THE RETREAT OF INFLATION AND THE MAKING OF MONETARY POLICY: WHERE DO WE STAND?

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Abstract

This document contains the text of the 1998 Central Banking Lecture delivered at the London School of Economics and Political Science on June 4th. It starts by asking what factors have been behind the remarkable retreat of inflation that has taken place internationally since the mid-eighties, then goes on to examine the contribution of monetary policy to this process, and concludes by commenting what can be learned from central banks' recent experience in seeking out alternative anti-inflationary monetary policy strategies.

Good afternoon, ladies and gentlemen:

It is for me a great pleasure and an honour to be here today in a place as special and full of significance for any social scientist as is the LSE to deliver this year's Central Banking lecture. Let me start by thanking the organizers and, in particular, the LSE Foundation and the Direction of the School for their kind invitation to speak before such a distinguished audience.

When I was a student at the LSE, some twenty years ago, I learned, no doubt, many things that helped me grow both as an economist and as a human being. But perhaps what I learned that was of most importance for me as a professional is that Economics, far from being the "dismal science" claimed by Thomas Carlyle, is a powerful discipline for understanding highly relevant aspects of social behaviour and a most important instrument for serving the public interest.

In this regard, I want to emphasize at the beginning of this year's Central Banking lecture that, in a democracy, central banks are institutions which exist to serve the public interest, and that the best way they can do so is by providing a stable monetary and financial environment for the development of economic activity.

Today I will focus on the issues relating to monetary rather than financial stability. This is not because I view financial stability as

unimportant. Quite the contrary. Yet focusing on monetary stability will allow me to examine the relationship between central bank behaviour, monetary policy and inflation, which is the main theme of my lecture.

Although economists are known to disagree very often, there is nowadays an overwhelming consensus that a most remarkable phenomenon over the past ten years has been the very significant reduction in inflation which has taken place internationally; something that at the time seemed virtually impossible to most observers.

Just to give an indication of the magnitude of the change, in the mid-eighties inflation was running at 5% in the group of industrialised countries, compared to 2% today; at 35% in the group of developing countries, compared to 11% today; and at 7% in the European Union, set against the 2% we currently enjoy. Significant, too, is the fact that unemployment rates, though still higher in many countries than what is deemed economically and socially desirable, are not generally higher nowadays than they were in the mid-eighties.

Given these stylised facts, two relevant questions spring to mind. What can explain the remarkable retreat of inflation? And is the present situation of low inflation a stable economic and political economy equilibrium?

As the saying goes: "there is nothing more prone to misunderstanding than success". Perhaps because of this, in recent years

there has been an abundant supply of popular explanations of why inflation has declined internationally[1]. One of the better known is that which places the emphasis on the process of international economic integration. Namely, stiffer foreign competition arising from growing trade integration would have mitigated inflationary pressures in those sectors and markets more exposed to such competition. And, at the same time, greater financial integration, amid the increasing globalisation and sophistication of international financial markets, would have considerably quickened and intensified such markets' punishment of countries pursuing economic policies not consistent with macroeconomic stability.

I do not deny that the ongoing process of international economic and financial integration has certainly made national policymakers more aware of the repercussions of their actions and amplified such repercussions. I also accept that stiffer foreign competition may have resulted in lower price levels in tradeable and quasi-tradeable sectors in a number of countries. Yet I am not sure why -if this were the main explanation for the reduction in inflation over the past ten years- inflation did not decline but rather increase in previous decades which also saw significant advances in the degree of international economic integration.

Admittedly, over the past ten years, the international economic environment has also benefited from the absence of adverse energy price

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[1] These explanations often appear in journal articles, and are sometimes espoused by businessmen. An articulate account of such explanations can be found in R. Bootle, The Death of Inflation, Nicholas Brealey Publishing Limited, 1996.

shocks, such as those in the middle and late seventies, and nowadays, if anything, we are enjoying the favourable repercussions of relatively low world prices of energy and other raw materials. Yet I consider the inflationary episodes of the seventies to be not only the result of adverse supply shocks. If inflation persisted it was mainly due to inappropriate demand management policy responses to shocks -and, in particular, of monetary accommodation- in a social context where price stability was not sufficiently valued.

Consequently, I would like to devote the bulk of my lecture to expounding what I consider to be a more traditional but most important reason behind the formidable progress made in achieving nominal stability over the last ten to fifteen years.

For me, the keys to the reduction of inflation are, on the one hand, the progressive perception by society, based on the experiences of the past, that inflation entails economic costs which are far more important than previously considered, and that its successful control is an essential condition for sustained economic growth; and, on the other, the progressive realisation by policymakers, and central bankers in particular, that activist demand management policies geared systematically to fine-tuning economic activity are ineffective for improving output and employment prospects, and ultimately have inflationary consequences which are detrimental to economic and social well-being.

To present these ideas in a more or less organized fashion, I will devote the first part of the lecture to describing what it is known at present about the economic costs of inflation, which may explain why there is nowadays a higher social preference for stability-oriented polices and policymakers. I will then turn to examining what are, in my opinion, the prevailing views in central banks concerning the main determining factors of inflation in the short and the medium term, and the conditions under which monetary policy may be expected to be successful in achieving and maintaining low inflation rates. Finally, I shall refer to what can be learned from central banks' recent experience in seeking out alternative anti-inflationary monetary policy strategies, and to the lessons which may be drawn and be of use to the making of monetary policy now and in the future.

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It is generally assumed that the costs of inflation arise when the economy deviates over a prolonged time from what is a situation of price stability, the latter being usually understood -following Alan Greenspan- as an inflation rate which is low enough not to disturb the decision-making processes of economic agents. In numerical terms, an annual inflation rate of up to 3% -according to some prominent academics, like Stanley Fischer- or 2% -according to most central bankers- is viewed as a reasonably approximate figure for what, in practice, should be considered to be price

stability[2]. In turn, the reasons often given why price stability should be interpreted in a pragmatic and not an absolute manner are both statistical and economic. Statistical, because of the difficulties of measuring the true changes in the cost of living standards through traditional consumer price indices, which, according to available empirical studies, tend to overstate the increase in the cost of living by a magnitude that has been estimated in various countries at between 0.5% and 1.5% per annum. And economic, because -as originally stated by Tobin many years ago and recently revisited by Akerlof and others- insofar as there are downward rigidities of prices and wages, a certain small positive rate of inflation is like "grease in the wheels" of the economy, allowing the necessary regular changes in relative prices to take place fluidly and thus improving overall efficiency[3].

If we can agree that price stability corresponds, in practice, to a rate of inflation of, say, up to 2% per annum, the next step is to ask how the public perceives the costs of inflation. In this regard, detailed surveys -like those developed by Robert Shiller- have recently been carried out in a number of countries with a view to answering this question[4]. These surveys show that the public regards inflation as

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[2] S. Fischer, "Modern Central Banking", in F. Capie, S. Fischer, Ch. Goodhart and N. Schnadt (eds.), The future of Central Banking: The Tercentenary Symposium of the Bank of England, Cambridge University Press, 1994.

[3] G. Akerlof, W. Dickens and G. Perry, "The macroeconomics of low inflation", Brookings Papers on Economic Activity, 1, 1996.

[4] R. Shiller, "Why do people dislike inflation?", mimeo, Yale University.

harmful overall inasmuch as it lowers the standard of living. However, the surveys results are much less clear with regard to how the public views the specific channels through which inflation entails costs. Consequently, from a strictly economic standpoint, it is essential to provide a theoretically convincing and empirically meaningful explanation of the various ways in which inflation erodes the public's standards of living.

In past years, particularly as a result of the generalised increase in inflation in many countries following the oil shocks of the mid-1970s and early 1980s, a number of theoretical models have been constructed that are able to establish the adverse effect of inflation on people's standard of living and welfare. However, it is only recently that these conceptual advances have been coupled with empirical evidence corroborating that the costs of inflation are indeed significant. Let me then briefly consider the main costs associated with inflation, with a reference to the available empirical evidence concerning their magnitude.

In examining the costs of inflation, the traditional distinction is between the costs which come with perfectly anticipated inflation, and those associated with unanticipated inflation.

Concerning the costs of anticipated inflation, along with the well-known "shoe-leather" and "menu costs", the most important are those that arise as a result of the impact of inflation within a tax, legal and contractual framework which is not fully adapted to it. As regards the costs of unanticipated inflation, they derive from the uncertainty and

volatility of the inflation process which puts "sand in the wheels" of the price system and distorts the allocation of resources. In addition to these various macroeconomic and efficiency costs, I would like to note that when inflation is not anticipated or when, if anticipated, it affects the public's economic entitlements and obligations, a significant redistribution of income and wealth ensues which tends to affect adversely those segments of society with less knowledge and fewer resources to protect themselves against inflation.

Having mentioned some of the main channels through which the economic costs of inflation manifest themselves, let me say something of the available evidence regarding the actual size of the overall costs.

The existing analyses usually start from the assumption that, regardless of the ways in which inflation may adversely affect an economy, to be costly it should undermine the level or growth rate of per capita income over the medium term. Given the diversity of approaches, geographical coverage and time frame of the existing empirical studies, it should come as no surprise that their results differ considerably. Admittedly, most of these studies may be criticised owing to the fact that inflation and growth are mutually determined variables in a general equilibrium framework, with the relationship between them ultimately depending on the macroeconomic policies applied in the countries involved. However, the results generated by those cross-country studies having a theoretical framework more firmly anchored in growth theory generally conclude that countries which enter into an inflationary

process, even at moderate rates, never see an improvement in their growth or per-capita income prospects and have a high probability of experiencing a deterioration in such prospects.

Very recently, the question of whether reducing inflation to go to price stability is also beneficial when starting from relatively low rates has been the subject of intense research. In particular, I would like to mention an ambitious, forthcoming study under the aegis of the National Bureau of Economic Research which involved the collaboration of academics and central bankers from various countries, including the Bank of England and the Bank of Spain[5].

The NBER project tries to approximate empirically on a country-by-country basis the net benefits of going from low inflation to price stability while also taking into account the output costs that may arise when moving along the short-run Phillips Curve. The general conclusion is that industrial countries tend to experience in net terms significant welfare gains when achieving price stability even if the starting inflation rates are low or moderate, say, 4 to 5%.

Consequently, it is my view that the bulk of the empirical evidence is consistent with the widespread public perception that inflation erodes standards of living by reducing per-capita income or its growth rate, and by lowering the welfare associated with a certain per-capita income level.

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[5] M. Feldstein (ed.), The costs and benefits of price stability, University of Chicago Press, forthcoming, 1998.

Nevertheless, it must be conceded that we are still far from adequately understanding the complex process by which inflation manifests itself in modern economies, and from being able to provide precise assessments of the true magnitude of the relevant costs.

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After examining some of the main economic costs of inflation, and reaching the conclusion that the pursuit of price stability is now widely perceived by the public to be a highly desirable goal, I would like to consider what the current views are, mainly in central banks but also in the Economics profession at large, on the main determinants of the course of inflation in the short and medium term, before proceeding to explain how these views are shaping the making of monetary policy.

The distinction between these two horizons is important for a proper understanding of the inflationary process. Indeed, while in the medium term it is commonly accepted that inflation is predominantly a monetary phenomenon, in the short term price developments are influenced by a variety of aggregate supply and demand factors.

Analysing inflation from a medium-term perspective, a most firmly established relationship in monetary theory is that the inflation rate equals, on average, the rate of monetary expansion which exceeds that which is needed to finance the potential growth of the economy. Admittedly, in the present circumstances of deregulation and continuous

financial innovation, it is often difficult to identify which specific monetary aggregate corresponds most closely to the relevant concept of "money" or "liquidity" -a problem well known within most central banks-. Nevertheless, there is a widespread conviction that monetary control is essential for achieving a satisfactory inflation performance over the medium term. And this explains the monetary authorities' concern, even in countries which have adopted very different monetary policy frameworks -such as monetary targets or inflation targets-, with reaching a rate of monetary expansion that on average is compatible with financing potential economic growth under conditions of price stability.

But then the following question arises: if inflation entails significant economic costs for society as a whole in the medium term, and if monetary policy is the main determining factor of the path followed by inflation over that time span, what prevents a policy stance from being adopted that is compatible with achieving and maintaining price stability?

The reply to this question is not, however, as simple and direct as might be thought. Indeed, far from being a mechanical phenomenon, monetary policy is a highly complex process in which a full array of economic, political and social factors converge and ultimately determine its course. Consequently, it is worth reviewing which factors may hamper the effective gearing of monetary policy in the medium term to the attainment of price stability.

Combining both recent developments in monetary theory and the lessons learned from the experience of a number of central banks in conducting monetary policy over the years, two factors prove to be pivotal: the difficulties arising from a structurally unbalanced budgetary policy, and the problems of dynamic inconsistency which result from the authorities' temptation systematically to exploit the perceived short-term trade-off between output and inflation in order to step up the pace of economic activity.

Over time, an unbalanced budgetary policy which results in chronic structural deficits may lead to a rate of monetary expansion in excess of what is needed to finance the sustained growth of the economy under conditions of price stability. The most direct way, of course, is when the fiscal deficit is directly monetised by the central bank. This situation, which is characteristic of non-industrialised countries with high budget deficits and poorly developed capital markets, reveals that keeping the fiscal deficit under control is essential for maintaining low inflation.

However, industrial countries may also experience the adverse effects exerted in the medium term by chronic budget deficits on the anti-inflationary stance of monetary policy. Indeed, as stated years back by Sargent and Wallace, fiscal deficits which lead to an unsustainable growth of public debt ultimately bring monetary expansion and -possibly

ahead of time- higher inflation[6]. And although it might be argued that there are fortunately few industrial countries currently facing the problems of financially unsustainable debt, the above reasoning is still relevant if it is borne in mind that in countries with relatively high deficits and levels of debt, pressure could be exerted on the central bank to keep interest rates relatively low in order to ease and lower the cost of financing the deficit through debt. In such a case, though not directly monetised the deficit is nevertheless monetised indirectly, with the subsequent adverse effect on future and -if the expectations channel is powerful- on current inflation, too.

The growing consensus as to the importance of the macroeconomic problems arising from chronic deficits, both with regard to the impact on monetary policy and inflation and to the adverse effects on potential economic growth, has in recent years led the authorities in many countries to adopt measures to improve their public finances. One was the introduction in the European Union of fiscal discipline rules to regulate access to Monetary Union and, after accession, to prevent the emergence of excessive deficits through the Stability and Growth Pact. Another was the entry into force, only a few years ago, of legal provisions prohibiting any central bank financing of the public sector. Both are significant steps

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[6] T. Sargent and N. Wallace (1981), "Some unpleasant monetarist arithmetic", Federal Reserve Bank of Minneapolis Quarterly Review, 1981. A fiscal theory of the price level is developed in M. Woodford "Price-level determinacy without control of a monetary aggregate", Carnegie-Rochester Conference Series on Public Policy 43, 1996; and M. Canzoneri and B. Diba "Fiscal constraints on central bank independence and on price stability", in J.L. Malo de Molina, J. Viñals and F. Gutiérrez (eds.) Monetary Policy and Inflation in Spain, Macmillan, forthcoming, 1998.

toward solving the inflationary problems which, in the medium term, arise from persistently unbalanced budgetary policies. From this viewpoint, the drive by many countries over recent years to restore greater budgetary discipline must have been a factor conducive to the worldwide reduction of inflation.

However, it is not only the problems arising from fiscal policy which lie behind the difficulties that monetary policy may face in the pursuit of price stability. As I mentioned earlier, there is also the problem of time or dynamic inconsistency stemming from the temptation to which the authorities may succumb to exploit the perceived short-term output-inflation trade-offs in order to boost economic activity.

Most of the theoretical models setting forth this problem conclude that the proclivity of the authorities systematically to run an expansionary policy to stimulate the economy simply leads to higher inflation without bringing any benefit in terms of higher output[7]. The main reason being that once economic agents become aware of the authorities' policy, they adapt prices and wages accordingly. This prevents the authorities from achieving their real targets, and induces them to accept a higher inflation rate.

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[7] The seminal contributions in this literature are F. Kydland and E. Prescott, "Rules rather than discretion: the inconsistency of optimal plans", Journal of Political Economy 85, 1977; and R. Barro and D. Gordon, "A positive theory of monetary policy in a natural rate model", Journal of Political Economy 91, 1983.

One of the basic contributions which, in my view, the literature on dynamic inconsistency has made to the making of monetary policy is to permit identification of the factors which influence the size of the inflationary bias of monetary policy. In particular, this bias will tend to be present and larger: when there are more economic policy targets than policy instruments; when price stability is assigned little value relative to other policy objectives; when there are significant structural distortions and rigidities in goods and labour markets that limit potential output; and when policymakers are convinced that they are able to boost economic activity through monetary expansions. Let me briefly discuss each of these issues.

One of the main problems traditionally faced by the authorities is that of having to achieve a variety of policy targets with an insufficient number of instruments. As originally stated by Tinbergen and as later qualified by Brainard, economic policy dilemmas arise when there are not at least as many instruments as there are policy targets[8]. Thus, when the authorities' goal is to reach a high rate of economic activity under conditions of price stability and only monetary policy is available for this purpose, there is an overburdening of monetary policy. Under such circumstances, the lower the priority given to price stability relative to other goals and the more pressure there is on the authorities to shorten the horizon of monetary policy decisions -owing, for example, to elections

[8] J. Tinbergen, On the Theory of Economic Policy, Amsterdam, North-Holland, 1952; and W. Brainard, "Uncertainty and the effectiveness of monetary policy", American Economic Review, May, 1967.

at regular intervals-, the greater the inflationary bias of monetary policy will be.

In a context of multiple policy targets, another factor which -according to the models of dynamic inconsistency- influences the medium-term stance of monetary policy is the difference between the level of the economy's potential output and the output targeted by the authorities. For instance, if the authorities' target is to achieve the level of potential output that could prevail in a more efficient and competitive framework, while the level of potential output actually attainable is lower -owing to rigidities and distortions that preclude the smooth functioning of goods and labour markets-, this introduces an expansionary and inflationary bias in monetary policy. In practical terms, the more constrained the levels of output and employment due to the presence of market rigidities and distortions, the greater the social and political pressures for monetary policy to "do something" to stimulate economic activity. Perhaps, a channel through which the process of international economic integration, and the privatisation and liberalisation policies undertaken in the recent past could have improved the inflationary outlook is, precisely, by increasing potential output and thus reducing the pressures on monetary policy to expand.

The final factor which, under the theory of dynamic inconsistency, influences the size of an inflationary bias in monetary policy is the extent to which the authorities are able to boost economic activity in the short term through monetary surprises; that is, the slope of the short-term

Phillips curve. Hence, the stronger the policymaker's conviction, erroneous or not, that monetary policy can stimulate the economy in the short term, the greater the temptation to expand liquidity systematically and thus the greater the departure from price stability.

However, before closing this part of my talk let me also say something about the short run. This is, I feel, important for gauging the actual ability of monetary policy to influence inflation during limited periods of time, and also for understanding what sort of considerations may shape the response of central banks to various shocks, even when it is generally acknowledged that achieving and maintaining price stability is a desirable policy objective in the medium term.

In practice, there are several factors, in addition to those of a strictly monetary nature, which have a direct impact on the price level in the short term. Any factor influencing aggregate demand or supply may in principle induce a change in the inflation rate within that time frame, namely: fiscal policy, the behaviour of economic and social agents in price and wage formation processes, international economic trends, and import prices. Furthermore, experience confirms that, in many cases and for relatively short periods, the foregoing variables frequently exert a stronger influence on prices than does monetary policy, owing to the fact that the effects of monetary policy on nominal magnitudes tend to become fully visible only with the passage of time.

The short term impact of monetary policy on prices and output has long been one of the most widely discussed issues in macroeconomic theory. It is also of considerable practical importance for the topic at hand. In particular, even where there is a firm belief that price stability is good for a country's economic health, the authorities must also assess the magnitude of the short-term output costs of disinflation in order to determine the pace at which inflation should be reduced to reach the established goals or return to them in case there are inflationary shocks which disrupt price stability.

True, there is abundant theoretical literature and empirical evidence concerning these matters; but our imperfect knowledge of the transmission mechanism of monetary policy and the diversity of national experiences in periods of disinflation make it very difficult to reach definitive conclusions on the short-term impact of monetary policy on inflation. The most we can aspire to is to set out some of the more generally accepted points, in the hope that they may at least act as a rough guide when making policy decisions.

A first generally accepted point is that the impact of monetary policy on prices is felt gradually. This is due to the lags existing in the transmission of movements in official interest rates to market rates, to the gradual response of spending decisions to changes in financial conditions, and to the greater or lesser speed with which prices and wages respond to changes in nominal spending.

A second point of agreement is that since, in practice, recessions are very often preceded by significant increases in inflation, keeping inflation from rising through an appropriate forward-looking use of monetary policy is of paramount importance so as to have, on average, more stable output and employment conditions. Indeed, it is the view in most central banks that interest rates should be pre-emptively adjusted whenever there are signs of persistent inflationary pressures, so as to avoid having to increase such rates by larger amounts later on, with the correspondingly higher output costs. A well-know practical problem is that what may be clear to the central bank may not be apparent to the public if inflation has not yet risen. This, at times, delays taking the appropriate policy measures by fear of them not being socially understood nor accepted.

A further point on which there is broad consensus is that the more rapidly agents adjust their inflationary expectations and the more flexibility there is in the setting of prices and wages, the greater the ability of monetary policy to reduce inflation with lower or no temporary output or employment costs, that is, the lower the sacrifice ratio. This is so because the more confident agents are that the authorities will stick to a less inflationary monetary policy, the more intense and rapid will be the adjustment of expectations. And because, when goods markets are highly competitive and the labour market is flexible enough to permit the rapid adjustment of wages, disinflation will be faster and entail lower output costs. This, in turn, lessens the short-term costs of going to price stability and makes it more likely that the latter will be achieved.

inflation rates. The importance of empirically assessing which of the two viewpoints mentioned better fits the experience of industrial countries has given rise to several studies which scrutinise the economic performance of OECD countries during episodes of disinflation[9]. The conclusion reached in these studies is that, in general, the faster disinflation is, the lower the output cost tends to be. However, this does not necessarily mean that stringent disinflationary policies should be implemented, for although the total output cost is lower, the impact on social welfare could be greater as costs are concentrated in a shorter period. Consequently, a resolute but gradual implementation of disinflation policies -consistent with interest rate smoothing practices- would seem to be a reasonable alternative, especially taking into account the uncertain knowledge that policymakers have about the structure of the economy.

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From the foregoing analysis of the interaction between monetary policy and inflation at various time horizons, it may be concluded that policy initiatives aimed at strengthening budgetary discipline, improving the functioning of goods and labour markets and adopting mechanisms to reinforce the anti-inflationary stance of monetary policy, favourably contribute to the achievement of price stability at low cost. Since I am

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[9] P. Andersen, "OECD country experiences with disinflation", in A. Blundell-Wignall (ed.), Inflation, Disinflation and Monetary Policy, Reserve Bank of Australia-Ambassador Press, 1992; and L. Ball, "What determines the sacrifice ratio?", in N.G. Mankiw (ed.) Monetary Policy, University of Chicago Press, 1994.

convinced that achieving and maintaining price stability is highly beneficial for society as a whole, the above-mentioned policy initiatives would not only improve the cost-benefit ratio of moving towards and maintaining price stability but would also make it easier, from a political-economy viewpoint, to achieve this goal.

Allow me now to devote the time remaining to comment on the lessons that may be drawn from central banks' recent experience in the search for suitable monetary policy strategies to effectively combat inflation.

At the risk of oversimplifying what has proven to be an arduous and complex process in many countries, recent developments in national monetary policy strategies may be said to have been marked by the endeavour to find a framework capable of blending rigour and discipline in the medium-term monetary policy stance with certain margins of flexibility to respond to macroeconomic disturbances in the short run.

This endeavour of monetary authorities reflects the desire to avoid two sorts of difficulties. On the one hand, the dynamic inconsistency problems arising from an excessively discretionary management of monetary policy, which make it virtually impossible to achieve and maintain price stability. And, on the other, the drawbacks associated with fixed or rigid rules which, by predetermining the course of monetary variables, leave no scope for monetary policy to play the welfare-improving role of reacting to certain macroeconomic disturbances.

Given the above-mentioned inflationary risks associated with an excessively discretionary monetary policy and the problems with fixed or rigid policy rules, the idea has been gaining ground in recent years that a good way to ensure that the necessary flexibility in monetary policy management does not introduce inflationary biases is to assign to the central bank the primary goal of price stability and provide it with the necessary means to achieve it. In some countries -like New Zealand- contracts have recently been entered into under which the central bank undertakes vis-à-vis the government to achieve a specific inflation target within a given time by applying the monetary policy it deems appropriate. The central bank authorities are accountable to the government in the event of the target not being reached.

In contrast to the contractual approach -but with similar objectives-, an increasing number of countries have opted in recent years for the more ambitious route of introducing legal reforms that establish price stability as the primary goal of monetary policy in the medium term and endow the central bank with considerable independence for achieving it. This significantly reduces the risks of short-term subordination of price stability to other monetary policy targets, and allows monetary policy decisions to be adopted with a sufficiently long time horizon and independently from the vagaries of the political cycle.

Indeed, as highlighted in an article which Professor Goodhart and I wrote a few years ago, the central banks of a fairly large number of countries -both inside and outside the European Union- have recently

gained a high degree of independence in the conduct of monetary policy[10]. In the specific case of European Union countries, the conviction that this was the proper approach for overcoming inflation on a lasting basis was enshrined in the Maastricht Treaty, leading to the establishment of a European System of Central Banks (ESCB) which is fully independent to formulate and execute monetary policy so as to achieve and maintain price stability in the European Monetary Union as a whole. In providing for the establishment of the ESCB the Treaty also made it mandatory for participating national central banks to have a legal status that was fully compatible with that of the System.

In view of the many studies that theoretically justify granting considerable independence to central banks in conducting a monetary policy that achieves price stability, it is particularly useful to review, albeit briefly, the experience of independent central banks in combating inflation.

The record would seem to indicate that countries having a well-established tradition of central bank independence tend generally to perform best as regards price stability. Of course, the question often arises whether it is central bank independence that favours price stability or, rather, whether societies with a high degree of aversion for inflation tend to have both independent central banks and low inflation rates.

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[10] Ch. Goodhart and J. Viñals, "Strategy and tactics of monetary policy: examples from Europe and the Antipodes", in J. C. Fuhrer (ed.) Goals, guidelines and constraints facing monetary policy-makers , Federal Reserve Bank of Boston, 1995.

But even if the ultimate causes governing the relationship noted between the degree of independence and inflation performance are not sufficiently known, the results available for various groups of countries, for different periods, and using a variety of indices to approximate the degree of independence, generally tend to suggest that central bank independence helps fighting inflation.

In line with the above, if it is agreed that introducing an institutional framework that guarantees central bank independence helps to strengthen the credibility and anti-inflationary discipline of monetary policy, it must nevertheless be asked whether this is achieved at the cost of a less favourable performance by real variables, such as the level and variability of output. Fortunately, the available empirical evidence suggests that these adverse effects do not generally occur. Let me now briefly turn to the reasons why this may be so.

Although it is likely that an independent central bank seeking to achieve price stability will tend to be less accommodating to certain economic disturbances that affect output, its greater independence will enable it to avoid those other disturbances which are political in origin. Moreover, it may be argued that insofar as the monetary policy implemented by an independent central bank enjoys greater anti-inflationary credibility, the monetary authorities will tend to find they have more scope in the short run for countering specific macroeconomic disturbances, without running the risk that the public will incorrectly interpret transient changes in monetary conditions as a change in the

monetary policy stance. Finally, the increased credibility of monetary policy may also help economic agents to distinguish between changes in the general price level and changes in relative prices, thus prompting a more rapid adjustment of prices and wages to macroeconomic disturbances. This will reduce the need for monetary policy to play a compensating role in the short term.

From the discussion so far, I draw the conclusion that endowing the central bank with considerable independence can favourably contribute to the achievement and maintenance of price stability. Nonetheless, as experience shows, the contribution will be all the more important the wider the support that the final goal of price stability receives from overall economic policy and the more rooted the conviction in society that maintaining price stability is essential for promoting economic growth.

The increasing attention paid in recent years to making legislative changes to ensure that monetary policy can be conducted in a medium-term perspective and without government interference has shifted the discussion about which monetary strategy best performs the role of "nominal anchor" from a relatively technical to an institutional level. In this regard, it can be stated that once price stability has been legally established as the primary goal of monetary policy and the central bank granted an independent status, the resulting strengthening of anti-inflationary credibility provides more room for manoeuvre in the choice of specific monetary strategies (e.g. monetary vs. inflation targets). This may explain why a number of central banks, all of which enjoy

considerable independence, nevertheless conduct their monetary policy on the basis of different monetary policy strategies. In this respect, it is also of interest to mention that independent central banks with price stability as the primary goal of monetary policy look at broadly similar sets of information variables and have, in practice, very similar reaction functions, in spite of having adopted formally different monetary policy strategies[11].

Still, it would be mistaken to conclude that the alternative monetary policy strategies potentially available to central banks -even to those enjoying independence- are equally effective. Indeed, given the imperfect knowledge that we have on how the economy works the most suitable strategy is that which, while adopting a medium-term perspective, tends to work well across different models of the economy, can cope with shocks from different sources, and can be transparently communicated to the public. Here, there is much to say for inflation targeting, pioneered by the Bank of England, and which has revealed itself in an increasing number of countries -Spain included- as an effective strategy for fighting inflation by making the commitment of central banks to price stability more concrete, visible and transparent.

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[11] R. Clarida, J. Gali and M. Gertler, "Monetary policy rules in practice: some international evidence", National Bureau of Economic Research, Working Paper no. 1750, November, 1997; and Th. Laubach and A. Posen, Disciplined discretion: monetary targeting in Germany and Switzerland, Essays in International Finance, no. 206, Princeton University, 1997.

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I would like to conclude this lecture with a reference to one of the most important changes in the modern history of central banking: the establishment, three days ago, of the European System of Central Banks, which as of January 1st 1999 will be in charge of conducting monetary policy in the euro area, which comprises about 280 million people and 20% of the world's GDP.

Certainly, the ESCB has been carefully designed from an institutional point of view, having price stability as the primary goal of monetary policy and enjoying a degree of political and functional independence higher than that of any existing central bank. Yet for the ESCB to be a successful guardian of monetary stability in the euro zone, it will also have to show, from the very outset, that whichever the monetary policy strategy adopted, it is run sensibly, transparently and with a true European spirit. Only then will the ESCB ensure for the single monetary policy the understanding and support of the European public, whom it ultimately must serve and be accountable to.

At the same time, European governments must implement the supply-side policies needed to improve the functioning of goods and labour markets and to reduce structural unemployment in the euro zone, while achieving a balanced budgetary position enabling national fiscal policies to play a countercyclical role within the limits of the Stability and Growth Pact.

This division of labour between the ESCB and national governments on the policy front is fundamental for the stability of European Monetary Union and for the maintenance of the non-inflationary economic growth needed to bring unemployment down and to improve the well-being of society. Otherwise, there would be a risk that continuing high rates of European unemployment may progressively undermine the social consensus for stability-oriented monetary and fiscal policies and that the problems that we think are now solved may return to haunt us, this time in a more complex economic and institutional setting.

Thank you very much.

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