BRITAIN'S INDUSTRIAL PEFORMANCE SINCE 1960: UNDERINVESTMENT AND RELATIVE DECLINE

ESRC Centre for Business Research, University of Cambridge
Working Paper No. 14

Michael Kitson
ESRC Centre for Business Research,
Newnham College, and
St Catharine's College
Trumpington Street
Cambridge CB2 1RL

Phone: 01223 338371
Fax: 01223 338340

Jonathan Michie
ESRC Centre for Business Research,
Judge Institute of Management Studies, and
Robinson College
Grange Road
Cambridge CB3 9AN

Phone: 01223 339150
Fax: 01223 351794

This Working Paper relates to the CBR Research Programme on Technical

Change, Manufacturing Strategy and Industrial Policy.

Abstract

This article argues that Britain's industrial performance since 1960 has been relatively poor; secondly, that the deindustrialisation which has been associated with this relatively poor industrial performance is a serious problem for the whole economy; thirdly, that neither the specific problem of deindustrialisation nor the consequent general problem of continued relative economic decline were solved in the 1980s; and fourthly, that the key reason why British industry has been doing relatively poorly has been underinvestment in manufacturing.

Keywords: Britain, economic policy, manufacturing, deindustrialisation

Acknowledgements

We are extremely grateful to John Wells for supplying us with unpublished data and for pointing out to us errors in the published data of the CSO, as well as for detailed comments on an earlier draft. We are also grateful for comments from David Coates, Andrew Glyn, John Grieve Smith, Geoff Harcourt, Jane Humphries, John McCombie and Brian Reddaway.

BRITAIN'S INDUSTRIAL PERFORMANCE SINCE 1960: UNDERINVESTMENT AND RELATIVE DECLINE

1. Introduction

This paper argues firstly, that Britain's industrial performance since 1960 has been relatively poor; secondly, that despite the views of Crafts (1993) and others, the deindustrialisation which has resulted from this relatively poor industrial performance is a serious problem for the whole economy - not just for the industrial sector itself; thirdly, that neither the specific problem of deindustrialisation nor the consequent general problem of continued relative economic decline were solved in the 1980s; and fourthly, that the key reason why British industry has been doing relatively poorly has been underinvestment in manufacturing. This underinvestment has been allowed to persist by the lack of any strong modernising forces within British society, with the trade union movement having been either too weak or too defensive, and with government policy at best being rather ineffectual and at worst positively harmful. The reasons for this policy failure lie in Britain's economic history and in the resulting distorted nature of both the economy and society. This fundamental problem, of a lack of any strong modernising force, has if anything been exacerbated since 1979.

2. The Output and Employment Record for Manufacturing

As indicated in Figure A1 of the Appendix, manufacturing output in Britain is barely higher today than it was 20 years ago. Looking at the three peak-to-peak periods (Appendix Table A1), in two of them Britain was at the bottom of the league table in terms of output growth of the six countries, and in the third only France had a worse performance.[1] Between the peak years of 1964 and 1989, the average annual growth of manufacturing output was 6.6% in Japan, 3.9% in the USA, 3.7% in Italy, 2.9% in France, 2.7% in Germany, and only 1.5% in the United Kingdom (Appendix Table A2). Over the ten year peak-to-peak period 1979-1989, manufacturing output grew by a total

of only 15%, an average cumulative growth rate of barely one percent a year (before dropping back in 1992 to around the same level as it had been in 1973: see Appendix, Figure A1). This poor record on manufacturing output resulted in a marked decline in employment (Appendix Table A1). But does it matter that the 1980s growth was so skewed towards services, particularly financial services, and the construction of shopping malls for the sale of what were increasingly becoming imported manufactured goods?

3. Can Deindustrialisation Seriously Damage your Wealth?

Crafts (1993) asks, 'can deindustrialisation seriously damage your wealth?', to which we would reply that yes, it can because of the continued importance of world trade in manufactured goods and because of the symbiotic relationship between the manufacturing and service sectors.

The emergence of mass unemployment in Europe over the past 20 years has been accompanied by declines in manufacturing employment, and in this process Britain has shown the lead. The share of employment in manufacturing fell in the decade 1976-1986 from 22.8% to 19.1% in the US, from 25.5% to 24.7% in Japan, and from 28.9% to 24.4% for the EU. This relative decline represented an absolute fall for Europe, of almost 5.5 million jobs. Of the 12 Member States, only Portugal and Greece avoided a fall in manufacturing employment, with the United Kingdom experiencing the most extreme cut (of 16%, representing more than 2 million jobs).

A shift in employment from manufacturing to other sectors could simply be the result of a shift in consumption patterns away from manufactured goods towards services, differential productivity growth between the industrial and service sectors, or changes in the pattern of international trade specialisation. However, two important points are clear. First, the decline in manufacturing employment in the United Kingdom *cannot* be explained solely by shifts in consumption patterns, nor by other sectors' requirements for labour:

the loss of manufacturing jobs has been accompanied by a deficit in manufacturing trade and by a rise in unemployment; manufacturing has not experienced rapidly rising output as a result of productivity growth, but on the contrary, a stagnant trend in output, with the productivity growth hence translating not into output growth but instead into job losses. And second, an economy's distribution of output (and employment) between sectors can lead to balance of payments constraints, and hence can impact not just on relative shares of output and employment but also on absolute levels.

Deindustrialisation also creates conditions in which firms cut back on training. This may take the form of a reduction of in-house training and/or a decline in support for external provision by training agencies so that the local infrastructure for skill generation is weakened. This leads to a focus on a narrow range of specific skills to meet the firms' immediate needs, often accompanied by the exclusion of worker representatives from the training design and implementation processes. The skill content of jobs is diluted and this interacts with the deterioration of the terms and conditions of employment and the increasing pessimism about future prospects of the industry to discourage new entrants from traditional areas of recruitment. Any subsequent relaxation of hiring standards to meet the labour shortage serves to further reinforce the downgrading of the job, the dissipation of skills, the loss of competitiveness, and industrial decline.[2]

3.1 Balance of payments

Despite assertions to the contrary by Chancellor Lawson (Lawson, 1992) and others, the Balance of Payments does matter, and the loss of Britain's manufacturing trading surplus in 1983 and the subsequent annual trading deficit in manufactured goods does pose problems for the wider economy. At the time of writing (June 1995), Britain's Balance of Payments appears to be recovering somewhat, with manufacturing having benefited from the post-ERM devaluation and interest rate cuts. However, for the country's long-term trading position

to be resolved, particularly at anything like full employment, a continual improvement in our industrial performance is required. The practically zero trend in growth of manufacturing output over the past 20 years is not sufficient. Neither can the service sector do it alone, as has been demonstrated for example by Cosh, Hughes and Rowthorn (1993). Indeed, Crafts (1993) implicitly acknowledges that something is amiss, when he notes that the exchange rate which would be required to achieve simultaneous internal and external balance has been falling since the early 1980s and will continue to fall during the 1990s.[3]

3.2 Conclusion: deindustrialisation <u>can</u> seriously damage your wealth

So deindustrialisation can seriously damage your wealth, firstly because much of the service sector itself will depend on the size and rate of growth of the manufacturing sector; certainly, some service sector jobs are created in the process of liquidating manufacturing enterprises, but this cannot be a long-term salvation. Secondly, processes of cumulative causation can lead to a spiral of relative decline which can spread out from manufacturing to other sectors, so that for example if deindustrialisation creates a depressing environment for training, this will obstruct one of the very processes necessary for any successful shift into new sectors. And thirdly, a deteriorating position in manufacturing trade creates a number of dangers, not least the deflationary macroeconomic policies which tend to follow any resulting balance of payments deficit or pressure on the currency.

But does focusing on output levels cause us to overlook a productivity miracle which could be said to have turned the situation round in the 1980s?

4. The 1980s: Miracle or Mirage?

Certainly, manufacturing productivity grew in the 1980s, but firstly, this was largely due to job cuts rather than increased output, and these jobs were not being lost in a period of full employment when the labour would

be taken up productively elsewhere. Secondly, some of the increased output per person was actually due to a one-off increase in labour inputs per person through increased production-line speeds, reduced break times and so on, not acknowledged in the official productivity calculations which would only notice the increased output (see Nolan, 1989). Thirdly, the official productivity figures reported in the Appendix are constructed using a single price deflator for both output and input prices; Stoneman and Francis (1992) have shown that when the appropriate deflators are used, labour productivity growth is lower, at only a 34% rise between 1979 and 1989 rather than the 51% increase shown in the official figures. And fourthly, what productivity growth there was went disproportionately into increased profits rather than reduced output prices (which would have allowed increased market share, with higher output and employment than was in fact experienced, along with a healthier balance of payments and lower inflation), and the increased profits went disproportionately into dividend payments rather than investment.[4, 5]

So while productivity growth in the 1980s returned perhaps to the rates experienced in the 1960s, firstly, these rates of growth were never satisfactory, secondly, UK productivity levels still lag behind the other leading industrialised countries (see Appendix, Figure A5), and thirdly, in the 1980s the benefits of this productivity growth went overwhelmingly into cutting employment and increasing dividends rather than developing new products and expanding output.

5. The Causes of Deindustrialisation

Manufacturing employment has fallen fastest in Britain because output has failed to grow. Output has failed to grow because demand for British manufactures has been low and investment has been poor. These two problems are inextricably linked. Poor investment reduces competitiveness, which in turn depresses demand, which in turn reduces the incentive for investment. Thus the stable ratio of gross investment to output indicated in the Appendix (Figure A2 and Table A3) is the result of inadequate investment (including underinvestment in skills-formation) matched by stagnant output. And manufacturing investment has been low because of

the distorted nature of the British economy, combined with bad or nonexistent macroeconomic and industrial policies.

5.1 Under investment

The relatively stable ratio of manufacturing gross investment to output disguises two very damaging processes. Firstly, the stable ratio reflects sluggish growth of both output and investment over the long run while other countries have seen rapid growth of both output and investment.[6] But secondly, the impact of the poor and erratic investment record has been to leave UK manufacturing with an inadequate capital stock. This is due not only to the scrapping caused by the severe recessions of 1979-81 and 1990-92, but also due to a reduction in the service life of many capital assets (for a discussion of which see Mayes and Young, 1994).[7] Table 1 indicates that during all three periods the growth of the UK's manufacturing gross capital stock has been inferior to that of the other major industrial nations.[8] This is most evident during the 1979-89 period, when although there was a worldwide slowdown in the growth of manufacturing investment, the United Kingdom was the only country of the five not to experience any growth in the manufacturing capital stock. This has left a legacy of a relatively low level of capital in UK manufacturing.[9] Table 2 shows that capital per worker hour in the United Kingdom is approximately three quarters of the American, German and French levels. Although the United Kingdom has a smaller gap with Japan, this gap is likely to increase due to superior Japanese investment.

In addition to a lack of investment, much of what has taken place has been cost-cutting rather than capacity enhancing. Thus while for the vast majority of OECD countries the growth rates of both total and industrial R&D were much higher in the 1980s than in the 1970s, the most notable exception to this was the United Kingdom (see Archibugi and Michie, 1995, Table 1).

The dismal investment record of UK manufacturing since the 1960s has been a major cause of Britain's indifferent growth performance, constraining technological progress and the expansion of demand.[10] Furthermore, the cumulative effect of this record has resulted in British

workers lacking the volume of capital equipment used by their main competitors. This capital stock gap is likely to grow as, through cumulative causation processes, the expectations that the manufacturing sector is not investing become self fulfilling.[11]

5.2 UK macroeconomic and industrial policy

UK macroeconomic policy over the past 30 years has resulted repeatedly in an overvalued exchange rate and high interest rates, both of which are particularly damaging to manufacturing, while industrial policy has been ineffectual, with little attempt to use the public sector as a modernising force. The most obvious cases of Sterling being overvalued as a result of macroeconomic policy were firstly, the effects of the Thatcher Government's initial monetarist policies in 1979-1980 and secondly, membership of the Exchange Rate Mechanism at an overvalued rate.[12] The industrial policies of the 1964 Wilson Government were also sacrificed on the altar of defending the currency, as were those of the Callaghan Government in 1976; the former was a case of defending an existing parity, while the latter was a fear that the currency would collapse (although whether our trading partners would have really allowed us to gain the competitive advantage which would have accrued to British industry from this is doubtful).[13]

Additionally, the high levels and volatility of interest rates have discouraged investment and business confidence. This was particularly apparent during the early 1980s when high interest rates created cash flow problems for many companies leading to bankruptcies and plant closures as well as contributing to the appreciation of sterling and the squeeze on exports. Interest rate policy during the 1980s has been identified as the main government policy which has impeded the growth of firms. The 1991 Cambridge survey (Small Business Research Centre, 1992)[14] into business performance, the most extensive since the 1971 Bolton study, indicated that a third of all firms surveyed identified interest rate policy as the most important negative government policy and half placed it in their top three policy concerns.[15]

The instability to which the UK economy has been prone, particularly since 1979, has been worse than that experienced in other industrial nations, reflecting the UK Government's desire since 1979 to target nominal variables (inflation and interest rates) rather than real variables (jobs and output). Additionally, they have harmed the long-term growth potential of the economy. This is due to two factors. Firstly, the depth of the recessions - they were much deeper than previous (at least pre-1974) post-war recessions - and the shortage (and high cost) of funds led to large scale scrapping of capital and the laying-off of workers.[16] Secondly, as the domestic economy has, albeit falteringly, developed, the industrial structure has shifted to more segmented and niche product markets. These sectors require specialist capital equipment and sector-specific skills. The loss of such factors due to a recession may be more difficult to replace in a period of recovery. The existence of sunk costs means that restarting operations will be expensive requiring a higher yield (in excess of the required or 'hurdle' rate) to encourage the replacement investment (Dixit, 1992).

The long-term costs of recessions place an increasing premium on achieving economic stability in the real economy. The manufacturing sector, like many other areas of economic activity, is not like an elastic band which can sustain severe pressure. When put under stress it will break, or at least parts of it will, and the costs of repair will be large.

5.3 The productive system

We have stressed the negative impacts of the economic shocks of the 1980s on the UK's long-run growth potential. As we note above others have argued for beneficial effects due to the reduced bargaining power of workers and the creation of a more flexible labour market. This notion is based on a neoclassical view of the competitive process, where producers face a large number of competitors and price is the key indicator of competitiveness. In reality most firms do not face a large number of homogeneous price-taking competitors and the key factors which contribute to competitive advantage are product quality and the characteristics of the customer-client relationship.[17] Thus, in order to create and sustain a competitive economy, firms require a steadily growing economy which

will foster inter-firm cooperation, encourage innovation and product development and the upgrading of the skill base of the economy. The UK strategy of macroeconomic instability and market deregulation will struggle to meet these objectives. This contrasts markedly with Japanese and German strategies. In Japan, the lifetime employment system which allows firms to accommodate shocks (trading off short-term profits and wages for long-term employment and market share), and the government support for industry, including cartelisation, help reduce destructive competition during recessions. In Germany, mechanisms such as the Kurzarbeit system, where during recessions employees who are put on short-time working still receive full wages, minimise both the short and long-term impacts of shocks.

The productive systems of Japan and Germany, far removed from the *laissez-faire* Anglo-Saxon model, provide examples of systems which provide stability for long-term investment and growth. An additional requirement is a financial system which can provide the funds for sustained growth.

6. The Causes of Poor Policy

So part of the blame for Britain's poor relative industrial performance since 1960 lies with inadequate macroeconomic and industrial policy; but this begs the question of why these have been so poor? The answer, we would suggest, lies in Britain's historical legacy and in the resulting power of the City of London.

6.1 The historical legacy

The historical legacy with which UK manufacturing has had to contend over the past 30 years has included a continued overseas orientation not only of the financial sector but also of Britain's multinational corporations; a disproportionate burden of military spending and the distorting effect this has had on R&D; and the continued inability of successive UK governments to modernise the economy. One additional, particular manifestation of this legacy has been the role of the City of London in the functioning of the economy and in the formulation of policy.[18]

6.2 The City of London and the problem of short-termism

The power of the City of London creates a political problem which needs to be taken into account in any discussion of economic policy, namely that there is disproportionate pressure put on any UK government to accept financial orthodoxy and the general interests and demands from the City. Crafts' argument that a repeated loss of competitiveness can be rectified by continual devaluations fails to recognise that the former problem will not necessarily be followed by the latter solution; the history of British industry is littered with examples of an overvalued exchange rate, and each time the voice of the City has been loud and clear, in favour of 'defending the currency' - from the 1920s Gold Standard, to the pressure on the Wilson Government not to devalue, to the Callaghan Government's turn to the IMF, through to the UK's membership of the Exchange Rate Mechanism.[19]

Hence the importance of taking into account the political and institutional context in which economies are situated and in which governments act (or do not).

The more specific argument that Britain's industrial performance is hampered by a short-termism fostered by the City has been made many times, but as good a summary of the case as any would be as follows:

> '...I do not doubt for one moment that deep-seated short-term attitudes are prevalent in our affairs; or that this is one important strand in understanding why we as a nation have performed less well than many of our competitors. Such attitudes have led us to invest less than we might in technology and advanced means of production. They have encouraged growth in companies by acquisition and financial engineering rather than through organic development and building on products and markets. They have led us to place far too great an emphasis on comparisons of near-term financial results in judging our companies, instead of considering the strength of management and its underlying strategy. Those attitudes are all of a piece.'[20]

7. Conclusion

The idea that the UK economy will be able to flourish internationally in the future, in the absence of a strong manufacturing sector is yet another in a long line of short-term attitudes to Britain's economic performance and prospects. To return to a position of full employment on a sustainable basis will require a dramatically better industrial performance than that witnessed since 1960 (or 1979). Indeed, in many ways the situation has deteriorated since 1979; net manufacturing investment which had averaged £3,514m a year over the 1964-1973 peak-to-peak period, and £2,146m a year over the 1973-1979 period, plummeted to a mere £694m a year between 1979 and 1989.[21] The manufacturing capital stock suffered as a result, and however hard the remaining workers in manufacturing were worked, they could not make up for the loss of capacity.

Notes

1. The reasons for France's particularly bad performance during 1979-1989 are analysed in detail by Halimi *et al.* (1994).

2. These points are argued in more detail in Michie and Wilkinson (1995).

3. This point is made by Wells (1993b), p. 56. Crafts (1993) cites the estimates of Church (1992) which suggest that the Fundamental Equilibrium Exchange Rate (FEER) has been falling at a trend rate of 1.5% per annum. This implies an annual terms-of-trade induced reduction of GDP growth of 0.4% per cent - a significant proportion of the UK trend growth rate.

4. See Glyn (1992) where these last, distributional, points are analysed in depth.

5. The following report is typical: 'Among appropriations, dividend payments rose by 17% in 1990, a lower growth rate than in the preceding two years (27% in 1989 and 33% in 1988), but one that was still surprisingly rapid. The dividend payout ratio, defined as the ratio of dividend payments to total income after deducting tax and interest payments, rose to 56% in the fourth quarter of 1990 and 64% in the first quarter of this year.' (Bank of England, *Quarterly Bulletin*, August 1991, p. 364)

6. During the 1960s manufacturing gross investment grew at an average annual rate of 1.9%; this slowed to 0.5% in the 1970s with only a modest recovery to 1.0% in the 1980s. (These growth rates use the peaks in the gross investment series: 1961, 1970, 1979, and 1989.)

7. The CSO made a downward revision to service lives in 1983 as existing assumptions were 'too long' (CSO, 1983 Blue Book). The effect of changing service life assumptions will alter the measured stock of capital. Thus, according to Mayes and Young (1994, p. 87), 'the level of the gross stock on the basis of constant new CSO lives is 15%

lower in 1989 than on the basis of constant original lives'. Their evidence, however, also indicates that whichever CSO assumption is used the growth of the gross capital stock slowed during the period 1979-89 (see their Chart 1). Furthermore, Mayes and Young employ other evidence on asset lives (from company accounts, fire insurance valuations, trade surveys, expert opinion, the assumptions used in other countries and macroeconomic evidence) which suggest that official estimates of the capital stock are too high.

8. The gross capital stock series is from O'Mahony (1993b) which constructs estimates using an internationally consistent methodology using standard US service lives.

9. The estimate of the UK capital stock level may be an overestimate as the collapse of manufacturing in the early 1980s led to substantial capital scrapping which was not incorporated into official figures (see Oulton and O'Mahony, 1994).

10. Scott (1989, 1992) emphasises, in contrast to much of new growth theory, that all types of investment, not just certain kinds (such as R&D expenditure and investment in education) create and reveal new investment opportunities. Additionally he stresses, in the spirit of Keynes, that investment responds to demand and expected demand. The important two-way relationship between investment and demand is overlooked in many recent discussions of economic growth which ignore demand constraints on the level of economic activity. Investment can increase, as well as respond to, the level of demand. Thus investment can affect the scale of production as well as its organisation and technological efficiency, although, through Verdoorn effects, scale and productivity may be positively related.

11. For a discussion of these processes of cumulative causation see Kitson & Michie (1995b) which also demonstrates the importance of Kaldor's work in establishing much of what is now being reinvented, albeit in a more limited form, within the new growth theory literature; see Kaldor (1957, 1961).

12. See for example the arguments of the Cambridge Economic Policy Group published in the *Observer* on 19 April 1992 and denounced the following week (26 April) by the *Observer*'s own Adam Raphael in a piece entitled 'Beware the siren devaluers who lure us to ruin'; see also the reply from Coutts, Godley, Michie and Rowthorn in the *Observer* of 3 May 1992.

13. The 1976 depreciation did give a substantial competitive advantage which was eroded by subsequent appreciation. A devaluation must be real (as in the periods following 1931 and 1992) and not just nominal if it is to improve competitiveness; this will depend in part on achieving a positive output response to spread overheads as capacity is increased, and reduce costs as new capacity is introduced. If instead prices rise, as after the 1967 devaluation, the real depreciation is eroded.

14. The Cambridge survey was undertaken during the spring and summer of 1991 and provides a national stock-take of approximately 2000 enterprises. The sampling framework, and the respondents, was split equally between manufacturing and the rapidly expanding business service sector (for further details see Kitson, 1995; and Small Business Research Centre, 1992).

15. In the Cambridge survey firms were asked to identify which government policies hindered or helped their business in the previous ten years. Overall, firms believed that government policy had hindered their performance. What was noticeable was the high proportion of firms that considered that they had received *no* help from government policy during the past decade. Nearly a third of the firms surveyed did not identify any significant help from government policy during the past ten years.

16. The contrasting impacts of mild versus deep recession can also lead to contrasting productivity changes. With mild recessions we tend to observe 'Okun's Law' with a *short-term* productivity loss associated with a fall in output. With deep recession we observe a 'shock effect' with a *short-term* gain in productivity due to the shedding of labour and capacity.

17. The 1991 Cambridge survey (Small Business Research Centre, 1992) indicated that 40% of manufacturing firms had less than 5 competitors and 70% had less than 10 competitors. The survey also showed that personal attention to client needs, product quality and an established reputation were the most important factors which contributed to the competitiveness of manufacturing firms. Price was ranked sixth out of 11 identified factors.

18. On Britain's long-run relative economic decline, see Kitson and Michie (1995a).

19. For a discussion of the role of the Gold Standard in the 1930s depression see Eichengreen (1992), and for a comparison of this with the ERM experience, see Kitson and Michie (1994).

20. Michael Heseltine, President of the Board of Trade, speech in Parliament, 22nd March 1993, (*Hansard* col. 637).

21. All figures at constant (1990) prices; see Appendix, Figure A4 and Table A5.

TABLES

Table 1 Growth of the Manufacturing Gross Capital Stock: International Comparisons (annual % growth rates)

	1964-1973	1973-1979	1979-1989
United Kingdom			
Equipment	4.6	2.6	0.2
Structures	2.5	0.8	-0.5
Total Assets	3.9	2.1	0.0
USA			
Equipment	4.2	5.0	2.4
Structures	4.9	2.6	1.4
Total Assets	4.4	4.1	2.0
Germany			
Equipment	7.6	2.9	1.7
Structures	4.1	1.8	0.4
Total Assets	6.1	2.5	1.2
France			
Equipment	7.8	3.5	1.7
Structures	8.4	6.6	3.4
Total Assets	8.0	4.2	2.1
Japan			
Equipment	14.0	5.5	5.0
Structures	13.9	7.3	5.7
Total Assets	14.0	6.0	5.2

Source: O'Mahony (1993b)

Note: `Equipment' includes all types of machinery, furniture and fixtures and vehicles. `Structures' includes all types of buildings and other forms of infrastructure.

Table 2 Manufacturing Gross Capital Stock: International Comparisons, 1989 (1985 prices)

	Total $	Per Hour Worker- $	Index (UK = 100)
United Kingdom	267	30.7	100
USA	1,572	42.0	137
Germany	578	41.1	134
France	296	41.5	135
Japan	1,132	34.6	113

Source: O'Mahony (1993a)

APPENDIX

Appendix

Figure A1 shows output, employment and productivity for the manufacturing sector. The picture is one of rising output up to 1973, followed by a fall to 1975 and subsequent recovery in the second half of the 1970s (generally taken as peaking again in 1979 although the annual index averages to a lower overall figure over 1979 than for 1978). The deep recession of the early 1980s was followed by a weak recovery, leading straight into the Lawson boom, taking manufacturing output to a new peak in 1989 before falling again in the early 1990s' recession. Meanwhile productivity grew in every year apart from 1975 and 1980, even when output fell. There has been an almost continual decline in manufacturing employment from its peak level in 1966.

Table A1 compares in summary form this experience with that of the UK's main competitors. The following emerges: Firstly, the UK is the only one of the six with a lower average level of manufacturing output over the years 1979-1989 than over the years 1973-1979, and was also the only country to experience a fall in output between the years 1973 and 1979; (between 1979 and 1989 this average growth returned to a positive figure, albeit lower than in any of the other countries save France). And secondly, a similar picture emerges for manufacturing employment, with the UK being the only one to experience a fall between 1964 and 1973; while others saw employment fall between 1979 and 1989, none did so at the rate experienced in the UK, while during 1973-1979 only Germany and Japan experienced a faster rate of job loss and, as indicated above, in both cases this was due to strong productivity growth rather than simply output loss as was the case for the UK.

Table A2 gives the average annual growth of manufacturing output for the six countries between the peak years 1964 and 1989, with the UK firmly at the foot of the league table. Table A2 also reports the overall growth between 1964 and 1989, as well as for the more recent period of 1973 and 1989. Taking the overall growth figure to 1992 it can be seen that while the level of manufacturing output was more than 30% higher by the end of the 20 year period in Germany, and almost 70% higher in Japan, in Britain

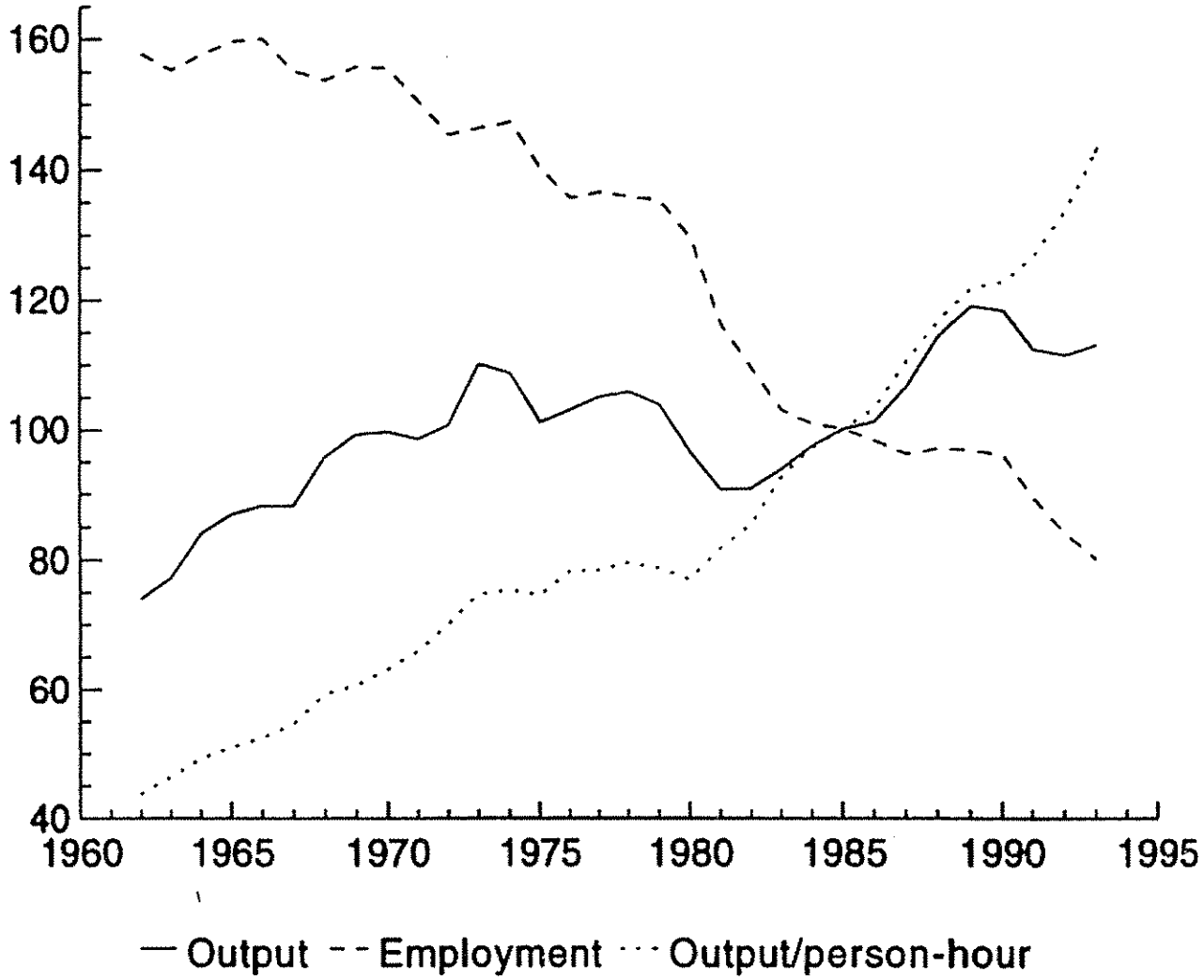
the overall growth was barely 1%; that is, the absolute level of manufacturing output in 1992 was hardly different from that achieved in 1973.

One interpretation of this performance by UK manufacturing is that firstly it is one of relative failure and that secondly such failure has been caused at least in part by underinvestment; it can be shown for example that as a percentage of GDP, the UK invests less than other countries do in manufacturing. Figure A2 and Table A3, however, report manufacturing investment as a share of manufacturing output, which is fairly stable. Figure A3 and Table A4 then compare such a series with that found for France and Germany, suggesting that investment has not been lower in the UK; (the UK series in Figure A3 is constructed differently from that reported in Figure A2: see the notes to the figures). A less rosy picture is painted, though, by the data for net (as opposed to gross) investment (Figure A4 and Table A5).

International comparisons of productivity levels and growth rates in manufacturing are reported in Figure A5 and Table A6 respectively. Figure A5 illustrates the relative decline of UK manufacturing productivity from 1960 to 1980, followed by a relative recovery. A similar picture is painted by the total factor productivity growth rates reported in Table A6, with the UK at or near the foot of the league table for the first two of the three periods, but showing a relative recovery in the most recent.

Tables A7 and A8 report some final summary statistics for the UK: output growth is reported separately for the production industries, for manufacturing and for services, as well as for GDP, for each of the three peak-to-peak periods into which the 1964-1989 years have been divided (Table A7); and Table A8 reports the summary statistics, for each of the three peak-to-peak periods, for employment and productivity, both for the whole economy and for the manufacturing sector alone.

Fig. A1. UK Manufacturing Industry, 1962-1993:
Output, Employment and Productivity (Output Per Person-Hour) (1985=100)



Source: OECD, Main Economic Indicators, December 1994 and previous issues, and own calculations (full data series reported in Kitson and Michie, 1996).

Table A1. Manufacturing output and employment: international comparisons

Average output (1985=100) and employment (millions) over each period, and average annual % growth during each period

		1964-1973		1973-1979		1979-1989	
UK:	Output index (average annual growth)	95.1	(3.1%)	105.3	(-1.0%)	101.2	(1.4%)
	Employment in millions (average annual growth)	8.254	(-0.8%)	7.481	(-1.3%)	5.759	(-3.4%)
Italy:	Output index (average annual growth)	66.4	(6.1%)	88.7	(2.6%)	103.4	(1.8%)
	Employment in millions (average annual growth)	6.203	(4.3%)	6.525	(0.2%)	6.606	(-1.5%)
France:	Output index (average annual growth)	72.4	(5.9%)	97.8	(1.5%)	103.7	(0.7%)
	Employment in millions (average annual growth)	5.670	(2.1%)	5.825	(-0.9%)	5.140	(-1.7%)
Germany:	Output index (average annual growth)	73.4	(4.8%)	90.2	(1.2%)	99.5	(1.5%)
	Employment in millions (average annual growth)	8.060	(0.8%)	7.684	(-2.2%)	6.972	(-0.5%)
USA:	Output index (average annual growth)	61.1	(5.2%)	77.5	(2.7%)	98.0	(1.5%)
	Employment in millions (average annual growth)	19.123	(1.7%)	19.824	(0.7%)	19.465	(-0.8%)
Japan:	Output index (average annual growth)	45.7	(11.9%)	70.3	(2.0%)	95.8	(4.1%)
	Employment in millions (average annual growth)	97.3	(1.8%)	96.8	(-1.9%)	97.3	(1.0%)

Source: OECD, Main Economic Indicators, and own calculations.

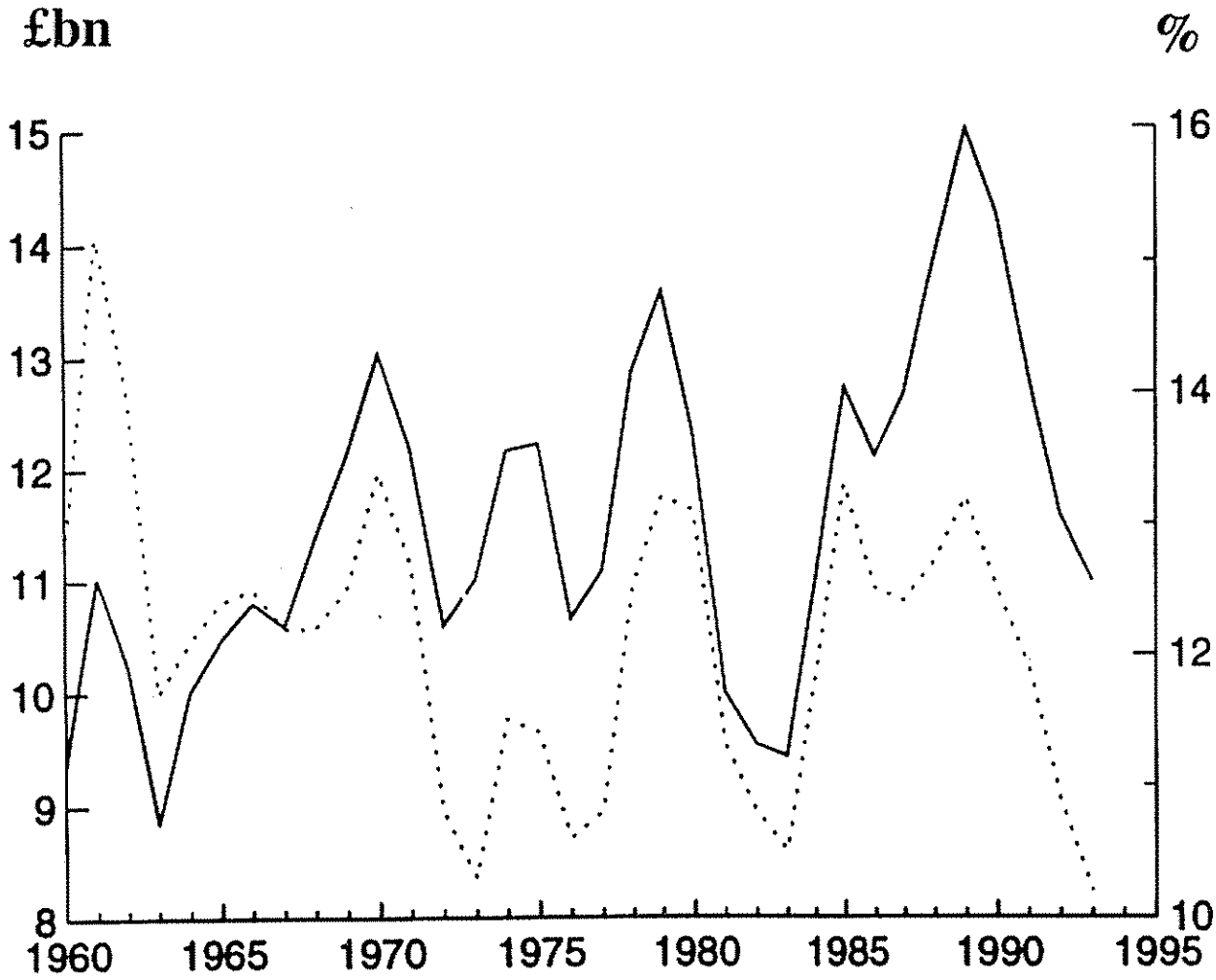
Notes: For employment, the figures for Italy include construction; there are definition changes in the data for West Germany from 1970; the first period average for France is for 1968-1973 (with the average annual growth also calculated between these years); and the figures for Japan are index numbers with 1985=100.

Table A2. Growth of manufacturing output between 1964 and 1989

	Average % Annual Growth	Total % Growth from 1st to last year		
		1964-1989	1973-1989	1973-1992
UK	1.5	41.8	8.2	1.3
Italy	3.7	138.3	39.7	68.6
France	2.9	97.2	17.5	16.5
Germany	2.7	89.4	24.0	32.1
USA	3.9	150.3	58.1	55.2
Japan	6.6	363.7	69.2	68.9

Source: OECD, Main Economic Indicators, and own calculations.

Fig. A2. **UK Manufacturing Gross Investment, 1960-1993**
£bn (1990 prices) on left hand scale, and as a percentage of manufacturing output on the right hand scale



Sources: CSO, Economic Trends Annual Supplement (1994); CSO, United Kingdom National Accounts (1994); and CSO, Economic Trends (1994), November.

Note: The manufacturing output series (£bn, 1990 prices) was calculated using the manufacturing output series from the Economic Trends Annual Supplement, scaled by Manufacturing GDP at current factor cost for 1990 from United Kingdom National Accounts.

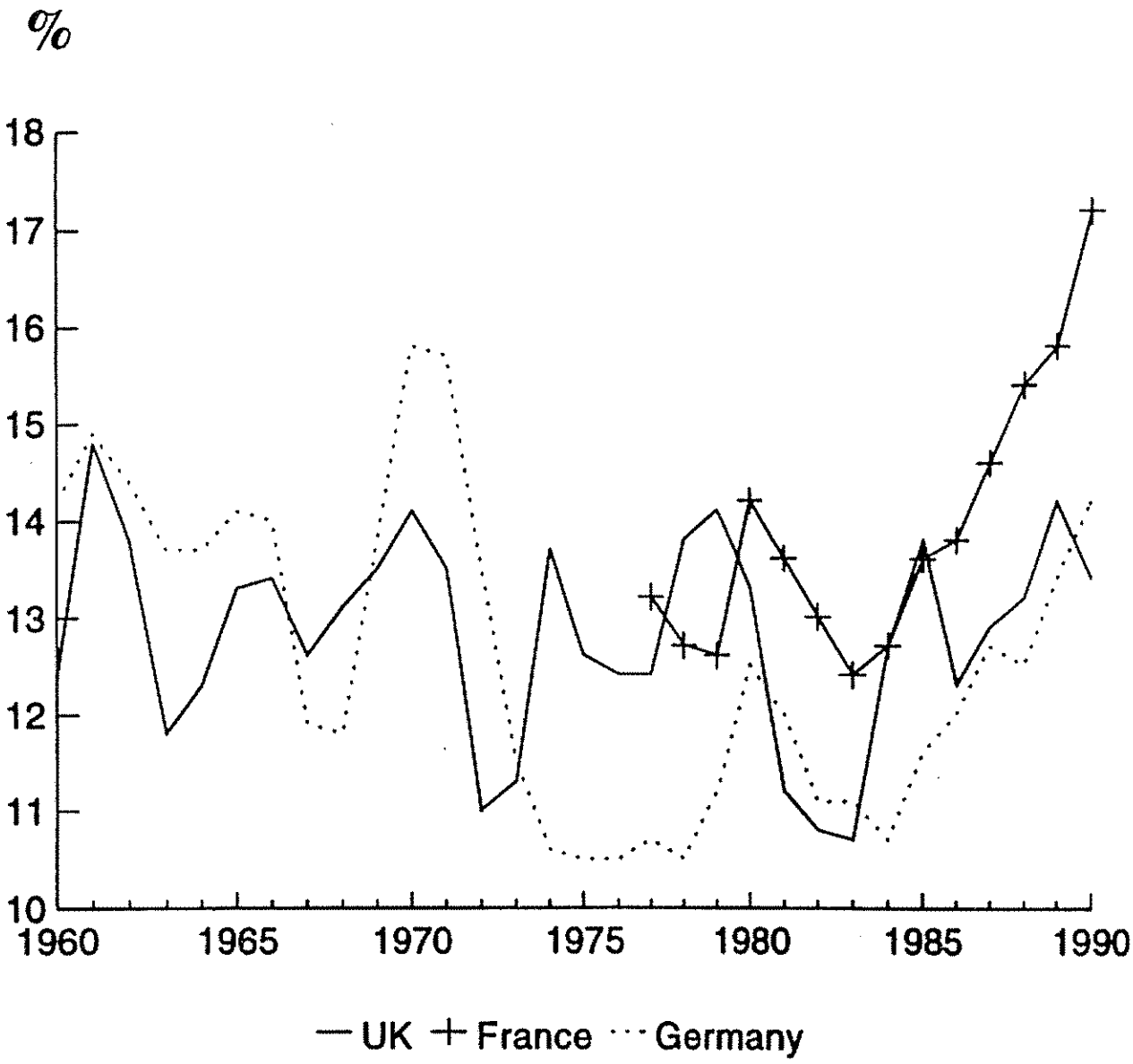
Table A3. **UK Manufacturing Gross Investment, 1960-1993**
Averages for the three peak-to-peak periods

	£ Million (1990 Prices)	Expressed as a share of Manufacturing Output (%)
1964-1973	11,212	12.1
1973-1979	11,925	11.5
1979-1989	12,003	12.3

Sources and Notes: As Fig. A2.

Fig. A3. Manufacturing Gross Investment Ratios at current prices

Manufacturing gross investment as a percentage of manufacturing value added



Source: OECD, National Accounts, Volume 2, (value added figures are market prices rather than factor cost); and CSO, National Accounts.

Note: Data for France includes mining and quarrying (not coal).

Table A4. **Manufacturing Gross Investment Ratios at current prices**

Manufacturing gross investment as a percentage of manufacturing value added

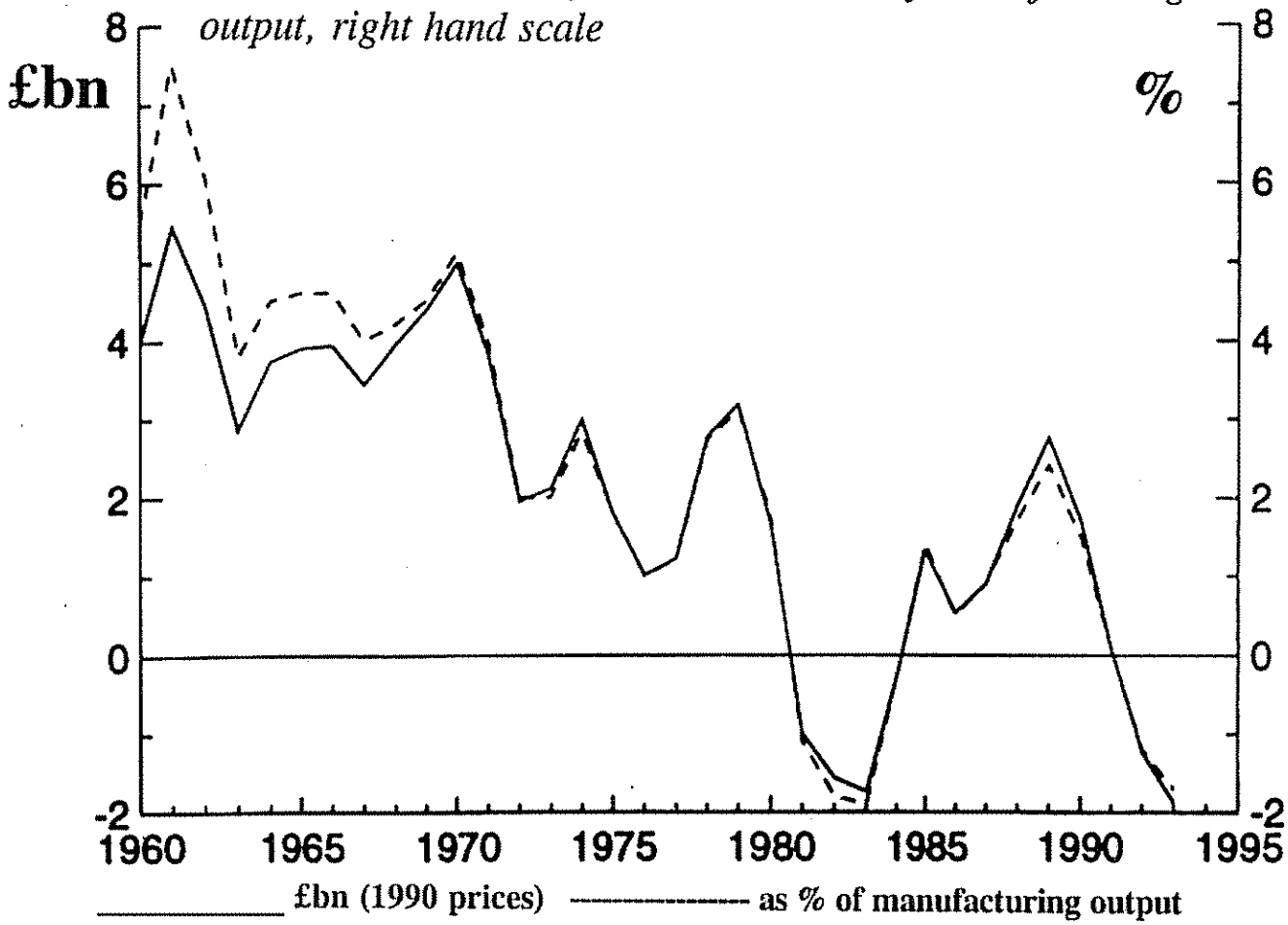
Averages for the three peak-to-peak periods

	UK	France	Germany
1964-1973	12.8	NA	13.6
1973-1979	12.9	NA	10.8
1979-1989	12.7	13.8	11.9

Source and Notes: As Fig. A3.

Fig. A4. UK Manufacturing Net Investment 1960-1993

£bn (1990 prices), left hand scale; % of manufacturing output, right hand scale



Sources: CSO, Economic Trends Annual Supplement (1994); CSO, United Kingdom National Accounts (various editions); CSO, National Income and Expenditure (various editions); and CSO, Economic Trends (1994), November.

Note: The net investment series has been calculated by subtracting capital consumption from gross investment (see Fig. A2). The capital consumption series was constructed by linking the various series published in United Kingdom National Accounts and National Income and Expenditure. These series vary in their coverage as they use different definitions of manufacturing due to changes in the SIC classification system. The linked series adjusts for this by using the ratio between new and old definitions in overlapping years. This constructed series was preferred to that published in United Kingdom National Accounts, as the latter is deficient due to the variable inclusion of leased items and some other apparent anomalies in the series.

Table A5. UK Manufacturing Net Investment 1960-1993

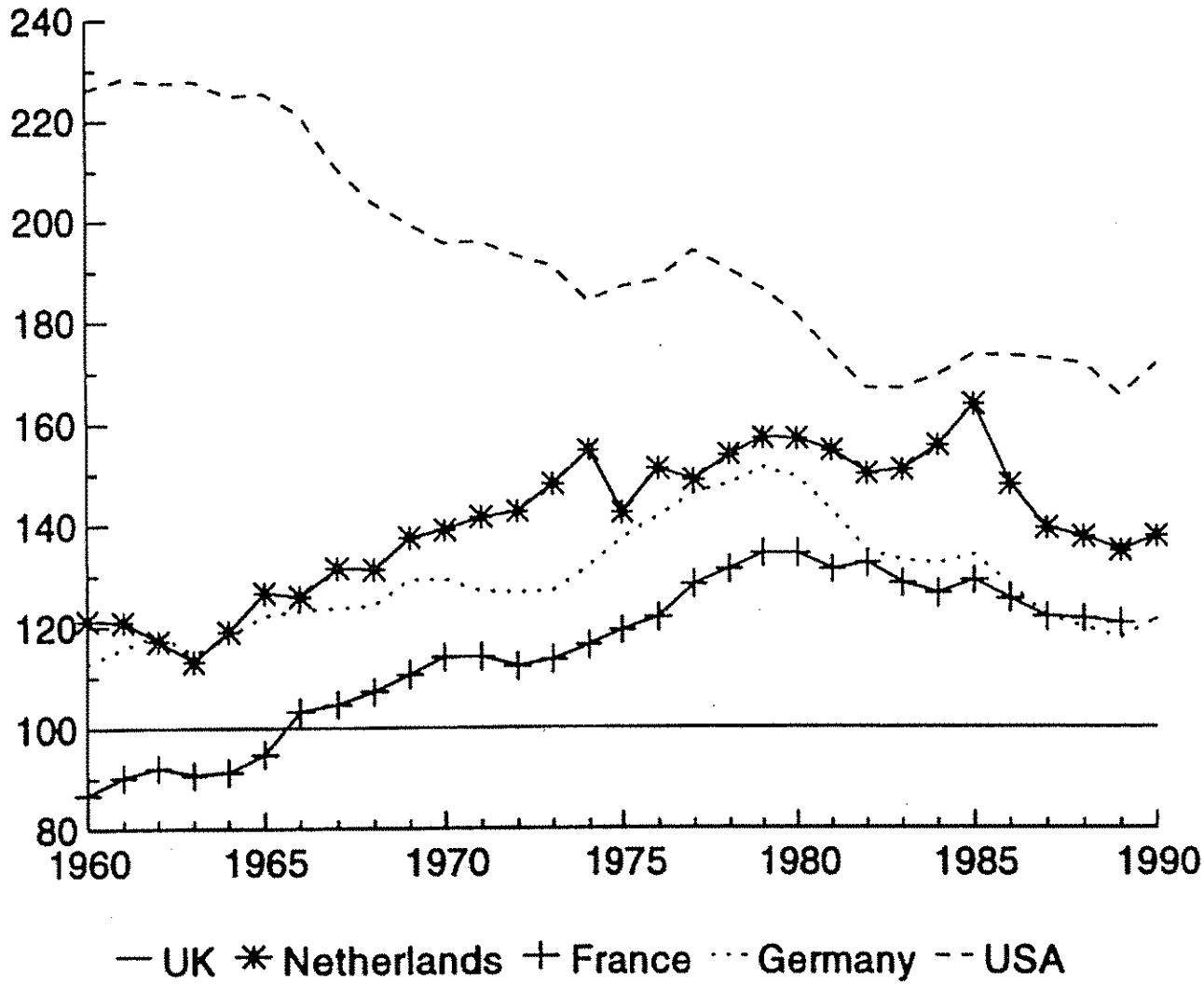
Averages for the three peak-to-peak periods

	£ Million (1990 Prices)	Expressed as a share of Manufacturing Output (%)
1964-1973	3,614	4.0
1973-1979	2,146	2.1
1979-1989	694	0.6

Sources and Notes: As Fig. A4.

Fig. A5. Value Added per Hour Worked in Manufacturing, 1960-1990

As a percentage of the UK, (UK=100)



Source: van Ark (1993) Appendix Table IV.5 and own calculations for US series from Appendix Table IV.4

Table A6. Total Factor Productivity Growth in manufacturing

Average annual percentage change

	Pre-1973	1973-1979	1979-1989
United States	2.6	0.4	0.7
Japan	6.9	2.4	1.1
France	5.4	3.0	1.0
Germany	3.6	2.8	0.5
United Kingdom	3.3	0.0	1.3

Source: OECD, Economic Outlook (1992), June.

Table A7. UK Output Growth, 1964 - 1989

Annual average % growth, between peak to peak years

	GDP	Production Industries	Manu-facturing	Services
1964-1973	3.1	3.0	3.0	2.8
1973-1979	1.4	1.2	-0.9	1.8
1979-1989	2.4	1.4	1.0	2.7

Source: CSO, Economic Trends Annual Supplement (1994).

Table A8. UK Employment and Productivity Growth, 1964 - 1989

Annual average % growth, between peak to peak years

	Employed Labour Force		Output per Person Employed	
	Whole Economy	**Manu-facturing**	**Whole Economy**	**Manu-facturing**
1964-1973	0.0	-0.8	3.1	3.8
1973-1979	0.2	-1.3	1.2	0.6
1979-1989	0.3	-2.9	2.1	4.1

Source: CSO, Economic Trends Annual Supplement (1994).

References

Archibugi, D. and Michie, J. (1995). 'The globalisation of technology: a new taxonomy', *Cambridge Journal of Economics*, vol. 19, no. 1 (February), pp. 121-140.

Cambridge Economic Policy Group (1992). 'Hands-off Economics Equals Stagnation', *The Observer*, 19th April.

Church, K. (1992). 'Properties of the Fundamental Equilibrium Exchange Rate in Models of the UK Economy', *National Institute Economic Review*, no. 141, pp. 62-70.

Cosh, A., Hughes, A. and Rowthorn, R.E. (1993). 'The Competitive Role of UK Manufacturing Industry: 1979-2003'. Chapter 2 of K. Hughes (ed.), *The Future of UK Competitiveness and the Role of Industrial Policy*, London: Policies Studies Institute.

Coutts, K., Godley, W., Michie, J. and Rowthorn, B. (1992). 'Devaluation of sterling is no 'quick fix'', *The Observer*, 3rd May.

Crafts, N. (1993). *Can Deindustrialisation Seriously Damage Your Wealth?*, London: Institute of Economic Affairs.

Dixit, A. (1992). 'Investment and Hysteresis', *Journal of Economic Perspectives*, vol. 6, no. 1 (Winter), pp. 107-132.

Eichengreen, B. (1992). *Golden Fetters; The Gold Standard and the Great Depression 1919-1939*. Oxford: Oxford University Press.

Glyn, A. (1992), 'The 'Productivity Miracle', Profits and Investment'. In J. Michie (ed.), *The Economic Legacy, 1979-1992*, London: Academic Press.

Halimi, S., Michie, J. and Milne, S. (1994). 'The Mitterrand Experience'. Chapter 6 of J. Michie and J. Grieve Smith (eds), *Unemployment in Europe*, London: Academic Press.

Kaldor, N. (1957). 'A Model of Economic Growth', *Economic Journal*, vol. 67, December.

Kaldor, N. (1961). 'Capital Accumulation and Economic Growth'. In F. Lutz and D. Hague (eds), *The Theory of Capital*, New York: Macmillan.

Kitson, M. (1995). *Seedcorn or Chaff? Unemployment and Small Firm Performance*, ESRC Centre for Business Research Working Paper 2 (February), University of Cambridge.

Kitson, M. and Michie, J. (1994). 'Fixed Exchange Rates and Deflation: the ERM and the Gold Standard', *Economics and Business Education*, vol. II, part 1, no. 5 (Spring), pp. 11-16. Reprinted in N. Healey (ed.), *The Economics of the New Europe: From Community to Union*, Routledge, 1995, Chapter 3 (pp. 68-81).

Kitson, M. and Michie, J. (1995a). 'Trade and Growth: A Historical Perspective', Chapter 1 of J. Michie and J. Grieve Smith (eds), *Managing The Global Economy*, Oxford: Oxford University Press.

Kitson, M. and Michie, J. (1995b). 'Conflict, Cooperation and Change: The Political Economy ofTrade and Trade Policy', *Review of International Political Economy*, vol. 2, no. 4 (Winter).

Kitson, M. and Michie, J. (1996). 'Manufacturing Capacity, Investment and Employment'. In J.Michie and J. Grieve Smith, *Creating Industrial Capacity - towards full employment*, Oxford: Oxford University Press.

Lawson, N. (1992). *The View From No. 11*, London: Bantam Press.

Mayes, D. and Young, G. (1994). 'Improving the Estimates of the UK Capital Stock', *National Institute Economic Review*, February, pp. 84-96.

Michie, J. and Wilkinson, F. (1995). 'Wages, Government Policy and Unemployment', *Review of Political Economy*, vol. 7, no. 2 (April), pp. 133-149.

Nolan, P. (1989). 'Walking on Water? Performance and Industrial Relations Under Thatcher', *Industrial Relations Journal*, vol. 20, no. 2, pp. 81-92.

Oulton, N. and O'Mahony, M. (1994). *Productivity and Growth: A Disaggregated Study of British Industry, 1954-86*, Cambridge: Cambridge University Press.

O'Mahony, M. (1993a). 'Capital Stocks and Productivity in Industrial Nations', *National Institute Economic Review*, August, pp. 108-117.

O'Mahony, M. (1993b). 'International Measure of Fixed Capital Stocks: A Five-Country Study', National Institute of Economic and Social Research, Discussion Paper no. 51, September.

Raphael, A. (1992). 'Beware the Siren Devaluers Who Lure us to Ruin', *The Observer*, 26th April.

Scott, M.F.G. (1989). *A New View of Economic Growth*, Oxford: Clarendon Press.

Scott, M.F.G. (1992). 'Policy Implications of 'A New View of Economic Growth", *Economic Journal*, vol. 102, pp. 622-32.

Small Business Research Centre (1992). *The State of British Enterprise: Growth, Innovation and Competitive Advantage in Small and Medium Sized Enterprises*, Cambridge: University of Cambridge, Small Business Research Centre.

Stoneman, P. and Francis, N. (1992). 'Double Deflation and the Measurement of Output and Productivity in UK Manufacturing 1979-1989', Warwick Business School Discussion Paper.

van Ark, B. (1993). *International Comparisons of Output and Productivity. Manufacturing Productivity Performance of Ten Countries from 1950 to 1990*, unpublished Phd thesis.

Wells, J. (1993a). 'The UK Record Since 1979 (A Reply to Crafts)', University of Cambridge, mimeo.

Wells, J. (1993b). 'The Trouble with Thatcher', *New Economy*, Autumn, pp. 52-56.