A fly in the ointment: Productivity growth, job loss and the NPI

Charles Meth

Saldru Working Paper No. 87

Cape Town

June 1997
Contents

Introduction .................................................................................................... 1

(I) The economics: two simple models, plus one, not-so-simple model ...... 3
Virtuous circles .............................................................................................. 5
Imperfect competition-indeterminate outcomes ........................................... 7
The antinomies of the invisible hand ............................................................ 11
How long is a temporary inconvenience? .................................................... 14
How long is the long term? ........................................................................... 17
Decomposing structural change .................................................................... 20
Every great comeback story has its downside ................................................. 27
The pain ........................................................................................................ 28
Disturbing trends in South Africa ................................................................. 32

(II) The Politics: Sound bites vs sound analysis ............................................ 35
Conclusion .................................................................................................... 46
Appendix ....................................................................................................... 52
A fly in the ointment: Productivity growth, job loss and the NPI

"There are people who argue that if you improve productivity you put people out of work. Yet you must have economic growth because a stagnant economy does not produce more job opportunities. It is a chicken and egg situation, but in the long term the temporary inconvenience to some people must be subject to the needs of the national economy." (Dr Jan Visser, Chief Executive of the National Productivity Institute (NPI) quoted in Financial Mail, Supplement 16 September 1983, p.21)

Introduction

When productivity grows, its impact on employment is of more than passing interest to a number of constituencies, not least among them workers. In this matter, as in so many others, economists' findings are somewhat equivocal, a not unsurprising state of affairs, given the difficulty of measuring accurately the precise impact of productivity changes. There seems to be fairly general agreement that in the long run, productivity growth and employment growth are positively related. It is recognised however, that in the short run, the two are often negatively related. It has long been known as well, that productivity grows at different rates (either positive or negative) in different firms and industries. These micro-level changes underlie the aggregate results reported for any economy. To survive, those industries or firms falling behind simply have to increase productivity. One of the common ways of achieving this is by reducing the size of the labour force (for declining industries, this is usually a sine qua non). Under prosperous conditions, this need occasion no great hardship—those losing their jobs may soon be absorbed into sectors of the economy that are growing. When, however, economic conditions are slack, displaced workers can suffer lengthy periods of unemployment.

This paper has two goals—firstly, it seeks to show, theoretically and empirically, that rising aggregate productivity in an economy is consistent with rising unemployment and falling absolute levels of total employment.1

1 The first version of this paper was presented at the NPI’s EBM (Economics, Business and Management) Conference at the Rand Afrikaans University in November 1994. Its reception by the NPI was not rapturous. An abbreviated version with the title “Productivity growth and job loss: A temporary inconvenience?” was published by SANER (The South African Network for Economic Research) as Occasional Paper No. 4. At the suggestion of the (anonymous) referee, the SANER paper confines itself to the ‘economic’ analysis, i.e., that part of the paper dealing with the first of the two goals spelled out above. My view is that both goals are equally important—the analysis of the NPI’s interventions at the level of ideology is therefore presented in full in this paper. The referee’s generous comments are acknowledged with thanks, as are those of Imran Valodia. Where possible, improvements suggested have been incorporated into both papers. Naturally, the errors that remain are my own responsibility.
These unpleasant circumstances may endure for several years, making the ‘short run’ uncomfortably long. Secondly, the paper attempts to analyse the way in which the National Productivity Institute (NPI), a quasi-state non-profit company charged with the responsibility for promoting productivity improvements in South Africa, has dealt with this awkward reality. It is contended that despite the NPI’s frequently-voiced concern about the undesirability of productivity improvements leading to the loss of jobs, the ambivalence of their communications on the subject points to problems in the NPI’s conceptualisation of its role in facilitating productivity improvements in the South African economy. Instead of pursuing vigorously the research agendas suggested by experience elsewhere, and indeed, by the agendas hinted at in the occasional piece of NPI writing, the organisation has treated justifiable worker concern over this issue with considerably less urgency than it has deserved.

The first part of the paper looks briefly at three simple stories that economics has to tell about the impact of productivity growth on employment. The first of these, drawn from conventional economic theory, has a virtuous circle of rising real wages, rising employment, and rising investment being generated after an exogenous positive productivity improvement (shock) is experienced. A similar event in the second story, a model built around imperfect product and labour markets, yields indeterminate results, with rising productivity, rising wages and falling employment as one possibility. The third approach draws attention to the paradoxical (dialectical) nature of economic process in capitalist economies to show that perverse (unintended) outcomes may easily result from the pursuit of seemingly virtuous individual ends.

Following this excursion into the abstract underpinnings of competing claims offered about productivity, a brief examination of the experience in certain OECD countries is made (roughly comparable figures for South Africa are also considered). The results suggest that episodes of rising productivity coinciding with falling employment are far from uncommon. Whether or not employment rises or falls in the short- to medium-term when productivity increases would seem to depend heavily upon prior conditions in the economy concerned.

2 There seems to be general agreement that at least in the short term, productivity improvements can raise unemployment levels. Sources as disparate as the United Nations Industrial Development Organisation (UNIDO) and the NPI itself are cited in support of this proposition. That being so, one may well ask what the point is of delving into economic theory, or of performing the empirical work necessary to confirm a view which already enjoys widespread acceptance? The answer is that the exercise takes us into relatively uncharted territory where terms such as long-term and short-term are used without precision, seemingly with insufficient regard to the welfare of those affected negatively by productivity changes.
Differential rates of productivity growth are, as noted above, part and parcel of the growth of capitalist economies. With them, come reallocations of labour between sectors of the economy. Conditions for workers expelled from a sector in which productivity growth outstrips demand growth are unlikely to improve unless they can move into alternative job opportunities (either existing or new) providing the same welfare. Whether or not this occurs is a matter of some controversy. An empirical analysis of the extent of worker reallocation in Germany, accompanied by an analysis, from a conservative source, of labour’s response to similar processes in the USA suggests that increasing productivity, at least in the medium-term, may be a mixed blessing.

Before proceeding with the attempt to discern, from published documents, what the NPI has had to say on the question of productivity and job loss, some of the evidence on the relationship between the two in South Africa at industry or sector level is examined. Unfortunately the poverty of South Africa’s statistics makes it impossible to say for certain whether or not productivity growth has been associated with rising unemployment. In any case, even if it had been, the peculiarities of the past two decades in this country militate against the drawing of any simple conclusions. This notwithstanding, however, South Africa shares with many other countries, a history of reductions in employment levels in parastatals and government business enterprises, brought about by the processes of commercialisation or privatisation. In a period in which little private-sector employment creation has taken place, this method of raising productivity is problematic.

(I) The economics: two simple models, plus one, not-so-simple model

Before commencing, a word is needed about the level of complexity (perhaps it would be more accurate to say the level of simplicity) at which the theory is presented, namely, one at which no competent first-year student of economics should experience difficulties of comprehension. There are several reasons for this. Perhaps the best of them is that socio-economic reality is so complex that general theories conjured up to explain particular phenomena usually need increasingly heavy qualification as they confront the disparate experiences of particular economies at particular moments. Highly abstract theory can serve as a crude first approximation, a sorting device to lump together apparently similar experiences. Satisfactory explanation of each individual episode will generally require subtle and
dense analysis, often with data of indifferent quality. As has so often been pointed out, in economics and other sciences, several theoretical models may explain any observed phenomenon, so that even after one has formulated an analysis and attempted to substantiate claims, doubts remain. To back up the claims made in this paper, evidence from South Africa and from more than a dozen OECD countries is called upon. It is extremely unlikely that the crude models to be offered below do justice to that evidence—all they can do is offer a pointer to areas requiring investigation.3

Somewhat less obviously, simplicity (a simplistic approach?) is appropriate because so much of what constitutes the common sense of the matter appears to be grounded in ‘knowledge’ of that form. One would hope that no sensible economist would subscribe to the caricature of the Neo-Classical model presented below. Notwithstanding its unreality, however, the model furnishes, for conventional economics, a base from which its essentially prescriptive message can be transmitted. The message says that everything would be for the best in the best of all possible worlds if only there were pure or perfect competition, especially in labour markets.4 This optimistic view of the world, it is argued below, is implicitly what informs the NPI position on the question. The messiness of reality is semantically reduced, as the passage cited immediately under the title of this paper suggests, to a ‘temporary inconvenience’.

In the spirit engendered by these currents, the first two theoretical models to be presented, although offered in highly simplified form, have something interesting to say about the question. They have been adapted from the discussion in Carlin and Soskice (1992). The first is the straightforward conventional labour market model in which perfect competition reigns in the factor and product markets (see Chapter 1). The second, which does not

---

3 The question of the impact of productivity changes on the level of employment in the short-to medium-term is a subset of the macroeconomic literature, in particular, that on unemployment. The complexity of that topic is well illustrated by the work of Layard, Nickell and Jackman (1991), with its 500 or so references, and its sustained attempt to ground its macroeconomics in a rigorous microeconomics. Although not as extensive as the general question of unemployment, the issue at stake here would certainly require more space, if it were to be theorised adequately, than is allotted to the whole of the present paper.

4 It is an enduring irony that behind the search by practitioners of conventional persuasion for a ‘positive’ economics lurks always, this decidedly normative stance. Thus, though there may be a temptation to smile indulgently at the crudeness of the story in its neo-classical guise, it is a good idea to suppress such impulses. There are powerful, well-placed individuals, who, though they may not believe that the world is organised in this way, believe strongly that it should be, and hence advocate policies aimed at pushing it in that direction. Such people are likely to have a strong anti-union bias. Their policy prescriptions include such age-old favourites as laws against ‘combination’. It seems likely that the degree of commitment to one or another of the two views to be examined below would be a good indicator of the degree in which productivity improvement is conceived of by different commentators as unproblematically ‘good’.
enjoy universal acceptance (see Chapter 6), is based on imperfectly competitive factor and product markets. Since it is not likely that perfectly competitive labour markets are to be found in many places (and especially not in South Africa), and since it is known as well, that many product markets are characterised by imperfections (even though such markets may, in principle, be contestable), it would seem rather obvious that the way to examine the relationship between productivity improvement and job growth/job loss is through models that treat market imperfections seriously.

Virtuous circles

The simple macro model presented below can use either the standard neo-classical assumptions or the assumptions used to create the Keynesian synthesis to achieve roughly the same outcome. Since we are concerned only with an improvement in productivity and a consequent increase in real wage and employment levels, disputes over downwardly sticky wages (and prices) are of no relevance. In other words, both perfectly competitive product and factor markets may be assumed. For convenience, both versions of the model are shown on the same diagram—Figure 1 below. We begin with an initial (full employment) equilibrium in the labour market yielded by the labour demand curve $E^D_0$ and the supply curve $E^S$ at real wage level $W_0/P_0 = w_0$ and employment level $E_0$. In the product market the aggregate supply curve would take the usual vertical form in the classical approach $AS_o$. Its Keynesian counterpart is $AS(K)_0$. As will be seen, it makes no difference which is used here. The aggregate demand curve $AD_0$ is the same in both cases. Initial equilibrium is at price level $P_0$ and output level $y_0$. In the upper quadrant, the IS/LM curves are shown. With initial positions of $LM_0$ and $IS_0$ an interest rate of $r_0$ results.

Now let an exogenous increase in productivity shift the short-run production function from $f(E_a)$ to $f(E_b)$. This could take place without any increase in the capital/labour ratio simply by a change to more effective ways of working. The simultaneous introduction in all the firms in this economy of co-operative methods of work organisation such as those suggested by the NPI could effect such a change.

---

5 It is assumed that when the real wage rises, the income effect will outweigh the substitution effect. This will generate the traditional upward-sloping labour supply curve.

6 The weak foundations of the aggregate demand curve, the outcome of the 'Keynesian' compromise that permits a supply and demand diagram for the whole economy to be drawn that is analogous to its microeconomic counterpart, are ignored here. For a critical view, see Nell (1996, pp.42-44).
Since output at every level of employment is higher, the aggregate supply curve shifts to $AS_1$ ($AS(K)_1$). Price level falls to $P_1$. The demand curve for labour shifts to $E^{D1}$. Output rises to $y_1$ and the real wage rises to $w_1$. The real wage increases both because price levels fall while the nominal wage is assumed to remain unchanged and also because market demand for the now more productive labour has risen. Assuming that investment is interest sensitive, the shift in the LM curve from $LM_0$ to $LM_1$ induced by the fall in the general price level from $P_0$ to $P_1$ will cause a rise in the level of investment (presumably reflected in the movement along $IS_0$).\footnote{A problem I have with this notion is that the short-term, the period during which all these changes are assumed to be taking place, is supposed to be that period during which the stock of capital in unchanged. Does this imply that the IS curve should be vertical? Clearly, this problem is artificial—resulting as it does from the timeless world}
A second-round set of effects (if one can conceive of such a thing in a timeless world) is then set in motion. In the classical (neo-classical) model the level of output is determined by the supply of labour—an increase in that supply from $E^{D0}$ to $E^{D1}$ as a result of the productivity improvement will result in a further round of increases in output. That will cause a further increase in output, and hence another fall in prices and the rate of interest. This, in turn will set off another round, and so on. I assume that decreasing returns to the fixed factor labour (augmented though it may well be by the additional capital invested as a result of the drop in the interest rate) will eventually bring the expansion to a halt. In other words, providing all of the relevant elasticities have the appropriate magnitude, a positive productivity shock should cause the economy to converge on a new higher equilibrium output level. Perpetual expansion can be built into the model by introducing a dynamic entrepreneur whose innovations have a similar effect to the positive productivity shock.

Output levels in the Keynesian model will be demand-driven, but as long as investment is interest sensitive, the same conclusion will emerge. One slight difference is that a multiplier effect will be operative. One would hope, however, that the equilibrium level to which the economy converges is similar to that attained when the classical assumptions are used. In other words, both approaches have the economy functioning in such a manner as to generate a virtuous circle of rising productivity, growing output levels, increasing real wages, not to mention additional investment.

Imperfect competition—indeterminate outcomes

Move away from the cosy world of perfect competition, and the prognosis changes. Using a model adapted from Carlin and Soskice (1992, pp.136ff), in which there is imperfect competition in both factor and product markets, it is a simple matter to show that unemployment is one of a number of outcomes that can result from an improvement in productivity. In this conflict model, the economy settles at an unemployment equilibrium at the

---

8 It is clear that the shape of the labour supply curve determines whether or not, or to what extent this increase takes place. A vertical labour supply curve will stop the expansion in its tracks.

9 The unreality of this exercise makes debate around the issue seem a bit like hair-splitting.
point at which the competing claims between labour and capital to the economy's real income give rise to a constant inflation rate (or the NAIRU, non-accelerating inflation rate of unemployment, as it is commonly known).

For a given level of labour productivity, firms and workers claim part of the total income (total output per worker) as profit (or, more precisely, gross surplus) and wages, respectively. In the imperfect markets in which each operates, market power is used to raise prices and money wages as each attempts to realise its claim. Arguing that workers bargain over the real wage, it is suggested that their ability to extract increases is a function of the level of unemployment. Higher unemployment rates inhibit wage increases, thus the Bargained Real Wage ($BRW$) curve slopes upward to the right when plotted in real wage/employment space. The higher the expected price level $p^E$, the higher the money wage demanded.

The next task is to determine the shape of the Price Determined Real Wage ($PRW$)—i.e., the relationship between employment levels and the real wage implied by the process of the firm setting its price in relation to costs. In the absence of agreement on the manner in which price setting in imperfectly competitive product markets takes place, a pragmatic method of determining $PRW$ is put forward by Carlin and Soskice. They point to the fact that empirical evidence suggests that under conditions of imperfect competition, prices do not respond much to changes in demand (1992, p.140). That being so, they argue that the $PRW$ curve is probably flat along the relevant portion. They observe in a footnote, however, that the model still works even if a conventional downward-sloping price determined real wage is posited. For purposes of exposition, they also assume that labour productivity $LP$ and mark-up $\mu$ are invariant to changes in employment and output levels (1992, p.142). Once again, if either of these is downward sloping, the model can still be made to work. The basic model and the

---

10 Carlin and Soskice examine wage and price setting mechanisms at some length (1992, Chapter 17). For the present purposes, little of the details of these processes need be repeated here. A cautionary note is perhaps necessary though—without careful handling, the deployment of some of the theoretical tools available can easily deteriorate into reactionary anti-unionism. An example is the 'insider/out sider' position (Lindbeck and Snower, 1986; Snower, 1995) which locates the power to raise wages and hence to cause unemployment far and square on unions. It seems only reasonable to point out that there are many reasons why management raises wages above their market clearing level. Grouped together under the rubric of the efficiency wage hypothesis, several of these are discussed in Snower (1995, p.118n, and in Carlin and Soskice (1992, pp.401-402). If, for any reason, a non-market clearing wage is set by an employer (an efficiency wage), similar results to those presented above will be generated. Incidentally, the Snower piece cited here contains a probing discussion of the Keynesian 'short-run', the period during which wages and prices are sluggish (1995, pp.114-116).

11 Some discussion of the results of attempts to estimate the bargained real wage (which appears to differ widely across countries), is given in Table 6.1 of Carlin and Soskice (1992, p.139).
impact on it of a positive productivity shock similar to that applied to the previous model are illustrated in Figure 2.

Figure 2

Given the conflicting goals of capital and labour (claims on total income exceed total income over part of the range of $PRW$ and $BRW$), it comes as little surprise to discover that an unemployment equilibrium results. The rate of unemployment is determined, somewhat unsatisfactorily, by the difference between the equilibrium employment $E_0$ and a notional labour force size $LF$.\(^{12}\) The initial employment equilibrium of $E_0$ and real wage of $w_0$ is set by $LP_0$, $PRW_0$ and $BRW_0$. The problem of the extent of equilibrium unemployment is not of concern here—our task is to discover the impact of the productivity shock. The immediate impact will be to shift $LP_0$ to $LP_1$. If prices do not respond much to changes in demand, and likewise, demand does not respond much to changes in prices over some range of output levels, then one possibility is that the imperfectly competitive firms will

---

\(^{12}\) One difficulty in conducting empirical analysis of the impact of productivity changes is the fact that independently of such changes, the aggregate supply of labour and the economic participation rate may themselves undergo change for other reasons. This means that in practice, rising productivity may coincide either with rising, static, or falling absolute levels of employment and rising rates and/or levels of unemployment.
attempt to appropriate the implied increase in output per worker in the form of additional profits. Profits per worker then, instead of being equal to \( w_0L_P_0 \), would equal \( w_0L_P_1 \). If, however, workers are aware of the productivity increase, one may expect them to bargain for what they regard as their fair share of the spoils. This could have the effect of driving \( BRW_0 \) up to \( BRW_1 \). This in turn could cause firms to push up prices, thus shifting \( PRW_0 \) up to \( PRW_1 \). Depending on the relative elasticities, employment levels could either rise, fall, or remain the same. For purposes of argument, a fall in employment to \( E_1 \) is illustrated. In this model, it is clear that one cannot specify \textit{a priori}, the effect on employment levels of an improvement in productivity.

Rather obviously, it is necessary to extend the model by inserting it into a capitalist world punctuated by business cycles of varying degrees of severity.\(^{13}\) Capitalist accumulation, far from being a process that proceeds relatively smoothly, is instead punctuated by recurrent crises. Crudely put, the crisis (a turning point between epochs) purges the system to some extent of previous blockages.\(^{14}\) A particular economy would thus be characterised

\(^{13}\) Prior to about 1970, the belief that the business cycle had finally been beaten was held with such confidence that one found economists of the stature of Paul Samuelson (a Nobel laureate) stating that: “The National Bureau of Economic Research has worked itself out of one of its first jobs, namely business cycles” (Samuelson, cited in Mandel, 1980a, p. 9).

What Samuelson was referring to was the relative tranquillity of the long growth period enjoyed by most economies after World War II. Whilst the cycle was still present in all economies, in most of the advanced capitalist economics industrial production never fell in absolute terms between 1960-73. In this long boom period economic growth (and productivity growth) standards were established against which more recent performance is measured. This period came, however, to an end in the mid-70s. Although most economies have recovered (some less than others), the radical restructuring embarked on by right wing governments that came to power in the wave of reaction against endemic crisis, has left a legacy of massive unemployment in several OECD countries.

\(^{14}\) Within Marxist theory, the concept of ‘crisis’ itself is in some need of an overhaul, or at least of clarification. The standard meaning of the term ‘crisis’ in Marxist theory is that of “...a turning point” (Marx, \textit{Das Kapital Volume III}, p.255; Junankar, 1982, p.146n) as Gelb points out, rather than “...a terminal disease” (1991, p. 8). A mental leap is required to expand the relatively short period implied by the notion of a ‘turning point’, to an epoch which could last for two or more decades. de Vroey offers a distinction (by no means new, he notes) between “cyclical” and “structural” crises—the former being the “...traditional conjunctural evolution: a particular phase of the cycle...”, whereas the latter refers to “...a dysfunction of the specific institutions and social processes forming a given regime of accumulation” (1984, p.53). Lipietz comments that: “...an economy is in serious crisis when its mode of regulation does not any longer guarantee stable accumulation. But since the world carries on during a crisis (as for example it has since 1973) why not talk of a regime of crisis, as some talk of dependent development?” (1984, p.106n)

Analysis of ‘regimes of crisis’ (and regimes of non-crisis) as variations in the form of the trajectory of capitalist development is a venerable pursuit within Marxist theory—the matter was addressed systematically (but using different terminology) as early as 1921 by Trotsky. He wrote that:

“This is the schema in the rough. We observe in history that homogeneous cycles are grouped in series. Entire epochs of capitalist development exist when a number of cycles is characterised by sharply delineated booms and weak, short-lived crises. As a result, we have a sharply rising movement of the basic curve of capitalist development. There obtain epochs of stagnation when this curve while passing through partial cyclical oscillations, remains on approximately the same level for decades. Finally, during certain historical periods the basic curve, while passing as always through cyclical oscillations, dips downward as a whole, signaling the decline of the productive forces” (cited in Mandel, 1980b, pp 127-128).

Mandel points out that Trotsky “...even gave concrete specifications” for studying these epochs—specifications which, according to Mandel, have a “striking” emphasis on:
over time by different levels of non-competitiveness, which themselves would differ from sector to sector, industry to industry, and firm to firm, depending on factors ranging from the state of the international economy, to the level of class struggle in the domestic economy.

A start in the process of addressing the question of which of these two very crude models gets closest to the truth is made when it is shown below that the predictions of those who implicitly make use of something approaching the crude perfect competition-based model spelled out above, are empirically falsifiable. Although that cannot be taken to mean that the imperfect-competition model is correct, it does confirm that conventional economics, with its excessive optimism over the virtues of the market, is not up to such a task in the simple forms in which it is often deployed. Two steps are necessary at this point. The first of them, as pointed out above, is a merging of the abstract theoretical proposition that imperfectly competitive product and factor markets could give rise to job loss when productivity improves, into a more general set of theoretical propositions linking changes in productivity with the phases of the business cycle. A recent book by Edward Nell (1996) offers a perspective on the latter—linking that to the former is one of the tasks that would face a researcher tackling individual country studies. The second thing that is necessary is an opening up of the concepts of short-term and long-term.

The antinomies of the invisible hand

An integration of models of imperfect competition into a coherent theory of the business cycle is an ambitious undertaking—and certainly not one that can be attempted here. Suffice it here to amplify a little, the remarks made above about the contradictory nature of capitalist accumulation and the way

"...the need to go beyond the limitations of 'purely' economic data and to integrate into any serious investigation a whole series of social and political developments." (1980b, p.128)

15 In other words, the assumptions underlying the model (which everyone agrees are 'inaccurate' by virtue of the very fact that they are abstractions), are so 'inaccurate' that they generate incorrect predictions.

16 It is not only notions of imperfect competition and non-clearing markets that are absent. Douglass North, 1993 Nobel Prize winner in Economic Sciences, and no socialist, has claimed that: "Neoclassical theory is simply an inappropriate tool to analyze and prescribe policies that will induce development." According to North, what is wrong with neoclassical theory is its use of two erroneous assumptions: "(i) that institutions do not matter and (ii) that time does not matter..." (North, 1994, p.359) Paraphrasing North, it could be claimed with equal force that: 'Neoclassical theory is simply an inappropriate tool to analyze and prescribe labour market policies'.

17 In the field of conventional economics, recent developments in business cycle theory are reviewed in Sims (1996).
in which unemployment emerges as an unintended consequence of that accumulation. Nell’s relatively simple macroeconomic model embodies good old-fashioned dialectical causality. The relevant passage is so short that it is transcribed verbatim—no attempt is made to summarise an already succinct presentation. It is part of an extensive critique of conventional economics. He draws attention to the numerous paradoxical outcomes of what conventional neo-classical economics would regard as virtuous economic conduct. The best-known of these, of course, is the paradox of thrift, but there are many others—productivity improvements, for example. This is what he says:

“Demand and productivity are related in contradictory ways. On the one hand high demand provides a strong stimulus to increasing productivity - it means, for example, that it would be worthwhile to undertake a possibly costly reorganization; it means that it will pay to push the system hard, to remove slack, to tighten up discipline, and above all to work, not hard, but smart. So strong demand tends to generate rapid rises in productivity. But then another effect comes into play: rises in productivity tend to weaken demand, by reducing the indirect or multiplier effects of spending. If the production capacity of existing facilities can be increased by reorganization of equipment and by rethinking procedures, then why build a new one? Building a new plant increases the demand for labour; renovating existing plants may be done largely by the existing labour force. Building new plants generates demand for all kinds of supplies and equipment, construction materials, heavy engineering, earth moving machinery and everything from heating systems to new windows and flooring to doorknobs and typewriters. Renovation may just involve closing down the plant while the existing labor force moves things around and installs some new parts - or, more likely, a new computer-driven control system - which will enable it to run faster, or make longer and more flexible production runs. Building new plant increases aggregate demand while adding to capacity; renovation increases capacity but adds little to aggregate demand.

So heavy demand leads to rising productivity, which in turn weakens demand, by reducing the multiplier, and slowing down or delaying investment spending.18 (Rapid growth also tends to bid up the interest

---

18 At this point in the text there is a footnote citing Taylor (1991), that reads as follows:

“Structuralist macroeconomics sometimes suggests that investment should be seen as depending both on profit potential - costs and prices - and on expected demand. So a fall in costs/rise in productivity would, or might, increase investment. This seems to imply that higher potential profit would call forth more investment, even if expectations of sales were weak or declining. Replacement investment, maybe - it makes sense to replace old
rate, another factor that tends to weaken investment.) Thus after a time demand will tend to fall off, and excess capacity and unemployment will rise to dangerous levels. This will lead to serious pressure for scrapping and reorganization, leading to pressures encouraging innovation. When innovation brings new methods of production and new products, old factories become obsolescent, and new factories will have to be built - it won’t be enough just to renovate. At this point an investment boom will begin, and demand will rise. Thus a cyclical pattern can be seen here: demand will rise in an investment boom, leading to rising productivity; which (in conjunction with rising financial costs) will dampen demand by weakening the multiplier and curtailing investment, leading to a downswing and slump, intensifying the pressure to innovate, and the innovations, when they develop sufficiently, will set off another investment boom.” (Nell, 1996, pp.67-68) (Emphasis in original)

Some unease may be felt about the assertion that innovations will lead to renewed investment. A similar view in Marx’s theory of the business cycle is argued by Junankar (1982, p.144) to have about it a ‘bootstrap’ character. Economic downturns (and upturns) are, in truth, much more complicated. Regulation theorists capture some of this complexity, noting in particular that even if the necessary steps towards restructuring the institutions of the economy are taken, there is no necessity that the conditions for profitable accumulation will be restored (Lipietz, 1984, pp.86-87).

Emerging from the theoretical excursus above (and bearing in mind the possibility that periods of slow or negative growth may be of lengthy duration) is the hypothesis that rising productivity itself can bring about conditions that, for a while, will extinguish further growth possibilities, bringing unemployment in and falling productivity in its train. To overcome the obstacles which this poses for further accumulation, moves to increase productivity (reduce costs) are imperative. Cutting labour costs is the most obvious strategy.

We now have two different causal mechanisms that will cause rising productivity to be associated with falling employment and rising unemployment. Of the two, the dynamics of accumulation, as it is conventionally understood by Marxists, is probably more important than
imperfectly competitive markets, though these could doubtless exacerbate the crises which are so much a part of capitalist accumulation. In short, imperfectly competitive markets, especially labour markets, may be a sufficient condition for generating the outcomes postulated here—they are not, however, necessary.

Instances of rising productivity/falling employment/rising unemployment drawn from such evidence as comes readily to hand will now be presented. Until much finer analysis is conducted on them, these events must be acknowledged merely to have been identified, not explained. Detailed examination (conjunctural analysis) is required before it may be said with confidence what the causes of each was. Prime suspects remain the process of capitalist accumulation itself, followed by imperfections of competition.

**How long is a temporary inconvenience?**

It turns out to be surprisingly easy to find evidence amongst the member countries of the OECD—the most advanced capitalist economies—of productivity growth being associated with a rising unemployment rate and falling absolute levels of employment. During the 16-year period 1978-93, 14 episodes of this type (in 12 countries) occurred. Their duration and severity are shown in Table 1. Some roughly comparable results from South Africa are also given in the table. Close consideration of these results is rewarding. It is important to note first of all, that on many occasions, productivity increases are secured not because output has grown, but

---

19 It might be objected that it is inappropriate to look to the experience of the most advanced capitalist countries for examples of the phenomena under consideration in this paper. Questions can also be raised about the time period selected. In response to the first objection, it is likely that of the middle-income economies with which South Africa might be compared, some will undoubtedly have poor records—combining slow-growing productivity with falling employment levels and rising unemployment, probably disguised as under-employment. Others, the so-called East Asian ‘tigers’, for example, will have excellent records of productivity growth coupled with rising employment levels and falling unemployment rates. The issue of why some succeed where others fail is the subject of a voluminous debate (Singh, 1995a) that does not concern us here. The reason why advanced capitalist countries were selected had nothing to do with this debate—they were chosen because data, of reasonably comparable quality, giving reasonably reliable unemployment estimates, are readily available. If Marxist theories of capitalist accumulation are correct, then even the rapidly-growing NICs may be expected to experience economic crisis, possibly of lengthy duration. When that happens, ‘modern-sector’ jobs will, in all likelihood, shrunk in number as firms strive to raise productivity. The absence of comprehensive social security networks will mean a rise in informal economic activities, masking the unemployment that would become visible in (some?) advanced economies. Mexico’s unemployment statistics are a case in point (Fleck and Sorrentino, 1994). On this head, Eatwell (1995) argues that the apparently greater success of countries such as the USA in creating employment, widely attributed to its more ‘flexible’ labour markets, is an illusion—what is created, he argues, is disguised unemployment, in the form of low-wage, low-productivity employment. As to the time period chosen, it covers the era after capitalism’s ‘golden age’ has come to an end (Eatwell, 1995, p.67; Singh, 1995b), a period marked by the accession to power of conservative regimes, almost without exception unopposed to phases of rising unemployment as a means of disciplining labour.
because employment has declined more than output has fallen. In two instances, Germany in 1982 and Belgium in 1983, unemployment rose from the previous year, employment levels fell, but productivity did not rise. The bout of falling productivity was, however, bracketed in each case by conditions which meet the stringent requirements laid out above, so the years episodes are not excluded.

Given the fact that apart from South Africa, twelve countries appear in the list, the condition (rising productivity, rising unemployment and falling total employment levels) could possibly have been observed on 192 separate occasions. A tally of the number of times when it does do so reaches 55. In other words, somewhere between one quarter and one third of the period (about 29 per cent) was spent in this lamentable state. Two countries, Germany and the UK, each experience two episodes. In the UK case, seven of the 16 years are passed in this way. The worst cases are Spain and Denmark. Spain records a fall in output in only one year, but employment falls for eight years in succession, trebling the rate of unemployment to the almost South African level of 21 per cent. Denmark’s experience is also interesting. Employment falls in each of six years, during which time output and unemployment both rise. The South African results, if we are to believe the figures on which they are based, offer no comfort to those who speak of ‘temporary inconveniences’.

20 The employment figures on which the results presented in Table 1 are based are for the ‘non-agricultural’ sectors of the economy. Nobody can say for certain, but it is likely that agricultural employment fell over this period. Those performing informal economic activities are excluded from the totals as well. Doubts have been expressed in several quarters about the reliability of both the output and employment statistics in South Africa. That is not of concern here. The NPI expressed no distrust of the official figures, so one must conclude that any analysis they might have undertaken would have yielded the same results, results which they would have accepted.
### Table 1 Percentage change from previous year in Employment, GDP and Unemployment Rate (%) in selected OECD economies and South Africa

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td></td>
<td>-0.1</td>
<td>-1.2</td>
<td>-1.4</td>
<td>-1.6</td>
<td>-1.8</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>1.8</td>
<td>-2.2</td>
<td>3.9</td>
<td>2.2</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>4.5</td>
<td>6.4</td>
<td>7.9</td>
<td>7.7</td>
<td>8.8</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td>-0.9</td>
<td>-3.4</td>
<td>-1.9</td>
<td>-0.2</td>
<td>-3.1</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>-2.2</td>
<td>-1.3</td>
<td>1.7</td>
<td>3.7</td>
<td>-2.0</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>5.3</td>
<td>8.3</td>
<td>9.7</td>
<td>10.5</td>
<td>11.0</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td>-0.6</td>
<td>-0.9</td>
<td>-1.9</td>
<td>-1.0</td>
<td>-0.2</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>4.3</td>
<td>-0.9</td>
<td>1.5</td>
<td>-1.7</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>7.9</td>
<td>10.2</td>
<td>11.9</td>
<td>13.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td>-0.6</td>
<td>-0.6</td>
<td>-1.0</td>
<td>-1.8</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>1.2</td>
<td>0.6</td>
<td>1.4</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>8.6</td>
<td>9.3</td>
<td>9.6</td>
<td>10.5</td>
<td>11.2</td>
</tr>
<tr>
<td>Iceland</td>
<td></td>
<td>-2.8</td>
<td>-1.6</td>
<td>-0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>-0.3</td>
<td>0.2</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>0.6</td>
<td>1.6</td>
<td>1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
<td>-0.9</td>
<td>0.2</td>
<td>-2.1</td>
<td>-1.8</td>
<td>-2.5</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>3.3</td>
<td>2.3</td>
<td>-0.2</td>
<td>4.4</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>9.9</td>
<td>11.4</td>
<td>14.0</td>
<td>15.5</td>
<td>17.4</td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
<td>-1.1</td>
<td>-2.1</td>
<td>-1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>-0.7</td>
<td>-1.5</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>6.9</td>
<td>9.5</td>
<td>11.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td></td>
<td>-0.4</td>
<td>0.8</td>
<td>-3.2</td>
<td>-2.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>0.7</td>
<td>-1.7</td>
<td>3.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>4.0</td>
<td>4.1</td>
<td>5.6</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td>-0.6</td>
<td>-3.0</td>
<td>-1.0</td>
<td>-1.0</td>
<td>-0.3</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>-0.5</td>
<td>0.6</td>
<td>1.7</td>
<td>1.6</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>3.2</td>
<td>4.9</td>
<td>5.2</td>
<td>5.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Spain</td>
<td></td>
<td>-1.7</td>
<td>-1.7</td>
<td>-3.0</td>
<td>-3.0</td>
<td>-1.3</td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>1.5</td>
<td>0.0</td>
<td>1.3</td>
<td>-0.2</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>7.0</td>
<td>8.6</td>
<td>11.5</td>
<td>14.3</td>
<td>16.4</td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td>-1.7</td>
<td>-4.1</td>
<td>-6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>-1.1</td>
<td>-1.9</td>
<td>-2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>2.9</td>
<td>5.3</td>
<td>8.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
<td>-0.1</td>
<td>-2.2</td>
<td>-2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GDP</td>
<td>0.0</td>
<td>-0.3</td>
<td>-0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemp. Rate (%)</td>
<td>1.1</td>
<td>2.5</td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td></td>
<td>-3.7</td>
<td>-3.6</td>
<td>-2.7</td>
<td>-1.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment-Private</td>
<td>-2.6</td>
<td>-3.2</td>
<td>-2.1</td>
<td>-0.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment-Govt</td>
<td>-1.8</td>
<td>-2.1</td>
<td>-2.2</td>
<td>-0.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment-Total</td>
<td>-1.1</td>
<td>-2.4</td>
<td>1.6</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>


Productivity did not grow in 1992, but for the three other years, the worst-case conditions were probably met. Although the latest attempts by the CSS at measuring unemployment in South Africa enjoy some credibility, there is no historical series for the period. The strong likelihood though, is that negative employment growth, allied to a substantial increase in the number of economically active, would have sent the rate of unemployment soaring.

**How long is the long term?**

Conventional economists, responding to expressions of concern over the possible impact of productivity growth on jobs have tended to take refuge in the long-term positive association of rising per capita GDP and the absolute numbers of workers on the one hand, and the absence of any systematic relationship between unemployment and productivity growth in the long-term on the other. As we shall see below, the NPI has dredged up a few quotable quotes from authorities in this matter. One of their favourites was 'Professor Richard Layard'. Here, from a different source than that usually cited by the NPI, is Layard, along with co-authors, Nickell and Jackman, commenting on the matter. Having examined the relationship over a very long period, they conclude that:

"...unemployment is untrended over the very long term... in the long term productivity [and taxes] have no impact on unemployment" (1991, p.5)

The obvious question, of course, is how long is the long term? Disagreements in economic debates are often exacerbated by a failure to spell out the implicit assumptions underlying positions adopted and to define the concepts used—the use here of the notion of ‘long term’ is a case in point. Is 20 years ‘long term’? In geological time, it would correspond to the nanosecond so important to the computer buff. In politics, it would be an eternity. In economics, it could well be ‘long term’.22 In support of the

---

21 The 1994 October Household Survey (Statistical News Release P0317 of 30 March 1995) was the first to cover the country as a whole. The 1993 October survey, which excluded the TBVC bantustans, replaced the old Current Population Surveys, execution of which ceased in 1990 because the survey results had fallen into disrepute.

22 In this paper it is claimed that market imperfections cannot be ignored when attempts are made to predict the impact on employment of changing productivity levels. Similarly, it is claimed that variations in the length of the time period under consideration are also potentially of great significance. It is also claimed that there are those whose analytical perspective can make the effects of concern here disappear. An example of this may be found in a disagreement between Samuel Bowles and Herbert Gintis (1990a) on the one hand, and Donald McCloskey (1990) on the other. In the quotes offered below, Bowles and Gintis were defending their contested labour markets approach (1990b)—one which also generates a less-than-full employment equilibrium—against criticism by McCloskey. He sought to reject their conclusions by arguing that the frictions and transactions costs in the labour market were similar to those in many markets. Citing the gold point—the gap between buy and sell prices of gold
claim that unemployment in the long term is untrended, readers of the work in question are referred to two diagrams plotting unemployment over time in the UK and USA. For the latter, the series stretches back for a century. For the UK, the series covers the period 1850-1990—that is the very long term. If, however, one turns to the statistical annexes provided by the authors and looks at, say, the 20-year period 1964-83 one finds that in several countries, unemployment appears to be most decidedly trended, and the trend is up. Table 2 shows what happened in 10 countries as the post-war growth spurt on which welfare capitalism was based, fizzled out. The table gives unemployment rates at the beginning and end of the period. It shows as well, in how many years during the period, unemployment was either static or declining. The relatively small size of each fall is reflected in the sum of these falls.

Selecting a particular year in which to commence an analysis is always attended by problems. In each of the economies in the table, the long recession takes hold after 1964. In most cases, the upward trend in the rate of unemployment does not set in firmly until 1970 or so, although early casualties like France and Canada point the way for the rest. To show this, the years in which the intermediate low points occur are given in Column 6. The recorded level of unemployment in this year is given in Column 7. Using this information, one may see that unemployment in Australia rose by 8.3 percentage points over the period 1970-83, while that in Belgium jumped by 10.0 percentage points between 1971-83.

at the same place and time, McCloskey claims that: "If you step back and squint, the gold points fade to insignificance... The same is true for labor if you squint a lot more." (Cited in Bowles and Gintis, 1990a, p.306) In their reply to McCloskey, they comment that:

"...if our empirical evidence is correct, one would have to do a whole lot of squinting to make labor markets appear to clear. By analogy, if we were geologists offering a theory of the distribution of mountains and river basins, McCloskey would be a critic observing that if you squint enough the Earth is just an oblate spheroid and the deviations we are concerned with are mere frictions! True, we would say, but irrelevant if you are planning a hike from Katmandu to Lhasa." (1990a, p.306) (Emphasis in original)

If we stand at some majestic distance from the day-to-day reality of the labour market, squinting at its performance over the very long term, the hoped-for positive relationship between productivity improvements and employment growth will emerge. Those deeply involved in struggles over wages and productivity are unlikely to have much interest in such a perspective—for them, it is the equivalent of the obstacles on the hike between Katmandu and Lhasa that are of interest. These obstacles manifest themselves in episodes of unemployment—the alternation of poverty and prosperity that characterise the differing phases of accumulation of the business cycle in capitalist economies.
Table 2 Rising trend unemployment in OECD countries, 1964-83

<table>
<thead>
<tr>
<th>Country</th>
<th>Unemployment rate (%)</th>
<th>No. of years in which unemployment rate is steady</th>
<th>Sum of falls (%)</th>
<th>Intermediate low point</th>
<th>Unemployment rate (%) in intermed. low point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1.7 9.9</td>
<td>2 7</td>
<td>1.4 1970</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>1.6 12.1</td>
<td>2 3</td>
<td>1.5 1971</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>4.3 11.8</td>
<td>2 5</td>
<td>2.8 1966</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>1.9 10.4</td>
<td>4 5</td>
<td>2.5 1970</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1.4 8.3</td>
<td>0 2</td>
<td>0.4 1969</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>4.7 14.0</td>
<td>0 8</td>
<td>3.5 1969</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>3.2 7.0</td>
<td>3 4</td>
<td>1.6 1974</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.7 12.0</td>
<td>3 3</td>
<td>1.0 1970</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>2.6 17.2</td>
<td>1 5</td>
<td>1.7 1975</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>2.6 12.5</td>
<td>3 5</td>
<td>2.8 1974</td>
<td>3.1</td>
<td></td>
</tr>
</tbody>
</table>

Source: Estimated from Layard, Nickell and Jackman (1991) Table A3, pp.526ff

Another way of interpreting the data confronting Layard and his co-authors would thus be to acknowledge the fact that the post-war consensus on full employment (buttressed by relatively rapid growth) yielded a flattish unemployment trend for roughly 15-20 years in many OECD economies, but that its collapse, and the onset of the productivity slowdown which is one of the hallmarks of the ensuing period, marked a point at which the trend of unemployment changed. The mid-1960s signals the beginning of the aforementioned end of capitalism’s golden age—the indicators are increases in unemployment, slow at first, but gradually accelerating to yield the full-blown crisis of the early 1980s. Not to draw attention to the conservative economic regimes which emerged in response to the turbulence of the times, and the sustained high rates of unemployment which accompanied the policies of austerity they pursued (with varying degrees of enthusiasm), is to tell only part of the story. For some purposes, it may be useful to insist that unemployment and productivity are not related over the long-term. Care, however, should be taken to spell out what, exactly, one means by the long-term.

Several uncomfortable facts must be faced—in the first place, as the simple imperfect competition model presented above suggested, the relationship between improvements in productivity and employment levels in the short-to medium-term is indeterminate—it cannot be specified a priori. In the second, the business cycle throws up adverse relationships between productivity growth and unemployment so frequently, and for such lengthy periods, that the timing of productivity improvement campaigns is obviously
critical. Launched at an inopportune phase of a downswing, it may exacerbate the regular crises to which the capitalist mode of production is susceptible. To embark with vigour on such a campaign, when, under conditions of economic and political distress there is little likelihood that the other structural reforms required to bring about economic recovery can be secured, is to display an unwarranted confidence in the efficacy of one’s policy prescriptions. This does not mean that falling productivity will protect jobs—on the contrary, it will probably lead to further job loss. With increasing globalisation, the possibility that any country can protect its enterprises against the inexorability of capitalist competition diminishes by the day. Thus although it is necessary to caution against the launching of ill-timed productivity improvement campaigns, it is necessary as well to recognise that the dull compulsion of international competition reduces the ability of national governments to protect their citizens against the vagaries of those forces. This is of special significance in countries with poorly-developed social security networks.

Decomposing structural change

Economics would be a lot easier if the reality it seeks to reproduce in thought could be depicted adequately using the ceteris paribus assumption. The dynamism of the labour market, for example, is exceedingly difficult to capture. Nonetheless, attempts have been made to decompose into the different effects, some positive, others negative, the movements that go to make up total employment changes. Net changes in employment are the result of changes in four inter-related variables, namely in productivity, technology, external demand (exports), and in internal or domestic demand and the way in which employers and workers (sometimes with trade union participation) respond to these changes. According to UNIDO, productivity improvements always destroy jobs, technology improvements may be either labour-saving or labour-absorbing, whilst increases in domestic and/or external demand always increase employment, and vice-versa (1986, p.100). Employment changes caused by changes in these variables will be accompanied by certain other changes that are less dependent on (or, in some cases, are independent of) them. The process of natural attrition, either through deaths, retirements, and exits from the labour force, or through labour turnover (many workers can move between industries or sectors, and not merely between firms) is part of a continual flow of workers into and out of industries. Changes in the four variables listed above also cause the structure of employment to change—this will
invariably be accompanied by changes in occupational status and wage patterns.

Total employment, either in the firm, the industry, the sector, or the economy as a whole, may either rise, fall, or remain constant (depending, rather obviously, on the phase of the business cycle) but any aggregate report of these outcomes always conceals a complex history of movements caused by the interaction of the variables discussed here. Structural changes occur continually in most economies—static economies are likely to be stagnant economies—though the process cannot be stopped, its worst effects can sometimes be ameliorated. A measure of democracy in any given country is the extent to which workers are protected against arbitrary hardship. From the worker point of view, what is important is the extent to which the movements between jobs, industries and/or sectors of the economy are voluntary. When a separation is involuntary, as happens, for example, when workers are displaced by technological advances or by productivity improvements, the nature of the social setting into which workers are ejected is a critical determinant of their well-being. In a hostile environment like that in South Africa, where unemployment is high, social security provision is primitive, and opportunities for retraining almost nonexistent, life is likely to be harsh.

Productivity and/or technological improvements not matched by increases in the demand for labour make certain groups of workers redundant. Productivity (and technological) improvements also cause changes in occupational and skill structures. In both instances, workers stand to be displaced when firms are unable or unwilling to redeploy them. Where natural attrition cannot be relied to resolve in humane fashion, the problem of this surplus labour, what happens then depends on the state of demand in the economy, and on the quality of the social security network. In some economies, substantial retraining and relocation schemes ease the transitions that workers have to make.23 In others, workers are left to bear alone the burden of moving from relatively well-paid jobs in say, manufacturing, to relatively poorly-paid work in the service sector.

A report of the President’s Council which examined the question of productivity in South Africa makes reference to the need to retrain displaced workers,24 and quotes one source which suggests that most jobs will be

---

23 A table summarising the types of benefits available to aid occupational and geographical mobility in more than 20 countries in the mid-1980s is given in ILO, 1987, pp.146-147.

24 See P.C. 1/1989, para. 5.177, p.197 for discussion on redundant public sector workers, and para. 6.27, p.256 for workers displaced because of structural change.
"...restructured every seven years", and another stating that "...four out of five people in the developed world will have their jobs significantly changed by the information revolution within another five years" (P.C. 1/1989, para. 3.10, p.76). The social implications of these changes are vast, and probably not very well understood anywhere. Certainly in South Africa, there is little known about the extent of the problems caused by structural change, nor are there any facilities of consequence for dealing with them. In the face of massive structural unemployment, the unfortunate side-effects of the sustained campaign conducted by the NPI to improve productivity in South Africa may simply be invisible.

Since no data are available to illustrate the point in the South African case, it is necessary to look abroad. A series of studies conducted by UNIDO provides an example—in the form of a snatch of the economic history of West Germany (between two deep recessions), which is considered in some detail below. In Table 3, the results of an attempt to analyse total employment changes in the West German economy in disaggregated terms are reproduced.

During the period concerned (1975-80), GNP grew at a rate of about 3.4 per cent per annum (compounded) (IFS, 1990, p.373) and the index of output in manufacturing grew at the rate of about 3.8 per cent per annum (UNIDO, 1988, p.A-34). Net change in employment in this table is the result of changes in the four inter-related variables discussed above—in productivity (Column 7), in technology (Column 6), in external demand (Column 5) and in internal demand (Column 4). Considered in its entirety, the picture presented here does not look too discouraging—the increase in employment (505 000 jobs) a modest growth rate of about 0.4 percent per annum, was accompanied by a slight fall in the rate of unemployment—from 3.6 to 3.0 percent (OECD, 1984, Table R12).

Productivity

25 The methodology used to perform these calculations is not described at great length in the source. In any event, the details do not concern us here. Brief reference is made to the fact that the employment changes derive from an exercise performed using input-output tables. Changes due to technology are obtained from changing material input coefficients—changes due to productivity improvements/deteriorations from changing labour coefficients (UNIDO, 1986, p.102). The authors draw attention to the fact that expansion in one industrial sector affects output and employment in other sectors—the impact on the original sector is termed the 'direct' and on other sectors, the 'indirect' effect. The study estimates employment effects (the sum of direct and indirect effects) for all imports and exports of manufactured goods. Presumably the same technique is used for all other sectors as well, although this is not absolutely clear from the study (1986, pp.102 and 106). The UNIDO results are said to be similar to those derived by Driver et al (1984) for the UK also using an input-output approach. For a discussion of the importance of estimating indirect employment effects (using input-output tables), see Krishnamurty (1985).

26 According to this source, it leapt up from this relatively modest level to the 6.1 per cent reported in Table 5 below. Estimates of the level of unemployment in Germany differ—the rate reported depends on the source. See for example, the differences between the standardised rates estimated by the OECD, and those given in Schneider,
improvements meant that job losses occurred in 24 out of 36 industries, with a total 585,000 jobs gained in the process versus 3,470,000 lost. 27

1991, p.337. The latter source uses official German data based on card-files of labour exchanges—see Table 5b, p.399.

27 In industries where job losses are not reported under the 'Productivity' heading (Column 7), productivity growth will have been negative. This occurs in 12 out of 36 cases. In several of these industries, it will be noted, technology changes (Column 6) have large negative impacts on employment.
### Table 3 Factors determining employment change: Federal Republic of Germany 1975-1980 (Thousands of persons)

<table>
<thead>
<tr>
<th>Branch</th>
<th>Employment levels 1975</th>
<th>Employment levels 1980</th>
<th>Net change</th>
<th>Employment change caused by changes in Demand</th>
<th>Employment change caused by changes in Demand</th>
<th>Technology</th>
<th>Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1759</td>
<td>1422</td>
<td>-337</td>
<td>37</td>
<td>-23</td>
<td>35</td>
<td>-387</td>
</tr>
<tr>
<td>Coal and coal products</td>
<td>244</td>
<td>195</td>
<td>-49</td>
<td>-12</td>
<td>-21</td>
<td>-161</td>
<td>144</td>
</tr>
<tr>
<td>Oil and oil refining</td>
<td>40</td>
<td>238</td>
<td>-2</td>
<td>-5</td>
<td>1</td>
<td>-3</td>
<td>5</td>
</tr>
<tr>
<td>Utilities</td>
<td>225</td>
<td>260</td>
<td>35</td>
<td>74</td>
<td>-2</td>
<td>26</td>
<td>-64</td>
</tr>
<tr>
<td>Sub-total</td>
<td>509</td>
<td>493</td>
<td>-16</td>
<td>57</td>
<td>-21</td>
<td>-138</td>
<td>85</td>
</tr>
<tr>
<td>Basic metals</td>
<td>444</td>
<td>396</td>
<td>-48</td>
<td>52</td>
<td>-15</td>
<td>-11</td>
<td>-73</td>
</tr>
<tr>
<td>Mineral products</td>
<td>419</td>
<td>393</td>
<td>-26</td>
<td>38</td>
<td>-5</td>
<td>-24</td>
<td>-35</td>
</tr>
<tr>
<td>Chemicals</td>
<td>540</td>
<td>508</td>
<td>-32</td>
<td>80</td>
<td>35</td>
<td>-29</td>
<td>-118</td>
</tr>
<tr>
<td>Metal products</td>
<td>884</td>
<td>922</td>
<td>-62</td>
<td>184</td>
<td>33</td>
<td>-305</td>
<td>-26</td>
</tr>
<tr>
<td>Machinery</td>
<td>112</td>
<td>1075</td>
<td>-46</td>
<td>46</td>
<td>-26</td>
<td>77</td>
<td>-143</td>
</tr>
<tr>
<td>Office machinery</td>
<td>287</td>
<td>301</td>
<td>14</td>
<td>51</td>
<td>-26</td>
<td>24</td>
<td>-35</td>
</tr>
<tr>
<td>Electrical machinery</td>
<td>1106</td>
<td>1072</td>
<td>-34</td>
<td>82</td>
<td>4</td>
<td>37</td>
<td>-149</td>
</tr>
<tr>
<td>Automobiles</td>
<td>556</td>
<td>642</td>
<td>86</td>
<td>50</td>
<td>74</td>
<td>-48</td>
<td>-11</td>
</tr>
<tr>
<td>Shipbuilding</td>
<td>119</td>
<td>132</td>
<td>13</td>
<td>44</td>
<td>-33</td>
<td>10</td>
<td>-8</td>
</tr>
<tr>
<td>Meat products</td>
<td>140</td>
<td>143</td>
<td>3</td>
<td>30</td>
<td>10</td>
<td>-3</td>
<td>23</td>
</tr>
<tr>
<td>Dairy products</td>
<td>59</td>
<td>69</td>
<td>10</td>
<td>-9</td>
<td>8</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Food products</td>
<td>425</td>
<td>440</td>
<td>15</td>
<td>19</td>
<td>7</td>
<td>84</td>
<td>-93</td>
</tr>
<tr>
<td>Beverages</td>
<td>211</td>
<td>190</td>
<td>-21</td>
<td>13</td>
<td>-8</td>
<td>39</td>
<td>-13</td>
</tr>
<tr>
<td>Tobacco</td>
<td>38</td>
<td>38</td>
<td>0</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Textiles</td>
<td>795</td>
<td>681</td>
<td>-113</td>
<td>98</td>
<td>-41</td>
<td>-92</td>
<td>-78</td>
</tr>
<tr>
<td>Leather products</td>
<td>118</td>
<td>109</td>
<td>-10</td>
<td>22</td>
<td>-26</td>
<td>27</td>
<td>-21</td>
</tr>
<tr>
<td>Wood products</td>
<td>443</td>
<td>441</td>
<td>-2</td>
<td>40</td>
<td>-32</td>
<td>-50</td>
<td>40</td>
</tr>
<tr>
<td>Paper products</td>
<td>832</td>
<td>452</td>
<td>-80</td>
<td>89</td>
<td>4</td>
<td>13</td>
<td>-185</td>
</tr>
<tr>
<td>Rubber products</td>
<td>332</td>
<td>377</td>
<td>45</td>
<td>41</td>
<td>6</td>
<td>16</td>
<td>-18</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>68</td>
<td>85</td>
<td>17</td>
<td>15</td>
<td>2</td>
<td>9</td>
<td>-9</td>
</tr>
<tr>
<td>Sub-total manufacturing</td>
<td>8737</td>
<td>8466</td>
<td>-271</td>
<td>932</td>
<td>-36</td>
<td>-521</td>
<td>-643</td>
</tr>
<tr>
<td>Construction</td>
<td>2071</td>
<td>2189</td>
<td>118</td>
<td>-25</td>
<td>23</td>
<td>91</td>
<td>29</td>
</tr>
<tr>
<td>Repair services</td>
<td>475</td>
<td>225</td>
<td>-249</td>
<td>-63</td>
<td>1</td>
<td>-80</td>
<td>-108</td>
</tr>
<tr>
<td>Trade</td>
<td>3349</td>
<td>3765</td>
<td>415</td>
<td>797</td>
<td>138</td>
<td>-255</td>
<td>-265</td>
</tr>
<tr>
<td>Lodging</td>
<td>721</td>
<td>844</td>
<td>123</td>
<td>158</td>
<td>13</td>
<td>28</td>
<td>-76</td>
</tr>
<tr>
<td>Sub-total</td>
<td>4545</td>
<td>4834</td>
<td>289</td>
<td>892</td>
<td>152</td>
<td>-307</td>
<td>-449</td>
</tr>
<tr>
<td>Inland transport</td>
<td>726</td>
<td>738</td>
<td>12</td>
<td>78</td>
<td>-38</td>
<td>136</td>
<td>-164</td>
</tr>
<tr>
<td>Maritime and air transport</td>
<td>130</td>
<td>955</td>
<td>-54</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>54</td>
</tr>
<tr>
<td>Aux. transport services</td>
<td>113</td>
<td>89</td>
<td>-25</td>
<td>13</td>
<td>1</td>
<td>31</td>
<td>-70</td>
</tr>
<tr>
<td>Communications</td>
<td>447</td>
<td>460</td>
<td>13</td>
<td>100</td>
<td>2</td>
<td>0</td>
<td>-89</td>
</tr>
<tr>
<td>Sub-total</td>
<td>1416</td>
<td>1382</td>
<td>-34</td>
<td>201</td>
<td>-30</td>
<td>172</td>
<td>-377</td>
</tr>
<tr>
<td>Credit services</td>
<td>680</td>
<td>730</td>
<td>50</td>
<td>171</td>
<td>12</td>
<td>1</td>
<td>-110</td>
</tr>
<tr>
<td>Market services</td>
<td>1736</td>
<td>2036</td>
<td>300</td>
<td>193</td>
<td>-13</td>
<td>-68</td>
<td>188</td>
</tr>
<tr>
<td>Non-market services</td>
<td>157</td>
<td>372</td>
<td>215</td>
<td>139</td>
<td>2</td>
<td>-93</td>
<td>34</td>
</tr>
<tr>
<td>Government services</td>
<td>4136</td>
<td>4327</td>
<td>191</td>
<td>1393</td>
<td>3</td>
<td>0</td>
<td>-126</td>
</tr>
<tr>
<td>Sub-total</td>
<td>6709</td>
<td>7465</td>
<td>756</td>
<td>1896</td>
<td>-24</td>
<td>26</td>
<td>-142</td>
</tr>
<tr>
<td>Total</td>
<td>25746</td>
<td>26251</td>
<td>505</td>
<td>3988</td>
<td>43</td>
<td>-641</td>
<td>-2885</td>
</tr>
</tbody>
</table>

Source: This table is reproduced from Table 3.4 in UNIDO, 1986, p.115. The source given in that table is "UNIDO input/output data bank.”

Note: Sub-totals are not given in the source. The industries have been grouped into sectors roughly, but not exactly according to SIC criteria, and the sub-totals have been added.

In 17 of the 36 industries net employment fell, as the result of a complicated set of interactions between the four variables. In 11 of the 17 industries, declines in employment due to productivity improvements were linked with net declines in employment in the industries concerned. In only one of these
11 cases (Repair services) did domestic demand fall. Changes in technology reinforced the negative productivity effect on employment in five of the 11 cases, confirming another frequently articulated worker concern. The really interesting effects become visible when one considers the disaggregated results. Agriculture, mining and oil production all shed workers, as one might expect. Utilities make a modest contribution to job creation, because the increase in domestic demand overshadows the negative effect of the productivity improvement. The increase in the demand for manufactured products increases the demand for labour by more than 900,000, but this is more than completely negated by the combined effects of the improvements in technology and in productivity. The negative effect of productivity improvements observed in 12 of the 20 industries listed cost an estimated 862,000 jobs, whereas the positive effect in eight industries was associated with an increase of only 219,000 jobs, to give a net loss of 643,000 jobs. The improvements in technology have a similar effect—710,000 jobs in eleven of the 20 industries on the negative side, and 189,000 on the positive. Construction is a net contributor, with neither productivity nor technological changes having a negative effect. The largest private sector contribution to employment creation is the trade sector, where increases in both external and internal demand combine to offset the healthy negative effects of the productivity and technological changes that occurred. Whether employment in this sector, which is often of the most menial kind, such as shelf Packing or check-out counter operation, is to be considered an adequate substitute for relatively well-paid work in industry is a moot point. Productivity improvements in transport and communications outweigh the effects of demand changes to register a small decline in total employment.

It is useful to stop at this point to take stock. The score so far is a net loss of 658,000 jobs (Agriculture, Mining, Utilities, Manufacturing, Transport), versus 407,000 new jobs created (Construction, Trade). The remainder of the story is told by looking at the experience of the major service sector employers. Here, identifiable private-sector industries add 350,000 jobs (Credit and Market Services), and ‘Non-market services’ (it is not obvious from the description whether this is state or private sector) a further 215,000. Improvements in productivity in government services, resulting in the loss of nearly one and a quarter million jobs were counterbalanced by a huge increase in the demand for state services to give a net increase in employment of 191,000. Presumably the bulk of workers were redeployed, but that cannot be taken for granted, especially if the skill structure of employment changed (from lower-skilled to higher-skilled).
Apart therefore from these latter two service-sector employers, 757 000 new jobs were created as against the 658 000 lost. State and non-market job creation were both critical to the overall result of 505 000 new jobs created. Questions obviously need to be asked about what happened to these jobs in the wake of the conservative counter-revolution that accompanied the deepening economic crisis that spread through the capitalist world from the late-70s onwards. A measure of the severity of this crisis in Germany is given by the fact that unemployment rose from 3.0 percent in 1980 to 8.0 percent in 1983 (OECD, 1984, Table R12). Efforts made by the German state to retrain workers generate impressive-looking statistics, especially when they are compared with the South African performance. In 1986, for example, 450 000 persons (some 1.7 percent of the workforce), of whom 300 000 had been unemployed, received retraining, 70-80 percent of them obtaining employment within three months of completing the training (P.C. 1/1989, para. 3.111, p.76). The Japanese have mounted a project of similar magnitude because of the displacements associated with rapidly rising productivity levels. These have necessitated a movement of workers from less-competitive to more competitive industries (P.C. 1/1989, para. 3.33, p.53).

It seems as well to acknowledge that even in the most apparently orderly of societies—and various aspects of the ‘German model’ have often been touted as possibilities for South Africa—there is no such thing as orderly employment creation. If one is involved in the social engineering business, the honest thing to do is to admit that one’s activities can have highly undesirable, even if unforeseen consequences. Attempting to estimate what these effects will be is an important part of the job. This can only be done

28 Retrenchment policy in South Africa merited exactly two paragraphs in the report of the President’s Council committee on productivity (P.C. 1/1989, paras. 5.109 and 5.110, pp 176-177). The view taken by the committee is too optimistic by far. Retrenchments in the public sector will, according to them, “...necessity [mean] that the private sector will have to expand its staff component to perform additional tasks.” (P.C. 1/1989, para. 5.110, p.177). This simplistic reasoning is suspect—no evidence is offered to support the committee’s claims. This matter will be addressed at somewhat greater length below when ‘commercialisation’ in South Africa is discussed. See Footnote number 38.

29 The President’s Council committee refers to the industry training boards established in recent years, noting that some 10 000 people were trained at the various centres in 1986. (P.C. 1/1989, para. 5.161, p.192)

30 Even so, the unemployment level had not dropped by 1987 (Schneider, 1991, p.399), and unions suffered a series of defeats in a contest with the state over policies to “denationalise” and “deregulate”. Union membership, having peaked in 1982, began to decline. Chancellor Kohl only eased the pressure when his electoral support diminished markedly in 1987/88, but even then, was soon forced back onto the offensive in October 1988 in the face of the perceived “enmity” of a trade union federation that backed a “week of action” (Schneider, 1991, pp.350-357).

31 For a dissenting view of the contradictory impact of massive productivity improvements on the lives of Japanese workers see Steven, 1988.
by the construction of detailed balance sheets that unravel the impact of structural change on people's lives. The table of changes reported above, which is vastly superior to anything available in South Africa,\(^{32}\) is far from complete. To supplement the analysis, one needs to identify the gainers and losers from the exercise. This entails, amongst other things, a comparison (in detail) of the quality of the new jobs created with those lost.\(^{33}\) Of particular importance to workers in this regard is the question of the extent to which union representation and protection is possible in the new industries.

Answering this question means getting behind the hype on the wonders of the information economy to the everyday reality of workers affected by changes such as those outlined above. This is no simple task—once again, to do justice to the complexity of the process, detailed case-studies would seem to be necessary. Such an activity lies well beyond the scope of this paper. To give a flavour of the opinion in quarters which could hardly be described as unduly sympathetic to worker organisations, the following passage, extracted from a recent article in *The Economist* celebrating the rejuvenation of the US economy is quite revealing. The discussion is joined at a point where the sub-editor has written the following headlines:

Not everyone can win

*Every great comeback story has its downside*

"If, by general consent, American manufacturing has bounced back, and services are on the point of a revival, why are workers not happier than they appear to be? One trouble is that few of them are benefitting from all this in a direct way. Another is that the revival may be a lot shallower than its boosters believe.

Since many firms have improved their profitability by the simple expedient of cutting their workforces, it would be surprising if the victims joined in the applause. America has, it is true, been strikingly successful in creating new jobs. Gary Burtless, an economist at

---

\(^{32}\) It is suspected that South Africa's input/output tables are not accurate enough to permit a replication of the UNIDO-type decomposition exercise to be undertaken. This is a topic that requires further research.

\(^{33}\) At one point, P.C. 1/1989 refers to the fact that retrenchments can have the effect that "workers often leave the sector in which they have been working and seldom return to it." (para. 5.17, p.151) This statement is made with reference to the impact on private sector employers of cutbacks in public sector capital projects, not of productivity improvements. The committee laments the additional training requirement to which this will give rise, but makes no reference to its implications for the workers concerned. No source is cited for the 'seldom return' statement.
Washington's Brookings Institution, says that in recent years an American has become less likely to lose his or her job. But the pattern of employment has changed in a number of discomfitting ways.

The big companies that used to be paternalistic employers are now "outsourcing" many categories of work that used to be done by their own people. Cleaners, accountants, security guards and computer operators are nowadays more likely to be employed by smaller, specialist firms. Some 14% of new jobs created in the current expansion were created in the "help-supply" services, up from under 5% in 1982-90. This blessing is mixed, even in a society hospitable to change. It relieves big companies of burdensome fixed costs, but pushes a lot of people into inferior jobs with no prospects. Although some service providers, such as Electronic Data Services (now at last divorcing from General Motors) are good employers, many are not.

The pain...

In the minds of many, changes such as this have snapped the link between the interests of a company and the interests of its employees. That feeling is strengthened by employers' failure so far to pass on any significant part of their recent productivity gains in the form of higher wages. Real pay has stagnated over the past 20 years, having risen steadily in the previous 20... Inequality is growing too.

Whether or not this will come to have serious political consequences, it already has implications for big companies. Their claim to have discovered the need to treat employees as their most valuable asset sits awkwardly with their habit of firing lots of them..." (The Economist, September 16th 1995, p.12)

A case can be made that for most workers outside of the ranks of the professional, technical and managerial corps, jobs in the manufacturing sector were superior to the alternatives. Although there were numerous exceptions, union density, and hence wages, tended to be higher. The intensification of labour (celebrated as increased flexibility of the labour force) that has occurred since the end of capitalism's golden age of accumulation may have taken the shine off of employment in the sector, but the quality of work life in other sectors of economies is likely also to have deteriorated as the increasing insecurity characteristic of the new realities of global production takes hold. It is thus possible that the combination of
rising manufacturing sector productivity and falling employment in the sector, even if not accompanied by falling total employment, could lead to overall declines in worker welfare. 34

Since part of the object of this paper is to subject the NPI’s analysis of its own and other data sources to critical scrutiny, what better place to look for evidence of job loss of this type associated with productivity growth than amongst the publications put out by the NPI? The information available from these sources is rough and ready—it does little more than whet the appetite for what would obviously be a fairly substantial task. Even so, the initial results paint a disturbing picture. Table 4 below shows how manufacturing sector output, employment and labour productivity changed in the economies of South Africa and 13 OECD countries during the years 1975-82. 35

This somewhat exceptional period has been selected deliberately to make the point that labour market upheavals, asserted to be of short-term duration, can last for many years. Objections against the choice of such a period can be countered with the response that economic crisis has dominated much of the period during which NPI’s productivity improvement campaign has been conducted. It does not seem unreasonable therefore, to suggest that there may be valuable lessons to be learned from experiences elsewhere in times of crisis. 36 Wholesale job destruction was

34 See Eatwell, 1995, Tables 9, 11 and 12 (pp.83-85). Increasing globalisation, and with it, increasing trade in manufactures with countries of the South is likely to have differential effects. Rowthorn argues that the economic position of unskilled workers in countries of the North is likely to be weakened, either because of increasing unemployment and/or by reduced relative pre-tax wages (1995, p.46). He argues that “[W]age flexibility has little effect on employment in the labour-intensive sector of the North, since it is facing such fierce competition from the South” (p.46). To the extent that South African ‘unskilled’ wages are high relative to those in other countries of the South, there is a chilling possibility that both the degree of wage flexibility and the extent of increased productivity required to stay in the running may be so high as to render employment in a wide range of industries extremely vulnerable.

35 The usual warning about end-point selection applies here—given that turning points of the business cycle differ from country to country, it is not easy to make watertight international comparisons. As it so happens, the years chosen for South Africa are not far off the recommended peak-to-peak years (1975 and 1981). In any case, the performance of the South African economy differs enough from that of many of the other countries in the table to make the comparison worthwhile. It is perhaps worth noting that despite the relatively respectable performance registered by the South African manufacturing sector in this period, the NPI was promoting assiduously the view that its results were poor.

36 Recovery in some of the OECD economies was very slow—during the years 1980-85, value added in manufacturing (MVA) in North America grew at only 2.4 per cent per annum. Over the same period, MVA in Western Europe grew at only 0.5 per cent (UNIDO, 1988, Table 61, p.104). With the exception of Japan, where growth was rapid, and Taiwan and Korea, where it was extremely rapid, MVA growth in South Africa kept pace, at least until 1987, with a small group of relatively good performers amongst the OECD countries, namely Italy, Canada and the USA. Lagging far behind were France, Germany, the Netherlands, Norway, Sweden and worst of all, the UK, where industrial output was lower in 1987 than it had been in 1973 (Productivity Statistics 1988, p.76). Apart from Japan, Taiwan, Korea and Canada, all of the other countries in the comparison carried out by the NPI expelled labour from the sector, the British workforce being most drastically affected—with 1970=100, employment fell to 61.4 by 1987, with more than half of the decline taking place between the years 1980-87 (Productivity Statistics 1988, p.78).
the order of the day over the period, except in South Africa and Japan. From this table it may also be seen that the Japanese economy was the only one amongst the group to post respectable output and productivity growth rates.

### Table 4 International comparison of manufacturing sector performance: South Africa and 13 OECD countries 1975-82. Countries in rank order for each of 3 indicators (1975=100)

<table>
<thead>
<tr>
<th>Country</th>
<th>Rank</th>
<th>Index</th>
<th>Country</th>
<th>Rank</th>
<th>Index</th>
<th>Country</th>
<th>Rank</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>1</td>
<td>145</td>
<td>Japan</td>
<td>1</td>
<td>111</td>
<td>Japan</td>
<td>1</td>
<td>149</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2</td>
<td>142</td>
<td>South Africa</td>
<td>1</td>
<td>111</td>
<td>South Africa</td>
<td>2</td>
<td>133</td>
</tr>
<tr>
<td>Denmark</td>
<td>3</td>
<td>134</td>
<td>USA</td>
<td>3</td>
<td>100</td>
<td>Denmark</td>
<td>3</td>
<td>122</td>
</tr>
<tr>
<td>Austria</td>
<td>4</td>
<td>132</td>
<td>Germany</td>
<td>4</td>
<td>95</td>
<td>Austria</td>
<td>4</td>
<td>121</td>
</tr>
<tr>
<td>France</td>
<td>5</td>
<td>126</td>
<td>Norway</td>
<td>5</td>
<td>93</td>
<td>USA</td>
<td>5</td>
<td>118</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>6</td>
<td>125</td>
<td>Switzerland</td>
<td>5</td>
<td>93</td>
<td>Netherlands</td>
<td>6</td>
<td>115</td>
</tr>
<tr>
<td>Sweden</td>
<td>7</td>
<td>120</td>
<td>Austria</td>
<td>6</td>
<td>92</td>
<td>Germany</td>
<td>7</td>
<td>113</td>
</tr>
<tr>
<td>South Africa</td>
<td>7</td>
<td>120</td>
<td>Denmark</td>
<td>7</td>
<td>91</td>
<td>France</td>
<td>8</td>
<td>112</td>
</tr>
<tr>
<td>Germany</td>
<td>8</td>
<td>119</td>
<td>Canada</td>
<td>8</td>
<td>89</td>
<td>Switzerland</td>
<td>9</td>
<td>108</td>
</tr>
<tr>
<td>USA</td>
<td>9</td>
<td>118</td>
<td>France</td>
<td>8</td>
<td>89</td>
<td>Canada</td>
<td>10</td>
<td>105</td>
</tr>
<tr>
<td>Canada</td>
<td>9</td>
<td>118</td>
<td>Netherlands</td>
<td>9</td>
<td>81</td>
<td>Luxembourg</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>Switzerland</td>
<td>10</td>
<td>116</td>
<td>Luxembourg</td>
<td>10</td>
<td>80</td>
<td>Norway</td>
<td>12</td>
<td>97</td>
</tr>
<tr>
<td>UK</td>
<td>11</td>
<td>114</td>
<td>Sweden</td>
<td>10</td>
<td>80</td>
<td>Sweden</td>
<td>13</td>
<td>96</td>
</tr>
<tr>
<td>Norway</td>
<td>12</td>
<td>104</td>
<td>UK</td>
<td>11</td>
<td>77</td>
<td>UK</td>
<td>14</td>
<td>88</td>
</tr>
</tbody>
</table>

Note: The employment and productivity indexes for Japan given in the source from which these figures are drawn are incorrect.

Source: Data are from *Productivity Statistics 1984*, pp.65-69.

Accompanying the destruction of manufacturing-sector jobs in ten of the 11 countries for which figures are available was a rise in the rate of unemployment in the economy as a whole. This is shown in Table 5 below. The countries are ranked in the same order as they are in the centre panel of Table 4, i.e., in the order in which jobs were created or destroyed in the manufacturing sector.

As may be seen, some of the increases in rates of unemployment were substantial. In some cases, e.g., the UK, absolute levels of employment fell over the period. Even where this did not happen, however, the level of social distress associated with transformation of this type could have been quite substantial. To be ejected into the labour market at a time when unemployment is rising is not a happy experience—the more so if one is a worker with firm-specific skills who is squeezed out of a relatively well-paid job.37

---

37 Layard, Nickell and Jackman (1991) argue that although the available evidence does not support a conclusion that "...industrial restructuring is not an important source of unemployment..." there is, "...contrary to popular belief...no evidence that this process has been accelerating..." They remark as well that “[P]eople seem constantly to forget the massive restructurings of the past, such as the huge exodus from European agriculture in the 1950s and 1960s which was accompanied by so little unemployment.” (1991, p.295) They could perhaps have added that
Gauging the extent of this unhappiness requires two questions to be addressed. Firstly, one would want to know whether the workers expelled from the manufacturing sectors in these countries were readily absorbed into other employment? Secondly, if they were, one would want to know whether their economic welfare improved or deteriorated as a result. Evidence is scanty, but what there is of it is not encouraging. Layard, Nickell and Jackman (1991) cite two oldish studies, one in the UK in 1978/70 and one in the USA in 1976 which suggest that only about one quarter of the jobs taken by the unemployed were in the same occupation and industry. About 40 per cent in the UK and 33 per cent in the USA were re-employed in the same occupation. About one-third of the re-employed took a cut in real earnings—for half of those it was a substantial cut (1991, pp.247-248). Being left with little other than an assurance by a social engineer of dubious analytical capacity that being temporarily inconvenienced is in the national interest could be quite a painful experience.

---

restructuring accompanied by massive unemployment is evidence that this latest phase of capitalist accumulation differs in important ways from those that have gone before—as noted above, the golden age has ended and the key to a renewed, humane capitalism has yet to be found (Singh, 1995b).
Disturbing trends in South Africa

That the relative fates of workers displaced by these processes in Germany and South Africa will differ markedly is, or should be, painfully obvious. The almost total absence in South Africa of any retraining schemes and the extreme flimsiness of the social security network, make it hardly surprising that workers should respond with suspicion to a national productivity drive. The evidence of the period during which the NPI has been active suggests that ‘economic’ motivations (read profit margins) referred to by it will and must, in terms of the imperatives of capitalist development, take precedence over the humanitarian considerations that the NPI voices. The evidence is difficult to interpret because, as usual, ceteris is never paribus—several changes are occurring simultaneously. Nonetheless, interesting pointers exist. Some of them are to be found in the record of job loss in what were formerly havens of secure employment. In these industries, enthusiasm for ‘commercialisation’, where outright privatisation has not been possible, has been quite marked. Consider, for a moment, the NPI’s record of what was happening to output and employment in three such areas—the basic metals industry, and the sectors (major divisions) ‘Electricity, gas and water’, and ‘Transport, storage and communication’. Respectively, these sectors contain Eskom, the major parastatal, and the government business enterprises which used to be known as the South African Railways and Harbours, and the Post Office. Table 6 introduces the problem.

<table>
<thead>
<tr>
<th>Year</th>
<th>Basic metals</th>
<th>Electricity, gas and water</th>
<th>Transport, storage and communication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Output</td>
<td>Employment</td>
<td>Output</td>
</tr>
<tr>
<td>1985</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1986</td>
<td>107.4</td>
<td>101.1</td>
<td>102.7</td>
</tr>
<tr>
<td>1987</td>
<td>108.3</td>
<td>100.9</td>
<td>106.2</td>
</tr>
<tr>
<td>1988</td>
<td>110.8</td>
<td>100.7</td>
<td>111.6</td>
</tr>
<tr>
<td>1989</td>
<td>113.6</td>
<td>100.6</td>
<td>115.1</td>
</tr>
<tr>
<td>1990</td>
<td>110.3</td>
<td>101.6</td>
<td>117.1</td>
</tr>
<tr>
<td>1991</td>
<td>108.4</td>
<td>99.5</td>
<td>119.3</td>
</tr>
<tr>
<td>1992</td>
<td>104.2</td>
<td>95.7</td>
<td>118.7</td>
</tr>
</tbody>
</table>

Source: Productivity Statistics 1994, pp.70, 75 and 78.

38 The impact of commercialisation and privatisation on employment levels in South Africa has yet to receive systematic treatment. The topic is too large to tackle here. It cannot, however, be passed over without comment. This is relegated to a short appendix at the end of the paper.
Given the economic and political conditions obtaining at the time, it is not easy to imagine how those advocating improved productivity growth could have been under any illusions as to what the likely outcome was going to be. Slow output growth was obviously going to have be countered by reductions in employment levels. Generally adverse conditions were almost inevitably going to mean large-scale retrenchment into a labour market offering few vacancies.

This was no new phenomenon—some ‘downsizing’ commenced well before 1985. The index of employment in the sector ‘Transport, storage and communication’, which includes amongst others, SATS and the postal and telecommunications services as well as private transport contractors, recorded a continuous decline from 104.8 in 1982 to 77.6 in 1992. While employment in the Post Office and Telkom increased from about 83 500 in 1982 to 95 000 in 1992 (South African Statistics 1993, p.7.32) the number of workers employed by Transnet (the former South African Transport Services, SATS) fell by 100 000 over the period 1982-89 (from a peak of 278 000 in 1982) and by a further 22 000 in the period 1989-92 (South African Statistics 1993, p.7.26). Numbers employed in the basic metals industry, which includes Iscor, the former state-owned steel producer, fell from 123 800 in 1982 to 110 900 in 1989, then to 105 400 in 1992, a decline of 14.8 per cent over the decade (p.7.23).

As one might have predicted, the impact of this state-sponsored productivity drive on African workers was more serious in each case. Over the period 1982-92, total employment in SATS fell by 43.9 per cent—white employment falling by 41.1 per cent (49 000 workers), while the numbers of African workers dropped by 47.0 per cent (63 000). Corresponding figures for the period 1982-89 were 32.8 per cent (39 000) for the whites, and 38.9 per cent (52 000) for the African workers (South African Statistics 1993, p.7.30). Proportional declines in African and white employment in basic metals in the period 1982-89 were not all that different (11.8 per cent and 9.7 per cent, or 4400 and 8700 jobs respectively). Thereafter, while white employment levels stabilised, the numbers of African workers continued to fall—by a further 5000, to post a total decline of 18.6 per cent for the period 1982-92 (South African Statistics 1993, p.7.23). In electricity generation and distribution the pattern was somewhat different—the build-up of staff only peaked in 1985, after which total employment fell from 66 200 to 52 400 in 1989 (p.7.24). Accounts of what ensued differ somewhat depending on the source consulted—South African Statistics 1993 (p.7.25) has it that the number of white workers fell from 25 800 to
23 000 (10.9 per cent) and of African workers from 36 200 to 26 200 (27.6 per cent).

Although exactly comparable productivity figures for these industries are not available, the NPI figures for the sectors in which these job losses took place are revealing. Best overall performer is ‘Electricity, gas and water’, where output per worker rose from 93.9 in 1982 to 114.6 in 1989, and to 136.1 in 1992 (Productivity Statistics 1994, p.75). Employment levels in 1992 being not much lower than they were in 1982, this sector is to be preferred (from a worker point of view) to the ‘best’ labour productivity performer, ‘Transport, storage and communication’. Here, output per worker rose from 92.9 in 1982 to 123.3 in 1989 (and to 137.5 in 1992). The shine is taken off this result because it is secured largely by reductions in employment. With more enthusiasm than tact, former Minister of Transport, Hendrik Schoeman boasted in 1986 that SATS had earned profits in excess of R100 million in the first half of the financial year because:

“...SATS had reduced its labour force by 60 000 since July 1982 and the subsequent increase in productivity was about 22%”. (Natal Mercury, 11 November 1986)

Apart from a seven-percentage point jump in the year 1985-86, output growth in ‘Basic Metals’ was sluggish. Employment levels were static during the period 1985-89. With the collapse of output growth thereafter, reductions in employment inevitably followed. These were not large enough, however to stop the index of labour productivity falling from a high of 112.9 in 1989 to 108.9 in 1992 (Productivity Statistics 1994, p.70).

Using the NPI’s own figures, the list of sectors in which rising productivity was associated with falling employment can readily be extended. Taking the peak-to-peak years of 1981-89 in ‘Agriculture, forestry and fishing’,

---

39 Labour productivity grew at about four per cent per annum between 1982-89 (and 1982-92) while employment declined at something in excess of two per cent per annum over the same period. Estimated from Productivity Statistics 1994, p.78.

40 It is interesting to compare the stance of the National Party toward job loss among civil servants in the run-up to the democratic elections in 1994, with that which it had displayed in an earlier period towards workers in parastatals and former government business enterprises that were undergoing privatisation or commercialisation. Large numbers of jobs in Transnet (formerly the employer of last resort for whites) were allowed to disappear, almost without comment. Energetic steps were taken, by contrast, to protect jobs in the state bureaucracy. Peter Moll (1990, p.66) commented on the tenacity with which both the National Party and the Conservative Party would resist slimming down the bureaucracy, pointing to the clash which a failure to do so would lead in the new South Africa. In the event, a pledge was extracted from the incoming Government of National Unity not to retrench without generous severance packages—a promise that has been kept.
employment fell from 960,000 to 900,700 while productivity rose from 101.2 to 130.4 (Productivity Statistics 1994, p.15). In ‘Mining and quarrying’, employment fell from a peak of 821,700 in 1985 to 662,600 in 1992, while labour productivity grew from 100.0 to 117.5 according to the NPI’s ‘recalculated’ indices (Productivity Statistics 1994, p.16). Since it is suspected that unemployment in the South African economy increased fairly steadily over the period, one may say with some confidence that productivity and job loss can go hand in hand for lengthy periods of time. One must also observe that the NPI, having produced the figures that enable one to draw these conclusions, must have been aware of this uncomfortable possibility.

(II) The Politics: Sound bites vs sound analysis

For many years, the South African economy has reportedly failed to register satisfactory productivity performances. Some (large) part of the failure of the South African economy to do so is ascribed by the NPI to ‘attitudes’. In the organisation’s mission statement, the belief is expressed that greater productivity can be achieved if ‘...a proper attitude of mind is adopted...’

Given this, it is not surprising to read in the document that:

‘[The NPI’s] first and foremost obligations are, therefore, to foster such an attitude of mind - i.e. to increase the awareness and appreciation of productivity among all producers and all consumers - and to provide them with the guidance they need in order to improve productivity.” (NPI, AR 1984/85, p.2) (Emphasis in original)

Translating this commitment into practice has entailed many different kinds of information-dispensing exercises. One of the more important of these is a huge publicity campaign, conducted more or less free of charge in the popular and financial press. It is in the nature of these media that the public consuming them does not, in general, wish to be bothered by the academic caveats so often necessary to rescue analyses from unwarranted certainty. To cater to this audience, the NPI has issued numerous statements in short, punchy copy that makes a series of simple points. A typical example is a two-paragraph, 160-word discussion of the productivity/employment growth issue in the NPI’s Productivity Focus—an annual publication aimed primarily at the business community. Presented under the heading

41 The output and employment figures on which the NPI’s productivity estimates are based are treated here as though they were credible. It must, however, be recognised that the quality of many of these statistical inputs is indifferent at best, and in the case of service sector outputs, probably not to be trusted at all.
“Productivity growth creates employment”, in 14-point boldface type on an almost empty page, this short article asserts that:

“It is often erroneously believed that increases in productivity are associated with decreases in employment.” (1984, p.50)

To show that this is not “…necessarily so…” the NPI offers on the next page a simple mapping of percentage changes in labour productivity in 20 manufacturing industries onto percentage changes in employment in those industries (1984, p.51). In each case a positive relationship between the two is shown to exist. The writer does acknowledge that:

“It might be true that over the shorter term increases in productivity could lead to decreases in employment when capital assets are substituted for labour. It could then happen that a particular type of labour might become obsolete.”

The general tone of the piece is, however, upbeat—it concludes that productivity increases lead to individual firms expanding, and to higher growth in macro-economic terms. It is instructive to compare the NPI’s efforts in this regard with the contents of a very similar publication put out by the United States Bureau of Labor Statistics. In the 1988 edition of Productivity and the Economy: A Chartbook, under the heading “No clear relationship exists between changes in productivity and changes in employment” (in roughly the same type font as that in the NPI publication), the following information is provided:

“Increases in productivity are often believed to be associated with decreases in employment. This is not necessarily so. Over the 1973-86 period, employment rose in a number of industries as productivity increased. Over the same period, however, employment dropped with advancing productivity in nearly three-fifths of all industries measured. Productivity gains in these industries were traceable to cutbacks in marginally efficient capacity (as in iron and copper mining, steel and some chemicals) as well as to technological improvements (as in fluid milk and non-wool yarn mills). Output growth was evidently not large enough to offset employment losses.” (BLS, 1988, p.44)

Unlike the South African publication, the United States study covers a large number of service industries. Large declines in manufacturing sector employment coincided with substantial growth in employment in some service industries (in some of which, conditions are notoriously bad). These included ‘Eating and drinking places’ where employment grew at 3.4 per cent per annum, and ‘Hotels, motels and tourist courts’ (3.5 per cent) (1988, p.84).
About five years ago, the NPI dropped the simple correlation approach—the authors of *Productivity Focus* took instead to citing eminent economists in support of their standpoint. The 1990 issue, for example, contains this statement:

“Productivity growth creates job opportunities, it is the lack of productivity improvement which creates unemployment and reduces the standard of living. Professor Richard Layard supports this statement by stressing that it is a myth to argue that unemployment is caused by modern technology which replaces people with machines: “The great breakthroughs of the past did not lead to prolonged general unemployment ... Particular workers often lost their jobs. But there was no general tendency to rising unemployment.” So let us bury for ever the idea that productivity growth as such is the problem.” (*Productivity Focus* 1990, p.13)

So great, it seems, was the relief at finding a scholar of international standing to buttress the NPI view, that the identical statement was carried over into successive issues of *Productivity Focus*—it is repeated, for example, in the 1994 edition (p.4). As has been suggested above in the discussion on the meaning of concepts like the ‘long term’, some guidance should, however, be provided to users as to what the authors think are valid (or invalid) inferences that may be drawn from their findings. Pushing the Layard and Nickell analysis to absurd lengths, one might ask whether it would be appropriate to conclude that because productivity and employment in capitalist economies had been positively associated for the past century (give or take a major depression or two), that the same relationship will hold for the next century?

The NPI is prepared to acknowledge that there is a problem but seeks to minimise its extent by consigning its effects to the short-term. In the circumstances considered here, it seems to be somewhat less than appropriate, not to say disingenuous, to lump together into an undefined ‘long term’ what are quite different phases of capitalist accumulation. The characteristics of the various periods differ enough from each other to have drawn forth a compendious literature that seeks to understand them. The capitalism of 1995, while still retaining the profit motive as its core, is, in many ways, a very different animal from the capitalism of 1955. Taking

---

42 Possible interpretations of the findings of any particular piece of research and the causes in the service of which these findings may be bent, are often multifarious. Once a piece of research has been launched into the public domain, there is little that its creators can do to control the uses (and abuses) made of it. Although it is not possible to foresee all the ways in which it will be taken up and used, a few cautions issued beforehand may be useful in forestalling the grosser forms of abuse. Critical engagement consists, in part, of trying to discern what constitutes legitimate, and what, illegitimate use of research findings.

43 The conditions necessary for a restoration of such relatively benevolent growth as was experienced during capitalism’s golden age are explored at length in Singh (1995b). For an analysis of the reasons for the declining
refuge in the citation of the words of authority on an irrelevant ‘long term’ smacks of desperation.

An altogether far more sophisticated position is adopted in the 1996 edition of Productivity Focus. The latest stand is worth quoting at some length—we pick up the argument after the connection between rising productivity and rising employment over the very long term (dates are given!) has been made:

“It seems then that productivity growth may actually boost employment in the long run. On the whole, faster-growing economies with rapid productivity growth have lower unemployment than their counterparts lagging behind. But unemployment depends far more on how labour markets work. If they are efficient and flexible, even countries with slow productivity growth can have low unemployment, such as the USA. If labour markets are highly inflexible, rapid productivity growth can accompany high unemployment.

Even in the best of circumstances, though, productivity growth can cause short-term dislocations for firms, sectors, regions and occupations. Moreover, adjustments take time, and industries and workers who benefit from such adjustments may be different from those who lose from them.” (NPI, 1996, p.13)

Reference is then made to the international dimension—countries exporting into growing markets can couple high productivity growth with high employment growth. Those exporting into static markets may see “...workers who are displaced...” not being able “...to find jobs elsewhere...” (p.13). In this, and in the other arguments advanced, is something with which one can engage—is it really the case that the USA labour market is so flexible? If the USA represents a success story, why has The Economist seen fit to run the story cited earlier? Is it implied that the South African labour market is “highly inflexible”? Unlike the silly claims

need of capital to seek accommodations of the kind embodied in the ‘corporatist’ (tri-partite) structures that emerged in many of the advanced capitalist economies during the ‘golden age’, see Gobeyn (1993).

44 For this state of affairs, I wish to take some of the credit. As noted at the beginning of this paper, the first version of the present paper was given at the NPI’s EBM (Economics, Business and Management) Conference at the Rand Afrikaans University in November 1994. It gave offence to senior NPI officials, but after the dust had settled, Ms K Liebenberg, editor for many years of Productivity Focus, agreed that the manner in which the NPI treated the problem of productivity growth and job loss was less than satisfactory. Further discussion led to the formulation of a wide-ranging proposal by Dr T Moll and myself aimed at raising the academic quality of the NPI’s output. First to receive attention was the annual Productivity Focus, whose form and content was the subject of extensive discussion. Unfortunately, another disagreement with the NPI, this time over a submission I made to the Labour Market Commission called “Institutional mechanisms to foster productivity enhancement” (Meth, 1995), meant that my collaboration was limited to the planning stage. Dr Moll duly served as editorial adviser for the 1996 edition of Productivity Focus. Ms Liebenberg has now resigned from the NPI. It is unclear who will take over the writing of future editions.

45 It is interesting that the authors refer here to ‘occupations’ rather than workers.
made about the need to dispel myths surrounding productivity and unemployment, these are questions one can begin to address in a reasonable manner.\textsuperscript{46}

Although still only a straw in the wind, statements of this type call to mind a sensitivity displayed in earlier, but possibly, less widely-read NPI publications. Some of the ‘sound bite’ analysis produced by the NPI is awful in the way such utterances frequently are. By comparison with the language in the \textit{Productivity Focus} pieces cited above, especially the most recent (1996) edition, that used in the past sometimes displayed a marked coarseness, presumably to render it suitable for popular consumption. The imperatives of capitalist accumulation are well captured in the passage from the \textit{Financial Mail} quoted at the head of this paper. Callously put, they require that:

\begin{quote}
"...in the long term the temporary inconvenience to some people must be subject to the needs of the national economy." \textit{(Financial Mail, Supplement 16 September 1983, p.21)}\textsuperscript{47}
\end{quote}

This was typical of the sort of statement put out by the organisation in the early days. Similar sentiments, less crudely articulated, were voiced by Visser in 1979, when he is reported as having said that:

\begin{quote}
"Of course there are short-term discomforts for some, and perhaps even difficulties medium-term in special cases. But the long-term benefits for all are incontrovertible. Those who deny this are simply afraid of change and the need to be more effective and efficient." \textit{(Sunday Times, 3 June 1979)}
\end{quote}

\textsuperscript{46} A respectable literature, critical of the usual celebratory statements made about the wonders of flexibility in USA labour markets has begun to emerge. The picture that it paints of what flexibility actually means in practice is not a pretty one. Freeman (1995) concludes a bleak paper on the topic with the statement that:

\begin{quote}
"Given the evidence reviewed in this article, it is difficult to maintain the conventional view that the way to solve Europe’s unemployment problems is through wage flexibility, US-style. The sizeable reductions in pay for the less skilled in the US have not been sufficient to maintain their employment, have impoverished them and their families, and arguably contributed to the decision of many of them to engage in crime. Wage reductions for the entire work-force that would enhance labour demand for all kinds of workers might help create jobs in Europe. Reductions in pay-roll tax on low-skilled labour might also create incentives to hire them. Perhaps an EC-coordinated macro-expansion could move labour markets closer to full employment without engendering inflationary risks or capital outflows from expanding economies. Whatever, more than wage flexibility US-style will be needed to cure joblessness, or to move Europe to a better social welfare outcome in the labour market."\textit{ (1995, p.72)}
\end{quote}

Gregg and Wadsworth’s (1995) analysis of the way in which the UK labour market has become more flexible without solving the unemployment problem makes equally depressing reading. As Singh (1995) argues, conventional theoretical models (including the NAIRU school) provide unconvincing explanations for unemployment. He is roundly critical of the advocates of flexibility (p.487), proposing instead, a battery of institutional changes calculated to solve the “political” problem of unemployment.

\textsuperscript{47} The NPI’s chief executive has, in the past, attempted to ‘correct’ the ‘misapprehension’ that increased productivity leads to redundancies, especially during downswings in the business cycle. See for example the article headed “Increased productivity creates employment” in \textit{NPI Newsletter, March 1982, p.1}.
From the point of view of workers, the rather obvious questions are, how temporary is the inconvenience to ‘some’ people, and who are those people likely to be? This insensitivity may be contrasted with the more careful commentary published for example in the May 1985 edition of Productivity SA, (the NPI’s glossy in-house periodical), which contained a special survey called “Patterns of Growth”. It covered in some detail, many of the questions that were glossed over or ignored in publications such as Productivity Focus. Under the heading “Productivity and Society”, the relationship between employment growth and productivity growth is treated thus:

“Higher employment appears normally as a long-term result of improved productivity and not an immediate one. It comes with the expansion of production capacity which ... is made possible through the re-investment of profits in capital stock. Since robots have not yet replaced people in most existing industries, and since expansion often goes in the direction of new service industries where people do most of the work, an expansion in production capacity often means that more people are needed. Unfortunately however, it may take a relatively long time for re-invested profits to work through the economic system until they turn into additional production capacity which requires additional labour. In the short-term, loss of jobs does sometimes result from improvement in labour productivity.”
(NPI, 1985, p. 12) (Emphasis in original)

This conclusion echoes the UNIDO finding cited above. The report states bluntly that:

“Growth generates jobs, while improved labour productivity destroys them, at least in the short term.” (UNIDO, 1986, p.100)

Explaining the immediate impact of productivity improvements, the NPI article states that:

“Improvement in labour productivity means that work previously done by a certain number of people can now be done by a smaller number of people. Some people thus become redundant and form an extra labour capacity. There are firms which can cope with extra labour capacity for a short while. They can do so either because they are profitable enough and therefore can absorb the unnecessary cost of extra people, and/or because their employees are willing to forgo wage increases - sometimes even to accept lower wages - in order to avoid retrenchment. But this is obviously a short-term solution only. Neither employers, nor employees, would be willing to adopt such a solution for too long since it weakens both. Thus, a long-term solution must be found, and in the long term there are two alternatives of action: to obtain additional business and thereby re-engage the extra people in productive work, or to send the people away. Only an increase in the sales of existing products or an introduction of new products into
the market can provide additional business and work - and this does not always happen fast enough.” (NPI, 1985, p.12)

Relating this to the direct effect on workers, the author gets behind the crudeness of Visser’s ‘temporary inconvenience to some people’ with an insightful analysis of some of the reasons why workers and the trade unions that represent them do not share the NPI’s enthusiasm for productivity improvements.

“For the economy as a whole, for industry, and for the firms involved, an improved level of labour productivity is an important achievement which cannot be foregone even when the short-term result is a drop in the number of jobs. It may eventually save the firm, the industry and the economy. But for the individual employees who must lose their jobs there is not much comfort in being the saviours. They need work, and the unemployment which industry regards as a short-term, transitory adjustment stage, is just too long for them. This is why workers, and labour unions which represent them, are often apprehensive of improvements in labour productivity and do not take kindly to the argument that improved productivity increases employment."

Yet the imperative to improve productivity is argued to be overwhelming, and that in no uncertain terms. The author claims that:

“The choice faced by South Africa is not between lower productivity of labour and higher employment on the one hand or higher productivity and increased unemployment on the other. Rather it is between higher productivity and temporary unemployment, which can be addressed, and lower productivity and even [higher] unemployment in the longer term - which will be much more difficult to address.” (NPI, 1985, p.12)

Sifting through these statements in the context of the theoretical model offered above, a number of issues emerge as being worthy of consideration. A list of such questions, neither exhaustive, nor necessarily arranged in order of importance, might look like this:

- Who is likely to become unemployed?
- What duration of unemployment is to be expected?
- What social safety net exists to catch those falling out of formal employment?
- To what extent does deskilling occur?
- What facilities for retraining exist?

---

48 There must be a typographical error in the original—the text renders this as ‘lower unemployment’ but ‘higher’ was surely intended.
• What happens to the earnings capabilities of those who are displaced by productivity improvements?
• With what speed are productivity improvements translated into a growth in demand for labour?
• What kinds of labour services are demanded?
• Related to this is the question of what the distributional impact is of the transformation of employment from goods- to service-production.

On a slightly different tack, one would wish to examine as well, the nature of the institutional and other barriers to structural transformation. Amongst other things, one would wish to know the extent to which factor and product markets are imperfectly competitive. Research into some of these areas is extraordinarily difficult to undertake, hence not all of these questions can be answered satisfactorily. That, however, is no reason to avoid confronting them. Unfortunately, the NPI either lacks the resources to undertake the research necessary to answer these questions, or it has not in the past considered them to be of sufficient moment to warrant the required research. Yet it is precisely by tackling these awkward questions that the NPI might have been able to gain the respect of the independent democratic trade union movement. Up until a few years ago, the response of the democratic trade union movement to the activities of the NPI (insofar as it can be said to have responded at all), was hostile. Historically, that hostility stemmed from the perception that the NPI was a 'tool' of management, and in particular, that it sought to frustrate the struggle for a living wage.

Probably of equal importance is the absence of a considered response to worker fears that productivity improvement will destroy jobs. As is well known, unallayed fears often give rise to obstructive behaviour. So, not only do workers frequently have a negative attitude towards productivity improvements—when they are able to, they may actively obstruct changes

---

49 The democratic worker movement long refused to have any dealings with other suspect institutions and inquiries. The committee of the President's Council investigating the problems of employment creation (P.C. 1/1987) was rebuffed by unions. Because the evidence before it on the subject of (excessive) wage increases and trade union action was overwhelmingly negative, the Committee "...went to great lengths to obtain comprehensive evidence from trade union lenders, especially from the ranks of Black trade unions. These efforts unfortunately failed." (para. 4.31, pp.32-33)

50 Fears about job loss are by no means confined to the South African workforce. Doubtless in nearly all countries with a history of adversarial industrial relations (in practice, all countries at some point or other), this will be found to have been an important factor in disagreements over the impact of productivity growth.
that they believe could make them redundant.\textsuperscript{51} Considered from a worker point of view, such actions may readily be seen to be rational, even if that rationality is self-defeating in the long-run. It seems entirely unreasonable to require of people whose immediate priority is, and must be, survival, that they take responsibility for smoothing out the upheavals in production caused by the anarchic character of capitalist production. Attempts by the NPI (and by bourgeois economists who do not have to bear the burden of the responsiveness to the ‘market forces’ of which they are so enamoured) to dismiss worker’s well-founded fears on the rising productivity/job loss score are sometimes as crude as they are patronising.\textsuperscript{52}

In short, despite the obvious sensitivity of this question, the NPI has not dealt with it adequately. Upon it being pointed out that workers perceive the activities of the NPI as a threat to their job security (Meth, 1990, p.81) an NPI spokesperson responded by reciting from the NPI mission statement, the following sentiment:

“The NPI’s mission is to make a significant contribution to the improvement to the improvement of the standard of living and quality of life of all people in South Africa and to the creation of employment opportunities by taking and evoking action that will result in the more productive use of resources.” (du Plooy, 1990, p.87) (Emphasis in quoted source)

This commitment in the mission statement translates into a ‘no-retrenchment’ position—as the NPI assured the committee of the President’s Council that examined the productivity problem:

“Management is invariably advised that workers should not be retrenched because of a productivity improvement programme...” (P.C. 1/1989, para. 4.109, p.146)

Unfortunately, the ritual incantation of a commitment to a ‘job creation’ policy is no more effective at warding off unintended consequences (and unpleasant accusations), than would be the use of the mission statement as a

\textsuperscript{51} The President’s Council committee investigating productivity notes that “...enthusiasm can turn to obstructionism...” if workers feel that jobs and livelihoods are threatened by changes made to improve productivity. (P.C. 1/1989, para. 2.63, p.28) It is to their credit that they recognise this.

\textsuperscript{52} The attitude of the President’s Council committee on this matter is proper but superficial. They state that they: “...received evidence from various experienced people in this field that showed quite clearly that productivity improvement efforts should be communicated to the work force with a guarantee that nobody will be retrenched as a result of increased productivity.” They continue with the observation that: “It must be stressed that the application of this policy is one of the most important reasons for the success of productivity improvement in Japanese industry.” (P.C. 1/1989, para. 5.109, pp.176-177) Such a guarantee is almost impossible to honour in South Africa.
talisman to keep evil spirits at bay. The NPI is the leading actor in a state-sponsored drive to improve productivity. As a by-product, that drive has produced many casualties. To the extent that the NPI has succeeded in raising the general level of awareness of the need to improve productivity, the campaign is likely to have had effects that stretch beyond the limited direct service to NPI clients. Whether or not these advances add to or detract from total welfare cannot be known a priori.

The writing of a history of ‘mission statements’ and the context in which they begin to be seen as necessary would make an interesting research topic. It seems that they gained increasing popularity during the severe economic crises of the 1970s, often as public relations devices. Designed to reassure a disenchanted citizenry about the aims and objectives of business (one can but admire the more honest ones which put profits first) many of them stoop to laughably low levels of saccharine sentimentality. This does not mean, however, that all organisations treat the aims expressed in their mission statements with cynicism. It is from the interpretation and implementation of these statements that one gets a sense of the real objectives of an organisation.

In the view of the framers of the NPI’s mission statement, the goal of facilitating productivity improvement creates a ‘first and foremost obligation’ to change attitudes. The assignment of priorities to the different strategies used to bring about productivity improvements was, presumably, the outcome of some sort of analysis, however poorly-informed, rather than mere thumbsucking. This idealist (as opposed to materialist, in the Marxist sense) approach concentrates on ‘hearts and minds’ rather than the actual material conditions of worker’s and manager’s existence. Such a stance is problematic. Although the NPI’s mission statement does not go so far as to claim that attitude change is a sufficient condition for productivity improvement, no serious study of the necessary conditions for productivity improvement, one which paid proper attention to South Africa’s political economy, has ever been undertaken by the NPI.

Instead, the experience gained through conducting numerous firm and industry studies has been filtered through an ideological grid into a mixture of common-sense and platitude (often insensitive). This is bolstered every now and then by the outpourings of the management advisory industry. The failure to base the drive to effect productivity improvements on quality research which treated seriously, the class dimensions of capitalist societies, has contributed to the distortions and crudities of the propaganda campaign waged by the NPI. Frustration at the inevitable failure of such a campaign to
appeal to workers, coupled with the zealotry into which propagandists so easily slip, leads to intolerance. This is evident in the publicly-expressed impatience with individuals who refuse to recognise that the ‘national good’ is more important than any temporary inconveniences that may be occasioned by the pursuit of that ‘good’. The apparent inability to understand the nature of the barriers to productivity improvement has also led to such vain gestures as the demand that constitutional protection be provided against the unemployment which so often accompanies ‘progress’.

Ironically, the NPI has identified, time and time again, the elements of which these barriers consist. Although they have been somewhat circumspect in tackling their major client, the business community, head-on over the question of non-competitive markets, they have long railed against the ability of firms to indulge in price ‘over-recovery’ (essentially, raising or maintaining profit margins through raising prices). Analysing the under-utilisation and inefficiency of labour in South Africa, the NPI source from which were drawn the sensible things about unemployment quoted above, states that:

“Our long experience ... suggests that ... the single most important factor contributing to labour under-utilisation is the quality of management; while the single most important factor contributing to labour inefficiency is the quality of labour. To be more specific, our experience suggests that lack of managerial skills particularly at supervisory and middle management levels results in very poor supervision and in greatly deficient production planning and control. These are responsible in turn for a great deal of idle time. With respect to inefficiency and its underlying poor quality of labour, our biggest problem lies in the very low level of education received by a large proportion of the labour force.” (NPI, 1985, p.7)

To be sure, many managers and workers undoubtedly have attitude problems, some of which might be amenable to modification, but the problems identified above are structural. Nor do they exhaust the list of structural barriers to improved productivity. Given equal weight as the NPI’s ‘first and foremost obligation’ should have been a commitment to conducting rigorous research into these problems. Propaganda has its place, but it is all too easy, as has been shown above, to allow enthusiasm for the goal of improving productivity to blind its partisans to the evil side effects that such improvements may, and indeed, appear to have had.
Conclusion

It appears from the evidence considered in this study that job loss associated with productivity improvements often occurs during phases of economic distress. Frequently, the productivity improvement results from the fact that although both output and employment decline, the latter falls faster than the former. As has been demonstrated, crisis in capitalist economies can give rise to conditions in which productivity rises, the absolute level of employment falls, and unemployment rises. Such episodes need not be of short duration—of 14 examined in this study, only two lasted less than three years. Calls to increase productivity under such circumstances are likely to lead to even greater distress. Given that the forces of change generated by the dynamics of capitalist production cannot easily be controlled, it is vital to ensure that when a deliberate piece of social engineering is embarked upon, due consideration is given to the welfare of those who may be harmed by the project. Timing of policy interventions would appear to be particularly important.

Neither cold references to ‘temporary inconveniences’ nor the overt commitment to a ‘no-retrenchment’ policy encourage the belief that the NPI has given sufficient consideration to the possible negative consequences of the national campaign to improve productivity. The NPI’s ambivalent stance on the question of productivity growth and job loss is a subtle reflection of the contradictory relations of production that characterise the capitalist mode of production. Fatalistic acquiescence (typified by the Thatcherite slogan ‘There is no alternative’ ) in the compulsion to take part in the capitalist war of all against all has robbed even former socialists of the ability to confront the seemingly ineluctable logic of the market. Discomfort with the consequences of this submission to the dominance of capital needs to be focused into a genuine resistance—as noted above, coherent and well-articulated alternatives have been put forward (Nell, 1996; Singh, 1995b). The principal obstacle is the continued conservatism of the major OECD economies (Singh, 1992, pp.34-36). Ways must be sought to soften the apparently cruel dilemma confronting policymakers required to respond to conditions of economic crisis. Improving productivity at a national level should not be raised to the level of a fetish—employing large numbers of the unemployed at low wages, for example, on public works programmes, would lower productivity, but would boost welfare. Of course, competitiveness counts, but not to the point where undue suffering results
from its pursuit. Flexibility and an undogmatic approach are what is required.
References


National Productivity Institute. NPI Annual Report. Various years. Referred to, for example, as NPI, AR 1984/85.


Appendix - Privatisation, commercialisation and job loss

This is not the place to write an essay on privatisation. It is, however, not inappropriate to insist at this point that greater attention be paid to the topic of productivity growth and job loss as the these two are affected by privatisation, and the commercialisation process that often acts as its forerunner.

Although outcomes cannot be predicted a priori, if the purpose of privatisation is to ‘improve efficiency’, the empirical evidence suggests that it is highly likely that steps will be taken to increase worker productivity, which will as likely as not to lead to reductions in employment levels, the lowering of wages and the removal of fringe benefits.

To make nationalised or state enterprises more attractive to potential buyers, it is common for governments to embark on a prior cleanout, sometimes misleadingly described as ‘rightsizing’, In practice, this usually means ‘downsizing’. There are dozens of instances of employment declines in public enterprises prior to privatisation—a selected sample for the European Economic Community is given in EUTI (1988, p.78). With the drying up of the well of ‘privatisable’ enterprises in some countries, the process has slowed down. Recent examples may, however, be found. The downsizing which preceded the proposed privatisation of nuclear power generation in Britain (an exercise not without its own particularly interesting political overtones) saw the workforce cut from 14 400 in 1990 to 9000 in 1995, while output increased by 45 per cent (Labour Research, August 1995, p.13).

In South Africa, Transnet provides an equally engaging case. On All Fool’s Day 1990 (1st April), some years after the downsizing described earlier in these pages had commenced, the 153 000 remaining workers who were eligible for unemployment benefits were admitted to the UIF (UIF Annual Report 1990, para. 36, p.10). Loss of job security leading to employment conditions similar to those obtaining in the private sector—the withdrawal of the system of (almost) tenured employment—required that UIF benefits be extended to them as well. (Incidentally, according to South African Statistics 1993 (p.7.30) Transnet Ltd employed 167 291 workers in 1990. It is likely that the extra 14 000 workers constituted the highly-paid group who were excluded from the cover of the UIF).
Some privatisations see the transfer of workers from state to private employment; others, the transformation of employees into individual contractors, bidding for their jobs against other private contractors whose:

"[P]rofitability... depends on an ability to cut pay, worsen working conditions, reduce hours (for example, to avoid social security overheads and the need for meal breaks) and to intensify work." (Michie and Wilkinson, 1992, pp.211-212)

This applies particularly to workers in the ‘bottom-end’ privatised jobs (catering, cleansing, refuse collection, laundry services) where conditions are often worse than what they were in the public sector. In other cases, e.g., utility providers, employment levels fall, but real wages of those remaining rise (Stroud et al, 1996, p.131).

A study conducted by the European Trade Union Institute (EUTI, 1988) confirms that some privatisations, rather than reducing bureaucratic privilege, push the burden of lowering the cost of services onto lower-paid workers. Work done in Germany showed that for every 100 public sector jobs:

"...the number created or retained in the private sector is no more than fifty to seventy. After privatisation, meanwhile, worker’s earnings tend to be around 30% lower than when they were in public sector employment. Furthermore, working conditions ... generally deteriorate once the service has been contracted out to private firms." (1988, p.62).

In some instances, the quality of services improves dramatically as costs fall—telecommunications are a typical example. In others though, contracting out to private suppliers leads to "...corruption...[Payoffs], kickbacks, price-fixing, collusive bidding and charges for work never performed..." (Bilik, 1990, p.6). Contracting out food services in the USA has been blamed for ill-effects as wide-ranging as learning difficulties in schools, and riots in prisons, in part, because the ‘service’ is delivered by “unhappy, low-paid or poorly-trained workers...” (Bilik, 1990, p.6).

For some privatisations, employee views are divided as to whether or not customer service improves. One study, showed, perhaps predictably, that managers seem more likely than manual workers to believe that services have improved. Managers and workers alike agree, however, that privatisation reduces job security (Labour Research, May 1991, p.7).

A major (45-page) article on privatisation in the UNIDO Industry and Development Global Report (1992/93), managed to deal with the
unemployment associated with privatisations in about 400-500 words (under the heading ‘Political constraints’). Qualified optimism was the order of the day. After noting the reasons for trade-union resistance to the process, the authors observe that:

"In the medium- to long-term, there should be a tendency for more jobs to be created or for earnings to increase, to the extent that the divestiture of SOEs [state-owned enterprises] brings efficiency gains to individual enterprises and to economies. In the short-run, almost certainly divestiture will result in the lay-off of surplus labour, particularly in those developing countries in the throes of structural adjustment and in the countries of Eastern Europe."

To their credit, however, the authors do touch on the “…the near catastrophic…social impact…” of such exercises, especially when social safety nets are inadequate. (UNIDO, 1992, p.240) Given that the commercialisation process in South Africa is of quite long standing, and that the privatisation drive may be about to commence in earnest, and given furthermore, the fragility of South Africa’s social safety net, it would be reassuring to know that a careful monitoring programme was in place. One rather suspects that there are at present, few institutions with the capacity to tackle such a task.
To anybody interested in what is happening in Southern Africa at the present time, it is clear that an understanding of changes taking place in the field of labour is crucial. The whole debate about the political implications of economic growth, for example, revolves very largely around different assessments of the role of black workers in the mines and factories of the Republic. Many of the questions with which people involved in Southern Africa are now concerned relate, in one way or another, to the field generally set aside for labour economists to cultivate. The impact of trade unions; the causes of unemployment; the economic consequences of different educational policies; the determination of wage structures; the economics of discrimination; all these and more are matters with which labour economists have been wrestling over the years in various parts of the world.

At the same time there are many who would argue that these issues are far wider than can be contained within the narrow context of ‘labour economics’. These issues, it is pointed out, go to the heart of the whole nature of development. In recent studies, commissioned by the International Labour Office, of development problems in Columbia, Sri Lanka, and Kenya, for example, leading scholars have identified the three crucial issues facing these countries as being poverty, unemployment, and the distribution of income. Thus the distinction between labour and development studies is becoming more blurred as economists come face to face with problems of real life in the Third World.

It is here too that an increasing number of people are coming to see that study of the political economy of South Africa must not be done on the assumption that the problems there are absolutely different from those facing other parts of the world. Indeed it can be argued that far from being an isolated, special case, South Africa is a model of the whole world containing within it all the divisions and tensions (black/white; rich/poor; migrant/nonmigrant; capitalist west/third-world; etc.) that may be seen in global perspective. Be that as it may, the fact remains that the economy of Southern Africa (for the political and economic boundaries are singularly out of line with each other) is one of the most fascinating in the world. It is one on which far more research work needs to be done, and about which further understanding of the forces at work is urgently required. It is in order to attempt to contribute to such an understanding that Saldru is issuing these working papers.