

Macroeconomy, Economic Bias & Employment

The Institutional Underpinnings of the Unemployment-inflation Relationship:

A Review Paper

Jonathan Michie

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HSRC Human Sciences Research Council

employment growth & development initiative

innovative employment strategies

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I am grateful for advice and suggestions from Dr Miriam Altman, Jackie Cook, Dr Evan Gilbert, Dr Simon Roberts and Professor Vishnu Padayachee. I have also drawn on work undertaken jointly with Professor Frank Wilkinson. Comments and suggestions welcome.

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Boxes

Glossary of terms

ABSA	Amalgamated Banks of South Africa
Co-operative	A company owned by its members (consumers or employees)
FDI	Foreign Direct Investment
GDS	Growth & Development Summit
High Commitment Work Systems	HRM practices that deliver higher productivity
HRM	Human Resource Management
IDC	Industrial Development Corporation
Keynesianism	Expected demand determines output and employment
Natural rate of unemployment	Vertical Phillips curve at point that markets clear
NAIRU	Vertical Phillips curve caused by wage and price setting
Monetarism	Belief that inflation is caused by money supply growth
NGOs	Non-Governmental Organisations
Phillips curve	Trade-off between unemployment and inflation
Product innovation	Introduction of a new product (good or service)
Process innovation	Introduction of a new way of organising production
R&D	Research & Development
SARB	South African Reserve Bank
Social Enterprise	A company with a social purpose
Third Sector	Co-operatives, NGOs, social enterprises and charities

Executive summary

The Phillips curve depicted a trade-off between unemployment and inflation. As the economy grows faster and unemployment falls, it becomes easier for workers to gain wage rises and for firms to raise prices – either to pass on increased costs or even to raise profit margins. This is particularly so if bottlenecks occur because of insufficient capacity. If there is a shortage of a particular type of skilled labour, for example, then their wage rates are likely to be bid up as firms compete to attract and retain them. If demand outstrips supply for office or other space, rents will be bid up. And so on. The key to achieving sustainable, non-inflationary growth is to ensure that industrial and economic capacity expands in line with demand. This Phillips curve relation underpinned public policy during the 1960s and 1970s.

This was replaced in the 1980s by monetarism and the associated 'natural rate of unemployment' which posited no trade-off between unemployment and inflation over the long run. Any such trade-off would be a short-term effect, whereby lowering unemployment below its natural rate would lead not just to *higher* inflation but to *accelerating* inflation. Weaknesses in the theory and problems with the practice led to the abandonment of what might be termed this 'Friedmanite' monetarist approach. It was replaced by the 'Non-Accelerating Inflation Rate of Unemployment' (NAIRU). Like the natural rate and unlike the original Philips curve, the NAIRU was taken to be vertical, allowing only one rate of unemployment at which inflation would be stable. But like the original Philips curve, and unlike the natural rate, the theoretical framework for NAIRU recognised that wage and price setting are influenced by market structure and bargaining power. The NAIRU approach thus puts more emphasis on how policy might shift the NAIRU, rather than accept it as 'given'.

The move from the natural rate to the NAIRU recognised that the labour market is segmented and that active labour market policies can reduce unemployment without necessarily creating inflationary pressures, and that competition policy can put downward pressure on prices.

The June 2003 GDS agreed a target of halving unemployment by 2014. How can the necessary degree of investment be achieved? To answer this question, research is needed into:

- The mechanisms whereby increased interest rates impact on the economy;
- How corporate investment decisions could be influenced to enhance productive capacity; and
- Research on key industries to determine the degree of market concentration, and the implications of any such concentration on pricing decisions.
- High level institutional interface, particularly between Treasury and the Reserve Bank in relation to expected stimulatory policy, possible price effects and appropriate responses.

A better-trained workforce combined with an appropriate organisation of work can usually improve organisational performance. And if the workforce is committed and motivated, productivity will be further raised. For this to translate into output and employment gains requires demand to rise faster than productivity. And for this to be combined with stable or falling inflation requires cost-absorbing new capacity and innovation. To be sustainable, the country's productive infrastructure needs to be continually renewed. This links to education, housing, FDI, entrepreneurship and an almost endless range of inherently inter-related economic and social factors. The key point is to understand that these links are there, and that they ought properly to be the focus of active and joined up policy development. Within this context, detailed research and policy work is necessary to advance our knowledge and understanding of how such policy can best be developed in each of these areas within the context of current day South Africa.

1. What does economic theory say about the inflation-unemployment relation?

There is no clear consensus within economic theory about the inflation-unemployment relation. In so far as there has been a dominant view, this itself has altered over time. As for the theory that informs the anti-inflation activities of central banks, this is rarely made explicit. Thus, for example, when the SARB raises interest rates in the face of inflationary concerns, is this in order to reduce the money supply which is thought to be a direct determinant of inflation, or is it to reduce consumer and/or investment demand and hence slow down the economy, or are other causal processes believed to be at play?

This section sets out the causal processes that economic theory has posited as underpinning the unemployment-inflation relationship over the past few decades. The reason for surveying these issues over time is firstly that it helps to illustrate the different sorts of linkages that might be at play. And secondly because there has not been a simple progression of theoretical advance over time, with the later theories being more useful or realistic than the previous ones. On the contrary, were the SARB for example to set out the thinking behind their policy actions, it would likely have more in common with the Philips curve thinking of the 1960s and 1970s than with the 'natural rate of unemployment' and accompanying monetarist beliefs that was dominant during the 1980s. That approach in turn gave way to the 'Non-Accelerating Inflation Rate of Unemployment' (NAIRU) approach. This section will describe each of these approaches in turn: the Philips curve, the natural rate, and the NAIRU.

1.1 Keynesianism and the Philips Curve

During the Keynesian consensus of the 1960s, the macroeconomic role of governments was generally thought to be to maintain full employment and stable inflation, along with economic growth, balanced trade, the provision of welfare state services, and possibly some redistributive (egalitarian) goals. The key beliefs as regards the unemployment inflation relationship were firstly, that it was possible to achieve both goals – to achieve and maintain full employment, without inflation accelerating; and secondly, that there was some degree of trade-off, but within acceptable ranges as regards both unemployment and inflation. In other words, it was thought possible to eliminate unemployment whilst maintaining broadly stable inflation rates.

Box 1: The Philips Curve

The Philips curve plotted the rate of unemployment each year with the rate of (either wage or price) inflation experienced that year. When first plotted by Professor Philips (of the LSE), it appeared as a downward sloping curve with unemployment on the horizontal axis. This was interpreted as representing a trade-off that governments faced, able to reduce inflation at the expense of higher unemployment, or to cut unemployment at the cost of higher inflation.

For a discussion of the literature, see Jossa (2001).

Of course, even during this era of full employment, there was always some degree of registered unemployment. To some degree this was just the inevitable 'frictional' unemployment as people moved from job to job, sometimes with a period of unemployment in between. There might be more serious 'pockets' of unemployment in certain regions, but this was regarded as a problem for regional policy to tackle. The 'demand deficient' unemployment of the 1930s, where people were unemployed because the level of aggregate demand in the economy was below that required to fully employ the workforce, was thought to be a thing of the past.

In this context, if inflation rose, it was interpreted in one of two ways. Firstly, it might be due to some exogenous factors – such as increased international raw material prices - that would either pass or could be dealt with. Or secondly, if there was persistent inflationary pressure, then this would be interpreted as evidence that the economy was overheating, with 'over-full' employment. Keynes had spelled out the policies that would be required to maintain full employment. But he had also stressed the importance of preventing aggregate demand from rising above its full-employment level, as this would lead to inflation.

Such inflation was thus interpreted as having been caused by the economy having moved up the Philips curve to the left, with higher inflation and lower unemployment. What was needed in such a situation was to move back down the Philips curve to the right, to the previous levels of unemployment and inflation.

This trade-off between unemployment and inflation was depicted by the Philips curve, following Philips (1958) having plotted unemployment against the rate of (money wage) inflation for the UK. Philips actually used pre-First World War data to construct the curve which was then superimposed on the inter-war data which fitted, although in a clustered fashion with the data from the 1920s generally above the curve and the data for the 1930s generally below. Lipsey (1960) did test for inter-war data, but without significant results for unemployment.[1]

[1] See Michie (1987), which discusses this in more detail.

Interestingly, though, the impact that this view of the world had on policy responses to either inflation or unemployment tended not to be for governments to simply choose to move to a different point on the given trade-off curve. In other words, were inflation to rise, it might be thought that the Philips curve model would suggest that this must be due to the economy having moved up the Philips curve to the left, so the policy response should be to move the economy back down to the right, increasing unemployment, as described above. The existence of the Philips curve tended not to be interpreted so mechanistically. This may be in part because reality never did fit the curve particularly closely. Thus, if inflation rose, it would often be the case that there would have been no concomitant fall in unemployment. Instead, it would be seen to have been caused by a rise in international fuel prices, or in wages, or in taxes imposed by Government. Policies would therefore tend to be introduced to tackle these problems directly, without seeking to raise the rate of unemployment in search of a new 'trade-off' point. Thus, particularly in the UK of the 1960s and 1970s, prices and incomes policies might be introduced, whereby wage rises would be limited to a certain ceiling, possibly with additional payments allowed if matched by productivity gains (so that unit labour costs did not rise), and likewise firms would be forbidden from raising prices by more than some prescribed percentage.

In other words, if inflation began rising, the policy reaction would be to attempt to restrain inflation directly, through prices and incomes policy, rather than to allow unemployment to rise. The exception was if the economy was thought to be genuinely over-heating, with over-full employment, in which case monetary and/or fiscal measures would be used to slow down the economy and allow employment to fall back to its 'full-employment' level.

Thus, the policy for maintaining full employment was broadly believed to be to maintain levels of aggregate demand sufficient to ensure that the available workforce was fully employed. In addition, it was thought likely that some unemployment would be caused by regional problems and industrial restructuring, and that this should be tackled through targeted regional and industrial policies. If demand deficient unemployment was thought to also be appearing, then Government would take policy action to boost demand. This might include fiscal policy and interest rate policy, but would not be limited to these. It would also include, for example, regulatory changes to affect how easily consumers could buy goods on credit.

Likewise with inflation, if this rose, the response was not always to increase interest rates with a view to slowing down the economy and thus increase unemployment, in order to move to a new unemployment-inflation trade-off. On the contrary, inflation would be targeted directly, for example through prices and incomes policies that put a ceiling on how far firms would be permitted to increase prices. Several versions of prices and incomes policies were introduced by successive Labour and Conservative governments in Britain during the 1960s and 1970s. The shift to monetarism in the 1980s saw the end of such policies. Generally, these prices and incomes policies would start with a freeze on increases in wages or prices, for say 6 months, in order to break any inflationary spiral. This would then be followed by a policy whereby wages could only be increased by either some flat rate or percentage amount, or in some

cases a mixture of the two. Generally, wage rises above these limits would be allowed if accompanied by productivity deals. Provided productivity rose, then the increased wage would not necessarily increase unit labour costs, or prices.[2]

To the extent that such policies were effective, in either reducing inflation without increasing unemployment, or reducing unemployment without increasing inflation, then clearly this would affect the shape of any Philip curve. In practice, in times of low unemployment there would still be higher inflation than in times of higher unemployment. But to the extent that prices and incomes policies were effective, lower unemployment could be achieved without inflationary pressures rising by the degree they otherwise would. In other words, the Philips curve would be that much flatter, moving up to the left.

The reason why there would be a trade-off at all, is that when the economy grows faster and unemployment falls, it becomes easier for workers to gain wage rises and for firms to raise prices – either to pass on increased costs or even to raise profit margins. This is particularly so if bottlenecks occur because of insufficient capacity. If there is a shortage of a particular type of skilled labour, for example, then their wage rates are likely to be bid up as firms compete to attract and retain them. If demand outstrips supply for office or other space, rents will be bid up. And so on. The key to achieving sustainable, non-inflationary growth is to ensure that industrial and economic capacity expands in line with demand.[3]

1.2 Monetarism and the 'natural rate'

The first Thatcher Government was elected in Britain in 1979 on the promise of squeezing inflation out of the system. The policy instrument for doing this was to be control of the money supply. The theoretical framework was Milton Friedman's monetarism and associated 'natural rate of unemployment'. This posited that there was no Philips-curve trade-off between unemployment and inflation over the long run. Any such trade-off would be a short-term effect, whereby lowering unemployment below its natural rate would lead not just to *higher* inflation but to *accelerating* inflation. Since accelerating inflation is not sustainable, unemployment would need to be allowed to increase back to the natural rate to bring the rate of growth of inflation back to zero. And to reduce the rate of inflation itself (as opposed to its rate of growth), unemployment would have to rise above the natural rate.

2 For a detailed discussion of the theory and practice of incomes policies, see Parkin & Sumner (1972). For a discussion of the use of incomes policies in Argentina, Brazil and Israel, see Dornbusch and Simonsen (1992).

3 For a detailed discussion see Michie and Grieve Smith (1996).

Box 2: The 'natural rate of unemployment'

Milton Friedman argued that the Philips curve represented only a short-term trade-off. If the economy moved up a short-run Philips curve to the left, the higher inflation would then become incorporated in people's expectations which would feed into still greater inflation in the next time period, and so on, creating ever rising inflation. The only point on a Philips curve at which actual inflation would turn out as expected would be the single point, on each short-run Philips curve, at the natural rate of unemployment. Only at this natural rate, therefore, would inflation be stable.

For a discussion of the literature, see Sawyer (2001).

The reasoning was that it was only at the natural rate of unemployment that people's expectations about inflation would match the actual outcomes. If unemployment fell, then inflation would rise as one moved up the Philips curve – but crucially, this was argued to be a short-term possibility. Any given Philips curve would be based on a single expected rate of inflation – namely the rate of inflation that the (short-run) Philips curve in question demonstrated at the natural rate of unemployment. If one moved up that curve to the left, with unemployment falling below the 'natural rate', then inflation would rise above that expected rate. Once people realised that inflation was higher than they had expected, they would adjust their behaviour accordingly. In particular, they would adjust upwards their wage demands. As expectations of future inflation adjusted upwards, one would move up to a higher short-run Philips curve corresponding to this higher rate of expected inflation. So long as the rate of unemployment remained below the natural rate of unemployment, it was argued, inflation would continue to rise, with actual inflation always outstripping expectations, which in turn would be revised upwards, a process that would itself give a further upward twist to inflation.[4]

The record in the UK at first was at least consistent with the belief that the long-term goal of zero inflation could be achieved.5 But from mid-1983 the record deteriorated and, despite a dip in 1986, prices were on an upward trend until the end of 1990. Thatcher's premiership ended with inflation at around the same level as she inherited in 1979: the annual increase in the Retail Price Index stood at 10.3% when the first Thatcher government took office in May 1979, while when Mrs Thatcher left office in November 1990 it was 9.7%.

4 For a detailed analysis and discussion of the natural rate of unemployment hypothesis, see Cross (1995).

5 See Michie & Wilkinson (1992), p. 196, Figure 9.1.

The initial belief that targeting the growth in the money supply directly (in terms of the quantity of money) would eliminate inflation gave way to old-style policies of high interest rates and deflation combined with labour market policies to restrain wages.

Monetary targets had been used prior to 1979; indeed, they were included in the IMF's 1976 loan conditions. However, prior to 1979, in neither theoretical nor policy areas was the monetarist explanation generally accepted as being adequate on its own, and the Callaghan (Labour) government continued to rely on incomes policies as the main anti-inflationary device. Full acceptance by the government of monetarist theory and policy prescriptions came only in 1979, although even then these were pursued partly by controlling the public sector borrowing requirement; Friedman himself disowned the use of fiscal policy as the leading method of controlling the money supply and argued (before the House of Commons Treasury and Civil Services Committee) that instead the market should be left to determine the interest rate.

Policy developments under the Thatcher governments began with strict monetary targets that required public expenditure cuts. Within a year of Thatcher taking office exchange controls had been abolished, direct controls on the growth of bank deposits ('the corset') scrapped, reserve asset ratios abolished and the minimum lending rate consigned to virtual oblivion. Ironically, the original aim of the Thatcher governments to impose monetary control proved to be incompatible with the financial liberalisation which freed the banking system's money-creating potential.

The failure to achieve the money supply targets from 1979 laid the basis for increasing criticism from non-monetarists. In 1981 Desai published his *Testing Monetarism* in which he examined the major predictions of monetarism and found them to be invalid. Kaldor had continuously insisted that the money supply in modern economics is not under the control of central banks, but is determined by borrower demand for bank credit. Thus the money supply is credit-driven and the demand for bank credit is closely related to changes in business demand for working capital. Bank financing of *ex ante* net deficit spending in the economy permits aggregate demand to grow. This view became increasingly acceptable publicly. Dow and Saville, leading advisors to the Bank of England, argued in 1988 that money creation is an endogenous process determined partly by the price level, and not the other way round, and Goodhart (1989) pointed out that this direction of causation was more generally recognised than some opponents of monetarism supposed.

In 1983 the Bank of England published fierce academic criticisms of Friedman and Schwartz's historical analysis of the role of money (and by clear implication, criticism of the wilder claims which had previously been made for monetarism as an anti-inflationary policy). In his contribution, Professor Brown concluded thus:

> *Do Friedman and Schwartz make their case that UK experience supports a simple quantity theory, with money supply controlling prices and output controlled by other factors entirely? In a word, no. First, strict truth of a simple quantity theory implies that velocity of circulation is constant (or changes only very slowly) – that nominal income varies in proportion to money stock, which we have seen ... to be only loosely true over long periods, and over some very considerable periods not true at all. Second, price-changes have been as much*

> *imposed on the UK from outside, or by labour-market behaviour only very loosely connected with monetary conditions, as they have been caused by monetary changes within the country. Such correspondence as exists between money stock and money income is due perhaps as much to money supply responding to demands created by eg rises in import and/or export prices, as to UK prices rising after a creation of domestic credit. It* is *true ... that output-growth shows no general, simple, connection with money-growth; it is affected by many factors, of which monetary* conditions *(a rather more complex matter than money-growth) provide only one. (Brown, 1983, p. 43)*

Hendry and Ericsson also refuted the historical relationship between money and prices claimed by Friedman, and in a revised version of their Bank of England paper stated that their findings were consistent with those reported by Desai (1981, especially Chapter 4), and that:

> *The failure by Friedman and Schwartz to present statistical evidence pertinent to their main claims about the United Kingdom leaves those claims lacking in credibility. (Hendry and Ericsson, 1991, pp. 32-33)*

Responding to these criticisms, Friedman and Schwartz merely complained that Hendry and Ericsson:

> *...use one equation from our book as a peg on which to hang an exposition of sophisticated econometric techniques. Insofar as their empirical findings do bear on ours, they simply confirm some of our principal results and contradict none. (Friedman and Schwartz, 1991, p. 39)*

This defence was denied by the London Business School:

> *A number of recent articles have attempted to restore the use of a simple measure of the money supply as an indicator of future price levels and to re-establish a causal link from money to prices ... we find ... the causality runs from prices to money – this result conforms well to the work of Hendry and Ericsson ... or Hall, Henry and Wilcox (1990)... (Allen and Hall, 1991, p. 45)*

The policy fate of the theory that control of the money supply will reduce the rate of inflation was sealed when John Major, then Chancellor, told the Treasury Committee in 1989 that:

> *That used to be the theory ... the Government may have followed some time ago. It certainly has not been the theory that the Government have followed during any period I have been in the Treasury. (Cited in Johnson, 1991, p. 66)*

1.3 The Non-Accelerating Inflation Rate of Unemployment (NAIRU)

The Philip's curve apparently lost its explanatory value as from the middle of the 1960s unemployment and inflation appeared to be directly rather than inversely related. To explain this, monetarists broke the link between labour market conditions and nominal wages by hypothesising that money wage increases are determined by the rate of increase of the money supply. Real wages, they argued, are determined by supply and demand in the labour market so that unemployment is essentially voluntary. Attempting to reduce unemployment below this 'natural rate' by expansionary policies would simply lead to a growth in the money supply and accelerating inflation.

The problem theoretically for this Friedmanite monetarist model was that in the equation MV = PT, there was no logical reason why the direction of causation should run from M, the money supply (or its rate of growth) to P, the price level (or inflation). There was also no necessary reason for V to remain constant if M (or its rate of growth) was altered by policy intervention, even if it had remained constant previously (Goodhart's Law). In terms of policy there were also issues around defining and measuring M, and problems in controlling its rate of growth – possibly because there was some degree of causation running from the Right Hand Side of the monetary equation to the Left Hand Side.

These weaknesses in the theory and problems with the practice led to the abandonment of what might be termed this 'Friedmanite' monetarist approach. It was replaced by what might be termed a neo-Keynesian approach in which the 'natural rate' was replaced by the 'Non-Accelerating Inflation Rate of Unemployment' (NAIRU).

Like the natural rate and unlike the original Philips curve, the NAIRU was taken to be vertical, allowing only one rate of unemployment at which inflation would be stable. But like the original Philips curve, and unlike the natural rate, the theoretical framework for NAIRU was not market clearing Walrasian equilibrium but rather a recognition that wage and price setting are influenced by market structure and bargaining power. Different levels of unemployment will produce different degrees of bargaining power on the part of labour, and hence correspond to different degrees of wage pressure, which results in just one level of unemployment (the NAIRU) corresponding to stable inflation, with unemployment either higher or lower resulting in a lower or higher bargaining power respectively, and hence falling or rising rates of inflation.

The NAIRU approach assumes that as output and employment expands in an upswing, the bargaining wage will rise as labour becomes more scarce and the bargaining position of employees strengthens. The 'feasible' wage is defined as the wage that firms are able to pay, without having to raise prices. In the upswing, as the bargaining wage rises, the feasible wage fails to rise in line. The point where the two curves – for the bargaining wage and the feasible wage – intersect will be an equilibrium, at which employers will be able to meet trade unions aspirations and

agree to pay the bargaining wage, without having to raise prices, as this will be precisely the feasible wage. There will thus be no tendency for inflation to rise (or fall). Hence the level of unemployment that this point represents will be the NAIRU.[6]

Box 3: The Non-Accelerating Inflation Rate of Unemployment

The Non-Accelerating Inflation Rate of Unemployment (NAIRU) is a long-run Philips curve. Like the 'natural rate', it is vertical. This is the only rate of unemployment at which inflation will be stable ('non-accelerating'). However, unlike the 'natural rate' theory, the NAIRU represents the outcome of real world processes, including trade union wage bargaining, companies' pricing decisions, and the levels of productivity. Changing any of these may shift the NAIRU, thus allowing the rate of unemployment and/or inflation to be brought down.

For a discussion of the literature, see Sawyer (2001).

The level of NAIRU can therefore be altered by any factors that are able to shift either the feasible or bargaining wage. These factors will include labour market structures and institutions – such as trade unions and industrial relations systems. If these institutions remain unchanged, then they will reinforce the existing NAIRU. On the other hand, policy can reduce the NAIRU, and/or reduce inflation, be acting on such factors. (If unemployment is at its NAIRU rate with high but stable inflation – it must be stable at the NAIRU – then if the NAIRU shifts to the left but actual unemployment does not fall concomitantly, then inflation must fall, as actual unemployment will then be above its NAIRU level.)

The NAIRU approach thus puts more emphasis on how policy might shift the NAIRU, rather than accept it as 'given'. If competition between firms can be enhanced through, for example, reducing the degree of industrial concentration, thereby reducing firms' mark-up over costs, then the economy will be able to operate at a lower rate of unemployment without inflation rising. Likewise, if aggregate investment could be increased, raising productivity and competitiveness, then the feasible wage that firms would be able to pay would rise. This again would allow the economy to operate at lower rates of unemployment, without inflationary pressures developing. Enhancing productive capabilities thus shifts the NAIRU curve to the left.

The implications of this for policies to cut unemployment without risking inflationary pressures is that the bargaining wage has to be reduced or the feasible wage has to be increased. The bargaining wage could feasibly be reduced through a national labour accord for this purpose. But the history of incomes policies would suggest that this is unlikely to be achieved or, even if achieved, to endure, unless action is seen to be taken on the supply side of the economy, to drive up the feasible wage. That is, to

[6] For a detailed textbook presentation and discussion of the NAIRU, see Carlin & Soskice (1990).

upgrade productive capabilities, productivity and value added so that firms are able to pay the higher wages that might be expected if the economy were to be operating at full employment. It is these policies that are key.

The way to do this – and hence to cut unemployment without risking inflation – are referred to in general terms above, namely increasing competition and productivity. The former requires detailed research into individual industries and markets to determine whether there is indeed scope for increasing the degree of competition. This is important not just to uncover cases of monopoly or collusion, where the required policy action may be clear. It is also important to be able to judge what the optimal degree and nature of competitive pressure would be to introduce or foster in any given market or industry. It would be counterproductive to put such pressure on companies that they felt unable to invest in long-term projects, whether on capital equipment, Research & Development, or employee training. If, in face of intensified market competition, companies cut back in these areas, the result would be to reduce the feasible wage – the exact opposite of what is needed for the NAIRU to be reduced.

Detailed research on a sector-by-sector basis is also required before anything sensible can be said about appropriate policies for driving up the feasible wage. In general terms, lower interest rates and publicly provided training can be expected to impact favourably on investment in capacity and skills. But beyond this, it requires targeted measures to assist firms and industries to upgrade and improve their productivity and competitiveness.

1.4 Beyond NAIRU

Within the NAIRU approach, as unemployment falls the 'bargaining wage', demanded by workers rises. This means that as unemployment falls, workers will be in a stronger bargaining position, and will hence be able to demand and get higher wages. At the same time the 'feasible wage' which employers can afford to pay without increasing prices fails to rise in line. This feasible wage will be determined by how productive the firm is.

Indeed, it is generally assumed that this 'feasible wage' does not rise with output at all. This failure of the wage which employers can afford to pay to rise as output rises is based on one or both of two seriously flawed arguments.

First, it is supposed that as firms increase their level of output, productivity fails to rise and may fall. But, in fact, the opposite is usually the case: in economic expansions output per head generally rises. This increase in productivity is explained by the fact that capital is operated at a higher level of utilisation as demand increases, and firms invest in more modern and productive equipment. The more reasonable assumption that productivity and hence the 'feasible wage' increases with output thus undermines the NAIRU approach. If increased capacity utilisation and, over the longer term, an increased and more technologically advanced capacity allows a growth of the feasible wage then there may be no unique 'equilibrium' point (NAIRU) with only that one

level of unemployment associated with non-accelerating inflation. Thus, even if the bargaining and feasible wages happened to coincide at a given level of unemployment, if unemployment falls with the feasible wage increasing (due to increased productivity) more than the increase in the bargaining wage, then such a model would actually predict that the reduction in unemployment would result in inflation falling rather than rising.

The second argument underlying the NAIRU analysis is that firms have to cut prices to sell more. By enabling firms to lower prices, cuts in wages and other employment costs allow them to sell more and to increase employment. But the size of the market of a firm (and hence the employment it can offer) is determined not only by the price that it charges but also by the prices being charged by its competitor firms. If the workers employed by that firm accept a lower wage so that the firm can cut its prices, it may be able to increase its output and its market share, but this may be at the expense of other firms and the employment that they offer. If all firms lower their wages there will be no change in relative prices and no increase in demand through the mechanism envisaged within the NAIRU approach. In that scenario it may be that the general fall in the price level would increase the real money supply, but that is a separate point, and could be brought about directly if so desired.[7]

Having pointed to the theoretical weaknesses in the NAIRU approach, it is important to recognise that while policy makers tend not to spell out the theoretical underpinnings to their policy actions, if this were to be done, then it is broadly this neo-Keynesian NAIRU approach that informs policy makers today – certainly more than the Friedmanite monetarism of the natural rate, and more so too than the previous Philips curve approach.

As far as policy implications go, though, rather than modelling any of the above Phillips curves with a view to what the inflation or unemployment rate might be in the future, given a change in level of the other variable, it is more helpful to analyse on the one hand those policies that might be pursued to reduce unemployment, and on the other those policies that might be pursued to reduce the rate of inflation. Crucially, where conflicting calls on policy emerge from this, it is important to then consider the various combinations of policies that might be pursued, and which might result in the optimum outcomes in terms of achieving both low rates of unemployment and low rates of inflation.

This after all was the approach during the 1960s and 1970s when supposedly the Phillips curve presented policy makers with a policy choice in terms of a trade-off. Rather than use this passively as a menu, policy makers continually sought to reduce unemployment without increasing inflation, and/or to reduce inflation without increasing unemployment. Likewise, while the NAIRU appears to suggest that unemployment cannot be cut below its non-inflationary rate without rising inflationary pressures, in practice the sort of economic modernisation policies that

[7] For a discussion of the 'natural rate' and NAIRU literatures, see Sawyer (2001).

governments in any case tend to promote – to encourage investment, R&D, and training – are precisely those that would boost the feasible wage and hence bring down the NAIRU.[8]

2. What does policy experience tell us?

The belief prevalent in the 1960s and early 1970s, that there was a simple trade-off between accepting higher unemployment and enjoying lower inflation was abandoned during the course of the 1970s as this apparent relationship undoubtedly broke down empirically. Policy attempts to return to full employment on the assumption that this would lead to the previously enjoyed rates of inflation failed, in the sense that the inflation outcomes in the 1970s turned out to be higher than would have been expected for any given rate of unemployment in the past. It became clear that there must be other determinants of inflation and unemployment. The policy implication was that these other determinants should be targeted.

Initially, in the later 1970s and 1980s, the determinant of inflation was taken to be the money supply, while the determinants of unemployment were thought to be 'imperfections' in the labour market. These beliefs also failed the policy test. There proved to be no simple effect from reducing money supply growth to reduced inflation.

Policy in the 1990s and early 2000s therefore, in most countries, fell back on a pragmatic attempt to restrain inflation by reducing economic growth whenever inflationary pressures were thought to be building. This has been pursued largely through interest rate policy. Attempts to reduce unemployment have consisted firstly of not raising interest rates any further than thought strictly necessary to contain inflationary pressures. In other words, provided there was no inflationary threat, interest rates would be kept as low as possible in order to maximise investment and consumption and hence economic growth rates and employment. In addition, active labour market and industrial policies have been pursued to varying degrees in order to directly tackle any remaining unemployment.

The outcome in most countries has been fairly low and stable inflation. However, it is not clear that this has been the result of interest rate policies used to contain inflation. On the contrary, interest rates were generally kept rather low, certainly in the US and Japan, yet inflation too remained low – and even fell below zero in Japan, risking deflation of the price level. In Europe, the moves towards monetary union involved restrictive fiscal and monetary policies, firstly as required by the Treaty on Monetary Union and subsequently by the Stability and Growth Pact. This generally resulted in

[8] This is assuming, of course, that the NAIRU is vertical. Setterfield & Leblond (2003) suggest that for US 1990s data it is not, and there is a policy trade-off available. Hodge (2002) failed to detect a stable short run trade-off between inflation and either unemployment or employment in South Africa (1970-2000) but did find a significant positive relationship between inflation and growth. Nell (2000) also found that inflation within the single-digit zone may be beneficial to growth.

higher interest rates in Europe than in the US and Japan. However, while these had the impact that might be expected in dampening economic growth and employment, there appears to have been no gain in terms of lower inflation in Europe than the US or Japan.

The move from Friedmanite monetarism and the natural rate, to the neo-Keynesian NAIRU framework gave theoretical justification for policy action in the area of unemployment and inflation in two key areas, namely recognising, firstly, that the labour market is segmented, and that active labour market policies can reduce unemployment without necessarily creating inflationary pressures, and secondly that competition policy can put downward pressure on prices.

2.1 Labour market segmentation

In the non-market clearing world of NAIRU, the labour market is recognised to be segmented in various ways: between 'insiders' and 'outsiders', between the economically active and inactive, and by the whole range of factors that tend to differentiate labour in the employment market. This has presented the theoretical basis for the 'New Deal' labour market policies of the current UK Labour Government. Firstly, through a recognition that 'the labour market' cannot be treated as a single entity whereby all workers will respond in similar ways to new employment opportunities, and secondly because of the idea that bringing the economically inactive into the active job market will weaken labour's bargaining power and hence shift the NAIRU to the left, creating stable inflation at a lower rate of unemployment than previously.

The theory of labour market segmentation actually pre-dates that of NAIRU, and includes broader sociological and institutional factors than are usually included in the NAIRU literature. Thus:

> *The structuring or segmentation of the labour supply so that labour of equivalent quality is available for employment at different wage rates results both from the structure of job opportunities in the labour market, and the influence of institutional factors, social, familial and educational, in differentiating labour on the labour market. (Craig* et al.*, 1982, p. 88)*

This segmentation analysis 'disputes the neoclassical view that the structure of pay reflects primarily the structure of relative labour efficiency, and argues that the number of good jobs in the economy is mainly determined by the development of the industrial and technological structure largely independent of labour supply. The structuring of the supply of labour serves to determine which groups are confined to the low-productivity secondary sectors of employment, but it does not follow that the least efficient workers are necessarily relegated to these low-productivity sectors. The existence of non-competing groups has important implications for the structure of employment.

Barriers to mobility mean that there is no equalisation between groups of the relationship of pay to labour productivity. In these circumstances firms can claim labour from segments where pay is low relative to labour productivity in order to compete more effectively and can possibly retain otherwise obsolete techniques. The existence of segments of the labour force with different labour market statues may also create the situation where jobs are classified not by their content but according to the labour market position of the workers normally undertaking the work. Thus jobs are secondary because they are performed by workers generally considered secondary: jobs are regarded as unskilled because they are feminised and not feminised because they are unskilled. Moreover, the existence of non-competing groups may be of considerable social and political importance for the maintenance of labour market segmentation. The role of class divisions and racial and sexual discrimination as a means of legitimising and enforcing inequalities in the labour market is central' (Craig *et al.*, 1982, p. 77).

This segmentation of labour markets means that policy goals of targeting certain levels of unemployment need to take account of the various segmented labour markets and what the public policy goals should be with respect to each. It also means that a prerequisite for such a policy agenda is detailed research into the segmented labour market: what those segmented labour markets are in any given country at any particular time, what the levels of pay, employment, productivity, labour turnover and so on are in each of those markets, what the degree of mobility is between the various segments of the labour market, and crucially, how policy might be tailored to tackle with the specifics that such research uncovers.

2.2 Competition policy and regulated prices

When market clearing assumptions are dropped, and the reality of industrial concentration and mark-up pricing is acknowledged, then competition policy becomes relevant to the issue of inflation. Certainly there has been renewed emphasis in the UK and across Europe recently on how increased competition can drive down prices, as well as deliver other economic benefits, including possibly increased employment.

> *It is worth emphasising the commitment of the Labour Government since 1997 to increased product market competition. There was a new Competition Act that included significantly increased powers for the Office of Fair Trading. Merger policy was firmly driven by competition considerations. In the utilities competition was pursued rigorously, with the fostering of domestic competition for gas and electricity and the introduction of the New Electricity Trading Arrangements. (Corry, 2003, p. 17)*

The degree of market concentration is clearly an empirical one, which in any given country will vary between industries and over time. The impact of market concentration is not just that firms will be able to charge higher prices than would otherwise be the case, but also that their reaction to events will differ – they may be more able to pass on increased costs than would otherwise be the case, thus exacerbating an inflationary spiral, and may also be less responsive to increased

interest rates, or at least the nature of their response may be different, postponing investment rather than cutting prices to maintain market shares.[9]

This is therefore an area that would require detailed research on an industry-by-industry basis to determine the degree of market concentration, and on a firm-by-firm basis to establish the implications of any such concentration on pricing and investment decisions in the face of changes in input costs or interest rate changes. Clearly the most important industries in this regard are those whose pricing behaviour can have economy-wide effects – such as food, energy and the utilities.[10]

[9] There is a large literature on the pricing reaction of oligopolists, including that around the 'kinked demand curve'.

[10] The Statements of the SARB's Monetary Policy Committee often discuss the degree to which inflationary pressures have come through from specific sectors (eg October 16th 2003).

3. The specifics of South Africa

There are questions over the reliability of data on unemployment in South Africa, but there is no doubt that unemployment is a serious problem.[11] The Reserve Bank reports an unemployment rate of 31.2%.[12] According to the Economist Intelligence Unit, unemployment has risen from 23% in 1999 to 26% in 2000, 28% in 2001 and 30% in 2002.[13]

Inflation has remained higher than in Europe, North America or Japan, but these are not necessarily the appropriate comparator economies, given both the level of income per head and also the structural make-up of the economy, with a large proportion of productive activity taking place in the agricultural, domestic service and informal sectors of the economy.

> *'The year-on-year rate of increase in the CPIX (the overall consumer price index for metropolitan and other urban areas, excluding the interest cost of mortgage bonds), which had dropped from 11,3 per cent in October 2002 to 6,4 per cent in June 2003, picked up marginally to 6,6 per cent in July before falling again to 6,3 per cent in August. Although this brought the rate of increase in the CPIX to its lowest level in twenty-one months, it was still above the upper boundary of the inflation target.' (SARB Monetary Policy Committee, 16th October 2003)*[14]

The SARB's target range for inflation is 3% to 6%.

In June 2003, at a Growth Development Summit held under the auspices of Nedlac, actions were agreed for accelerating the growth and development process, and to halve the rate of unemployment by 2014.

What implications does this commitment have for inflation? There are two possible connections. Firstly, it may be that achieving such a reduction will require either a fall in interest rates or a fall in the value of the Rand against other currencies, and in either case this might tend to raise the rate of inflation. Secondly, it may be that a fall in the level of unemployment might itself have inflationary consequences. This might operate through the NAIRU-type processes, of increased wage pressures. Alternatively, it may be that there is insufficient productive capacity in the economy to

[11] For a discussion of how to define and interpret unemployment and underemployment in South Africa, see Standing *et al.* (1996).

[12] Latest at time of writing (16/10/03).

13 See Altman (2003a) for a discussion of the reliability and range of unemployment figures for South Africa. See also Kingdon & Knight (2000, 2001) for a discussion of the measurement and nature of unemployment in South Africa.

[14] This statement also discussed the variation in different components of inflation, including the producer price index which is currently rising at a far slower rate than the CPIX.

sustain the higher levels of employment, in which case inflationary pressures would result from supply shortages. We consider these labour market, capacity and interest rate issues in turn.

3.1 Unemployment, wage growth and productivity

In an analysis of South African labour market processes, and in particular of the relationship between unemployment, wage growth and productivity, Wakeford (2003) found that unemployment 'has little or no effect in terms of restraining real wage growth'. Wakeford found that increased productivity allowed – and led to – an increase in real wages, although not fully proportional, so that, had this been tested for, we would expect that part of the gains from productivity would feed through to increased profits.

The implications for inflation and unemployment are as follows. Increased productivity allows increased real wages. These can come through one or either of two routes. Either the increased productivity boosts profits and this leads to some increase in wage rates. Or alternatively, the increased productivity allows prices to be cut (or at least, price rises to be cut), hence increasing the real value of any given money wage. Either way, the result will be to prevent or at least reduce pressure for increased money-wages. The target real wage will have been delivered – in whole or part, or possibly even exceeded – through the increased productivity. The outcome will thus be reduced inflationary pressure.

The degree to which increased productivity can pay for increased wages without the need to increase prices will depend on how costly or otherwise the increased productivity was to the company. At one extreme, a gain in productivity might be entirely costless, for example if it resulted simply from being able to expand output in response to increased demand at a time when resources were otherwise lying idle. On the other hand, if the rise in productivity is the end product from years of costly investment into Research & Development, product and process development, work reorganisation and staff training, then these additional costs might absorb the whole of the increased value added resulting from the increased productivity.

The outcome on employment will depend on the extent to which the increased productivity leads to increased sales. These can come from increased exports or increased domestic sales, and can be achieved either because the increased productivity allows lower prices or increased quality or both. In some cases the increased productivity will be associated with innovation, in which case whole new markets may be created. Thus, increases in output per head (productivity) tend to be associated with increased sales and hence higher output. The relative size of these two effects – increased sales, and higher productivity – will determine whether the increased output levels will involve higher or lower employment.

Thus, there is no reason to suppose that achieving the lower rate of unemployment targeted would lead to upward pressure on inflation. That will depend on the

behaviour of a number of other economic variables, including the 'bargaining' and 'feasible' wage levels. The lower unemployment outcome might even be associated with lower inflation. The key issue is whether the economy's productive capacity is expanded in line with increased employment, with the necessary levels of investment in new infrastructure, capital equipment, R&D and training.

3.2 Investment and productive capacity

Whether firms will increase or reduce their prices as demand for their goods and services rises depends crucially on whether they are expanding their own productive capacity. If so, then there will be cost savings from spreading overheads over a larger output with increased capacity utilisation. Over the medium and longer terms the increased productivity from newer 'vintages' of capital equipment and more modern equipment and productive facilities generally, may lead to falling costs and prices (or at least falling rates of increase).[15] If firms also have an incentive to cut prices to gain market share then this may have a further counter-inflationary impact.

On the other hand, if the expansion in employment occurs without sufficient expansion in investment, this may lead to available capacity becoming fully utilised, creating inflationary bottlenecks. As indicated above, the term 'investment' covers a range of activities: not just corporate investment in premises, machinery and equipment, but also investment in infrastructure, in Research & Development, and in training and human capital development. In these areas, Government and other public and quasi-public agencies may have a part to play.

Government needs to facilitate the necessary developments so that this economic capacity – broadly defined – can be enhanced in a balanced fashion across the economy. This is the surest way to bring about the desired non-inflationary growth in output and employment.

3.3 Interest rates, investment and demand

The question remains, however, whether the necessary investment decisions will be made and sustained in the face of high interest rate levels. The preferred outcome would clearly be to enhance economic capacity so as to reduce inflationary pressures, thus avoiding the need to raise interest rates. However, if for whatever reason inflation rises, then there is indeed a danger that if interest rates are raised in response, this may well choke off either some of the activities through which the increased employment was envisaged being created, or the capacity enhancing investment which is required to increase employment in the economy.[16] In the former case the

[15] See Salter (1969) for an analysis of the role of investment on economic performance, and a discussion of the 'vintages' model of capital investment.

[16] Aron & Meullbauer (2002) find important and persistent effects of high real interest rates, which significantly constrained South African economic growth in the 1990s.

unemployment targets will simply not be met. In the latter case, inflationary pressures will be created.

This calls for detailed research work to be undertaken into the various causal mechanisms that the SARB assume lead from an increase in the interest rate to a fall in the rate of inflation. Is the effect thought to work via:

- The increased interest rate causing a fall in the money supply which leads directly to a reduction in inflation, as in the monetarist model?
- Reduced consumer demand leading to firms cutting prices (or planned price rises) in order to retain sales?
- Reduced investment demand leading to a fall in prices of investment goods?
- Some combination of the above two effects leading to slower growth, resulting in pressure on firms to cut prices to stay in business, and increased unemployment leading to reduced wage levels and hence reduced inflationary pressure?
- Or any other causal processes?

Whatever the hypothesised processes, they need to be researched and established empirically. If this were done, it is possibly that other, more effective mechanisms might be found.

For example, one of the causal mechanisms might be that an increase in interest rates reduces planned investment, thus reducing the pace of economic expansion and hence reduces inflationary pressure. But how does an increase in interest rates actually affect firms' investment decisions? How does this differ between large, medium, small and micro firms? Between manufacturing, agriculture and services? Between the internationally traded and non-traded sectors? Between the formal and the informal sectors? Between domestic firms, foreign MNEs and domestic MNEs? Between the public and private sectors? And so on.

The relative importance of the interest rate level as against other factors – such as the availability of capital, and the terms on which it is available – need to be established both theoretically and empirically. Once this has been done, the efficacy of using interest rates to target inflation can be estimated, and this can be compared with other possible policy levers that might be used either instead of or in combination with interest rate policy.

There are a number of issues here.

First, to what extent are interest rates and inflation linked? It is clear that the SARB believe that they are, since the statements of their Monetary Policy Committee tend to end with the warning that if inflation were to rise, the Bank would take the necessary decisions on interest rates – clearly implying that they would be increased. That increased interest rates will tend to have a depressing effect on prices in the short

term is generally not in dispute. There are some counteracting pressures, for example in countries where mortgages are significant and are included in the measures of inflation, so that an increase in interest rates will lead to an increase in mortgage rates and hence to a rise in the measured rate of inflation. The doubts, though, are twofold. Firstly, what are the mechanisms by which an increase in interest rates tends to depress rates of inflation? And secondly, what implications might there be for the inflation over the longer term?

On the first question, there are a number of possible mechanisms, as illustrated above. In addition to those listed above, an increase in the interest rate will also tend to raise the value of the currency on foreign exchange markets, hence reducing the price of imported goods. The broad issue is to what extent the interest rate effect on inflation works through depressing real economic variables, namely investment, output, and employment? In the era of Friedmanite monetarism described above, the hope was that controlling the money supply ('M' in the MV=PT monetary identity) would impact directly on inflation (P). The reality has proved different in two important ways. Firstly, the impact of attempting to control the money supply is to increase interest rates. So policies to control inflation now tend to be pursued through raising the interest rate directly. And secondly, this impacts on the real side of the economy – the number of transactions (T), alternatively written as output (Q). The resulting reduction in output (or its rate of growth) will tend to depress the rate of inflation, as firms face weaker markets in which they have to attempt to sell their goods and services. And as output (or its rate of growth) falls, so does employment. This may also impact on the ability of employees to secure increased wages – although this depends very much on the segmentation of the labour market referred to above. It may be that if there is wage pressure on inflation, this is coming from an entirely different segment of the labour force than the segment that will be affected by a slowdown initiated by increased interest rates.

To increase interest rates to reduce inflation is therefore at best a rather 'blunt instrument', working as it does through depressing the real economy. If it is the only option, then so be it. But this does mean that if the actual processes can be identified, it may be that more targeted policy could achieve the same anti-inflationary gain with less depressed real output pain.

In other words, the increased interest rate will impact on various sectors of the economy. Each will suffer some degree of 'pain' in the sense of increased costs of investment and possibly a reduction in their expected future sales if the increased interest rate impacts on demand. Each may also, therefore reduce their employment, or planned employment, below what it would otherwise have been. (This may be just a reduction in a planned increase rather than a reduction in actual levels.) And in each case, there may be some downward effect on prices in that sector. The point is that the size of these effects may differ from sector to sector.

First, different sectors may experience different degrees of 'pain'. Secondly, for any given fall in output, the corresponding reduction in employment may differ. And thirdly, for any given fall in output and employment, the degree to which there is any counter-inflationary gain may differ.

If the size of these three effects were known on a sector-by-sector basis, then it might be possible to target policy more accurately – either by taking action to slow down those sectors from which most inflationary gain would be expected or by attempting to protect those sectors from which there would be little to be gained from squeezing. This latter might be attempted, for example, by somehow sheltering those sectors from the impact of an increase in the general rate of interest.

The second question posed above was what effect all this might have on inflation over the longer term. If a rise in interest rates depresses investment – either directly, because of its increased costs, or indirectly by depressing the general level of activity, which will cause investment plans to be scaled downward – then this will lead to a lower level of economic capacity than would otherwise have been the case. In addition, the capital stock will on average be older than it would be, had there been greater investment in new machinery. Likewise, if investment in people is scaled down, then the labour force may be less skilled than they otherwise would have been. The first effect, of a lower level of economic capacity, means that in any subsequent economic expansion, capacity constraints and bottlenecks are likely to be hit sooner than would otherwise have been the case. And these capacity constraints and bottlenecks are generally sources of inflationary pressure.

The second effect, of depressed productivity (or reduced growth in productivity) will leave firms less able to absorb any increase in costs that might come from raw material prices, wages or some other source. A greater proportion of any such increase in input prices is thus likely to be passed through in increased output prices.

These longer-term effects of increased interest rates may thus leave the economy less well placed to deliver non-inflationary growth in the future, despite any short-term effect of depressing the rate of inflation.

4. Policy implications

The policy implications of this are as follows. Firstly, achieving increased productivity is an important way of maintaining low rates of inflation. If input costs are rising, then a firm with rising productivity may be able to absorb these increased input costs, while a firm with stagnant productivity will have to pass them on in increased prices. Increased productivity, though, generally requires investment – in capital and people. Hence it is important to keep interest rates as low as is practically possible, to encourage such investment. High interest rates may also dampen growth rates and, perhaps even more crucially, expectations about the growth of demand. If so, this will tend to inhibit the sort of investment and expansion plans that generally deliver increased productivity.

Hence there is a paradox. Interest rates are raised to avoid any perceived danger of imminent inflationary pressures. But there is a danger that in so doing, productivity-enhancing investment and expansion may be inhibited. Yet these productivity gains are crucial for avoiding inflationary pressures over the longer term. The short-term anti-inflationary gain from raising interest rates may thus lead to longer-term inflationary pain.

The key policy question for South Africa, therefore, is as follows. If interest rates were cut in order to encourage productivity-enhancing investment and expansion, would this lead to a short-run rise in inflation, before the inflation-absorbing benefits of the increased productivity came on stream. If the answer to this is yes – that there would be a danger of a short-term rise in inflation – then are there other policies that might be pursued to contain inflation in the short term? And are there other policies that might be pursued to encourage increased productivity and expansion, other than the reserve bank cutting interest rates?

4.1 Policies to contain short-term inflationary pressures

The Central Bank's interest rate decisions do of course impact upon the exchange rate level, and this also affects the inflation rate. However, to the extent that this is pursued as a short-term anti-inflation measure, the implications for interest rate policy are similar to the use of interest rates to target inflation directly, namely, an increase in interest rates aimed at curbing inflation will also tend to strengthen the value of the currency, and this in turn will have an anti-inflationary impact in the short term. The medium and longer term effects may include the same problems as are caused by the high interest rates themselves, namely a depressing effect on output and hence investment, and thus on capacity levels.[17]

[17] Jack Kipling, Chair of the Export Council for the Clothing Industry reports that the current value of the Rand is beginning to lead to small cuts in employment (cited in Itano, 2003).

In principle the value of the exchange rate can be influenced by exchange controls, although in practice South Africa is not likely to consider their use.

Other possible anti-inflationary measures have been referred to above. Incomes policies have been used extensively in the past across the world, but have generally fallen out of favour. There may be scope for developing a national accord on wages and prices, but international experience suggests that this would most likely only work if part of a more general package of measures aimed at securing non-inflationary growth of output and employment.

Administered prices can and have been used by governments to restrain inflation. But unless there is reason to believe that there is scope for altering the current decisions in these areas, this is not likely to provide much scope for use against inflation.

Increased prices can in some cases be offset by cuts in taxes on those goods, but again this is likely to be at best only a short-term option, appropriate perhaps if there are particular inflationary pressures that are believed to be only one-off or short term, that could be counteracted in this way.

Finally there is the point mentioned above about increasing competitive pressures in markets. This may be particularly important in cases where input prices rise – for example because of increased fuel prices. In an uncompetitive sector there will be a natural tendency to pass on increased costs in price rises. In other words, a constant mark-up on costs will be implied, thus producing increased prices. In a more competitive market, this will not be done without serious thought about what competitors might do. And if the increased input costs are thought to be only temporary, there may be a greater tendency to try to absorb the increased costs by accepting a temporarily lower mark-up, thus avoiding price rises.

4.2 Policies to boost productivity and expansion

If the above policies are not thought to be adequate to allow the Reserve Bank to cut interest rates to the level that would maximise productivity-enhancing investment and expansion, then are there other policy initiatives that could be taken to act directly on such investment decisions?

It is important firstly to recognise that the interest rate actually faced by any individual company that is considering whether or not to embark on what might be a costly and long-term investment programme will vary from company to company. In other words, we cannot read off directly from the interest rate set by the Reserve Bank to that which will be influencing these key corporate decisions, on which the future productivity levels of the economy will depend. The actual interest rates faced will depend on a range of factors such as that company's credit rating.

The important point for the current paper, though, is that there may be some scope for public policy to circumvent the potential damage that high interest rates might

otherwise have on investment decisions by providing lower interest rate arrangements for specific projects, along the lines of the cheap finance that has been made available in the past by the Industrial Development Corporation (IDC).

While such an approach is not government policy at present, it might prove to be worth considering, depending on what, empirically, was found about the impact of interest rate increases on different types of firms across sectors.

It is also important to establish just what role the interest rate level plays for different types of enterprise when it comes to their making productive decisions – on investment, output, employment, pricing and so on. Research is also needed into what other factors play a role, such as the availability of finance, and the terms and conditions under which such finance is made available.

4.2.1 Public works

The use of public works to tackle unemployment is usually associated with John Maynard Keynes's original argument that the workings of free market economies will not of itself result if full employment. In *The General Theory of Employment, Interest and Money* he argued that the level of unemployment will depend of how much employment is required to produce the level of goods and services that are, in aggregate, demanded. Or even more precariously, the level of demand that companies *expect* to face. If the level of aggregate demand is below that required to fully employ the entire workforce, then unemployment will result. And expectations can prove self-fulfilling, in either a positive or negative fashion. If investors' 'animal spirits' take a cautious turn, then the resulting cut backs in investment and orders will themselves create a fall in demand, which will further dampen expectations. Expectations of a recession can become self-fulfilling. What is required for a return to full employment is thus a boost in effective demand. And public works is one way in which governments can help to deliver the necessary boost to demand.

More recently attention has focussed on how to attract foreign capital, and on how to improve the domestic economy's international competitiveness. An efficient productive infrastructure – transport, communications, education and training, and so on – is key. Here again, the role of public works is vital, given the 'public good' nature of much of this infrastructure work.

Public works thus play a dual role. On the one hand, they improve the underlying economic infrastructure. On the other, they can be part of an active labour market policy. Improving the underlying economic infrastructure will of course be beneficial over the longer term to output and hence employment. Thus, the active labour market aspect of public works might be thought of as addressing immediate cyclical unemployment problems, whereas the economic capacity enhancing aspects are addressing the longer-term structural unemployment problems which require a sustained improvement in economic performance over time. The two aspects both therefore contribute to employment over the longer term.

There are short-term choices to be made, though, as to how labour or capital intensive civil works should be. The Department of public works is thus currently looking at whether a clear commitment by government could be made to ensure that such works are made as labour intensive as is practicable and appropriate.

So certainly, investing in an improved productive infrastructure – such as the telecommunications network, including access to broadband – is an important area for public policy. Such activity will also create employment directly in the short run, quite apart from the beneficial outcomes that it intends to deliver for business and hence for future economic growth and employment opportunities.

The June 2003 Growth & Development Summit (GDS) saw the government agreeing to extend the public works and infrastructure investment programme that was already to be found in the Medium Term Expenditure Framework. For some, the benefits from this are no doubt thought to be the job creation effects of the programmes themselves, as well as the contribution that the works might make to living standards if they are delivering say housing or water. But such programmes, particularly those involving the productive infrastructure, do also play an important role within the unemployment-inflation relationship, by creating the conditions for higher productivity over the medium and longer term, hence alleviating the danger of inflationary pressures at the same time as creating the conditions for higher levels of employment and hence lower unemployment:

> *'To promote sustainability and a virtuous circle of growth, such a programme will require a detailed understanding of the dynamics of the targeted industries, in order to ensure that increased expenditure is matched by enhanced supply capacity, including appropriately skilled and accredited labour. This requires an industrial strategy for each sector, in addition to the more narrow focus on increasing the demand for goods and services through the expansion of government expenditure.*
>
> *'Government can only go so far in stimulating jobs directly. Ultimately, deeper linkages are required. It is often forgotten that employment is about all the linkages that occur in response to an investment. The more credible and sustained a programme is, the more the private sector will respond, not just by delivering the procured service, but by mobilizing investment resources to provide inputs, logistics, and related goods and services – these are the desired spin-offs that are required to enhance the ability of the economy to create more jobs.' (Altman, 2003b, p. 8)*

Thus, public works can influence the employment-inflation agenda in a number of different ways. Firstly, public works can directly affect the level of unemployment, via their direct employment effects. Secondly, by enhancing the productive infrastructure, South African industry can be made more competitive internationally and hence may increase their market shares in export as well as domestic markets (in competition with imports). This will lead to increased employment. Thirdly, by addressing real needs within society, public works may help foster and develop new markets and

areas of economic activity that otherwise would not have existed, and this might prove sustainable over the longer term beyond just the direct public works input.

5. Further research

This paper has sketched out what seem to be the key issues that would need to be analysed in order to establish how the target of halving unemployment might be achieved in a non-inflationary manner. Two areas of research into policy measures appropriate to the current South African context would be:

- The segmentation of labour markets means that policy goals of targeting certain levels of unemployment need to take account of the various segmented labour markets and what the public policy goals should be with respect to each. It also means that a prerequisite for such a policy agenda is detailed research into the segmented labour market: what those segmented labour markets are in any given country at any particular time, what the levels of pay, employment, productivity, labour turnover and so on are in each of those markets, what the degree of mobility is between the various segments of the labour market, and crucially, how policy might be tailored to the specifics that such research uncovers.
- The degree of market concentration is clearly an empirical one, which in any given country will vary between industries and over time. The impact of market concentration is not just that firms will be able to charge higher prices than would otherwise be the case, but also that their reaction to events will differ – they may be more able to pass on increased costs than would otherwise be the case, thus exacerbating an inflationary spiral, and may also be less responsive to increased interest rates, or at least the nature of their response may be different, postponing investment rather than cutting prices to maintain markets. This is therefore an area that would require detailed research on an industry-by-industry basis to determine the degree of market concentration, and on a firm-by-firm basis to establish the implications of any such concentration on pricing and investment decisions in the face of changes in input costs or interest rate changes.

6. Conclusions

Discussing whether monetary policy is different for the SARB than for other central banks, Ian Plenderleith (2003), a Deputy Governor of the Reserve Bank, concludes that while the task is broadly comparable, the context is different. One of these differences is the greater need, in South Africa, to establish policy credibility, so that the SARB needed if anything to be more cautious than central banks elsewhere. On the other hand, one of the other differences Plenderleith notes is the greater susceptibility of the South African economy to supply shocks – and 'higher interest rates will not help to make the maize crop grow higher'.

While central banks tend nowadays to prioritise the policy target of achieving and maintaining a low rate of inflation, within or around some inflation target, in practice other factors undoubtedly impinge on their decision making processes to some degree – the level of the exchange rate, the rate of growth of the economy, the rate of unemployment, and so on.[18] Padayachee (2001) argues that this broader agenda should be made more explicit. Epstein (2002) argues that employment should be made an explicit target. In effect, though, this would simply be to shift the *emphasis* from inflation to employment, whilst retaining a focus on the whole range of economic variables being targeted – or at least influencing the decision making processes – since Epstein acknowledges that any employment target would need to be subject to some inflationary ceiling or limit. But even such a shift in emphasis, Epstein suggests, would help change the culture within the SARB and elsewhere, leading to research becoming more focussed on the employment consequences of policy actions, and so forth.

It is certainly true that the general macroeconomic and public policy culture can play an important role in setting the agenda for research and policy development, encouraging certain avenues to be explored and closing down others. It is also the case that if there is going to be a serious effort across the economic, political and social community to achieve major policy goals such as the halving of unemployment whilst maintaining the current 3% to 6% inflation target range, and also pursuing other major goals such as black empowerment and employment, it will be important to develop 'joined up' thinking and action between the various departments and sections of Government, other public agencies, quasi-public bodies, the corporate sector, trade unions, community bodies and others.

The above discussion has avoided listing the huge range of policy areas that would need to be brought in on any such major policy development. But any one of the few topics mentioned above – such as developing high commitment work systems – would involve a huge range of different actors, across the private and public sectors, and across corporate, trade union and governmental bodies. Just this area alone might

[18] For a discussion of whether inflation targeting is appropriate for South Africa, see ABSA (2002).

involve legislative change, regulatory action, trade union involvement, corporate decisions and so on.

The institutional underpinnings of the unemployment-inflation relationship are key to the functioning of any economy. But they are not simple. Neither are they given or static. These relationships are constantly evolving. But they are also subject and amenable to change and development. Such change and development can and should be actively fostered, not only to bring about better outcomes for, say, the labour market, but also to contribute to economic development more fundamentally, through the interconnections referred to above, between such processes and other economic outcomes.

Thus, a better-trained workforce is a classic 'public good'. Combined with an appropriate organisation of work, this can translate into a private good for the employers. And if the workforce is committed and motivated, productivity will be further raised.

For this combination to translate into macroeconomic output and employment gains, will require demand to be rising faster than productivity. And for this to be combined with stable or falling inflation will require cost-absorbing new capacity and innovation. To be sustainable, the country's productive infrastructure needs to be continually renewed. This narrative could continue through the links to education, housing, FDI, entrepreneurship and an almost endless range of inherently inter-related economic and social factors. The key point, though, is to understand that these links are there, and that they ought properly to be the focus of active and joined up policy development.

Within this context, detailed research and policy work is necessary to advance our knowledge and understanding of how such policy can best be developed in each of these areas within the context of current day South Africa.

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