

Changing views on how best to conduct monetary policy

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1. Introduction

With all the talk about “new era” economics in the last few years of the 1990s, supposedly driven by technological progress and deregulation, one might have thought that change in economics was something of a novelty. Nothing could be further from the truth. Many countries in this region are still emerging from decades of socialist planning and direct government control of economic processes. Other countries, both in this region and around the world, have been liberalising capitalist systems that were in different ways still heavily influenced by the state. The deregulation of the financial system, both internally and with respect to the external accounts, has been a common feature of economic change for many years. However, in the light of the global economic slowdown and recurrent financial crises around the world, increasing attention is now being paid to how the process of liberalisation is carried out. Nike (and the Washington consensus) might well say, “Just do it,” but in practice the way in which things are done can have important consequences. Looking forward, a swing back to increased government interference in the operations of the financial systems in the advanced industrial countries now seems likely. In short, change, and changes in fashion with respect to the conduct of policy, seem to be a regular feature of the economic landscape.

Today, I also want to talk about change; in particular, changes in the way that academics and policymakers have approached the problem of conducting monetary policy over the last 50 years or so. To some degree, these changes have been needed to respond to shifts in the underlying structure of the economy. To some degree, they have been the result of changing intellectual fashions and powerful academic insights from such people as Friedman, Keynes and Hayek. But perhaps to the greatest degree, these changes have reflected the fact that the previous approach to monetary policy was simply not delivering the goods. Either the objectives being sought by policymakers were not being met, or the unexpected side effects of the policy led to a significant reassessment of whether the benefits were great enough to justify the associated costs. In most instances the need for change was steadfastly resisted until the cognitive dissonance grew so great that a paradigm shift followed.

This process of change is continuing. Consider how many emerging markets are now thinking of adopting inflation targeting regimes, often in the context of a new commitment to floating exchange rate regimes. This is a big change, and one increasingly supported by the IMF. Nevertheless, it needs to be recorded that this new trend in the emerging market countries is occurring just at the time when many analysts in industrial countries are beginning to question some aspects of these regimes. In particular, how should they be adapted to deal with bubbles in credit, asset prices and investment that have the potential to wreak havoc on domestic financial systems? And consider too the spread of electronic money and the recent suggestion by Mervyn King, Deputy Governor of the Bank of England, that traditional money and the central bank’s monopoly over its growth might eventually disappear. To repeat, the process of re-evaluation and change in the domain of monetary policy is by no means over yet.

My approach will not be chronological. Rather, I want to focus in turn on a few broad issues which condition the conduct of monetary policy, and emphasise how and why views have changed over time. First, we must recognise that policymakers act within an empirical, political and philosophical framework, with the last aspect referring to the processes chosen to make practical decisions in an uncertain world. Second, conditional on this framework, they must attempt to devise a strategy for conducting policy which provides a certain consistency over time. In this context, regime choices, particularly for exchange rates, take on great importance. And third, policymakers must make certain operational decisions which allow them to exploit whatever room for manoeuvre remains within the confines of the

framework and the strategy. As a by-product of this discussion about history, we may also get some insights as to why thoughtful people today still differ in their views, and why an approach to policy which is good for one country may not be seen as good for another. In monetary policy, as in many other areas, no one size fits all.

2. The framework within which policy is conducted

There are many aspects to this, but perhaps the most crucial is the **empirical** framework. All monetary policy decisions must be based on some idea of how decisions will affect the real world. In short, policymakers must conduct their policy within the framework of a model. This is not a statement that all central banks need to estimate 500 equations using the latest econometrics and then solve them simultaneously. The model may be as simple as one unspecified equation in the mind of the central bank Governor, but one must begin somewhere. Economics may not be a science, but it should at least be conducted according to scientific principles recognising cause and effect.

In this regard, there have in fact been enormous changes over the years. Montagu Norman, Governor of the Bank of England in the 1930s, once told an Adviser: "Your job is not to tell me what to do, but to explain to me why I did it." He and many others relied heavily on intuition, but in subsequent years this approach became increasingly complemented by more explicit modelling and the heavy use of modern technology. Indeed, for a period of time, perhaps particularly through the 1960s and 1970s, there was excessive reliance on such modelling in many central banks. More recently, the circle has turned again, although not fully, as policymakers have become more aware of the limitations of their models and the need to recognise how profound are the remaining uncertainties.

The fact is that no one knows the proper model of the economy with certainty. Nor can one be sure of the magnitude of cause and effect reactions within a chosen model. It is instructive that in recent years there have even been disputes as to the signs, not just the magnitudes, of the parameters defining many important relationships. Consider, for example, the Stiglitz-Mussa debate about the appropriate policy response to the Asian crisis. Moreover, the signs often change depending on the length of the time period being considered. In this context, the fact that private sector behaviour may be altered in response to official behaviour (the so-called "Lucas critique") is particularly troubling. In addition, the data required to monitor the economy and its reactions to monetary policy are poor and are often heavily revised. And finally, the economy is subject to exogenous shocks as well as stochastic error in individual relationships. Clearly, this is not the empirical framework we central bankers would have chosen. Unfortunately, it is the one we have been given, and policy decisions must in any event be made on a regular basis.

As if all these complications were not bad enough, I have already noted that the structure of the economies we are trying to model is almost always in the process of change. In the industrial countries, a combination of deregulation and technological progress has led to widespread alterations in the way the economy works. Generally speaking, things happen faster and at a global level. Moreover, while these trends were first manifest in the production of goods and non-financial services, financial markets are now at the forefront of this ongoing revolution. And in emerging market and transitional economies, similar changes have often occurred with brutal rapidity.

These developments have clearly had profound implications for the job of central banking. Beyond the need to model changing structure, central bankers increasingly found that their traditional "command and control" approach no longer worked. In the industrial countries during the 1950s and 1960s, it was still possible for central bankers to use moral suasion, to enforce interest rate ceilings, and to use rationing to successfully implement quantitative controls over the rate of growth of credit and monetary aggregates. In Japan, this went on

until the late 1980s. But for most central bankers in the industrial world, those days are over. In a market-driven world, “control” has been superseded by “influence”. The modern central banker must use the few instruments which he or she can still directly control to convince the market, with its immensely deep pockets, of both the intention and capacity to achieve stated objectives. It is this underlying empirical reality, the growing force of markets, which has driven central bankers to become much more transparent over the course of recent years.

A second aspect of the framework within which monetary policy is conducted is the **political structure**. Here too some major changes have been observed. Whereas previously the activities of most central banks were strongly influenced by their Treasuries, there has been a growing trend towards central banks being given some form of “independence”. The first point to note is that this word is rather misleading. In a democratically ordered society, no government agency, including the central bank, can be wholly “independent” from government. Indeed, the very suggestion runs the significant risk of needlessly antagonising the various arms of government, Treasuries and parliamentarians among them.

An approach which better recognises the necessary subtlety of these relationships will emphasise three interrelated aspects of the institutional structure: namely, the mandate, powers and accountability of the central bank. As to the first of these, many central banks traditionally had a mandate which was both very broad and often implied the simultaneous pursuit of conflicting objectives. In recent years, there has been a clear trend towards specifying clearly a much more limited mandate, generally some form of price stability, with other objectives being either ignored or explicitly defined as being of a second order of importance. Sometimes the central bank determines the mandate itself, but increasingly it is the government which does so. While this might seem a threat to independence, it could also be argued that explicit government support of the mandate strengthens the hand of the central bank in exercising its powers to pursue that mandate.

As for the independent exercise of powers, which is what most people really mean by “independence”, there has been a clear trend towards central banks doing this without any guidance from government. The objective in this regard is to insulate the central bank from short-term political influences and ensure a consistent pursuit of medium-term objectives. Finally, accountability increasingly means that central banks explain both to elected representatives and to the electorate directly why they have either succeeded or failed in carrying out their mandate. Obviously, the worst possible situation for a central bank is to have a specific mandate, for which it will be held accountable, but not to be given the independent powers to achieve it. Central banks in such an unfortunate position would surely long for the good old days when anything that went wrong could at least be blamed on their Treasury masters.

The third structural aspect conditioning the conduct of monetary policy could be defined as the **philosophical** framework. Central banks need to define an approach or a process for taking decisions in a highly uncertain and unpredictable world. The key issue here used to be thought of as “rules versus discretion”. While recognising that single-minded devotion to a rule can sometimes be desirable, say the pursuit of a fixed exchange rate by a relatively small open economy, experience has also taught policymakers that life is commonly more complicated than that. The task is less that of choosing between rules and discretion than of harmoniously blending the two together.

Rules are useful in that they greatly simplify the policymaking process; one simply cannot look at everything all the time. Rules also aid transparency and constrain the behaviour of those whose integrity might be open to question. At the same time, discretion and judgment will always be required in some measure, either to respond to the unexpected or to seize some technical advantage. This latter possibility perhaps explains why central banks tend to be more willing to be transparent about their policy objectives than their intervention procedures. Indeed, this exercise of discretion must also extend to a willingness to re-evaluate periodically and, at the limit, change the rules themselves when they fail to produce

the desired results. To repeat, it is the blending of rules and discretion that poses the real challenge for most modern central bankers.

Another aspect of the philosophical framework has to do with the choice of an optimising strategy. Should policymakers follow a maximising strategy to try to squeeze out of the economy all the benefits possible, or should they follow a minimaxing strategy of trying to avoid really bad outcomes? Looking at the actual conduct of monetary policy in various jurisdictions, differences of view can be observed as well as changes in view over time. This choice would presumably also influence the policymakers' reaction to often conflicting economic and anecdotal indicators as to what was going on in the economy, and whether it was a potential source of worry or not. As evidence has mounted over the last decade or so about the huge costs of financial crises, the possibility of truly bad outcomes must now be taken more seriously.

3. The choice of an exchange rate regime

Within the framework just described, there is need for a strategy to ensure the consistent conduct of monetary policy over time. When considering such a strategy, the first and most important choice is that of the exchange rate regime. The reason for focusing on the exchange rate regime issue is the existence of the well known "impossible trinity". Given highly mobile capital flows, a country cannot have both a fixed exchange rate regime and an independent monetary policy. This was the principal insight of the Mundell-Fleming model of the early 1960s for which, in part, Bob Mundell recently received the Nobel Prize in Economics. What has not changed over time is that countries can still choose only two out of the three, but not more. What does seem to have changed has been the weight given to various arguments for and against retaining each of them.

At the time of the gold standard, the ultimate fixed rate regime, the desirability of free international capital flows went virtually unchallenged. As for the loss of domestic monetary independence, many commentators actively distrusted the activities of politicians and the state, and took this loss as a positive advantage. The closest contemporary cousins to this are the currency board regimes of Hong Kong and a host of smaller countries. In most of these cases, and this applies to the failed Argentine currency board as well, a chequered history in controlling domestic inflation made the loss of domestic monetary policy more an attribute than a disadvantage. This having been said, most contemporary currency boards do not behave in the textbook fashion. Similarly to the way the operation of the gold standard evolved to become less automatic prior to World War I, managers of currency boards have generally not been prepared to accept all of the harsh domestic implications of such regimes and have taken active steps to mitigate them.

Since the end of World War II, there has been a greater tendency for industrial countries to opt for retention of a domestic monetary policy capability. To some degree, this may have reflected a heightened sense of national responsibility and a capacity for success coming out of the war years. Yet, the experience of the Great Depression, which underscored the need for a domestic policy response to macroeconomic disturbances, was probably of even greater significance. However, in contrast to this constancy, there has been a significant evolution over time in thinking about which element of the impossible trinity might need to be given up. Initially it was capital mobility, later it proved to be the system of fixed exchange rates itself, and most recently the pendulum may be swinging again.

When the Bretton Woods system was established in 1946, it again brought in a fixed exchange rate system. The most fundamental objective was to foster international trade by precluding the competitive devaluations and subsequent protectionist pressures which had characterised much of the 1930s. The discouragement of international capital movements in support of this goal was considered to be a small price to pay given the benefits expected

from an open trading system. However, by the early 1970s, international capital mobility had in fact increased to the point where the Bretton Woods system of fixed exchange rates became unviable. While it took another 25 years, the same point could be made about attempts to limit fluctuations in the value of Asian currencies against the US dollar. In each instance many forces were at work, but highly mobile capital flows were prime among them. Within the euro area, pressures arising from such flows provided strong support for the decision to establish a single currency whose value would itself float against major counterparts.

In the light of these postwar developments, there has also been a considerable evolution in thinking about these issues. In large part, this led people to conclude that what had happened, in spite of the associated turmoil, was actually all for the better. As international trade has steadily expanded and tariff barriers have been steadily reduced, the argument that fixed exchange rate systems were needed to promote trade became steadily less compelling. Moreover, while each still has disadvantages, the advantages of both floating and open international capital markets have become better appreciated due to both accumulating experience and new academic insights.

Floating is now recognised as a desirable response to asymmetric shocks across countries, even if in some cases (eg within the Eurosystem) other arguments for fixed rates might seem more compelling. In addition, floating reduces, although clearly does not eliminate, the likelihood of speculative currency attacks. And, for emerging countries with high productivity growth in the tradable goods sector, floating may facilitate the needed upward creep in the external value of the currency. As to international capital mobility, there has been a growing recognition of the positive effects on international resource allocation and trade. Moreover, this recognition seems to have been matched by an increased appreciation of the negative effects of capital controls. No fact underlines this evolution more eloquently than the almost total lack of interest in reimposing capital controls in Asia, in spite of the dramatic events which took place during the Asian financial crisis.

The heyday for this kind of thinking was probably three or four years ago. More recently, the pendulum has again begun to swing, with greater emphasis being put on the dangers associated with large-scale capital inflows and outflows. The continued good economic performance of both China and India, both of whom have significant impediments to such flows, has not gone unnoticed. Moreover, many countries with “floating” exchange rate regimes have in fact shown a marked inclination to manage the float with a view to reducing volatility, easing external imbalances, and sometimes pursuing other objectives. The fact that many countries are now talking about the merits of regional currency areas, and even planning for them in the Middle East and West Africa, indicates that the debate about the choice of an exchange rate regime is still continuing.

4. Conducting an independent monetary policy

Without prejudice to the different choices that might be made to solve the impossible trinity problem, let us suppose that a country has chosen to pursue an independent monetary policy within a floating exchange rate regime. This suggestion was first made by Keynes in 1923 in the “Tract on monetary reform”. Needless to say, there has been a significant evolution since that time in both thinking and practice about the objectives of monetary policy, the transmission mechanism of monetary policy, and the processes used to formulate and implement policy.

There seems to be a general consensus today that the primary **objective** of monetary policy should be domestic price stability, commonly measured using some variant of the consumer price index. However, this was not always so and, indeed, may yet be challenged again. Until the late 1960s at least, and later in many countries, it was generally accepted that there was

a long-run trade-off between inflation and unemployment. That is, it was thought that unemployment could be permanently lowered by accepting a slightly higher level of inflation. Needless to say, many countries opted for this solution, even when unemployment rose for supply side reasons as in the first oil shock. Later academic work (in particular that of Friedman and Phelps) disputed this conclusion, noting that there could not be a long-run trade-off because inflationary expectations would constantly accelerate, not just rise to a higher level, if unemployment was pushed below the natural rate. This view seemed validated by the inflationary experience of the 1970s and 1980s. While the recent inflationary experience of the United States, the United Kingdom and other countries has led some to question the conclusion that there is no long-run trade-off, it still must be described as the conventional wisdom expounded in most modern macroeconomic textbooks.

So, at the level of theory, the pursuit of price stability as an objective largely reflects the view that monetary policy cannot sustainably do anything else. In effect, nominal causes eventually produce nominal effects. But other more practical reasons for wishing to lower inflation also became evident. In particular, the period of high inflation and low productivity growth in the 1970s provided evidence that inflation lowered the information content of the price system; that it interacted in undesirable ways with the tax system; that inflation raised risk premia and discouraged investment; and that it eroded the social consensus with implications for political stability.

Views have also evolved over time as to the speed with which a high inflation rate should be brought down, as well as the specific numerical objective thought to be consistent with price stability. As to the speed issue, the possibility of a non-linear short-term trade-off between inflation and unemployment argues for going slow. So too does the existence of a weak banking system that could be further hurt by a very vigorous disinflationary policy. In contrast, if inflation was originally so high as to have materially adverse effects on the economy, and if inflationary expectations could be easily shocked downwards, these would be arguments for more haste. Broadly speaking, the pendulum swung from a preference for gradualism in the 1970s to “cold turkey” in the 1980s. However, the issue has become rather academic in recent years given the prevailing climate of very low inflation.

As for the issue of what price stability means in numerical terms, the consensus in the inflationary 1970s and 1980s seemed to be: the lower the better. As Governor John Crow of the Bank of Canada put it: “there is something magical about zero.” More recently, as the threats posed by deflation have become more significant (of which more below), many commentators have touted the merits of a “small” positive rate of inflation. It is argued that this could facilitate needed real wage adjustments if nominal wages were sticky downwards, and would also allow negative real interest rates in spite of the zero lower bound on nominal interest rates. As to what one means by “small”, there seems general agreement that this means 2% or less, although there are a wide array of practices with respect to the specific measure of inflation to which this rule applies.

Another change arising from the last few years of low inflation has been a growing recognition that macroeconomic problems can still arise from both financial market cycles and exchange rate movements. Low inflation is not a panacea. The credit-fuelled asset price bubble and investment boom in Japan in the late 1980s occurred when inflation was very low. Yet the collapse of the bubble had devastating effects on the banking system and in turn the real economy. The same things can be said about the United States in the 1920s and many Asian countries in the 1990s. Still more recently, concerns have been expressed about the legacy of past credit growth, asset price increases and excessive capital stock accumulation in the United States. These concerns exist even though CPI inflation has remained quite well behaved. The underlying worry, perhaps already materialising, would be that the “bubble” would burst, that the consequences would feed back into the financial system, and that the economy might be subject to severe “headwinds” for some time. Financial cycles of this sort were very common prior to World War I. At that time, there was

an unregulated and global financial system bearing many similarities to the one we have today.

Can monetary policy do anything to head off financial cycles such as the ones just described? And should it? Chairman Greenspan has recently eloquently argued that there are very great practical difficulties in such an approach. How can one determine when asset prices are deviating from “fundamentals”? Which asset prices should one focus on? If interest rates are raised and there is no overt inflation, will this not cause inflation to undershoot desired levels? Counterarguments might be that a combination of credit growth, asset price increases and high investment can give reliable signals of approaching trouble; see the recent work of my colleagues Claudio Borio and Philip Lowe. Tightening policy might imply temporarily undershooting CPI targets a little, but not tightening might eventually lead to undershooting them a lot once the bubble (if it is one) collapses. These issues are receiving increasing attention from central bankers, particularly those who also have a mandate for preserving financial stability as well as price stability.

Another change which has occurred quite recently has been growing concern about deflation. Put otherwise, there is a growing recognition that “price stability” as an objective of policy implies resisting both rising and falling prices. There is already downward pressure on prices in Japan, China and Hong Kong. Moreover, the increasing concern about financial bubbles, just alluded to, must accentuate fears of possible deflation elsewhere in the industrial world. Were a burst bubble to impair the operations of the financial system at a time when inflation was already very low, deflation would seem the natural consequence. Deflation could threaten a cumulative downward spiral if real wages rise and profits suffer; if real interest rates and real debt service increase; and if spending is postponed to wait for lower prices still. This having been said, it should also be noted that periods of temporarily falling prices, say due to positive supply side shocks, might not be a source of concern. Going back in history, a number of such periods can be identified when periods of falling prices were in fact associated with quite robust real growth. This also implies that policymakers must identify what kind of deflationary process is in train. An automatic pre-emptive response may not be appropriate.

Suppose, however, that there were serious concerns about a debt-deflation spiral aggravated by an impaired financial system. What should be the response? It might seem obvious that a vigorous reduction in interest rates would be appropriate to prevent the process from taking hold. This would be consistent with a Keynesian, demand-focused response. It is worth noting, however, that Hayek and others in the 1930s did note that the supply side implications of such a policy also deserved consideration. Governor Hyami of the Bank of Japan recently made a similar point. If low interest rates keep “zombie” companies alive, and prevent the needed reduction in excess capacity, then profits will not recover. And without profits, there can be no economic rebound more generally. A second argument against vigorous easing to contend with debt overhang problems is that it may just feed the bubble, leading to a more profound collapse in the end. These issues need more serious thought in the light of the experiences of the last decade in particular.

Finally, for the sake of completeness it should also be noted that exchange rate movements might in some circumstances raise concerns going well beyond the direct impact of the exchange rate on inflation. Exchange rate changes can alter competitiveness and threaten external balance. Highly volatile exchange rate movements can lead to misallocations and other economic costs. And, as observed in many emerging market countries recently, exchange rate changes can threaten the health of the financial system if a significant enough number of borrowers have debts denominated in foreign currency.

To summarise these last few paragraphs, it has become increasingly easy in recent years to envisage circumstances in which the single-minded pursuit of near-term price (CPI) stability as an objective might prove suboptimal. This would not normally be the case, so this logic does not lead to the abandonment of the objective under normal circumstances. But it does

imply that central banks, normally committed to price stability, should have a communication strategy prepared to explain why they have acted in ways that might seem incompatible with that objective. In the case of concerns about financial instability, the explanation for higher interest rates against a background of quiescent inflation would be to avoid deflation further in the future.

Once the objective of monetary policy has been specified, the next issue is how to achieve it in practice. The first requirement is some understanding of the **transmission mechanism** which links the central bank's policy instruments to its ultimate objectives. What has remained constant over recent decades is that monetary policy still affects prices only with "long and variable lags", to use language popularised by Milton Friedman in the 1960s. One reason for the "long" is that regulated prices, long-term contracts of various sorts and overlapping wage settlements impede rapid price adjustments. And one reason for the "variable" is that, at each stage of the transmission mechanism, expectations of economic agents about the future are a crucial determinant of their behaviour. Indeed, Keynes felt these variable psychological factors were so central that he fundamentally questioned the usefulness of forecasting processes based on historical data.

What has changed is that, in most economies, there have been significant efforts to reduce rigidities in both product and labour markets. Moreover, recognising the importance of expectations in the transmission mechanism, central banks have become increasingly transparent about what they are trying to achieve, how they see the economy working, and what their policy reaction might be in certain circumstances. While the real world remains far removed from that of a frictionless Rational Expectations model, these developments would seem to work in the direction of making the lags in the effects of policy on prices shorter.

If this is the good news about changes affecting the transmission mechanism, there is, unfortunately, bad news to go along with it. Advances in theory along with practical experience lead us to the conclusion that the economy is actually much more complicated than we used to think. For example, 30 years ago, the primary impact of higher interest rates on spending would have been presumed to come through intertemporal substitution effects; spending would have been delayed. Today, any competent analyst would also have to factor in distribution effects, feedback effects on government debt service and deficits, and balance sheet effects having to do with both debt levels and asset price values. Similarly, exchange rate depreciation would once have been deemed unequivocally expansionary due to substitution effects, unless the pass-through to domestic prices was quick and substantial. But today, factoring in the effects of terms-of-trade losses, and balance sheet effects when borrowing has been done in foreign currency, even the sign of the effect could be a topic for debate. Moreover, as evidenced in the recent crisis in Indonesia, these contractionary effects could be even stronger if trade credit dries up and exports cannot be shipped out because, with no imports to carry, no ships have landed.

It also seems to be the case that inflation and inflationary expectations in most countries are much stickier around low levels than they used to be. On the face of it, this is a good thing since it lowers the danger of accelerating rising inflation having to be offset by tighter policies and recession. This was a very common problem up until the 1980s. Yet, this stickiness might also expose us to other dangers. In particular, such a background might increase the likelihood of financial bubbles of the sort noted above.

It is also likely to be the case that the transmission mechanism of monetary policy could become impaired should such a bubble burst. In such an environment, risk aversion would clearly rise. This would lead to higher credit spreads that might partially offset reductions in policy rates. Higher liquidity preference could also lead to longer-term rates falling less than shorter-term rates. In addition, there could be a flight into "safe haven" currencies in such circumstances. The recent phase of policy easing in the United States has in fact been associated with all of the above phenomena. Indeed, the only element of the transmission mechanism which does appear to be operating normally is that operating through the

mortgage market, and even there certain unusual elements can be discerned. And, finally, the transmission mechanism will certainly be subjected to an unusual constraint when nominal policy rates hit the zero lower bound. This has been a practical concern in Japan for a number of years. Moreover, with policy rates at postwar lows, it is being increasingly seen as a possibility in a number of other industrial countries.

The last requirement for the conduct of monetary policy is a set of **operational procedures** for changing the setting of policy instruments. Here too major changes have occurred over the course of the years. Broadly put, the trend has been from informal processes, with policy decisions taken at irregular intervals, to more formality and more regularity. As a complement to this, there has also been a trend away from Governors having sole responsibility for policy decisions towards votes by committees of officials established specifically for this purpose. In the latter regard, however, it must also be added that Governors often continue to have informal influence that belies their single vote.

At the heart of these more formal processes in most industrial countries is a forecast (or set of forecasts if a committee is involved) of how the economy seems likely to perform given certain assumptions about exogenous variables. Of particular interest in recent years has been the outlook for inflation, given that most countries either explicitly ("inflation targeting" regimes) or implicitly have medium-term objectives for that variable. In effect, the policy instrument will first be set with a view to achieving the medium-term objective. At some regular interval, this procedure will then be repeated, incorporating all new information, and the setting of the policy instrument will be adjusted accordingly. At this level of generality, the policymaking process would seem a pretty simple and technical affair. However, as in many areas of human endeavour, the devil is in the details.

The first practical complication is, what do we mean by the policy instrument? Here too there has been a significant evolution over time. Some decades ago, the academic literature would have emphasised the importance of the reserves supplied by the central bank to the banking system, and the implications (via the money multiplier) for the growth of money and credit. Today, it is more broadly understood that no industrial country conducts policy in this way under normal circumstances. Recognising how unstable in practice is the demand for cash reserves, and the associated implications for interest rate volatility, there has been a decisive shift towards the use of short-term interest rates as the policy instrument. In this framework, cash reserves supplied to the banking system are whatever they have to be to ensure that the desired policy rate is in fact achieved. All this having been said, the recent switch in Japan to a reserve targeting regime (since policy rates are efficiently at zero) raises the intriguing question of what else might be done by monetary policy to stimulate growth.

The second practical complication is that forecasts of output and inflation are notoriously unreliable, for all the reasons noted above. This is one reason why many policymakers still like in practice to keep at least one eye on the rate of growth of monetary and credit aggregates. The heyday of monetary targeting in the industrial countries was in the 1970s and early 1980s, when decisions on policy rates were decisively influenced by the assumed implications for money supply growth. While this is no longer so, due to observed instability in demand for money functions, the Eurosystem in particular still looks upon money growth as a fundamental pillar supporting its monetary policy decisions. Moreover, as concerns about asset price increases fuelled by credit expansion have attained more prominence, it may well be that this policy indicator will once again receive increased attention.

A third complication is that information pertinent to policy decisions arrives continuously rather than discretely. Should such information be allowed to have an effect on policy variables in the period between the regular updates of the forecast? An important example of this problem might be a sharp decline in the exchange rate, with potential implications for inflation, raising the issue of whether the policy rate should be allowed to rise almost automatically in response. This would be the outcome for countries which focus on a Monetary Conditions Indicator in setting policy. Thinking in this area continues to evolve, but

in recent years there has been a movement away from such quasi-automatic responses. One reason for this has been the growing appreciation that the underlying causes of observed phenomena are pertinent to how policy should react. For example, downward pressure on the exchange rate due to a sharp fall in the terms of trade would have significantly less inflationary potential than one arising from a speculative currency attack. In such a situation, where the appropriate reaction “all depends on the underlying circumstances”, there is understandably a greater tendency for policymakers to sit tight.

5. A concluding comment

If I have left you with the impression that views have changed significantly over the years with respect to virtually every aspect of the conduct of monetary policy, that was my intention. If I have also left the impression that similar changes are likely to be ongoing, that too is all to the good. The modern central banker needs to be open to the reality of the ongoing structural changes around him, and to keep an open mind as to how monetary policy might best be used to enhance the welfare of the citizens for whom he or she is responsible.

The possibility of further change having been noted, the current consensus of view is also worth underlining. A longer-term commitment to price stability, supplemented by longer-term concerns about financial instability and potential deflation, should be the principal objective for monetary policy today. However, each of you will have to make your own judgments, reflecting your country-specific circumstances, as to how this objective might be most efficiently achieved.