

BRITISH ECONOMIC GROWTH BEFORE AND AFTER 1979: A REVIEW OF THE EVIDENCE

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ABSTRACT

British Economic Growth Before and After 1979: A Review of the Evidence*

The paper surveys the evidence on British economic growth performance since the war. It is shown that the hypotheses proposed by Bacon and Eltis, Kaldor and Thirlwall to account for slow growth are inadequate and that supply-side problems leading to poor productivity performance are the most plausible explanation of Britain's relative decline. It is argued both that these failings have their basis in the political and institutional legacy of postwar Britain and that the Thatcher years have seen only a partial solution to supply-side weaknesses.

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NON-TECHNICAL SUMMARY

By the late 1950s there was widespread concern at Britain's failure to grow as fast as other advanced countries. In the subsequent 30 years our relatively poor performance in terms of output and productivity growth has been the subject of repeated analysis, and many remedies have been proposed both by governments and by academics. Not only did Britain lag behind in the years of the long postwar boom which ended in 1973, but in the difficult years of the later 1970s we remained near to the bottom of the growth league in a world where living standards were rising much more slowly. This generally rather gloomy statistical record has prompted a number of questions and has given birth to a wide range of supposed explanations, some of which, as we shall see, are not very persuasive. The most obvious questions are the following:

- 1) Why has the UK suffered such relatively slow growth until recently?
- 2) Does the post-1979 growth performance indicate that the pay-off from the 'Thatcher Experiment' has been so substantial that relative economic decline has been permanently reversed?

For economic historians there are additional important issues, which arise in the following questions:

- 3) What were the effects on postwar growth of the legacy of the interwar and wartime periods?
- 4) Were the reasons for relatively slow growth the same after World War II as in the preceding seventy years?

It is well known that the UK economy went through a long period of relative economic decline during which economic growth and, in particular, productivity growth in Britain were slow by comparison with its major competitors. Before World War II American productivity moved far ahead of British levels while Continental countries were catching us up. In the postwar years Britain reduced America's lead but was overtaken by European economies. Thus in 1870 real GDP per hour worked was 90% of the UK level in the United States and 49% in France. By 1950 the figures were 171 and 71% respectively and by 1979 140 and 117%. The postwar years were especially remarkable for the weakness of manufacturing productivity in Britain; output per employee in West German industry was 77% of the British level in 1951, the same in 1959 but was 139% by 1979. Since 1979, however, there appears to have been a substantial productivity revival in British manufacturing: a provisional estimate for 1987 suggests that German productivity is now only 113% of the British level. This paper reviews the evidence now available on once-popular explanations for slow British growth prior to 1979. It also considers the reasons for and the extent of

the economy's recent success in reversing a century of relative economic decline.

The growth of output and productivity can be described using 'Growth Accounting', which decomposes the rate of economic growth into contributions from the inputs of capital and labour and those from 'total factor productivity' (TFP) growth. If capital and labour are measured very accurately, it will be possible to allow for changes in their quality, and TFP growth will reflect improvements in technology and elimination of inefficiencies in the use of resources. In practice, some or all of the improvements in factor-input quality is likely to be captured in TFP growth. This decomposition reveals that 1950-73 represents a period of particularly high TFP growth both for Britain and the other countries. This period also saw much higher investment and capital-stock growth. TFP growth has slowed significantly since 1973 in all countries (including Japan) and Britain's shortfall has been much less. During 1950-73 when Britain experienced much slower growth than France, Germany or Japan, compared with those countries slower TFP growth accounted for 52, 75 and 29% respectively of the gap in growth rates, and capital accumulation was responsible for 31, 7 and 31% respectively. Britain's competitors undoubtedly had more scope to increase productivity after the war by reallocating resources away from agriculture and catching up with American technology, and these factors played a significant part in their faster TFP growth, especially for Japan.

The TFP decomposition reveals that the growth of capital per worker (through investment) and also of output per unit of total input (through greater efficiency and technological progress) determine the growth of real output per worker, and theories seeking to explain poor British growth performance can be thought of as possible reasons for slow progress in either or both of these growth determinants. Examination of the growth of output and productivity in different sectors of the British economy indicates that poor performance relative to Germany was pervasive (Panic, 1976). We might therefore expect to find some general forces at work and this has encouraged many writers towards a macro-level approach.

For a long time it was often argued that Britain's growth problems were rooted in 'macro-structural' aspects of the economy. Thirlwall argued that the balance of payments constrained UK growth because of adverse demand conditions for British exports. Kaldor emphasized Britain's early start in industrialization, which, he argued, led to labour-supply restraints that prevented manufacturing productivity growth based on Verdoorn's Law. In some versions of Kaldor's theory this led in turn to a vicious circle as a result of balance of payments constraints. Bacon and Eltis suggested that the rapid growth of the non-marketed (public) sector was crowding out investment and thus growth.

Each of these arguments seems to have been taken seriously by policymakers at some time. Unfortunately they can all be shown to be inconsistent with the evidence. Balassa's reworking of the trade evidence rejects Thirlwall's argument that the income elasticity of demand for British exports was unusually low. Chatterji and Wickens show that British manufacturing is subject to Okun's Law but not Verdoorn's Law. It is also easy to demonstrate not only that in the long run the non-marketed sector has grown at the expense of private consumption rather than private investment, but also that the relative expansion of the non-marketed sector has continued since 1979.

There is thus little evidence to support the 'macro-structural' explanations; instead the chief obstacles to faster growth appear to have been supply-side failures. This argument is by no means new, of course, and can also be found in discussions of the late-nineteenth-century and interwar economies. The recent work of Batstone, Davies and Caves, Prais, Pratten and many others has shown that poor UK productivity performance stemmed from inappropriate plant size; industrial-relations problems, which led to inflexible working arrangements and over-manning; inadequate education and training, particularly of those leaving school at the minimum age; and a shortfall of research and development. The upshot is argued to be a slow rate of adoption of new methods and a failure to reap the full potential of technological change, which were reflected in the growing productivity gap between British industry and that of other countries that characterized the 1960s and 1970s. Accordingly the difference between Britain and countries like Germany could be explained more by differences in the incremental capital-to-output ratio than by differences in the share of output invested. Similar weaknesses also seem to have afflicted the prewar economy, whose potential for productivity growth was distinctly lower than that of the postwar economy.

In economic terms these arguments imply widespread 'market failure', in the sense of a failure to achieve an efficient allocation of resources. This argument also suggests market failure in the sense that market forces, operating through new entry and takeover, were not able to prevent an inadequate productivity performance. Textbooks would see government action as potentially able to remedy such problems, but the critics tend to regard the state as, if anything, exacerbating resource misallocation. Olson, for example, has argued that there is a general tendency for stable democracies to develop a large number of special interest groups. The activities of these groups, unless they have been disrupted by a period of war, foreign occupation or totalitarian government, impede the resource reallocations necessary for full exploitation of improved technological possibilities. Postwar Britain is seen by Olson as particularly prone to this 'sclerosis' problem. Evidently the administrations since 1979 have accepted the diagnosis of 'supply-side problems' and have sought in particular to reduce tax and trade union obstacles to growth.

This paper emphasizes possible explanations for the poor UK productivity growth. This may seem slightly surprising in view of a widely-held belief that the UK has invested too little. Certainly the share of investment in national income in the postwar period has been some 5 percentage points lower than the European average. Nevertheless, the decomposition suggests that only a relatively small part of the shortfall in British growth in 1951-73 can be attributed to slower capital accumulation.

The evidence on investment in manufacturing in Britain and Germany confirms this. As far as manufacturing is concerned Britain and Germany invested fairly similar proportions of output. In each economy over 1954-72 the rate of growth of the capital stock slightly exceeded the rate of growth of output, but the difference in the growth of output per worker was almost entirely due to TFP growth – 1.4 out of 1.7 percentage points per year. Britain experienced a lower level of output per unit of capital, and thus its investment translated into a much lower rate of growth of capital (3.9% per year compared with 7.4% in Germany in 1954-72).

It should be noted that much of this diagnosis was already available and accepted both by the employers and by the TUC in the early 1950s, as a result of the work of the Anglo-American Productivity Council. By the mid-1960s all the weaknesses mentioned were clearly visible, even if they were not demonstrated with the same statistical clarity as is now possible. Rather than remedying these failings governments were seduced into ill-advised dashes for growth, supporting declining industries, the over-enthusiastic encouragement of mergers and the subsidizing of investment. As Metcalf has pointed out, these policies encouraged governments to pursue cooperation with the trade union movement, thereby precluding effective action on the industrial relations front and undermining the post-Donovan reforms of the 1970s. Finegold and Soskice have argued that the reform of education and training was subverted by the historical decentralization of power in the educational world and by vested interests on both sides of industry. Thus the obstacles to faster growth seem to have been chiefly in the realm of political economy and linked to the institutional inheritance of postwar Britain.

Developments since 1979 should be viewed against this background and in the light of the Conservatives' abandoning of attempts at cooperative solutions to macroeconomic management. It is clear that the 1980s have seen dramatic productivity gains in Britain, resulting from the adoption of more flexible working practices and a shake out of labour as the bargaining position of organized labour has weakened. At the same time it would be wrong to be euphoric about recent developments. The reversal of Britain's relative decline in 1979-87 resulted more from the slowing of growth elsewhere than from improved UK performance. The evidence also points to a general failure to get to grips with the inadequate

training and research and development in Britain. Moreover the unfortunate structure of industrial relations inherited from the 1970s seems largely intact; and it may well be, as Metcalf has argued, that fear rather than a new cooperation has underwritten productivity advance.

A. Introduction

By the late 1950s there was widespread concern at Britain's failure to grow as fast as other advanced countries. In the subsequent 30 years our relatively poor performance in terms of output and productivity growth have been the subject of repeated analysis and many remedies have been proposed both by governments and academics. Not only did Britain lag behind in the years of the long postwar boom which ended in 1973, but in the difficult years of the later 1970s we remained near to the bottom of the growth league in a world where living standards were rising much more slowly. This experience is not only important in providing a context for Thatcherite economic reforms but also provides some benchmarks with which to judge their success.

Table 1 puts British economic growth in a comparative perspective as well as setting the postwar years against the experience of earlier eras. The estimates are based on historical national accounts statistics with output measured in constant prices. Strictly speaking the table describes trends in labour productivity but it also offers a good guide to comparative growth in real income per person which follows a similar pattern. The periodization is chosen to show trends between years of relatively full utilization of resources with a view to minimizing distortions arising from short term economic fluctuations, except for the use of 1987 figures which are the latest available.

Table 1 reveals very clearly the longstanding peacetime tendency to slower growth in labour productivity than our competitors. Note also that the years 1951-73 represent both the UK's highest output per worker growth and the period when the largest gap exists between ourselves and the fastest growing countries. The table also reflects the general slowdown in productivity growth after 1973 and the UK's move up the comparative league table since 1979.

The years of slower growth saw not only a decline in real income per head relative to other countries but also a large reduction in our share of world exports of manufactures and, from the end of the 1960s, a deindustrialization of employment which became pronounced after 1979. In 1970 US dollars the UK advanced from a per capita GDP of 2094 in 1950 to 3981 in 1979; by contrast in the same period Germany went from 1374 to 4946, France from 1693 to 4981

TABLE 1. Growth Rates of Real Output per Worker Employed (% per annum).

	UK	USA	France	Germany	Japan
1873-1899	1.2	1.9	1.3	1.5	1.1
1899-1913	0.5	1.3	1.6	1.5	1.8
1913-1924	0.3	1.7	0.8	-0.9	3.2
1924-1937	1.0	1.4	1.4	3.0	2.7
1937-1951	1.0	2.3	1.7	1.0	-1.3
1951-1964	2.3	2.5	4.3	5.1	7.6
1964-1973	2.6	1.6	4.6	4.4	8.4
1973-1979	1.2	-0.2	2.8	2.9	2.9
1979-1987	2.1	0.6	1.8	1.5	2.9

Sources: Matthews *et al.* (1982, p.31) and OECD (1988).

and Japan from 585 to 4419 (Maddison, 1982, p.8). From a share in manufactured exports of 25.4% in 1950 the UK fell to 11.2% in 1969 and 7.6% in 1984 (House of Lords, 1985). Employment in UK manufacturing declined from 8.2 mn (36.9% of total employment) in 1969 to 7.2 mn (32.1%) in 1979 and 5.3mn (25.2%) in 1985 (Department of Employment Gazette, 1986). With these figures in mind it is interesting to look at labour productivity in manufacturing.

TABLE 2. Output per Employee in Manufacturing, 1951-1986
(UK 1970 = 100)

	UK	Germany	USA	WG/UK	US/UK
1951	66	51	180	0.77	2.73
1964	84	92	255	1.10	3.04
1973	117	142	332	1.21	2.84
1979	125	174	374	1.39	2.99
1987	175	198	490	1.13	2.80

Sources: Prais (1981, p.279) and OECD (1988).

This table reveals a persistent tendency for American productivity to be close to 3 times the British level throughout the postwar years. A similar calculation shows a ratio of 2.25 for 1937 (Rostas, 1948, p.47) which indicates, not surprisingly, a rise in the American lead during World War 2. Much more striking, however, is that for three decades German productivity advance steadily exceeded our own, a phenomenon which might be due to reconstruction in the 1950s but not thereafter. By 1964 Germany's lead was once again similar to that found by Rostas for 1936 and over the 20 years to 1979 Germany had moved from parity with the UK to a lead of almost 40 per cent. The recent acceleration in British manufacturing productivity growth, combined with much slower German productivity growth, has, however, reduced the gap to around what

it was in 1967/8.

TABLE 3. Real GDP per Hour Worked: Comparisons with the UK in Selected Years

	UK	USA	France	Germany	Japan
1870	100	90	49	53	17
1890	100	105	50	58	19
1913	100	125	62	70	23
1929	100	146	71	69	31
1938	100	143	84	78	36
1950	100	171	71	57	24
1960	100	174	86	89	34
1973	100	145	108	106	64
1979	100	140	117	120	71
1984	100	124	121	112	69

Source: Feinstein (1988, p.4)

Looking at the whole economy rather than just manufacturing and adjusting for hours worked gives a rather different picture of comparative productivity levels, as Table 3 shows. The overtaking of Britain by European countries in the 1960s still stands out, however. It is also worth noting the much superior performance of the American economy in the years 1870 to 1950 and the still inferior Japanese productivity level in the 1980s resulting from the relatively underdeveloped state of sectors other than exportable manufactures.

This generally rather gloomy statistical record has prompted a number of questions and has given birth to a wide range of supposed explanations, some of which, as we shall see, are not very persuasive. The most obvious questions are the following:

- 1) Why has the UK been relatively so slow-growing until recently?
- 2) Does the post 1979 growth performance indicate that there has been such a substantial payoff from the 'Thatcher Experiment' such that relative economic decline has been permanently reversed?

These questions have already produced a great deal of work by economists. For economic historians there are additional important issues which arise in the following questions.

- 3) What were the effects on postwar growth of the legacy of the interwar and wartime periods?
- 4) Were the reasons for relatively slow growth the same after World War 2 as in the preceding seventy or so years?

It is easy to imagine in the light of Table 1 that the UK had been in long term decline for over a century since the days of our pioneering leadership in the Industrial Revolution and that this arises from continuing, longstanding features of our society and economy. Part of the historian's task is to evaluate such commonly held views.

B. Accounting for British Economic Growth

A more sophisticated description of the growth of output and productivity can be obtained using 'Growth Accounting'. This technique has come to be widely used in the past quarter-century and formed the basis of Matthews *et al's* seminal (1982) study of British economic growth. The methodology decomposes the rate of economic growth into contributions from the inputs of capital and labour and from total factor productivity growth as in equation (1).

$$\Delta Y/Y = \alpha \Delta K/K + \beta \Delta L/L + \Delta TFP/TFP \quad (1)$$

where α and β are coefficients representing the elasticity of output growth to capital and labour growth respectively and $TFP = Y/(\alpha K + \beta L)$. For the postwar years values of $\alpha = 0.3$ and $\beta = 0.7$ would be appropriate. If capital and labour are measured very accurately, it will be possible to allow for changes in their quality and TFP growth will reflect improvements in technology and elimination of inefficiencies in the use of resources. In practice, depending on data availability and the range of the comparisons being made some or all of the improvements in factor inputs quality is likely to be captured in TFP growth. Table 4 gives a long run and comparative perspective on the sources of growth based on the growth accounting approach.

It is clear from Table 4 that the years 1950-73 represent a period of particularly high TFP growth both for Britain and the other countries. This period also saw much higher investment and capital stock growth. TFP growth has slowed significantly since 1973 in all countries including Japan and Britain's shortfall has been much less. During 1950-73 when Britain experienced much slower growth than France, Germany or Japan, compared with those countries slower TFP growth accounted for 52, 75 and 29 per cent respectively of the gap in growth rates and capital accumulation was responsible for 31, 7 and 31 per cent respectively. Britain's competitors undoubtedly had more scope for productivity increases after the war from reallocation of resources away from agriculture and the catching up of American technology during reconstruction and Table 4 shows that these factors played a significant part in their faster TFP growth, in

- i) As equation (1) implies, growth of capital per worker (through investment) and of output per unit of total input (through greater efficiency and technological progress) determine the growth of real output per worker and theories seeking to explain poor British growth performance can be thought of as possible reasons for slow progress in either or both of these growth determinants.
- ii) In making comparisons of growth between countries it is important to try and distinguish to what extent the reasons for slower UK growth lie in domestic failure as opposed to circumstances beyond our control. (For example, continental Europe started the postwar period with greater scope to contract small-scale agriculture and a bigger backlog in technology than Britain.)
- iii) Examination of the growth of output and productivity in different sectors of the British economy indicates that a poor performance relative to Germany was pervasive (Panic, 1976). We might therefore expect to find some general forces at work and this has encouraged many writers towards a macro level approach.
- iv) Table 1 shows that the UK has a long history of relatively slow growth and readers familiar with pre-1945 economic history, will be aware of many criticisms of economic performance both before and after World War I. It does not necessarily follow, however, that the same explanations apply throughout or even that the reasons for slow growth since 1945 have deep historical roots.

Over the past 25 years or so economists have puzzled as to what is so different about Britain. Among the most prominent hypotheses at one time or another have been the following.

1) Balance of Payments Constraint. This argument takes as its starting point the demand side of the economy and can be found in a number of variants, for example Beckerman (1965, ch. 2) and Thirlwall (1986, ch. 11). The suggestion is that the growth of demand for exports constrains domestic growth through the requirement for balance in external payments. This balance condition means that

$$\frac{\Delta Y}{Y} h \times e_m = \Delta \frac{Y}{Y} RW \times e_x \quad (2)$$

$$\text{and } \frac{\Delta Y}{Y^h} = \frac{\Delta Y/Y_{RW} \cdot e_x}{e_m} \quad (3)$$

(where h is the home country, RW is the rest of the world and e_x and e_m are the income elasticities of demand for exports and imports of the home country respectively) if the balance of payments cannot be brought into equilibrium by changes in competitiveness (the real exchange rate). It has frequently been argued that the elasticities facing Britain are much less favourable than those for other economies (Thirlwall, 1979, p.51). This constraint on the demand side would put a ceiling on growth in the basic case; in a more elaborate argument there would also be an adverse effect on productivity growth arising from 'dynamic economies of scale' (see below) which in subsequent periods could tighten the balance of payments constraint still further. It should be noted, however, that if the real exchange rate is free to vary (i.e. balance of payments difficulties can be solved by a rising relative price of imports) then the consequences of unfavourable demand conditions should be felt on growth of real incomes (through the terms of trade) rather than of real domestic product. Moreover, the chief obstacle to adjustment of the real exchange rate is usually expected to be from the resistance of trade unions to reductions in real wages leading to depreciation of the nominal currency being offset by rising money wages (and thus labour costs). Thus in terms of output growth the problem would stem from a combination of trade conditions and labour market institutions.

2) Fiscal Policy

There are two rather different versions of this type of argument. The older variant relates to the 'stop-go' demand management policies and was cogently presented by Dow (1964). He claimed that the government's attempts to stabilize the growth of aggregate demand had in fact destabilized the economy with somewhat adverse effects on investment. More importantly he advocated that policies for the management of demand needed to be given a role in the long term improvement of productive potential by being used in conjunction with indicative planning to create favourable expectations of sales growth, and thus, a high rate of capital accumulation (1964, ch. 16), (see ch. 5).

A decade later the emphasis switched to an argument that government expenditure was 'crowding out' private sector investment and thus inhibiting growth. The best known theory is that of Bacon and Eltis (1978) which discussed the roles of the "non-marketed" and "marketed" sectors of the economy; they argued that the surplus of output over consumption in the marketed sector was potentially

available for net exports, investment in the marketed sector or could be siphoned off for use in the non-marketed sector and that after 1960 government claims had taken increasingly more of the marketed sector's production. Since in practice they saw workers as able to pass on any taxes aimed at cutting real wages and consumption to profits and thus investment they regarded the process as very damaging for long run growth. In the notation of equation (4), $I_n + C_n$ grew at the expense of I_m , where we have

$$Y_m - C_m = I_n + C_n + NX_m + I_m \quad (4)$$

where the subscripts m and n refer to the marketed and non-marketed sectors).

Obviously the Bacon and Eltis hypothesis is much closer to Thatcherite diagnoses of the reasons for slow growth whilst Dow's views were very much those of the incoming Wilson government in 1964. There is, however, a more important difference to be noted. At bottom the Bacon and Eltis view stresses the power of trade unions to resist inroads on real wages whilst demanding increasing welfare provisions as the underlying problem - much as the Thirlwall diagnosis of balance of payments constraint sees real wage rigidity as preventing export led growth. By contrast, the 1960s optimism of Dow was that long run demand management and indicative planning would raise domestic productive potential and international competitiveness through faster investment and associated technological progress without foundering on trade union wage pressures.

3) Verdoorn's Law and the Structure of Employment

One of the most influential items in the postwar debate on growth was Kaldor's inaugural lecture (1966). In it he drew attention to the apparent existence of the following relationship in the manufacturing sector

$$p_m = a + be_m \quad (5)$$

(where p_m is the rate of growth of output per worker, e_m is the rate of growth of employment, and $b > 0$.) Equation (5) is known as Verdoorn's Law and it implies that output growth brings with it productivity growth in manufacturing. In Kaldor's formulation this resulted from dynamic economies of scale. If this claim is valid, then several insights into slow British economic growth follow.

- i) There could be reason to suppose that early British industrialization, which by the post World War 2 period had left very little labour in agriculture, had exhausted much of the economy's ability further to expand manufacturing employment and thus had reduced our post 1945 growth potential relative to other countries. (The argument would go well beyond that of Maddison (1987), as reported in Table 4, who merely accounted for a static reallocation effect from previously

under-employed labour.)

- ii) Linked to the growth of North Sea Oil which raised the exchange rate and tended to retard manufacturing employment growth via reducing the price to us of manufactured imports, Verdoorn's Law could help explain relatively poor productivity growth in the 1970s.
- iii) Most importantly, the possibility is opened up of cumulative causation (virtuous/vicious circle) accounts of relatively slow British growth. Thus slow expansion of the economy, perhaps due to the balance of payments constraint, retards productivity growth which in turn reduces the prospect of loosening the constraint through increased competitiveness etc.

4) Supply-Side Problems.

The first three hypotheses considered stress aspects of the macroeconomic environment which made it difficult to achieve fast growth. Recently, however, critics have pointed much more to weaknesses at the microeconomic level which have independently had adverse effects on the supply-side of the economy - this change of emphasis is well reflected in Walters (1986, ch.9). Such complaints are by no means new, of course, and can also be found in discussions of the late nineteenth century and interwar economies.

Among the factors which have often been blamed for poor productivity growth and linked to this a low rate of investment with disappointing profitability are obstructive industrial relations and restrictive practices by trade unions, inadequately trained and technologically unqualified management, low rates of skill acquisition by workers, badly directed research and development and distortions arising from the tax system. The upshot is argued to be a slow rate of adoption of new methods and a failure to reap the full potential of technological change reflected in the growing productivity gap between British industry and that of other countries characteristic especially of the 1960s and 1970s.

Put in terms of basic economics these arguments imply widespread "market failure" in the sense of failing to achieve an efficient allocation of resources. Included in this would be that market forces operating through new entry and takeover were not able to prevent an inadequate productivity performance. The textbooks would see government action as potentially able to remedy such problems but the critics tend to regard the state as, if anything, exacerbating resource misallocation. Olson (1983) has argued that there is a general tendency for stable

democracies to develop a large number of special interest groups whose activities retard the resource reallocations necessary for full exploitation of improved technological possibilities unless they have been disrupted by a period of war, foreign occupation or totalitarian government. Britain is seen by him post 1945 as particularly prone to this "sclerosis" problem.

The ideas contained in these four prominent hypotheses have had their reflection in government policies. Evidently Thatcherite administrations since 1979 have acted as if accepting the diagnosis of "supply-side problems" and have sought in particular to reduce tax and trade union obstacles to growth. That trade union reform might ameliorate the workings of the labour market and thus lessen the severity of the balance of payments constraint and the profits squeeze has been widely recognized since the Donovan Commission of 1968, if not earlier and, of course, the Wilson government's National Economic Plan sought a way of managing demand along the lines Dow proposed. (These policy initiatives have been analyzed in detail in chapter 5). The dashes for growth under Chancellors Maudling (in 1963/4) and Barber (in 1972/4) can be understood in terms of attempts to defeat the balance of payments constraint supplemented by policies to restrain the workings of the labour market based essentially on an analysis close to the first hypothesis discussed. (These episodes were considered in full in chapter 3.)

D. Empirical Evaluation of Hypotheses to Explain Slow Growth

It is now time to return to the historical evidence related to British economic growth to examine the plausibility of the arguments listed above. The late 1980s provides a useful vantage point for this exercise in that it permits a perspective from a date well beyond the fast growth era prior to 1973 and at a point when Thatcherite policies have had a fair time to make an impact. Our review of the evidence is arranged in the order of the hypotheses listed in the previous section.

1) Balance of Payments Constraint

During the fast growth years 1951-73 when Britain was outperformed so decisively by rival economies it is certainly true that our exports grew much less quickly than those of countries like Germany and Japan, as Table 5 shows. Thirlwall drew from this experience support for the idea that British growth was balance of payments constrained and arguing that in practice relative price effects were small so that equation (3) could be restated as the "law" "that except where the balance of payments equilibrium growth rate exceeds the maximum feasible capacity growth rate, the rate of growth of a country will approximate to the ratio of its rate of growth of exports and its income elasticity of demand for imports"

(1979, p.50). Table 5 reports this equilibrium growth rate for $\Delta Y/Y$ as estimate (a) and comparisons with the actual growth of output seem to support Thirlwall's claims. Moreover the initial evidence of econometric estimates for the income elasticity of demand for exports by Houthakker and Magee (1969) further reinforced this position and using equation (3) give estimates for the equilibrium growth rate consistent with balance of payments equilibrium labelled (b) in Table 5. The UK was seen to be constrained by an income elasticity of demand for exports of only 0.86 compared with Germany at 2.08 and Japan at 3.55, while import elasticities were 1.51, 1.89 and 1.23 respectively.

TABLE 5. Thirlwall's Law, 1951-1973

	Equilibrium $\Delta Y/Y$			Actual	
	(a)	(b)	(c)	$\Delta Y/Y$	$\Delta X/X$
UK	2.7	2.8	7.1	2.7	4.1
USA	3.4	3.2	6.6	3.7	5.1
France	5.0	4.6	6.2	5.0	8.1
Germany	5.7	5.4	5.9	5.7	10.8
Japan	12.5	14.1	8.0	9.5	15.4

Sources: derived from OECD (1988), Thirlwall (1979) and Balassa (1979); for discussion of differences between estimates (a)(b) and (c) see text.

These estimates of income elasticities of demand for exports appear to be unreliable, however, as they do not make adequate allowance for the possible intervention of supply factors nor do they control for non-price (quality) influences on demand, although it is widely believed that British exports were increasingly affected by relatively poor performance in terms of delivery dates, reliability etc. It is notable that Britain's exports were not relatively concentrated in goods where demand was only growing slowly - weak export performance seems to be associated rather with losses of market share. This led Balassa (1979) to calculate an income elasticity of demand for exports for each country based on what would have been the case had they maintained their market shares. This seems to be a more acceptable methodology, potentially getting round the difficulties of the Houthakker-Magee figures. Balassa's estimates suggest that the income elasticities of demand for exports for UK, Germany and Japan were 2.20, 2.27 and 2.00 respectively and give the estimates for equilibrium $\Delta Y/Y$ reported as estimate (c) in Table 5. Using Balassa's estimates then leads to the implication that British growth was less constrained by demand elasticities than French or German growth and only slightly more constrained than Japanese growth.

Recent research on the labour market also relates to the question of the balance of payments constraint. In general, the evidence seems to suggest that real wages are quite slow to adjust to new market conditions but are not completely rigid such that in the medium term it is possible for the real exchange rate to adjust. Indeed real wage flexibility in post war Britain was probably a little greater than before World War I (Hatton, 1988). It is the case, however, that British labour market institutions appear to adjust more slowly to shocks than those of more 'corporatist' economies such as Sweden (Bean et al., 1986).

Thus the evidence for a balance of payments constraint bearing particularly tightly on British growth as a result of exogenous demand factors and rigid real wages is not compelling. In particular, it seems likely that demand conditions were broadly as favourable as for other economies but that Britain failed to take advantage of fast growth in world trade through declining competitiveness. This suggests that the solution to Britain's apparent balance of payments constraint may well have involved domestic productivity improvements and the remedying of supplyside failures at home.

2) Fiscal Policy

The evidence to support the hypotheses put forward in this category is also not very persuasive. It is arguable whether government demand management in the Keynesian years actually did make for greater instability (see ch. 3) but in any event detailed study demonstrated that the UK experienced decidedly milder economic fluctuations than the fast growing economies (NEDO, 1976, pp. 25-6) and, in the absence of a solution to the balance of payments problem, the experiment of the National Plan was shortlived and unsuccessful (see ch. 5).

Table 6 The Long Run Relationship of the Marketed and Non-Marketed Sectors

(% of marketed output)

	1924	1937	1955	1965	1974	1979	1987
Marketed Sector Consumption	81.4	76.4	56.7	53.0	51.2	47.0	46.3
Marketed Sector Investment	6.5	9.4	14.0	17.3	19.0	19.7	17.3
Balance of Trade	-3.0	-5.0	-1.8	-0.9	-6.1	0.2	-0.2
Government Financed Consumption	9.3	9.3	20.3	18.8	22.1	21.8	25.0
Government Purchases of Materials & Investment	5.8	9.5	10.7	11.7	13.8	11.3	11.2

Sources: derived from Feinstein (1972), Bacon and Eltis (1978) and National Accounts Statistics (1988).

Table 6 places the Bacon and Eltis 'crowding out' argument in long-run perspective. This offers a rather different picture from that obtained by concentrating on the 1960s and early 1970s. In particular, the following points should be noted:

- i) In the long run the rise of government financed (non-market sector) consumption appears to come at the expense of marketed sector consumption whilst marketed sector investment holds up well. (As compared with the prewar years marketed sector investment has been able to advance markedly against marketed sector consumption). This is a much less damaging outcome than was discussed by Bacon and Eltis.
- ii) The Thatcherites, despite their instinctive sympathy for reversing the rise of the nonmarketed sector, have not succeeded in so doing. The recovery in total factor productivity growth and relatively good growth in the 1980s have occurred regardless of this.
- iii) The squeeze on profits which was marked in the mid 1970s has been reversed. Thus net trading surplus as a percentage of value-added averaged 27 per cent in 1984 and 1985, which was much the same as the 1960s level, compared with 18.6 per cent in 1974-6 (National Accounts Statistics, 1986).

Thus the Bacon and Eltis hypothesis appears much less plausible now than at the time it was originally put forward. The reason for this may possibly be found in the workings of the labour market which writers such as Layard and Nickell (1986) have uncovered in seeking to explain a rising NAIRU (see Chapter 7). Their model suggests that rising tax rates to fund the growth of the nonmarketed sector will in the long run tend to raise unemployment rather than lower profitability, as also would greater trade union wage militancy. This implies that in the long run there need be no impediment to investment and growth, although, because equilibrium is not reached very quickly, in the short run there could be adverse consequences from expansion of the nonmarketed sector. The behaviour of profitability in the past twenty years tends to support this view.

3) Verdoorn's Law and the Structure of Employment

The key empirical question concerns the validity of the claim that expanding the manufacturing sector gives productivity gains arising from extra technical progress and learning effects. For practical investigation variants of equation (5)

have been employed notably using the identity

$$q_m = p_m + e_m \quad (6)$$

(where q_m is the rate of growth of output in manufacturing) to obtain

$$q_m = a + (b+1)e_m \quad (7)$$

McCombie (1983) estimates (7) for a cross-section of 11 advanced countries for 1950-65 and finds $b = 0.39$ in line with Kaldor's prediction. However, Chatterji and Wickens (1983) who investigated time series of equation (5) for 6 countries for 1960-80 found b significantly greater than zero only in the United States. Verdoorn's Law on this evidence might apply to the early postwar period but not more recently. In fact, it seems quite probable that even the 1950-65 result is spurious and occurs simply because in the period of rapid catching up of American technology after the war those countries who were most able to benefit from this process enjoyed rapid growth of employment and output and productivity without there being any causal connection running from greater employment growth to productivity growth.

Time series evidence for the UK has been examined in some detail in Chatterji and Wickens (1982). They conclude that British manufacturing is characterized by Okun's Law rather than Verdoorn's Law, i.e. that there has been a short run cyclical relationship between employment growth and labour productivity but no long run one. This point is clarified in figure 1.

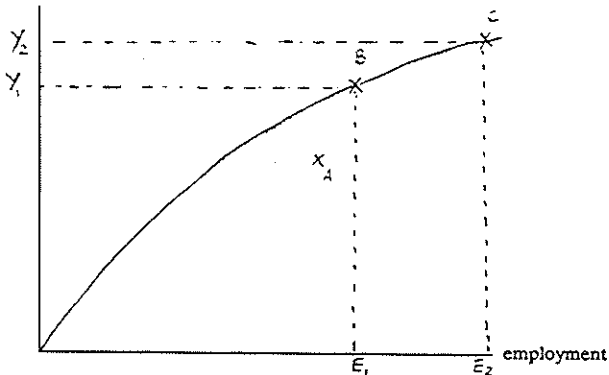


Figure 1. The Relationship between Employment and Output in the Short and Medium Term.

OBC is a typical production function showing output rising with employment but with employment having diminishing marginal productivity. With all factors fully employed and a given capital stock and technology an increase in employment from E_1 to E_2 raises output from Y_1 to Y_2 . In a recession, however, firms typically hold onto much labour in the short term (because of union agreements, hiring and firing costs etc.) although it is underemployed. In recovery, output rises rapidly as the underemployment is eliminated. Over the cycle output varies proportionately more than employment and labour productivity varies directly with output and employment (Okun's Law). The economy moves from point B to A and back again. Any test of Verdoorn's Law must avoid contamination by allowing for this Okun effect. When this is controlled for, Chatterji and Wickens conclude that for Britain (and other countries) after 1960 the Verdoorn dynamic economies of scale do not exist.

Thus it would seem unwise to see the contraction in manufacturing employment since 1968 (or much more rapidly since 1979) as of itself an explanation for unsatisfactory productivity performance in British manufacturing; nor should blame be put on the legacy of a small agricultural labour force.

It would also appear in the light both of this evidence and the earlier discussion in this section that the dashes for growth of Chancellors Maudling and Barber were ill-advised in that they could not have been expected to lead to a virtuous circle of rising productivity, greater competitiveness, a relaxation of the balance of payments constraint, higher growth, rising productivity etc. Given that productivity increases could not be readily induced in manufacturing by expansionary demand management and the lack of success in sustaining incomes policies it is not surprising that both episodes led to big balance of payments deficits without permanently raising the growth rate (see chs. 3, 6).

4) Supply Side Problems

Tables 2 and 4 showed that levels of productivity in the UK have been disappointing relative to those of other countries. Further examination of details of the productivity gap which developed in the post war period is suggestive of reasons for lagging productivity growth and can offer insights into the importance of alleged supply-side failures in the economy. Studies have been carried out at the sectoral and the company level; these have mostly concentrated on manufacturing which in 1977 accounted for 61.4% of the production sector's total productivity shortfall relative to Germany (Smith et al 1982, p.28).

Davies and Caves (1987) investigated the factors which in cross-sections of sectors of manufacturing in 1967/8 and 1977 were associated with *relatively* good or bad productivity in a UK industry compared with its American counterpart using regression analysis. This technique can reveal the effects of variables which differed between sectors (such as the degree of trade union membership) but not those which were economy-wide (such as income taxation). Davies and Caves's results suggest that the most important factors leading to relatively lagging UK labour productivity were trying to operate large plants but failing to gain advantages from them, lower capital per worker, a less educated workforce, high unionization and relatively bellicose workers (in 1967/8 only - a period of high strike activity in the UK), and lower research and development. Table 7 gives an indication of the extent to which 'avoidable failure' accounted for the UK productivity lag in 1967/8. It is suggestive of failures in supply-side policy and company management which if remedied during the 1950s and 1960s might have significantly raised the British productivity growth rate.

Table 7. Predicted Improvements in Relative Net Output/Head from Achieving Best Practice Standards throughout British Manufacturing in 1967/8 (%)

Correcting Plant Size	24.9
Eliminating Capital Shortfall	9.1
Removing Substandard Educational Background of Workforce	8.5
No Adverse Trade Union Problems	6.7
Making Good R & D Shortfall	4.7

Source: adapted from Davies and Caves (1987, Table 7.4); for precise definitions of variables consult the original.

Note: "best practice" is regarded as achieving one standard deviation better than the mean actually achieved - thus, for example, "removing substandard educational background" would imply all sectors having workers with as many years of schooling relative to their American counterparts as the sector one standard deviation above the average in 1967/8. The predicted effect on productivity comes from the authors' regression analysis.

Two international comparisons of productivity in companies are particularly noteworthy, those of Pratten (1976) relating to 1972 and of Daly *et al* (1985) for 1983/4. Pratten's findings are summarized in Table 8 and relate to international companies with operations in both countries based on interviews with management and unions. Several interesting points arise from these results. In particular, the large role played by behavioural factors, essentially stemming from labour relations, is of significance as is the relatively small part played by differences in

capital per worker in the UK-Germany comparison. It is also clear that North Americans have a big advantage over Europeans in the length of their production runs presumably based on a large and relatively homogeneous home market. The finding on behavioural factors is consistent with the outcome of 25 studies covering 6 sectors at various times in the postwar period listed by Pratten and Atkinson (1976, p.574) 23 of which report inefficient labour usage, in 14 cases from

Table 8. Labour Productivity Comparisons in International Companies: Reasons for Productivity Differentials (1972).

	German Advantage over UK (%)	North American Advantage over UK (%)
<u>'Economic' Causes</u>		
1. Length of Production Runs	5½	20½
2. Plant and Machinery	5	6
3. Other ^a	2	6
<u>'Behavioural' Causes</u>		
4. Strikes and Restrictive Practices	3½	5
5. Manning and Efficiency	8½	6
	Total Differential ^b 27	Total Differential 50

Source: adapted from Pratten (1976, Table 9.1)

Notes

- a. Other economic causes include differences in product mix, capacity utilization and quality of materials.
- b. The contributions to the total differential are multiplicative not additive.

restrictive practices and in 21 cases reflecting management failure according to the authors. Daly *et al* in their comparison of UK and Germany agree that lack of modern machinery is not a major factor in lower UK productivity. They stress the lack of qualifications of foremen and associated with this poor maintenance of machinery, inadequate quality control, excess breakdowns etc. and conclude that "the most important overall implication of the study is that lack of technical expertise and training...is the stumbling block." (1985, p.59). Thus, the regression findings of Davies and Caves are to a considerable extent echoed in company level studies.

Indeed, the consistency of these various findings is well-reflected in the major study by Prais (1981) who reviewed performance in ten industries in the 1960s and

1970s. In six of them he found increases in productivity had been retarded by problems of negotiating appropriate manning levels with trade unions when technological improvements became possible (brewing, tobacco, motor vehicles, tyres, metal boxes and newspapers) and in the other four (manufactured foods, machine tools, typewriters and furniture) the chief retarding factors were found to lie in inadequate training and skills-acquisition for the labour force. Importantly Prais also showed (1981, ch.7) that large plants in Britain in the 1970s were extremely strike-prone relative to small plants domestically or equally large plants abroad and this provides a major reason for Davies and Caves's finding that Britain does badly in industries where large plant-size is normal in other countries.

The inhibitions on productivity performance coming from industrial relations appear to have intensified during the 1960s and 1970s. In particular, attempts at trade union reform following the 1968 Donovan Commission Report appear to have been counterproductive. The main thrust of developments in this period was towards greater formalization of bargaining structures but in the environment of the 1970s this appears to have reduced rather than enhanced managerial freedom and in a cross-section of industries was correlated with slower productivity growth (Batstone, 1988, pp. 142-3). At the end of the 1970s econometric evidence suggests that in large firms with a closed shop union presence had a substantial negative effect on labour productivity and the rising trade union density of the 1970s (see ch. 11) was probably not conducive to rapid productivity growth (Metcalf, 1988a, pp. 8-11).

The nature of industrial relations in Britain and some important contrasts with the postwar position in other countries in this regard are perhaps the most promising way of building on Olson's sclerosis hypothesis. Batstone (1986) points out that it is important to examine not just the long run stability of democratic institutions but also the "scope" of unions and "sophistication" of unions and employers. Unions with narrow scope represent the interests of small sub-groups of workers and can be expected to be more obstructive of productivity improvements than all-encompassing unions who would have more reason to fear the costs of such actions. Sophistication involves the ability to co-ordinate interests and to develop and implement strategy. Batstone argues that the post-war UK persistently experienced narrow scope and low sophistication in its industrial relations and that this explains the particularly debilitating form of its sclerosis. As Table 9 shows, there does appear to be a correlation worth further research, although the post-1973 experience is less supportive.

Table 9. Industrial Relations and Productivity Growth, 1950-73.High Sclerosisa) Broad Scope, High
Sophistication

Netherlands	4.4
Norway	4.2
Sweden	4.2
Belgium	4.4

b) Narrow Scope, Low
Sophistication

Canada	3.0
USA	2.6
UK	3.1
Australia	2.6

Low Sclerosisc) Broad Scope, High
Sophistication

Austria	5.9
Finland	5.2
West Germany	6.0

d) Broad Scope, Low
Sophistication

Japan	8.0
France	5.1
Italy	5.8

Growth of GDP/Person-Hour

Growth of GDP/Person-Hour

Source: adapted from Batstone (1986, Table 1).

Thus it seems quite likely that overmanning and problems arising from the structure of industrial relations adversely affected not only British productivity levels but also the rate of growth of productivity. Similar outcomes are likely with regard to research and development and education, which also were highlighted in Table 7. Measured as a proportion of GDP British expenditure on R and D until the mid 1970s was second only to the United States. Unfortunately this relatively high level of spending appears to a significant effect to have been misdirected. Government support was unduly concentrated on high technology and the aircraft industry (Freeman, 1982, p.189; Pavitt, 1976, p.114) while industry financed R and D grew much more slowly relative to profits or output than in Germany or Japan during the 1960s and 1970s (Patel and Pavitt, 1987, pp.72-3). NEDO concluded that "The UK puts emphasis on science and in particular 'big science'...at the expense of engineering. The sectoral distribution of R and D effort appears inappropriate to patterns of world demand and export growth" (1983, p.2). The outcome in terms of patented inventions, a key indicator, shows a decline relative to key rivals; thus in 1958 Britain had 23.4%, Germany 25.6% and Japan 1.9% of all patents granted to foreign applicants in the United States but by 1979 the percentages were 10.1, 23.9 and 27.7 respectively (Pavitt and Soete, 1982).

Neither the Butler reforms of the 1940s nor the comprehensive school

movement of the 1960s improved the availability of technical education at school. Moreover, growth of vocational qualifications among the labour force was relatively slow in Britain even though years of schooling increased at a similar rate to elsewhere and in the late 1970s Britain was spending much less on vocational training with the result that whilst over 60% of the German manufacturing workforce had at least intermediate qualifications less than 30% were similarly qualified in the UK. (Sanderson, 1988).

The discussion in this section has emphasized possible explanations for the UK's poor productivity growth. This may seem slightly surprising in view of a widely-held and longstanding belief that the UK has invested too little. Certainly the share of investment in national income in the postwar period has been some 5 percentage points less than the average of European countries. Nevertheless, the sources of growth analysis of Section B suggested that only a relatively small part of the shortfall in British growth in 1951-73 came from slower capital accumulation where this was regarded as a separate source of growth.¹

An exploration of the evidence on investment in manufacturing in Britain and Germany bears out this emphasis with more detail. As table 10 shows, as far as manufacturing is concerned the UK invested a fairly similar proportion of

Table 10. Investment, Profits and Capital Productivity in British and German Manufacturing

(%)	<u>United Kingdom</u>			<u>Germany</u>		
	<u>1964</u>	<u>1973</u>	<u>1979</u>	<u>1964</u>	<u>1973</u>	<u>1979</u>
Investment/Output	12.4	11.2	13.2	13.7	11.6	11.2
Profits/Output	31.0	26.9	22.4	35.2	31.2	28.8
Output/Capital	39.1	34.6	29.0	52.2	52.9	50.0
Profits/Capital	12.1	9.3	6.5	18.4	16.5	14.4

Sources: derived from Hill (1979) and OECD (1986).

output to Germany. In each economy over 1954-72 the rate of growth of the capital stock slightly exceeded the rate of growth of output but the difference in the growth of output per worker was almost entirely due to TFP growth (1.4 out of 1.7 percentage points per year) (Panic, 1976, pp.4, 20, 38, 64). The UK experienced a lower level of output per unit of capital and thus its investment

translated into a much lower rate of growth of capital (3.9% per year compared with 7.4% in Germany in 1954-72. Panic, 1976, p.20). It is also important to note the role played by low capital productivity in the existence of a low rate of profit even prior to the difficulties of macroeconomic adjustment in the 1970s. This is shown in Table 10 based on the identity

$$\frac{\Pi}{K} = \frac{\Pi}{Y} \cdot \frac{Y}{K} \quad (9)$$

(where Π is profits). Both the Wilson Committee and NEDO (1975) concluded that there was no reason to regard the cost or availability of external finance as a greater obstacle to investment in Britain than elsewhere; "the major constraints on investment in recent years have been the related factors of the depressed and fluctuating level of demand, poor capital to output ratios and the low rate of return anticipated on new investment" (Great Britain, 1980, p.258).

It would appear therefore that low rates of capital accumulation reflected a lower rate of growth of demand for capital in Britain rather than difficulties relating to the supply of funds. The lower rate of growth of demand for capital was closely linked to a lower productivity. Investment received a lower rate of return and produced a lower capital stock growth because of poor capital productivity; in 1958-72 the increase in net output per unit of investment in Germany was 1.9 times the British level (CBI, 1977) and in 1973-9 1.7 times (OECD, 1988). In addition the inefficient use of labour discussed earlier in this section has tended to lower the level of capital per person.

Low productivity from additions to the capital stock relative to German achievements emerges as a key feature of the above picture. In part this seems to have arisen because of the industrial relations and educational deficiencies already reviewed but some additional reasons should be noted.

- 1) There is evidence that the capital market was permissive of managerial failure to maximize profits. In particular, Meeks (1977) found evidence that mergers lowered profits and productive efficiency on average in the period 1954-72, a result supported by Firth's (1979) investigation of the stockmarket's reaction to mergers and takeovers. This is in sharp contrast to experience in the United States.
- 2) The overall performance of the nationalized industry sector, especially in the 1970s, must be regarded as disappointing as far as productivity growth is

concerned (see ch. 12 and Pryke (1981)).

- 3) Throughout the period studies have expressed doubts concerning the recruitment and education of managers. Thus Swords-Isherwood concluded "the educational background of the average British manager is inferior to that of his equivalent in other major industrial countries...a mix of elite, academically specialised, non-technical education, and the right social background remain the sure road to success in British management" (1980, pp.88-89), findings which are very similar to those in the 1950s of the Acton Society Trust (1956).

It is plausible to suggest therefore that the chief reasons for relatively slow British economic growth in the postwar period lie in institutional, supply-side weaknesses. In turn this suggests either that economic policy may be directly to blame or that there was a failure to develop appropriate policy initiatives. Certainly policy-makers expressed strong desires for faster growth especially from the early 1960s on and to a considerable extent the diagnosis presented above was already a familiar one by the end of that decade.

For example, as early as 1948, concern over lagging British productivity led to the setting up of the Anglo-American Council on Productivity which in the following 5 years produced a stream of well-publicized reports on various industries. These detailed studies were generally highly critical of the poor quality of British management and the restrictive practices of trade unions. Significant weaknesses in education and training were highlighted in the famous manifesto of the National Economic Development Council (1963) and the shortcomings of research and development were laid bare in the much discussed Brookings report on the British economy (Caves, 1968, ch. 12). By the late 1960s widespread anxiety over the growth-inhibiting consequences of British industrial relations was echoed by the Donovan Commission.

Nevertheless, as Chapter 5 has related, supply-side policy did relatively little to combat the sources of low productivity growth discussed in this section despite the many permutations explored during the 1950s through the 1970s. The main thrusts were to be found rather in subsidizing investment, supporting declining industries and promoting mergers.

E. The Historical Context of Post War Growth

In this section our focus will be on the historical background to postwar British economic growth as we take up the related questions of the impact of the legacy of the past on recent growth performance and of the extent to which the obstacles to faster growth have changed over time.

It is widely believed, although not always for well thought out reasons, that the failures of the postwar economy are deeply rooted in the past, presenting successive governments both with an unenviable legacy and a most daunting task in any attempt to remedy Britain's relative economic decline; thus Eatwell argues that "The weakness of the British economy... is the cumulative product...of the entire history of Britain since the end of the nineteenth century, when it first became evident that Britain was unable, or unwilling, to adapt to a competitive world in which her pre-eminence could no longer be taken for granted" (1982, p. 50). Certainly complaints about the poor quality of industrial management, trade union obstacles to productivity advance, the inappropriate and inadequate education system and slowness to develop and apply advanced technology were already commonplace at the start of the century - as they have been in recent decades. Nevertheless much remains to be done to convince a sceptic that there were powerful strands of continuity underlying unsatisfactory growth in different periods or that it really was extremely difficult to escape from the unfortunate legacy of an early start in industrialization.

The disappointing years of the 1950s through to the early 1970s were a period when investment at home as a share of GDP was roughly double that of any previous era and when TFP growth was three times that of the interwar years. (Matthews et al., 1982, Table 4.7). Indeed, the economic growth of the West in the twentieth century has been characterized by the potential for much greater productivity growth than was possible in the eighteenth or nineteenth centuries. It is important to recognize that during the industrial revolution Britain never achieved TFP growth of more than 0.7 per cent per year and that the nineteenth century peak rate was only briefly above 1.0 per cent (Crafts, 1985, p.81). Moreover, this early productivity growth was concentrated in relatively few sectors (such as cotton, iron and steel and railways) and resulting much more from trial and error innovation than from scientific education and research and development expenditures. By the turn of this century the United States was pioneering a new and much higher growth path based on the large corporation, electrification, mass production, use of scientifically trained manpower and investment in research. The result was a dramatic rise in United States TFP growth from an average of

0.5 per cent per year in 1855-1905 to 1.5 per cent in 1905-1927 (David, 1977, p. 186). In the early twentieth century Britain was unable to achieve a similar acceleration in productivity growth and it occupied a position in the international economy based on the exports of 'low-tech' Victorian staples quite different from that of the United States as it assumed the status of most advanced economy (Crafts and Thomas, 1986).

There are reasons to believe that British growth and productivity performance prior to World War I should be regarded as something of a failure, although the new economic historians of 15-20 years ago quite rightly exposed some of the then popular criticisms as unacceptable. Indeed the productivity estimates of Table 3 provide a prima facie case for doubting McCloskey's famous claim that the late Victorian economy was a case of "an economy not stagnating but growing as rapidly as permitted by the growth of its resources and the effective exploitation of the available technology" (1970, p.459). Certainly quantitative investigation has shown that in several important cases (e.g. ring-spinning, basic steel) alleged failures rapidly to adopt new techniques were in fact correct decisions under British cost conditions and it has also been demonstrated that the London capital market was not biased in favour of foreign investment (Sandberg, 1981; Edelstein, 1982) but at the same time research has shown up a number of major shortcomings, notably the following.

- (a) There are reasons to be sceptical of the effectiveness of British education, training and research in an age where these factors mattered much more than earlier in the achievement of rapid productivity growth. In particular, despite improvements in technical education notably from the spread of technical colleges there was a much lower standard of technical training for most workers than in Germany while the public school's contributions to technological knowledge among the employers were weak and few managers had technical qualifications (Sanderson, 1988). Moreover, the supply of qualified engineers in England was only a third of the French or German levels (Ahlstrom, 1982, p.14) and expenditure on R and D, although rising was still less than £1mn per year in 1910 (Sanderson, 1972b). Britain's share of patents granted in the United States as a percentage of all foreign patents fell from 36.2% in 1890 to 23.3% in 1913 (Pavitt and Soete, 1982).
- (b) Business historians repeatedly point out unfavourable comparisons between British firms and their continental or American counterparts particularly in respect of slowness to move to exploit the advantage of large scale corporate

capitalism (Chandler, 1980), hostility or indifference to new methods (Coleman and MacLeod, 1986) and failure to achieve full management (as opposed to union) control over work practices particularly in engineering and related sectors such as motorcars, shipbuilding and iron and steel such that 'second-best' levels of capital intensity and plant size became rational to adopt initially and hard to change subsequently (Lewchuk, 1987; Zeitlin, 1987).

- (c) The economy suffered from weaknesses in the capital market associated with problems of inadequate information and lax requirements for disclosure and auditing. As a result there was no effective takeover mechanism to eliminate bad management (Hannah, 1974) and an inadequate new issues market to develop sectors like electricity (Kennedy, 1987, ch. 5). Although in itself less good at allocating funds than a perfect capital market, the German reliance on investment banking with direct involvement of bankers in industrial activities may have been much more effective both in monitoring management and financing high-risk, high pay-off projects (Tilly, 1986).

The period from World War I to 1950, although not a time of complete regeneration of the economy, did see progress on the supply-side. Expenditure on research and development in the UK of less than £1 mn per year in 1910 rose to perhaps £10 mn by the late 1930s (Sanderson, 1972b), manufacturing became organized more on a corporate basis (Hannah, 1983) and the number of students reading science and technology was five times larger in 1938 than in 1913 (Sanderson, 1972a). By the late 1940s our problems lay not in doing too little research and development but in the allocation of the funds. The 1948 Companies Act by requiring much more disclosure of information led to the development for the first time of the take-over mechanism as a serious check on managerial incompetence. The structure of the manufacturing sector moved towards 'new' industries: by 1937 chemicals, vehicles and electrical engineering accounted for 21.1 per cent of output compared with only 8.8 per cent in 1900 (Matthews et al, 1982, pp.255-7). The rate of TFP growth in manufacturing rose from 0.6 per cent per year in 1873-1913 to 1.9 per cent in 1924-37, virtually the same as in 1951-64 (Matthews et al., 1982., Table 8.3) and the post depression years of 1932-7 saw growth of real GDP at 4 per cent per year despite the parlous state of the world economy.

These encouraging signs of progress are not the complete picture, of course, and other aspects of the development of the economy in the interwar years are

much less favourable to subsequent growth. For example, the growth of the 1930s was much stimulated by policies with good short term impacts on recovery but dubious long term consequences such as tariffs and rearmament. In response to hard times and in the absence of anti-trust laws, industry became highly collusive (Gribbin, 1978). No adequate solution was found to the shortfall in technical education even in the 1944 Education Act (Sanderson, 1988) and managers continued to be poorly qualified. Of those entering management in large companies in the late 1930s only 15 per cent had any professional qualifications (Acton Society Trust, 1956). Moreover, top management continued to be recruited from a narrow social elite - the average wealth left by fathers of the chairmen of the top 200 corporations in 1920-39 was £43000, compared with only £5300 in the 1960s (Rubinstein, 1986, p. 187). Evidence of the seriousness of continuing problems in the quality of management together with the unresolved difficulty of 'narrow scope' union opposition to productivity improvement is clear in the Anglo-American Council on Productivity reports discussed above in section D.

Certainly many industries seem to have failed to keep pace with best practice techniques and work organization abroad including coal, cotton, motor vehicles, shipbuilding and steel (Kirby, 1977; Porter, 1979; Lewchuk, 1987; Tolliday, 1987) and, as Table 3 shows, our relative position in terms of productivity performance in 1938 was distinctly worse than in 1913.

With its low rates of investment and its poor record in human capital formation, its family capitalism and weak technological progress capability, the Victorian economy would have struggled even more than Britain actually did post 1945. The adaptations and changes that had occurred were mostly in the right direction. Nevertheless there were 'traditional weaknesses' in education and training and in industrial relations and these problems have mattered more in the economic environment since 1945. Doubts also exist throughout concerning the quality of British management which, as noted, capital market imperfections allowed to persist and which, more surprisingly, do not seem to have been particularly effectively dealt with by the much more aggressive climate of mergers and takeovers of the 1950s and 1960s.

The 'traditional weaknesses' might, in principle, seem to be suitable areas for government to provide effective remedies. In both cases, however, it can be argued that history had produced, in Olson's phrase, 'sclerotic tendencies' which mitigated against successful policy responses. Thus, trade unions entered the post 1945 economy in a position of unprecedented potential strength with their legal

immunities intact, their membership levels very high and the labour market at an extremely low level of unemployment (see chapter 13). Faced with this situation governments sought cooperative solutions with the TUC to a possible inflationary crisis. For instance, in return for a tacit incomes policy, the Conservatives in the 1950s forswore deflation, labour legislation and explicit incomes policy. In the long term this approach failed as the locus of bargaining switched to the plant level and shop stewards became more important in exploiting the latent bargaining power of workers. For as long as cooperation was pursued as a solution to the changed bargaining power of organized labour there was a major constraint on attempts at reforming industrial relations in pursuit of a system of collective bargaining more conducive to productivity growth (Flanagan *et al.*, 1983, pp. 374-407). For example, as Metcalf notes (1988b, pp.8-9) the Donovan reforms of the 1970s took place against a background of record state handouts to 'lame ducks' and of incomes policies which precluded much potential bargaining about work practices and accordingly they were undermined as instigators of productivity advance. In the field of education and training politicians were hindered from taking a more active role by the weakness of the central bureaucracy in the face both of a historical decentralization of power within the educational world and of vested interests on both sides of industry (Finegold and Soskice, 1988).

It is possible therefore to argue that the past had a somewhat unfavourable impact on postwar economic growth in terms of bequeathing a legacy which contained both supply side weaknesses and obstacles in the way of amelioration of those deficiencies. To an extent it is possible then to sympathize with Olson's sclerosis version of an early start hypothesis of poor growth post 1945. By contrast, the earlier discussion in Section D should be read as indicating that the Kaldor/Thirlwall hypotheses, which can also be seen as early start arguments in which the unfavourable legacy is in terms of an inability to exploit Verdoorn's Law and an adverse export demand situation produces a vicious circle of balance of payments constrained growth, are not very convincing ways of linking slow postwar growth to our earlier economic history.

F. The Thatcher Experiment and Growth in the 1980s.

Tables 1 to 3 established that in terms of productivity advance British performance in the 1980s has been both an improvement on the 1970s and creditable with regard to international comparisons. More sophisticated calculations for manufacturing alone allowing for the important Okun's Law effect bear out these conclusions; Muellbauer (1986, p. xiii) found trend TFP growth of 2.76 per cent per year from the second half of 1980 through early 1986, slightly higher

even than the 2.63 per cent he estimated for the 1959-72 period. An industrial breakdown of achieved and forecast labour productivity growth is shown in Table 11.

The Conservative governments of the 1980s have departed substantially from the earlier postwar consensus on economic policy and political events (Falklands War, Labour Party splits) have permitted a lengthy experiment. The Thatcherites can be seen as having abandoned earlier efforts at cooperative solutions to the control of inflation by means of implicit or explicit incomes policies and the commitment to full employment and thus as having more freedom to manoeuvre in seeking to reform industrial relations in order to give management an opportunity to control restrictive practices and to obtain faster productivity growth. Important new supply-side policies have included the moves towards privatization of nationalized industries, the reform of trade union law and especially recently, initiatives to strengthen education and training. It does appear to be the case that tighter financial controls on nationalized industries together with the prospect of privatization have brought about an improvement in productivity growth (see chapter 11 and Molyneux and Thompson, 1987).

TABLE 11 Changes in Real output per Worker in UK Manufacturing. (% per annum).

	1954 - 75	1975 - 80	1980 - 84	1984 - 90
Food, Drink & Tobacco	2.2	2.8	4.5	3.1
Chemicals	4.4	0.4	6.1	4.3
Metals	1.0	-1.9	13.4	3.6
Engineering	2.1	-0.3	4.5	3.9
Mechanical	2.4	-1.6	0.8	3.5
Electrical	3.1	3.2	8.1	5.0
Motor Vehicles	2.3	-2.0	4.1	3.1
Textiles & Clothing	2.5	0.6	7.3	2.2
All Manufacturing	2.5	1.0	5.6	3.7

Source: University of Warwick Institute for Employment Research (1986).

This section reviews what is known more generally about the sources of productivity growth in the Thatcher period thus returning to the second of the questions posed in section A. A close look at 1980s experience can be useful for two reasons; first, it can provide further evidence in connection with the reasons for earlier slow growth and, second, it can offer some guidance as to the extent and sustainability of the improved performance of recent years and thus inform a provisional verdict on the gains which may have resulted from the Conservatives' new supply-side approach.

Three rather obvious points can be made straightaway with regard to the hypotheses to explain slow growth in the pre-Thatcher years discussed in section D.

- 1) The 1980s has not seen a rolling-back of the share of the non-marketed sector in marketed sector output, as Table 6 demonstrated. The Thatcherite escape from the Bacon and Eltis problem has come from a return to normal profit levels in industry, which, as ch. 7 argues, have resulted from the restraints on real wage pressures provided by high unemployment and faster productivity growth.
- 2) The improved productivity performance has not come from a Verdoorn's Law effect through expansion of manufacturing output and employment, nor has been associated with a rise in manufacturing investment which in 1987 was still about 10 per cent lower than in 1979.
- 3) The relatively rapid growth of the British economy in recent years has been accompanied by a move into substantial deficit in the balance of payments. This is a result of increased demand for imports rather than a declining share of world trade and comes against a background of reduced world trade growth in the 1980s as compared to the 1960s. It remains to be seen whether the economy can now adjust its real exchange rate (competitiveness) in order to permit faster growth in the UK than elsewhere to coexist with external balance.

There are, in fact, several competing (but not mutually exclusive) hypotheses to explain the recent revival in labour productivity growth, particularly in manufacturing. Muellbauer (1986, p. iv) lists closure of below average productivity plants, improved industrial relations and faster technological change as prime candidates. In addition, he points out that official statistics may mismeasure growth of the capital stock following the rise in energy prices - in effect, some capital assumed to be scrapped in the 1980s may already have gone

in the 1970s such that the growth of capital was then held back more than the figures suggest. To the (unknown) extent that this is the case, the improvement of the 1980s over the 1970s reflects the repercussions of OPEC activity rather than a gain from Thatcherism.

The early 1980s was a period of substantial closures in manufacturing as over 5000 plants were shut between 1979 and 1982 compared with a net increase of over 13000 plants between 1973 and 1979; the net losses were particularly of large plants with employment in establishments of 1500 or more employees falling by 1 million between 1979 and 1984 (Oulton, 1987, p. 53). It appears likely that these closures will have helped to extricate companies from their worst industrial relations problems (cf. Prais, 1981) and will have helped adjustments within sectors toward optimal plant size (cf. Davies and Caves, 1987 and Table 7). The recovery of manufacturing since 1982 has seen a continuing (slower) contraction in the number of large plants while very small plants have risen steeply in number. These developments are probably favourable for long run productivity growth and tend to support part of section D's diagnoses of weaknesses leading to earlier productivity problems. Since, however, large plants on average have rather higher output per worker than small ones, closures per se do not seem to explain rising overall labour productivity levels in the short run in the early 1980s (Oulton, 1987, p. 55).

Surveys of working arrangements and industrial relations in the 1980s have confirmed a very considerable increase in flexibility and success in eliminating restrictive practices in a labour market and legal situation more favourable to management. It seems probable, therefore, that there has been a positive short term impact in catching-up already-achieved European productivity levels through reductions in overmanning (cf Pratten, 1976 and Tables 7 and 8). This is borne out by the well-known cases of steel and motor vehicles as well as the leap in productivity growth in some sectors to levels well above anything achievable in the steady-state, which comes over to an extent in Table 11. The implication of this would be to confirm that productivity growth in earlier periods was retarded by inability to extract maximum advantage from available improvements in technique. Thus, after 1980 60 per cent of wage settlements had at least one productivity enhancing concession (Metcalf, 1988b, pp. 16-17), in the three years to 1987 ACAS found that over 25 per cent of respondents to their survey had succeeded in introducing one or more types of flexibility in crafts and skills use (1988, p.19) and a mid 1980s survey found only a third of managers were constrained in their organization of work compared with just under a half at the time of Donovan

(Daniel, 1987, p.168). ACAS concluded that their results were "consistent with the view...that in recent years, the presence of trade unions has not appeared to inhibit the introduction of new working practices." (1988, p.30).

Although for the moment at least the conduct of industrial relations has changed, it is less clear that there has been a reform of the underlying structure which Batstone's work, reported in Table 9, described as "narrow in scope and low in sophistication". Thus multi-unionism has not decreased significantly, union presence in manufacturing is virtually the same as in the late 1970s and the number of shop stewards has risen slightly. Batstone concluded that in these respects "there has been no transformation of the pattern of workplace industrial relations...the role which trade unions play...is still probably greater than...at the time of Donovan" (1988, p.180). Given this background and the very high correlation across industry between declines in employment at the start of the decade and productivity growth over the first half of the 1980s, it is probable that fear rather than a new cooperation has been the factor which has enabled the realization of productivity gains frustrated by the climate of the 1960s and 1970s and the success in reducing Germany's productivity lead (Metcalf, 1988b, pp.22-32).

Other weaknesses contributing to relatively low productivity growth in Britain identified in section D appear still to remain in the late 1980s. A recent Select Committee report found that defence still dominates the UK's research and development effort, that skilled scientific manpower for other needs is in short supply and that of the five leading industrial nations the UK now devotes the lowest share of GDP to R & D (House of Lords, 1986, p. 21, 24, 39). On the other hand, it should be noted that the Department of Trade and Industry following a thorough policy review in 1984/5 appears to have developed a more effective programme of support for R and D, concentrating now on improving information flows, and that DTI spending on support for science and technology is expected by 1989/90 to be 47 per cent of its total expenditure compared with 6 per cent in 1979/80 (Barber and White, 1987, p.44). Where management skills are concerned, the UK still lags as far behind other countries in training managers and a recent report concluded that a tenfold increase in management education was required (NEDO, 1987, p. 13).

Although the Thatcher years have seen considerable progress in combatting one of the "traditional weaknesses" of the British supply-side, namely industrial relations obstacles to productivity enhancement, there appears to have been little

significant achievement on the second area of weakness, education and training. The main thrust of new provision has been and will continue to be YTS for teenagers but so far this has been ineffective as a means of increasing the skills base of the economy and eradicating failings in shopfloor personnel, highlighted by Daly et al. (1985) in comparing Britain with Germany, as the survey by Deakin and Pratten (1987) shows. Indeed it can be argued that, although the government has been able to force the pace of reform through the Manpower Services Commission, thus obviating many of the earlier institutional obstacles to change, it has not developed a coherent stance on the education of "non-academic" adolescents and it has so far achieved very little to improve the level of training among adult members of the labour force (Finegold and Soskice, 1988). At the same time employer attitudes to training appear grounded still in complacency and ignorance (Coopers and Lybrands Associates, 1985, pp. 4-5) and it follows that any sizeable change in the average quality of the British labour force is going to be very slow to materialize.

In sum, the evidence gives some support to the emphasis in section D on supply-side failings as major reasons for slow British growth in the post war period. There is reason to believe also that useful progress has been made in the Thatcher years in remedying some of our earlier deficiencies but perhaps only two cheers are appropriate at the moment. As the Warwick estimates in Table 11 suggest, it seems probable that productivity growth above the levels of the earlier postwar period can be maintained but that the rapid advance of the early 1980s may partly have been once and for all such that it is not fully sustainable.

6) Concluding Comments

At this point it is opportune to pull together and recapitulate some of the findings of earlier sections before raising a few more general implications of the material covered in this chapter.

The major arguments of the chapter have been the following.

- 1) The chief reason for the relatively slow rate of growth of the UK in the post-war years has been poor productivity growth.
- 2) Neither the Kaldor hypothesis that the UK was handicapped by its structure of employment and unable to exploit Verdoorn's Law in manufacturing nor the Bacon and Eltis claim that the growth of the non-marketed sector was a major disadvantage are convincing explanations for slow growth in the long-run.
- 3) The relatively severe balance of payments constraint suggested by Thirlwall is

likely to reflect domestic supply side problems. Adjustment of the real exchange rate may well be painful in its inflationary consequences but in practice it was probably not the balance of payments which was the binding constraint on growth performance or the initiator of a vicious circle.

- 4) The important obstacles to faster productivity growth lay on the supply-side of the economy and brought about a relatively slow reduction of overmanning and reduced the benefits from new technical possibilities in production. Growth was hampered by weak management, poor industrial relations, ineffective research and development and low levels of vocational training.
- 5) Supply-side policy in the pre-Thatcherite period was poorly directed and was not particularly successful in ameliorating productivity performance. Rather than remedying these weaknesses both Labour and Conservative governments were seduced into ill-advised dashes for growth, supporting declining industries, over-enthusiastic encouragement of mergers and subsidies to investment.
- 6) The Thatcherite "productivity miracle" has at best dealt with only a part of the supply-side problem by creating conditions in which improvement has been achieved with regard to restrictive practices and overmanning. A more fundamental reform of industrial relations, together with significant advances in training of both shopfloor and management and an enhanced research and development effort are all still to be achieved if Britain is fully to eradicate the causes of poor productivity performance.
- 7) There is indeed a long history of supply-side problems in the UK contributing to relatively slow growth over the last century or so. It is important, however, to recognize that in many respects the postwar world was very different from that of the Victorians. By the 1950s there was much more research spending, the capital market had been significantly improved by new companies law and more was invested in education and training. Equally, the postwar of much more powerful trade unions brought new obstacles to productivity improvement as governments sought to avoid confrontation with organized labour. Perhaps the most persistent weaknesses have been in education and training (including the quality of industrial management) and in industrial relations.

These points have a bearing on more general issues relating to economic growth which serious students may wish to consider.

- 8) The undisputed growth failure of the postwar economy should encourage scepticism of attempts to exonerate earlier economic performance. Also, however, it draws attention to the important question as to why institutional

arrangements failed; for example, it is important to ask why markets were bad at eradicating low quality management or why entry of new firms could not obviate the restrictive practices of "narrow scope" industrial relations.

- 9) It follows that the microeconomics of the growth process matter much more than economists steeped in the growth models of the 1950s and 1960s were brought up to believe. Accordingly, future research will need to give more attention to questions of entry to and exit from markets and will need to take more seriously the historical evolution and strategic aspects of individual industries.
- 10) As far as economic policy is concerned the main message that comes across is that recognizing obstacles to better productivity performance is much easier than removing them. Little in this chapter would be a great surprise to the members of the Anglo-American Productivity teams of nearly forty years ago but repeated diagnosis has not led to anything like a complete cure. Quite why this should be deserves further investigation.

FOOTNOTE

1. In practice, however, it may not be appropriate to regard capital accumulation as an independent factor in longrun economic growth. There is an automatic tendency for the rate of growth of the capital stock to equal that of output growth, as equation (8) reminds us

$$\frac{\Delta K}{K} = \frac{I}{K} = \frac{I/Y}{K/Y} \quad (8)$$

K/Y is the capital to output ratio and thus when capital grows faster than output the rate of growth of the capital stock is falling (and vice versa) because the investment ratio is divided by a larger number. (Thus a higher investment rate does not in the long run lead to a faster growth rate of the capital stock.) In addition, evidence on the determinants of investment in the UK indicates that firms aim for a fairly constant capital to output ratio (the investment function is a flexible accelerator) modified in the short run by fluctuations in interest rates and unforeseen changes in aggregate demand (Bean, 1981).

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