
Twenty years on: has the economy of the UK coalfields recovered?

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Abstract. Almost the whole of the British coal industry has closed since the early 1980s. The authors assess the extent to which the areas once dependent on coalmining have adapted to this job loss. A 'labour-market accounting' approach is employed to document the principal changes in employment, unemployment, commuting, and activity rates among men in the English and Welsh coalfields over the period to 2004, building on previous similar research covering the period 1981–91. The authors point to a strong recovery of employment among men in these areas, though this is not yet on a scale to offset all the coal job losses and there is important variation between areas. There is also evidence of extensive and continuing 'hidden unemployment'.

Background

In March 1985 Britain's coalminers returned to work after the longest and most bitter industrial dispute in modern times in the UK. They had lost their battle to stop pit closures. The year-long miners' strike was one of the defining events of Margaret Thatcher's premiership.

Over the months and years that followed, the pit closures that the miners had feared did indeed happen. In fact, the closures and job losses were greater than anyone had predicted. At the time of the strike, the state-owned UK coal industry employed 171 000 miners at 170 collieries, and had a total workforce (including white-collar staff, workshops, opencast mines, etc) of 221 000. Nearly 90% of this workforce was shed during the first ten years after the strike, and job losses have continued on a smaller scale ever since. In March 2005 the now privatised coal industry employed fewer than 7000 in total, of whom only 4000 worked at the eight remaining collieries.

One of the most important features of this job loss is that it has been concentrated in just a dozen or so areas across Britain. This is inevitable given the nature of mining: coal can only be dug in the places where coal deposits are found. However, in most of these areas coalmining had been the dominant source of employment for men, so the consequences for local labour markets were always going to be serious. In its scale, speed, and geographical concentration, the contraction of the UK coal industry is arguably the definitive example of deindustrialisation in Britain or Western Europe.

Twenty years on from the end of the strike, to what extent has the economy of the coalfields recovered? In the intervening years there have been numerous regeneration initiatives in former mining areas, and the UK economy as a whole has experienced a sustained period of economic growth since emerging from the recession of the early 1990s. Has this meant that the economy of the coalfields has bounced back? Or have these areas remained in the doldrums, bypassed by newer forms of economic activity?

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Scope of the study

The present paper focuses on the *number of jobs* in the coalfields. We make no apologies for this emphasis. The miners' strike was about jobs, and it was the loss of jobs that so marked the subsequent experience of Britain's mining areas. It is therefore entirely appropriate to document the extent to which the jobs lost from the coal industry have been replaced.

More specifically, the paper focuses on *jobs held by men*. Again, we make no apologies. The coal industry was an overwhelmingly male employer. The loss of coal industry employment was therefore primarily a problem for men, so it is appropriate to look at how the male labour market has recovered. At the same time, it is important to recognise that 'male' and 'female' labour markets do not operate entirely independently of each other, so account does need to be taken of the main interactions in understanding men's experience.

The paper covers the twenty-three years between 1981 and 2004—a slightly longer period than the twenty years since the end of the strike. In a previous study, published a decade ago, two of the present authors examined labour-market adjustment in the UK coalfields over the period 1981–91 (Beatty and Fothergill, 1996). The choice of dates for this earlier study was driven by the availability of fine-grain data from the decennial Census of Population. What we have done in the present study is to extend the core elements of this previous work initially through to 2001, to take account of new census data, and then to 2004 with the aid of a range of other data sources. It is, nevertheless, worth noting that the three years leading up to the start of the miners' strike (ie 1981–84) were also ones of substantial job loss from the coal industry—some 50 000 coal jobs disappeared during these years.

The paper covers all the English and Welsh coalfields. This leaves out the Scottish coalfields. This is not ideal but has been forced on us by an unusual piece of negligence. At the time of the original 1996 study, the authors discovered that an electronic version of the ward-based Special Workplace Statistics for Scotland from the 1981 Census had 'gone missing' from all the main archives, making it extremely difficult to replicate key parts of the analysis in Scotland. However, the English and Welsh coalfields account for about 90% of the total coalfield population in the UK, and about 90% of the coal job losses since the early 1980s.

The central analysis in the paper involves the construction of 'labour-market accounts' for the coalfields. Their usefulness lies in the fact that changes in employment and unemployment are not simply and mechanically linked, especially at the local scale. A fall of, say, 1000 in employment does not lead to a corresponding rise of 1000 in unemployment. There are several mediating influences—migration, commuting and changes in labour-force participation, for example—which mean that in any given area the changes in employment and unemployment are unlikely to be of the same magnitude, or even necessarily in the same direction. It is therefore wrong to assume that because claimant unemployment is now relatively low in most former mining areas there must have been substantial local job generation. The reality of local labour-market adjustment is much more complex.

The labour-market accounts provide an overview of what has happened in the coalfields. In this paper we then use the information they generate to answer three key questions:

(1) *To what extent have the jobs lost from the coal industry been replaced by new jobs in the coalfields?* This is the most obvious question of all, but what it ignores is the fact that the coalfields mostly had large-scale unemployment even before the pit closures began in the 1980s. The task of successful regeneration was therefore always a lot larger than just replacing coal job losses. Hence the second question...

(2) *To what extent has the overall job shortfall in the coalfields been eliminated?* This involves taking a wider view of the scale of the coalfield employment problem. It also involves looking at a wider range of labour-market adjustments, including not only job creation but also commuting and migration.

(3) *What is the real level of unemployment in the former coalfields?* This involves looking beyond just the claimant unemployment figures to take account of people who have been diverted onto other benefits, or out of the benefits system altogether.

Throughout, our focus is on the labour market as a whole in the coalfields, not on the fate of ex-miners. Many of the older miners who were made redundant in the 1980s and 1990s will now have moved beyond state pension age (65 years). Other ex-miners will have found new jobs. The fate of ex-miners is an important research question in its own right but the disappearance of mining jobs removed employment opportunities for following generations as well as for the miners themselves, and when an ex-miner finds new work he may do so at the expense of other local residents. The loss of coal jobs was a problem for coalfield communities as a whole, and it is the labour market as a whole in the coalfields that we investigate.

The theoretical issues

There are two radically different trajectories that the economy of the coalfields might have followed in the wake of pit closures.

The first is that the imbalances in local labour markets would prove self-correcting—a view rooted in neoclassical economics (see, for example, Richardson, 1978). According to this perspective, competition from redundant miners would push down local wage levels. Lower wages would increase profitability and attract new investment, which, in turn, would boost the demand for labour, and restore an equilibrium. The availability of labour, as well as its price, would reinforce the recovery. The out-migration of workers to other areas would also help restore a balance between labour demand and supply. There might be temporary unemployment, but in the long run, adaptation and recovery would characterise coalfield areas.

The alternative trajectory is one of cumulative causation (see, for example, Myrdal, 1957). According to this perspective, the loss of jobs from the coal industry could be expected to provoke further job losses, among suppliers and in businesses dependent on local consumer spending. Insofar as job loss provoked out-migration, this would lead to further job losses in population-related services like health and education. New investment would be deterred by falling local markets. Insofar as migration stripped the coalfields of the most able and dynamic in the workforce, there would be further damaging consequences for the dynamism of the local economy.

Theory alone does not, therefore, tell us exactly what to expect in the wake of pit closures. In practice, it is likely that elements both of neoclassical adjustment and of cumulative causation will exist side by side in the same places, but again there is no obvious reason to predict which will be the most powerful. The actual trajectory of coalfield areas is ultimately an empirical question.

The policy background

It has never been the view of the UK government that the coalfields could not, or should not, be regenerated. Long before the closures of the 1980s, several of the main mining areas—South Wales and North East England, for example—were already targeted by various forms of regional aid intended to create new jobs. There is convincing evidence that in the period up to the start of the 1980s, at least, these policies did have a substantial and positive impact on employment (see, in particular, Moore et al, 1986). As the pit closures of the 1980s got underway, assisted area status

was extended to additional mining areas, notably in Yorkshire and Nottinghamshire. The generosity of assistance to firms has, however, been cut back over the years, and grants are now wholly on a discretionary basis.

The European Union has likewise been a long-term supporter of coalfield regeneration. Beginning in 1989, its 'Objective 2' programmes of support for areas undergoing industrial restructuring targeted the majority of the UK coalfields, mainly providing finance for infrastructure investment and business support. From 2000 onwards the large South Wales and South Yorkshire coalfields have had EU 'Objective 1' support, entitling them to more generous assistance.

The coalfields have also been targeted by a number of specific regeneration initiatives. One of the earliest was the establishment in 1984 of the job-creation agency British Coal Enterprise, which operated as a subsidiary of the state-owned coal industry until its privatisation in 1994. The European Union introduced the RECHAR programme of aid for coalfield areas in 1990. Over the following ten years this brought more than £250 million of additional regeneration funding to the UK coalfields. Three coalfield 'Enterprise Zones' were established in Yorkshire, Nottinghamshire, and County Durham in 1995, providing financial incentives targeted at key development sites. A major programme of coalfield-site reclamation and redevelopment, led by the government agency English Partnerships, was initiated in 1996 and has subsequently been expanded to cover just over 100 sites and a public sector spend in excess of £600 million. The Coalfields Task Force report (DETR, 1998), commissioned by the in-coming Labour government, gave further impetus to regeneration efforts.

Previous research

The 1996 coalfield study mentioned earlier (Beatty and Fothergill, 1996) was the first to quantify the way in which the local labour market had adapted to job loss. It found that between 1981 and 1991 the single largest adjustment was a withdrawal of men into 'economic inactivity'. The rise in inactivity reflected, in particular, a big increase in recorded 'permanent sickness' which the authors argued should in part be interpreted as hidden unemployment. Out-migration by men of working age was another important labour market adjustment. Between 1981 and 1991, new jobs for men replaced only about a quarter of those lost in the coal industry. A second study, based on the same data, documented the differences between individual mining areas (Beatty et al, 1997).

Hitherto, the absence of suitable data (primarily from the decennial Census of Population) has meant that these coalfield labour-market analyses could not be extended to cover later years. The 'hidden unemployment' hypothesis, however, has found strong support in subsequent national studies that have highlighted rising male economic inactivity and its concentration in areas of job loss (eg Green and Owen, 1998; MacKay, 1999; Webster, 2002)

A second strand of quantitative research on the coalfield labour market has covered ex-miners themselves. This includes studies by Guy (1994), Fieldhouse and Hollywood (1999), and Hollywood (2002). This research differs in that it focuses on just one subgroup of workers, albeit the group directly affected by redundancies, and thereby neglects the knock-on consequences for the wider local labour market. Nevertheless, the findings confirm the large withdrawal of men from the labour market, particularly into 'permanent sickness'. This research also shows that where ex-miners have found new work it is often at wages below those they previously earned in the coal industry.

A third rather different strand of research on the impact of pit closures has focused on the wider community impact. This includes studies by Bennett et al (2000), Turner (2000), and Waddington et al (2001). These provide fewer statistical insights into the way the coalfield economy has adapted. The research does, however, underline the fact

that the dislocation caused by pit closures spread well beyond just the labour market into many other aspects of community life.

Defining the coalfields

There is no single definition of 'the coalfields'. Maps based on geology, historical connections, or labour markets at different points in time would all generate subtly different definitions.

For the purpose of the 1996 study, a ward-based map of the British coalfields was developed based on the share of resident men in employment who worked in the coal industry in 1981. The cut-off used was 10%—that is, 'coalfield wards' were those which met or exceeded this dependence on coal industry employment, though in practice there

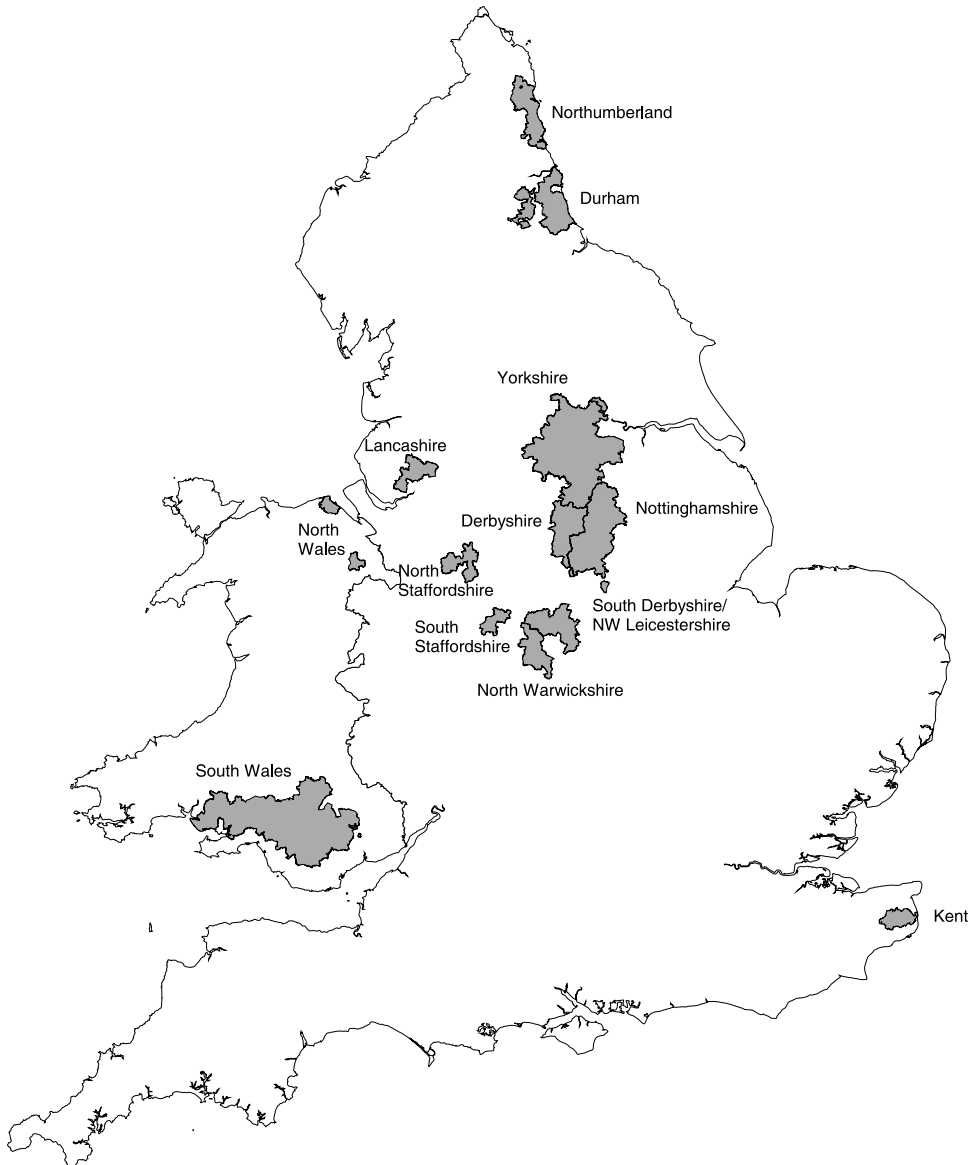


Figure 1. The English and Welsh coalfields.

were also a number of minor adjustments to take account of local circumstances. This definition of the coalfields was subsequently widely adopted, for example, in government-funded studies of Lottery grant distribution (Gore et al, 1999) and educational performance (Gore and Smith, 2001). What should be noted about this definition is that it is relatively tight, excluding, for example, areas with only an historic connection with the coal industry and excluding adjacent urban areas that do not form part of the coalfield itself. To overcome boundary changes and allow data to be compared across long periods, the ward-based definition of the coalfields for subsequent years has been matched as closely as possible to the original 1981-based definition.

Figure 1 shows the location of the English and Welsh coalfields, based on this definition. Table 1 shows their population in 2001. In total, the English and Welsh coalfields are home to just under 4.5 million people. This makes them a substantial chunk of the country, equivalent in population terms to a typical English region. Three of the coalfields in table 1 (Yorkshire, Derbyshire, and Nottinghamshire) make up a continuous block, extending from just east of Leeds to near Nottingham, with a population of just under 2 million.

Table 1. Population of the English and Welsh coalfields in 2001 (source: Census of Population).

Coalfield	
Yorkshire	1 136 000
South Wales	733 000
Durham	535 000
Nottinghamshire	503 000
Lancashire	365 000
Derbyshire	312 000
North Staffordshire	267 000
North Warwickshire	183 000
S Derbyshire/NW Leicestershire	142 000
Northumberland	140 000
South Staffordshire	109 000
Kent	39 000
North Wales	24 000
England and Wales coalfields	4 488 000

In 1981 the coal industry employed 229 000 men in these English and Welsh coalfield areas. These jobs accounted for almost exactly one in four of all the male jobs located in these areas. According to 1981 Census figures, these English and Welsh coalfields already had 160 000 unemployed men even before the main pit closures began.

Table 2 shows the loss of coal-industry jobs between 1981 and 2004 in each of these areas. The large Yorkshire coalfield heads the list with the loss of 67 000 male jobs, followed by Nottinghamshire (40 300) and South Wales (27 200). What is striking in this table is that in every English and Welsh coalfield well over 90% of all the coal industry jobs held by men in 1981 had disappeared by 2004, and in several areas coal industry employment was eliminated entirely. In most coalfields, these coal job losses accounted for a large proportion (typically 20%–35%) of all the jobs held by men in 1981. The exceptions are North Staffordshire and Lancashire, where coal-mining took place in highly urbanised areas alongside other industries and where, as a consequence, the coal job losses accounted for a smaller proportion of total employment.

Table 2. Loss of coal jobs, 1981–2004 (sources: Census of Population, Coal Authority).

Coalfield	Male job loss 1981–2004	Male coal job loss as a percentage of male coal jobs in 1981	Male coal job loss as a percentage of male jobs in the area in 1981
Yorkshire	67 000	95	27
Nottinghamshire	40 300	96	35
South Wales	27 200	97	21
Durham	22 800	100	26
Derbyshire	13 700	99	20
Northumberland	10 100	94	32
S Derbyshire/NW Leicestershire	9 600	99	31
North Staffordshire	8 600	100	13
Lancashire	7 100	100	9
South Staffordshire	5 700	100	27
North Warwickshire	5 500	92	23
Kent	3 200	100	48
North Wales	1 200	100	39
England and Wales coalfields	222 000	97	24

Labour-market accounts

Labour market accounts disaggregate local labour-market trends into a number of separate flows:

- (a) natural increase in the workforce—the excess in the number of 16-year olds reaching working age over the number of people reaching state pension age (65 for men) plus deaths of working-age people;
- (b) net migration—the balance between the number of people of working age moving into an area and the number moving out;
- (c) change in net commuting—the change in the balance of commuting flows into and out of an area;
- (d) change in labour-force participation—the change in the proportion of adults of working age who are ‘economically active’ (that is, in employment or seeking employment);
- (e) change in employment; and
- (f) change in recorded unemployment.

This approach to local labour markets was first deployed in the UK regional context by the Cambridge Economic Policy Group (1980; 1982). It was applied to the UK’s cities by Begg et al (1986) and later by Turok and Edge (1999). In addition to the previous application to the coalfields in the 1996 study, two of the present authors have also assembled labour-market accounts for England’s disadvantaged rural areas (Beatty and Fothergill, 1997) and Britain’s seaside towns (Beatty and Fothergill, 2004).

One of the advantages of labour-market accounts is that all the components are arithmetically related, so it is possible to show how they work together to generate the overall pattern of labour-market change. There are a number of different ways in which the accounts can be presented. The one we follow here is as follows:

$$\begin{aligned}
 & \text{job loss in coal} \\
 & + \text{ natural increase in the workforce} \\
 & + \text{ net in-migration} \\
 & + \text{ increase in net in-commuting} \\
 & + \text{ increase in economically active} \\
 & - \text{ increase in non-coal jobs} \\
 & = \text{ increase in recorded unemployment.}
 \end{aligned}$$

This arrangement of the accounts is particularly helpful because it exposes how a large loss of jobs from the coal industry has been able to coexist with falling recorded unemployment in the same areas. The first five lines of the accounts measure the change in labour supply arising from coal job losses and other labour-market trends. The sixth line measures the change in labour demand arising from sectors other than coal. The change in recorded unemployment, in the final line of the accounts, is the difference between the two groups. In this formulation of the accounts, any 'hidden unemployment' will be included in the change in the number of economically active men.

Assembling labour-market accounts is, nevertheless, a formidable task and involves the manipulation of large amounts of census and other data. In the analyses presented here, the use of a ward-based definition of the coalfields is an added complication. The detailed data sources and methods are described in the appendix.

Labour-market accounts for working-age men, for the English and Welsh coalfields as a whole between 1981 and 2004, are presented in table 3. This is a pivotal table in understanding the process of labour-market adjustment and therefore justifies being explained at some length.

The first point to note is that between 1981 and 2004 the very large loss of coal jobs (222 000) coexisted with a substantial reduction in recorded unemployment (nearly 75 000). This is not what might have been expected in areas of acute job loss, and at first sight could be taken to indicate exceptionally successful adaptation. The reality is more complex, as the labour-market accounts demonstrate.

Over this 23-year period, natural increase in the male workforce in the coalfields added a further 86 000 to the excess in labour supply caused by the loss of coal jobs. This was partly offset by the loss of 58 000 men of working age through net out-migration—that is, more men of working age moved out of the coalfields than moved in.

In addition, a net increase in commuting to other areas reduced local labour supply by another 30 000. The coalfields overall have been substantial net exporters of commuters to other areas (such as neighbouring cities) for many years—that is, the number of men and women commuting out exceeds the number commuting in. Gross flows have tended to increase in both directions as local labour markets have become less self-contained. A negative 'increase in net in-commuting', such as the one shown in table 3, represents an increase in the net outward flow.

The really big adjustment in labour supply, and the dominant feature of labour-market change in the coalfields, was, however, a big reduction in economic activity among men of working age. 'Economically inactive' men are those who are neither in employment nor recorded as unemployed. These are the working-age men who,

Table 3. Labour-market accounts for working-age men, English and Welsh coalfields, 1981–2004 (sources: see appendix).

	Number	Percentage of male working-age population in 1981
Job loss in coal	222 000	15.9
+ Natural increase in workforce	86 600	6.2
+ Net in-migration	–57 900	–4.1
+ Increase in net in-commuting	–30 700	–2.2
+ Increase in economically active	–162 500	–11.6
– Increase in noncoal jobs	132 400	9.5
= Increase in recorded unemployment	–74 900	–5.4

according to official figures, have dropped out of the labour market altogether, either out of choice or because circumstances have pushed them out. Between 1981 and 2004 the reduction in male economic activity rates in the coalfields took no fewer than 162 500 working-age men out of the local workforce, equivalent to one in nine of the entire male population between the ages of 16 and 64. This is a large change, whether viewed in absolute or proportional terms. Later in this paper we take a closer look at these economically inactive men and argue that, in fact, a substantial number of them could be described as 'hidden unemployed'.

Finally, there was an increase of just over 132 000 in the number of noncoal jobs in the coalfields held by men. This figure provides firm evidence that a recovery in the labour market for men in the coalfields is indeed underway.

Table 4. Labour-market accounts for working-age men, English and Welsh coalfields by subperiod (sources: see appendix).

	1981–91	1991–2001	2001–04
Job loss in coal	159 400	60 000	2 500
+ Natural increase in workforce	62 100	18 800	5 700
+ Net in-migration	–59 600	–11 200	13 000
+ Increase in net in-commuting	–4 500	–22 800	–3 500
+ Increase in economically active	–84 600	–78 600	700
– Increase in noncoal jobs	44 900	48 300	39 200
= Increase in recorded unemployment	27 800	–82 000	–20 700

Table 4 looks at the labour-market changes among men in the coalfields over three subperiods: 1981–91, 1991–2001, and 2001–04. The table reveals at least five important shifts through time.

- (1) The job loss in coal was front loaded, with the largest losses occurring in the 1980s and losses declining thereafter.
- (2) Migration patterns among working-age men have turned around—from substantial net out-migration from the coalfields in the 1980s to modest net in-migration in the latest period.
- (3) The withdrawal of men into economic inactivity in the coalfields, which is such a dominant feature of trends over the whole 1981–2004 period, appears to have come to a halt. In contrast to the earlier periods, there is no evidence of any additional withdrawal between 2001 and 2004.
- (4) The pace of increase in the number of noncoal male jobs appears to be accelerating. The absolute numbers rather mask this encouraging trend, but in the three years between 2001 and 2004 the number of noncoal jobs held by men in the coalfields increased by almost as much as in either of the previous two decades.
- (5) The reduction in recorded male unemployment in the coalfields occurred entirely in the two later periods. Even so, it is worth noting that the fall in recorded unemployment between 1991 and 2001 (some 82 000) was almost entirely matched by additional economic inactivity (more than 78 000). Only in the final 2001–04 period is the reduction in recorded unemployment no longer mirrored by rising inactivity.

Job replacement

To what extent have the jobs lost from the coal industry been replaced by new jobs in the coalfields? Above, we said that this is perhaps the most obvious question of all, and the simplest if not necessarily the best measure of the extent to which the economy of the coalfields has recovered.

The labour-market accounts provide an answer: between 1981 and 2004, 222 000 male jobs were lost from the coal industry in these areas; this was offset by an increase of 132 400 in male jobs in other industries and services in the same areas.

Table 5 presents a coalfield-by-coalfield view. This compares the job losses in coal with the increase in noncoal employment in the area, in both cases just for men. At this scale the answer is a lot more complex. In five areas all the jobs lost from the coal industry have been replaced by new jobs for men. Four of these (South Derbyshire/North West Leicestershire, South Staffordshire, North Warwickshire and North Wales) are relatively small coalfields, but the fifth (Durham) is one of the larger ones. At the other extreme, in three coalfields (Northumberland, North Staffordshire, and Lancashire) none of the jobs lost in coal had been replaced by 2004. This is because in these three areas net job losses for men in other industries added to the job losses in coal.

Table 5. Job replacement in the English and Welsh coalfields, 1981–2004 (sources: Census of Population, Coal Authority, Annual Business Inquiry).

Coalfield	Male jobs lost in coal	Increase in noncoal jobs held by men	Percentage of coal jobs replaced
Yorkshire	67 000	55 300	83
Nottinghamshire	40 300	17 400	43
South Wales	27 200	5 200	19
Durham	22 800	23 900	100
Derbyshire	13 700	7 800	57
Northumberland	10 100	–600	0
S Derbyshire/NW Leicestershire	9 600	12 900	100
North Staffordshire	8 600	–13 600	0
Lancashire	7 100	–100	0
South Staffordshire	5 700	7 700	100
North Warwickshire	5 500	12 900	100
Kent	3 200	2 100	66
North Wales	1 200	1 400	100

Table 6 looks at the same information but from a different angle, and shows the number of coal job losses still remaining to be replaced in 2004. These figures show that in all just under 90 000 coal jobs remain to be replaced, or 40% of the total lost from the coal industry between 1981 and 2004. Nottinghamshire and South Wales together account for half the job losses still to be replaced.

Table 6. Post-1981 male coal job losses still to be replaced (sources: Census of Population, Coal Authority, Annual Business Inquiry).

Coalfield	Number
Nottinghamshire	22 900
South Wales	22 000
Yorkshire	11 700
Northumberland	10 100
North Staffordshire	8 600
Lancashire	7 100
Derbyshire	5 900
Kent	1 100
England and Wales coalfields	89 400

There is therefore evidence, on this particular measure, of real forward progress but also of a continuing task remaining. However, at this point three digressions are necessary.

The first concerns the extent to which the new jobs really are adequate replacements for the jobs lost from the coal industry. One view is that the jobs in the mines were well paid, whereas the new sources of employment for men—in new factories, call centres, and the service sector—generally compare unfavourably in terms of pay and conditions. So mere numerical replacement of coal jobs may overstate the true extent of recovery. It is certainly true that the coal industry paid good wages for manual labour, though in fairness not always a great deal more than some of the other heavy industries of the past. On the other hand, structural shifts in the labour market in the coalfields and elsewhere should not be overlooked. Manual jobs are in decline but the number of white-collar jobs, including in the public sector, has been increasing and many of these new jobs do offer better terms and conditions than the mining jobs of old. The quality of the new jobs for men in the coalfields is a legitimate topic for research, but the presumption should not necessarily be that the new jobs are much worse than those they are replacing.

The second digression concerns women's jobs. So far we have looked at men in isolation, but that is not how the real-world labour market operates. Although the coal industry was an almost exclusively male employer, in large segments of the labour-market men compete with women for the same jobs. Table 7 shows the increase in noncoal jobs in the coalfields, for women as well as men. This shows that the large increase in jobs held by men has been matched by an equally large increase in the number held by women. Overall, noncoal employment in the coalfields grew by 264 000 jobs between 1981 and 2004—more in fact than the loss of jobs from the coal industry itself.

Table 7. Increase in noncoal jobs in the English and Welsh coalfields, 1981–2004 (sources: Census of Population, Coal Authority, Annual Business Inquiry).

	1981–91	1991–2001	2001–04	Total 1981–2004
Jobs held by men	44 900	48 300	39 200	132 400
Jobs held by women	68 500	47 800	15 600	131 800
Total jobs	113 400	96 100	54 800	264 200
Annual rate	11 300	9 600	18 300	11 500
Percentage male	40	50	72	50

What is especially noticeable is that through time the proportion of new jobs going to men has been increasing—from 40% between 1981 and 1991, to 72% between 2001 and 2004. At first sight this is surprising because the industries and occupations that have shown the strongest employment growth in the UK in recent years have tended to be those where women are especially concentrated. What the figures on male and female employment suggest is that the coalfield labour market may be operating in new ways: whereas ex-miners themselves shunned employment they saw as 'women's work', the generation of men behind them has adopted a more open-minded attitude and has begun to fill jobs that once would have been taken by women. If this interpretation is correct, it has important implications. First, one of the very long-term effects of coal industry job losses is to squeeze the job opportunities for women in the coalfields as men begin to compete for and take the same jobs. Second, the increase in the number of jobs for women in the coalfields is opening up job opportunities for men as well.

The final digression concerns the relationship between output and employment. There are no figures available to chart the value of economic output (measured, for example, by gross value added) at the local scale in the coalfields or elsewhere. The fall in UK coal production—down around 70 million tonnes a year since the early 1980s—will by itself have reduced the output of the coalfield economy by £2.5 billion a year at current coal prices (or £4 billion a year at the prices prevailing in the 1980s). On the other hand, output per head in virtually all sectors of the economy, nationally and locally, has been increasing through time. It is possible to be confident, therefore, that with male employment in the coalfields clawing its way back towards previous levels and a big increase in female employment, the total value of output from the coalfield economy will now significantly exceed pre-pit-closure levels. In this limited sense, at least, the economy of the coalfields has recovered. But this does not detract from the fact that the key coalfield problem has for at least twenty years been about jobs, and it is in terms of jobs that the true extent of recovery therefore needs to be judged.

The overall job shortfall

To what extent has the overall job shortfall in the coalfields been eliminated? We noted above that mere replacement of the jobs lost in the coal industry is not a very good measure of coalfield regeneration. The problem is that the coalfields began to lose coal jobs when they were already affected by large-scale unemployment. Some of this pre-existing unemployment can be traced back to coal job losses in earlier years, but it also reflects the state of the national economy. The year our empirical investigation starts—1981—falls in the middle of the deepest recession to hit the UK economy in the second half of the 20th century. The recession was especially severe in Britain's manufacturing heartlands, including in coalfield areas where major job losses often occurred in the factories brought in by previous rounds of regional policy.

A wider view of the employment shortfall for men in the coalfields involves adding together:

- (a) the job loss in the coal industry;
- (b) the preexisting unemployment in the coalfields; and
- (c) the natural increase in the local workforce.

This last variable—natural increase—is relevant because it measures the extra jobs required just to keep pace with the growth of the local workforce. Offsetting the job shortfall are three factors:

- (a) the increase in non-coal jobs;
- (b) net out-migration; and
- (c) the increase in net out-commuting.

The second and third of these offsetting variables are relevant because they represent ways in which local labour markets adjust to change, for example as places adopt new roles as commuter settlements or shrink in population to reflect a smaller economic base.

In table 8 we work through this calculation for men in the English and Welsh coalfields as a whole over the 1981 to 2004 period. This table shows that the overall job shortfall for men in the coalfields (nearly 470 000) was more than double the loss of coal jobs, not least because the coalfields began the period with so many unemployed men. The table also shows that even after the substantial labour-market adjustments of the last two decades, more than half the shortfall (nearly 250 000) still remains. The growth in noncoal jobs for men has been the largest factor in the reduction in this shortfall, but out-migration and, to a lesser extent, out-commuting have contributed as well.

Table 8. Job shortfall among men in the English and Welsh coalfields, 1981–2004 (sources: see appendix).

	Number
Job loss in coal	222 000
+ 1981 unemployment	160 000
+ Natural increase in male workforce	86 600
= Total job shortfall	468 600
– Increase in noncoal jobs	132 400
– Net out-migration	57 800
– Increase in net out-commuting	30 800
= Remaining job shortfall	247 600

Table 9 shows the results of replicating this calculation for each individual coalfield. The share of the shortfall eliminated by 2004, in the second column of numbers, arguably provides the single best measure of the extent to which the labour market of each area has ‘bounced back’. It reveals a diversity of experience, though one that is consistent with casual observation of the economic health of most of the areas. Two small Midlands coalfields (South Derbyshire/North West Leicestershire and North Warwickshire) show the strongest recovery. We have already noted that in these two areas all the coal job losses have been replaced. At the other end of the spectrum, the large South Wales coalfield is a weak performer on this indicator, as are the Northumberland, Durham, and Derbyshire areas and the more urban coalfields of Lancashire and North Staffordshire. The continuing labour-market weakness in Durham, where we previously noted that coal job losses have been entirely replaced by new male jobs, is a reflection of other powerful influences on the local labour market (inherited unemployment, commuting patterns, etc). Durham illustrates the more general point that mere replacement of coal jobs is not necessarily an indicator of complete recovery.

In practice, it is unrealistic to expect the whole of any job shortfall to be eliminated, even in the most favourable circumstances. This is because even in the most prosperous areas there is always residual unemployment as people move between jobs and as a

Table 9. Job shortfall among men, by coalfield, 1981–2004 (source: authors’ estimates).

Coalfield	Total job shortfall 1981–2004	Percentage of shortfall eliminated by 2004
Yorkshire	127 800	53
South Wales	68 400	35
Nottinghamshire	65 000	60
Durham	56 400	40
Lancashire	35 200	37
Derbyshire	23 900	33
North Staffordshire	21 300	29
North Warwickshire	21 100	66
Northumberland	15 400	38
S Derbyshire/NW Leicestershire	14 500	67
South Staffordshire	13 000	60
Kent	4 700	62
North Wales	2 100	32
All England and Wales coalfields	468 600	47

result of skill mismatches. In addition, economic inactivity among working-age men has tended to increase through time irrespective of any surge in hidden unemployment, for example, because of early retirement. These labour-supply factors impose constraints on the extent to which the job shortfalls identified in our calculations could ever really be removed. In that sense, some of the ‘missing’ jobs should not really be counted as part of the job shortfall at all. It is impossible to be precise, but if the irreducible job shortfall accounted for 5% of working-age men in the coalfields, that would point to a figure of 70 000–80 000, or about one third of the remaining shortfall for men identified in the calculations. Looked at from the other direction, that means an extra 175 000 male jobs are still needed in the English and Welsh coalfields.

Unemployment

What is the real level of unemployment in the coalfields? One of the striking features at the present time is the relatively low level of claimant unemployment. Figure 2 shows claimant unemployment among men in the English and Welsh coalfields from 1984 (when ward-level figures first became available) until 2004. The key feature is the large reduction, initially in the second half of the 1980s and then again from around 1993. Overall, claimant unemployment among men in the coalfields has fallen by three quarters from peak levels. The numbers in the coalfields have broadly followed the trend in the UK as a whole, though the rate in the coalfields has always remained a little above the corresponding national figure.

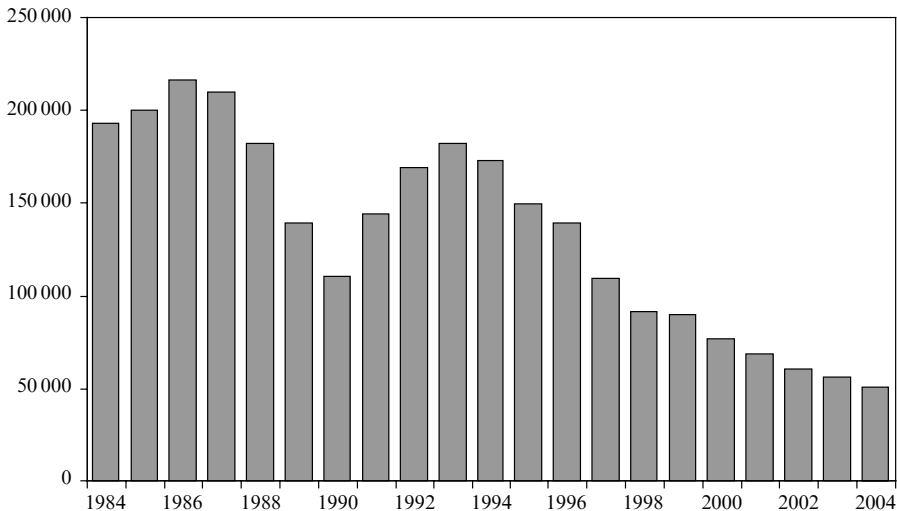


Figure 2. Male claimant unemployment in the English and Welsh coalfields, 1984–2004 (figures refer to April each year) (source: NOMIS).

The problem with claimant unemployment data is that they count only those people who are out of work and claiming unemployment-related benefits, principally Jobseeker’s Allowance. The rules governing eligibility for these benefits have changed through time, nearly always leading to a reduction in the claimant unemployment total. What the figures fail to include are the unemployed people who have been diverted onto other benefits or out of the benefits system altogether, many of whom are conventionally counted as ‘economically inactive’.

Table 10 disaggregates the economic inactivity among men in the coalfields recorded by three successive Censuses of Population. Earlier, we noted that the increase in the number of inactive men represented the single largest labour-market

Table 10. Economic inactivity among men in the English and Welsh coalfields as percentage of males aged 16–64 years (source: Census of Population).

Category	1981	1991	2001
Permanently sick	4.9	9.0	10.8
Retired	1.5	3.7	3.1
Students	3.8	3.6	3.7
Looking after family/home	} 0.5	0.9	1.3
Other inactive			3.0
All inactive	10.7	17.2	21.9

adjustment in the coalfields. Table 10 shows that between 1981 and 2001 these men doubled as a proportion of the total male population of working age, to more than one in five of all 16–64 year olds. A surge in ‘permanent sickness’, to nearly one in nine of all working-age men, represented the largest component of the increase. The number of retired—in this instance ‘early retired’, because all are below state pension age—also increased, though in the 1980s rather than the 1990s. The number of economically inactive students remained broadly stable. The number of ‘other inactive’ increased sharply between 1991 and 2001, though this is probably attributable to the use of revised criteria in the 2001 Census which had the effect of classifying some people as ‘inactive’ who would have been recorded as ‘unemployed’ in earlier years.

In April 2004 claimant unemployment in the English and Welsh coalfields stood at 67 000 (made up of 50 000 men and 17 000 women). Coalfield unemployment on the International Labour Organization (ILO) measure (which counts everyone who is out of work, available to start in two weeks, and has looked for work in the last four weeks) was somewhat larger—an estimated 93 000, comprising 58 000 men and 35 000 women. The ILO figures are in theory the government’s preferred measure of unemployment. More importantly, official figures show that in August 2004 no fewer than 326 000 coalfield residents of working age (193 000 men and 133 000 women) were out of work and claiming incapacity benefits, mainly Incapacity Benefit itself.⁽¹⁾ Or, to put the figures another way, there are nearly five times as many people of working age in the coalfields who are out of work and claiming incapacity benefits as there are out of work and claiming unemployment benefits. The people claiming unemployment and incapacity benefits are two mutually exclusive groups: it is not possible to claim both benefits at the same time. Most incapacity claimants do not actively look for work, so they also tend to be excluded from the ILO unemployment count.

Table 11 shows the distribution of male incapacity benefit claimants by coalfield. What is noticeable here is that in all but three small Midlands coalfields, these claimants account for 10% or more of all 16–64-year-old men. In South Wales, the coalfield with the highest density of incapacity benefit claimants, the proportion reaches nearly one-in-five of all working-age men.

The key question concerns the extent to which the very large number of economically inactive men, and of incapacity claimants in particular, hides unemployment. In the 1996 study of the coalfields mentioned above, it was argued that a substantial proportion of the men in the coalfields who are recorded as permanently sick should indeed be regarded as ‘hidden unemployed’. The logic here was not that the benefit claims were fraudulent or that the health problems were anything less than real, but that in a genuinely fully employed economy many of these men would have been in work. This claim has subsequently

⁽¹⁾ These figures and those in table 11 refer to working-age recipients of Incapacity Benefit, National Insurance credits for incapacity, and Severe Disablement Allowance.

Table 11. Male incapacity-benefit claimants by coalfield, August 2004 (sources: Department for Work and Pensions; Office for National Statistics).

Coalfield	Number	Percentage of working-age men
South Wales	42 400	18.5
Durham	26 500	15.6
Lancashire	17 000	14.3
North Staffordshire	11 900	13.9
Northumberland	6 200	13.7
Yorkshire	45 000	12.4
Derbyshire	12 300	12.3
North Wales	1 000	12.1
Nottinghamshire	18 300	11.4
Kent	1 200	10.1
South Staffordshire	3 100	8.7
North Warwickshire	4 700	7.8
S Derbyshire/NW Leicestershire	3 400	7.3
England and Wales coalfields	192 800	13.4

been the basis of substantial research in the coalfields and elsewhere (see, for example, Alcock et al, 2003). The government itself accepts that, in the right circumstances, many incapacity claimants could hold down jobs.

Since the publication of the 1996 coalfield study, improved methods have been developed to estimate the numbers of incapacity claimants who 'could reasonably be expected to have been in work in a fully employed economy'. These methods are based on establishing a 'benchmark' for every area, which combines:

(a) the incapacity claimant rates currently prevailing in the parts of southern England at or close to full employment (a group of seven counties to the north, west and south of London); and

(b) the underlying differences in rates of incapacitating ill health between each area and this fully employed part of southern England (using the differences recorded by the 1981 Census, before the figures became badly contaminated by the diversion from unemployment). In each area, incapacity claimant numbers in excess of this benchmark are judged to represent hidden unemployment.

These methods are explained in full elsewhere (see in particular Beatty and Fothergill, 2005) and the robustness of the resulting estimates has been tested using alternative methods. What we have done here is to apply these methods to the coalfields, using ward-level incapacity claimant data for August 2004 from the Department for Work and Pensions. For each individual coalfield this has involved establishing a benchmark that reflects claimant rates in fully employed parts of Britain and the underlying higher rate of incapacitating ill health in the local area.

The results of this exercise are presented for the coalfields as a whole in table 12. This shows that over 90 000 men in the English and Welsh coalfields are estimated to have been diverted from unemployment onto incapacity benefits. These men represent almost half of the 193 000 men of working age in the coalfields claiming incapacity benefits. The number estimated to be diverted from unemployment to incapacity benefits is nearly double the number of male claimant unemployed in the same areas. Adding this group and the extra ILO unemployed to claimant unemployment almost triples estimated total unemployment among men.⁽²⁾

⁽²⁾ The definition of 'real' unemployment used in table 12 (and in table 13) is slightly narrower than the one used in the 1996 coalfield study in that it excludes small diversions from claimant unemployment into 'early retirement' and onto 'government schemes'.

Table 12. Unemployment among men in the English and Welsh coalfields, mid-2004 (sources: Office for National Statistics and authors' estimates).

	Number	Percentage of male working-age population
Claimant unemployed	50 300	3.5
Additional ILO unemployed ^a	7 500	0.5
Diverted to incapacity benefits	91 000	6.3
'Real' unemployment	148 800	10.4

^aILO—International Labor Organization criteria.

Table 13 presents the results of the same calculation for each individual coalfield. In all areas, the 'real' level of unemployment is markedly higher than claimant unemployment, reflecting the scale of hidden unemployment—especially among incapacity claimants. The inclusion of hidden unemployment also differentiates individual coalfields more sharply. Rather than being tightly clustered with claimant unemployment rates between 2% and 5%, the inclusion of hidden unemployment widens the range to 5%–13%. South Wales and the two North East coalfields appear especially disadvantaged on this wider measure of unemployment.

Table 13. Unemployment among men by coalfield, mid-2004 (sources: Office for National Statistics and authors' estimates).

Coalfield	Claimant unemployment		'Real' unemployment	
	number	percentage of working-age male population	number	percentage of working-age male population
Northumberland	2 200	4.9	5 700	12.7
South Wales	8 800	3.8	28 600	12.5
Durham	7 500	4.4	21 200	12.5
Lancashire	4 600	3.8	13 400	11.2
North Staffordshire	2 900	3.4	9 500	11.2
Derbyshire	3 700	3.7	10 400	10.3
Yorkshire	11 900	3.3	34 500	9.5
Nottinghamshire	5 000	3.1	15 200	9.5
North Wales	200	2.0	600	8.0
Kent	300	3.0	800	6.9
South Staffordshire	1 000	2.7	2 400	6.8
North Warwickshire	1 500	2.4	4 100	6.7
S Derbyshire/NW Leicestershire	700	1.6	2 400	5.1
England and Wales coalfields	50 300	3.5	148 800	10.4

Too much reliance should not be placed on the precise figures. The methodology used to estimate hidden unemployment among incapacity claimants is based on a number of assumptions, and in practice there will have been changes in the underlying level of incapacitating ill health in different areas. The figures we present are intended to provide broad estimates of the scale of the distortion to conventional unemployment data. Nevertheless, this alternative perspective on unemployment casts the coalfields in a very different light. It suggests that, rather than having been reduced to modest levels, unemployment among men in the coalfields has mostly become hidden from view—above all diverted to incapacity benefit recipients.

What we are arguing, therefore, is that one of the main long-run adjustments to coal job losses has been the diversion onto incapacity benefits. This constitutes a form of hidden unemployment because many of the men claiming these benefits would have been in work in a fully employed economy. Indeed, prior to the pit closures, far fewer men in the coalfields claimed these benefits. Underlying health problems have not radically worsened (indeed, national trends show some gradual improvement), which suggests that at one time far more people with health problems did indeed hold down jobs. But many of these jobs, especially in the coal industry of course, have disappeared. In the competition for the remaining jobs, people with health problems are amongst those who have lost out and the differences in benefit payment rates has created an incentive for them to claim Incapacity Benefit (to which they are entitled on health grounds) rather than Jobseeker's Allowance.

At the same time, it is important to acknowledge that this form of hidden unemployment differs in several respects from conventional unemployment. In particular, once on Incapacity Benefit most men and women quickly give up looking for work. They are not, therefore, part of the pool of active jobseekers from which employers fill vacancies. This has implications for policies to reengage these individuals with the labour market because, although shortfalls in the local demand for labour act as the trigger for rising incapacity benefit numbers, subsequent job creation does not automatically bring the numbers down again. It is the active jobseekers, such as those claiming unemployment benefits, who take up the job opportunities. This is precisely what has happened in the coalfields in recent years: as new jobs have been created, claimant unemployment has fallen but the numbers on incapacity benefits have hardly been dented. To make inroads in future to the stock of incapacity claimants will require job creation to go hand-in-hand with labour market activation policies.

An assessment

Let us now try to provide an answer to our central question: *has the economy of the coalfields recovered?*

The first and most fundamental point that needs to be made is that the English and Welsh coalfields have not entered a 'spiral of decline'. On the contrary, there is incontrovertible evidence that the labour market in the coalfields is bouncing back from the hammer blow of coal job losses. This is encouraging, especially as there was never any certainty that this would be the trajectory.

The more difficult issue is the scale of the recovery. The answer on this point varies according to exactly which yardstick is used. In terms of the number of coal jobs replaced by new jobs for men, the coalfields as a whole appear to be about 60% along the way to full recovery. On the other hand, taking a wider view of the employment shortfall (including, for example, the high inherited level of unemployment) suggests that only about half the job is done. Low claimant unemployment, however, presents a wholly misleading impression of the extent of recovery. In practice there has been a huge diversion of working-age men into 'economic inactivity', and in particular onto incapacity benefits. Much of this diversion should be regarded as 'hidden unemployment'.

Looking at these findings as a whole suggests that, as a sweeping generalisation, the economy of the coalfields is perhaps a little over half way towards full recovery. The coalfields have come a long way, but still have a long way to go. An additional 90 000 male jobs would be needed to claw back all the job losses in the coal industry since the early 1980s, and another 50 000 or more to erode the inherited male job shortfall.

The extent to which recovery can be attributed to national economic growth or to interventions to help the coalfields is unclear. In truth, both have probably contributed in major ways but it would need a further major piece of research to unravel the respective contributions. What is clear is that since the beginning of the present decade the combination of a long period of national growth and the coming to fruition of key regeneration measures conceived in the 1990s (the English Partnerships coalfield programme and Enterprise Zone status, for example) has accelerated the pace of recovery.

What is also clear is that the experience of individual coalfields has varied a great deal. The contrast between Yorkshire and South Wales is the most striking example. These are the two largest coalfields in terms of population, with 1.1 and 0.7 million people, respectively. The whole of the South Wales coalfield and the largest part of the Yorkshire coalfield have both benefited from EU Objective 1 status and its equivalent Tier 1 status for regional aid from the UK government. Yet here the similarities appear to end. Whereas in Yorkshire there has been a net increase of 55 000 in the number of noncoal jobs held by men since 1981, in South Wales the increase has been only 5000. The performance of Yorkshire has been particularly impressive in recent years, with noncoal jobs for men up by 30 000 between 2001 and 2004 alone.

The statistical disparity between Yorkshire and South Wales chimes with casual observation. The Yorkshire coalfield, bounded by motorways on all sides and with new road links into its core, is reasonably centrally located in Britain as a whole and was perhaps always a candidate for recovery once the basic building blocks (roads, sites, training, etc) had been put in place. There has been major new investment in the Dearne Valley Enterprise Zone in South Yorkshire, along the M62 in West Yorkshire, and on the outskirts of Doncaster, to mention just three examples. Much of this has happened since the late 1990s, after substantial preparatory investment. The South Wales coalfield, by contrast, appears to be a much more intractable case. Whilst South Wales has a longer history of regeneration initiatives, the difficult terrain of the mining valleys and the greater isolation of many communities seem never to have proved very attractive to new investment. Insofar as development has taken place in South Wales in recent years, this has often been along the M4 corridor—just off the coalfield itself. As a result, the trajectory of the South Wales valleys has been less one of job replacement and more one of rising out-commuting. In the valleys, employment rates remain low and unemployment very high.

The statistics for the Durham coalfield tell a different story. In this part of the country new-job creation for men has been impressive, to the extent that on our figures all the coal jobs lost since the beginning of the 1980s have been replaced. A new Nissan car factory, and major call-centre developments at Doxford Park, on the outskirts of Sunderland, and in Easington district have been among the flagship investments. But the Durham coalfield is embedded in a region with more widespread employment problems, so as jobs have been created in the former coalfield many of them have gone to residents of neighbouring areas. One consequence is that a large imbalance in the Durham coalfield labour market still persists, with much of the imbalance hidden away in the very large numbers on incapacity benefits.

The clear success stories are the three small coalfields of the Midlands: South Derbyshire/North West Leicestershire, North Warwickshire, and South Staffordshire. Here the coal job losses have been fully replaced and good progress has been made towards eliminating overall job shortfalls. Local unemployment is now relatively low, even taking a wider view. However, the small scale and central location of these coalfields, and their proximity to areas of prosperity, always meant that regeneration in these areas was never going to be as daunting a task as elsewhere.

So how much longer can full recovery in the coalfields be expected to take? The recent rate of job creation has been impressive—more than 50 000 new jobs in the coalfields between 2001 and 2004, of which more than two thirds went to men. If this rate of job creation is sustained it will take only another six or seven years to replace all the coal job loss with new jobs for men, and perhaps a further five years to wipe out the wider accumulated job shortfall. With claimant unemployment relatively low in most areas, much of the discernible impact from here on would take the form of lower numbers of economically inactive men, and lower numbers on incapacity benefits in particular. However, individual coalfields where difficulties are entrenched, such as South Wales, could be expected to take rather longer to make a full recovery—even with the right measures in place.

Whether recent rates of job creation can be sustained depends a great deal on continuing growth in the national economy. The stability of UK economic growth since the mid-1990s has been astonishing, but there can be no guarantee that the future will mirror the recent past. But even if national economic growth were to be sustained, it would be foolish to rely on market forces alone to resolve the coalfields' remaining economic problems. The coalfields have come this far along the road to recovery in part because of the intensive practical support they have received from local authorities, development agencies, central government, and the European Union. To finish the job, this support will need to be sustained a little while longer.

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Appendix: Data sources and methods

The labour-market accounts for 1981–2004 are the summation of separate accounts for each of the three subperiods (that is, 1981–91, 1991–2001, and 2001–04). The data sources and methods for each element of the accounts are set out below.

Job loss in coal

The figures for coal industry employment in 1981 and 1991 are from the Census of Population and refer to total male employment in SIC (1980) 1.1. The figures for 2001 and 2004 are from Coal Authority data on coal industry employment by area. In all cases the figures refer to jobs actually located in the area, not employees living in the area.

Natural increase in the workforce

This is the number of men reaching working age (16 years) as an excess over the number leaving the workforce through death or attainment of state pension age (65 years). For 1981–91 and 1991–2001, natural increase was calculated using a cohort-survival model. For the period after 2001, the same rate of natural increase as in 1991–2001 has been rolled forward to 2004. The absence of volatility in trends in natural increase indicates that this assumption is reasonably robust.

Net in-migration

This is the difference between the actual male population of working age and the projected male population of working age derived from the cohort-survival model. For 1991 and 2001 the actual population of working age comes from ward-level Census of Population data. Students studying away from home in 2001 have been added back into the population of their home area, for consistency with 1991 data. The 2004 data are estimates derived by projecting forward the trend change in working age population between 2001 and 2003, shown by Office for National Statistics mid-year population estimates, in thirty-four coalfield districts.

Increase in net in-commuting

This is the change in net commuting flows among men between the beginning and end of each period. Net commuting is calculated by subtracting the number of male

residents in employment from the number of men employed in the area. For 1981, 1991, and 2001 ward data from the Census of Population were used. For 2001–04 the change in net commuting was calculated as the residual in the accounts.

Increase in economically active

This is the change in labour supply resulting from changes in the economic-activity rate among men of working age. 'Economic activity' includes the employed, self-employed, recorded unemployed, and temporarily sick. For 1981, 1991, and 2001 the economic activity rate was taken from ward-level Census of Population data. The change in economic activity rates between 2001 and 2004 is the weighted average change in thirty-four coalfield districts, from four quarters' data from the Labour Force Survey. (The data for individual districts from the Labour Force Survey tend to be unreliable because of sampling errors).

Increase in employment

This is the change in the number of jobs held by men located in coalfield wards. The figures include the employed and self-employed. The source for 1981, 1991, and 2001 was the Census of Population. Men with 'no fixed workplace' and 'workplace inadequately described' are included at their place of residence. The percentage change in employment between 2001 and 2004 was taken from ward-level data from the Annual Business Inquiry.

Increase in recorded unemployment

This is the change in the number of men of working age recorded as unemployed. For 1981, 1991, and 2001 the figures were taken from ward-level data in the Census of Population. For 1991, men on government schemes (27 300 in all across the English and Welsh coalfields) were added to the number of unemployed in their area of residence. The 2004 figures are the number of claimant unemployed men resident in coalfield wards in April 2004, grossed up by the ratio between Census and claimant unemployment for men in 2001.

'Residual'

Calculating each component of the accounts separately generates a residual in the accounts as a whole, arising mainly from minor inconsistencies between different datasets. The residual is small—equivalent to well under 0.5% of the working-age population between 1991 and 2001, for example. For presentational purposes, the residual was incorporated into the net commuting figures, which tend in any case to be subject to a wider margin of error than the other variables in the accounts because of the larger number of individual elements that feed into the commuting calculation.

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