BANK OF ENGLAND

Speech

"The Meaning of Internal Balance" Thirty Years On

Speech given by

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At the James Meade Centenary Conference

13 July 2007

Abstract

In his Nobel Prize lecture, Meade laid out a macroeconomic programme based on the principle of allocating demand management policies to the pursuit of price stability, reformed wage-fixing institutions to achieving full employment, and foreign exchange policies to maintaining balance-of-payments equilibrium. But with respect to the first of these, he advocated the pursuit of a target for nominal income, rather than the price level. I evaluate this programme with the benefit of hindsight and in the light of the successful application of inflation targets in many countries, including the United Kingdom. I consider why an inflation target is typically preferred to a nominal income target and note that a "flexible" inflation target overcomes Meade's primary objection to a price level target. I discuss some of the issues associated with the application of flexibility in practice, as well as the extent to which financial stability considerations should affect the conduct of monetary policy.

1   Introduction

2007 is not only the centenary of James Meade's birth, but it also marks exactly thirty years since he and Bertil Ohlin received the Nobel Prize for their "pathbreaking contribution to the theory of international trade and international capital movements." The award recognised Meade's analysis of trade policy in a world with various market distortions as well as his pioneering work on open-economy macroeconomics. In this regard, Meade's analysis of the relation between internal and external balance, and the relation between targets and instruments of economic policy, was of particular importance.

It was therefore somewhat surprising that in his Prize address, "The Meaning of Internal Balance" (Meade, 1978; henceforth MIB), Meade chose to focus not on open-economy issues but how to define, and more particularly how to achieve, internal balance in an economy. But it is characteristic of Meade's modesty that he chose to dwell not on his achievements, but rather on where he felt his earlier work had been deficient.

Meade's *Balance of Payments* (Meade, 1951), one of the two key works which gained him the Nobel Prize[1], employed a standard Keynesian fixed-price income-expenditure framework, transplanted to an open economy setting. A key focus of interest was how an economy could simultaneously achieve balance-of-payments equilibrium (external balance) and full employment (internal balance). In a nutshell, that was to be achieved by a combination of demand management (expenditure increasing/reducing policies) and foreign exchange policies (expenditure switching).

At the time, and following the *General Theory*, Meade felt that nominal wage and price rigidity was an acceptable assumption to make for short-run analysis. The development of the Phillips curve allowed subsequent analysis to endogenise wages and prices, but the analysis and control of inflation remained something of a sideshow to the main event. But following Friedman's 1967 presidential address to the American Economic Association (Friedman, 1968) and associated work by Phelps

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[1] The other is *Trade and Welfare* (Meade, 1955).

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(1967) and Lucas (1973), and more particularly reflecting the widespread emergence of stagflation in the 1970s – which the United Kingdom suffered from especially badly – it was clear that inflation needed to be properly integrated into the picture. In MIB, Meade recognised this deficiency in his earlier work and noted that policy makers needed to seek to achieve price stability, as well as full employment and balance-of-payments equilibrium.

How was this to be achieved? Achieving three targets in general requires three instruments and Meade identified demand management (fiscal and monetary policies), wage-fixing and foreign exchange policies as the tools required for the job. But what was more interesting – and for that time more novel – was the particular allocation of these instruments to targets, namely:

- Demand management to control total *money* (rather than real) expenditure and thus to achieve price stability;
- Wage-fixing institutions to ensure that wages moved to match the demand for labour to the available supply (rather than to control inflation as in traditional incomes policies) and thus to achieve full employment;
- And foreign exchange policy to maintain balance-of-payments equilibrium.

In MIB, Meade then went on to elaborate on this assigment of instruments to targets and a host of issues connected with its implementation. But there were so many details to be filled in that it occupied a large team – including the organisers of this conference and one of my division heads – at Cambridge for more than a decade, and led to four books (Meade, 1982; Meade et al., 1983; Meade, 1986; and Meade et al., 1989), as well as a host of articles. On a personal note, it also provided the stimulus for part of my own PhD thesis (Bean, 1983).

Seen with thirty years hindsight, it is notable how much of the essence of Meade's thinking is embodied in the current macroeconomic policy framework. But, not altogether surprisingly, there are important ways in which it differs. So in the rest of my contribution, I shall explore in more depth what has survived and what has not, as well as considering some unresolved issues associated with the current policy framework. As befits a central banker, I shall focus on the demand management

aspects of Meade's policy programme, though I shall conclude with a few observations on the wage-fixing and foreign exchange elements.

2   Demand Management

The Policy Assignment

A key feature of Meade's programme was the assignment of demand management policies to the control of nominal spending and inflation, rather than to the level of real activity and employment, which were instead to be pursued through reform of the institutions determining wages. That is very much the consensus approach to policy today and reflects the belief that while temporary wage and price rigidities or sluggish expectations could create a trade-off between activity and inflation in the short run, that trade-off cannot be systematically exploited to run the economy above the 'natural' level of output that would prevail once wages, prices and expectations had adjusted. It is, though, the reverse of the assignment prevailing in the 1960s and 1970s

Why does this long-run neutrality of inflation for output lead naturally to Meade's (and the current) assignment of instruments to targets? It is not because the traditional assignment could not work in principle. The level of wages could be set to generate some predetermined inflation rate and macroeconomic policies then set to achieve what is believed to be the natural rate of output conditional on that inflation path. In essence, one would be just solving a pair of simultaneous equations for two unknowns.

The problem comes when the policy maker's assessment of the natural rate of output is wrong. If, for instance, it is too optimistic – as was effectively the case in the United Kingdom through the much of the 1960s and especially the 1970s – then there will be upward pressure on wages and prices relative to that generated by the policy for wages and prices. Though the latter might hold for a while, experience suggests that such prices and incomes policies would eventually need either to accommodate

that higher required inflation rate or else collapse. And so long as the target for output was too high, there would be a tendency for inflation to keep on ratcheting up.

Meade's assignment prevents this happening. In deciding the target for the rate of growth of nominal spending, the policy maker would need to take a view on the rate of growth of the natural level of output. But if (s)he is too optimistic, the consequence would be higher inflation than intended, but no tendency for it to continue to accelerate. So the assignment is potentially more robust to errors in implementation. Moreover, it helps to emphasise to the public that ultimately the level of activity is determined by real factors and cannot be affected in the long run by trying to manipulate the level of nominal demand alone.

The argument here is very similar to that embodied in the literature on the time inconsistency of monetary policy developed by Kydland and Prescott (1977) and Barro and Gordon (1983). But in those models, an inflationary bias arises because distortions, associated with the exertion of monopoly power in product and labour markets, lead the policy maker's target for output to exceed its natural rate.

Fiscal or monetary policy?

One aspect in which Meade's assignment differs from contemporary practice is in the roles played by fiscal and monetary policies. In MIB, Meade noted that if the velocity of circulation were stable, then a steady rate of expansion of nominal demand could be achieved through a steady rate of growth of the money supply. In turn that could be delegated to an independent central bank – an idea that he found attractive – with a constitutional requirement to aim to achieve steady but moderate growth in nominal income. However, instability in the velocity of circulation – and remember this was before the experiment of monetary targeting in the 1980s had been derailed by shifts in velocity associated with financial market innovation – persuaded him that monetary policy, i.e. interest rates, should be used to directly target nominal income and that this should be supplemented by the use of fiscal policy, i.e. the use of two instruments to hit one target.

That one might want to use more than one instrument to try to hit a single target can be rationalised by uncertainty about the impact of each instrument on the goal variable. With multiple instruments, one can increase the precision of control by diversifying across instruments, placing more weight on those instruments whose impact is felt to be more certain, as well as exploiting any covariances between policy multipliers (Brainard, 1967). Meade's analysis was rather different though. He noted that what sort of fiscal action was called for depended on the nature of the shock – he gave the example of an adverse terms-of-trade shock that necessitated a fall in real consumption in the home economy – and that therefore the best model was probably to let the fiscal authority, which he did *not* think should also be independent, set fiscal policy in the light of circumstances, knowing that the central bank would then set monetary policy to maintain nominal demand at its desired level.

This is pretty much the arrangement that we do have, with the important proviso that monetary policy is seen as the *primary* tool for managing nominal demand. Interest rates are a flexible tool that can be changed instantaneously, though the transmission lags to demand and thence to inflation are certainly, in Friedman's famous phrase, "long and variable" (to which I would also add 'rather uncertain').

Fiscal policy is, by contrast, these days seen as a less effective weapon. Increases in government spending take time to initiate. And temporary changes in income taxes are likely to be ineffective in stimulating or retarding demand, at least if consumers obey the life-cycle/permanent income hypothesis. Temporary variations in sales taxes or investment credits could be used as a countercyclical fiscal tool, as they potentially induce intertemporal substitution in spending, though these too are not regarded as a central part of the armoury. That is because all fiscal expansions, whether as result of higher spending or lower taxes, tend to be politically hard to reverse. For that reason, the conventional wisdom has for some time been to set fiscal policy with an eye to the medium to long-term, ensuring that budget deficits are purely temporary phenomena reflecting unusual events, e.g. cyclical downturns or wars, and matched by appropriate surpluses in the good times.

Central bank independence

MIB does not expand in detail on the case for an independent central bank. At the time, it was a relatively unusual position to take, though now it can be taken as representing the conventional wisdom, both in academia and more generally. Much of the impetus to academic thinking came from the work of Kydland and Prescott (1977) and Barro and Gordon (1983) mentioned earlier, as well as that of Rogoff (1985), who showed how delegation to a 'conservative' central bank could reduce the inflation bias and raise social welfare. Subsequent work has explored alternative ways of achieving the same end through mechanisms such as performance-related contracts, which provide the monetary policy maker with an incentive to offset any inflation bias.

Interesting though this literature may be, in my view it was the better comparative performance of countries with independent central banks, such as the United States and Germany, coupled with an appreciation that delegation of monetary policy would allow the Chancellor and the Treasury to focus on fiscal and structural issues, that provided the main impetus behind the decision to give the Bank of England operational independence in 1997. And given the relatively good performance since then, with inflation generally close to target and relatively steady growth, support for independence has if anything strengthened.

There are, however, also degrees of independence. The Bank of England has just operational independence; our target – 2% CPI inflation at all times – is given to us by the Chancellor each year. Other central banks, such as the European Central Bank (ECB) and the Federal Reserve have more latitude in setting their own objective within their general legal mandate. I think Meade would have approved of the UK arrangement, as it helps to reduce the likelihood of unco-ordinated decision making by the Bank and the Treasury leading to a sub-optimal policy mix. If the Bank had freedom to set its own goal, there is always some possibility that it would differ from that of the Treasury. If the Bank (Treasury) then sets monetary (fiscal) policy treating the policy setting of the other agency as given, the resulting Nash equilibrium is inefficient. But the Chancellor presumably sets us an objective that is consistent with the Government's, so that misalignment of objectives is impossible; the Treasury sets

fiscal policy, knowing that the MPC will then adjust monetary policy to keep inflation at the target.[2]   Under such circumstances, the outcome of such unco-ordinated decision-making will be optimal from the perspective of the former, at least so long as we share the same assessment of the economic conjuncture and of the short-run output-inflation trade-off (see Bhundia and O'Donnell, 2002).

It is worth noting that there are intrinsic limitations to just how independent a central bank can be. The Government's intertemporal budget constraint ensures that fiscal policy and monetary policy are necessarily tied together in a long-run sense. And there are some circumstances where the involvement of the finance ministry would be essential – for instance in a deflationary situation, when official interest rates are at their zero lower bound and recourse is being made to 'unconventional' expansionary monetary operations in bonds and equities. Finally and most fundamentally, central bank independence can only survive if it retains the support of the country's citizens. It can best foster that through demonstrating competence in achieving its given objective and avoiding straying into territory that does not fall within its mandate. See Buiter (2006) for more on these, and related, issues.

Nominal income v inflation targets

An obvious divergence between Meade's programme and current practice is that the Monetary Policy Committee (MPC) has been given a target for consumer price inflation, not total money spending. Indeed, there are at least 22 central banks around the world that have explicit inflation targets and a number of others, such as the ECB, which have something that looks like an inflation target even if they do not describe themselves as inflation targeters. The chosen regime for those central banks which do not have an inflation target is usually some form of exchange rate target – most often in small, open economies. To my knowledge, no central bank has ever formally pursued a nominal income target.

In MIB, despite having declared that price stability should be one of the two components of internal balance, Meade argues that

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[2] In the jargon of game theory, the Treasury is a Stackelberg leader and the Bank is a Stackelberg follower.

"to make price stability itself the objective of demand management would be very dangerous. If there were upward pressure on prices because the prices of imports had risen or indirect taxes had been raised, the maintenance of price stability would require an offsetting absolute reduction in money wage costs; and who knows what levels of depression and unemployment it might be necessary consciously to engineer in order to achieve such a result?"

He goes on to observe that

"this particular danger might be avoided by choice of a price index for stabilisation which excluded both indirect taxes and the price of imports; but even so, the stabilisation of such a price index would be very dangerous. If any remodelled wage-fixing arrangements were not working perfectly…a very moderate excessive upward pressure on money wage rates and so on costs might cause a very great reduction in output and employment if…the whole of the impact were taken on profit margins. If, however, it was total money incomes which were stabilised, a much more moderate decline in employment combined with a moderate rise in prices would serve to maintain the uninflated total of money incomes."

The argument here is quite straightforward. While nominal income and price/inflation targets should lead to identical interest rate decisions in the face of shocks that affect only the level of demand, they potentially have different implications for behaviour in the face of shocks to supply, with nominal income targets being more 'forgiving' than an inflation target. In Meade's example – a deterioration in the terms of trade or a rise in indirect taxes – trying to stabilise consumer prices would require falls in both the money wage and the price of domestic value added. And even if the target were for the price of domestic value added, any resistance by workers to the requisite fall in the real consumption wage would have to be reflected entirely in lower output, rather than a combination of higher prices and lower output as would happen under a nominal income target. So intuitively, Meade felt a nominal income target would have better operating properties in the face of supply disturbances.

Indeed, in the case of some sorts of supply shock, a nominal income target would actually generate an optimal outcome. Specifically, if labour supply is inelastic, then a labour-augmenting productivity shock which raises the output of a given quantity of labour by x% requires an x% increase in both the real wage and output in equilibrium. If nominal wages are pre-set and output prices are flexible, that can be achieved through an x% fall in the price level, leaving nominal income unchanged (Bean, 1983). But in more general settings and with arbitrary types of supply shock, neither a nominal income nor an inflation target would ensure that output was always at its 'natural' level associated with fully flexible wages and prices.

So why is an inflation target the chosen regime for so many countries? And why are nominal income targets conspicuous by their absence? The answer is, I think, twofold. First, the choice between a nominal income target and an inflation target is an artificial dichotomy. Given that neither generally delivers the optimal outcome, why should the policy choice be so restricted? Why not adopt a more flexible approach? That is exactly what inflation targeting as it is actually practised does. Second, an inflation target has some practical advantages over a nominal income target, particularly in terms of the likely impact on inflation expectations.

All inflation targeting central banks pursue 'flexible' inflation targets, in which there is 'constrained discretion' in choosing how to respond to supply shocks of the sort considered above and in how quickly to correct any deviation from target (King, 1997). Although the Chancellor's *Remit* to the MPC says that our target is to achieve 2% CPI inflation "at all times", it goes on to recognise "that the actual inflation rate will on occasions depart from its target as a result of shocks and disturbances. Attempts to keep inflation at the inflation target in these circumstances may cause undesirable volatility in output."

Indeed, Svensson and Woodford have argued that optimal monetary policy can be implemented through a regime of flexible inflation targets (Svensson, 2003a; and Svensson and Woodford, 2005). Contemporary discussion of macroeconomic policy issues is dominated by the New Keynesian/New Classical Synthesis approach that recasts traditional Keynesian macroeconomic thinking in a setting with explicit micro-foundations. On the demand side, consumers are intertemporal optimisers, follow the

life-cycle/permanent income hypothesis and have Dixit-Stiglitz preferences for individual goods. On the supply side, monopolistically competitive firms use labour to produce those goods, charging a price that reflects the elasticity of demand. However, those prices can only be changed periodically, with a random fraction of firms getting the chance to re-set their prices each period.

A log-linearised representation of the demand side is given by:

(1) $\qquad x_t = E_t x_{t+1} - r_t/\sigma + v_t,$

where: x_t is the deviation of output from its flexible-price, or natural, level, i.e. the output gap; r_t is the deviation of the (expected) real interest rate from the flexible-price, or natural, real interest rate; and v_t is an aggregate demand shock. This is essentially the intertemporal optimality condition characterising the representative household's optimal consumption path.

The supply side is correspondingly given by a New Keynesian Phillips curve:

(2) $\qquad \pi_t = \beta E_t \pi_{t+1} + \kappa x_t + u_t,$

where: π_t is the deviation of inflation from target; β is a discount factor that is close to unity; and u_t is a supply (strictly a mark-up) shock. This relationship reflects the pricing behaviour of firms; firms only get the opportunity to change their price periodically, so the price they set will reflect future cost and demand conditions.

The social welfare function is assumed to be given by the expected discounted loss:

(3) $\qquad L_t = (1-\beta)E_t[\sum_{k=0}^{k=\infty} \beta^k (\pi_{t+k}^2 + \lambda x_{t+k}^2)/2].$

Because of the presence of expectational variables in equation (1) and equation (2), the optimal policy depends on whether or not the central bank can commit to follow a particular monetary strategy. When it cannot pre-commit, the optimal policy satisfies the first-order condition:

(4) $\qquad \pi_t = -(\lambda/\kappa)x_t.$

Thus policy should 'lean against the wind' in the event of supply shocks, but demand shocks should be neutralised.

When the central bank can commit, the optimal policy satisfies instead the set of first-order conditions, for all $k \geq 0$:

$$(5) \qquad E_t\pi_{t+k} = -(\lambda/\kappa)(E_t x_{t+k} - E_t x_{t+k-1}).$$

Both equation (4) and equation (5) ensure that inflation will be brought back to target, but at a rate that recognises the consequences for activity. Svensson has characterised optimality conditions of this type as describing 'flexible inflation-forecast targeting'. Note that the optimal policy in equation (5) is history-dependent, even though there are no lagged endogenous variables in the model. That is because if there is an adverse supply shock, the central bank would prefer to get inflation down today by promising to run an extended period of small output gaps into the future, rather than having a larger output gap today. Note also that if λ and κ happen to be the same, and the rate of growth of the natural level of output is constant (an heroic assumption), then the policy characterised by equation (5) is tantamount to maintaining a constant rate of growth of nominal income.

In this interpretation, specifying the inflation target involves specifying a 'high-level' objective for inflation, leaving the central bank then to apply the policy strategy (4)/(5) to bring it back to target. One might be tempted to suggest that a 'high-level' target for the natural level of output should be specified too. However, the natural level of output is not known with any certainty. Given the inability of monetary policy to influence anything other than inflation in the long run, nothing is lost by this omission as output will gravitate to its unknown natural level in the long-run as expectations adjust and nominal rigidities work their way out. Moreover, if the government were to set a 'high-level' target for output, it would reintroduce scope for pressure to manipulate interest rates in order to achieve short-term political ends. The wording and lexicographic structure of the mandates of both the Bank of England and the ECB instead help to insulate the central bank from pressures to pursue a more

accommodative monetary policy in the short run if that conflicts with keeping inflation close to target.

Looking at the demand management problem this way does, though, invite the question as to whether a 'flexible nominal income target' would do just as well. After all, instead of delegating to the MPC the task of achieving a 2% CPI inflation target, if the average rate of growth of natural level of output were, say, 3%, he could just as easily have told us to target '5% growth in nominal income at all times'[3], but given us the same 'constrained discretion' that we employ in pursuing the inflation target. In that way, we could end up taking exactly the same interest rate decisions.

There are a couple of reasons why I think a flexible inflation target dominates a flexible nominal income target. First, data on nominal income appears with a lag and is subject to considerable revision. From the point of view of holding the MPC to account, having a target measure that is both relatively timely and not revised[4] holds considerable attractions.

Second, and more importantly, inflation in the prices of things that people buy is something that they recognise. And expected inflation is something that matters both in determining the level of demand, via the real interest rate, and in the setting of wages and prices. Indeed, in the sort of New Keynesian model outlined above, inflation expectations represent the key channel in the monetary transmission mechanism. By contrast, the expected rate of growth of nominal income is only relevant indirectly. Now rational agents might have no problem calculating the likely rate of growth of real income and then working out the implied inflation rate. But many households and businesses are probably not particularly sophisticated and will tend to follow simple heuristics in forming their expectations (see King, 2005). In that case, provided it is credible and well understood, a clear inflation target may help to anchor private sector inflation expectations more effectively than would a nominal income target. One of the particular virtues of our current regime is, I believe, the

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[3] I am assuming for simplicity that the GDP deflator and CPI rise at the same rate. That is not quite case in practice.

[4] The old target measure, RPIX, is never revised. Technically, CPI can be revised if errors are uncovered or there is new information. But revision is very rare in practice.

point nature of the target. This simplicity and clarity should help to anchor private sector inflation expectations better than having a target range.

Performance under an inflation target: the Great Stability

The importance of keeping inflation expectations anchored cannot be stressed enough. Inflation in this country has been low, close to target and unusually stable since the adoption of the inflation target, in marked contrast to our earlier experience. Indeed, Benati (2006) concludes that the inflation-targeting regime constitutes the most stable macroeconomic environment in recorded UK history. RPIX inflation has averaged 2.6% under the inflation targeting regime, while CPI inflation has averaged 1.8%[5]. The corresponding figures for the period since the MPC was created in June 1997 are 2.4% for RPIX and 1.4% for CPI. Moreover, inflation has been far less variable than was expected. It took ten years before inflation deviated by more than one percentage point from the target, thus triggering an Open Letter of explanation from the Governor to the Chancellor. But calculations at the time the regime was set up had suggested that such letters were likely to be triggered around 40% of the time (see Bean, 1998)! This unexpected decline in inflation volatility is documented in Chart 1.

Such stability might just about have been expected if the MPC had behaved not as flexible inflation targeters, but as – in Mervyn King's pithy phrase – "inflation nutters". But in that case, one might have expected output growth to have been rather variable, for two reasons. First, the anchoring of inflation expectations at a low level should tend to flatten the short-run inflation-output trade-off, both because inflation expectations are less responsive to the current output gap and because price changes are likely to become less frequent. That indeed appears to be what has happened; see Chart 2. As a consequence any demand shocks that are not neutralised will have less effect on inflation, but more effect on output. Second, stabilising inflation involves a less forgiving response to cost shocks. Given that, the *really* remarkable thing is how stable output growth has also been, with 59 quarters of unbroken expansion, the

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[5] The target was initially defined in terms of RPIX inflation. At inception in October 1992, the target was specified as a range of 1%-4%; later in the parliament, that was altered to 2.5% or less. In June 1997, it was re-specified as a simple point target of 2.5%. The target measure was switched to CPI inflation at the end of 2003, with the target itself changed to 2%; on average, CPI inflation has run about ¾ percentage point below RPIX inflation.

longest such run on record. This decline in the volatility of output is documented in Chart 3. Low and stable inflation coupled with relatively stable growth has been a characteristic of most developed countries over the past 15 years, but none has experienced quite such an improvement; see Chart 4.

There are a number of possible causes of this 'Great Stability' (also known as the Great Moderation in the US literature). As well as better monetary policies, these include smaller and more benign shocks and structural changes that have led to smoother macroeconomic outturns. As far as the good luck explanation goes, the past decade does not seem to have been a particularly tranquil period. At a global level, we have seen: the integration of China, India and the former Communist countries of Eastern Europe into the world economy; the ICT revolution and the associated dotcom boom-bust; the emerging-market debt crisis and the collapse of LTCM in 1998; the sharp correction in international equity prices and the associated global slowdown in 2001; the attacks on the World Trade Centre and subsequent conflicts in Afghanistan and Iraq; and the tripling of oil prices over the past three years. In addition, at a domestic level, the MPC has also had to contend with: the effects of the shocks that led to the 25% rise in sterling between 1996 and 1998 and the tripling in house prices between 1997 and 2006; ongoing labour market reforms, including the introduction of a National Minimum Wage; and substantial, and highly uncertain, net inward migration, particularly from the Accession countries.

Under the heading of possible structural influences, one could include: better inventory management techniques, which have attenuated the stock cycle; the transition to a more services dominated economy; and more effective risk-sharing as a result of financial innovation. However, most of these have been happening gradually. So it is difficult to believe that they have been the main drivers behind the increase in stability.

Turning to the empirical evidence, there are some studies, mainly for the United States, which suggest that a sizable portion of the improved performance is related to good luck rather than better policy (e.g. Sims and Zha, 2006; and Stock and Watson, 2003). Some others have suggested that the role of improved policy has been central (e.g. Clarida, Gali and Gertler, 2000; and Lubik and Schorfheide, 2004). However,

those studies which assign a large role to good luck often suffer from a significant shortcoming in that the demand and supply shocks hitting the economy are typically identified with the residuals in econometric equations. That ignores the fact that better monetary policy may itself affect the impact of the true – but in these exercises unobservable – shocks, thus leading to smaller residuals in the estimated models (see Bernanke, 2004).

Why might this be? One feature of forward-looking behaviour is that expectations of future changes in policy do a lot of the work, obviating the need for sharp movements in the current level of official interest rates. Thus an adverse shock to demand will lead private agents to expect a reduction in current *and future* interest rates – provided the commitment to stabilise inflation is understood – leading to a depreciation of the exchange rate and a rise in equity prices (compared to what would have been the case without a policy response). These asset price movements will automatically tend to stabilise demand.

Possibly more importantly, a well-understood and credible commitment to stabilise inflation may also reduce the impact of cost shocks. When policy is credible and inflation expectations are well anchored, then the chance of an adverse supply shock triggering a wage-price spiral is much less than when people believe that the central bank will accommodate the shock and allow inflation to rise.

Are there limits to flexibility?

Flexible inflation targets dominate both a strict inflation and a strict nominal income target. But that does leave open the question of how best to use that 'constrained discretion'. One issue is the weight to place on output versus inflation in deciding how quickly to return inflation to target, i.e. the choice of λ in equation (3). If equation (3) is thought of as reflecting the efficiency losses associated with nominal rigidities and the inflation tax on money balances, it can in principle be derived from the micro-foundations of the model underlying equations (1) and (2); see e.g. Woodford (2003). In that case, λ could be inferred directly from a calibration of the underlying model economy. However, the micro-foundations are of the usual representative agent variety and ignore the distributional issues associated with the

uneven impact of unemployment. So one might feel uncomfortable in applying a λ derived in this way. But in any case, λ really ought to reflect the preferences of society.

Now the 'contract' between the government and the MPC could be said to be incomplete in that it doesn't specify what λ is. As noted above, the *Remit* for the MPC tells us that we should avoid unnecessary volatility in output, so we know λ must be non-zero. But that is all. Because of this, Svensson (2003b) has suggested that the MPC reveal the relative weight it places on deviations of inflation from target and output from its natural level. But I am not sure this would mean very much to the public at large. In any case, I believe that public uncertainty about 'our λ' is really a minor issue. In Bean (1998), I argued that a wide range of plausible loss functions lead to rather similar policy choices (though see also Henry, Satchi and Vines, 2006, who raise some doubts about the robustness of this result). But more importantly, any deviation of inflation of more than one percentage point either side of the target triggers an Open Letter from the Governor to the Chancellor, which amongst other things is required to say how quickly the MPC plans to bring inflation back to target. Moreover, the Chancellor's response to that letter gives him the option of indicating whether that is too rapid, or not rapid enough.[6]

Of greater practical importance is how far the flexibility can be used before the central bank is in danger of losing the beneficial impact on expectations that comes from an inflation target. This issue is side-stepped in most academic analyses by assuming rational expectations and that the central bank's reaction function is understood and credible. But actual policy makers cannot take that for granted. To illustrate this, go back to Meade's example in MIB of an adverse terms-of-trade shock or an increase in indirect taxes. Standard New Keynesian reasoning would say that if there are nominal rigidities in domestic output prices, then the optimal policy is to stabilise the price of domestic output and thus accommodate the shock by allowing consumer prices to rise. And, indeed, the tenet that one should accommodate the first-round impact of a

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[6] In the case of the one Open Letter that has so far been issued, the projected return of inflation to target was mainly associated with the unwinding of temporary factors. As a consequence this issue did not arise in a substantive way.

terms-of-trade shock or a rise in indirect taxes, but not the second-round effects, does seem to constitute the conventional wisdom.

In practice, given that we know so little about how expectations are formed and how credibility is gained and lost, the central bank cannot be sure that private agents will treat a temporary pickup in inflation meant to accommodate just the first-round effects of an adverse terms-of-trade shock as just that. The situation is especially difficult if there are a series of adverse shocks, such as the gradual rise in oil and other commodity prices that has taken place since early 2004. Is it safe to assume that private agents will believe that an extended period of higher inflation is just a case of the central bank accommodating the direct effects of the sequence of jumps in commodity prices? If there is a chance that private agents will treat the increase in inflation as a harbinger of raised inflation in the future too, then it probably makes sense for the central bank to be wary about accommodating even the first-round effects.

This line of thought also points to the danger of targeting a measure of core inflation that excludes prices of volatile components, such as oil and food. Such an approach can be justified on efficiency grounds if the prices that are included are those that are subject to nominal rigidities, while those that are excluded are relatively flexible. But if the shocks to the flex-price components are serially correlated, then there is a risk that the resulting persistent swings in actual inflation will lead to inflation expectations becoming less well-anchored.

Is price stability enough?

In MIB, Meade elaborated his concept of internal balance to include price stability as well as full employment as an objective. There are, of course, many other objectives that a government may have, e.g. achieving a suitable distribution of incomes, realising a satisfactory pattern of regional development or maintaining global carbon emissions at an appropriate level. These are all amenable to a variety of microeconomic interventions to correct market failures and externalities, but are largely tangential to the issue of characterising internal balance from a macroeconomic perspective. But is Meade's characterisation sufficiently complete?

According to one view the answer is No, and one should add the maintenance of financial stability – understood as the efficient intermediation of funds from lenders to borrowers – to the list. Moreover, according to some, episodes of financial instability or disruption can significantly impact on the natural level of output and impose large welfare loses. In that case, they argue, it is worth directing monetary policy to that objective, even if it compromises the pursuit of price stability. I stress that I am talking here about events like: the Great Depression; the aftermath of the collapse of the Japanese stock market and property bubble; and the (possible) consequences of the explosion in global credit and asset prices that we have seen in the recent past. There is no dispute that central banks have a duty to provide emergency liquidity on demand to ensure the financial markets continue to function efficiently when there is the threat of a temporary hiatus. Rather the question is whether they should take pre-emptive action to try to curtail a credit and asset price boom, over and above any implications it may have for the outlook for inflation, in order to limit the potential costs when the boom turns to bust.

This view has been associated with the Bank for International Settlements (e.g. Borio and Lowe, 2002; Borio and White, 2003; see also Bordo and Jeanne, 2002). The argument runs as follows. Some invention (e.g. the railways, the internet) or just plain animal spirits sets in train an increase in investment, at least partially financed by borrowing. Subsequently, excessive optimism about future returns drives up asset values, prompting increased borrowing to finance further capital accumulation. Moreover, appreciating asset values raise the value of collateral facilitating the accumulation of that debt. During the upswing, balance sheets look healthy as the appreciation in asset values offsets the build-up of debt. But when boom turns to bust, there is a sharp deterioration in borrowers' net worth, followed by a tightening in credit conditions as financial intermediaries react to those stretched balance sheets. Such a credit crunch is likely to impact on activity more quickly than a conventional wealth effect and, moreover, temporarily reduce the effectiveness of monetary policy. Neutralizing the macroeconomic consequences of such financial instability may thus be difficult to achieve. Moreover, the very success of central banks in achieving the goal of low inflation and anchoring inflation expectations is argued to have made such excesses more likely, as they no longer show up so immediately in higher inflation.

According to this view, monetary policy should be focussed not just on price stability, but should seek to prevent credit excesses building up, even if that means inflation undershooting the target. In principle, that could still be consistent with a suitably flexible interpretation on the inflation target, if the consequence of sticking to the target in the short run (i.e. two years or so ahead) is to increase the likelihood of missing it further out. All that is required is to adopt a longer perspective in decision making. In that case, an amendment to the formal mandate of an inflation-targeting central bank is not required, though the rhetoric employed to explain policy may need to alter; see Bean (2003).

But though the argument that monetary policy makers should factor in the long-term implications for output and inflation of credit/asset-price boom-busts may appear persuasive in principle, there are a number of serious practical difficulties in implementation. First, the policymaker must judge whether the boom is warranted by the fundamentals or whether it is instead based on misplaced expectations and furthermore poses a threat to future financial and macroeconomic stability. A mechanical response that treats all asset price movements alike, whatever their causes, is unlikely to be appropriate. Since such boom-busts are apt to occur when the fundamentals have also improved, that is not likely to be a straightforward task, at least in the early stages.

Second, once excessive credit/asset-price growth has been diagnosed, the lags in the monetary transmission mechanism seriously complicate the calibration of an appropriate policy. Raising official interest rates will be counterproductive if the boom turns to bust, so that the economy is subject to twin deflationary impulses both from the asset price collapse and any associated credit crunch, and from the effect of the policy tightening. Indeed, in the unlikely event that the policymaker knew that an asset price collapse was imminent, monetary relaxation, rather than tightening, would be called for. Gruen, Plumb and Stone (2003) show that the informational requirements necessary to render an activist policy effective are extreme once lags are taken into account.

Third, a modest increase in interest rates may do little to restrain an asset price boom. But an increase large enough to materially affect the evolution of asset prices is likely to have a significant adverse impact on economic activity. So the policy maker would need to be confident that the short-term costs of such a strategy are outweighed by the uncertain long-term gains. Moreover, if the key concern is a build-up of debt, higher interest rates will exacerbate the problem if the increase in debt service outweighs the reduction in new borrowing. In any case, expectations of future returns are likely to be a key driver of asset prices, investment and borrowing, so expectations of future policy actions may be as relevant as current policy settings.

All of these considerations have persuaded many central bankers, most obviously exemplified by the US Federal Reserve, that monetary policy should remain focused on achieving low inflation and stable growth, but then act promptly to deal with the fall-out when the excesses start to unwind (see Bernanke and Gertler, 2001; and Greenspan, 2002).

Finally, and perhaps most obviously, this is a classic case of trying to achieve two objectives with one instrument. If one adds financial stability to the list of characteristics of internal balance, then it makes sense to look at regulatory and prudential policies that correct any externalities and market imperfections and which thus encourage the right behaviour. This is an area where more research and analysis would be valuable, especially in view of the recent innovations in financial markets and the development of a variety of complex new financial instruments; see Fisher and Gai (2005).

3.   Other aspects of Meade's programme

MIB was farsighted in advocating the allocation of demand management to the pursuit of price stability and structural policy to the achievement of full employment. And, of course, one of his key contributions was to recognise that another instrument would also be necessary to achieve external balance. Current practice deviates from Meade's programme instead in the details. I have already discussed why central banks generally target inflation rather than nominal income. I will conclude with a

few brief remarks on Meade's proposals regarding wage-fixing and achieving external balance.

Wage-fixing

In MIB, Meade recognised that reform of the institutions of wage-fixing in order to deliver full employment was potentially an even more demanding task than achieving price stability through appropriate macroeconomic institutions and policies. Most importantly, he saw the need for greater emphasis on balancing supply and demand in each sector of the labour market. Meade identified five broad approaches: government edict; corporatist wage-bargaining; increased competition; workers hiring capital rather than the other way round; and arbitration in which supply-demand conditions were paramount. His preferred approach was the last.

That he discarded government edict (on the grounds that government lacked the necessary information) and labour co-operatives (on the grounds that it was only feasible with small-scale enterprises) as options is unsurprising. More interesting was his dismissal of both the corporatist approach and the competitive solution, since some of the smaller European countries have successfully achieved low unemployment through the corporatist approach, while the United Kingdom has done the same through the pursuit of a more competitive paradigm.

Meade rejected corporatism on the grounds that, at least in a relatively large country like the United Kingdom, there were sure to be outsiders who would be excluded. The idea that corporatism could work in small countries but not in large ones was, of course, subsequently formulated rigorously by Calmfors and Driffill (1988), though their argument rests not on the exclusion of some outsiders, but on the reduced incentive to internalise externalities as bargaining units become more fragmented. In addition, increased competition in product markets associated with globalisation and in labour markets associated with increased migration has made corporatist solutions harder to maintain even in smaller countries.

He dismissed increased reliance on competitive forces on the grounds that monopsony power was inevitable on the labour-demand side because of increasing returns to

scale, while one could not prevent employees combining together to undertake collective bargaining. Moreover, he thought that it would necessarily lead to reduced compensation and support for workers who did lose their jobs. Here, he clearly underestimated the extent to which legislative changes and the shift away from traditional heavy manufacturing towards services and niche manufacturing would lead to a fall in UK union density from nearly 60% in 1979 to around 30% today, as well as the emergence of a more co-operative approach to bargaining on the part of union leaders. And while he was right to see that there would be downward pressure on unemployment benefits – and particularly the duration for which they were paid – he failed to foresee the shift in emphasis that would take place away from providing financial assistance to those who have lost their jobs, and towards providing support to those who were actively looking for work – so-called active labour market policies. But Meade was certainly right to highlight the importance of labour market institutions in delivering low unemployment, a theme that emerges strongly in the large literature on European unemployment (see e.g. Blanchard and Wolfers, 2000; Layard, Nickell and Jackman, 1991; OECD, 1994)

External balance

Though it was Meade's contributions to the theory of international trade and open economy macroeconomics that won him the Nobel Prize, little more than a page of MIB is devoted to the question of achieving external balance. In the MIB programme, that task is given to foreign exchange policies. That Meade thought of foreign exchange policy as something independent from monetary policy is perhaps not too surprising, given that at the time of writing there were still considerable obstacles to the free movement of international capital between the developed economies, let alone with developing economies. Central banks could undertake foreign exchange intervention to manipulate – or in the UK case, usually prop up – the value of the currency without immediately needing to alter the stance of monetary policy.

Today, with very high levels of international capital mobility and a freely floating exchange rate, sterilised intervention in countries like the United Kingdom is largely ineffective. Only countries like China, which retain controls on external capital

flows, can hope to offset the impact of foreign exchange intervention on domestic monetary conditions by undertaking offsetting open market operations in domestic bond markets. In countries with open capital markets, foreign exchange intervention to support (depress) the currency is only likely to be effective if it is accompanied by higher (lower) domestic interest rates. But in that case, monetary policy is being directed to achieving stability in the external value of the currency rather than its internal purchasing power. Those two objectives will generally conflict, unless some other instrument is brought into play.

That instrument is provided by policies to affect the level of national savings, including fiscal policy. At the time Meade was writing, it was still problematic for countries like the United Kingdom to run a balance of payments deficit for any period and the international trade and payments data were probably amongst the most eagerly watched of all macroeconomic statistics. But with open international capital markets, that is no longer the case and the monthly trade data are of only peripheral interest. Indeed, the United Kingdom has experienced a deficit on the current account for most of the period since 1983 without derailing macroeconomic policies (though other factors have).

These days, the current account deficit is simply seen as the counterpart to the savings and investment decisions of the private and public sectors, which in turn are driven by intertemporal considerations, such as the desire to smooth consumption across temporary fluctuations in income. The external constraint is just the counterpart to the sum of the household, corporate and public intertemporal budget constraints. In such a world, it no longer makes sense to think of external balance as something that needs to hold period by period, though the set of intertemporal budget constraints will impose restrictions on the feasible time paths of macroeconomic variables, including the real exchange rate. While MIB does not engage with this issue, subsequent work by Meade and his collaborators did (Meade et al, 1989).

MIB does, however, contain a brief, but resonant, discussion of the interaction between the success or failure of policies to maintain internal balance and the openness of the international trading system. Meade notes that if domestic policies failed to find a way to combine price stability with full employment, then countries

were likely to be drawn to prefer restrictions on cheap imports to exchange rate depreciation as a way of correcting balance of payments deficits. We are fortunate that the emergence of China and India into the global market economy has taken place during a time in which inflation and unemployment – at least outside some of the larger European economies – have been low. Had that not been the case, then the pressure to impose restrictions on imports from the developing economies might have been more intense. Even so, protectionist pressures have been building up, particularly in the United States, where the massive current account deficit is often associated with 'unfair' competition from China (including an undervalued renminbi), rather than the savings and investment decisions of US and foreign citizens and companies[7], as well as the relative attractiveness of US assets to foreign investors. Think how much worse those pressures would be if US unemployment had been at its 1992 level of 7.5%, rather than its current level of 4.5%!

4   Concluding remarks

Re-reading Meade's Nobel Prize lecture with the wisdom of hindsight only increases one's admiration for one of the most remarkable economists of the twentieth century. While some of the details of Meade's programme turned out not to be right, he correctly identified the importance of assigning monetary policy to the pursuit of price stability and appropriate reform of labour market institutions to achieving full employment. Today, many central banks, including the Bank of England, follow an inflation target rather than a nominal income target, but in a flexible fashion so as to avoid generating undue volatility in output in the face of cost shocks. But in so doing, they come closer to what Meade was aiming for in his advocacy of a target for nominal income. Even so, there are still many practical issues associated with the practice of inflation targeting that remain to be fully resolved. It will be interesting to see how practice evolves over the next thirty years.

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[7] It is also worth noting that while a country can choose its own inflation rate, it cannot necessarily choose its external balance at any given moment, because that depends on the policy choices of other countries too.

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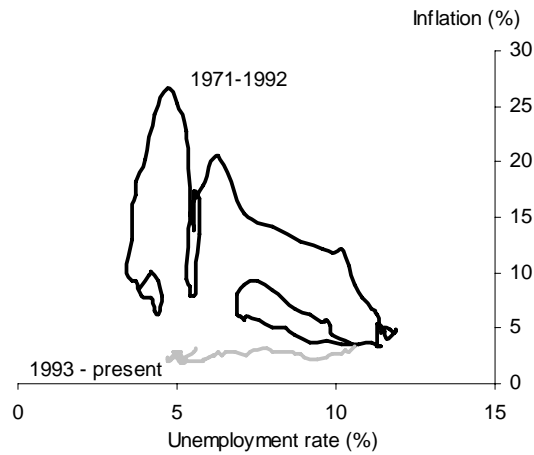
Chart 1: Volatility of UK inflation

Percentage points
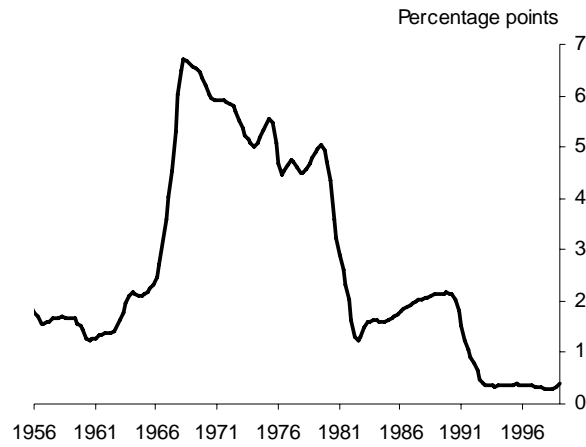
Source: ONS.
(a) Rolling eight-year standard deviations of four-quarter RPIX (RPI before 1976) inflation. Standard deviations are leading, ie 1997 Q1 observation shows standard deviation from 1997 onwards (for eight years).
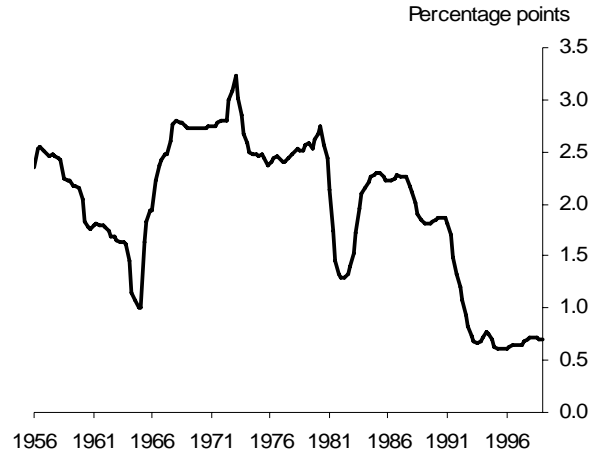
Chart 2: UK inflation and unemployment[a]

Inflation (%)

Source: ONS.
(a) LFS unemployment rate and four-quarter RPIX (RPI before 1976) inflation.

Chart 3: Volatility of UK GDP growth

Percentage points

Source: ONS.
(a) Rolling eight-year standard deviations of four-quarter GDP growth. Standard deviations are leading, ie 1997 Q1 observation shows standard deviation from 1997 onwards (for eight years).

Chart 4: Output and inflation volatility in the G5

UK: K   US: S   Japan: J   Germany: G   France: F

Standard deviation
of inflation

Standard deviation of output growth