

The Political Economy of Full  
Employment in Modern Britain

by

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# The Political Economy of Full Employment in Modern Britain<sup>1</sup>

May I say how pleased I am to be giving the Kalecki Memorial Lecture. Michal Kalecki was one of the greatest macro-economists of all time. He pioneered the use of mathematics in macroeconomics, he developed a coherent and convincing theory of aggregate demand and employment, and his writings on growth and cycles were in a class of their own. Yet his name is unknown to many younger economists and is rarely cited in modern textbooks. This is partly because economists, unlike natural scientists, have little interest in the history of their subject. It is also because Kalecki has been overshadowed by his famous contemporary, Keynes, whose location at the peak of the British academic establishment guaranteed him an influence and readership denied to an obscure, left-wing, Polish, Jewish émigré. Another factor may be that Kalecki's writings were too clear to attract the kind of following which Keynes enjoyed. *The General Theory* of Keynes contained many ambiguities and obscurities which allowed different schools of thought to interpret it in line with their own predilections. This gave *The General Theory* a breadth of intellectual appeal which

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<sup>1</sup> This paper is the text of a lecture given at the Oxford University Institute of Statistics to mark the hundredth anniversary of Kalecki's birth. I have made a few minor amendments and included an appendix on the role of the export base in a regional economy. I should like to thank Michael Anyadike-Danes, Iain Begg, Andrew Glyn, Graham Gudgin, Geoffrey Harcourt, Ron Martin and Solomos Solomou for their helpful advice or comments; also the following who generously provided me with data for some of the charts: Michael Anyadike-Danes, Gavin Cameron, Ezra Erdem, Andrew Glyn and Ivan Turok,

was never available to the unambiguous Kalecki. It must be said that Keynes himself was an admirer of Kalecki.

My lecture today is about unemployment. Kalecki believed that unemployment in advanced capitalist economies such as ours is often due to insufficient aggregate demand, and can be reduced by creating demand through deficit-financed government expenditure. However, he recognised such a remedy may not always work. In 1943, whilst here at the Oxford Institute, he wrote a paper entitled “Political Aspects of Full Employment”, where he argues that unemployment may be functional to a capitalist economy because it maintains labour discipline and keeps wage demands in check<sup>2</sup>. He then considers how capitalism might be reformed so that it can function without unemployment. The authoritarian solution is fascism, which replaces the discipline of unemployment by the direct repression of the working class by force. The democratic solution, which he favours, is a new settlement between capital and labour, in which powerful trade unions co-operate with the employers in return for income redistribution and other egalitarian measures. This type of co-operation became widespread in Northern Europe following the Second World War and was known as social partnership. It has become less common in recent years, but it is still to be found in some small countries such as the Finland, Ireland and the Netherlands.

In the absence of this type of co-operation, Kalecki predicted that employers and the financial sector would turn against full employment policies. This was an extraordinary prediction of the turn towards monetarism throughout the OECD during the 1980s, following the period of industrial strife, wage pressure and profit squeeze

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<sup>2</sup> Kalecki (1943)

of the preceding decade. Nowhere was the impact of this shift in policies more profound than in the UK, as I shall argue later in this lecture.

Kalecki also recognised that structural factors might limit the scope for demand-stimulating measures. In his 1944 paper, “Three Ways to Full Employment”, also written in Oxford, he argues that inflation will result if demand increases so much that a general scarcity of productive capacity emerges<sup>3</sup>. In order to avoid inflation, the government must, therefore, be careful not to push deficit spending beyond the mark indicated by full utilization of equipment. Kalecki also argues that the elasticity of substitution between capital and labour is low, with the implication that a very large, and unacceptable, reduction in real wages may be required in order to price workers into employment when the economy is facing a capital shortage. Under such conditions, the appropriate policy is not to force down wages, but to encourage extra investment in productive capacity. Moreover, once there is enough productive capacity in place and full employment has been achieved, to maintain full employment in the future will require that productive capacity increases in line with the growth in population and productivity of labour.

These propositions are, in my view, fundamentally correct. There is strong empirical evidence that the elasticity of substitution between capital and labour is low, and that wage cuts are not very effective at stimulating extra employment with a given volume of productive capacity. To the extent that wage flexibility aids employment, this is primarily because it increases profits and encourages investment in extra productive capacity, thereby making the economy larger and raising the future demand for labour.

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<sup>3</sup> Kalecki (1944)

I have discussed these issues at length elsewhere, so I shall not pursue them here<sup>4</sup>. Instead, I shall examine other structural obstacles to full employment which were never, to my knowledge, considered in depth by Kalecki. He was, of course, aware of these other obstacles but he left the task of analysing them to his academic colleagues. For example, in his paper, “Three Ways to Full Employment”, he explicitly refers to the essays by Kurt Mandelbaum and David Worswick on the subject of employment and labour mobility, which appeared in the same volume as his own paper<sup>5</sup>.

In my discussion of the structural obstacles to full employment, I shall be mainly concerned with Britain, but much of what I say is relevant to other advanced economies, especially those of Western Europe.

### *Structural Change*

Over the past few decades the British economy has undergone a number of major structural shifts. These have had severe regional consequences which are not reflected in the official unemployment statistics and until recently were largely ignored in the national political debate. However, this situation is now beginning to change as the depressed areas finally make themselves heard, and those living in more prosperous areas are getting worried about the environmental effects of inward migration from their poorer neighbours.

From a regional point of view, two of the most important structural shifts have been as follows:

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<sup>4</sup> Rowthorn (1995), (1999).

1. *De-industrialisation.* The share of services in total employment has been rising rapidly, whilst the shares of manufacturing, mining and agriculture have been falling. In quantitative terms the decline in manufacturing is the most important, although certain particular areas have suffered from a serious loss of mining and agricultural jobs. The term ‘de-industrialisation’ is often used to denote a decline in the share of manufacturing in total employment. All OECD countries have de-industrialised to some extent over the past thirty years, but the process has been more extreme in Britain than elsewhere. Moreover, the relative decline in British manufacturing has occurred against a background of stationary total employment. Thus, the falling *share* of manufacturing has been matched by a huge fall in the absolute numbers employed in this sector. This is in stark contrast to the United States where total employment has grown rapidly, so that the absolute numbers employed in manufacturing have remained fairly stable despite a large reduction in the relative share of this sector.

2. *De-urbanisation.* The locus of economic activity in Britain and certain other European countries is moving away from the large urban centres which arose during the industrial revolution. Most of the modern expansion in services has been in towns and rural areas, whereas most conurbations and cities have witnessed very little net job creation in services. The decline in manufacturing employment has been also been much greater in the cities and conurbations, whilst this sector has survived quite well or even prospered in less urbanised parts of the country.

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<sup>5</sup> Mandelbaum (1944), Worswick (1944).

Thus Britain has experienced a combination of inadequate overall growth in employment, a falling share of manufacturing in total employment, and a shift in the locus of economic activity away from the larger urban concentrations. As others have already documented, and I shall demonstrate later, the implications of these developments have been catastrophic for many urban areas. They also have an important North-South dimension. What is loosely known as the “North” of our country has suffered disproportionately from the decline in manufacturing, whilst the expansion of service employment has been heavily skewed towards the South<sup>6</sup>. In part this reflects the fact that most declining urban areas are located in the North, although other factors are also at work. Some years ago, together with a colleague, the late John Wells, I wrote a book in which we distinguished between various types of de-industrialisation<sup>7</sup>. In the positive type, a dynamic manufacturing sector is increasing output quite fast, but is also shedding labour because of rising productivity, and this labour is then absorbed rather speedily into an expanding service sector. Thus, both manufacturing and services are increasing their output quite fast, but the balance of employment between them is shifting. During this process living standards rise and there is only a modest amount of transitional unemployment as manufacturing workers move to new jobs in the service sector. The British case is definitely not an example of positive de-industrialisation. The manufacturing sector has certainly shed labour, but this has been against a background of virtually stagnant manufacturing output, and many of those displaced have not found employment in the service sector. Many of the new service jobs have been taken by other people, often located in other parts of the country.

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<sup>6</sup> Throughout this paper the term “North” is used to denote the North of England plus Scotland. The regions which belong to the North of England are: Merseyside, North East, North West, West Midlands, Yorkshire and Humberside.

<sup>7</sup> Rowthorn and Wells (1987)

Such changes have important social and political implications. However, before considering these implications, let examine in more detail the structural changes just outlined.

### *De-industrialisation*

In all OECD countries the share of manufacturing in total employment has fallen, whilst that of services has risen. The extent of this shift varies markedly between countries, with Japan at one end of the spectrum and Britain at the other. If the OECD economies had grown sufficiently fast over the past thirty years to maintain full employment, and the share of manufacturing in total employment had remained at its peak level, there would now be approximately 35 million more people employed in this sector than is actually the case.

Together with my colleague Ramana Ramaswamy at the IMF, I have tried to quantify the effect of various factors on manufacturing employment<sup>8</sup>. Although the estimates are inevitably rather crude, one thing does seem fairly certain. Trade with the developing economies has not been the major factor behind the decline in manufacturing employment. It accounts for a net loss of maybe 5-6 million manufacturing jobs in the OECD since 1970, which although a significant number is only a fifth of the total decline. I say net loss of jobs because the rise in manufacturing trade with developing countries has occurred in both directions and jobs have been gained as well as lost as a result. Indeed, in purely financial terms the manufacturing trade surplus of the OECD with developing countries has actually

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<sup>8</sup> Rowthorn and Ramaswamy (1999)

increased over the period. However, this disguises an important asymmetry. Wages in developing countries are much lower than in advanced economies, so that manufactured imports from these countries contain a much greater amount of labour than is contained in the high wage manufactured goods we export in return. If the advanced countries were to produce all of their own clothing, for example, we would have to devote far more labour to the task than we do in producing the sophisticated manufactures, such as turbines, which we currently export to pay for the clothes we import.

Although significant, especially for regions which used to specialise in clothing production and the like, this new global division of labour is not the main factor behind the decline in manufacturing employment. More important are demand and productivity trends. It has been suggested, by Colin Clark amongst others, that the income elasticity of demand for manufactures falls in the course of development, with the result that in advanced economies there is a shift in demand away from manufactures towards services. The estimates of Ramaswamy and myself support this hypothesis. However, there is also productivity to consider. Although productivity is sometimes difficult to measure, especially in the services, it is clear that *on average* labour productivity, and also total factor productivity, have been growing significantly faster in manufacturing than in the service sector as a whole. This has a dual effect on employment. For a given level of output, higher labour productivity means less employment. On the other hand, rapid productivity growth makes manufactured goods relatively cheap compared to services, thus stimulating the demand for manufactures. The net impact of higher productivity on manufacturing employment depends on the relative strength of these two effects. Our estimates imply that the

demand switching effects are substantial, but not sufficient to offset the labour-saving effects, so the net impact of higher manufacturing productivity in advanced economies is to reduce employment in this sector.

Manufacturing output and employment have also been influenced by other factors, such as the slow-down in investment in advanced economies and trade between such economies. However, I shall not discuss these here. Let us instead examine some of the main trends in production and employment. This will help to show how unusual British experience has been.

Chart 1 shows what has happened to manufacturing and services in the OECD as a whole since 1960. Perhaps the most striking feature of this chart concerns output. Despite some slowdown after the climacteric in 1973, manufacturing output has continued to grow strongly. Indeed, since the mid-1980s, manufacturing and services have enjoyed an almost identical growth in output. It is clearly not the case that the OECD is withdrawing from the production of manufactured goods as it is sometime claimed. Despite this output growth, the numbers employed in manufacturing have been slowly drifting downwards. Because of the explosion in service employment, the share of manufacturing in total employment has, of course, fallen sharply.

Chart 2 shows what has happened to British manufacturing since 1960. It is often said that the Thatcher government presided over a productivity revolution in our manufacturing sector. The graph provides some support for this view. Output per worker apparently stagnated over the period of the Labour government 1974-79, then apparently rose strongly over the next decade. However, productivity growth has

been slower in the past few years, and it seems that productivity is now back on the pre-1973 trend. To the extent that there was a productivity revolution under Thatcher, this seems to be more of a return to a previous trend rather than a permanent acceleration in the underlying growth rate. Moreover, even this interpretation may be incorrect. Several researchers, including Oxford's Gavin Cameron, have argued that official output statistics are misleading<sup>9</sup>. They underestimate output and productivity growth under the 1970s Labour government, and thus over-estimate the extent of the improvement under Thatcher. Chart 2 compares official figures for UK manufacturing with revised estimates kindly supplied to me by Gavin Cameron. With the revised series, the acceleration in productivity growth during the Thatcher period is a rather modest one and for all effect, certainly not enough to be considered a revolution.

Chart 3 compares British experience with that of other countries. The average growth rate of labour productivity since 1973 has been virtually the same in British manufacturing as in the EU or the OECD as a whole. This is true whether we use official figures or Cameron's adjusted figures which are shown here. What really distinguishes the UK from other countries is the output performance of this sector. Since 1973, manufacturing output has risen by 2.3 percent a year. In the EU the rate has been lower, at around 1.4 percent a year, reflecting in part the deflationary bias of the Bundesbank and other central banks during the period. Much worse than either of these has been the UK, where manufacturing output growth has average a mere 0.4 percent a year. Following a brief upsurge during the Lawson boom in the late 1980s, output has been almost stationary during the past decade.

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<sup>9</sup> Stoneman and Francis (1994), Cameron (1999)

What explains this dismal performance? Part of the explanation is the changing pattern of UK specialisation in the world economy. Non-manufacturing exports have been boosted by the discovery of North Sea Oil, the rise to pre-eminence of the City of London as a world financial centre, and a more general growth of internationally traded services in the south of the country. All of these have impinged on the manufacturing trade balance, which has gone from surplus to deficit over the period as new sources of foreign revenue have replaced manufactured exports. Britain no longer has a trade surplus in manufactures because it no longer needs one. Such a change in the external trade structure has obvious implications for the internal structure of the economy. In relative terms, it implies a shrinkage of the manufacturing sector and an increased weight in the economy for the service sector. It helps to explain why UK manufacturing output has grown so slowly.

However, this is only part of the explanation. If manufacturing output in the UK had grown at the same rate as the OECD average since 1973, our production and employment in this sector would now be 30 percent higher than it actually is. If we had merely kept up with the rest of the EU, production and employment would be around 18 percent higher. Such large differences between our experience and that of other countries cannot plausibly be explained by changes in our external balance of trade. These changes are simply not big enough to explain why our manufacturing performance has been so much worse than that of other OECD countries, including our EU colleagues who are being constantly lectured about the alleged virtues of our “flexible” model. Whatever the virtues of this model may be, they are not reflected in the manufacturing statistics.

One factor behind the dismal performance of UK manufacturing has been the serious macro-mismanagement of our economy. There was a massive slump in the early 1980s caused by a combination of mistaken monetary and fiscal policy. This was followed by an overly fast recovery and then a further slump. There have also been three periods of serious currency overvaluation - the early 1980s, the ERM period in the early 1990s and again today. All of these have damaged the manufacturing sector. The share of manufacturing in total employment was bound to fall by a great deal and the loss of several million jobs in this sector was inevitable. But the loss has exceeded the requirements of structural change and modernisation. Macro-economic instability and exchange rate fluctuations have destroyed parts of the manufacturing sector which had the potential for long-term growth and also discouraged the entrance of new firms into the industry. These losses have damaged those service activities which are dependent in some way on the manufacturing sector.

With better macro-economic policies, manufacturing output and employment might have been significantly greater than they are today. It is a matter of speculation what the difference might have been, but some indication may be gleaned by looking at the experience of other countries. Suppose that with a better macro-policy over the past twenty-five years, our manufacturing sector had managed to grow as fast as the average for the rest of European Union. This would still leave it with a performance that was sluggish compared to the OECD as a whole. Even so, with observed productivity trends, the number of workers in British manufacturing in 1999 would have been around 4.7 million. This is far below the historic peak of 8 million workers, but is 700 thousand greater than the actual figure of 4.0 million for

manufacturing employment in 1999. There would have also been a positive multiplier effect on the service employment. With such an improvement, some depressed areas of our country would be in much better shape than they are today, although many would still be in a bad way. It was disillusionment with British macro-economic management which led many Keynesians to embrace European Monetary Union in the hope that it would keep the exchange rate down and prevent damaging instability. Personally, I am not convinced but I see their point.

It is nowadays fashionable in Europe to blame poor economic performance entirely on supply side factors, but this is not in my view a plausible contention. I can see no reason why quite so much the North had to be laid waste to make room for Southern expansion. Nor can I see why the huge slump of the early 1980s was required to revitalise British manufacturing industry - not that it actually did so. With a better macro-economic policy, we could have enjoyed the benefits of a stronger manufacturing sector than we have now without sacrificing the benefits deriving from North Sea Oil and our dynamic international service sector. It was not a simple matter of either or. As I have written at length elsewhere, manufacturing employment was bound to shrink a great deal and the weight of this sector in the national economy was bound to fall<sup>10</sup>. But macro economic policy has accelerated the decline, made the country poorer than it otherwise would be, and exacerbated the inevitable problems of those areas heavily reliant on manufacturing employment.

It is to the geographical dimension that I now turn.

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<sup>10</sup> Rowthorn and Wells (1987)

### *De-urbanisation*

Over the past forty years, there has been a marked shift in the locus of economic activity in Britain, away from the larger urban centres towards towns and rural areas. Leading this process has been the migration of manufacturing industry. This is partly because it is cheaper to develop new activities on greenfield sites than to clear away the remnants of former industrial activity. It is also because the rise of the motor car and modern forms of communication has reduced the advantages of agglomeration in cities. Moreover, as Stephen Fothergill and Graham Gudgin argued some years ago, technical progress in manufacturing reduces the demand for labour much faster than the demand for floor space<sup>11</sup>. Hence, just as in agriculture, the labour to land ratio in manufacturing is constantly declining, and large urban centres, where land is scarce or expensive to re-develop, are likely to shed labour rapidly, even when manufacturing production is increasing in the country as a whole. This is reinforced by the need to provide employee car parks in a car-based age.

Charts 4 and 5 indicate what has happened to manufacturing output and employment in various types of area. The employment figures are taken from a recent study of urban unemployment by Ivan Turok and Nicola Edge<sup>12</sup>. The output figures are derived from their employment figures by assuming that output per worker is the same in all types of area. This is only an approximation, but it is adequate for our purposes. The series for total output is slightly different from the official series because it embodies Cameron's corrections mentioned above. From chart 4 we see that manufacturing output is increasing strongly in towns and rural areas, declining in the

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<sup>11</sup> Fothergill and Gudgin (1982). See also Fothergill, Kitson and Monk (1985) and Begg, Moore and Rhodes (1986).

<sup>12</sup> Turok and Edge (1999)

large conurbations and just about holding its own in free standing cities<sup>13</sup>. All areas are shedding labour because of productivity growth, but the decline is much greater in the cities and conurbations. It is interesting to note that manufacturing employment in the conurbations began to fall as long ago as the 1960s and has been continuing to fall ever since. The cumulative scale of this decline is truly dramatic. In 1961 more than 3.4 million people were employed in manufacturing industry located in the conurbations. Today, the figure is scarcely a quarter of this amount. The decline in free-standing cities has been less dramatic, but even these have lost about sixty percent of their manufacturing employment in recent decades.

These huge losses in the manufacturing sector have not been offset by a corresponding growth in alternative employment in the areas concerned. Service employment has expanded in the country as a whole, but as can be seen from Chart 6 the new jobs have been almost entirely located in towns and rural areas<sup>14</sup>. These developments are reflected in the behaviour of total employment, which has fallen by more than 20 percent in the conurbations since the early sixties, whilst increasing by around 30 percent in towns and rural areas. As can be seen from Chart 7, the group worst hit by these changes have been full-time male workers, who have experienced a net loss of more than a million jobs in the country as a whole since 1981. Within this group, the decline has been greatest amongst manual workers, who have suffered a virtual collapse of employment in some conurbations. The decline of manual employment, it must be stressed, is not simply due to the decline of manufacturing industry.

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<sup>13</sup> There are eight conurbations and twelve free standing cities. The conurbations (and their cores) are as follows: Greater London (Inner London), West Midlands (Birmingham), Greater Manchester (Manchester), West Yorkshire (Leeds), Clydeside (Glasgow), South Yorkshire (Sheffield), Merseyside (Liverpool) and Tyneside (Newcastle). The Free-standing cities are: Bristol, Edinburgh, Stoke-on-Trent, Leicester, Wigan, Coventry, Sunderland, Doncaster, Cardiff, Nottingham, Hull and Plymouth.

<sup>14</sup> Charts 6 and 7 are from Turok and Edge (1999).

Throughout the economy, including manufacturing, the proportion of educated and white-collar workers has been increasing.

One interesting feature of these developments is the location of the new jobs for women. In the conurbations as whole, there has been no net increase at all in full-time jobs for women and only a modest increase in part-time jobs. There has been an increase in full-time managerial and professional jobs for women, but this gain has been offset by an equal fall in traditional full-time jobs for women in manufacturing and elsewhere. Contrary to the impression given by that well-known film, *The Full Monty*, the economic position of working-class women in the old industrial areas has not in general improved significantly. Their relative position compared to that of men may have got better, but this is only because the men have done so badly.

### *Regional Implications*

The above trends are reflected in regional economic performance. As can be seen from Chart 8, total employment in the heavily urbanised “North” of England has been declining, as it has in Scotland<sup>15</sup>. With the exception of London, there has been a sustained growth of employment in the South of England, whereas Wales has in aggregate held its own. The growth of the South partly reflects its less urban character, and partly the fact that most of the modern expansion of internationally tradable services has been concentrated in this area. Employment has also grown fast in Northern Ireland, reflecting the expansion of public services and the long-delayed revival of its manufacturing sector in response to a vigorous programme of government support.

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<sup>15</sup> The data for this chart are from Gudgin (1995) supplemented by data from *Regional Trends*.

These regional trends are hardly visible in the official unemployment statistics. Indeed, there has been a convergence in regional unemployment rates over the past decade, giving rise to the false notion that the old North-South divide is disappearing. What explains this illusion? One reason is inter-regional migration, which helps to siphon off surplus labour from depressed areas and thereby level out unemployment rates across the country. However, this is not the main reason why official unemployment rates are now so uniform, since migration flows are relatively small and consist disproportionately of younger people with qualifications. Older or less qualified people, who comprise most of the jobless, tend to remain where they are. Some of them are official recorded as unemployed, but most are excluded from the official unemployment statistics and are classified as economically inactive.

Chart 9 is taken from a recent submission by Andrew Glyn and Esra Erdem to an Employment Sub-Committee of the House of Commons<sup>16</sup>. It shows regional unemployment and inactivity rates for men aged 25-64 in 1997. In most regions, the number of men in this age group who are classified as inactive is more than twice the number classified as unemployed. In the old industrial regions, such as Merseyside, South Yorkshire or Tyne & Wear, around 30 percent of men in this age range are without a formal job. Of these, only 9 percent are officially unemployed and the remainder are classified as inactive. In the most prosperous regions of the country, the corresponding figures are around 12 percent and 4 percent respectively. This suggests that the true unemployment rate for men in the depressed regions, and the contrast

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<sup>16</sup> Glyn and Erdem (1999)

with more prosperous areas regions, is far greater than the headline unemployment figures suggest.

The term “economically inactive” covers a variety of different circumstances. Many of the inactive are people who are officially classified as unable to work because of long-term illness, and their number is much higher in the old industrial areas than elsewhere. In part, this must reflect the traditionally lower standard of health in industrial areas, but it must also reflect the impact of economic decline. In their paper on regional inequality, Ivan Turok and David Webster show there is a strong correlation between lack of work and the official rate of long-term illness<sup>17</sup>. For people below pensionable age, long-term illness rates range from 3 percent in the most prosperous areas up to 18 percent in the most depressed. The very high rates in depressed areas must surely conceal a great deal of disguised unemployment. Many of those who are classified as too sick to work are probably capable of holding down a job, but have such poor employment prospects that doctors have certified them as unfit to work as a humane way of providing them with a secure income in the form of sickness benefit. Even where their incapacity is genuine, some of those concerned must have become sick because of the stress and poverty of job insecurity and unemployment.

Another factor raising the inactivity rate in depressed areas is premature retirement, especially amongst men. Many older men who lost their jobs during the run down of traditional industries were given financial pay-offs which allow them to get by without a job. Some of them are quite happy as they are, some would like a job now but are

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<sup>17</sup> Turok and Webster (1998)

not actively seeking one, whilst others would develop a renewed interest in work if reasonable jobs were plentiful.

The prevalence of premature retirement and long-term illness in the depressed areas is reflected in the extremely low activity rates amongst older men, especially those without much formal education<sup>18</sup>. For such men, to have a stable job is now unusual and the majority of them are either unemployed or outside the labour force altogether. Consider, for example, males in the lowest educational quartile in the age group 55-64. Even in the supposedly prosperous south of the country, nearly 40 percent of such men are without a formal job, whilst in the most depressed northern regions, such as Tyne & Wear, the figure is around 80 percent. Given the fact that many of these men live at or close to the poverty line, the obvious conclusion is that an entire generation of industrial workers was thrown on the scrap heap during the great transformation of recent decades. Whatever benefits it brought to others, de-industrialisation was clearly not a positive experience for them.

The fact that male joblessness is particularly high amongst older, less qualified workers might suggest that it is a transitory problem which will fade away as these workers eventually disappear from the scene. They are the unfortunate casualties of a half-forgotten war. However, the evidence does not support such an optimistic interpretation. Joblessness is not confined to older workers and affects the less qualified of all ages. In most northern regions, around 40 percent of all prime age males in the lowest educational quartile are currently without formal employment. Many are officially classified as unemployed, but many others are not. The latter exist

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<sup>18</sup> The numbers cited in this and the following three paragraphs are taken from Glyn and Erdem (1999)

outside of the official labour force surviving by one means or another. Some are supported by friends or relatives, whilst others get income from crime or semi-legal activities.

Further evidence against the optimistic interpretation is provided by Glyn and Erdem (1999). For men in the lowest educational quartile, despite cyclical fluctuations, there has been an apparent upward trend in joblessness over the past fifteen years affecting virtually all regions of the country. There is also little sign that the gap between the best and worst regions is narrowing. On a national level, this trend reflects the severe disadvantage suffered by those at the lower end of the educational ladder. It also indicates the seriousness of this problem in the depressed areas. The upward trend cannot be ascribed simply to the industrial collapse of the early Thatcher years, since the period we are talking about is subsequent to this collapse.

I have focused so far on men, but less qualified women also have very limited job opportunities in the depressed areas. Depending on the age group, only 20-40 percent of women in the lowest educational quartile are in paid employment in these areas. This partly reflects a conscious desire to specialise in homemaking and child raising, but many of the women concerned would surely seek paid employment if jobs were plentiful. In the more prosperous southern regions, 60-70 percent of less qualified women of child-bearing age have a job. The huge gap between North and South may indicate something about social attitudes, but the lack of jobs in the North must also be a major factor.

One reason for the low labour force participation of women in the depressed areas is lone parenthood. It has been shown that there is a positive correlation between lone parenthood and male joblessness<sup>19</sup>. Men without jobs are more likely to father children outside the framework of a stable relationship. Cohabiting couples are more likely to break up if the man is without work or loses his job, and are more likely to make the transition into formal marriage if the man has a stable job<sup>20</sup>. Thus, in the depressed areas, the absence of work for men encourages lone motherhood, whilst the absence of work for women encourages welfare dependence by the lone mothers. The Welfare to Work programme of the present government is intended to tackle this problem, but unless the economic decline of such areas can be reversed the programme is unlikely to achieve very much. Even if the lone mothers concerned do get jobs, this may only be at the expense of someone else and perhaps destabilising some other family.

### *The Long-run Implications of Northern Decline*

Suppose that the economic trends we have been discussing are not reversed. What are their implications? To answer this question let consider briefly what geographers call the “export base” of a region. The export base consists of all those activities which bring income into the region by providing a good or service to the outside world, or provide locals with a good or service which they would otherwise have to import. The alternative term “tradables” is also used to denote such activities. Agriculture, mining and manufacturing mostly belong under this heading, as do the local producer services which these activities rely on. The export base also includes services such as tourism, national call centres, central government offices, military bases, large

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<sup>19</sup> See Turok and Webster (1998)

company headquarters and the like. These all represent an independent source of income for the region which is not merely a welfare transfer from the central government. The export base does not in general include local consumer services, such as retail distribution, or population-based services such as health and education<sup>21</sup>

The prosperity of a region is determined primarily by the strength of its export base<sup>22</sup>. Consider what happens if the export base shrinks through the closure of a steel works or a naval base, for example. This will cause an immediate fall in employment and total income in the region. There will be a short-run multiplier effect on employment as local suppliers lay off workers, and consumer expenditure on housing, shopping, leisure activities and the like is reduced. The scale of this short-run multiplier will be limited by the operation of the welfare state whose expenditures in the region will help to maintain local demand following a blow to the local economy. Government transfer payments to the newly unemployed will allow them to continue spending, albeit at a reduced rate, on local goods and services. Hospitals and schools will continue to operate as normal, providing jobs for those who work in them and supply them. In addition, redundant workers may receive compensation which allows them to continue spending in the local economy.

Thus, in the short run, there is a variety of mechanisms which limits the extent of decline following a major shrinkage in the export base. What happens in the long run depends on migration. If emigration is easy, then following the initial decline, some younger people will start to leave the region in search of better opportunities elsewhere. As they do so, the number of children living in the region will begin to fall

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<sup>20</sup> See Ermisch and Francesconi (1998)

and schools will close or lay-off staff. The demand for medical services for younger adults and their children will also fall as people leave. And as the present generation of pensioners dies off and are not replaced because of emigration, the demand for medical and social services for the elderly will eventually shrink. All of these mean further reductions in employment. Thus, the initial decline will set in train a long-run multiplier as emigration leads to a downward spiral of shrinking population and falling employment.

In the absence of permanent obstacles to emigration, the surplus population of a depressed region will tend to redistribute itself over the country until equilibrium is eventually restored, and the existing export base is sufficient to support a reduced population at the normal level of prosperity. This assumes that there are no agglomeration effects associated with migration. If there are strong agglomeration effects, the dynamic regions absorbing migrants from elsewhere may gain further competitive advantage from this inflow, whilst those regions losing population may find their export base shrinking still further, locking them into a vicious spiral of decline which has no equilibrium point other than virtual collapse. Such a phenomenon has not yet been observed on a large scale in Britain, but it might conceivably happen to an area like Merseyside if the current obstacles to outward migration were removed.

To get an idea of long-run trends, I have tried to estimate what has happened to the export base of the “North”, which is the term I shall use to cover the North of England plus Scotland. Given the ambiguities involved in the concept and the limited statistics

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<sup>21</sup> For a discussion of what constitutes a tradable service see Begg (1993)

available there is no ideal way of measuring the export base, but as a proxy I use the total number of people employed in agriculture, mining, manufacturing, the armed forces plus what I call “extra” employment in financial and business services. The latter is an estimate of the number of people employed in producing tradable financial and business services<sup>23</sup>. Other ways of measuring the export base were also considered and lead to similar conclusions to those which follow.

Having estimated the export base for the North, this figure is divided by the corresponding figure for Great Britain as a whole. The resulting ratio is then expressed as the index which is shown in Chart 10. This series indicates clearly how the export base of the North has shrunk in relation to the rest of Britain. The decline was steepest the early 1980s slump, but the index has continued falling since then and is now almost 20 percent below its value a quarter of a century ago.

The share of the North in population is also falling, but at a much slower pace. This lag reflects the inertial impact of the welfare state and the obstacles to North-South migration. A major obstacle to inter-regional mobility is the high cost of housing in the more prosperous areas, which makes it very difficult for less qualified workers to move and reduces the incentive for workers of all kinds to migrate<sup>24</sup>. Indeed, when the cost of housing is taken into account, many people in the North who are fortunate

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<sup>22</sup> The role of the regional export base is discussed at length in an appendix.

<sup>23</sup> “Extra” employment in financial and business services is defined as follows. For region  $i$  in a given year, let  $P_i$  stand for population and let  $F_i$  stand for *total* employment in financial and business services. Also, let  $w$  be that region of Great Britain for which the ratio  $F/P$  is lowest in the relevant year. Then, *extra* employment in region  $i$  is, by definition, equal to  $F_i - (F_w/P_w) \times P_i$ . Since region  $w$  is always Wales, this formula implies that extra employment in Wales is always equal to zero. Thus, our procedure for measuring the export base tacitly assumes that the output of externally-tradable financial and business services in Wales is zero. This assumption accords with the findings of Anyadike-Danes (1999), who argues that Wales produces very few business services that are directly traded across the regional boundary. Other ways of estimating employment in tradable services were also considered, but the final results were very similar to those reported in this paper.

enough to have stable jobs are better off than their southern counterparts. The differential in housing costs provides a brake on emigration and inhibits the cumulative decline and de-population of the depressed areas. The down-side is that an important safety valve is thereby removed, and failing a renewal in the local export base there will be a chronic surplus of population and scarcity of jobs in these areas.

One interesting feature of Chart 10 is the behaviour of non-tradables employment, where the share of the North has been drifting irregularly downwards roughly in line with population. This is to be expected since much of the demand for non-tradables is generated by fiscal transfers from the central government, which are closely linked to population. The chart shows clearly the impact of cyclical movements. At the end of the 1980s, constraints on further expansion in the South caused the economic boom to spill over into the North, and this was followed by a serious recession in the southern service sector. This combination led to a temporary increase in the northern share of employment in both tradables and non-tradables. However, since then the relative decline of the North has resumed.

Chart 10 indicates the scale the problem that Britain now faces. Suppose that the obstacles to emigration from the North of England were removed allowing the surplus population to move south. Under these conditions, the share of the North in national population would carry on falling until it was commensurate with the share of this area in tradable activities. Since 1971, the share of the North in tradables employment has declined by 19 percent, whilst its population share has fallen by only 5 percent. Thus, in the absence of any further relative decline in the export base of the North,

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<sup>24</sup> See Cameron and Muellbauer (1998)

another 14 percent of its population would have to be siphoned off before the old balance between population and the local economy was restored. This amounts to 3.5 million people<sup>25</sup>. Such a transfer of population is required simply to catch up with the shrinkage of the northern export base which has already occurred. Since the northern export base is still shrinking in relative terms, the ultimate scale of migration required to restore balance could be much greater than this figure suggests.

Migration approaching this scale is not without precedent. There were large movements of population during the inter-war period as the boom in new manufacturing industries in the South sucked in workers from the depressed areas<sup>26</sup>. There were even larger movements during the industrial revolution and much of the nineteenth century. However, the situation is different today. In the inter-war period, housing in the expanding areas was quite cheap and there were plenty of jobs for uneducated, manual workers. In those days, younger people in the depressed areas, even those without much formal education, could follow the advice of our former Employment Secretary, Norman Tebitt, and “get on their bikes”. This is how his father had found a job when unemployed before the war. Nowadays, however, housing costs in the dynamic areas are often very high and jobs are comparatively

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<sup>25</sup> This estimate is based on the assumption that only “extra” employment in financial and business services is part of the export base. If all financial and business services are included in the export base, the relative decline of the North since 1971 is an estimated 16 percent, and the transfer of population required to offset this decline is 2.8 million. Thus, the numbers are not highly sensitive to the exact definition of what constitutes a tradable service.

<sup>26</sup> ‘From 1923 to 1936 London and the Home Counties and the South-Eastern and South Western divisions of the ministry of Labour made a net gain of 2,400,000 inhabitants, the North-East, North-West, Scotland and Wales lost 2,200,000 and the Midlands showed no change’ - quotation from ‘Britain’s Town and County Pattern’, *Nuffield College Social Reconstruction Survey*, Cited in Worswick (1944, p 75).

scarce for the uneducated even in these areas. These are formidable obstacles to large scale migration into the South<sup>27</sup>.

To eliminate such obstacles, housing costs in the South for incomers would have to be reduced, and potential migrants from the North would have to be given the education required to get a reasonable job when they arrived. There would have to be a massive programme of house building in the South, most of which would inevitably be on greenfield sites in rural areas and around existing settlements. Such an ambitious programme would be highly contentious, as can be seen from the hostile response to existing plans for house building in the South.

Education is often seen as the key to the revival of depressed areas, but this is an over simple view. As can be seen from the recent success story of Ireland, to have an educated population may be a great economic asset, especially if they are willing to accept lower pay than their external competitors. Such a combination is attractive to inward investors and makes local firms more competitive. For this reason, education is a crucial component of any policy for reviving the fortunes of depressed areas. However, education may also be a passport to emigration since it improves the external job prospects of those who might leave.

### *Concluding Remarks*

This lecture has questioned the complacent view that Britain's economic performance has been a shining success, that our country is now an advertisement for the virtues of

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<sup>27</sup> This is not just a British phenomenon. Most European countries have much lower rates of inter-regional migration than the USA, where migration is on a sufficient scale to eliminate unemployment disparities quite rapidly. See Blanchard and Katz (1992), Decressin and Fatás (1995), Baddeley, Martin

de-regulation and labour market flexibility. It is true that the southern part of our economy has displayed an impressive dynamism and has a clear lead over the rest of Europe in the provision of internationally traded services. However, the income from these activities has masked the decline of manufacturing industry, which has hit the larger urban centres of the North especially hard. Given Britain's stage of economic development, manufacturing employment was bound to fall a great deal over the past twenty years and there was bound to be serious dislocation. But the decline has been more extensive, and the dislocation worse, than was necessary. Our politicians tirelessly expound the benefits of the British model to their continental counterparts. Yet in terms of productivity growth the British performance in manufacturing has been no better than the West European average, whilst in terms of output their performance has been much better than ours. If our manufacturing industry had done as well as theirs over the past twenty five years, then by now we would be one of the richest countries in Europe, and some of the depressed areas of our country would be in much better shape than they are at present.

This is, of course, all water under the bridge. The central issue is not how did we get where we are, but where do we go from here? What do we do about the scarcity of jobs in the North? This issue is rising rapidly up the political agenda and is likely to play an increasing role in the national debate on whether or not Britain should join European Monetary Union. Those in favour of entry will doubtless argue that it will help us to avoid currency instability and bring interest rates down, thereby aiding the economic revival of the North. Opponents will argue that we need freedom of action to tackle such a severe problem. It is not my intention to enter this policy debate here.

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and Tyler (1998), Obstfeld and Peri (1998), Bentivogli and Pagano (1999), Mauro, Prasad and

Instead, let me conclude with a general observation about the task that faces us, inside or outside of the Euro.

There is a serious job scarcity in the North and there are only two genuine ways to eliminate it. One is to move potential workers to jobs elsewhere. The other is to create new jobs in the North. Education is an important component of either policy. If the sole aim is to move northern workers into southern jobs, better education must be combined with a relaxation of housing and other restrictions in the South. If the sole aim is to encourage development of the North, education must still be improved, but restrictions in the South should be retained or even tightened. If people can migrate easily into the South, better education in the North may simply encourage emigration and do little to revive the local economy. In the event, some mixture of the two policies may be required, combining revival of the depressed areas with emigration to remove some of their surplus population. This is probably the most realistic option. To rely entirely on emigration as the solution would involve a scale of population movement which is technically feasible but politically unacceptable. To rely entirely on a revival in the North would require an implausible turnaround in its economic fortunes. The danger in the present situation is that emigration from the North will be inadequate to remove the area's surplus population, whilst the local economy will remain too weak to absorb those who are left behind. The North would then become Britain's Mezzogiorno, absorbing mounting funds from the central government and generating growing resentment in more prosperous areas.

## APPENDIX:

### THE ROLE OF THE EXPORT BASE IN A REGIONAL ECONOMY

This paper uses a simple mathematical model to analyse the behaviour of regional employment and population. It highlights the central role played by the export base in the evolution of regional economies. In this model, the equilibrium share of a region in national employment and population depends on the both dynamism of its export base and the natural growth rate of population (balance of births over deaths). Each region has an equilibrium path along which employment and population grow at the same constant rate relative to the national average. Deviations from this path are spontaneously eliminated through migration and induced variations in the size of the export.

#### **Classification of activities**

Economic activity in any given region can be divided roughly into three main sectors which are defined as follows.

1. *Extra-regional tradables.* These are goods and services which can be easily traded with economic agents located outside the region in question. In this category are most manufactures, minerals and agricultural products. Some services are also included, such as, inter-regional (or international) banking, insurance and tourism. So, too are many central government activities, such as military bases, national administrative headquarters and the like. For example, if there is a military base in a region, the services supplied by this base are classified as an "export" to the central government. The crucial

feature of a tradable good or service is that its output in a particular region does not depend simply on the scale of local demand. Every region produces more of some tradables than it consumes and exports the surplus, whilst the consumption of other tradables exceeds production and the deficit is covered by imports. The output of tradables is often called "export base" of a region.

2. *Government non-tradables*. These are locally-produced public services for use within the region concerned. Under this heading are most of health, education, social services, the police, fire service and the like. The output of these services is closely linked to the size of population in a region, and government policy may ensure a roughly uniform standard of public service provision across the various regions.

3. *Government non-tradables*. These are items produced by the private sector for use by local purchasers. They are not directly traded in their own right across regional frontiers, although some of them may be used as intermediate products by the export base and hence may be regarded as indirectly tradable. The private non-tradables sector includes most consumer services - for example, the bulk of retail distribution, local transport, retail banking and insurance, hairdressing, catering and the like. It also includes most of the construction industry and of certain manufacturing industries whose products are difficult to transport (e.g. bricks). Some private non-tradables are destined for use by local consumers and demand

for them is determined mainly by the amount of disposable income available in the region. Others are destined for use by the government sector or export sector, and the demand for them depends, respectively, on the level of government services and the volume of tradables output.

The above classification is rough and the lines of demarcation between one sector and another are by no means clear in practice. However it is adequate for our purposes.

### **Output and Expenditure**

Output and employment in each sector are denoted by the following symbols:

	<b>Value-added</b>	<b>Employment</b>
Tradables	$Y^x$	$E^x$
Government non-tradables	$Y^g$	$E^g$
Private non-tradables	$Y^n$	$E^n$
Total	$Y$	$E$

Magnitudes referring to region  $i$  are denoted by the subscript ' $i$ '; those referring to the country as a whole have no a subscript.

Gross domestic product in region  $i$  satisfies the following equation

$$Y_i = Y_i^x + Y_i^g + Y_i^n \quad (1)$$

The determination of  $Y_i^x$  is discussed below. The remaining components of  $Y$  are determined as follows. The per capita provision of non-tradable government services is uniform throughout the country and thus,

$$Y_i^g = g P_i \quad (2)$$

where  $P_i$  is the population of region  $i$  and  $g > 0$  is the same for all regions. The output of private non-tradables is given by

$$Y_i^n = a\bar{Y}_i + bY_i^x + cY_i^g \quad (3)$$

where  $a$ ,  $b$  and  $c$  are positive constants and  $\bar{Y}_i$  is disposable income in region  $i$ .

To determine  $\bar{Y}_i$  we assume that net capital flows, net property income and net private transfers between the region and the outside world are all zero. Disposable income is then given by

$$\bar{Y}_i = Y_i - Y_i^g + T_i \quad (4)$$

where  $T_i$  is the balance of payments deficit of the region with the outside world. This deficit is financed by a fiscal transfer from the central government which is determined as follows

$$\frac{T_i}{P_i} = r - s \frac{Y_i}{P_i} \quad (5)$$

where  $r > 0$  and  $1 > s > 0$  are constants. The parameter,  $s$  is a kind of marginal income tax rate. As the per capita income of a region rises, a fraction  $s$  of the additional income is taken by the central government, leaving the remaining fraction  $1 - s$  available for local use.

From the preceding equations it can be shown that

$$Y_i = \alpha Y_i^x + \beta P_i \quad (6)$$

$$\frac{Y_i}{P_i} = \alpha \frac{Y_i^x}{P_i} + \beta \quad (7)$$

where

$$\alpha = \frac{[1+b]}{1-a+a s}$$

$$\beta = \frac{g[1+c-a]-a r}{1-a+a s}$$

We assume that  $\alpha, \beta > 0$ .

From the above equations we see that regional GDP is determined by two variables: the output of tradables ( $Y_i^x$ ) and population ( $P_i$ ). Moreover, GDP per capita is determined by the ratio of these two variables [ $Y_i^x / P_i$ ]. Thus, a region with an above average output of tradables per capita also has an above average per capita income. In fact, in our model, differences in the per capital output of tradables account for all inter-regional differences in per capita income. Fiscal transfers help to narrow differences in per capita income but do not eliminate them altogether.

## **Employment**

To determine the level and pattern of employment, assume that labour productivity is the same in all sectors and all regions of the economy. This greatly simplifies the exposition. Thus, for all  $i$

$$\begin{aligned}
E_i^x &= \mu Y_i^x \\
E_i^g &= \mu Y_i^g \\
E_i^n &= \mu Y_i^n \\
E_i &= \mu Y_i
\end{aligned} \tag{8}$$

where  $\mu > 0$  is a constant which is the same for all regions. Similar equations hold for national aggregates. From (6) and (7) it follows that

$$E_i = \alpha E_i^x + \beta P_i \tag{9}$$

Summing over all regions we get for the country as a whole

$$E = \alpha E^x + \frac{\beta}{\mu} P \tag{10}$$

The corresponding per capita equations are

$$\frac{E_i}{P_i} = \alpha \frac{E_i^x}{P_i} + \frac{\beta}{\mu} \tag{11}$$

and

$$\frac{E}{P} = \alpha \frac{E^x}{P} + \frac{\beta}{\mu} \tag{12}$$

Thus inter-regional differences in the employment rate ( $E_i/P_i$ ) are entirely explained by differences in tradables employment ( $E_i^x/P_i$ ). Regions with a relatively large tradables sector have a relatively high rate of total employment. Fiscal transfers and government services help to reduce inter-regional differences in employment rates but do not eliminate them altogether.

## Population and Tradables Employment

So far population and tradables employment have been regarded as exogenous. In reality, population will normally be influenced by the amount of work available in a region. Regions with plenty of jobs will attract population from regions with below average employment opportunities. To formalise this idea, we use the following equation

$$\frac{P}{P_i} \frac{d(P^i / P)}{dt} = n_i + \delta \left[ \frac{E_i}{P_i} - \frac{E}{P} \right] \quad (13)$$

where  $\delta > 0$  and  $n_i$  is equal to the natural growth rate of the region's population relative to that of the country as a whole. If the region has an above (below) average ratio to births to deaths  $n_i$  will be positive (negative).

Migration is not the only channel through which adjustment can take place when population and employment are out of line. A shortage of population in a region may cause a scarcity of labour and inhibit the performance of the export base via wage or rationing effects. Conversely, a surplus of labour may enhance this performance. For example, wages may be depressed so that regional producers become more competitive, or else some of the unemployed may set up in business to produce tradable goods and services. To model this relationship we shall assume that

$$\frac{E^x}{E_i^x} \frac{d(E_i^x / E^x)}{dt} = t_i - \phi \left[ \frac{E_i}{P_i} - \frac{E}{P} \right] \quad (14)$$

where  $\phi > 0$ , and  $t_i$  indicates the underlying dynamism of the region in comparison to the national average. In the most dynamic regions  $t_i > 0$  and the opposite is the case in the least dynamic regions.

Using equations (11) and (12), the above relationship can be written as follows

$$\frac{P}{P_i} \frac{d(P_i/P)}{dt} = n_i + \alpha \delta \left[ \frac{E_i^x}{P_i} - \frac{E^x}{P} \right] \quad (15)$$

and

$$\frac{E_i^x}{E^x} \frac{d(E_i^x/E^x)}{dt} = t_i - \alpha \phi \left[ \frac{E_i^x}{P_i} - \frac{E^x}{P} \right] \quad (16)$$

The parameters  $\delta$  and  $\phi$  indicate the relative importance as adjustment, mechanisms of migration and induced variations. If  $\phi = 0$ , the performance of the export base is exogenous and all adjustment is through migration.

To express the above equations in a more convenient form, define

$$\begin{aligned} Z_i &= \frac{E_i^x/E^x}{P_i/P} \\ \bar{Z}_i &= 1 + \frac{t_i - n_i}{\alpha \left[ \frac{E^x}{P} \right] [\delta + \phi]} \end{aligned} \quad (17)$$

It can be easily shown that

$$\frac{P}{P_i} \frac{d(P_i/P)}{dt} = \frac{\delta t_i + \phi n_i}{\delta + \phi} + \delta \alpha [Z_i - \bar{Z}_i] \frac{E^x}{P} \quad (18)$$

and

$$\frac{E^x}{E_i^x} \frac{d(E_i^x/E^x)}{dt} = \frac{\delta t_i + \phi n_i}{\delta + \phi} - \phi \alpha [Z_i - \bar{Z}_i] \frac{E^x}{P} \quad (19)$$

Subtracting (18) from (19) yields

$$\frac{1}{Z_i} \frac{dZ_i}{dt} = -[\delta + \phi] \alpha [Z_i - \bar{Z}_i] \frac{E^x}{P} \quad (20)$$

From equation (20) it is clear that  $\bar{Z}_i$  is the equilibrium value towards which  $Z_i$  tends to return following a displacement. Note that  $\bar{Z}_i$  is a dynamic equilibrium because it is the outcome of offsetting changes in relative employment and population.

The long-run growth rates of employment and population (relative to the national average) are equal and are given by

$$\text{long - run relative growth rate} = \frac{\delta t_i + \phi n_i}{\delta + \phi} \quad (21)$$

Thus, the relative growth rate of a region is a weighted average of the relative dynamism of its export base  $[t_i]$  and the natural growth rate of its relative population  $[n_i]$ .

In the long-run dynamic equilibrium the following relationships hold

$$\frac{E_i^x}{P_i} = \left[ \frac{E^x}{P} + \frac{t_i - n_i}{\alpha[\delta + \phi]} \right] \quad (22)$$

$$\frac{E_i}{P_i} = \left[ 1 + \frac{t_i - n_i}{\left( \alpha \frac{E^x}{P} + \frac{\beta}{\mu} \right) (\delta + \phi)} \right] \frac{E}{P}$$

Thus, if  $t_i - n_i > 0$  the region will have a greater than average ratio of employment to population, and a larger than average tradables sector. A shock will disturb these ratios but they will eventually be restored. If  $t_i - n_i = 0$  in all regions, then all will ultimately have the same ratio employment to population and the same per capita export base.

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**Chart 1: OECD Manufacturing and Services 1990-95**  
**(indices)**

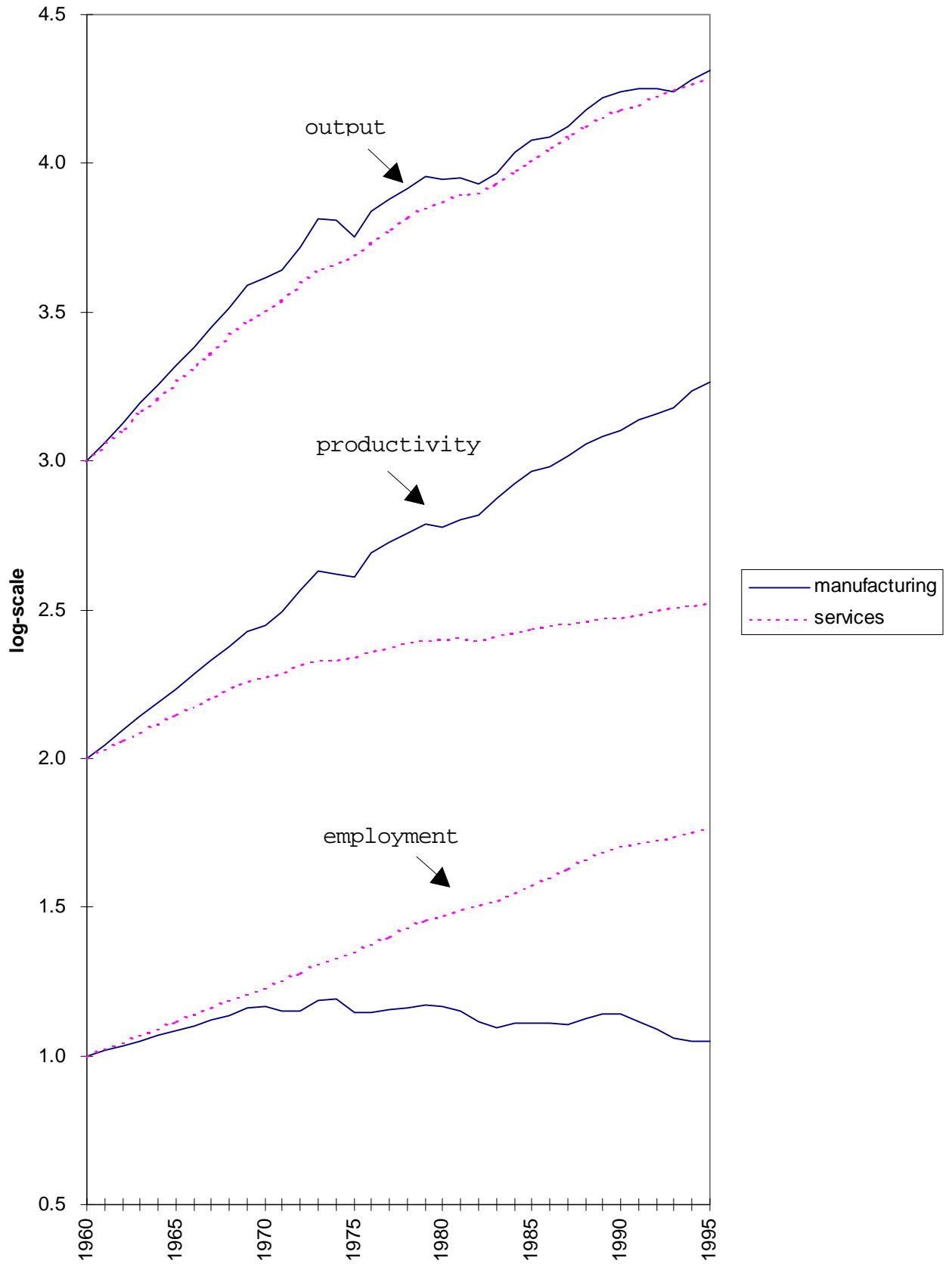
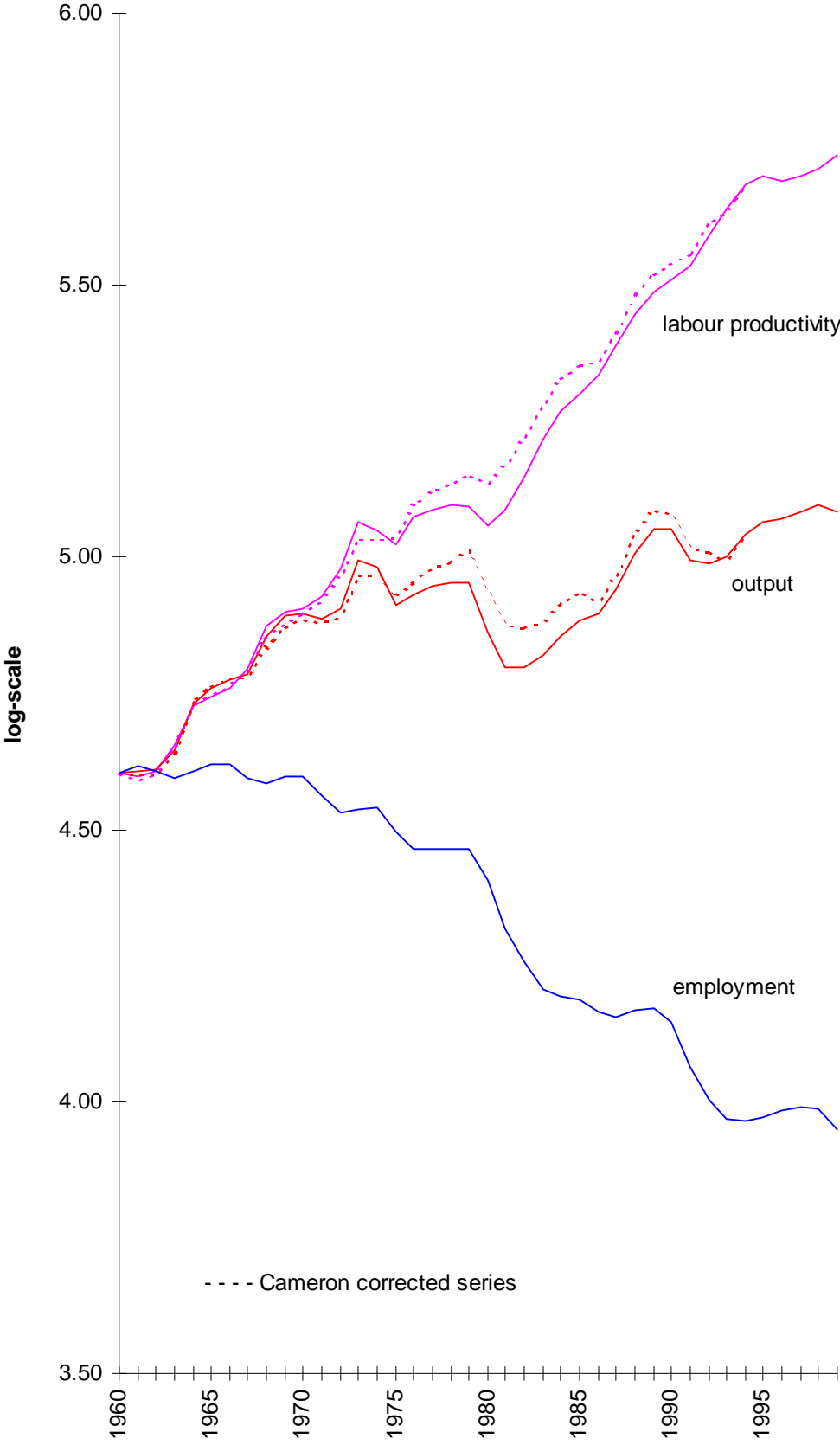
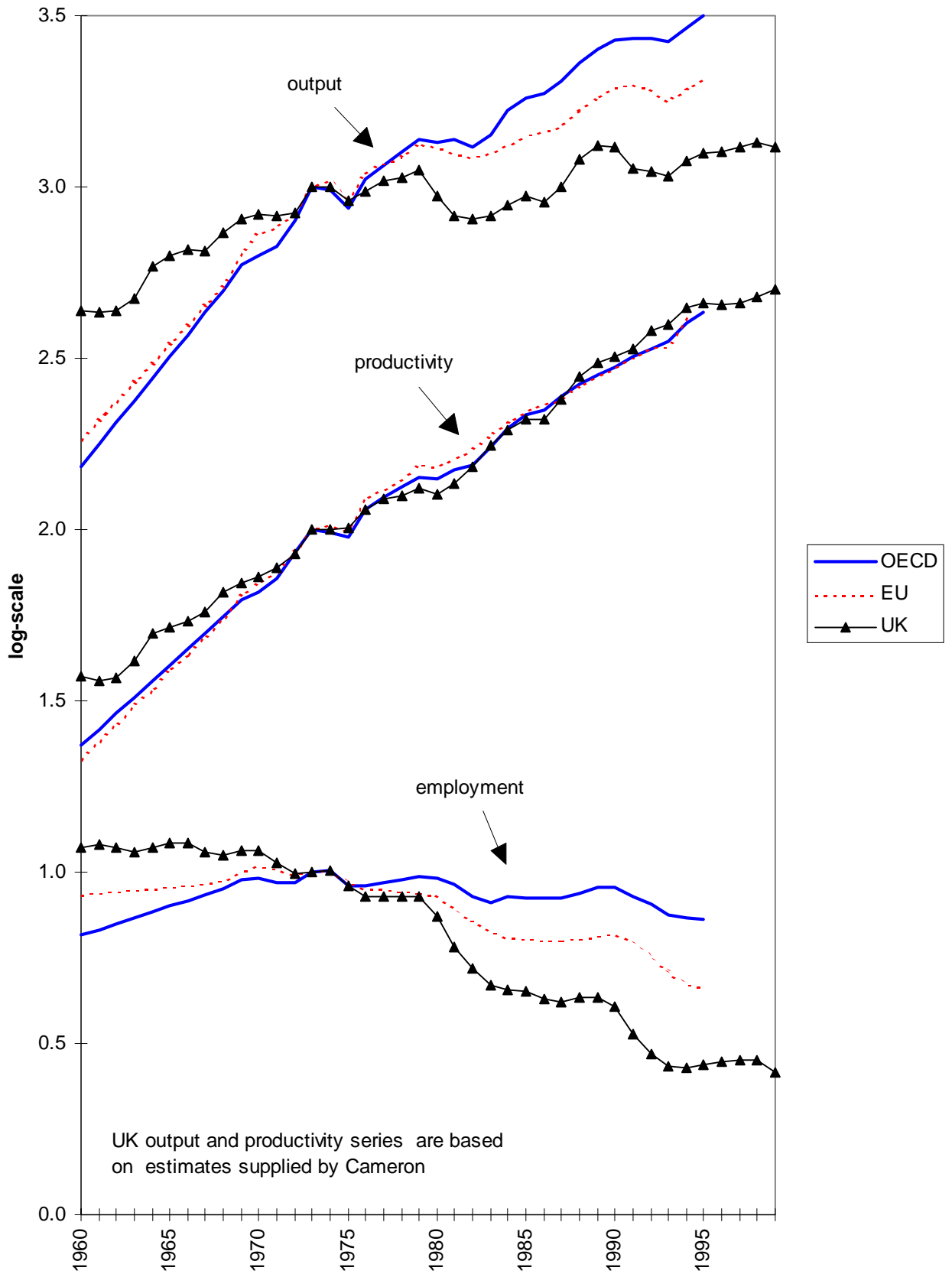


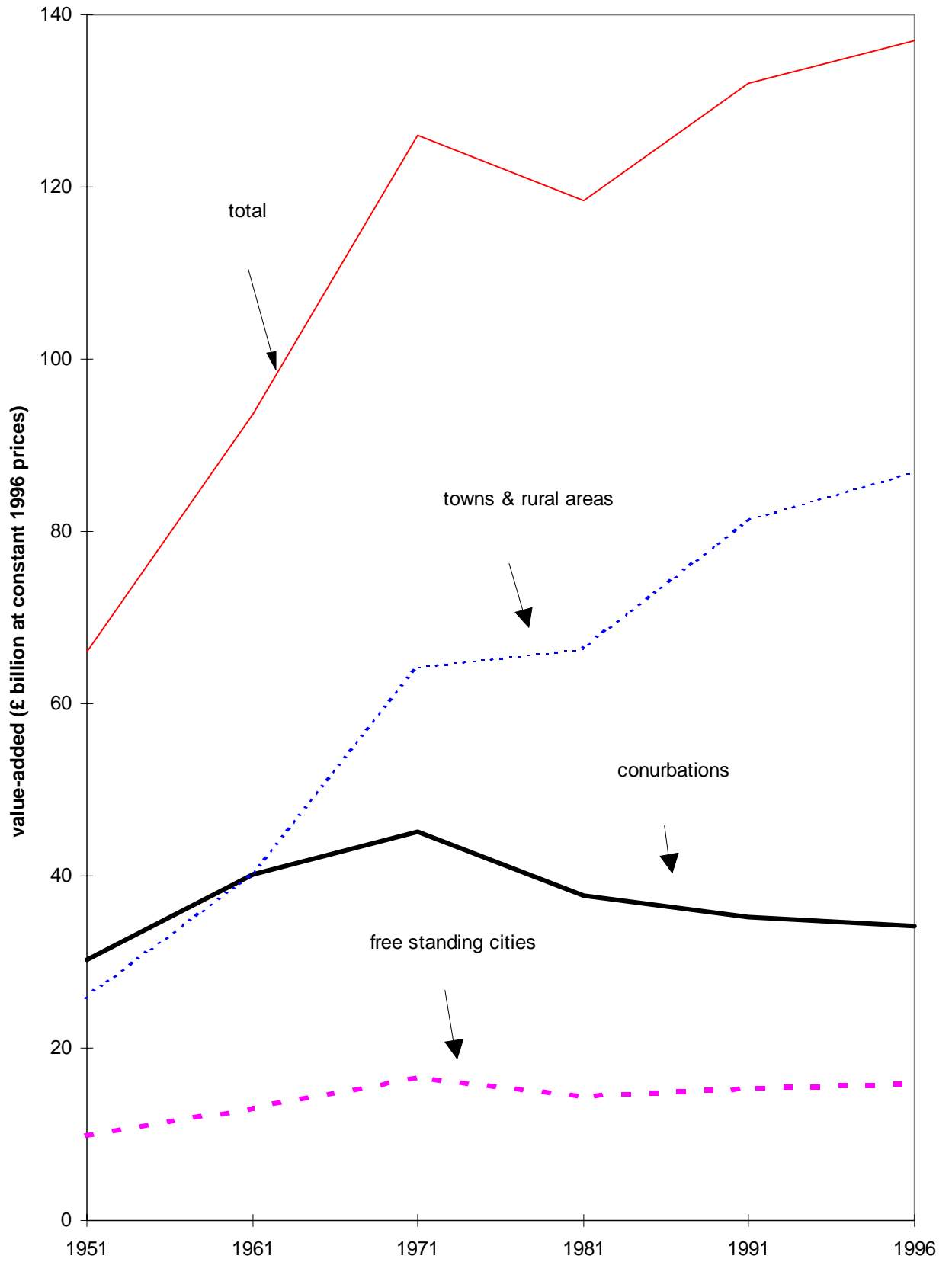
Chart 2: UK Manufacturing 1960-99  
indices



**Chart 3: OECD Manufacturing Since 1960  
(indices)**



**Chart 4. Manufacturing Output : Great Britain 1951-96**



**Chart 5. Manufacturing Employment: Great Britain 1951-96**

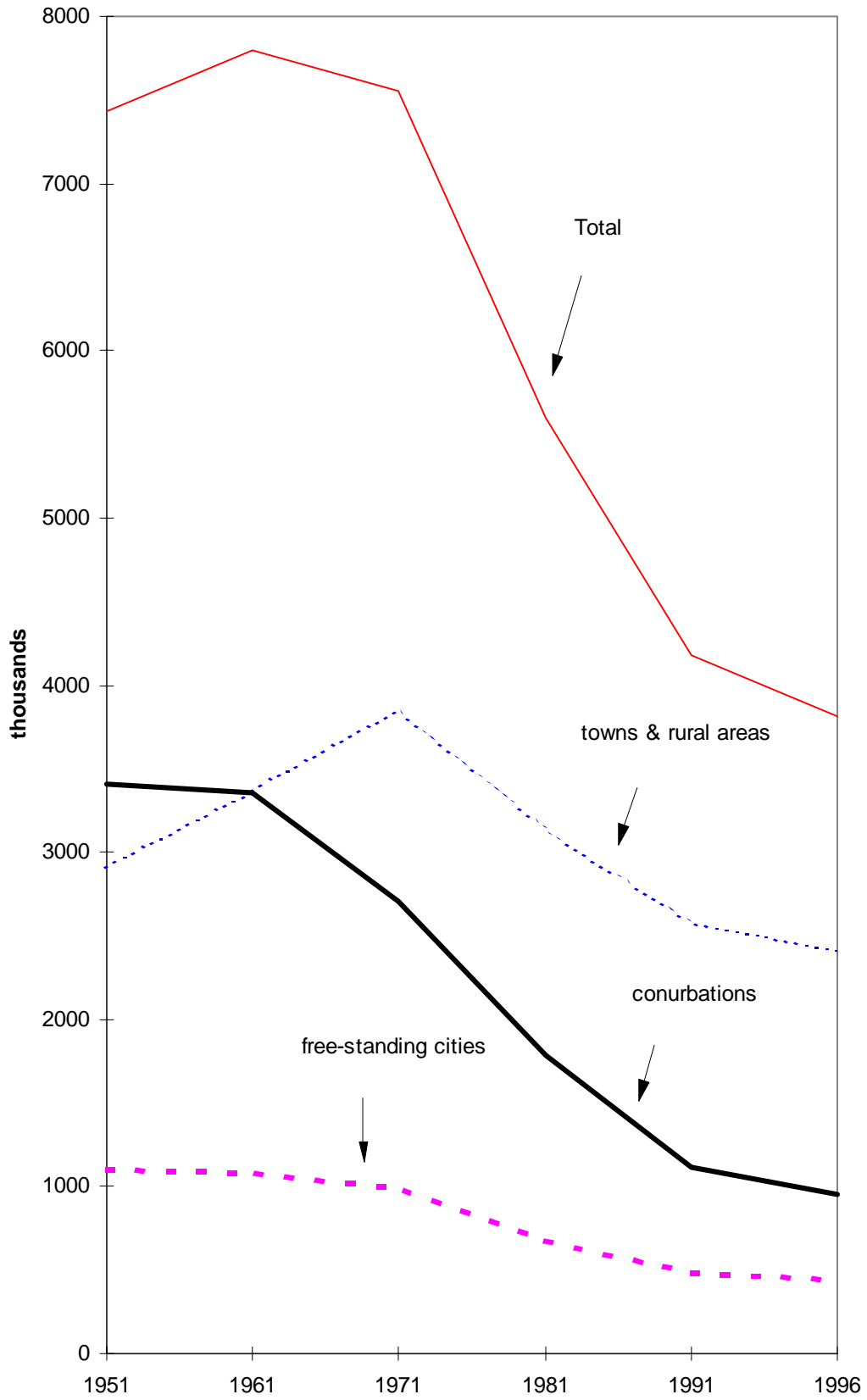
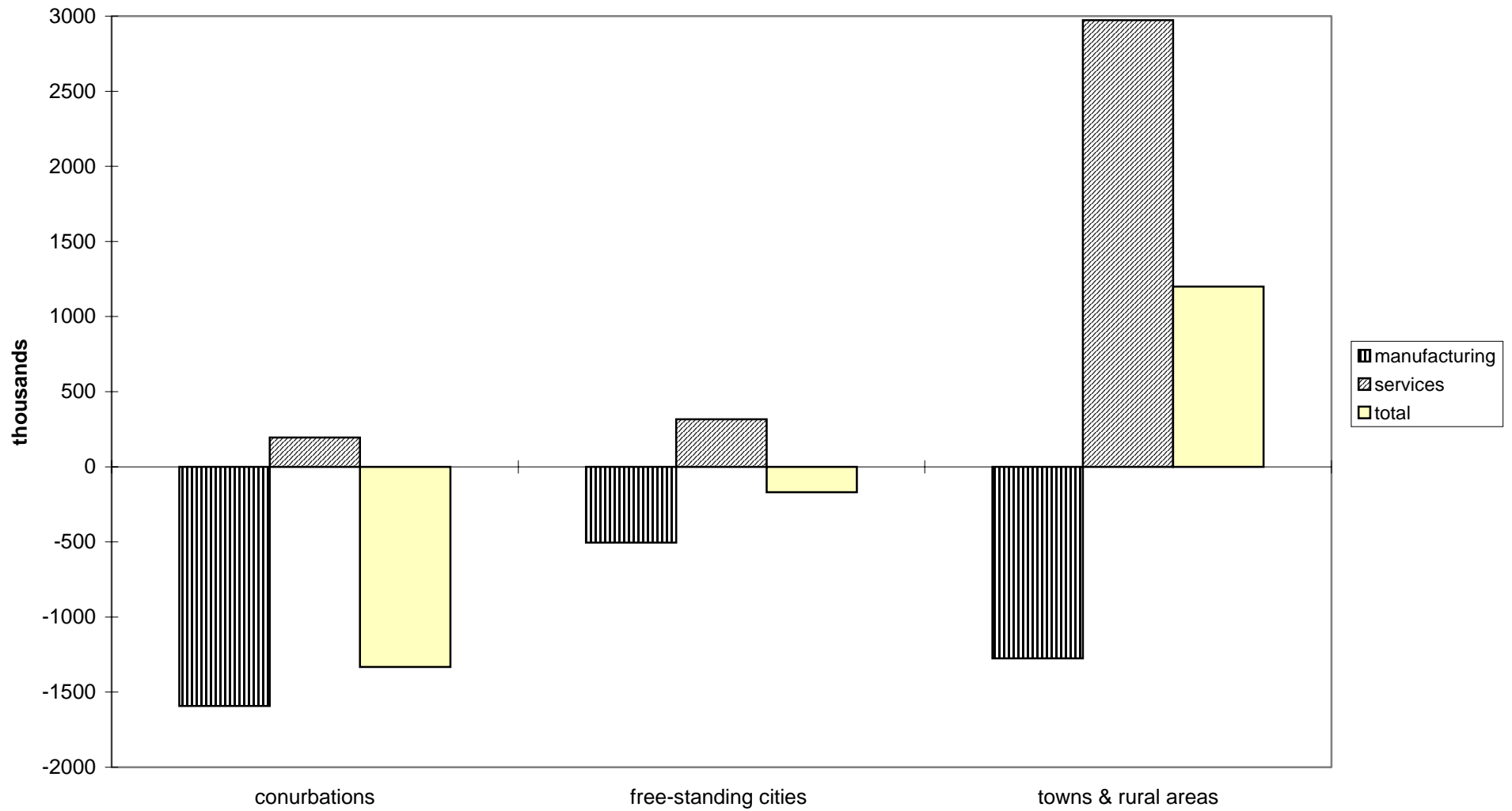


Chart 6. Change in Employment: Great Britain 1971-91



**Chart 7. Change in employment for various groups: Great Britain 1981-96**

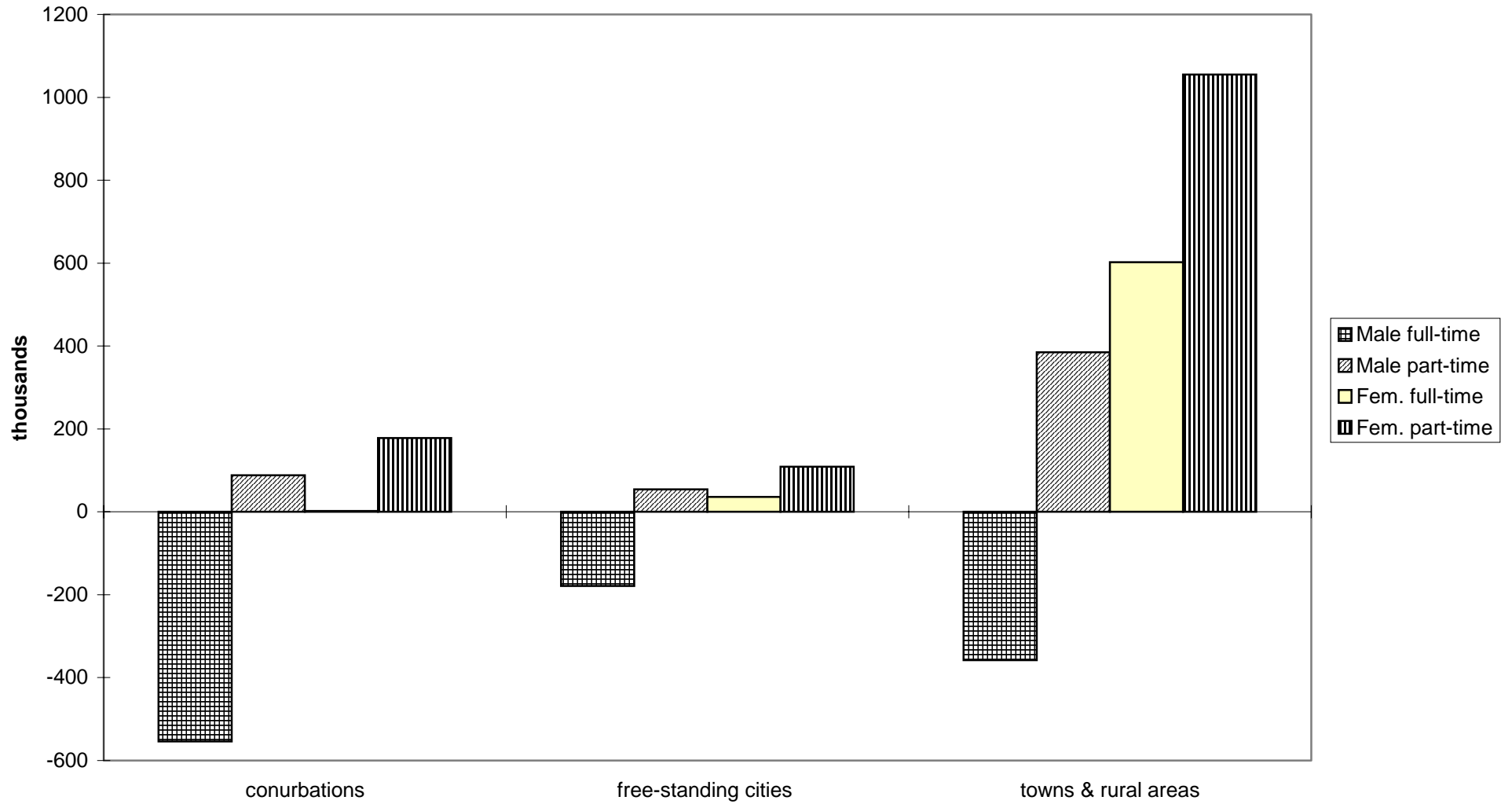
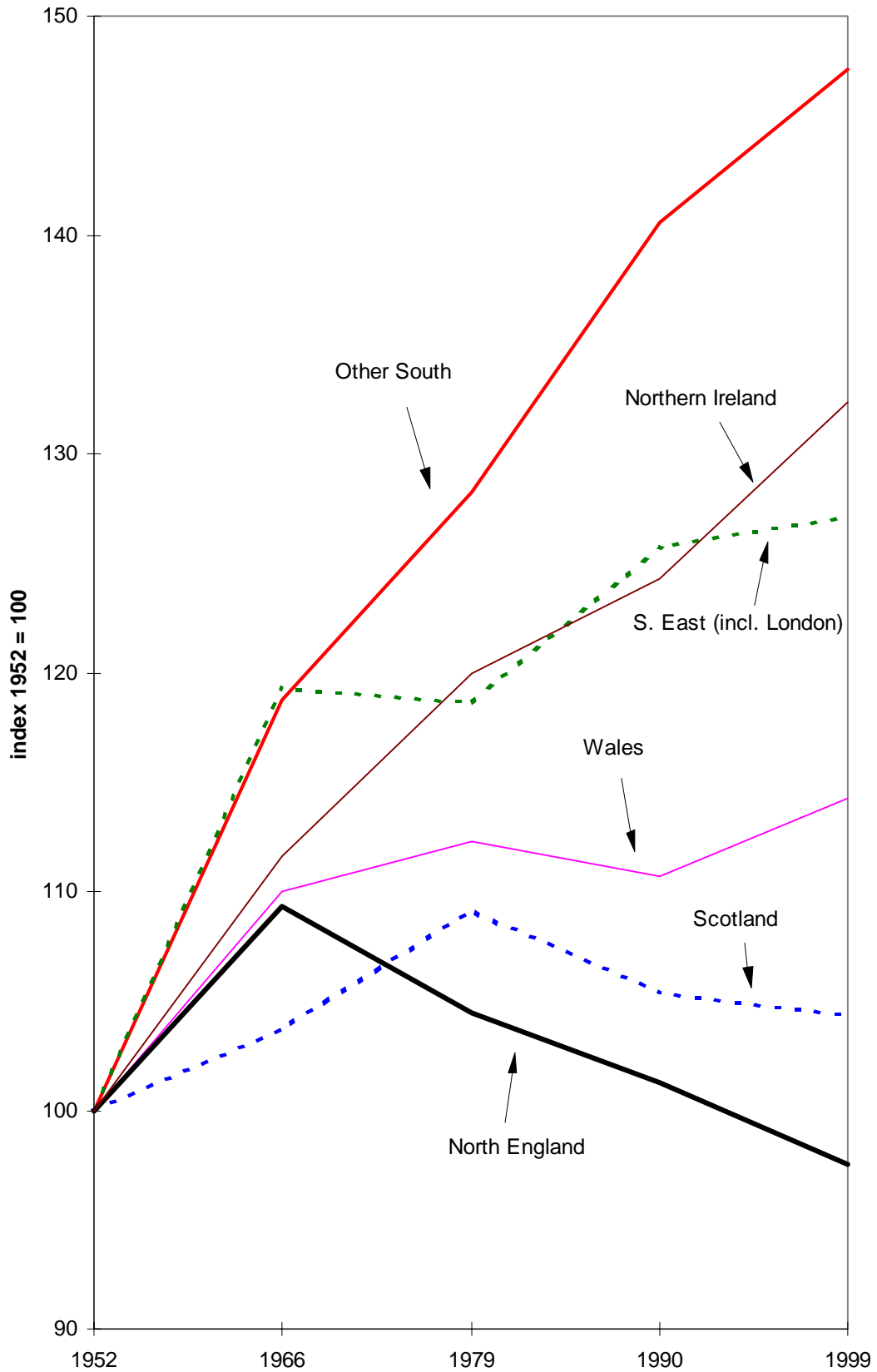


Chart 8. Employment by Major Region: United Kingdom 1952-99





**Chart 10: Share of the North (incl West Midlands and Scotland) in GB Employment and Population Since 1971**

