The dollar-euro exchange rate as well as other advanced countries’ rates follows the DM-pattern. Most currencies of OECD countries swing in tandem around the dollar, some more, some less. This implies, that the prime reserve currency’s effective exchange rate is one of the most unstable exchange rates in the world. The often-stipulated long-run equilibrium, close to PPP, shows up only in passing, in the course of long swings of over- and undershooting. This implies not only high volatility, but also long-standing misalignments of (real) exchange rates. Even if a return to PPP or alternatively defined fundamental exchange rates would occur in the long run, say in five to ten years, enterprises and industries hit by long over-appreciation would have gone bust, in case of undervaluation would have gained uncontested strong market share advantages. Hence this PPP would be a perverted quasi-equilibrium.

Regarding emerging economies, their exchange rates seem to be affected by much stronger volatility (see charts 5 and 6), long-standing misalignments, for many countries towards overvaluation with regard to their current account, for some undervaluation. The number of currency and related financial crises in developing and emerging countries has increased to 130 from 1970 until 2007 (almost none before), exclusively in emerging economies (Laeven/Valencia 2012). Exchange rate surges came mostly with short-term capital inflow tsunamis, and the infamous sudden reversals. There is more and more evidence that the main driver for these capital in- and outflows emanate from the tide of financial investors’ risk appetite in the advanced countries, which are related to the business cycle and central banks’ policies. Pull factors in emerging countries with open capital accounts reinforce excessive capital inflows, attracted often by high growth and a nominal interest rate

differentials. If the dollar-euro or dollar-yen exchange rates change strongly, many developing countries that tend to follow one of the two or three leading currencies with a soft peg or with managed floating, lose competitiveness either vis à vis the dollar or the euro or yen bloc. Effective rates cannot be pegged. Many developing countries would prefer intermediate exchange regimes, i.e. neither full float nor hard pegs, but the prevailing non-system pushes them towards floating. They fear floating for a number of reasons, such as the incalculable momentum of overshooting depreciations, inflationary impact, costs of real appreciation of external debt and currency mismatch problems in balance sheets.

Both country groups, those facing strong appreciation and those facing strong depreciation, suffer peculiar hardships. The former tend to lose competitiveness of exports and imports and worsening of the current account; they exert pressure on labour costs, tighten fiscal policy and perhaps mitigate monetary policy. Most deficit countries have to turn to deflationary policies and will suffer lower growth and employment. Economies with strong depreciation of their currency have to stem the ebb, are confronted with inflationary impulses and have to tighten monetary policy. Both country groups miss the proper policy stance for growth, price stability and employment. The promise to gain monetary policy autonomy with floating exchange rates turns out to be elusive: if the exchange rate movements are too strong and come unwanted, monetary policy can hardly ignore exchange rate management.

Floating exchange rates, or somewhat managed and softly floating, are accepted by many countries since they have only worse alternatives. Unilateral defence of exchange rates can work at best in cases of appreciation pressure, but to a lesser extent for depreciation pressure due to limited currency reserves. Using capital controls is considered inappropriate for OECD countries, and requires sophisticated institutions and respective policies in other countries. So far, successes with mild forms of capital controls with regard to exchange rate management had been limited, in contrast to exerting influence on the *composition* of capital inflows. Pegging and other intermediate exchange rate regimes often have to be abandoned in situations with strong exchange rate pressures, so that full float is the last option. Even pegging to one lead currency implies floating to other lead currencies if the latter two float.

At first glance it seems as if full floating is an easy and comfortable option. Authorities are freed from difficult exchange rate management, and forex markets seem to be in permanent equilibrium if supply meets demand no matter where the rate stands. If floating exchange rates lead to current account deficits, global capital markets stand ready to offer ample

finance. Sophisticated financial markets are praised for their potency to provide finance even for large deficits.

The two giant economies in the world economy, China and India, seem to be in a gradual transit to more exchange rate flexibility and less capital controls, other populous emerging economies such as Turkey, Indonesia, Brazil and Mexico as well. If the policy space for these economies would be narrowed by full exposure to the vagaries of forex markets and concomitant capital flows, the global economy might change with a quantum leap in an unfavourable direction.

The seminal turn to floating exchange rates has triggered a boom of financial markets which seek to provide support for coping with exchange rate instability. Exchange rate forwards, swaps, futures and options have mushroomed, furthermore short-term portfolio flows. It seems that exchange rate liberalization had opened the box of the Pandora for full capital account liberalization and financial deregulation in general. As a matter of fact, the age of general financial liberalization had started with freeing forex markets from the fetters of Bretton Woods.

Some countries have deliberately undervalued their currencies in real terms. Others have guided monetary policy after the global financial crisis towards quantitative easing with waves of short-term money flowing into other countries, often emerging economies, triggering waves of appreciation, often connected with carry trade. Tapering of QE threw countries in severe depreciation storms. Japan and Europe follow China with strategic depreciations. There seems to be a new disorder in global currency relations.

Today, forex markets have become the largest financial markets on the globe with a daily transaction volume of \$5.3 trillion (2013, BIS 2013)), which amounts almost 23 times the Gross World Product. Global trade in goods and services is dwarfed to 1.62% of forex market transactions. Forex markets have grown from 1998 until 2013 by 250%, annually by 8.7%. Swaps account for 42% of all forex transactions, spot transactions for 38% of total (2013), derivatives are mushrooming but their share remains still small (3%), assuming correct counting by BIS. The high volume of transactions seems to be linked to mainly short-term capital flows. The US\$ has a supreme position on global forex markets: the US\$ is involved in 87% of all transactions, the euro in 33%, the yen in 23% (from 200% as the total). With a market share of 24% of all transactions (counted as 100) the dollar-euro market is the biggest, followed by the dollar-yen and dollar-GBP market with 18 and 9%, respectively. If both sides of the transactions are counted with a total of 200%, China's

currency figures low with only 2.2%. The financial crisis of 2008-9 has not lowered the market position of the US\$.

Foreign exchange markets are considered highly unregulated, especially in the case of fully floating exchange rates, for instance on the dollar-euro market. This market seems to be the lead market for all others, in connection with the dollar-yen market. A change in these two markets has considerable repercussions on all other forex markets. Stabilizing exchange rates should start with a closer look at these two markets.

In contrast to the age of Bretton Woods, price stability is nowadays considered solely as domestic price level stability, excluding the external value of the currencies. This is a limited understanding, since it excludes the prices for traded goods and services, as well as asset prices. Exchange rates are – in the realm of prices of goods and factors – very special prices since a currency is not a normal good or service. Changes of exchange rates have an impact on all *relative* prices, if they go beyond merely offsetting inflation differentials (which is so in most transaction as inflation differentials between advanced countries are small). Hence any *real* exchange rate change distorts myriads of relative prices of goods and factors and requires permanent readjustments. Misalignments of exchange rates for a considerable duration distort all other prices, in particular distort trade and capital flows and thus cause allocational inefficiencies of grand scale.

Overall, one can sum up that floating exchange rate regimes generated high volatility of exchange rates, often led to long-standing misalignments, allocational inefficiency, higher uncertainty, increased global imbalances and raised hedging costs. Monetary policies have used unilaterally exchange rate policies for beggar-thy-neighbour export promotion, and careless monetary policy after the financial crisis have disregarded negative external effects on other countries. Key activities of long-term impact cannot be hedged against exchange rate volatility, especially investment in fixed assets. Moreover, floating exchange rates created a huge playing field for speculation with foreign exchange and other financial assets.

### 3. *The crisis of exchange rate theories*

There is a great and disturbing variety of exchange rate theories (Priewe 2015, Taylor 1995). The traditional theories still taught in most textbooks are the PPP-theory, rooted in Gustav Cassel's writing and implicit in David Ricardo's theory. Also Keynes believed that the PPP-theory and the law of one price are a truism, applicable to exchange rates in the long run, but restricted to tradables. The PPP-theory is often embedded in the monetary theory of

exchange rates which explains inflation differentials by changes in money supply, following David Hume. Hence exchange rates follow fundamentals, considered as offsetting inflation differentials and equalizing the prices of homogeneous tradable goods by way of arbitrage. Interest rate parity theories of the uncovered and covered versions complement the PPP-theories for the short- or medium-term. They can also lead to overshooting exchange rates due to sluggish responses of the real economy to price differentials, as compared to financial markets. In the long-term equilibrium exchange rates converge to PPP and parity of real interest rates. This would guarantee under full floating stable real effective exchange rates.

Ever more sophisticated econometric research in the last few decades (starting with Meese/Rogoff 1983) was unable to explain short to medium term exchange rates on forex markets of advanced countries' currencies (Rossi 2013). Random walk can better explain exchange rate behaviour than models based on fundamentals. De Grauwe summarizes the devastating judgment of conventional exchange rate theory: „There is overwhelming empirical evidence that the exchange rates of the most important currencies are unrelated to the fundamentals that economic theory has identified.” (2000, 353).

Despite this insight, many economists still believe in equilibrium in the long run, based on some kind of PPP. For the dollar-DM and dollar-euro exchange rates, strong deviations from PPP are the rule, rates near PPP the exceptions. What is more important, however, is that PPP-theories are no longer applicable if long spells of deviation have passed, since the basket of goods produced in a country changes. Then the real economy has to adjust to the exchange rates, not the exchange rates to the real economy. Causality is reversed (Priebe 2015). Another reasoning in favour of PPP-theory is that enterprises often respond to exchange rate changes with pricing to markets, i.e. they keep prices for tradables fairly stable. This would imply that enterprises make huge losses for longer periods if exchange rates appreciate strongly. Hedging against exchange rate changes is costly and limited to the short term.

Most traditional exchange rate theories implicitly or explicitly use rational expectations and follow the efficient market analysis. Market participants therefore do not make systematic forecast errors and are, on average, cognizant of the equilibrium rates. They use all available information so that information is completely fed into prices, implying that systematic profits cannot be made on forex markets. These assumptions imply that destabilizing speculation does not occur on forex markets, since it would be irrational and lead to loss making.

Since the early 1990s an important and promising branch of exchange rate economics turned to the microeconomic structure approach, after explaining exchange rates with macro variables had seemingly failed (Frankel and Froot 1990, Taylor and Allen 1992). In this approach, the behaviour of forex traders is at the centre stage of analysis. Observations show that most traders follow technical analyses or chart techniques, rather than analysing fundamental variables. The chartist traders predominate and tend to use backward looking expectations leading to trending upward or downward paths. They have normally a very short-term time horizon, often use algorithm trade, and combine arbitrage with speculation, i.e. incur unhedged risks to a limited extent. Fundamental considerations, such as looking at key macro variables, especially interest rates, inflation rates and price levels, expected growth etc., are not fully ousted, but only seldom considered and only in periods of high uncertainty. At times, fundamental considerations can predominate, often determining the *direction* of changes. In contrast, the speed and magnitude of changes in a given direction is less or even not at all influenced by fundamentals.

This approach has become an important part of behavioural finance (cp. De Grauwe 2000, De Grauwe/Grimaldi 2006, Schulmeister 1988, 2009). The assumptions of rational expectations and efficient markets are completely dismissed. Instead volatile expectations under uncertainty are introduced, destabilising speculation is allowed for, expectations following Keynes's "beauty contest" (expectations on other players' expectations) and self-fulfilling expectations included, also herding, bandwagon effects, panics and euphoria are taken into account. Much of this is perfectly in line with Minsky's theory of financial fragility and asset bubbles or with Kindleberger's history of speculative bubbles, although put in a different microeconomic framework (Priebe 2015).

In this perspective, exchange rates must be seen as assets of their own, traded mainly among dealers with heterogeneous expectations. Detached from fundamentals, appreciations and depreciations can go on for long periods, at times interrupted by short resting phases, thus shaping outright asset bubbles. Arbitrage, hedging and speculation are interconnected. Intertemporal arbitrage between spot and forward rates may involve speculation, hedgers may contract with speculative counterparties etc. However, since exchange rates cannot grow or fall for ever, there must be turning points at which the direction of trade is switched. Such features are empirically in line with empirical anomalies such as short phases of extreme change, longer phases of sideward movements, the "fat tail" phenomenon, clustering of volatility and non-linearities. The turning points are hardly predictable. They seem to be idiosyncratic events, strongly influenced by the perception of fundamentals.

Central banks' interventions may play a role, or just announcements of authorities that change expectations; the perception of political stress when exchange rates deviate overly strong from what might be perceived as reasonable. It is in the nature of the behavioural approach that econometric tests are not applicable.

This approach, in my view, does not hold that fundamentals are unimportant and any deviation is possible. In contrast, fundamentals is an umbrella term comprising mainly expected inflation differentials, price level differentials, expected growth differentials, valuation of current account balances and expected interest rate changes. These indicators need to be observed and interpreted. Interpretation is neither always unambiguous nor points always clearly in one direction. Currency traders are not experts in analysing fundamental indicators, hence they can hardly replace those authorities in charge of fundamentals. But the latter are absent on freely floating forex markets.

#### *4. Proposals for global monetary reform*

There is broad consensus that the much stronger than expected volatility of exchange rates in the “non-system” after Bretton Woods is problematic, but many see it as a minor nuisance compared to establishing a new system. Let us review briefly the main proposals made in academics and the policy arena.

##### *Global money in a clearing union – Keynes's alternative to Bretton Woods*

During the Bretton Woods negotiations, Keynes had proposed an International Clearing Union (ICU) with an artificial currency, the Bancor, to be used by the global central bank within ICU in transactions with national central banks (Keynes 1980). The Bancor was envisaged as a basket currency, first pegged to gold in constant relation, but not infinitely redeemable in gold. All national currencies are pegged tightly but adjustable to the Bancor. The clue of the ICU was that both surplus and deficit countries should participate in reducing imbalances: deficit countries should devalue, surplus countries are obliged to use the surplus to place foreign direct investment in deficit countries and transfer the rest to a reserve fund which could be lent to the deficit countries. The latter should sell their gold to the ICU, accept higher interest rates for loans and prohibit capital exports. Pegged exchange rates vis à vis the Bancor could be maintained under limited and regulated cross-border capital mobility. Keynes wanted to achieve stable exchange rates, solve problems of imbalances in the current accounts without forcing deficit makers into deflationary policies,

and delinking the new global currency from a national currency (i.e. solving the Triffin-dilemma) and later on also from gold. Although the US government rejected Keynes's proposal, a mild variant was implanted into the Bretton Woods system. The US\$ replaced the Bancor, fixed but adjustable exchange rates were established, and the reserves of the IMF and the finance of the World Bank should support deficit countries, thus assigning the residual adjustment burden solely to the deficit countries.

Although the Keynes-Plan is now outdated, especially in an era of high international capital mobility, the problems Keynes foresaw, namely strong imbalances in the balance of payments forcing deficit countries into repressed growth and competitive devaluations and the Triffin-dilemma did materialize, let alone exchange rate volatility after the demise of the Bretton Woods system.

An updated version of the Keynes-Plan is advocated by Paul Davidson (2009, 132-142): He abandons the idea of a world central bank and a new global currency, but maintains the concept of an international clearing union. Surplus countries should have similar binding obligations as in the Keynes-Plan, including the option to buy goods from deficit countries, and deficit countries could receive finance from the clearing union, which then acts as a lender of last resort, either as direct investment, or as transfers as in the Marshall Plan after World War II. Exchange rates remain flexible or fixed. The indifference towards exchange rates implies the notion that an automatic clearing mechanism for deficits and surpluses is sufficient to cope with exchange rate volatility and misalignment. In this respect Davidson's proposal falls short of both the Keynes-Plan and the Bretton Woods system.

#### *Increasing special drawing rights (Stiglitz Commission)*

Special drawing rights (SDR) were created in 1969 as a basket currency of the four most important currencies, in addition to national currencies. All members of the IMF have to pay in and are entitled to draw SDR which can be exchanged in any currency. This system was supposed to provide additional hard currency to deficit countries, mainly developing countries, at favourable conditions without conditionality. Due to the Triffin-dilemma there was fear that the dollar as well as gold might be too scarce as reserve currency, thus forcing deficit countries into depreciation spirals. Stiglitz, chairman of a UN-Commission instituted 2009, proposed to increase SDR within the framework of the old non-system (Stiglitz et al. 2010). This could gradually lead nations away from the dollar-centred monetary system towards a true multi-currency system. Distrust against the quality and further acceptance of

the prime reserve currency was a focal notion for this proposal, promoting diversification of international reserves. SDR emission and allocation could be managed either by the IMF or by a new Global Reserve Bank. Availability of SDR dispense policy makers from accumulating excessive reserves to insure their currencies against crises, and offer ample development finance for global public goods. However, so far the leading developed countries have opposed the extended use of SDR. The only exception was the G20 summit in 2009 in London which approved additional SDR worth \$250 billion, almost half of which were allocated to G7-countries. Regarding exchange rate volatility in the framework of a revival of a new Bretton Woods system was not on the agenda of the Stiglitz-Commission, in contrast to various proposals from UNCTAD which supported the work of the Stiglitz-Commission.

#### *Target Zones for exchange rates (Williamson, McKinnon, Krugman, Bofinger)*

John Williamson developed the idea of target zone exchange rates after the breakdown of Bretton Woods (1985, 1988, 2000, Miller/Williamson 1987). The core idea is to include in this system at least the three most important currencies (at the time dollar, yen and DM). Target rates should have a band of +/-10% to allow for flexibility and unrestricted monetary policy sovereignty. At its edges, the band should have soft buffers that allow countries to return into the band or consider a change in the target rate. Monetary policy is supposed to be the main tool to keep currencies within the band. Interventions, sterilised or not, are not discussed in the original proposal. Thus it would be an intermediate regime, a compromise of fixed and flexible regimes. Williamson envisioned four main social functions of this system: flexibility to reconcile differential inflation rates; provide incentives for trade if balance of payments adjustments are necessary; liberate monetary policy to allow leeway for countercyclical monetary policy; absorb speculative pressure. The target should be chosen such that “fundamental equilibrium effective exchange rates” (FEER), i.e. real effective rates can be secured. Having stabilised exchange rates of leading currencies, intermediate regimes are easier to achieve for other currencies, especially from developing countries. Williamson intends to avoid the misalignments under global floating, and, furthermore, forcing countries to coordinate their macro policies. Relying on full floating is a comfortable excuse for heedless policies that ignore spillovers and international repercussions. Williamson revised his original proposals (2000, 31ff.) by denouncing the prime use of monetary policy for defending the band, and turned to advocating

interventions, preferable sterilised, and at least in developing countries also capital inflow controls. The main reasons for this revision was the widespread fear that monetary policy might be too strongly pinned to exchange rate stabilisation, and politicians dislike the option to use fiscal policy more actively to support or replace monetary policy; besides he found more evidence that coordinated interventions might work. Since exchange rates have an arbitrary element due to being expectations-led, he argued, publicly announced interventions could lead expectations and thus calm down volatility.

McKinnon (1984) called for target zones with unsterilized interventions from the viewpoint of currency substitution as a driving force for exchange rate changes. Interventions leave global money supply unchanged. Krugman (1991) supported in a theoretical model the target zone proposal, but relied on rational expectations and the efficient market hypothesis. Nonetheless, his result that target zones may work without interventions if the margins are perceived credible, sounds plausible. However, speculative attacks cannot be ruled out.

Most target zone proposals suggest forex interventions for defending the band margins, rather than monetary policy. Interventions can be conducted unilaterally either by the depreciating or the appreciating party, or bilaterally by both central banks involved. Bofinger (1999) supports the concept of sterilised interventions and adds a number of important arguments. He suggests coordinated interventions between the two parties involved. The central bank in the appreciation country should stem the appreciation by purchasing the weaker currency with own currency. Since foreign reserves are not necessary in this case, appreciation can in principle always be prevented; interventions can be done without limitation. However, the burden of intervention should not rest on the country with devaluation pressure because it would need currency reserves to buy own currency. Hence, this bilateral rule of intervention needs to be followed. Sterilisation can be done easily, if additional money creation for intervention against appreciation is mopped up with issuing bonds or by using the deposit facility of the ECB or similar policy tools. Since central banks set short-term interest rates and do not target money supply (after monetary rules are outdated), and sterilisation does not pose a problem, besides potential costs. Bofinger calls for a cost-sharing scheme between the two countries involved. Furthermore, he argues that the “impossible trinity”, the notion (based on the Mundell-Fleming model) that only two of the three goals (capital mobility, sovereign monetary policy and stable exchange rates) can be accomplished, is misleading: sterilised interventions do not preclude monetary sovereignty within the limitations of a band for exchange rate flexibility. Williamson had argued similarly.

Questions remain how much intervention, sterilised or not, is necessary to maintain the band, how to withstand speculative attacks and whether usage of – at least partially – monetary policy tools to defend the band might be necessary or expedient. Also, how to determine the target rate. Furthermore, one might question whether the control of exchange rates in the target zone proposals suffices to avoid or limit current account imbalances. If they remain to some extent, the above discussed options of SDR or of a clearing union may be more appropriate for this problem.

#### *Global or regional basket currency*

Several authors propose, similar to Keynes, a new global or regional basket currency, however without a clearing union. The most prominent example is the European Exchange Rate Mechanisms (ERM), the predecessor of the euro, functioning from 1979 until 1993 with a band of +/-2.25% (for a few countries +/-6%) and since 1993 with a broader band of +/-15%. The heart of the ERM was the European Currency Unit (ECU), a basket currency in constant composition of the participating currencies. All currencies floated against the US\$ and other external currencies, so that currencies were simultaneously in both corners of exchange rate regimes – in full float and in pegs. The DM was seen as the nominal anchor of the ECU. The so-called ERM II provides an obligatory anchor to those countries that want to access the euro system (the “pre-ins”) – for at least two years – with a band of +/-15% to demonstrate convergence. The ERM obliged members for multilateral interventions if the band margins are reached. Countries could apply for realignment of the reference rate, decisions were done by all members and the European Commission. In ERM II the ECB can offer member states finance for intervention, but member states are seen as primarily self-responsible for interventions.

Sterilised interventions were neither prescribed in ERM nor in ERM II. The ERM encountered 54 realignments during its lifespan, mainly for inflation-prone currencies. In 1992 and 1993 the ERM broke almost down, in the course of excessively tight monetary policy of the Deutsche Bundesbank due to inflation beyond 5% in reunified Germany. The valuation of the ERM performance is mixed. Certainly the band was too narrow, not allowing for monetary policy autonomy of its members. The main goal was to enforce lower inflation with a nominal anchor. More scope for fundamentally justified realignments should have been provided. German monetary policy was imposed, more or less, on all members, in the absence of a common central bank. Compared with exchange rate volatility

of the European currencies vis à vis the US\$, volatility was much less. Often the ERM was seen as regional Bretton Woods and a model for other continents. Yet Asia, Africa and Latin America are way farther from being optimal currency areas than Western Europe. The ERM was a kind of target zone implementation with a basket currency, but strongly in contrast to Williamson's proposal with a broad band and soft buffers.

### *Capital controls and Tobin tax*

Limited capital account liberalisation was one of the pillars of Bretton Woods. Many developing and emerging economies still use in one way or the other an array of restrictions on capital flows. China and to a much lesser degree India stand as cases in point, but also many other countries in Latin America have used so-called market based temporary controls, notably Chile in the 1980s and Brazil recently, also Korea as an OECD-member (Fritz/Prates 2013). In the case of China, there is little doubt that China's exchange rate policy with a hard peg or crawling peg to the US\$ was a key tool for stabilising the Renminbi (most likely on an undervalued level from the early 2000s until 2009) and a cornerstone for the high growth performance. The key idea in the usage of capital controls is to deter short-term speculative inflow surges which tend to appreciate the exchange rate and to depreciate it when sudden reversals occur. This might also help to change the composition of capital inflows towards longer stay periods. Since OECD-countries are by virtue of their statutes committed to fully liberalised capital flows including market-determined exchange rates, there is no room for any kind of capital controls.

Tobin re-invented 1972 Keynes's idea of a tax on speculative transactions, now applied to foreign exchange spot transactions. Keynes wrote in chapter 12 of the "General Theory": "Speculators may do no harm as bubbles on a steady stream of enterprise. But the situation is serious when enterprise becomes the bubble on a whirlpool of speculation. ... The introduction of a substantial government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprise in the United States." (Keynes 1936, 159f.) Tobin foresaw at the end of Bretton Woods a transition to strong exchange rate volatility due to excessive inter-currency mobility; hence he proposed a tax on foreign exchange transactions to mitigate the strongest downsides of the post Bretton Woods non-system (Tobin 1978). He argues it is not the question of fixed or flexible exchange rate regimes, it is most importantly the differential adjustments between financial assets to exchange rates and sluggish

responses of goods prices and wages. Tobin debunked monetarist reasoning in favour of full floating as elusive, especially the hope monetary policy could gain autonomy under a flexible regime as stipulated by the Mundell-Fleming model. Under full floating, monetary policy would become de facto exchange rate policy; expansionary monetary policy would lower interest rates and spark inflation, and vice versa. Moreover, it would impose restrictive monetary policy on the country with the counterparty currency.

After lengthy debates about the Tobin tax, modern proponents have endorsed the old reasoning of Keynes and Tobin and gathered new arguments. If the influence of chartist traders on exchange rates is as strong as modern exchange rate theories contend, and if changes in rates come in hundreds and thousands of small steps, often in fractions of seconds, the Tobin tax seems to be the proper response. Extended to a general financial transaction tax it might be the best tool for mitigating volatility and thus could be an important complement in the toolbox needed for target zones (cp. Schulmeister 2012). Different designs are conceivable, e.g. variable rates, inclusion of derivatives etc. It could also be used without target zones. Its main downside seems to be the implementation in the most important G7 countries, mainly in the US and in the UK, likely due to vested interests.

### *Managed floating and policy coordination*

Most developing countries have adopted some kind of managed floating. This relies on unilateral interventions and/or interest rate policies, at times supported with capital controls. Managed floating can be the smoothing of short-term fluctuations, as if the central bank were the market maker, or the control of the exchange rate trend towards an unannounced target rate. The latter would be similar to target zone proposals, the former closer to full floating.

Policy coordination to exert influence on exchange rates target not only on coordinated interventions in times of stress, but also at coordinated monetary and fiscal policy. The model for this was the Plaza and Louvre Accord 1985 and 1987. The Plaza Accord between the G5 country group intended to stop the extreme appreciation of the US\$ and the widening fiscal and current account deficit, provoked by excessively tight monetary and excessively loose fiscal policy and subsequent waves of reinforcing speculation; the policies that were included in coordination were all macro policies, including unsterilized interventions (cp. Obstfeld 1996). The policies were so effective, that the dollar depreciation tended to go too far and the appreciation of the other currencies, in particular the yen, likewise. In the Louvre

Accord it was agreed on policies to stabilise the exchange rates reached in 1987, even though considerable policy discontent was visible. Japan fell in recession due to the strength of the yen and responded with ultra-expansionary monetary policy which triggered asset price inflation. Yet, it can be contended that at least the Plaza Accord managed to stop the growing global imbalances originating in the US monetary and fiscal policy 1980-85, starting with the monetarist experiment of the Fed in the late 1970s under Paul Volcker as chairman of the Fed. As of late, the former ECB president Jean-Claude Trichet had called for new policy coordination to manage the dollar-euro exchange rate turbulances 2014-15.

The spectrum of reform proposals is broad. It can be classified in three overlapping groups. One group is more concerned on payment imbalances and looks for solutions like a clearing union or better reserve access for deficit countries via SDR or similar. Implicit in this line of thinking is that a global economy with one national reserve money leads into dilemmas to the detriment of the majority of nations, mainly developing countries, a view in the tradition of Triffin. Another hidden assumption is that rectifications of exchange rates are necessary but insufficient to solve the imbalance problem. The second group is more concerned with exchange rate fluctuations and long-standing misalignments. Here the target zone proposal is the focal idea. The Keynes-Plan combines both groups of proposals. A third group avoids grand reforms and looks pragmatically for feasible and light reforms, such as managed floating or policy coordination. The latter proposals can also be understood as first steps toward grand reforms.

##### *5. Why global monetary reform is rejected*

In the political arena, it is mainly the small group of leading OECD-countries centred on the US, UK and Germany which reject most actively attempts for reforms. Let us not discuss the underlying political and economic reasons, but turn to the academic discourses. First of all, it is a stunning fact that discourses on these matters are scarce in the economics profession in the last two decades. The debate about the European currency union, i.e. a regional solution to the global problems had predominated. Debates on the older proposals have faded, new insights, new evidence and new theoretical approaches have hardly been incorporated, and the older proposals are shelved, often insufficiently evaluated and marginalised in economics education and in research; equally important, they are not updated and adjusted to the needs of the globalised economy in the 21<sup>st</sup> century.

A blunt catch-all argument against all reform ideas is that the system of flexible exchange rates is the best that can be achieved in a non-perfect world. Problems of exchange rate volatility and misalignments are downplayed or passed on to financial markets for providing hedging. If governments would follow “sound policies”, i.e. care for price stability, fiscal discipline and flexible labour markets, further implement a market-friendly legal framework, less volatility would evolve automatically. Destabilising speculation on financial markets is unlikely, as Milton Friedman held, and in contrast to the rational expectations hypothesis, and if it occurred it would soon be expelled by rational players. In such a well-behaved market economy grand disequilibria or imbalances are hardly possible. This implies the belief that undeniably existing turbulences come mainly from outside of the market system, i.e. from bad policies and bad governance in the frameworks of poor institutions. Rational markets have the prolific potency to punish such wrongdoing, and inevitable pains have to be accepted.

The more specific lines of reasoning in defence of the present non-system rest on rational expectations theory and the efficient market hypothesis, applied to forex markets and underlying financial markets. The complementary notion is the general belief in the welfare-enhancing power of liberalized global financial markets, meaning full global liberalisation of the capital accounts. All three beliefs rest on very shaky theoretical and empirical fundaments. There is ample evidence that exchange rate volatility among G3-currencies cannot be explained by fundamentals, implicating that either intentional speculation or unintended chaos, let's call it noise trading, is predominant (Rogoff (2002) spoke of the “mystery of the volatility of the world's three key currencies”). The empirical evidence for the general benefit of universal capital account liberalisation is missing, as surfaced by a host of studies. Modern exchange rate theories hold that unfettered float is compatible with multiple equilibria, some of which are in line with fundamentals, the majority not.

A third line of defence centres around the idea that policy action against the market forces may not work (see some representative older texts from Scheide 1986, Reszat 1993, Reinhart/Reinhart 2002). Core reasoning rests mainly on three contentions: (i) the mammoth dimension of global forex markets cannot be controlled by central banks' actions - too big to be controllable; (ii) non-sterilised interventions of central banks are inflationary and would lead to interest rate volatility which would harm the global economy, and sterilised interventions simply don't work, while capital controls are unwanted by the vast majority of the business communities and by politicians. Even if they were advisable, the course of history cannot be reversed. If monetary and fiscal policy have to be used for

exchange rate control, sovereign macro tools are at risk, especially in the leading currency countries. (iii) Policy coordination is unlikely to work, due to conflicts of interest; if it works, only in a hierarchical context of national leadership, such as the US for the global currency system and Germany for the European, perhaps China or Japan in Asia. These three beliefs or concerns require indeed careful consideration and further research.

A few comments on these issues must suffice in this paper. Firstly, the sheer magnitude of foreign exchange transactions and the speed of their growth would indeed be disturbing if it deemed hazardous. If this were so, giving in and shying away would be irresponsible. Hence, the arguments has to be turned around – control and action would be necessary if perils were detected. That control is impossible implies that neither interventions of central banks or other tools can work, but this boils down to point (ii). Hence the magnitude is not a separate concern. Besides, it has to be checked whether the size of forex transactions is really a problem. Pure arbitrage is innocuous, stabilising speculation would be even beneficial. Money transactions for the broader use of diversified financial instruments may also be of little concern. If the main driver were intentional speculation, mostly destabilising or not clearly identifiable as stabilising, action might be needed and instruments are, potentially, available, such as the Tobin tax. This is precisely what Tobin foresaw as the core problem of the non-system of post Bretton Woods. If one gives in to consider this option, we should turn to point iii. What should be necessary and undisputed is better surveillance of forex markets. The largest global financial market is totally unregulated and not subject to systematic surveillance in all its complex facets.

Let us turn to the sterilisation issue (ii). The blanket verdict against sterilised interventions is premature. There is no reason to assume that interest rates rise due to sterilisation in the case of interventions of the strong currency country, as Bofinger had shown. In the meantime, there is ample evidence that sterilisation can be done, even in large magnitude. If a currency appreciates in the course of tight monetary policy justified by autonomous monetary policy, the target zone proposal does allow interest rate spreads. The trilemma view, tailored for full accomplishment of the corner targets, contending that monetary autonomy of the country is lost, does not apply. Where limitations to sterilisation lie, is not sufficiently clear. In most cases of interventions in the past, especially under the Bretton Woods regime, sterilisation was not done or even attempted. Besides, interventions to preserve fundamentally not justified exchange targets should not be done; target systems should allow for realignments, as proposed in all concepts.

Another issue is whether sterilised interventions are really and always needed. Since the demise of monetarist money targeting by all major central banks, the focus is on short-term interest rates and inflation targets. As is well-known, there is no stable relationship between base money, i.e. the medium for foreign exchange interventions, and inflation. If speculation for one currency and simultaneously against another one occur in the course of expected interest rate changes, it should be considered whether the Tobin tax is the more appropriate tool rather than interventions. As we know from emerging economies, capital inflow controls as a novel form of macroprudential regulation that can work if well designed. The taboo that this must not be done in OECD countries has not only been breached by Korea recently, it is simply not sensible in specific circumstances. Lastly, the best example that target zones with currency interventions can work better than transatlantic floating is the ERM and also ERM II.

Is it true, that policy coordination does not work (iii)? The first question is what kind of policy coordination is needed in which policy proposal. A blanket rejection against policy coordination stands against much empirical evidence. The Plaza and Louvre accord, the commitments to liquidity enhancing measures in critical years like 1997 and 2001 and for countercyclical fiscal policy 2009 are unambiguous cases in point. In the negative, it should be clear with the wisdom of hindsight the lack of monetary cooperation 1929, the reckless and overdrawn monetary policy of the Fed in the late 1970s coupled with equally reckless excessive fiscal policy or the overly tight monetary policy of Deutsche Bundesbank 1992 which risked the bursting of ERM are cases for missed cooperation, even by hegemonic powers.

Nonetheless, international policy coordination is indeed difficult and requires search for compromises. One might distinguish coordination of several policies which can probably only be done in discretionary negotiations on the one hand and rule-based coordination on the other. A global monetary reform would require the latter. It should be in the prudent long-range interest of all. Hierarchical solutions may not always be the best. One should also have in mind that the evolution of a duopoly of key global currencies (or a narrow oligopoly of several currencies) poses the challenge of much more volatility of the exchange rates of the affected countries than under the uncontested supremacy of the US\$. This argument underpins the case for currency cooperation amongst the authorities of these currencies. The bottom line of this reasoning is that policy coordination is in principle doable despite conflicting interests and potential unequal loss-benefit ratios of participants.

A key idea of institutional thinking is that good governance requires institutions that enable good policies.

## 6. *Conclusions*

Advances in exchange rate theory have led to discovering the microeconomics of forex markets in regimes of free floating. Today, we better understand the genesis of high volatility (it's no longer mystery!), misalignments and the role of speculation. The marginalisation of fundamental considerations in the rationale of traders is mirrored by the passivity of central banks which should be in charge of exchange rates in line with fundamentals. The meaning of fundamentals, regarding exchange rates, depends on a number of key indicators that do not always point in the same direction. Hence there are competing goals and interests. Since central banks in most advanced economies give priority to internal price stability and thus take exchange rate instability only indirectly into account as far as the latter impacts inflation, exchange rates seem to have no official caretaker. Governments often practice more or less benign neglect even though they may act in times of strong pressure such as 1985, 1987 or 2000 (Plaza and Louvre Accord, euro weakness). Expectation of future rates play a key role on forex markets, and any increase in uncertainty gives rise to massive and systematic speculation or even to panics. If herding plays a big role, then leadership for herds is required.

The costs of exchange rate volatility and of misalignments is hard to assess, and its distribution to the different countries affected is not obvious. But it seems that countries which are more open and less advanced than the G7 economies are more affected, especially emerging economies which face often waves if not tsunamis of appreciation followed by sudden reversals. With increased financial globalisation, especially with more countries having fully opened capital accounts, exchange rate volatility is expected to increase. There should be no doubt that more exchange rate stability is needed, and the core of instability is derived from the forex markets of national currencies to the US\$, the yen and the euro. If the latter three exchange rates fluctuate strongly, it impinges heavily on all other exchange rates. Roughly 45% of global forex transactions take place between dollar and euro (24.1%), dollar and yen (18.3%) and euro and yen (2.8%) (BIS 2013). Much would be gained for global stability if volatility on the two large markets could be tamed.

The most important requirement is to avoid in the three leading currency countries/regions monetary policy with excessively high interest rate hikes. Next, regulation that calms down

speculative herding with a tax on forex transaction in line with Tobin's proposal or with the new attempt of 11 European countries for a broad-based financial transaction tax would be highly conducive. Such a measure is closer to the core causal drivers of exchange rate volatility, compared to interest rate adjustments or forex interventions by central banks. It should also be contemplated whether and how to regulate the most unregulated financial market on the globe, i.e. forex markets in their various segments. Here experimentation is needed, since it is a move into uncharted territory. Brazil's use of a tax on forex derivatives, a kind of macroprudential regulation mixed with elements of capital control, should be explored for broader usage, especially since it is a unilateral action.

Most arguments against sterilised intervention have proved premature and unsound. There seems to be much more scope for sterilised interventions, also for non-inflationary and non-sterilised interventions if this is done in a coordinated manner with clearly assigned duties. Moreover, many arguments put forward against target zones seem weak and not tenable in the light of new exchange rate theories and modern monetary policy, and also in the light of new evidence. If the main pillars for vindicating laissez faire on forex markets are falling, namely rational expectations, the efficient market hypothesis and absence of destabilising speculation, then the arguments of the proponents of global monetary reforms gain a lot power. Vested interests and fears of the loss of privileges remain as heavy roadblocks to progress, especially in the US and the UK with London as the most important epicentre of forex markets.

First steps towards global monetary reforms could be the collaboration of the three leading central banks. Even if only the Fed and the ECB would start collaborating by denouncing laissez faire and further benign neglect of exchange rates, the doors could be opened for next steps. It should be accepted that the monetary policy autonomy of each of the three central banks remains untouched as long as extreme single-handedness in monetary policy is avoided. This approach is in line with all target zone proposals which attempt to enable latitude for country-specific monetary policy related to inflation, growth and employment.

An important step forward would be the start of systematic surveillance of the two largest forex markets with respect to curbing speculative herding. Central banks could easily announce bands for the two main exchange rates which are seen in line with fundamental indicators and policy norms, such as inflation and interest rate differentials, nominal growth differentials and current account balances. With seemingly increasing synchronization of business cycles due to financial transmission channels, targeting fundamental exchange rate

should be easier than two or three decades earlier. There is no urgent need to define precisely what a target rate is. Constructive vagueness can be more conducive, as long as the upper and lower margins for what is considered consensually as appropriate are defined. This does not mean that immediate action has to be taken when the limits are trespassed. They should serve as guideposts for expectations or – if considered necessary – as guideposts to redefine the fundamental requirements. One should reckon that on forex markets with so little guidance from the authorities in the past many forex dealers might even applaud if uncertainty is reduced. However, they might not applaud to hear that the machinery for systematic misallocation in favour of speculative profits has now some sand in the wheels.

If the leading non-prime currencies swing with less amplitude around the dollar, other currencies are likely to follow. However, the problems of volatility and misalignment of emerging countries' currencies is likely to remain. Their forex markets vis à vis the dollar are, in general, much less deep and more linked to short-term capital flows. Here the much debated proposals for capital inflow controls or “capital flow management” have their role to play. But these countries will face much less volatility for their *effective* exchange rates if the three leading currencies are more stable among each other. Next steps for them could be to approach more regional monetary cooperation.

The end vision of the new approach could be something like a “World Exchange Rate Mechanism” (WRM) similar to the ERM but with a broader band and a basket of lead currencies, including some emerging market currencies in an enlarged SDR basket. A global financial transaction tax is a critical pillar of such a project for the 21<sup>st</sup> century.

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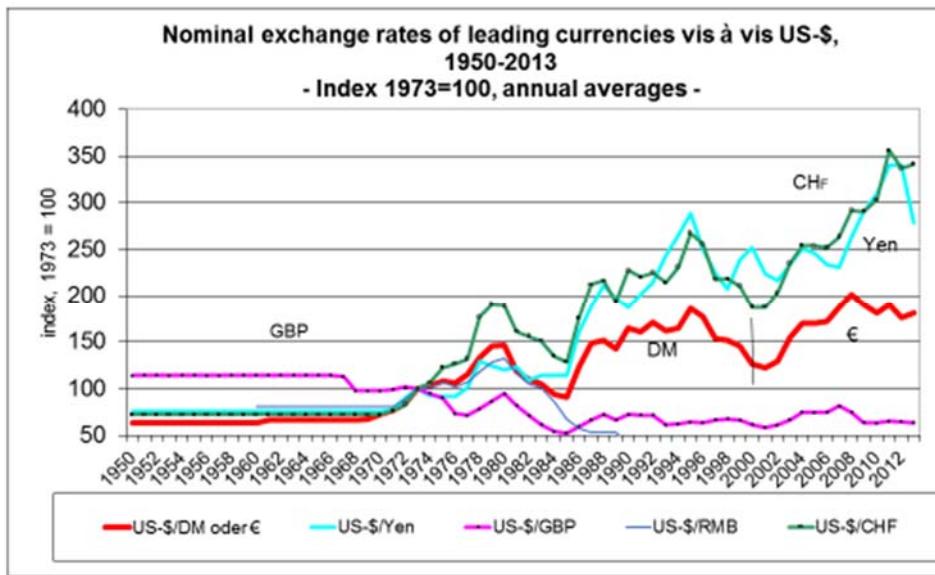
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## APPENDIX

Chart 1

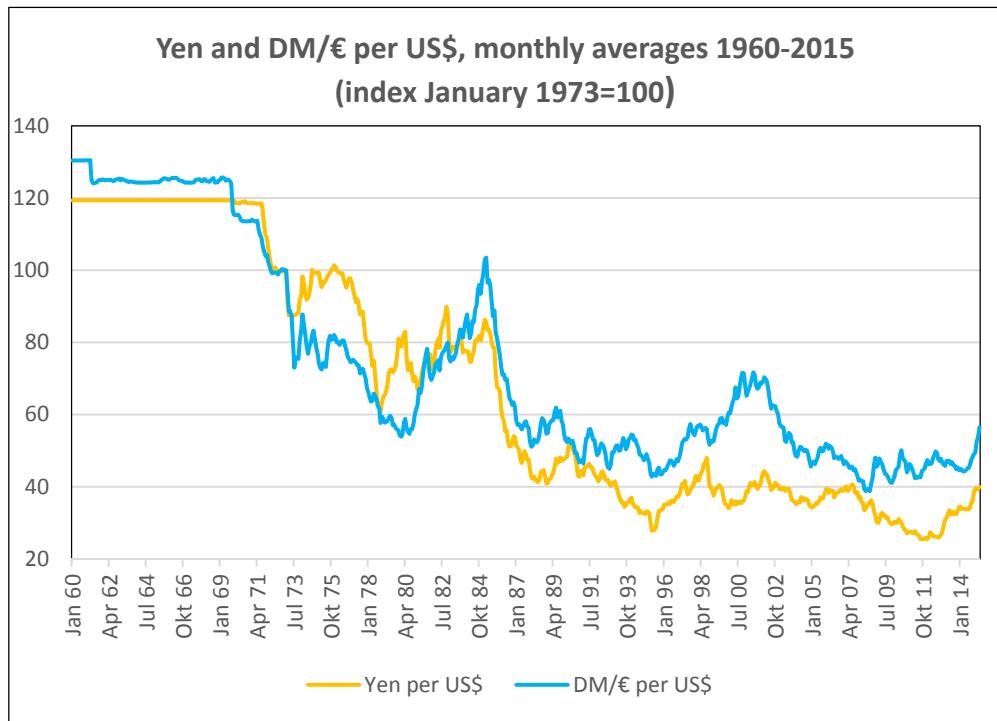


12

Note: Upward movement is appreciation against the US\$

Source: Deutsche Bundesbank, Penn World Tables, World Bank

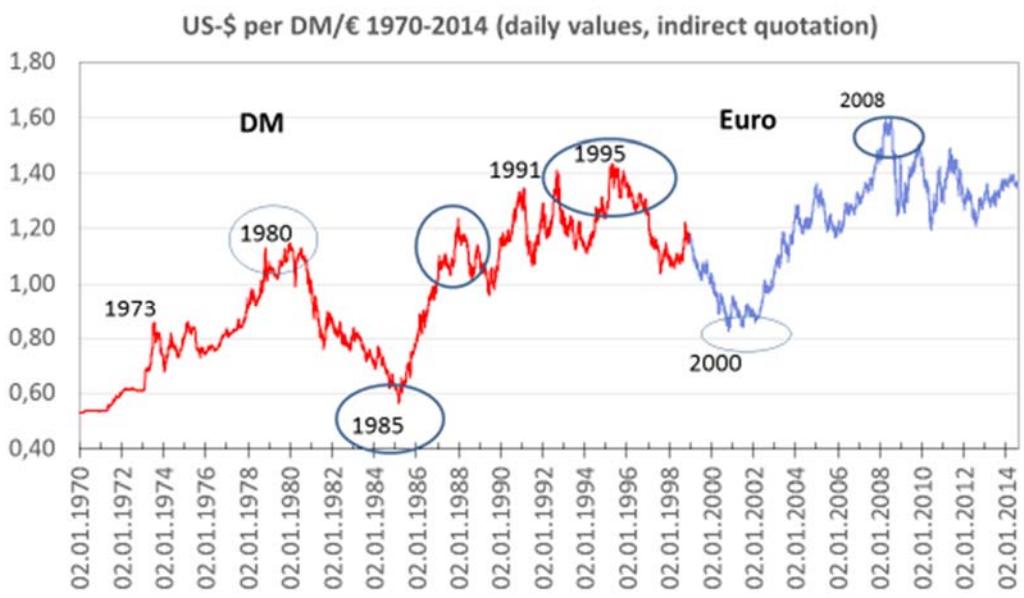
Chart 2



Note: Downward movement is appreciation

Source: <http://fxtop.com/en/historical-exchange-rates.php>

Chart 3

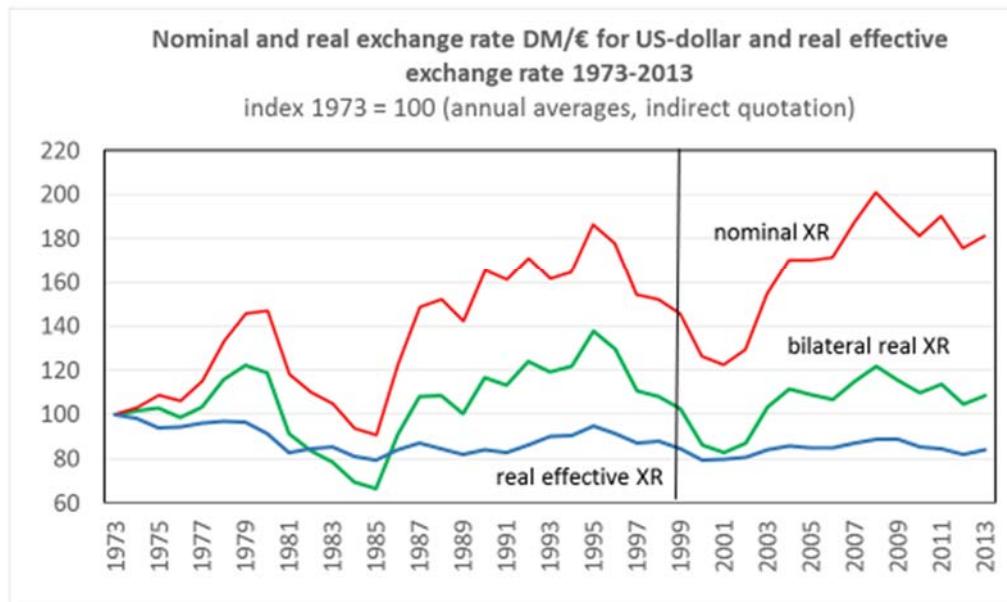


14

Note: Upward movement is appreciation of the DM or euro

Source: Deutsche Bundesbank, European Central Bank

Chart 4

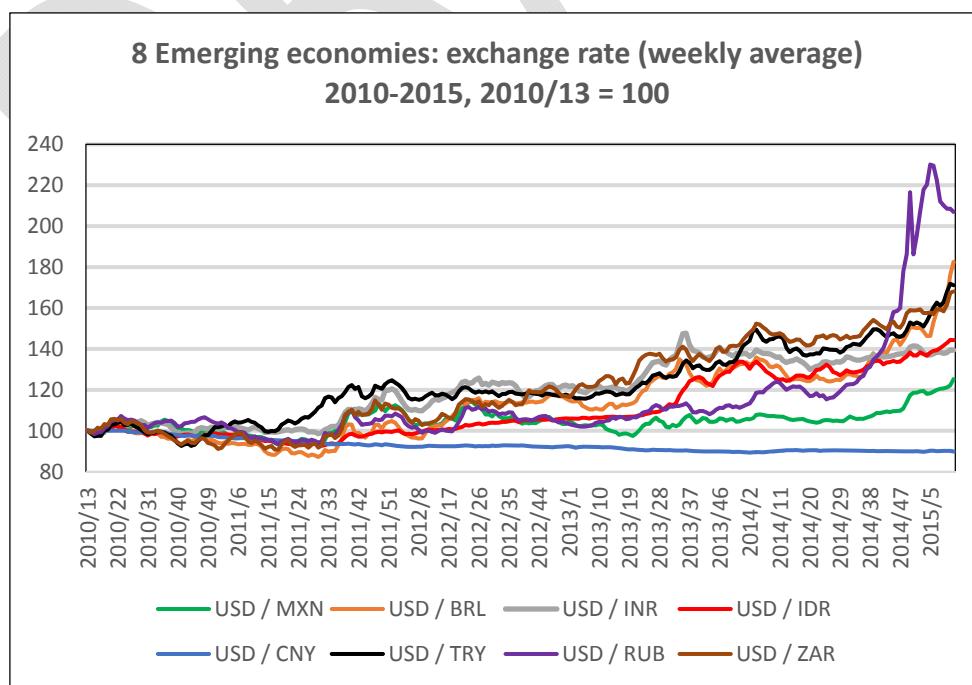


16

Note: Upward movement is appreciation of the euro

Source: Deutsche Bundesbank, BIS, AMECO, ECB

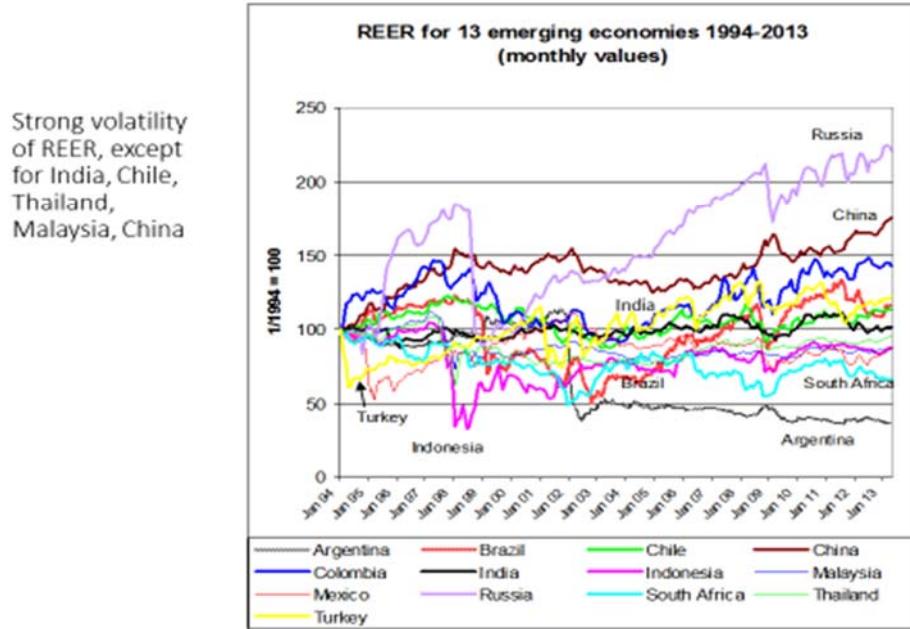
Chart 5



Note: upward movement is depreciation; currency units per US\$, for IDR and TRY divided by 10.

Source: OANDA (online)

## Chart 6



Note: Upward movement is appreciation against the US\$; REER is the real effective exchange rate.

Source: OANDA (online)