
Chief Economist Workshop April 2005: exchange rate regimes and capital flows

By Gill Hammond of the Bank's Centre for Central Banking Studies and Ole Rummel of the Bank's Monetary Instruments and Markets Division.

The second annual Chief Economist Workshop, organised by the Bank of England's Centre for Central Banking Studies (CCBS), brought together economists from more than 30 central banks. It was part of CCBS's programme of events to provide a forum for central bankers and academics to exchange views on central bank policies and to share specialist technical knowledge. The topic for this meeting was exchange rate regimes and capital flows, with a special emphasis on the choice of an appropriate exchange rate regime within the domestic monetary, fiscal and financial framework.

Introduction

In April 2005 the second Chief Economist Workshop⁽¹⁾ was held at the Bank of England, attended by more than 30 chief economists from central banks around the world. The topic this year was 'Exchange rate regimes and capital flows' and the Workshop featured academic papers⁽²⁾ as well as empirical and country case studies. This article reports on the main themes of the Workshop.⁽³⁾

The choice of exchange rate regime is of vital importance for monetary policy, the main responsibility of central banks. Yet, despite much debate on this subject over a number of decades, there remain many unresolved issues. Indeed, it seems that no sooner has a conventional wisdom on exchange rates been established than new thinking emerges to challenge it. The topic therefore provoked much discussion among participants and, while there was no universally accepted proposal for exchange rate regimes, some broad conclusions were reached. Workshop participants concurred with the proposition that there was no 'one size fits all' exchange rate regime that was suitable for all countries at all times. Equally, there was agreement that history appeared to play a large part in the choice of exchange rate regime. When considering how to respond to exchange rate shocks, the source and propagation of shocks was of crucial importance. And there were some complex issues related to the potential conflict faced by

central banks that operate both a fixed exchange rate and an inflation-targeting monetary regime. Participants also discussed the importance of the national institutional framework, the growing degree of international financial integration and the associated effect of greater capital flows — both sudden (mainly speculative) inflows as well as particularly sharp and abrupt reversals — on exchange rate regimes. Finally, the discussion touched upon the challenges of exiting a fixed exchange rate system to attain greater exchange rate flexibility.

Exchange rate regimes: how should they be classified?

One reason for the lack of consensus on the appropriate exchange rate regime was that, while economic theory implied that the choice of regime was important for economic outturns, empirical evidence seemed to suggest there was no broad difference in economic performance between countries with fixed or floating rates. Workshop participants noted that empirical results varied quite considerably depending on the way that exchange rate regimes were classified and in particular whether the traditional, *de jure* (declared) or the newer, *de facto* (actual) classification schemes were used.

Traditionally, empirical investigations were based on the exchange rate arrangements reported by individual

(1) The inaugural Chief Economist Workshop at the CCBS was held in February 2004 on the topic of the relationship between monetary and financial stability. More information is provided in Fisher and Lund (2004).

(2) Presentations were given by Kenneth Rogoff (Harvard University), Christopher Meissner (University of Cambridge) and Morris Goldstein (Institute for International Economics).

(3) All discussions were conducted under Chatham House Rules whereby comments can be recorded but not attributed to individuals.

countries to the IMF and published in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* until 1999 (the *de jure* classification). Using this *de jure* classification of exchange rates, Ghosh *et al* (2002) found that inflation was lower and growth higher in countries with fixed exchange rates. More recently, however, economists have argued that the *de jure* classification was flawed. The currencies of some countries that were officially classified as flexible in practice exhibited what Calvo and Reinhart (2002) termed a 'fear of floating', with interest rate changes and changes in reserves used to limit movements in the exchange rate. Equally, some *de jure* fixed exchange rates in practice moved quite considerably as a result of either frequent devaluations or the existence of dual or parallel markets.

In response to this, a number of researchers have presented alternative, *de facto* classification schemes, eg IMF (1999), Bubula and Ötoker-Robe (2002), Ghosh *et al* (2002), Bailliu *et al* (2003) and Levy-Yeyati and Sturzenegger (2003). Employing market-determined parallel exchange rates, Reinhart and Rogoff (2004) devised yet a third variant, which they referred to as the 'natural' classification scheme. A comparison of regime classifications across the *de jure* and the natural classification showed that only about half of the observations were classified the same way by both the IMF and Reinhart and Rogoff (2004). Participants noted that among the IMF's *de jure* 'free floats', only 20% operated as true floating regimes. Moreover, unofficial pegs were better characterised as managed or freely floating arrangements, or limited flexibility, about 45% of the time. Finally, of countries that were listed in the standard *de jure* classification as managed floating, about half turned out to have *de facto* pegs, crawls or narrow bands with some anchor currency.

Participants looked at the reasons for the discrepancies between *de facto* and *de jure* classification for individual countries. In some cases, eg Norway (1982–91) and Sweden (1993), countries had reported a fixed exchange rate regime but, because of exchange rate devaluations, were classified as non-fixed in *de facto* studies. In other cases, eg Switzerland (1982–98) and Canada (1974–89), the countries declared a floating-rate regime, but the currencies did not fluctuate much in practice.

It was suggested that the two sets of cases were quite different. While failure to maintain a *de jure* fixed rate could be seen as a 'broken commitment', lack of volatility in a *de jure* floating rate might have reflected a number of

factors. One possibility is that exchange rate stability is a consequence of monetary policy strategy and macroeconomic stability. Or it could be that a country wants to have exchange rate stability, but keep the option of flexibility to respond to shocks. Finally, a country may wish to pursue exchange rate stability but not advertise a fixed exchange rate for fear of a speculative attack.

Four factors might explain 'fear of floating' in emerging market countries. First, the authorities may be concerned about the high degree of pass-through from exchange rate changes to domestic inflation. Second, they may be concerned about financial vulnerabilities arising from highly dollarised liabilities on domestic balance sheets. Third, the authorities may worry about a potential loss of competitiveness and, finally, they may have concerns about losing the transparent nominal anchor of the exchange rate target to guide domestic inflationary expectations.

But the 'fear of floating' phenomenon was perhaps not as widespread as suggested. Emerging markets in Central and Latin America provided a good counterexample. In the mid-1990s, the majority of countries in the region had either adjustable pegs or exchange rate bands with an exchange rate target but by 2004, most were following managed or free floats with an inflation target.

The new *de facto* classification seemed to challenge the conclusions about exchange rate regimes and economic performance that were derived from analysis of *de jure* regimes. But there was considerable variety in the conclusions reached in the different studies, in part reflecting different countries in the samples, different time periods, and varying levels of aggregation. Some common threads emerged. One result of particular interest to the chief economists was that what matters for growth was a strong monetary framework — such as inflation targeting — rather than the exchange rate regime.

At the same time, it was noted that such an overly quantitative approach represented only one side of the coin. Some participants argued that it was still important to consider what countries said they were doing, as well as to observe exchange rate movements in practice. Not only was communication an important part of a country's strategic exchange rate policy, but economic outcomes depended both on what countries

did, and what they said they were doing. In addition, foreign exchange interventions could be regarded as a revealing aspect of what exchange rate regime a country was in.

What determines the choice of exchange rate regime?

This proved a fascinating question, though there were no clear answers. The classical view was that the choice of an exchange rate regime primarily depended on the nature of the shocks hitting the economy. If real shocks (ie shocks emanating from the terms of trade) dominated as, for example, would be the case for commodity exporters, a flexible exchange rate system was preferable. On the other hand, if nominal shocks (ie shocks arising from the demand side or the money supply) dominated, a fixed exchange rate regime was preferable.⁽¹⁾

As described above, analysis of the choice of exchange rate regime is inextricably linked to the question of how regimes are classified. Studies based on *de jure* regimes had led to a conventional wisdom of a 'hollowing out' or 'bi-polarisation' over the past 15 years, with countries moving to either ends of the fixed to floating spectrum of exchange rate arrangements — to hard pegs or currency unions on the one hand or freely floating on the other — and away from intermediate regimes such as pegs. But studies based on the *de facto* classification of exchange rates seemed to refute the 'bi-polar' view of exchange rates.⁽²⁾

What is less contentious is that there has been a fall in the number of currencies used as an anchor, with the US dollar and the euro the predominant currency pegs today. Meissner and Oomes (2005) looked at the factors that determined the choice of anchor currency, noting that the currency denomination of debt as well as trade network externalities (ie the importance of trade partners' anchor currency choices), were key determinants of the choice of peg. In other words, countries adopt a particular currency peg because there are benefits in using the same anchor as their trading partners. And the greater the flows of imports and exports between a country and its trading partners, the larger are the potential benefits from adopting the same anchor currency. The network effects can also give rise to co-ordination failures. This is illustrated by the fact that a number of transition economies in Europe chose

a peg to the US dollar, rather than the euro, even though it may have been preferable for them to peg to the euro.

Participants also noted that, while there were theoretical arguments in favour of pegging to a basket of currencies, particularly for countries with a diverse trading pattern, the empirical evidence showed that most countries chose a single currency peg. There were a number of possible explanations. Single currency pegs were more transparent, and possibly more credible. Some countries might peg to the single currency of a monetary union (the euro, for example) with a view to joining that union at some point in the future. Moreover the operational aspects of basket pegs could be more complex. (Should the weights be disclosed? Should there be a fluctuation band around the target and if so should that be announced? How frequently should the weights be revised to reflect changing trade patterns?)

Several participants noted the persistence of exchange rate regimes, which was mirrored in the academic literature. For example, Reinhart and Rogoff (2004) found that regime changes were rare. On average, only about 7% of countries changed their *de facto* regime in any one year.

The key conclusion reached by participants was that the choice of exchange rate regime did matter for economic performance. There was no one size fits all, and while the evidence was mixed, the strongest result seemed to be that, as countries became more developed with stronger institutions, a more flexible exchange rate system was better.

Financial integration and its effects on the domestic economy

The two key questions discussed here were whether financial integration led to more rapid growth in developing countries, and whether it caused more macroeconomic volatility. In theory, financial integration should increase growth in developing countries both directly (augmenting domestic savings, lowering the cost of capital and technology transfer) and indirectly (promotion of specialisation and better macroeconomic policies). Empirically, however, it was hard to find evidence of the gains from financial integration, possibly because factors such as differences

(1) It was also imperative to try and identify whether the shock hitting the economy was temporary or permanent.

(2) Reinhart and Rogoff (2004) suggested that intermediate regimes such as pegs have consistently accounted for about 50% of all regimes from 1970 to 2000.

in institutions and human capital were more important than differences in physical capital. In addition, it was not easy to measure financial integration. As with exchange rates there existed considerable differences between *de jure* integration (measured by official restrictions on capital flows) and *de facto* integration (measured by actual capital flows).

Participants commented on both the potentials and pitfalls of increased capital market integration. Increasing deregulation had in some countries led to ongoing imbalances between savings and investment, coupled with a dependence on capital inflows. These in turn resulted in persistent current account deficits, which left the country more exposed to shifts in global investment preferences.

Capital flows and exchange rate regimes

A key theme of the Workshop was the linkages between international capital market integration and exchange rate regimes and whether these were different for developing and emerging economies compared with advanced economies. The theory and empirical evidence on international capital market integration appeared to point to unambiguous benefits for advanced countries. For developing countries, the evidence was more mixed. There were benefits from capital integration, but also problems associated with inflexible exchange rate regimes, high levels of public and external debt, weaker governance and financial market regulation and less stable macroeconomic policies. These factors left developing countries more vulnerable to shocks.

While there was no robust empirical relationship between economic performance and exchange rate regime for emerging market countries, it appeared that emerging market countries with exposure to capital markets faced a greater risk of banking or exchange rate crises under a fixed or inflexible regime than other developing countries. For poorer developing countries, fixed regimes were associated with lower inflation and high durability. One possible explanation for the discrepancy between developing and emerging countries was that other factors, for example the quality of financial regulation, the quality of institutions such as the central bank and a sustainable fiscal position were more important.⁽¹⁾

For most emerging market economies, the magnitude and gyrations of capital flows, rather than the trade deficit and economic growth, were becoming the primary determinants of short-term exchange rate movements. Indeed, some participants noted that increased capital mobility in recent years has played the most prominent role in determining the exchange rate regime and its durability in these economies.

Based on their experiences, participants offered some recommendations on how to manage capital flows (particularly reversals) in fixed and managed regimes. For a start, countries had to maintain adequate foreign exchange reserves to smooth the impact of capital reversals and sterilise the reserves inflow through open market operations in domestic securities. Another suggested measure was to raise the statutory reserve requirement on domestic/foreign deposits (on a remunerated/non-remunerated basis). Further ideas included limits on open foreign currency positions, the use of forward exchange swaps by the central bank, and widening the exchange rate bands to allow some exchange rate appreciation. In addition, it was recommended there should be a clear hierarchy in the nature of capital flows, with equity flows being preferred to short-term debt flows. The use of capital controls to deal with (unwanted) capital inflows was debated. The consensus was that while they induced a change in the composition of the inflows, they were not useful in avoiding a real exchange rate appreciation. In fact, they may end up reducing foreign direct investment.

The role of the real exchange rate

In his classic study Mussa (1986) showed that real exchange rates were more volatile when exchange rates were floating than when they were fixed. In emerging economies, the real exchange rate may trigger a wide variety of problems, most of them related to the solvency of financial and fiscal institutions. Far from being exogenous to the economy, the real exchange rate was better regarded, at least in the short and medium term, as a mechanism of transmission between the current and the capital accounts of the balance of payments. Real exchange rate fluctuations were mostly explained by short-term shifts in capital movements. As such, every change in capital not sterilised by a similar change in international reserves generated a real exchange rate

(1) See Reinhart *et al* (2003) who argued that, for emerging markets, excessive government borrowing was at the root of most exchange rate crises.

adjustment. In particular, the sudden stops in capital flows identified by Calvo and Reinhart (1999) were usually related to episodes of sharp devaluations.

Participants agreed that targeting the real exchange rate would not be beneficial. On the contrary, such a policy entailed only transitory effects, induced policy mistakes, distorted investment decisions and, in the long term, generated inflationary pressure and reduced the credibility of the monetary authorities.

Fixed exchange rates and interventions

Participants debated the efficiency and efficacy of foreign exchange interventions as a tool of exchange rate management and the optimum level of foreign exchange reserves. The general conclusion was that foreign exchange interventions were not very effective. In general, foreign exchange reserves were dwarfed by the size of portfolio flows and the daily turnover in the world's foreign exchange markets. Some felt that foreign exchange reserves should at least be sufficient to cover likely variations in capital flows or the 'liquidity at risk'. Others were of the view that some foreign exchange reserves were still needed for periodic interventions in view of large exchange rate misalignments. Many countries also recognised the need for more active management of the central bank's asset portfolio and more innovative measures for the deployment of these reserves. But there was also a suggestion that countries with floating exchange rates did not need a large amount of foreign exchange reserves.

Institutional framework

The Workshop discussed the important role played by the institutional framework. There were a number of elements to this. Monetary stability required a strong commitment to long-run price stability by both the general public and the monetary authority, as well as central bank (instrument) independence.⁽¹⁾ Financial stability required robust prudential and supervisory arrangements. And fiscal stability was best ensured by sustainable debt levels and incentive-compatible revenue sharing systems.

Participants noted that the standard theory of optimum currency areas (originating with Mundell (1961)) often failed to consider monetary, financial and fiscal institutions, which were frequently weak and themselves a source of problems in emerging countries. Indeed, the

nature of these institutions could affect the types of shocks a country experiences. Calvo and Mishkin (2003) concluded that the choice of exchange rate regime was likely to be of second order importance to the development of good fiscal, financial and monetary institutions in producing favourable macroeconomic outcomes in emerging market countries. In fact, their paper posed a paradox, in the sense that 'A floating exchange rate is clearly the wrong prescription....But...it is not clear that a fixed exchange rate is sustainable, either' (page 13).

With a weak monetary authority, inflation is more likely to ratchet up and become unpredictable. Rules may then tend to be replaced by discretion, thereby aggravating the time inconsistency problem. Taken to extremes, this can lead to the domestic currency being replaced by a foreign one (currency substitution), and asset and liability dollarisation extending to the rest of the financial markets. A resulting perception of worsening solvency ratios reinforces potential runs on banks and capital flight. The latter is a frequent outcome in such a situation, putting pressure on the sustainability of a fixed exchange rate system. Weak fiscal institutions in turn can cause governments in emerging countries to issue foreign currency debt (a process referred to as original sin), occasionally even in domestic markets (known as original super sin). In that case government solvency becomes vulnerable to adverse fluctuations in the real exchange rate. The effects of the real exchange rate tend to increase when the economy is in a recession, at the same time that tax collection is lower. Consequently, the interest burden also increases with the real exchange rate. The end effect is a deterioration of the fiscal account with little or no room for countercyclical policy.

Many participants warned that market incompleteness may present problems, leading to high exposure to sudden stops in capital flows and the potential for currency substitution and liability dollarisation. There was a view that one way for central banks to counteract this was to encourage the development of capital markets, including deep and liquid foreign exchange markets, which would allow market participants to hedge exchange rate movements. It was noted that attempts by central banks to prevent excessive exchange rate volatility, for example by using exchange rate bands, could inhibit market developments of exchange rate derivatives and hedges.

(1) Instrument independence is described in more detail in Debelle and Fischer (1994), and refers to the central bank's unimpeded choice about the use of monetary policy instrument(s) to meet the monetary policy objective.

The interplay between the exchange rate and the inflation-targeting regime

Several countries represented at the Workshop had adopted an inflation-targeting framework while maintaining a fixed exchange rate regime.⁽¹⁾ Under inflation targeting, the attainment of the inflation target is the primary objective of monetary policy.⁽²⁾ But the need to support the additional exchange rate target means that one policy instrument (the policy interest rate) has to support two policy goals. Conflicts can arise if high interest rates required to attain the inflation target cause capital inflows that put appreciation pressure on the exchange rate band. But lowering interest rates to relieve this pressure threatens the inflation target. Exchange rate bands can also weaken the monetary policy transmission mechanisms by limiting the operation of the exchange rate channel. Hence several countries have complemented monetary policy by implementing intra-marginal sterilised interventions — often with limited effectiveness and high quasi-fiscal costs. The end result has been that the frequent policy conflicts have undermined the credibility of both targets.

Participants concurred with the proposition that while exchange rate stability was a prior for price stability, monetary policy should focus on the latter. But a shift to greater exchange rate flexibility did not mean that inflation-targeting central banks could ignore the exchange rate: on the contrary, exchange rate shocks and the associated exchange rate volatility were important in all inflation-targeting countries. This is because the exchange rate channel may be the most powerful and fastest transmission channel to influence domestic prices in open economies, operating directly and indirectly through three channels. A direct channel works from the exchange rate to imported goods prices and thence to the consumer prices index (CPI). In the first of two indirect channels, the exchange rate has an effect on income and wealth, which shifts the demand for goods and therefore affects the CPI. In the second indirect channel, the exchange rate has an effect on balance sheets, and the credit channel ensures that there is an effect on the CPI.

Exiting to greater exchange rate flexibility

There was some agreement that as countries develop economically and institutionally, there appeared to be considerable benefits in adopting a more flexible exchange rate system. The benefits of such a move occurring voluntarily, and not as the result of an exchange rate crisis, were illustrated in the IMF's September 2004 *World Economic Outlook*, which showed that countries switching voluntarily to floating exchange rates performed better on inflation and experienced little growth volatility. The Workshop touched upon the issue of best practice in switching to greater exchange rate flexibility. Four operational issues were identified in moving (voluntarily) to a fully flexible exchange rate system. For a start, there was the need to establish a new nominal anchor and/or monetary policy framework. On top of this came the development of an efficient and liquid foreign exchange market, coupled with the capacity to manage and regulate exchange rate risks. Finally, credible foreign exchange intervention policies needed to be formulated.⁽³⁾

International monetary system, and the growing role of Asia

There was considerable interest in the question of how the mix of current exchange rate regimes is linked to global current account imbalances, and the implications of this for the future evolution of the international monetary system. Several participants noted the increasing importance of Asia in the international monetary system, as reflected in the growing share of real reserves held by Asian central banks. Their choices of reserve currency and exchange rate arrangements have potentially important consequences for the global monetary system.

Discussion focused on the potential interplay of two stylised features of the Asian monetary system: the attainment of regional exchange rate stability by *de facto* pegging to the US dollar and the collective reliance on exports outside the region for growth.⁽⁴⁾ Some outside commentators have suggested that Asian central banks are pursuing exchange rate stability as insurance against private sector balance sheet exposure to exchange rate

(1) Eventually, though, most dual-target countries either widened the exchange rate band sufficiently to limit the likelihood of policy conflicts or abandoned the exchange rate target altogether by floating. In fact, most of today's inflation targeters having floating exchange rates.

(2) Other objectives are subordinated to achieving and maintaining low inflation (except under exceptional circumstances).

(3) But Brazil (1999) and Turkey (2001) have demonstrated that exits can be successful without taking account of these four operational issues.

(4) Formally, of course, there is a range of exchange rate regimes in Asia.

appreciation.⁽¹⁾ Others that exchange rates are undervalued to support export volumes and hence growth.⁽²⁾ Various authors believe, for different reasons, that the current pattern of global current account imbalances could persist for some time. Others, though, question the sustainability of the current arrangements because both these theories imply substantial market distortions (public sector insurance of private sector risk in the first case and mispricing of exports and a global misallocation of resources in the second). Either way, there was agreement that even if the risks of a rapid unwinding of current global imbalances or a sea-change in the position of the dollar as reserve currency may be remote, the consequences could be huge.

The implications for short-run global demand dynamics have been analysed by the Bank's International Finance Division using a simple three currency bloc Mundell-Fleming model. In this model the euro floated against the US dollar while an Asian currency bloc could be switched from a fixed exchange rate against the US dollar to floating to explore some of these scenarios. The most striking feature of their analysis was that under the current hybrid floating and fixed system, the burden of adjustment to a demand shock fell disproportionately on one of the three blocs — precisely which one depended on the nature of the shock — relative to a system in which everyone floats. This increased the volatility of this particular international monetary system compared with a more uniform system. Given the presence of domestic adjustment frictions, this raised the issue of whether there is a greater need for international policy co-ordination. The latest literature in this area suggests that national policymakers setting policy to optimise on domestic goals can, unintentionally, still achieve close to the best outcome so policy co-ordination would not be needed. But the assumptions required to reach this

result may be overly restrictive and there may be a need for co-ordination, as a second-best solution. If so, how could this be achieved? Should the IMF be given more powers, for example?

The question of a possible exchange rate realignment in the area was also discussed. If this were necessary, is it better done individually or collectively? What would be the effect of exchange rate realignments on Asian countries' balance sheets and trade positions? It was agreed that these were complex issues that warranted further research.

Conclusion

Participants at the second Chief Economist Workshop discussed the interplay between exchange rates and capital flows in an environment of increasing capital market integration and potentially abrupt reversals in investment and capital. Frequently, exchange rate regimes were the outcome of a country's history rather than careful design and lengthy negotiation. Moreover, no exchange rate system could fit all the countries all of the time. Specifically, the source of the shocks facing an economy would have to be reflected in the choice of an exchange rate regime, but the regime was most likely going to change over the course of a country's economic development. The co-existence of a fixed exchange rate system with an inflation target was thought to represent a particular challenge to the domestic monetary authorities. Participants concluded that the choice of exchange rate regime depended on a number of factors, not all of which were exogenous and represented a dynamic process. Finally, the design of domestic monetary, fiscal and financial institutions was of paramount importance, especially in order to create institutions that were robust both to a range of economic shocks as well as to abrupt reversals in capital flows.

(1) See McKinnon and Schnabl (2004).

(2) See Dooley *et al* (2003, 2004).

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