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Keynote address

Inflation targeting in emerging markets: the global experience

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Abstract

This keynote address reviews the experience of countries who adopted inflation targeting during the past two decades. It shows that monetary policy became more rule-like and less discretionary, and thereby more credible and predictable. The adoption of inflation targeting thereby resulted in improvements in domestic macroeconomic performance. Experience shows that these policies also tended to lead to smoother adjustments and less volatility internationally. They created forces that reduced exchange rate pass-through to inflation, moderated exchange rate volatility, and cut down on monetary-induced capital flows. The paper also examines the impacts and spillovers of a major departure from rules-based monetary policy in developed countries on emerging-market countries, and the recent threats to inflation targeting as more emphasis has been placed on the fine-tuning of macroprudential instruments and other expansions of central bank actions. The conclusion is that the entire international monetary system should endeavour to re-normalise and return to rules-based policy globally.

1. Introduction

In order to assess adequately the emerging-market experience with inflation targeting in recent years, it is necessary to place the experience in the broader context of global monetary policy in which emerging markets are playing a growing and increasingly important part.

During the past decade, the practice of monetary policy changed dramatically in many countries around the world. In some developed countries – the United States (US) and euro area countries in particular – this change in policy was apparent before the global financial crisis, and it showed up as a deviation from the more rules-based policy of the 1980s and 1990s. This policy shift continued after the crisis and spread to other countries in what has been called the Global Great Deviation.[1] It has been characterised by interest rate decisions that differed markedly from the 1980s and 1990s and by unconventional monetary policy actions, including quantitative easing in

the form of large-scale purchases of securities. In my view, this shift in policy has not been beneficial, but rather has been a factor in the deterioration of economic performance in the past decade.

As this shift away from rules-based policies was occurring in developed countries, the central banks of many emerging-market countries were moving towards more rules-based systems of inflation targeting. South Africa, as well as Brazil, Mexico and the Philippines all adopted inflation targeting around the turn of the century, and other countries, such as Colombia, began implementing monetary policy using the interest rate instrument in a rule-like manner similar to many other inflation-targeting countries. In my view, these changes were, for the most part, beneficial. They led to a more stable macroeconomic environment despite significant shocks from abroad – including the global financial crisis itself – and from other non-monetary policy shocks within the countries.

But the Global Great Deviation of the developed country central banks has affected the inflation-targeting movement of the emerging-market countries. First, it has created direct economic spillovers which have apparently adversely affected economic performance and have thus blurred the good effects of inflation targeting. Second, it has led to policy spillovers in which emerging-market central banks have been driven to deviate from their inflation-targeting rules.

There is now much discussion on the exit from the unconventional monetary policy of recent years, and the key question is where policy should be exiting to. Some are calling for a so-called new normal for monetary policy. The International Monetary Fund (IMF) recently devoted a conference, 'Monetary Policy in the New Normal', to this idea. For the developed countries, the new normal would mean the continuation of much of the unconventional monetary policy of recent years. For emerging-market countries, it would mean a change in, or even and end of, inflation targeting in which so-called macroprudential policy instruments would be manipulated in place of some formerly conventional monetary policy actions.

In my view, as I hope to show in these remarks, central banks around the world should re-normalise monetary policy rather than new-normalise it to some new normal. For the emerging-market countries such as South Africa, this means sticking to the type of inflation targeting they adopted a decade or more ago, with macroprudential policy simply focused on getting the overall risk environment right without also trying to fine-tune sectors of the economy over the business or credit cycle. For the developed countries such as the

US, this means ending the Global Great Deviation and returning to the rules-based monetary policy that worked well in the 1980s and 1990s and until recently.

Research and experience show that if such a policy framework were implemented by central banks in emerging-market and developed countries around the world, a more smoothly operating international monetary system would emerge. It would lead not only to a non-inflationary consistently expansionary (NICE) economy, but also to a near internationally cooperative equilibrium (NICE), which I have referred to as a TWICE NICE or NICE-squared outcome.[2]

I start with a simple empirically grounded theoretical framework to illustrate the interaction between monetary policy in emerging-market and developed country central banks. I then examine the empirical findings of spillovers based on multi-country model simulations, and finally I consider the historical experience.

2. Inflation targeting and rules-based policy in practice

To motivate the theoretical framework it is important to emphasise that as inflation targeting has been implemented in practice by most central banks – including the South African Reserve Bank (SARB) – it has been accompanied by a more rules-based approach to the settings of the instruments of policy. As the former governor of the Central Bank of Chile, Jose De Gregorio, (2014) puts it in his recent book, "The inflation target is an efficient framework to conduct monetary policy. The issue then is how to operationalise this framework. When should monetary policy be tightened or loosened? The most traditional answer is the Taylor rule …".

But whether it is a Taylor rule or some other rule for the monetary policy instruments, there is a remarkably close association between inflation targeting and such a rules-based policy. In the case of the SARB, Ellyne and Veller (2011) provide empirical evidence. They find that "monetary policy has become both more rules-based with the adoption of IT [inflation targeting] (or more precisely, that instrument reactions have more closely approximated a rule under IT), as well as simpler". They add that "[f]or the IT period, the basic Taylor Rule provides a good fit" but "a poor fit for the pre-IT period". Similarly, Klein (2012) shows that SARB policy is well described by a Taylor rule, noting that the implicit inflation target is at the upper part of the band with the inflation target gradually creeping up. Ortiz and Sturzenegger (2008)

also estimate a policy reaction function for the SARB, finding that the rule for the monetary policy instrument is similar to Canada, the United Kingdom (UK), Australia and New Zealand.

In its own explanation of its inflation-targeting policy on its web page, the SARB also emphasises the more systematic setting of the policy instrument, comparing it with the period prior to adopting the inflation-targeting framework when it used a 'discretionary monetary policy' or an 'eclectic approach' with evident switches between exchange-rate and monetary-aggregate targeting.

The SARB also states that it uses a 'flexible inflation-targeting framework', explaining that "[t]his flexibility … allows for interest rate smoothing over the cycle, which may mitigate any output variability from the monetary policy response to the shock". In other words, there is a tradeoff between output variability and inflation variability that monetary policymakers consider in choosing a rules-based approach that delivers good economic performance.

3. A simple theoretical framework[3]

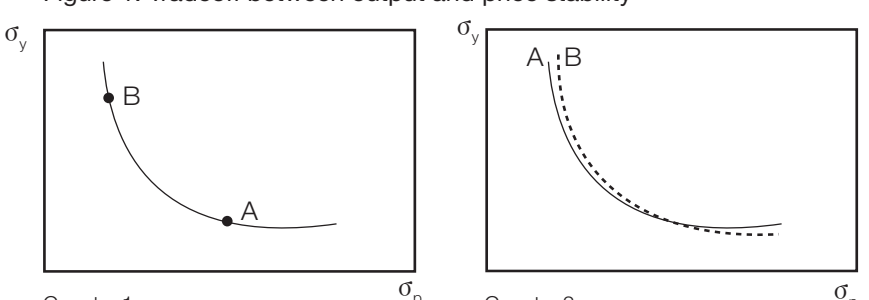
The idea that a rules-based policy for the policy instruments along with an inflation target delivers good economic performance comes out of basic monetary research. It applies to the conduct of policy in a single country, but it also applies to the global economy, as I want to emphasise here using a multi-country modelling framework (see, for example, Carlozzi and Taylor (1985) and Taylor (1993, 2013a)). The framework takes highly mobile capital as a given. It also assumes staggered wage and price setting as in the Taylor (1980) model, so that inflation today depends in part on inflation in the future. Domestic prices in each country are affected by both domestic wages and the price of foreign imports, so the law of one price does not hold in the short run. Output in each country is influenced by the real interest rate, the real exchange rate, and expectations of future output due to forward-looking consumers who take account of their future income prospects when deciding how much to consume.

Shocks can hit anywhere in the economy and may be due to shifts in policy, preferences or technology. Shocks to the wage and price-setting process are central to the modelling framework and preclude any miraculous divine coincidence, as defined by Blanchard and Galí (2007). Indeed, the essence of the monetary policy problem is characterised by a policy tradeoff between price stability and output stability. The task of monetary policy in both emerging-market and developed countries is to find a policy in which the policy instrument is adjusted so as to reach an efficient point on that tradeoff.

The problem for the central bank is to decide how to respond to shocks and fluctuations in the economy while not creating its own shocks and disturbances either domestically or internationally. By choosing the size of its responses, it can affect the relative amount of price stability and output stability. For example, when the interest rate reaction to inflation increases, then price stability increases and output stability falls. Conversely, if the central bank chooses to react less to inflation, then there will be less price stability but more output stability. And by minimising deviations from its optimal policy responses – that is, by not adding shocks to its policy rule – it will minimise monetary policy-induced fluctuations.

In such a monetary policy framework, the central bank's choice of a policy rule – the decision to be more or less responsive – has relatively little impact on output and price stability in the other countries. Figure 1 illustrates the idea in the case of two countries. We can suppose that Country 1 is a developed country and Country 2 is an emerging-market country. Figure 1 shows the tradeoff between output and price stability in both countries. Measures of the size of output and price fluctuations are on the vertical and horizontal axes respectively. The tradeoff curve is like a frontier. Points on the curve represent optimal policy. Monetary policy cannot take the economy to infeasible positions to the left or below the curve. But suboptimal monetary policy – due to policy errors, reacting to the wrong variables, and so forth – can take the economy to inefficient higher variability points above and to the right of the curve. Along the curve, lower price variability can only be achieved with greater output variability corresponding to different values of the reaction coefficient. The existence of such a tradeoff curve is quite general, and the curve has been used in many different monetary policy studies over the years.

Figure 1: Tradeoff between output and price stability



If Developed Country 1 chooses Optimal Policy Rule B rather than Optimal Policy Rule A, then the policy frontier in Emerging-Market Country 2 shifts from Curve A to Curve B, or by a very small amount.

The shape and the position of the tradeoff curve depend on the parameters of the model and the size of the shocks. An increase in the variance of the shock to wage setting in one country, for example, will move that country's curve up and to the right. A reduction in the size of the response of wages to the state of the economy – effectively more price-wage stickiness – will also result in a shift in the tradeoff curve in the northeast direction.

Points A and B, which are on the tradeoff curve for Country 1, represent two alternative choices for optimal policy, reflecting different weights on the macroeconomic objective function for Country 1. The policy at point A results in a relatively small variance of output and a relatively large variance of prices compared with point B. The two different tradeoff curves for Country 2 show the effect on Country 2 of a change in policy in Country 1 from A to B. The important point is that the tradeoff curve for Country 2 is virtually the same regardless of which of the optimal policies are chosen by Country 1. Curve B is drawn with a slight twist relative to Curve A, but that is not a general result.

This is the sense in which monetary policy research, as discussed in Taylor (1985, 1993), implies that there is little to be gained by Country 2 coordinating its own policy rule with Country 1 if both Country 1 and Country 2 are following policy rules that are optimal domestically. In game theory terminology, macroeconomic performance under a Nash non-cooperative monetary policy is nearly as good as under the optimal cooperative monetary policy, and far superior to a policy which is suboptimal on purely domestic grounds. If the Country 2 curve were to shift significantly with a change from one optimal policy to another optimal policy in Country 1, and vice versa, then a cooperative monetary policy might be worth pursuing even if the policies were optimal from a domestic point of view.

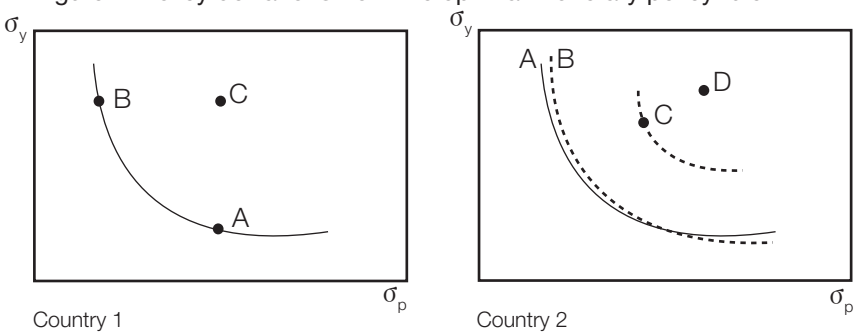
4. International spillovers on policy tradeoffs and on policy deviations

These results, however, do not hold if monetary policy in Country 1 deviates from its monetary policy rule. This is shown in Figure 2. Suppose Country 1 deviates from its optimal monetary policy rule and moves in the direction of an inefficient policy as shown by point C in Figure 2. There are two types of spillover effects in the emerging-market country to consider.

First, the *tradeoff curve could be shifted out in the emerging-market country*. The change in policy in the developed country could spill over, for example, in the form of more volatile export demand, as was demonstrated vividly in the financial panic in late 2008, or simply in more volatile exchange rates or

commodity prices. Bordo and Lane (2013) have shown that policy deviations can have a variety of adverse effects on economic performance which can be transmitted globally. These shocks would be very hard for even the best monetary policy to fully counteract. Figure 2 shows this shift in the tradeoff curve in Country 2; the original curve – either A or B – moves out to the curve with the long dashed lines. Hence, Country 2 is forced to the point C, or perhaps to another point on the new less-favorable tradeoff.

Figure 2: Policy deviations from the optimal monetary policy rule



If Developed Country 1 deviates from its optimal policy rule, moving to point C, then the impact on Emerging-Market Country 2 can be quite large: it either causes the emerging-market country to choose a poor policy rule C with no change in the tradeoff, or it causes the tradeoff curve to shift out, or both, as in point D.

Second, *policy deviations from the optimal monetary rule could become larger* in the emerging-market country due to the change to a less efficient monetary policy in Country 1. For example, if the policy change in Country 1 is to bring about an excessively easy policy with very low interest rates, then the policy makers in Country 2 may be concerned about exchange-rate appreciation and thus keep their interest rate too low too – deviating from their policy rule – which could cause an increase in price volatility and output instability. The central bank might do this even if there was an offsetting effect from higher export demand from higher output in Country 1. They might perceive that offsetting effect to be too low or too delayed or they may be concerned about the hit to certain export sectors. Of course it is possible that both international effects of the change in policy in Country 1 occur at the same time, in which case the outcome could be point D in the right-hand panel of Figure 2.

There is considerable evidence that the world economy has moved from the situation illustrated in Figure 1 to the situation in Figure 2 in recent years. Nikolsko-Rzhevskyy, Papell and Prodan (2014) provide the latest evidence using modern time series techniques that there was a shift away from rules-based policy in the US. Hofmann and Bogdanova (2012) and Ahrend (2010) show similar changes in other developed countries. Nikolsko-Rzhevskyy, Papell and Prodan (2014) also provide evidence for an earlier shift in the US in the 1980s corresponding to a move from Figure 2 to Figure 1. This earlier benign shift was originally documented by Clarida, Galí and Gertler (1998 and 2002) and recently reviewed by Clarida (2014).

There is also evidence that shifts in policy tradeoffs are due to such policy deviations, though more research is needed. Rey (2013) has shown that a good portion of the large destabilising capital flows motivated by a search for yields has been induced by erratic swings in monetary policy which are related to such policy deviations. Vegh and Vuletin (2012) found that the adoption of rules-based inflation targeting had the effect in a number of emerging-market countries of reducing large capital movements associated with "fear of free falling" exchange rates. Empirical research by Eichengreen and Taylor (2003) found that "countries that target inflation have significantly less volatile exchange rates". Inflation targeting also created forces that reduced exchange rate pass-through to inflation.

There are of course different views about the recent change in policy. Some argue that the monetary policies undertaken by the developed country central banks have been appropriate. Yellen (2013) argues, for example, that "the simple rules that perform well under ordinary circumstances just won't perform well with persistently strong headwinds restraining recovery…". According to this alternative view, the shift in the tradeoff curves or policy in Figure 2 is not due to monetary policy deviating from a rules-based approach but rather to other factors. King (2012) argues that the tradeoff curve shifted out because financial stability during the Great Moderation eventually bred instability, largely through the complacency of investors who, thinking that stability conditions would continue, took on too much risk and thereby increased instability. Bernanke (2013) argues that the effect of what I call a policy deviation in Country 1 on policy in Country 2 is entirely appropriate for some countries. He compares recent monetary policy shifts to what happened during the Great Depression when countries moved off the gold standard and started what were called competitive devaluations, but in essence were a move towards more monetary ease.

5. Empirical estimates of the spillovers from monetary policy deviations

I next consider the size of the spillover effects of deviations from policy rules. Here I draw on the evidence embodied in a state-of-the-art estimated global policy model, the IMF's model, GPM6. This model includes both developed and emerging-market monetary policies – some with inflation-targeting rules and flexible exchange rates and others with fixed or nearly fixed exchange rates (Hong Kong and Singapore).

There are six countries or groups of countries:

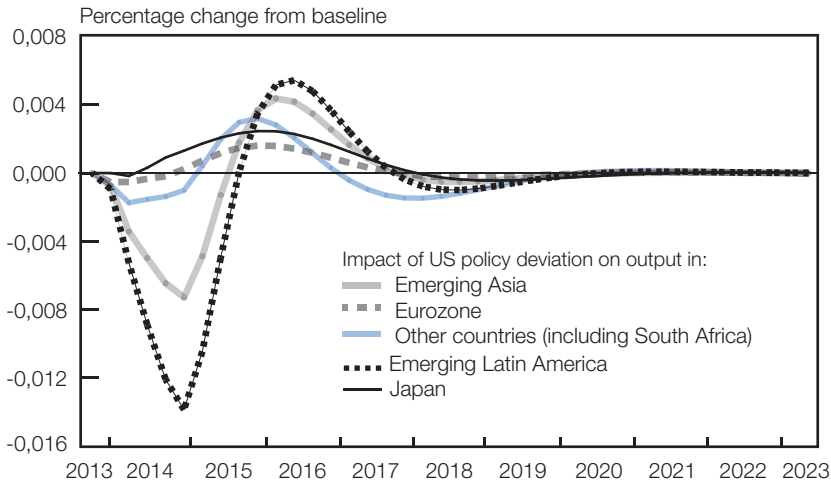
- United States;
- Japan;
- eurozone;
- emerging Asia (China, India, South Korea, Indonesia, Taiwan, Thailand, Malaysia, Hong Kong, Philippines and Singapore);
- emerging Latin America (Brazil, Chile, Colombia, Mexico and Peru); and
- other countries (United Kingdom, Canada, Turkey, Australia, Argentina, South Africa, Venezuela, Sweden, Switzerland, Czech Republic, Denmark, Norway, Israel, Bulgaria, New Zealand and Estonia).

The GPM6 model is described in Carabenciov, Freedman, Garcia-Saltos, Laxton, Kamenik and Manchev (2013).[4]

Figure 3 shows the impact on real GDP of a deviation from the monetary policy rule in the US on the various countries or regions in the model.

The monetary shock is a deviation from the monetary policy rule in the US. The deviation initially causes the interest rate to fall by about 0,2 percentage points and then the dynamics of the policy rule lead to a gradual rise in the interest rate back to its starting point in about 5 quarters. The interest rate overshoots before returning to normal due to the response of the policy rule to the economy after the shock. As a result of this shock, the dollar depreciates by 1,0 per cent in GPM6 (not shown in the figure). US output rises by about 0,2 the percentage points for each percentage-point reduction in the interest rate.

Figure 3: The global output effects of a US policy rule deviation



The deviation is a temporary negative shock to a US interest rate rule of 0,2 percentage points simulated in the GPM6 model.

According to the GPM6 model, the change translates into a negative effect on output in the emerging-market economies. As described by the authors of the IMF's GPM6 model, this occurs in these countries because "the exchange rate channel is stronger than the direct output gap effect". The impact on Japan's output is not negative, but it is quite small: only about 1/20th of the US output increase.

These policy simulations differ from the view put forth by some central banks. Bernanke (2013), for example, argues that "[t]he benefits of monetary accommodation in the advanced economies are not created in any significant way by changes in exchange rates; they come instead from the support for domestic aggregate demand in each country or region. Moreover, because stronger growth in each economy confers beneficial spillovers to trading partners, these policies are not 'beggar-thy-neighbor' but rather are positive-sum, 'enrich-thy-neighbor' actions".

While these simulations do not consider quantitative easing, there are also reasons to doubt the 'enrich-thy-neighbor' view in that case too. Stroebel and Taylor (2012) found very little effect of large-scale purchases on mortgage rates when controlling for other risks, and the announcement effects detected by Gagnon et al. (2011) likely phase out over time.

6. Historical and statistical evidence of policy spillovers from monetary policy deviations

The policy simulations show why a policy deviation in the developed countries may put pressure on central banks in emerging-market countries to deviate from their otherwise optimal policy rule.

6.1 Interest rate decisions

First consider interest rate decisions. As the empirical model shows, a reduction in policy interest rates abroad causes the exchange rate to appreciate. Even though there may be countervailing effects as economic output abroad is stimulated, for the emerging-market countries the exchange-rate effect dominates according to the empirical model simulations. Moreover, the output effect may occur with a lag and is less visible than the exchange-rate appreciation.

Many central banks will tend to resist large appreciations of their currency, and thus will hold their own policy rate down relative to what it would be otherwise. This will reduce the difference between the foreign interest rate and the domestic interest rate and will thus mitigate the appreciation of their exchange rate.

Another concern of some central banks is that very low interest rates at the major central banks can increase risky capital flows in their countries, as shown by Bruno and Shin (2012), and one way to combat this is to lower the policy interest rate. Firms abroad are able to borrow in dollars to finance investment projects even though the returns on these projects are denominated in local currency. The loans made to the firms by banks to fund these projects are subject to default in the event that the project earns less than the loan, including interest payments. In such a circumstance, a central bank can mitigate the increase in foreign lending by keeping its own interest rate lower than it otherwise would for domestic stability purposes. This reduces the incentive to borrow abroad and the associated risk.

There is considerable empirical evidence of the impact of foreign interest rates on central bank interest rate decisions. Many central bankers readily admit to these reactions, and some issue public reports. The Norges Bank explicitly reported that it lowered its policy interest rate in 2010 because interest rates were lower abroad. It also reported the details of its own policy rules, showing that there was a large deviation in 2010; the actual policy rate, at about 2 per cent, was much lower than the rate implied by its domestic

monetary policy rule, which called for a policy rate of about 4 per cent. This deviation was almost entirely due to the very low interest rate abroad. The Norges Bank reported that a policy rule with external interest rates included came much closer to describing the actual decisions than the policy rules without external interest rates.

There is also considerable econometric evidence of the spread of central bank policies. Gray (2013) estimated policy rate reaction functions in which the US federal funds rate or other measures of foreign interest rates entered on the right-hand side as deviations from their respective policy rules. He used panel data from 12 central banks, and found that the reaction coefficient on the foreign rate was large and significant.

6.2 Quantitative easing decisions

The recent case of the Bank of Japan's move towards quantitative easing and large-scale asset purchases provides another example of policy spillovers. After the financial crisis, the yen significantly appreciated against the US dollar as the US Federal Reserve (Fed) extended its zero interest rate policy and its large-scale asset purchases. Concerned about the adverse economic effects of the currency appreciation, the new government of Japan urged the Bank of Japan to implement its quantitative easing, and this is exactly what happened. As a result of this change in policy, the yen fully reversed its course and has returned to the exchange rate just before the panic of 2008. In this way, the policy of one central bank appeared to affect the policy of another central bank.

The recent moves of the European Central Bank (ECB) towards quantitative easing of some kind may have similar motivations. In the view of the ECB, an appreciating euro was a cause of both the low inflation and the weak economy. With the prolonged zero interest rates in the US, an understandable response was to shift to even lower rates in the eurozone and the initiation of quantitative easing. Indeed, the shift and initiation has been followed by a dollar strengthening and a weaker euro.

There is also evidence that shifts in monetary policy in the form of quantitative easing have an impact on monetary policy decisions abroad. Chen, Filardo, He and Zhu (2012) found that "the announcement of QE [quantitative easing] measures in one economy contributed to easier global liquidity conditions".

6.3 Capital controls

Concerned about the ramification of deviating from their normal interest rate policy, central banks in some emerging-market countries have looked for other ways to deal with the impacts of policy deviations abroad. The imposition of capital controls is one approach. Capital controls limit the flow of capital and are usually aimed at containing the demand for local currency and its appreciation, but also to mitigate risky borrowing and volatile capital flows.

However, capital controls create market distortions and may lead to instability as borrowers and lenders try to circumvent them and policymakers seek even more controls to prevent the circumventions. Capital controls are thus one reason why the output and price stability tradeoff curve will shift adversely. Capital controls also conflict with the goal of a more integrated global economy and higher long-term economic growth. The unusual spillovers of recent years have even led the IMF to suggest that capital controls might be used as a defense despite these harmful side effects.

6.4 Currency intervention

Currency intervention is another way that emerging-market countries might try to prevent unwanted appreciation of a currency either as an alternative or as a supplement to lower interest rates. In fact, currency intervention has been used widely in recent years by many emerging-market countries. However, currency interventions can have adverse side effects even if they stabilise exchange rates for a while. Currency intervention leads to an accumulation of international reserves which must be invested somewhere. In the case where the low policy interest rates are set in the US, the gross outflow of loans due to the low policy rates is accompanied by a gross inflow of funds from central banks into dollar-denominated assets, such as US Treasury or mortgage-backed securities, which affect prices and yields on those assets.

Borio and Disyatat (2011) and Beckworth and Crowe (2012) analysed the possible adverse effects of these flows during the period of the low federal funds rate in the US from 2003 to 2005. They show that the inflow of funds from abroad into US mortgage-backed securities helped keep mortgage rates low, worsening the housing boom leading up to the financial crisis. In this case, the policy deviation not only had an effect on the policy tradeoffs abroad, but it fed back on the policy tradeoff in the US.

6.5 Macroprudential policies as an imperfect substitute for rules-based inflation targeting

Another policy reaction has been the increased use of substitutes for monetary policy in emerging-market countries, especially when their policy is impacted by policies from abroad. This is most obvious in emerging-market economies closely tied to the major currencies. Both Singapore and Hong Kong have had near-zero short-term interest rates in recent years because the Fed has had zero rates. Their pegged exchange-rate regimes and open capital markets have left no alternative. So in order to contain inflationary pressures, they have had no choice but to resort to discretionary interventions in housing or durable goods markets, lowering required loan-to-value ratios in housing or requiring larger down payments for automobile purchases. Similarly, Switzerland has introduced explicit restrictions on housing in order to contain a housing boom in the face of near-zero interest rates.

These types of policies are also being discussed in inflation-targeting countries with flexible exchange rates. The SARB's *Financial Stability Review,* March 2014 (page 6), for example, states that "Given the large negative credit-to-GDP gap of mortgage advances, the implementation of other macroprudential instruments could be considered to promote the use of these types of credit, especially since a capital buffer was not initiated during the upswing".

It is understandable that such market-specific measures are being considered with the unprecedented shifts in monetary policy abroad. These so-called macroprudential actions are, however, inherently discretionary, expand the mission of central banks and bring them closer to politically sensitive areas. They also run the risk of becoming permanent even after unconventional policies abroad are removed. A regulatory regime aimed at containing risk taking is entirely appropriate, but that entails getting the levels right and not manipulating them as a substitute for overall monetary policy.

7. Conclusion

In these remarks, I reviewed the experience of emerging-market countries that adopted inflation targeting in recent years in the context of the global monetary policy environment of the past decade. While the adoption of rules-based inflation targeting resulted in improvements in domestic macroeconomic performance in emerging-market countries, the major departure from rules-based monetary policy in developed countries has blurred these effects and made the implementation of inflation targeting more difficult. One result has been a questioning by some of the inflation-targeting

approach, with recommendations that more emphasis be placed on capital controls, currency-market interventions, fine-tuning of new macroprudential instruments and other expansions of central bank actions.

My conclusion is that emerging-market countries such as South Africa should be sticking to rules-based inflation targeting with macroprudential policy concentrating on the overall risk environment rather than on trying to fine-tune sectors of the economy over the cycle. In the meantime, the developed countries should endeavour to return to the more rules-based monetary policy that worked well for them in the 1980s and 1990s and until recently. Experience shows that these monetary policies will lead to smoother adjustments and less volatility internationally.

Notes

[1] See Hofmann and Bogdanova (2012) who define 'global' as comprising both advanced economies (Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Sweden, Switzerland, United Kingdom and United States) and emerging-market economies (Argentina, Brazil, China, Chinese Taipei, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Poland, Singapore, South Africa and Thailand).

[2] See Taylor (2014).

[3] The diagrams in this section are based on Taylor (2013b).

[4] I am grateful to these authors for running the policy simulations described below with their model.

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