

An aerial night photograph of a city, likely Cambridge, with a blue circle in the center containing the title text. The city lights are visible against the dark background, and the overall image has a warm, golden glow.

The Macroeconomic Impact of Liberal Economic Policies in the UK



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EXECUTIVE SUMMARY

A sea-change occurred in the early 1980s in the way the UK economy was organised. From then on, until the present day, openness to trade, light-touch regulation of commerce and free competition have been the watchwords, alongside low income tax rates and constraints on trade union action. Most importantly, the removal of a raft of restrictions on banks and building societies, combined with the abolition of controls on the international movement of capital, allowed a huge expansion in household borrowing. These liberalisation measures extended an earlier trend including the bonfire of war-time restrictions, international trade agreements to reduce tariffs, the move to floating exchange rates between 1971 and 1973, and the switch from direct to indirect controls on bank lending in 1971. However, even by the late 1970s the UK economy was still strongly managed by government. Controls were still in place on capital movements, investment, prices and incomes. Trade unions remained powerful and the basic rate of income tax was at 30% with the top rate at 83%. Most lending to households was still undertaken by heavily controlled building societies. Government economic policies prior to the late 1970s still aimed to maintain full employment although the practice had become more difficult to achieve. After 1979 policy switched decisively towards controlling inflation, firstly through monetarism and later by using interest rates to meet inflation targets.

It is often taken for granted in media and policy making circles that more structural economic reforms, involving greater labour market flexibility, will increase the efficiency of the economy. This assumption may arise because liberal markets are linked to a political philosophy of individual freedom and responsibility. It may also be because many economists in business and academia have a presumption that private sector organisation of economic activity is superior to any state intervention. We make no such assumption. Instead, the purpose of this report is to assess the factual evidence on the macro-economic impact of liberal policies on the UK economy. In particular it is to assess their impact on the growth of GDP, productivity, employment, unemployment and inflation. The report shows that GDP and productivity have grown *more slowly* since 1979 than over previous decades, contrary to widespread belief. Although inflation and industrial disruption were reduced after 1980, unemployment and inequality have been higher. The volatility of the economic growth has also been much greater. The fluctuations in GDP have come in large waves in contrast to the ripples of the 1950s and 1960s.

Any support for the conventional wisdom that the liberal market regime since 1979 has had a favourable impact on growth of the UK economy thus depends on a view that economic performance would have been worse after 1979 even if the previous 'corporatist' regime had been maintained. One view is that the high inflation of the 1970s would have continued as a problem if a liberal market regime had not been adopted from 1979, leading to slower growth. However price inflation fell sharply from 1980 in all advanced economies irrespective of the economic policy regime.

An important post-1979 change that should be taken into account is the slowdown in growth in the volume of world trade in goods from the mid-1970s. A likely cause of the slowdown was the ending of the long recovery in the war-torn economies of Europe and Asia, but the switch to floating exchange rates may have played a role. We estimate that the growth in real per capita GDP in the UK would have slowed from 2.6% per annum to 2.2% per annum due solely to the impact of slower growth in the volume of world trade. Assessed against this more slowly growing benchmark trend, per capita GDP in the UK exceeded the trend in the late 1980s and in all years from 1994 to 2008. It then fell well below the trend and now looks unlikely to regain it for many years, if ever.

We argue that per capita GDP was maintained at levels above this trend after 1979 only by the build-up of high household debt levels. Once debt, and the rising property prices supported by rising debt, reached unsustainable levels, as it did by 2007, the banking system crashed and the level of GDP fell much further below previous trends than in any period since the Great Depression. The UK economy now appears to be developing permanently on a

lower and slower long-term trajectory than for any period in the last 80 years. Our view is that the Labour Government was misled into believing that the economic growth rates of 1997-2007 could be sustained, and hence kept up a growth in public spending higher than might otherwise have been the case. A belief that the trend growth of the economy had increased during this period was held by the Treasury and by many academic economists. The politicians can hardly be blamed for accepting this professional advice.

Growth in per capita GDP is the arithmetic sum of growth in productivity (GDP per hour), hours worked per employee, employment rates and the ratio of working-age to total population. It is clear that productivity has grown at a slower rate in the post-1979 liberal market period than previously. This is associated with the decline of manufacturing, a casualty of free market policies and globalisation. Manufacturing had, and has, consistently faster productivity growth than service sectors. The conversion of the UK economy to one based overwhelmingly on services has reduced the rate of productivity growth from around 2% per annum thirty years ago to less than 1.5% per annum today. For many years from 1982 to 2005 the falling rate of productivity growth was offset by a rising employment rate to generate a growth in per capita GDP not far below the pre-1980 trend. Even with employment rates recovering between 1982 and 2007, rates were however generally lower after 1979 than before this date and unemployment much higher. Other factors helping to maintain the growth of per capita GDP were a slower annual decline in average hours worked, and generally favourable changes in the proportion of the population who were of working age. Without these offsetting changes in employment rates, hours worked and dependency ratios, per capita GDP in the UK would have grown by 1.6% per annum on average since 1980.

Inflation, de-regulation and privatisation

The main improvements in the liberal market era have been lower inflation and a greatly reduced rate of industrial disruption. More than anything else it was the huge rise in inflation during the 1970s and associated industrial disruption that stimulated the change in economic policies from 1979 onwards. UK inflation was generally a little higher than in the USA or G7 average over the 1950s and 1960s and again in the 1980s. It was in the period 1971-77 that inflation rose well above the US or G7 average levels, averaging seven percentage points above the level of inflation in the USA, and peaking at just below 25% in 1975. However UK inflation had returned to a level close to the US and G7 averages by 1978, although the subsequent breakdown of wage controls, a new oil price hike and a near doubling in the rate of VAT led to an increase in inflation in 1979 and 1980.

The main improvement relative to the G7 average came not with the Thatcher Government's monetarist policies over the 1980s but following the UK's ejection from the European exchange rate mechanism (ERM) in 1992. After 1992 UK price inflation was generally below the G7 average, due initially to high unemployment and after 1996 to a large appreciation in the Sterling exchange rate. However UK price inflation has returned to its traditional position, a little above the G7 average, since the large depreciation of Sterling in 2008. It was only in the exceptional 1993-2007 period that the UK had lower inflation than the G7 average. Otherwise inflation relative to other major economies in the post 1979 period has been similar to the 1950s and 1960s.

While the high inflation of the 1970s is often viewed as the culmination of earlier corporatist policies, it can just as easily be treated as a temporary aberration that was on its way out by the time the Thatcher government took office in 1979. Inflation was high in all major economies in the 1970s due to high deficit spending in the USA, the resulting collapse of the Bretton-Woods exchange rate system and the associated quadrupling of world oil prices in 1973. The corporatist era's policy regime of wage and price controls in a context of strong unionisation was unable to deal well with this disruptive situation and policy mistakes were made. The threshold wage agreements introduced by the Heath Government in 1973, caused prices to soar in 1974 following the oil price increase, but rises in unemployment were kept smaller than would otherwise have been the case. Inflation is likely to have been somewhat higher after 1980 than it actually was if corporatist policies had continued, but unemployment would have been much lower.

Other projected gains from liberal market policies have not been realised or not sustained. Total taxation is no lower now relative to GDP than in the 1970s. The enterprise boom in new firm formation did not outlast the 1980s and new firm formation rates are now only a little higher than in the decades prior to 1980. If business investment was expected to have risen from its low rates in the pre-1980 period, then the expectation was not realised. Nor has the record of research and development spending improved. Indeed it has worsened. Again this is likely to reflect the loss of manufacturing with the UK experiencing the largest proportional loss of any industrial nation.

Any consideration of the changes in business regulation in the post-1979 period is complex. The prices and incomes controls of the pre-1980 period did not work well and arguably had a limited impact on inflation. Such controls would in any case have become redundant as global inflation came down over the 1980s and 1990s. Regional development controls on manufacturing investment did help regions with high unemployment but were in abeyance by 1979. Although such controls were abandoned, a regime of grant-based incentives has continued up to the present albeit one regulated through EU state aids rules. The huge success of a low business tax regime in attracting multi-national firms to the Republic of Ireland shows that regional attraction measures can be very effective.

The growth of new regulations over recent decades, many EU-wide, in health and safety and other areas are part and parcel of a higher standard of living. Countries with more controls, including Germany, Austria and Sweden, do not appear to suffer a significant overall productivity penalty. OECD studies suggest that, among deregulation measures, it is free trade that has most impact. We argue that most of the tariff reductions on trade in goods had already been introduced by 1979. Nevertheless it remains true that, on average, the post 1979 period experienced much freer trade than the preceding decades. Other regulations, including labour market rules, appear to have had a limited impact. UK attempts to derogate from EU labour regulations are likely to have done little to increase economic growth or productivity over recent decades. We conclude that the regulatory regime before 1980 had little negative impact, and the fact that the UK has had a somewhat lighter regulatory regime than other EU countries since has done little to increase economic growth or productivity.

It was the de-regulation of bank lending which had most impact after 1979. Financial de-regulation, undertaken initially in 1971 and more determinedly after 1979, led to faster growth in GDP up to 2007 but eventually left a highly indebted household sector and a devastated banking sector. Since the financial crash of 2008 the UK economy has languished further and further below the pre-2008 trend and seems most unlikely ever to regain that trend.

The impact of privatisation on industrial efficiency has been judged in most studies to have been limited. This was surprising because privatisation improved corporate governance, and freed companies from political interference and from Treasury financial controls which were likely to have constrained investment. Commercial objectives including profitability became more dominant and firms improved efficiency in marketing, innovation and finance, and were able to diversify into overseas markets, becoming large multinational companies. Even so, studies across privatised companies have concluded that either there were no long run effects on UK output or that it was tough regulation rather than privatisation per se that gave rise to welfare gains for consumers. Studies of individual privatisations show mixed results. Only some studies detected clear performance gains and a number confirmed that the main gains occurred in the run up to privatisation. In general however efficiency gains were, as expected, more likely when accompanied by competitive markets or effective regulation.

The official historian of UK privatisation concludes that *'the strident claims of ministers during the 1980s and 1990s about the benefits of privatisation were exaggerated and the true picture is more of a mixed one'*. It should also be borne in mind again that any efficiency gains at company or sector level only lead to macro-economic gains if redundant labour is re-employed in productive activity. The persistently high unemployment of the 1980s and 1990s indicates that there was insufficient re-employment to growing sectors and fits our observation above that, far from improving, the trend growth in GDP per hour deteriorated substantially from the early 1980s.

It is true that the retreat of state involvement in the UK has avoided repetitions of some of the commercial failures of the corporate age including nuclear power (AGRs), Concorde and launch rockets. However other countries, and notably France, persevered longer with these technologies and now have more successful firms in these areas than does the UK. Nor was it the case that government commercial failures were confined to the corporate period. Commercial blunders were equally possible in a regime of liberal markets, as shown by the mis-selling scandal over privatising pension provision as personal pensions in 1985, and the attempt to privatise vocational training as individual learning accounts in 2000.

Relative productivity performance

Much of the support for the liberal market reforms comes from a belief that the UK's economic performance improved relative to Western European competitors although not, it should be noted, relative to the USA. Other than the support of what we regard as inappropriate theories currently dominant in much of university economics, and in some quarters a philosophy of individual freedom, it has been the UK's improved performance *relative* to major European competitors that has underpinned the consensus around the economic benefits of market liberalisation.

In the immediate post-war years, levels of productivity and per capita GDP in the UK were well above those of most of Western Europe. The advantage had disappeared by 1979 as productivity in other EU countries improved faster than in the UK, but after 1979 the UK matched or bettered growth in per capita GDP in the original EEC members. There is however little evidence, as we have argued, that this improvement in relative growth was caused by any improvement in the actual growth of UK GDP. Rather, the improved *relative* performance was caused by a dramatic slowing in the growth of continental EU economies from the early 1970s onwards. GDP in the EU6 countries grew rapidly at an annual rate of 4.5% per annum from 1950-73, slowing to 2.5% per annum in 1973-79 and only 1.6% per annum from 1979-2007.

By 1980 French and German labour productivity levels were approaching 90% of US levels and had little further room to converge, while their hours worked per employee continued to fall. Moreover there was no compensating rise in employment rates, including in Germany until the Hartz labour market reforms of a decade ago. As a result, growth in per capita GDP slowed within the EU6. These conditions did not apply to the UK, where labour productivity was only 75% of the US level in 1979 and has never subsequently reached 90%. With less globalisation and hence a slower decline in manufacturing we believe that productivity growth would have slowed down less after 1979 than it actually did. On the other hand a more unionised UK is likely to have continued to reduce hours worked per employee as in the EU6 countries.

One of the proximate causes of slow productivity growth in the UK has been the low rate of investment both by businesses and government. Data from the IMF show that the UK has consistently had the lowest rate of total investment of any major economy. The investment rate in the liberal market era has been even lower than in the previous corporatist decades, but both were low. OECD data shows that business investment has been the lowest of any major economy since 1980.

Our conclusion is that UK growth in per capita GDP did not improve after 1979 and even the achievement of keeping close to pre-1980 growth rates was attained by keeping working hours from falling further. Labour productivity has remained below that of France and Germany and has fallen further behind the USA. There is little to suggest that liberal market policies in the UK contributed to convergence with other European economies.

One confidence-sapping characteristic of the pre-1980 decades was the continuous decline in the UK share of world trade in goods. This decline appeared to cease after 1980 initially due to the growing production of North Sea oil and gas combined with high oil prices. The longer trend has been a continued decline in the UK share of world trade at much the same rate as before 1980. Once again there is little to suggest a sustained improvement in performance due to liberal policies. Instead the UK current account on the balance of payments has been continually in deficit since 1983 in sharp contrast with earlier decades. This has occurred despite a growing surplus in trade in services.

Slow Growth in Future

The future implications of the analysis in this paper are serious. The trend in productivity growth in a UK economy heavily denuded of manufacturing by decades of globalisation is unlikely to be much above 1.4% per annum. Growth in the employment rates did offset declining productivity growth from the early 1980s, but this offset cannot be sustained in future. With the employment rate in 2014 once again close to a peak, there will be little or no future secular growth in employment rates. Even worse, a projected decline in the proportion of working-age people, due to an aging population, will reduce the long-term trend in growth of per capita GDP by a further 0.5% per annum. If the average number of hours worked per employee continues to decline, even at the slow rate of recent decades, a further 0.3% per annum will be subtracted from the growth rate of per capita GDP. The trend growth rate of per capita GDP would then be only 0.6% per annum. If this sounds alarmist, we should note that observed growth over the decade to 2014 has been only 0.4% per annum. We thus expect the UK to experience the secular stagnation that Lawrence Summers projects for the USA, but the reasoning involves fundamental trends in sectoral productivity and demographics rather than the demand-side factors invoked by Summers.

Discussion

The main contention of this paper is that financial liberalisation was the sole aspect of the liberal market reforms introduced into the UK, initially in 1971-73 and more consistently from 1979, which materially increased the rate of economic growth. The freeing up of finance led to a huge, and eventually unsustainable, expansion of household borrowing. This temporarily accelerated the growth of consumer spending and hence GDP and of house prices, but in 2008 contributed to a banking crisis and the longest recession for over a century. Other than this unsustainable boost to demand from *financial* liberalisation there is little evidence that other liberal market policies taken together improved the trend rate of economic growth in the UK even temporarily, although they may have been advantageous in other ways. Evidence that the growth rate was poor in the post-1979 liberal period also lies in the consistently high level of unemployment which has averaged 8% since 1979, (not including the concealed unemployed on sickness benefits), compared with 3% in the three previous decades.

The liberal market reforms were one attempt to stem the rate of decline in the UK share of world trade. Joining the EEC in 1973 in the expectation of tying the UK economy to fast growing markets had been another. While post-1979 liberal reforms may have had some success in improving management and industrial relations, they have also allowed UK firms to relocate production to emerging economies, helping the extreme de-industrialisation of the UK economy. As far as EU membership is concerned, the UK actually joined one of the world's slower growing trade blocs, as growth slowed permanently in France, West Germany and other EEC nations just as the UK acceded.

Margaret Thatcher regarded the British in 1979 as "a brave people who were stifled and controlled by a bureaucratic state that penalised the good and rewarded the bad, stifled innovation, while generating feckless welfare dependency". The policies designed to reduce bureaucracy, promote innovation and reduce welfare dependency clearly did not succeed in raising rates of economic growth. Even in 2007 government current spending was higher as a percentage of GDP than it had been in 1979. Welfare dependency rose by 50% during the Thatcher-Major years and remains at this level today. Attempts to reduce taxation through lower public spending were also only temporarily effective and did not survive the first post-Thatcher recession in 1990/91. Levels of business investment in the UK have remained low compared with all major competitors. Company formation rates rose only briefly and are now not much higher than before 1980. Expenditure on R&D has also remained lower than competitors and indeed the UK is the only major country in which R&D expenditure has been trending downwards relative to GDP. The erosion of manufacturing has left the UK with a permanently lower rate of productivity growth. OECD research shows that less regulated labour markets do not lead to a better economic performance. Even trade restrictions like the 11% cap placed on car imports since 1977 have served the UK well as Japanese car manufacturers subsequently set up production plants in the UK.

What was achieved by liberal economic policy was a reduced level of industrial disruption and weaker trades unions, although in part this was due to higher unemployment. It is difficult to estimate the direct economic impact of improved labour relations and lower level of industrial disputes. Common sense indicates that less disruption should be a good thing in itself but not necessarily if the result has been a weakening of wage bargaining power that has allowed a resurgence of extreme income inequality. We note that the UK economy grew consistently and well through the 1950s and 1960s even with poor industrial relations, as it did in the USA with extra-ordinarily high strike levels by British standards. Moreover, the idea that high inequality is necessary for enterprise and innovation also receives little support from the data. Recent research from the IMF suggests that increasing inequality is not associated with faster growth in GDP or higher productivity.

This report attempts to lay out the facts of UK macro-economic performance under contrasting policy regimes. It does not attempt to say much in detail about alternatives to the current liberal market regime. We can say that while we believe a framework of competition between companies and organisations promotes productivity growth, the evidence appears to show that this is not necessarily sufficient to generate adequate growth in productivity. In complex economies like the UK, in which governments are inevitably involved in supporting the economy, the extreme assumption that free markets will generate optimal outputs is shown to be untrue. The evidence suggests that policies aimed at maintaining full employment generated better growth outcomes than policies that instead targetted inflation. The main reason is likely to be the greater certainty engendered when governments maintain demand at a high level. This encourages company investment and skill formation. Persistent tightness in labour markets also promotes rapid sectoral change as low productivity sectors run short of labour which is attracted to higher paying sectors. The problem with liberal market regimes is that they leave demand management to an unco-ordinated private sector. Bank lending, chiefly to households fills the gap vacated by governments and has negative impacts on house prices and ultimately on bank viability. Aggregate demand is usually too low, resulting in high unemployment which while depressing inflation has permanently unfavourable social effects. Our conclusion is that a wider range of varieties of capitalism are available to policy-makers than is commonly assumed.

INTRODUCTION

The economic crisis in the UK, which began in 2008, has been the deepest and most prolonged for over a century. The level of output, or gross domestic product (GDP), is now 20% below the pre-2008 trend¹, and the cumulative loss of income since 2007 is equivalent to a whole year's GDP. Even with the recent upturn in growth, no economic forecaster currently expects any of this lost income to be recouped in future. In other words there is no anticipated convergence back towards the pre-2008 trend². That trend had been well established at least since 1948 when modern records began. Since there was also continuous growth from the early 1930s to 1948, this means that the UK economy is in new territory and beyond the adult experience of anyone currently alive.

This is an appropriate time to question whether the UK is following the most appropriate form of capitalism. The conventional wisdom, notwithstanding the recent recession, is that the liberal market policies followed since Mrs Thatcher's election victory in 1979 (and in part also a few years earlier) remain the best model for the UK economy albeit with additional safeguards to prevent future banking collapses. This belief is based on a view that liberal market policies reinvigorated a failing economy and underpinned a resurgence of UK prosperity from 1980 onwards. For several decades this view appeared to be supported by the facts on the ground as well as by a rejection of Keynesian economic theory by many university economics departments. The 364 mainly Keynesian academic economists who warned in 1981 that Thatcherite austerity policies would prolong the slump in GDP were proved to be wrong³. However it slowly became clear that a substantial part of the unexpected recovery in prosperity from the early 1980's onwards was accompanied by a huge increase in household indebtedness. As a result a small group of economists, including our mentor Wynne Godley, came to view the growth of recent decades as unsustainable⁴. In Wynne Godley's view the ratio of household debt to income could not continue rising without limit and when it stopped rising the economy would go into recession followed by slower growth.

Most people, including most economists, still view the period 1979 – 2007 as one of faster economic growth and greater prosperity compared with earlier decades, as well as one of lower inflation, more enterprise, greater industrial peace and higher efficiency in the privatised, formerly state-owned, companies⁵. In this report we ask whether this benign view of the post 1979 world is a true reflection of the economic facts. The aim is not to conduct an exercise in economic history for its own sake, but to investigate the extent to which the post-1979 switch to a liberal market regime is an essential underpinning for our prosperity. Those who believe in the free market economy must be able to show that economic performance after 1979 was better than it would have been under the 'corporatist' economic policies of earlier decades. The starting point in doing this should be to show that the actual performance was better than had been the case during the decades prior to 1979.

The report shows that the most important economic indicators, including growth in GDP per head, were in fact no better in the post-1979 decades. This makes it incumbent upon supporters of liberal market policies to explain why this supposed superior economic system did not produce the goods. The end of the 1979-2008 period also saw the largest recession for a century, and this in itself is an indictment of a liberal market regime. While it is not the purpose of this paper to describe the causes of the recent economic crisis in detail, we can say that a major factor was the build-up of household debt over three decades of financial liberalisation, leading eventually to a vastly

¹ The trend used here for GDP per head is 2.55% per annum; see chart 1 below.

² The UK economy would have to grow at an unprecedented 5% p.a. every year to regain the trend within ten years.

³ The letter to the Times from the 364 economists asserted that "present policies" announced in the 1981 Budget, "will deepen the depression, erode the industrial base of our economy and threaten its social and political stability". The letter was co-ordinated from Cambridge University, and one widely recognised set of forecasts in line with the sentiments of the letter was produced by the Cambridge Economic Policy Group (CEPG) (of which we were members at the time). The Cambridge Economic Policy Review April 1981 contained a 5 year projection that with unchanged policies, GDP would decline by 10% between 1980 and 1985. In the event the economy grew by 13% over this period. On the other hand the CEPG were correct in predicting that unemployment would rise to 4 million, at least when the 'hidden unemployed' i.e. those transferred onto Invalidity benefits, are included.

⁴ Godley W (1999)

⁵ It is the growing inequality of incomes, and most recently the long recession since 2007, that have begun to cast doubt on the liberal market approach, or at least on the financial deregulation aspects of the liberal market model.

over-extended banking system dependent on loans backed by over-valued housing assets. The value of housing had been greatly increased by easily available credit in a liberalised banking system, and individuals were willing to gear themselves highly to realise huge capital gains. As Minsky clearly predicted⁶ years before the crash, credit-based bubbles end in economic crashes. The demand for credit disappears once house prices begin to fall; economies move into recession as the supply of credit dries up from troubled banks.

The economic crash of 2008-9 has of course caused many to question the validity of the liberal market model. The main international policy response to these questions has been to strengthen rules on bank reserves to avoid future financial stresses causing the collapse of major banks. Otherwise the liberal market economy remains intact. This paper asks the more general question, extending well beyond banking, of whether liberalising the economy, several decades before the crash, led to faster economic growth and greater stability as modern economic theory suggests it should.

The report begins by setting out our view of the main features characterising the liberal market policies that have been adopted over the past three or four decades. It then compares the performance of the UK economy over the thirty year period beginning in 1950, with the thirty years from 1980, focussing initially on the growth of GDP per head in the UK. We show that the performance of GDP per head was no better in the decades after 1980 onwards than it had been in earlier decades. Despite the change to a more liberal deregulated market, there were reasons to expect that growth would have been slower in the second period – principally a slowdown in the growth of world trade. In our view, the impact of slower growth in world trade on UK growth of GDP was offset by increased spending financed by a rapid rise in household debt. Such a rise in debt could only ever be temporary even if it lasted for several decades. Once it reached a peak the slower underlying performance of the economy would inevitably be revealed. We believe that this has happened since 2008.

This analysis is followed by sections which examine performance in a number of areas, including productivity, unemployment and inflation, and in the conduct of economic policy on issues such as industrial disputes, taxation, regulation and privatisation. We conclude that, even allowing for factors such as the slowing in growth of world trade, the evidence for an absolute improvement in UK economic performance after 1979 is at best mixed and that the main support for liberal market reforms is the view that UK performance improved relative to its European competitors. This claim is examined in detail and it is shown that the relative improvement that took place was the result of slower productivity performance by European countries and not of any improvement in UK performance. It is also shown that while the UK's declining share of world trade stabilised for a twenty year period from the early 1970s, this improvement went into reverse from the mid-1990s and by 2012 was close to the pre-1980 trend rate of decline. The paper concludes with a discussion of economic performance and conduct of policy in the two periods and suggests what reforms to the liberal market framework might improve performance and provide a wider share of the benefits to the UK population.

⁶ Minsky H (1986)

Liberal Market Policies Defined

While we do not propose to conduct a lengthy review of the nature of liberal market policies, the broad characteristics can be summarised as follows:

They are:

- Free markets including:
 - Free trade, low tariffs and absence of non-tariff barriers
 - Free movements of capital and labour
 - Light regulation of business and labour markets
 - Light-touch regulation of banking and removal of restrictions on Building Society activity
 - Private ownership of marketable production and services
 - Low income taxes (among other things to encourage enterprise)
 - Weak trades unions with limited legal immunities
 - Strong competition law

The contrasting policy regime that dominated the three decades prior to 1979 is often described as ‘corporatist’⁷. During the 1950s, 1960s and 1970s the economy was highly regulated with relatively high tariffs on trade⁸, controls on capital movements, large-scale industrial subsidies and regional investment controls, cartels and weak competition rules, substantial public ownership of production⁹, and close involvement of powerful trades unions in determining economic policy¹⁰. Wage and price controls were also intermittently in force during periods of high inflation, and average and marginal income tax rates were high by post-1980 standards.

Industrial conditions in most of the pre-1979 period could be summed up in the then common aphorism ‘the British Disease’. This was shorthand for an economy typified by poorly trained and ineffective management, sometimes appalling industrial relations and high wage inflation. Poor labour relations were characterised by constant demarcation disputes in several traditional sectors, and especially in shipbuilding, by over-manning and absenteeism, as well by a high level of strikes and other disruptions. These shortcomings are documented in Corelli Barnett’s two books on the UK economy in and after the Second World War¹¹. Barnett shows how these were problems of long standing, largely untouched by wartime exigencies and only lightly addressed in plans for post-war reconstruction which instead emphasised social reform¹². In his view the problems began in the very poor working conditions of the early industrial revolution and continued without a pressing need for reform through much of the 19th century as long as the UK had few foreign competitors. Once US, German and competition from other economies became increasingly acute towards the end of the 19th century, complacency and stubborn resistance to change meant that the UK lost its prime mover advantages but retained its dysfunctional industrial

⁷ We recognise that the move towards free markets pre-dated Mrs Thatcher’s government and included inter alia the end of the Bretton Woods system of fixed exchange rates in 1973 and the end of direct restrictions on bank lending under Competition and Credit Control, also in 1971.

⁸ The average effective rate of protection fell from 9.3% in 1968 to 4.7% in 1979, and 1.2% in 1986 (Ennew et al. (1990). Membership of the EEC in 1973 and the European Single Market legislation contributed to the fall in protection but tariff rates were falling more widely under the various GATT rounds.

⁹ Employment in public corporations was close to 2 million from 1961-81 (8% of all employment) and fell steadily to 370,000 (1.3%) on the eve of the Labour general election victory in 1997. Since then public corporation employment has remained in the range of 1 -1.3% of total employment.(excluding NHS Trusts and publically-owned banks).

¹⁰ Crafts (2011) op. cit. p11 describes UK industrial relations in the post-war decades as ‘idiosyncratic and unreformed’ ‘characterised by craft control, multi-unionism, legal immunities for trades unions and strong but decentralised collective bargaining’ with ‘increasing trades union density and the proliferation of shop-stewards’.

¹¹ Barnett C. (1986 and 1995). Further details on industrial conditions in 1950 and their subsequent reform are given in annex A. For a critique of Barnett’s views see Annan N (1990) pp.454-460. Schumpeter J.A. (1942)

Although growth in GDP has accelerated in 2014 and is expected to remain above trend in 2015 and 2016 we regard this as a temporary boom driven by business investment which is catching up after a five years of low investment.

¹² The reforms came from what Barnett terms the ‘New Jerusalem’ movement. The reforms included the NHS, housing construction, higher pensions, free secondary education and policies to maintain full employment.

system¹³. This complacency extended into the education system which reformed slowly and with little regard to technical (as distinct from scientific) education. The small technical stream of the 1944 Act's tripartite system withered on the vine and it was not until the 1960's that an attempt was made to break the university-oriented grammar school dominance of secondary education through the introduction of comprehensive schools¹⁴. It was also not until the 1960s that there was the introduction of a tertiary-level technical stream in the Colleges of Advanced Technology and the opening of the UK's first Business schools in 1985¹⁵.

Much of this was to change after 1979 in an attempt to reform Britain's industrial ills through the strengthening of market disciplines. Fixed exchange rates had already been abandoned internationally by 1973 and a start had been made on UK financial deregulation in 1971¹⁶. Capital controls were quickly removed in 1979 followed by wage, price and investment controls. Over the 1980s a whole series of deregulatory measures were introduced in the financial and commercial sectors¹⁷. Although the overall level of taxation was not permanently reduced there was a major switch away from high marginal income taxes and towards indirect taxes. Competition law was strengthened¹⁸ and new trades union laws introduced. Finally, a major programme of privatisation transferred the ownership of many public corporations to the private sector. In some cases this was a reversal of earlier nationalisations, but in the utilities this was a sell-off of organisations that were originally developed by local or central government. Education was slower to change. Comprehensive schooling was continued and extended but without notable success in emulating the technical streams of the education systems of Germany, Switzerland, Sweden or Finland. The Polytechnics expanded and largely pursued a vocational focus but never lived up to their promise of rivalling German or Swiss tertiary-level technical education. After 1992 they became universities and although some have maintained a strong focus on vocational subjects others have not.

The key question is whether these liberal market reforms led to faster economic growth and higher productivity across the UK economy as a whole. There is a widespread consensus that the market liberalisation reforms since 1979 strengthened the competitiveness of the UK economy, ending a long period of relative economic decline and introducing a sustained period of rapid and stable growth. For instance Professor John Van Reenan, Director of the Centre For Economic Performance at the LSE, wrote in April 2012, 'Mrs Thatcher's reforms helped to end a century of relative UK economic decline'¹⁹. The widely quoted economic historian Professor Nick Crafts takes a similar view²⁰. Crafts (2011) concludes that "*applied economists in the UK are now generally agreed that strengthening competition in product markets is good for productivity performance*". Crafts reviews a range of studies which shows that price-fixing and cartels, market concentration, separation of ownership and control, and strong trades unions all tend to reduce growth in productivity, as do barriers to trade and to new entrants in a sector. Andrew Sentence, Chief Economist at PwC and former Monetary Policy Committee member, views the quarter century from 1982 to 2007 as a 'golden age'²¹.

These examples immediately reveal a contradiction at the heart of economic thinking about this period. Everyone regards the post-war period up to the 1970s as one in which the UK economy grew more slowly than its main competitors in Western Europe (but not the USA which had a similar growth rate to that in the UK). Yet, the same

¹³ Barnett (1986) argues that industrial failures left the UK unable to successfully fight the second war alone. It was only with huge imports of American machine tools and electronic components, financed by lend lease and Commonwealth credits that it was possible to produce the necessary aircraft, radar and other war production. See Barnett C (1995) e.g. chapter 2.

¹⁴ Barnett C (1986) page 302.

¹⁵ Barnett C (1986) page 303.

¹⁶ In the Competition and Credit Control Reforms. See Goodhart C A E (1984)

¹⁷ See Lawson N (1992) Annex 5 for a list of deregulation initiatives in the financial sectors.

¹⁸ Anti-trust law was strengthened by the Competition act of 1998 and the Enterprise Act of 2003. Crafts (2011) states that these Acts increased the independence of the competition authorities, removed the old 'public interest' defence, and introduced criminal penalties for running cartels, Crafts op. cit. p13. By international standards UK competition rules were still weak in 1995 but were much stronger by 2005.

¹⁹ The Times April 16 2012.

²⁰ N Crafts (2011). For instance p19, 'when competition was strengthened in later decades [i.e. after the 1950s and 1960s] there was a strong productivity response.'

²¹ The Times May 9 2012. Note that Sentence's period handily omits the two deep recessions which immediately preceded and immediately followed his 1982-2007 period.

people frequently refer to the 1950s and 1960s as a 'golden age' of relatively low unemployment and moderate inflation. By 1979 it was relative decline which dominated interpretations of the post-war period. The economic turbulence of the 1970s led to a reaction to the 'corporatist' model which had prevailed under both Labour and Conservative governments until 1979. High inflation, frequent and damaging strikes, and dissatisfaction with the performance of some nationalised industries all contributed to the Thatcher victory in 1979 and the subsequent free-market revolution²².

²² Nigel Lawson, Conservative Financial Secretary and later Chancellor 1983-89 outlined the need for liberal market reforms in his autobiography ('The View From No.11'. Bantam Press. 1992). His worry was "the long-term decline of the British economy" and the fact that growth "lagged well behind the rest of Europe and Japan" (p.29). Most immediately, "over the six years from the cyclical peak of 1973 to that of 1979 the British economy all but stopped growing altogether. Excluding North Sea Oil the average annual rate of growth over that period was a half of one per cent" (p.29). Other concerns were the "inexorable ... rise of inflation", trade union power, and sinking profits (p30). Margaret Thatcher made similar points in her autobiography 'The Downing Street years', Harper Collins 1993. She described the 'democratic socialism' of the decades prior to 1979 as 'a miserable failure in every respect' (p.7). Like Lawson she draws attention to the slower growth in the UK relative to Western Europe, but adds "as the 1970's wore grimly on, we began to fail absolutely as well as relatively" (p.7). As far as GDP was concerned this was not true. Lawson's points on economic growth appear to be selective and exaggerated. The period 1973-79 includes the first major post-war recession, caused by the quadrupling of world oil prices in 1974. In the recovery period 1975-79 annual growth in GDP averaged 2.8 % p.a. Even excluding the contribution of North Sea Oil to GDP, growth over the 1975-79 period averaged 2.0 % p.a.

EVALUATING THE IMPACT OF FREE MARKET REFORMS SINCE 1979

The economic changes undertaken since the 1970s are so numerous and interwoven that an evaluation is necessarily complex. In this paper we focus primarily on growth and productivity in the macro-economy and on unemployment and inflation, although we will have something to say about the impact of individual changes such as privatisation, deregulation, innovation and enterprise policy. The starting point in making a judgement on the impact of the liberal reforms is to conduct comparisons. Our main comparison is of UK economic performance in the three decades since 1979 with that in the three preceding decades. In doing so, we also compare UK performance with other advanced economies over the same two periods to address the issue of *relative* growth and decline. A number of studies have investigated the impact of deregulation and increased competition by comparing individual sectors and firms²³. These studies are valuable and informative, but also partial. A necessary starting point in our view is to look at the performance of the UK economy as a whole, and to use sectoral and other studies as an aid to interpretation. The 30 years since the election victory that brought the Thatcher government to power is a long enough period to attempt an assessment of the impact of this revolution on the UK economy²⁴.

The salient facts

Per capita GDP

Looking back over the past sixty years, the evidence now clearly shows that there was no sustained improvement in the trend growth of per capita GDP in the UK after 1979²⁵. Indeed, per capita GDP has only returned to the pre-1979 trend, at the pinnacle of the 1980s boom in 1989 and again temporarily in the decade 1998-2007 (chart 1). The current level of per capita GDP in 2014 is 20% below what it would have been if the 1950-79 trend had continued. This suggests two things. Firstly, any claim that market liberalisation in the UK has raised the growth rate in per capita GDP depends entirely on the view that in the absence of the liberal reforms the trend would have deteriorated after 1979. Second, the superior trend over the three decades before 1979 was achieved despite the presence of all of the corporatist apparatus listed above which is now generally regarded as damaging to economic growth and productivity. As well as high marginal income tax rates and higher inflation (the latter being mainly confined to the period from the late sixties to the early eighties), much of the period was also characterised by wage, price and investment controls²⁶, fixed exchange rates, greater public ownership, subsidisation and regulation of industry, as well as alleged poor management and restrictive labour practices²⁷, together with a less favourable record of strikes and industrial relations. Any claim that the economic record has been better under a more liberal economic regime must explain why faster growth was possible under the more corporatist and interventionist regime that characterised the period up to 1979.

²³ These studies are summarised in Crafts (2011) op cit. Crafts and Toniolo (1996) also examine contrasts in growth and productivity between the golden age (1950-73) and the following period for a range of European countries, although not directly in the context of deregulation.

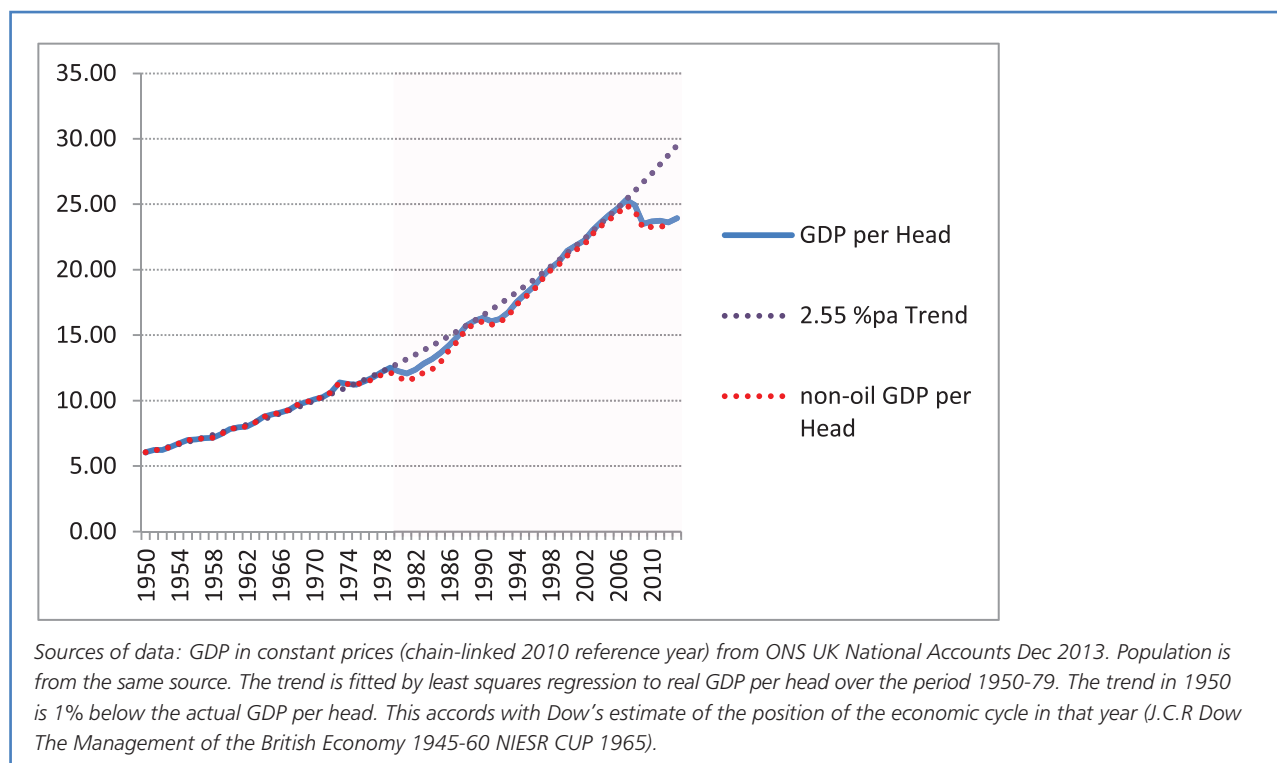
²⁴ It is also 40 years since the antecedents of the Thatcher revolution in the form of the liberalisation of banking under the Competition and Credit Control reforms and the introduction of market determined exchange rates. See Goodhart C A E (1984).

²⁵ Some economists argue that 1973 is a better candidate than 1979 as the key turning point in post-war economic history. There is some merit in this idea and it does seem true for the USA. However, as can be seen in chart 3, the later 1970s were reasonably close to the 1950-79 trend for GDP per head. The final year, 1979, was only 1% below this trend and closer to the trend than virtually any later year. The year 1979 was also only 2.5% below the 1950-73 trend and closer to this trend than any subsequent year. If GDP from North Sea is excluded then the year 1979 is 4% below the 1950-79 trend and still higher than almost any post-1979 year. See also, footnote 22 for details on economic growth in the later 1970s.

²⁶ Through much of the 1950s consumer rationing and significant tariffs were also in force

²⁷ N Crafts (2011)

Chart 1: Real GDP per capita in the UK (£000, 2010 price reference year)



On the first issue, i.e. the need to show that a continuation of the corporatist regime after 1979 would have led to a poorer economic record than it actually did prior to 1980, there are two possible reasons for expecting a worsening economic growth performance in the UK irrespective of the domestic policy regime. First, world trade grew more slowly in the second period. Secondly the progressive adoption of free trade under GATT rules could have reduced the growth of UK exports by exposing uncompetitive firms to greater international competition.

Table 1: Growth in Export Volumes (% per annum)

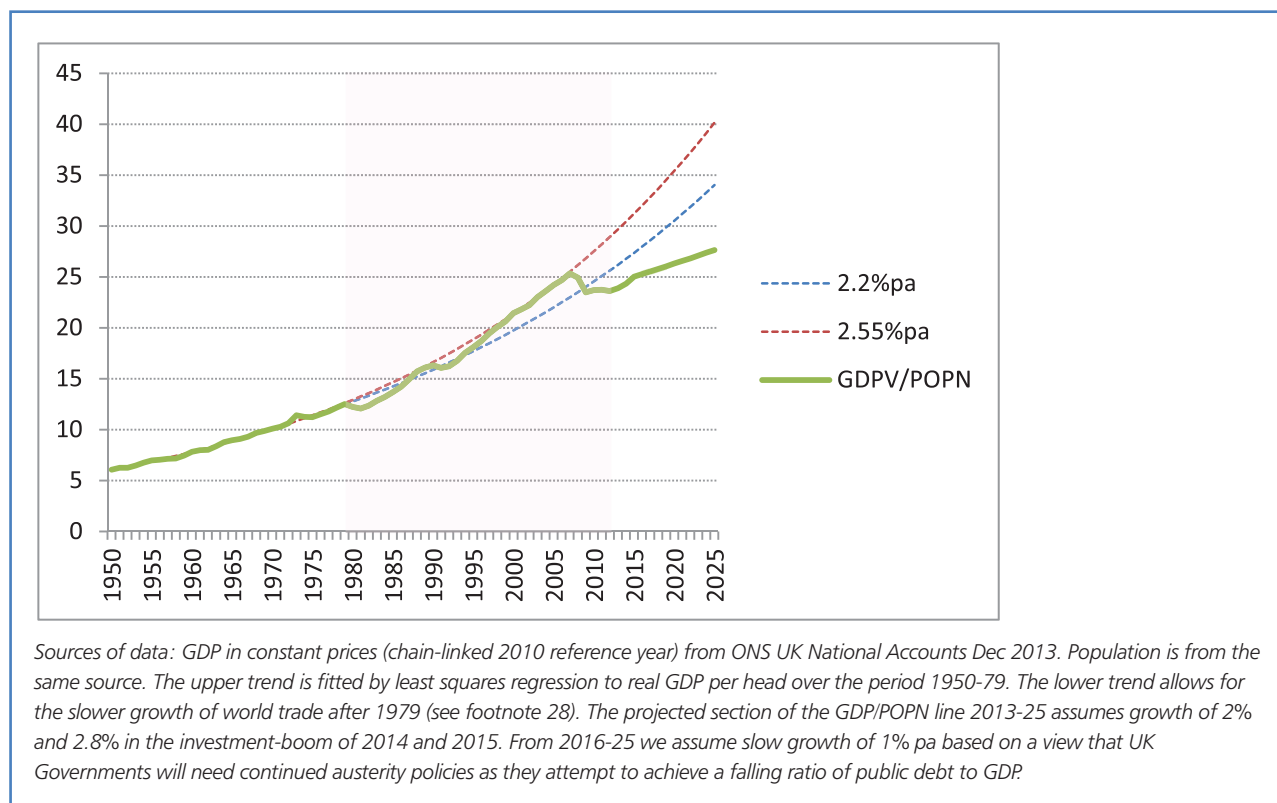
	1950-79	1979-2007
World Exports Volume (manufactures)	8.9	6.4
UK Exports Volume (goods & services)	4.3	4.3

Sources of Data: World Trade Organisation *World merchandise exports, production and gross domestic product, 1950-2010*; and ONS *Exports and imports of goods and services*. ONS data is available for UK exports of goods and services separately from 1955. The growth of world exports of manufactures was rather faster for 1955-79 than for 1950-1979 at 9.6% pa. UK goods exports growth slowed from 4.5% p.a. to 4.0% p.a. between the two periods. Growth in services exports slowed from 5.6% pa to 4.7% pa.

On the first of these two possible reasons, it is true that world trade in manufactures grew considerably more slowly in volume terms in the three decades after 1979 than in the previous three decades (Table 1). Rapid growth in the immediate post-war decades was due both to post-war reconstruction and the dramatic reduction in tariffs under the first six GATT rounds. There was however no slowing in the growth of the volume of UK exports of goods and services after 1979 despite the slower growth in world trade in goods. The continued good growth rate of UK exports after 1979, in a context of slower growth for world trade in manufactures, reflected improved cost competitiveness through much of the next two decades. If competitiveness had not improved we estimate that slower growth in world trade alone would have reduced growth in UK exports by 0.7% p.a. The consequent

impact on GDP growth is likely to have been of the order of about one third of one per cent per annum²⁸ leading to trend growth in real GDP per head of 2.2% per annum instead of the 2.55% per annum trend observed for 1950-79. In chart 2 this slower trend is added to the data already seen in chart 1.

Chart 2: Real GDP per capita in the UK projected to 2015 (2010 price reference year)



A reasonable expectation might be that per capita GDP would follow a 2.55% per annum trend before 1979, but after 1979 would follow a slower, 2.2% per annum, trend due to the slower growth in world trade. Chart 2 also shows that actual GDP per head was above this slower trend briefly in the late 1980s and more persistently from 1993-2007. However since 2008 actual GDP per head has been well below even this slower trend. The chart also shows our projections based on continued austerity policies which suggest that actual GDP will stay well below this trend for at least a decade and probably much longer. Our interpretation is that the deviations of per capita GDP from the slower trend over the period 1979-2014 were determined by changes in household debt. Household debt rose rapidly over the 1980s, and again from the mid-1990s (see chart 26 below) but has fallen since 2008. Our estimate is that the magnitude of the impact of growing debt on GDP was large enough to more than offset the negative impact of more slowly growing world trade in the post 1979 period²⁹. The relationship between debt and GDP is discussed further in Annex B.

²⁸ We take a Keynesian view that the main exogenous variables driving growth in UK demand are exports and government spending (with consumer spending and private investment endogenous). Since exports are around half of the combined exogenous expenditure, demand for GDP will decline by about half of the reduction in growth of exports. UK export volumes grew by 4.3% pa in the pre-1979 period while world trade in manufactures was expanding at 8.9% p.a. If world trade had continued to grow at this rate in the three decades after 1979, then UK exports might have also continued to grow at 4.3% pa. The slower rate of growth in world trade in this post-1979 period would have reduced the growth rate of UK exports to 3.8% p.a. This is calculated as the observed growth rate of UK exports 1979-2007 at 4.5% p.a. adjusted for the fact that by 2007 actual export volumes in the UK were 22.2% above the expected volume based on the growth of world trade and the UK's falling share of that trade (i.e. 1.045 divided by 1.0072 which is the annual growth rate required to achieve a cumulative growth of 22% over 28 years). The reduction in export growth between the two periods is thus 0.7% p.a. If the impact on GDP is half of this, then this impact would be around 0.35% p.a.

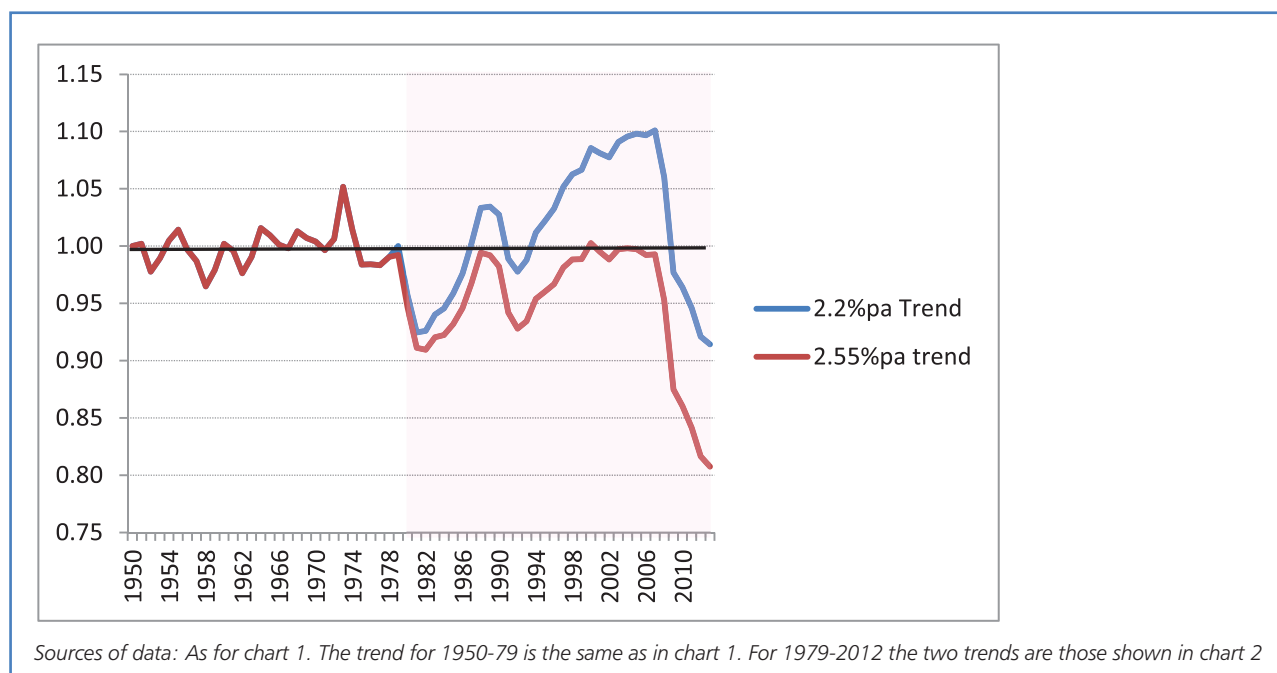
²⁹ Household debt rose by 7% p.a. in real terms over the period 1979-2007 compared with 4.4% p.a. over the previous three decades. Our econometric equation for real consumer spending suggests that a 7% p.a. increase in real household debt raised real household consumption by 1.35% p.a. This in turn would raise real GDP by 0.9% p.a. The same calculation for the earlier 1950-79 period suggests that rising debt boosted real consumer spending by 0.44% p.a. or GDP by around 0.3% p.a. The increase in the boost to GDP in the post-1979 period was thus of the order of 0.6% p.a.

On the second point, i.e. potentially negative impacts on UK exports of greater openness to trade, much of the reduction in tariff barriers to trade undertaken through the various GATT had already occurred by 1979. Average trade-weighted tariffs on goods declined from around 50% when the GATT was signed in 1947 to 4.7% after the Tokyo round in 1979³⁰. Subsequent rounds concentrated on agricultural trade and services and non-tariff barriers. Evidence presented below examines trends in cost competitiveness together with the UK share of world trade. The conclusion is that there was a prolonged improvement in the UK share of world exports after 1973 but this was reversed from the late-1990s after the Sterling effective exchange rate soared. In other words UK export performance improved initially during the period of low tariffs (accelerated of course by the UK joining the EEC in 1973) and before Liberal Market policies such as trade union law reform can have had much influence. However these measures could have helped to maintain the improved export performance. A more plausible influence is the low level of unit labour costs in much the 1980s and early 1990s (see chart 23 below). After the late-1990s the UK share of world trade fell strongly and consistently but most of this is likely to be due to reduced cost competitiveness under a strong Sterling exchange rate. Similarly, import penetration remained stable up to the mid-1990s but has risen strongly since then.

Increased Volatility of Growth.

Economic growth also became more volatile after 1979 in the sense that departures from the long-term trend became deeper and more prolonged, even if they were less frequent. Between 1950 and 1979 in what were then called 'stop-go cycles', the 'stop' years were slow-downs in the rate of growth rather than recessions with actual declines in GDP. The only years in which real GDP was lower than the previous year were 1974 and 1975, following the first global oil price hike³¹. Since 1979, there have been three major recessions, with the latest one being the deepest for a century. Departures from trend have been much more serious and prolonged in the post-1979 period (chart 3). Many economists, including Andrew Sentence quoted above, have focussed on the lengthy period of

Chart 3: Deviations From Trend. Ratio of GDP per Head to a Trend



³⁰ World Trade Organisation. http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm

³¹ The quadrupling of OPEC oil prices in 1973 was itself due to the depreciation of the real value of oil revenues as inflation accelerated in the late 1960s and early 1970s following US government decision to expand defence spending and social benefits without concomitant increases in tax. The most plausible explanation for the subsequent recession (which was quite mild by post-1979 standards) was the difficulty of recycling the huge increase in OPEC revenues through a relatively under-developed international financial system. These were eventually recycled to less developed countries at the cost of a round of sovereign defaults in the early 1980s.

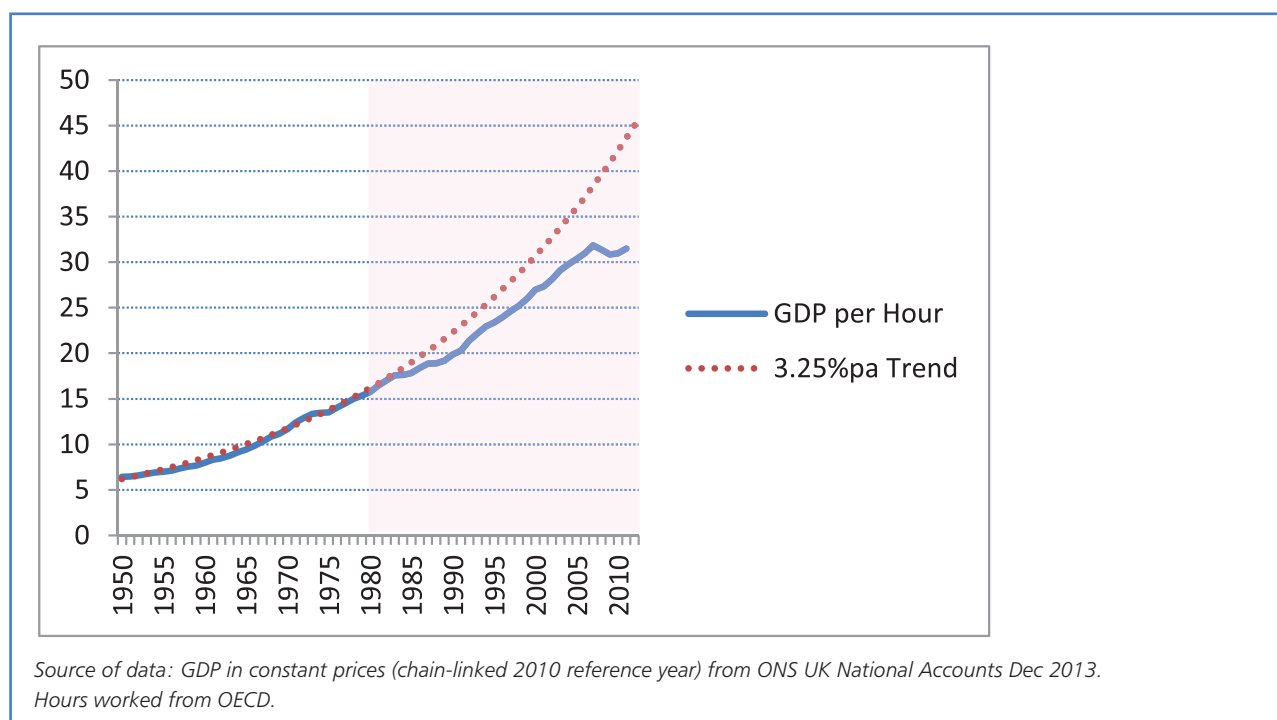
concerted growth between recessions. The period 1985-2007 has been referred to as the Great Moderation because of its combination of growth with quiescent inflation. The recession of 2008-9 destroyed the idea that boom and bust had been abolished and it is difficult to interpret the entire post-1979 period as one of stability. For the UK, chart 3 suggests the opposite.

Consumers' expenditure returned to the pre-1979 trend by the end of the 1980s and remained close to this trend until 2007. This was a rather better performance than for GDP per head because consumers' expenditure reversed its previously falling trend in its share of GDP after 1979 mainly due to increased household borrowing. Lower income taxes in the post-1979 period helped to maintain the growth of household incomes but were offset by higher indirect tax rates. Overall taxation was higher through most of the 1980s than in the 1970s but fell after 1992 to levels a little lower than the 1970s.

Productivity

The differences in GDP growth before and after 1979 can be examined further by disaggregating per capita GDP into components. Per capita GDP is the arithmetic product of productivity (GDP per hour), hours worked per employed person, employment rate (numbers employed divided by population of working age) and a dependency ratio (inverse of working age population divided by total population). The evidence on productivity shows that the pre-1979 trend in productivity (GDP per hour) was maintained for a few years into the early 1980s but deteriorated after that, coming to a halt after 2007³² (chart 4).

Chart 4 Productivity (GDP per Hour, £000, 2010 prices)



Another common measure of productivity is to adjust the growth of labour productivity for increases in capital per worker. The aim here is to estimate general features of improvements in technical knowledge and organisation. To estimate multi-factor, or total factor productivity, we first calculate the growth of output implied by the growth of labour and capital inputs. Multi-factor productivity is the residual between the growth of output calculated from

³² There is evidence of slow productivity growth during the 1950s when price-fixing and cartels dominated, (Broadberry S N and Crafts N R (2001) and Crafts N (2011) op. cit. p11). However productivity accelerated over the 1960s to regain the long-term trend in GDP per hour of 3.2%pa. The trend growth rate for real GDP per hour in the private sector from 1960-79 was 3.65% pa. This slowed to 2.75%pa from 1983-2007. The difference in these means that actual private sector productivity in 2007 was 23% below where it would have been on the pre-1983 trend.

factor inputs and the growth of actual output and is often attributed to a variety of elements such as technical innovation, research and development, education, training and workforce efficiency.

As a measure of capital input, we have used a series produced by ONS for the volume of capital services, which goes back to 1950³³. To obtain a comparably long series for labour input, we have used a consistent series for employment from the OECD and a series of hours per person from Conference Board data³⁴. Table 2 shows the resulting estimate of multi-factor productivity.

Table 2 Multi-factor productivity – historical growth rates

Percent change per annum	1950-1979	1980-2007
Output per employed person	2.25	2.17
Multi-factor productivity (MFO)	1.78	1.44

Source of data: Author's calculations using data from ONS, OECD and Conference Board

Over the first three decades the growth rate of MFP averaged a little less than 1.8% per annum, but fell slightly in the second period to about 1.4% per annum³⁵. Once again, the evidence is that productivity performance deteriorated after 1979.

A substantial part of the slow-down in the growth of real GDP per hour can be ascribed to the decline of manufacturing. Real output per employee in manufacturing grew at close to 3.25% p.a. throughout the post-war period while the equivalent growth rate for non-manufacturing sectors in aggregate was under half that at 1.5% p.a. The figures for real GDP per hour are available for sectors only since 1997 but over this period the growth of GDP per hour is similar to that of GDP per employee. The decline in manufacturing reduced the weight of this major sector with fast-growing productivity and by 2014 the UK economy had become heavily dominated by service sectors with slower growing productivity. The simulations reported in Annex C lead us to believe that this factor alone accounts for a reduction in aggregate productivity growth of around 0.35% p.a. since the 1970s. This accounts for most although not all of the deviation from trend observed in chart 4 up until 2007. The decline in manufacturing can itself be considered a consequence of liberal market policies. Growing globalisation with free trade and free movement of capital led to a major transfer of actual and potential manufacturing production out of the UK and mainly into lower cost producers in the Far East and Eastern Europe. These processes went further in the UK than any other OECD country leading the UK to end up with the smallest manufacturing sector of any advanced economy.

The decline in manufacturing did not however translate directly into slower growth in *GDP per head*. This is because the labour released from a declining manufacturing sector has been mostly taken up in the services including the high value-added financial and professional services, allowing these to grow faster than otherwise would have been the case. In other words the reduced growth rate for productivity was offset by a growing employment rate.

The level of the *employment rate* was generally lower after 1979 than it had been prior to 1980 despite the expansion of the female workforce, the growth of part-time employment and most recently the increase in employment of people aged over 64 (chart 5). It was reduced by the severe shake-out of labour that occurred in the 1980-81 recession (mostly from manufacturing), but recovered strongly over the 1980s and then the 1990's as large numbers of jobs were created in the services sectors. With aggregate demand maintained by burgeoning

³³ See *Economic & Labour Market Review*, May 2011 for estimates of multi-factor productivity from 1970-2009. The series is based on the perpetual inventory method and combines capital stocks according to estimates of rental price, rather than purchase price of capital assets. Our method uses coefficients of 0.3 on the capital term and 0.7 on the labour term.

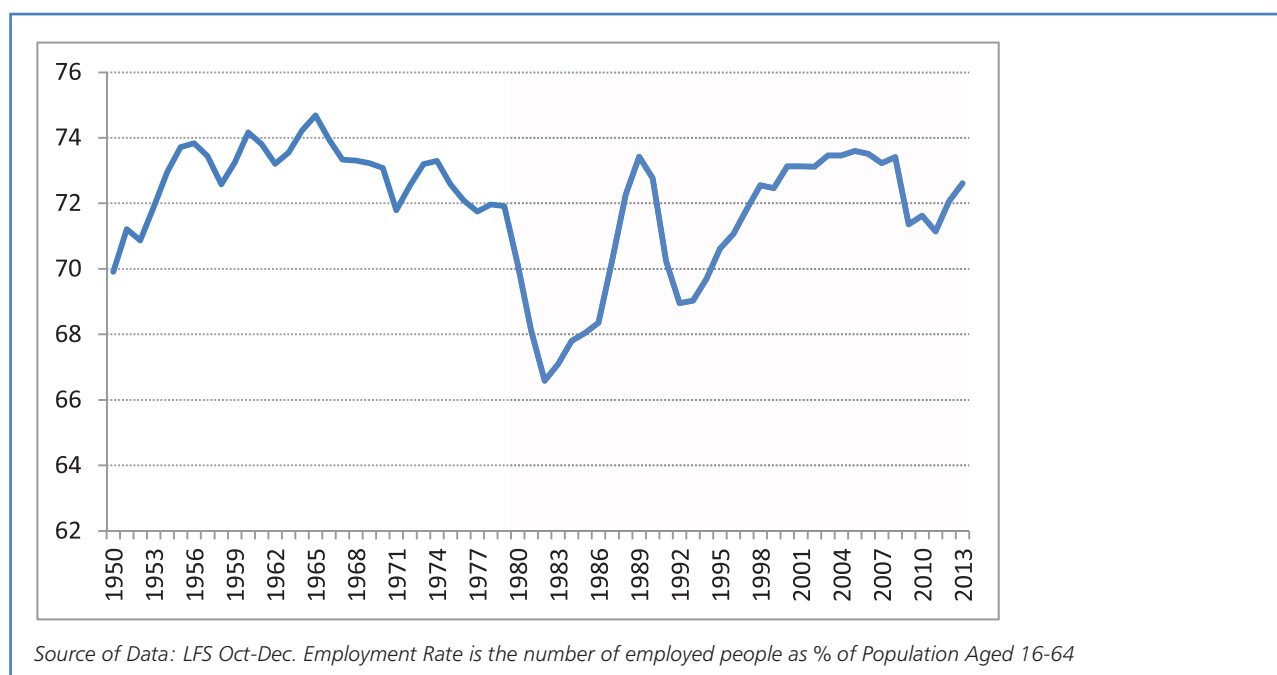
³⁴ Conference Board, Total Economy database. This can be found at <http://www.conference-board.org/data/productivity.cfm>

³⁵ The estimated growth rate from 1970-2007 of 0.8% per annum agrees closely with the ONS figure given in *Economic & Labour Market Review*, May 2011.

household indebtedness, the jobs lost in the manufacturing sector were replaced by new jobs in the services sectors and particularly in private sector services. By 1982 the total number of people employed was only 900,000 above the level of 1950, but the strong subsequent growth in employment led to a further 5.5 million people becoming employed by 2007. Productivity growth in the economy as a whole was slower due to the increasing dominance of services, but as argued above this was offset by a recovering employment rate to give a growth rate in per capita GDP that was not much below its pre-1980 trend. Although lasting for almost three decades this offsetting process could only be temporary and we can expect a slower growth of per capita GDP in future. With a largely service sector economy, productivity growth in the UK has become permanently slower than it was prior to 1980 when the manufacturing sector was consistently larger. However the recovering employment rate was bound eventually to reach a ceiling when everyone who wished to work was already employed. This point appears to have been reached by around 2005. Since then, we would argue, the trend in growth of per capita GDP has permanently slowed, although the long-term trend is not yet fully obvious, dominated as it is by the huge cyclical swing brought about by financial collapse which began in 2008.

Even with a rising trend after 1982 the employment rate was on average lower through much of the post 1979 period than it had been previously (chart 5). The lower employment rate in most years contributed to a lower *level* of GDP per head, but its negative impact was more than offset by a lower *dependency ratio*³⁶ and a cessation of the previous falling trend in *hours worked per employee* (see chart 18 below). As in the USA the slowing of the decline in hours worked per employed person has also helped per capita GDP to stay close to its pre-1980 trend despite the slowdown in productivity growth.

Chart 5 Employment Rate (% of working-age Population)

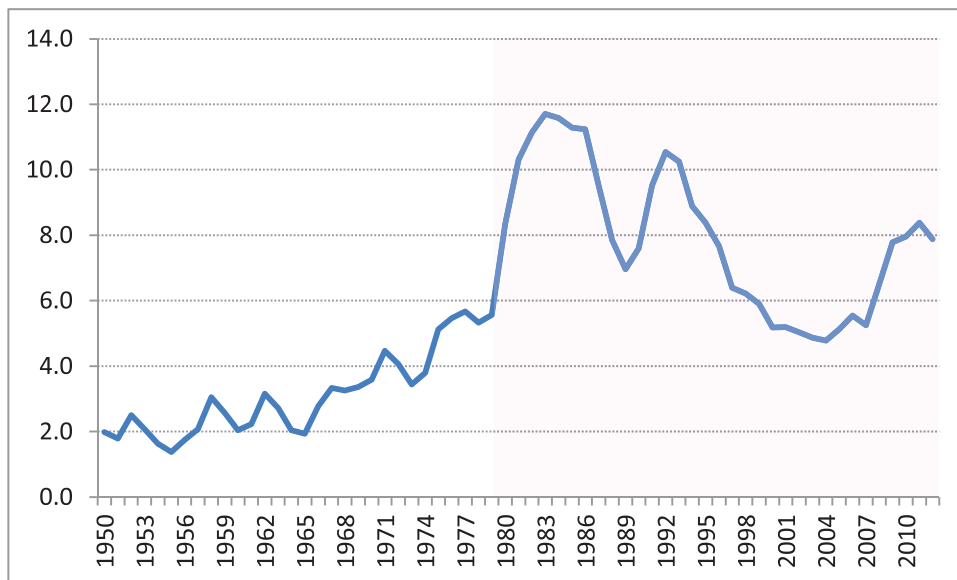


³⁶ The ratio of non-working-age to working age population grew at an annual rate of 0.75% p.a. between 1950 and 1974 reducing growth in GDP per head during this period, but then fell by 0.55% p.a. until 2007 thus raising the growth of GDP per head in this period.

Unemployment

The clearest and largest failure of the liberal market policy era has been unemployment. The average unemployment rate since 1979 has been 7.8%, a rate two and a half times higher than the average for 1950-79 (chart 6). Unemployment rates have been higher than in 1979 in every subsequent year with the exception of the short period 2000-2004. This is not what supporters of free market policies would expect. Greater competition, with reduced regulation in business and labour markets should in theory have led to close to full employment. The fact that it has not done so has led to the development of the currently dominant 'New Keynesian' school of macro-economic theory. This attempts to explain the continuing high unemployment as the consequence of structural changes in labour and product markets leading to a higher level of unemployment consistent with stable inflation. Our (old) Keynesian view is that the level of effective demand has not been sufficiently high to maintain full employment. This view is strengthened by the fact that measured unemployment is only part of the problem of joblessness. Fothergill, Beatty and Gore (2012) argue that 900,000 people (3% of the labour force) on Employment and Support Allowance (formerly Incapacity Benefit and before that Invalidity Benefit) should be considered to be a form of concealed long-term unemployment.

Chart 6 Unemployment Rate (% of Labour Force)

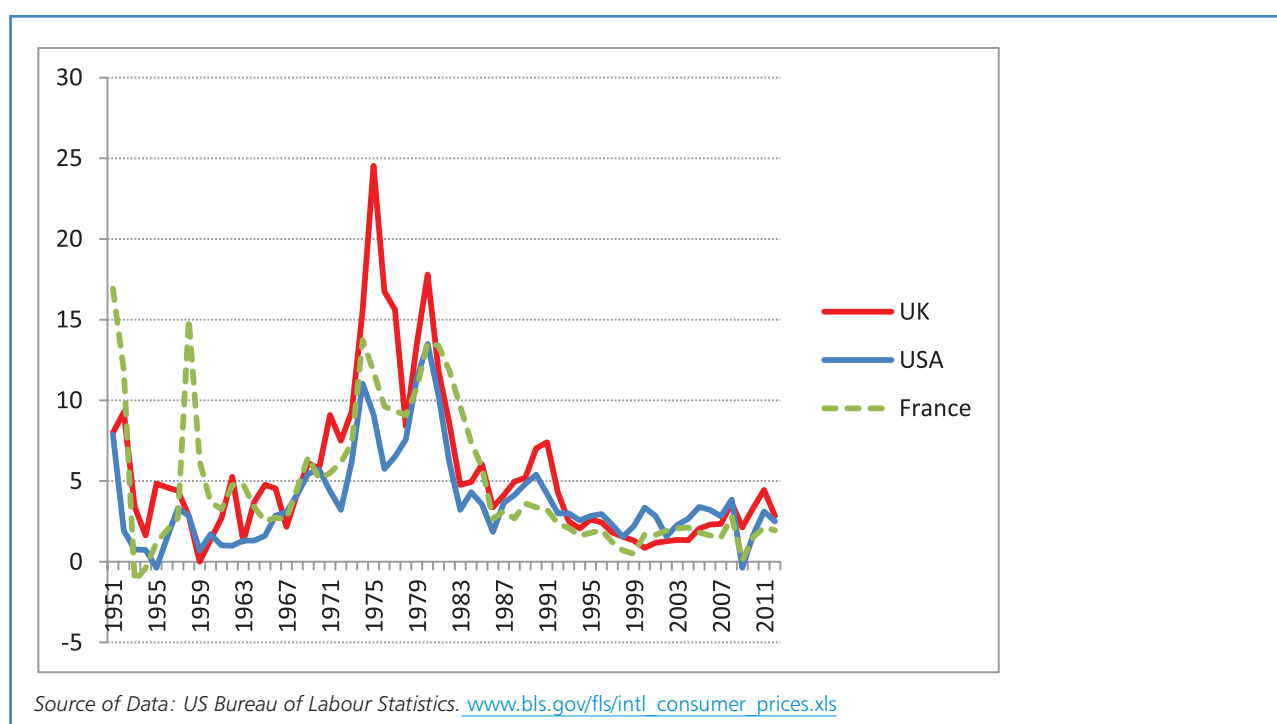


Source of Data: LFS (ONS) persons actively seeking work as a % of employed persons plus unemployed persons.

Inflation

More than anything else it was the huge rise in inflation during the 1970s that stimulated the change in economic policies from 1979 onwards³⁷. UK inflation was generally higher than in the USA through the 1950s and 1960s although the gap narrowed as the Vietnam War expenditure stimulated demand in the USA in the later 1960s. UK inflation rose after the 1967 devaluation of Sterling and again from 1971 due to both the introduction of a floating exchange rate, and the so-called 'Barber Boom' following the first round of financial deregulation that year. Inflation in the US, and most other advanced economies, peaked after the 1973-4 oil price hike, but UK inflation rose by much more (chart 7). The impact of the first oil price hike in 1973-4 was greatly magnified by inept wages policies of 1972-4 under the Heath Government in which 'threshold' wage increases were linked to price rises. Further devaluation of Sterling under the post-1973 floating exchange-rate regime kept inflation high through much of the 1970s, although the Callaghan-Healey wages squeeze of 1976-9 helped to bring down wage inflation when global inflation was moderating. The squeeze proved too rigorous and led to the breakdown of the policy after the Winter of Discontent and another bout of high inflation exacerbated by the second oil price hike in 1979-80.

Chart 7 Inflation Rate. Annual % Changes in Consumer Price Index



It was this record of high inflation that caused the incoming Conservative government in 1979 to adopt its Medium-term Financial Strategy (MTFS) which set out year-by-year targets for money supply growth. This used government expenditure cuts and high interest rates to reduce inflation in place of wages policies. Inflation did fall rapidly in the early 1980s, but this was a global phenomenon and the UK inflation record over the period 1980-92 was the same vis-à-vis the USA as it had been in the 1950s or 1960s, even though UK unemployment was very much higher in the 1980s. UK inflation peaked once more at the beginning of the 1990s following an extended period of rapid economic growth despite the fact that unemployment remained high (the Lawson Boom).

The main improvement in consumer price inflation relative to the G7 average thus came not with the Thatcher government's monetarist policies over the 1980s but following the UK's ejection from the European exchange rate

³⁷ For evidence on the impact of wage indexation (threshold agreements) on the rapid acceleration of inflation in 1974, see Henry and Ormerod (1978). The disruptive nature of the large number of strikes during the 'Winter of Discontent' 1978-9 was a more immediate and pressing factor underlying the Conservative Party victory in the 1979 election

mechanism (ERM) in 1992. After 1992 UK price inflation was generally below the G7 average, due initially to high unemployment and after 1996 to a large appreciation in the Sterling exchange rate. However UK price inflation has returned to its traditional position, a little above the G7 average, since the large depreciation of Sterling in 2008. It was only in the exceptional 1993-2007 period that the UK had lower inflation than the G7 average. Otherwise inflation relative to other major economies in the post 1979 period has been similar to the 1950s and 1960s. While the 1970s are often viewed as the culmination of earlier corporatist policies, they can just as easily be treated as a temporary aberration that was on its way out by the time the Thatcher government took office in 1979. Inflation was high in all major economies in the 1970s due to high deficit spending in the USA, the resulting collapse of the Bretton-Woods exchange rate system and the associated quadrupling of world oil prices in 1973. The corporatist era's policy regime of wage and price controls was unable to deal well with this disruptive situation and policy mistakes were made which allowed prices to soar, but rises in unemployment were kept smaller than would otherwise have been the case. However, there is no reason to believe that in the more tranquil conditions that subsequently evolved for world inflation, traditional UK policies could not have coped and evolved, without the extreme inflation of the mid-1970s. Inflation is likely to have been a little higher after 1980 than it actually was, but unemployment would have been much lower.

Our conclusion is that global free trade has tended to reduce price inflation in the UK and elsewhere, but domestic policy changes have been less important. Higher unemployment during the post-1979 years restrained wage increases and the general abandonment of the practice of centralised sectoral wage bargaining may have put some downward pressure on wages, but there is little obvious influence from other liberal policies such as trade union legislation. The high inflation of the 1970s was as argued above a historical aberration brought about firstly by the huge credit boom of 1971, the collapse of the Bretton Woods fixed exchange rate regime and the oil price hikes of 1973-4. The attempts to control wages sparked trade union militancy, making for an economically dismal decade, but without a repeat of these unusual conditions we take the view that inflation would have naturally moderated.

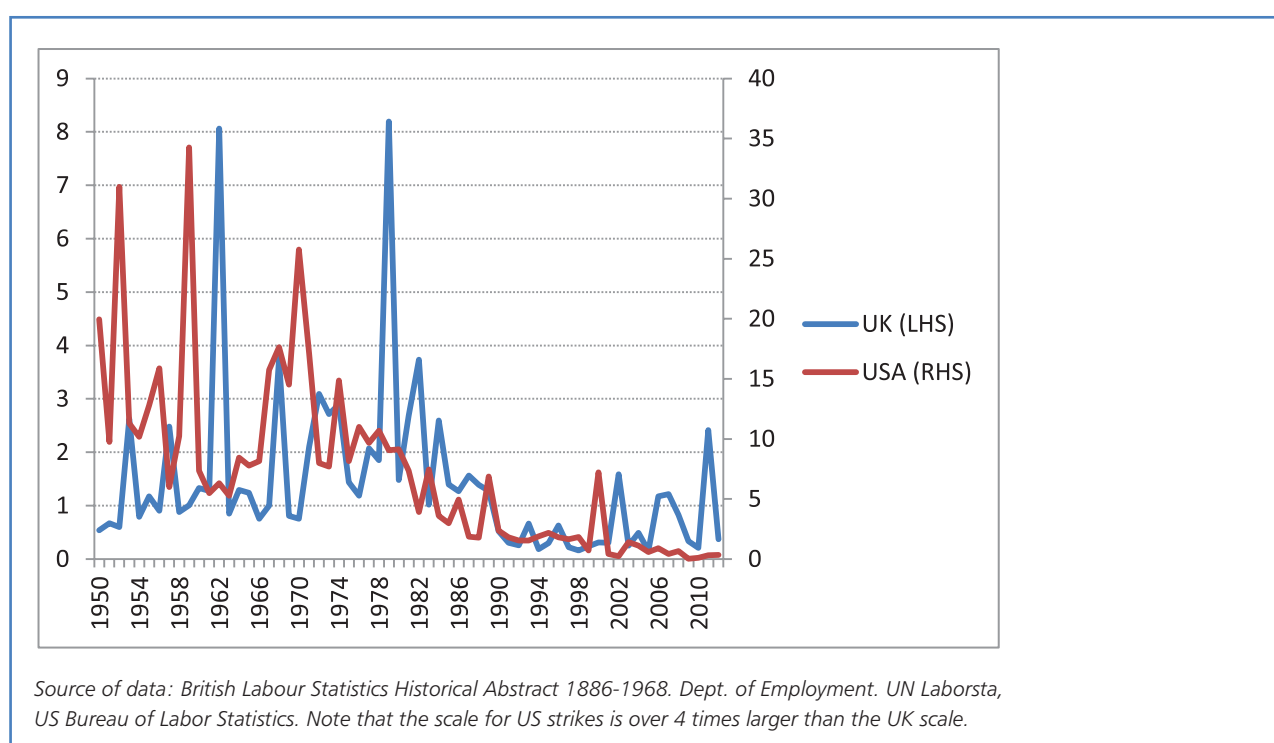
There is some evidence from economic research that high inflation leads to lower economic growth³⁸. However the link between price inflation and economic growth clearly depends on the context, including real interest rates and the drivers of inflation. Higher government spending might for instance generate higher inflation and higher growth. Higher inflation with a fixed real interest rate could be expected to generate a larger reduction in GDP growth than a rise in inflation without a concomitant increase in interest rates. It is thus difficult to speculate on what impact on economic growth might have resulted from a continuation of more corporate policies after 1979. The tendency since 2007 has been towards deflation, at least once the impact of the 2008 sterling depreciation had worked through the UK economy. The connection between inadequate demand and low inflation or deflation is even more obvious within the Eurozone.

³⁸ Kahn and Senhadji (2001) in an international panel study indicate that a rise in consumer price inflation from 3% per annum to 5% per annum would be associated with a slowing in economic growth of 0.33% per annum.

Industrial Disputes

Poor industrial relations were a particular feature of Britain not only in the 1970s but over the whole corporatist period. They improved under the liberal market regime after 1980, and the reduction in the annual number of days lost in strikes since the 1970s was dramatic (chart 8). The number of days lost averaged 900,000 in the 1950s and 1960s³⁹, 1 to 2 million in the 1970s and early 1980s with a peak of 4.5 million during the Winter of Discontent of 1978-9. By the 1990s the average number of days lost had fallen to around 250,000 per annum. High unemployment in the 1980s, the reform of trade union legislation and practice, and government determination as displayed during the 1984 miners' strike, all played a role. The reduction in strikes, and related industrial disruption, were welcomed by business, and must have helped management to raise productivity in some sectors, but in any case the worst affected sectors tended to greatly shrink or disappear. However, the impact on GDP growth is not clearly a large one. The growth in aggregate productivity in the UK has not risen as the days lost in strikes have fallen and indeed has been slower than before 1980.

Chart 8: Days Lost in Industrial Stoppages (no. of days per 100 population)



Other factors are clearly involved and it seems that the reduction in industrial disruption has not been a large enough influence to overcome other influences leading to lower productivity growth. It can also be seen that in the USA strikes were a much larger feature than in the UK right up to 2000. As in the UK there was no obvious link between falling strike intensity and aggregate productivity. Nor was the much higher US strike rate prior to 1979 reflected in a slower economic growth rate than in the UK. We should note however that the high US strike rate of the first post-war decades is widely held to have consisted mainly of predictable disputes connected directly with wage bargaining and less disruptive than disputes in Britain including 'wildcat' strikes, 'go slows' and secondary picketing.

³⁹ British Labour Statistics. Historical Abstract (1971) Table 197 no. of workers directly involved in strikes. The figure falls to 720,000 if the high strikes year of 1962 is omitted.

Taxation and Income Inequality

One of the chief mantras of the liberal market philosophy is that a low tax environment helps economic growth by providing incentives for innovation and entrepreneurship and by concentrating finance for investment⁴⁰. The Thatcher government accordingly set out to reduce the burden of taxation even though it started out by doubling VAT rates in 1980. The most striking change in tax after 1979 was the reduction in the top rate of income tax from 83% to 40% between 1979 and 1988⁴¹. The basic rate also came down from 30% in 1979 to 22% from 2000 and 20% from 2008. These rates were of political importance but in practice did little to reduce the total burden of taxation or even the proportion of household income taken in tax. This was partly because the real value of thresholds for paying basic and higher rate income taxes were allowed to fall, and also because the less politically salient national insurance contribution rate rose after 1979. Direct taxes on incomes have in fact been higher on average since 1979 as a percentage of GDP compared with the three previous decades⁴², although direct taxation tended to rise under Labour administrations and to stabilise under the Conservatives.

Total tax revenues fluctuated as a percentage of GDP over the years, but the average has not differed much between the two periods. The percentage was a little lower on average before 1980 than in the three decades after 1979 but total revenues were close to 34% of GDP in 1950, 1979, 1997 and 2011. Neither has there been a substantial sustained transfer from indirect to direct taxation despite the initial hike in VAT in 1980. In total there has been little to suggest that, whatever one believes about the impact of taxes on economic growth, that taxation can have played much role influencing growth. The exception may have been a boost to enterprise from the large reduction in the top rate of income tax. However we argue in the next section that this boost is likely to have been relatively small.

Inequality in pre-tax household incomes has risen greatly since the late 1970s until the mid-1990s in most OECD economies. The reasons are not fully clear although they are associated by some commentators with increasing globalisation and falling trade union membership. By 2012 the level of inequality was similarly high in most of these countries. It is notable that pre-tax income inequality rose largely during the period of Conservative government 1979-97 and has stabilised since then⁴³. Inequality has also risen in post-tax household incomes (chart 9) but by rather less than for pre-tax incomes. This appears to follow general international experience in that there is more political pressure to introduce redistribution through tax systems when pre-tax inequality is high⁴⁴. Nevertheless post-tax income inequality in the UK is higher than any other OECD country with the single exception of the USA which the UK closely resembles (chart 9). The rise in UK inequality clearly began in the early 1980s since when a large divergence has occurred between the UK on the one hand and Germany, France, the Netherlands and Scandinavia on the other.

⁴⁰ This view is aired repeatedly in the UK press. An example is David Smith, Economics Editor of the Sunday Times 24th April 2014 *"Have we learnt nothing since the 1970s about the impact of very high tax rates on growth and incentives? Does anybody not think that the prospect of eye-wateringly high tax rates on success will stop people striving for success, taking the risks needed to stimulate innovation?"*

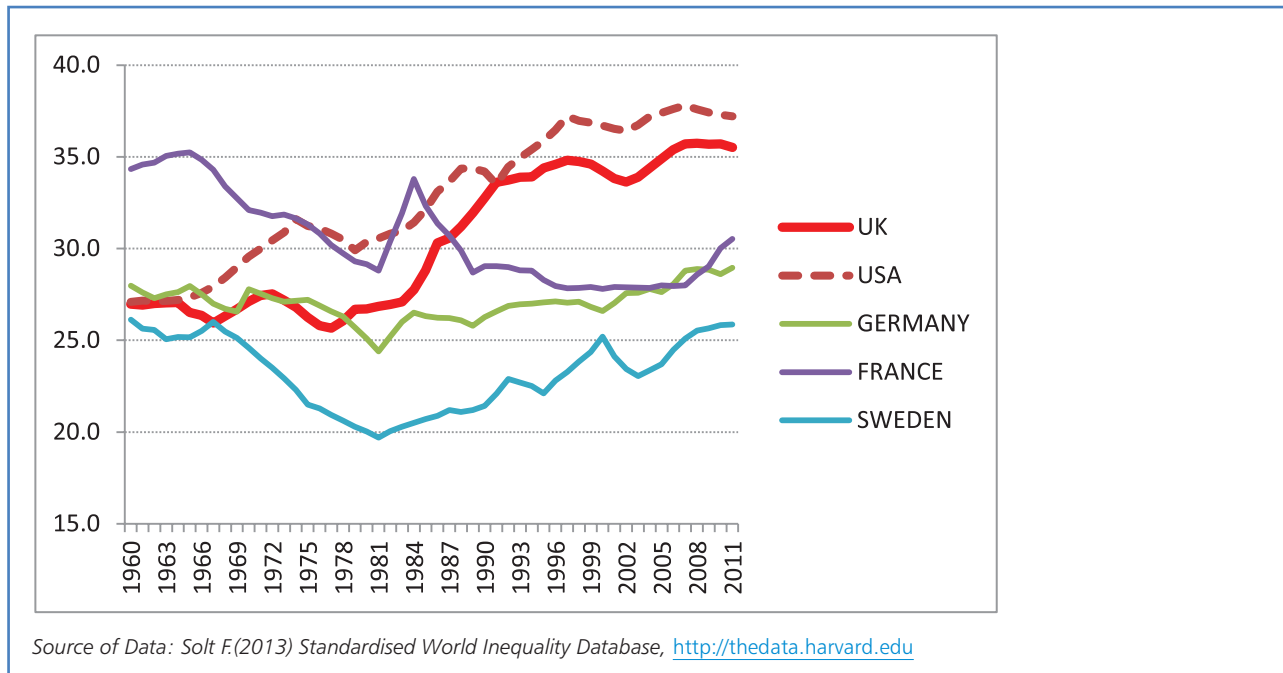
⁴¹ Top marginal rates of income tax in the UK were 98% in 1950. They had been below 10% in 1914 but had risen to 60% during WWI and then to 98% in 1941. They remained at over 90% until 1978 when they fell to 75%, falling again to 60% in 1984 and to 40% in 1988. No further change occurred until 2010 when a new higher rate of 50% was introduced (trimmed to 45% in 2013). Top rates in the USA have had a similar history to the UK having been at 90% until 1965 when they fell to 70% and to 60% in 1983. After briefly falling to 28% in 1988 they have subsequently been in the range 35-40%. Top rates in France and Germany have been more stable than in the UK or USA in the range 50-65% from 1950-2005, since when they have fallen to 40-45%.

⁴² Income taxes and national insurance contributions (including employer's contributions) averaged 20.9% of household incomes between 1950 and 1979 compared with 25.6% between 1980 and 2012.

⁴³ This conclusion is based on gini coefficients for pre-tax income from Solt F. (2013). The gini coefficients were 34.3 in 1960, 35.0 in 1978, 47.8 in 1997 and 47.1 in 2011. It is also seen in the share in total income of the top 1% of earners in the UK which fell from 10% in 1950 to 6% in 1980. The share then rose to 12% by the late 1990s, since when it has risen more slowly and is now at 15%. The post-1980 rise in the share of the top 1% was even faster in the USA but has hardly occurred in France, Germany, Sweden and Japan. For further details see Picketty (2014) p316.

⁴⁴ Ostrey et al (2014)

Chart 9. Inequalities in Post-tax Household Incomes (Gini Coefficients⁴⁵)



It is frequently claimed that higher inequality is associated with faster economic growth but a recent IMF study demonstrates the opposite⁴⁶. The study which examines 153 OECD and less developed countries over the period 1960-2010 concludes that lower inequality in post-tax incomes is *'robustly correlated with faster and more durable growth'* and that *'redistribution appears generally benign in terms of its impact on growth except in extreme cases'*. The IMF authors caution against drawing strong policy conclusions from what is a cross-sectional study but do conclude that *'extreme caution about redistribution – and hence inaction – is likely to be inappropriate'*⁴⁷. This fits with the observation that the Scandinavian countries, with the world's most equal distribution of incomes, have maintained high living standards and good growth for decades. Inequality has become a social problem and one without offsetting economic advantage.

⁴⁵ Gini coefficients are measures of inequality where 0% indicates complete equality (the same income for everyone) and 100% indicates maximum inequality (one person captures all of the income). In approximate terms a value of 50% indicates that half the population receive only 15% of the income, whereas a value of 25% indicates that half of the population receives 30% of the income.

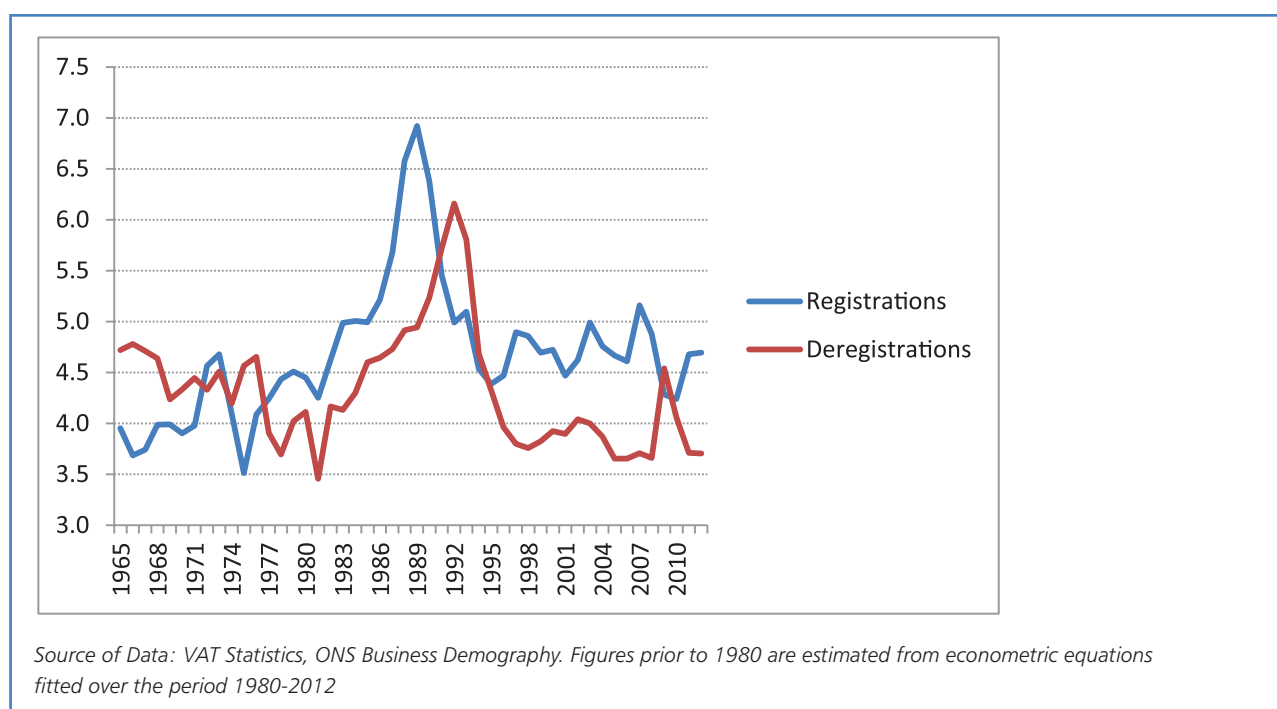
⁴⁶ Ostrey et al (2014) p4

⁴⁷ Ostrey et al (2014) p26

Enterprise

One of the most often repeated claims for liberal market policies is that they would ‘unleash’ enterprise. Since ‘enterprise’ is a rather wide term it is difficult to measure either its extent or impact. For this report we examine one measure of enterprise. This is the number of new firm formations and closures. This has been conventionally measured through the number of businesses registered for value-added tax⁴⁸. The data shows that the number of newly registered firms soared in the late-1980s but fell almost as much in the recession of 1990-1 (chart 10). Since then, formation rates have been more stable in the range 4.5-5 new firms per thousand people of working-age. Our data prior to 1980 is estimated but suggests that formation rates were around 15% lower before 1980 than they have subsequently been. Our econometric work suggests that fluctuations in the formation rate reflect unemployment, house prices (which provides finance and loan collateral for start-ups) and public sector employment (which provides alternative employment) and changes in higher-rate taxation⁴⁹. A reduction in the top rate of income tax of 10 percentage points is estimated to lead to a 3.5% increase in the number of new registrations with the impact slowly declining over time. If higher tax affects larger start-ups more than smaller start-ups, the impact of tax rates may be larger than suggested by the number of start-ups alone.

Chart 10 New Firm Formation and Closure
(Registrations and Deregistrations for VAT per ‘000 people of working age)



The late 1980s peak reflects high unemployment and high house prices, low increases in public sector jobs and the large reductions in the top income tax rates in the 1980s. Unfortunately the late 1980s peak in firm formation was soon followed by a large rise in closures (de-registrations) in the recession of 1991-2. However de-registrations have been much lower than new registrations since the late 1990s leading to an increase in the stock of businesses at a rate of around 30,000 per annum. If we assume that each business was associated with two employees in addition to the self-employed owner, this would lead to the creation of 900,000 extra jobs over the decade 1998-2008. ONS business

⁴⁸ The turnover threshold for registration for value-added tax is regularly updated for inflation but as an approximation usually includes firms with around one employee. Deregistration may not automatically occur when firms’ turnover falls below the current threshold but usually does so if the firm remains below the threshold. The data is available from 1980 but we have econometrically estimated data for earlier years.

⁴⁹ Our equation estimated on annual data over 1980-2011 is: $D(VR) = F(VR(-1), E(-1), UR(-1), DL(HP), D(UR), D(E_PUB)) * LN(TREND), D(TOP)$ where VR is the number of new registrations for VAT, E is the number employed (000s), UR is the unemployment rate (%), HP is the mean house price deflated by the CPI; E_PUB is the number employed in the public sector (000s), TOP is the highest rate of income tax (%). All variables are statistically significant at the 1% level except the time trend (5%) and the change in the unemployment rate D(UR) (10%).

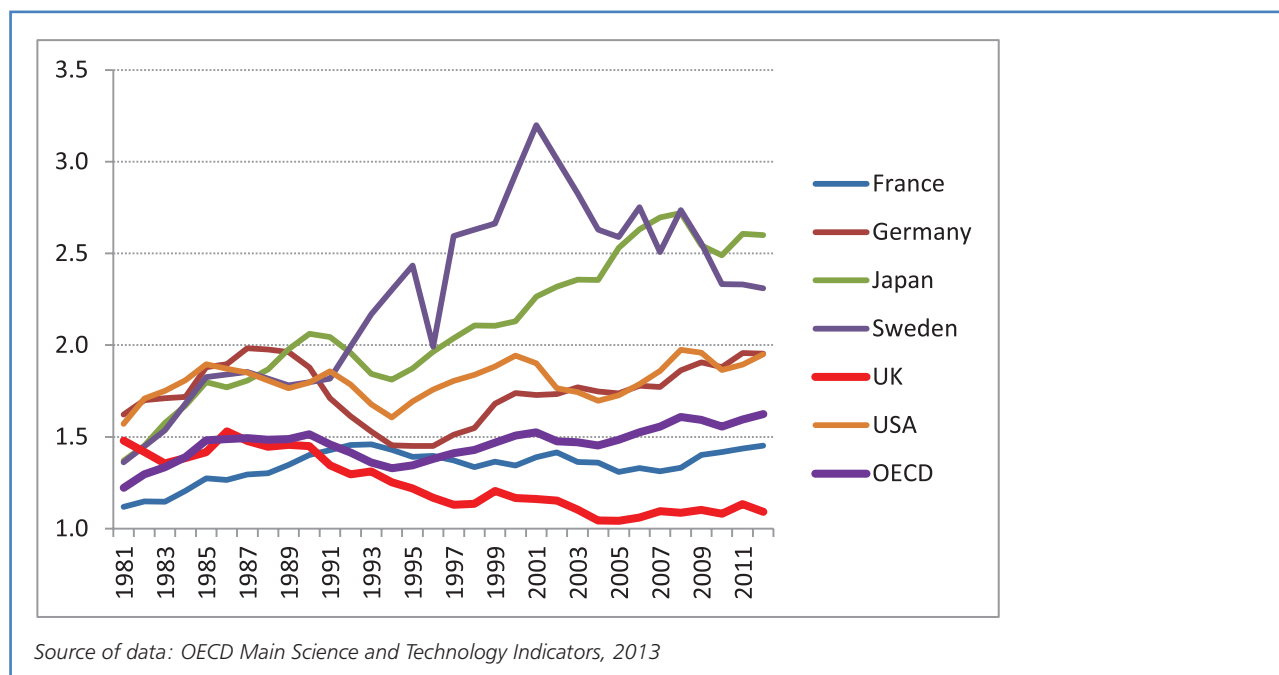
demography data shows that almost half of all businesses are in construction, distribution or hotels and catering, and another 40% are in professional and business services. Demand within each of these sectors has been greatly stimulated by increased household borrowing since 1980 and the surge in new businesses is likely to have reflected this growth of demand. Having said this, the relative ease of starting a business in the UK helps to translate demand into businesses and jobs. For the purposes of this report though, it is not obvious that the ease of starting a business has materially changed between our two periods. Hence our interpretation is that the better performance of business formation and closure after 1980 has reflected the expansion of demand through increased borrowing as well as the generally higher levels of unemployment and house prices during this period, rather than any change in attitudes to enterprise. Tax reductions in the 1980s helped cause a temporary boom in firm formation, but the lack of further tax rate reductions after the late 1980s means that the impact of low tax rates will have been small for much of this period.

R&D and Innovation

It is not easy to define ‘innovation’ with sufficient precision to allow comparison of periods, but some observations can be made. Much innovation, although no means all, is connected with spending on R&D. NESTA estimates that R&D spending constitutes only about 11% of intangible investment in the UK, or a third as much as spending on software and design⁵⁰. Even so, R&D spending is essential to the development of science-based sectors including pharmaceuticals, aerospace and electronics⁵¹. In this context it is notable that R&D spending in the UK has declined since the pre-1980 period relative to GDP, and relative to all major competitors. OECD data shows that the UK fell from having the internationally highest level of R&D relative to GDP in 1981 to 19th place in 2012⁵².

More strikingly the UK was the only OECD country in which recorded R&D spending actually fell as a percentage of GDP over this period. Research shows that it is business sector R&D which has most influence on economic growth⁵³ and the UK’s record is equally poor here (chart 11). The UK level fell from above the OECD average, and

Chart 11 Business Sector R&D as a Percentage of GDP



⁵⁰ National Endowment for Science Technology and Arts (2009) p 12.

⁵¹ Kafourous (2008) estimates that in the UK a doubling of R&D spending is associated with a 7-13% increase in total factor productivity with the largest gains in science-based sectors.

⁵² OECD MSTI database 2013. Bean and Crafts (1995) present data (p 144) showing that total R&D spend relative to GDP was around 40% higher than major European economies in 1964.

⁵³ Congressional Budget Office. R&D and Productivity Growth: A Background Paper June 2005

close to the USA level, down to around half of the levels in the USA, Japan or Germany. Once again the UK has the OECD's only recorded long-term decline in business R&D as a percentage of GDP.

We do not have equivalent data for the decades prior to 1980 but can take the OECD figure for 1981 as an indicator of R&D spending at the end of the 'corporatist' period. The dismal showing since 1980 is likely to be associated with the halving in the importance of manufacturing in the UK over this period⁵⁴ and with the fact that the UK experienced the largest decline in the importance of manufacturing of any OECD country. It could be argued that conventional R&D statistics focus on manufacturing and tend to ignore spending on innovation in service sectors including finance. The period since 1980 has been one of dramatic financial innovation, including the introduction of hedge funds and many varieties of financial derivative. The main claim for the latter has been that they spread risk. However, the financial crisis of 2008 and its prolonged aftermath, have substantially weakened this argument. These innovations did, and still do, bring income into the UK economy, but a full cost-benefit evaluation remains to be done.

In a more general sense it is obvious that the decades since 1979 have witnessed dramatic and beneficial innovation. The most spectacular examples have been the internet, worldwide web, mobile telephones and the social media. Even where these innovations originated in the USA or elsewhere, their adoption in the UK has been rapid and life-changing⁵⁵. It is not obvious how much the impressive list of post-1979 innovations might owe to liberal market policies, although private companies have been responsible for inventing or developing many of them. However Mazzacuto argues that many apparently private sector innovations originated in government-funded research or support⁵⁶. These include a US national Science Foundation grant for the original Google algorithm, and molecular antibodies (the basis for genetic research) which were developed in the UK's MRC laboratory near Cambridge. She also asserts that many of the USA's most innovative young firms were financed not by venture capital but by grants from the USA's Small Business Innovation Research Grant Scheme. Venture capital she argues tends to back low risk activities and that government involvement has been essential in creating many innovative breakthroughs⁵⁷.

It is also not obvious that the record of innovation since 1979 was more dramatic than that of the three previous decades. Bunch and Helleman's *History of Science and Technology* states of the World War II years and the subsequent decades, *'there has been no period of comparably swift technological change since the Industrial Revolution'*⁵⁸. Our conclusion is that scientific innovation has been spectacular throughout the post WW2 period right up to the present day. Some of this innovation originated within the UK and probably proportionately more in the pre-1980 period than subsequently. Certainly it seems that recorded scientific R&D has faded since 1980 and fallen well behind many major OECD economies. Mazzacuto's work suggests that state involvement is essential to the development of major innovative breakthroughs. The *laissez-faire* approach of British governments since 1979 appears to have led to a reduction in the UK's contribution to applied technological innovation. Private firms, including venture capital companies, tend to avoid the most basic and hence most risky innovation, and hence a reliance on the private sector does not seem to promote breakthrough innovation.

⁵⁴ Manufacturing generated 19.2% of total GVA in 1979 but by 2012 this has fallen to 10.8%. Manufacturing employment fell from 24.1% to 8.2% of total employment over the same period.

⁵⁵ Other important innovations in this 'information age' include: personal computing and a vast expansion of software applications including word processing and spreadsheets, interfaces such as computer mice, and touch-screens, laser technology, satellite and optical cable communications, GIS technology, super-computers, ATMs, superconducting materials, nano-technology, solar-power and modern wind-power, applications in genetic engineering, MRI scanners, improved transplant therapy using stems cells, and development of high-speed trains and electric cars.

⁵⁶ Mazzacuto (2011).

⁵⁷ Janeway, (2012)

⁵⁸ Bunch and Helleman (2004) p541. Much of innovation before 1979 was state sponsored. Innovations in the 1945-79 period include jet engine technology and modern airliners, jumbo-jets, super-sonic aircraft, space rocketry, communications satellites and space stations, genetic engineering and the DNA code, new herbicides and pesticides (which with tractors helped cereal yields to double between 1950 and 1980, rising at a much faster rate than after 1979), the spread of radio and television broadcasting, hi-fi recording, micro-wave technology for telecommunications and cooking, co-axial cables, transistors, printed and integrated circuits, memory chips and micro-processors, computer languages, keyboards and floppy disks, modern glass offices, scientific weather forecasting, nuclear reactors, offshore drilling platforms, containerisation, plastics and other synthetic materials, CNC machine tools and the first industrial robots, laser technology and computer-aided design. Medical advances were also huge including: heart and other organ transplants, heart pacemakers, endoscopy and angioplasty, ultrasound scanning, amniocentesis and IVF, artificial skin and cochlear implants, advances in penicillin and other antibiotics, the contraceptive pill, advances in immunology affecting diabetes and arthritis, and CT scanners. At the same time the 1950s and 1960s saw the mass mechanisation of domestic household activity with washing machines, dish-washers and vacuum cleaners, refrigerators and micro-wave ovens, and fixed-line telephones as well as central heating. These innovations assisted greatly in raising female participation in the work-force leading to a large increase in labour supply.

Regulation

Much of the regulation of the pre-1980 'corporatist' era was *dirigiste* by modern standards. Because the economic policy priority of this period was the maintenance of full employment, largely under a fixed exchange-rate regime, wage and price controls were periodically applied to control a growing problem of inflation. Incomes policies were in force in some form in almost every year from the Conservative's pay-pause of 1961 to the final stage of Labour's social contract in 1979⁵⁹ and price controls often accompanied the wage controls especially in the early 1970s. Stringent capital controls had also been present since the 1930s as a means of maintaining a fixed exchange rate. In addition, strong controls on the location of industry (Industrial Development Certificates or IDCs) had been in place since the Distribution of Industry Act of 1948 but were strongly enforced largely in the decade from 1963⁶⁰ as means of combating high unemployment in declining industrial areas. A wide range of other health and safety and labour market regulations had been in place since the Victorian Factory Acts although these were generally less extensive than they have become in recent decades under EU regulation.

The presence of economic controls was an important factor in UK politics throughout the pre-1980 period. The policy of full-employment backed by controls lay at the heart of corporatism. The problems that these policies engendered drove the Heath government temporarily and the Thatcher government more permanently, to reject this whole approach and to move to much freer markets as a means of managing the economy in general and inflation in particular. Many of the heavy-handed regulations of the pre-1980 period were quickly disposed of after 1980. Wage, price and capital controls were abandoned, as were the Industrial Development Certificates (IDCs) which licensed and constrained industrial expansion in the South East and Midlands. Although detailed health and safety and labour market regulation has spread and been standardised across the EU, the UK has been generally considered to be among the most lightly regulated of the OECD economies since the early 1980s. This view is supported by the OECD which measures product and labour market regulation on a 6 point scale. These measures place the UK close second only to the USA on lightness of product market regulation, and third after the USA and Canada on employment protection⁶¹.

However, these objective measures do not tell the whole story, since the stringency of enforcement and associated bureaucracy are also important. In more subjective surveys of businesses the UK emerges as intermediate among a wide range of countries for labour regulation but quite high for business regulation including planning laws. For the UK the Better Regulation Task Force (2005) estimated that⁶² administrative costs of complying with regulations were 3-4% of GDP per annum and other policy costs, for instance the need to install new equipment, were 7-8% of GDP. Estimates are that there were 674 regulatory bodies in the UK in 2005, employing 61,000 people with a budget of £4 billion⁶³. The average two-employee firm spent 6 hours per person a week on government regulation and paperwork. For a 50-employee firm the burden falls to one hour per employee. However even if the direct costs of regulation had doubled over the last ten years the direct impact on productivity growth would only be around 0.15% per annum. It is the indirect impact on investment and innovation decisions which is likely to be more important⁶⁴.

⁵⁹ The exceptions were 1969 when the Wilson government's pay freeze broke down and 1970-71 when the incoming Heath Government tried unsuccessfully to re-introduce liberal markets and to govern without incomes policies.

⁶⁰ IDCs had been used since the early post-war period to redirect industrial development from the south to the north and west of the UK, but were little used after high unemployment became prevalent in all UK regions after 1974.

⁶¹ Nicoletti and Scarpetta (2005)

⁶² Better Regulation Task Force (2005). *Better Regulation. Less is More*. London

⁶³ Hampton P. (2005) *Reducing Administrative Burdens. Effective Inspections and Enforcement*. HM Treasury. Cited in Crafts N (2006) *Op cit*.

⁶⁴ Crafts N (2006) *Regulation and productivity performance*. *Oxford review of Economic Policy*. Vol.22 No. 2 p 192.

The impact of regulation

The main problems of the regulatory approach of the pre-1980 decades were that wage and price controls had only temporary impacts and usually broke down in a wave of recrimination and industrial disputes, most famously in the Winter of Discontent that preceded Mrs Thatcher's first election victory in 1979. The IDC location controls successfully moved an estimated 250,000 manufacturing jobs out of southern England and into Wales, Scotland, Northern Ireland and the North of England but involved large-scale subsidies and were accused of compromising industrial efficiency to attain social goals⁶⁵. An increasingly affluent population chafed at the constraints of exchange controls which did much to limit foreign travel.

The control of inflation lay at the heart of corporatist regulatory policy for wages and prices. Did it succeed? Annual price inflation had averaged less than one percentage point above the US level between 1950 and 1970 and could be regarded as reasonable. However in the period 1971-77 inflation averaged seven percentage points above the US level and peaked at over 25% per annum or 17 points above the USA. After 1980, with more regulated trades unions, fewer nationalised industries and higher unemployment, the average was only 0.3% above the US level and in several years was below it. The important point is that none of this appears to have had much influence on investment or economic growth. Company investment remained on trend through the 1970s and as we have seen by 1979 real GDP was close to the long-term trend.

Persistent squeezes on prices led to falling profitability. Investment was however maintained even though business profitability fell during the 1960s and for much of the 1970s. Both pre-tax and post-tax return on capital fell by a third in the era of prices and incomes policies between 1960 and 1970. Pre-tax returns then plummeted to half of the 1960 level in 1975 as exceptionally high inflation played havoc with stock appreciation. Post-tax returns were however cushioned to a great extent by free depreciation on fixed investment and the introduction of tax relief on stock appreciation,⁶⁶ and had recovered fully by the end of the 1970s. Although post-tax returns on investment have fluctuated since 1979 they were on average one sixth higher in the three post-79 decades than over the 1960s and 1970s. There was however no similar advantage in real business investment which remained the same on average in the post-1979 decades as it had been in the 1960s and 1970s.

As argued above, much detailed sectoral regulation remained and was expanded after 1979 varying between sectors and activities. Even though regulation is frequently criticised by business organisations, it is not clear that heavy regulation has the large negative effects that its critics claim. It is true that most major studies have found that light regulation is associated with higher productivity. An OECD study in 2003 concluded that if European countries adopted the light regulatory stance of the USA, productivity would rise by 1.1 percentage points over 10 years⁶⁷. An IMF study found that a one standard deviation decrease in the OECD's regulation measures raised real GDP per head over four years by 7% for product market deregulation (especially tariffs) and 1.9% for labour market deregulation.

Other studies have shown that the main productivity gains from lower regulation were achieved through higher investment, particularly in utilities, transport and communications and higher entry of new firms. Regulation appears to have played a significant role in the difference between the USA and Europe in productivity growth in the late 1990s when US productivity surged, particularly in retailing. The ability of USA sectors to take full advantage of the IT revolution is viewed as being related to the light regulation regime. Nicoletta and Scarpetta (2005) found that countries with stronger product market regulation had a lower contribution to productivity growth from ICT-using services⁶⁸.

⁶⁵ Moore B and Rhodes J (1976)

⁶⁶ Coutts K (1978) p 58.

⁶⁷ Nicoletti G and Scarpetta S (2003) Regulation, Productivity and Growth. Economic Policy 36

⁶⁸ Nicoletti G and Scarpetta S (2005) Regulation and economic performance. Product market reforms and productivity in the OECD. OECD Economics Department Working Paper no.460

A number of studies that have examined the impact of employment legislation on productivity at the level of the whole economy have however generally found that the impact is small or insignificant⁶⁹. A one point difference on the 6-point OECD scale of employment regulation would lead to an increase in total factor productivity of around 0.15% per annum⁷⁰. A one point difference is approximately the gap between the USA and UK or half the gap between the USA and the EU. Most countries have done little to reform dismissal rules for full-time employees. Many have instead deregulated temporary contracts, but this study suggests that such changes will not raise the growth of productivity.

An implication of this work is that stricter dismissal rules will affect sectors in which rapid technological change occurs. Requirements for reallocation or downsizing of staff associated with technological change will increase the costs of litigation for these sectors. Countries where regulations are more stringent will therefore tend to specialise in industries in which the rate of technological change is sluggish. This may account for the observation that while Germany mainly specialises in incremental innovation, the UK and USA specialise in emerging radically new technologies⁷¹. High levels of job protection legislation may also discourage firms from experimenting with new technologies and may reduce worker effort due to a reduced threat of dismissal.

Any consideration of the changes in business regulation in the post-1979 period is clearly complex. The price and incomes controls of the pre-1980 period did not work well and arguably had a limited impact on inflation. Such controls would in any case have become redundant as global inflation came down over the 1980s and 1990s. Development controls did help regions with high unemployment but were in abeyance by 1979. Although controls were abandoned, a regime of grant-based incentives has continued up to the present, albeit one regulated through EU state aids rules. The huge success of a low business tax regime in attracting multi-national firms to the Republic of Ireland shows that regional attraction measures can be very effective.

The growth of new regulations over recent decades, many EU-wide, in health and safety and other areas are part and parcel of a higher standard of living. Countries with more controls, including Germany, Austria and Sweden, do not appear to suffer a significant overall productivity penalty. The OECD studies cited above suggest that it is free trade that has most impact. We argue below that most of the tariff reductions on trade in goods had already been introduced by 1979. Nevertheless it remains true that, on average, the post 1979 period experienced much freer trade than the preceding decades. Other regulations, including labour market rules, appear to have had a limited impact. UK attempts to derogate from EU labour regulations are likely to have done little to increase economic growth or productivity over recent decades. We conclude that the regulatory regime before 1980 had little negative impact, and the fact that the UK has had a somewhat lighter regulatory regime than other EU countries since has done little to increase economic growth or productivity.

Privatisation

The most eye-catching of the Thatcherite liberalisation policies was the privatisation of previously state-owned businesses. In 1979 the nationalised industries accounted for 10% of GDP and 8% of employment and dominated the transport, communications, energy, water, steel and shipbuilding sectors⁷². By the late 1990s after 50 large enterprises had been privatised this had been reduced to 3% of GDP and a little over 1% of employment. The whole of transport, telecommunications, energy, steel and what little was left of shipbuilding were by then in the private sector. The policy of privatisation has been copied around the world and was accepted in the UK by the

⁶⁹ This may be because the impact varies considerably between sectors. A recent extensive study (Basanini et al,2008) of the impact of labour market regulation on productivity takes account of this possibility and also examines different types of legislation 1982-2003. The study examines the impact of three types of legislation and finds that: dismissal regulations depress total factor productivity in sectors where layoffs are more likely; the main impact of layoff restrictions is on efficiency improvements and technological change; restrictions on the use of temporary labour have if anything a positive impact on productivity; there is no evidence that dismissal regulations affect the adoption of better capital equipment.

⁷⁰ Basanini A, Nunziata L, and Venn D (2008)

⁷¹ Hall P and Soskice D (2001) *Varieties of Capitalism*. OUP

⁷² Parker D (2012) *The Official History of Privatisation*. Vol 2 page 504.

Labour administrations of 1997-2010. Privatisation has also continued in the UK although necessarily on a more limited scale, and in 2013 the Royal Mail postal service was privatised. In addition many other public services have been contracted out or partly taken over by private sector providers in sectors such as health, prisons and the probation service. The proceeds of privatisation up to 1997 were £68 billion at current prices or £113 billion at 2010 prices. The annual proceeds averaged just less than 2% of government expenditure or 0.7% of GDP. Against this £29 billion of debt (at 2010 prices) was written off in order to privatise the companies successfully.

Parker (2012) regards the privatisation programme as being driven by a combination of ideological commitment to private ownership, a need for greater competition, extension of share ownership (popular capitalism), reducing state borrowing and limiting the power of trade unions⁷³. Some of these aims have been achieved but by no means all. Millions of individuals bought shares in the privatised firms, and the proportion of the adult population owning shares rose from 7% in 1979 to 22% in 1997⁷⁴. However, there has been a long-term decline in the private investor's holdings of listed shares. Private investors owned 54% of listed shares in 1964 and 28.2% in 1981 but only 15.3% in 1999 and 10.4% in 2010⁷⁵.

Competition was increased only partially and fitfully. In sectors which were already open to strong competition a change of ownership made little difference. A flurry of new suppliers immediately followed privatisation in some sectors, especially buses and railways, but was followed by later consolidation and in some cases re-nationalisation (Welsh Water, Railtrack and East Coast Rail)⁷⁶. The Competition Commission complained in 2011 of a lack of competition in the, by then, highly concentrated bus industry which has been subject to over 200 allegations of predatory pricing.⁷⁷ Several key sectors, including electricity, gas, water and telecoms required specialised regulators to determine prices. Although subject to much criticism, the general conclusion was that the regulators were usually able to protect consumers, and to promote investment and cost savings and were more successful than the 'defective' regulation under nationalisation.⁷⁸ The record was however mixed. Some privatisations created local monopolies. Privatised airports for instance face limited local competition. As they derive most of their revenues from car parking and retail rents, accessibility to airports has become restricted (partly under the guise of security) and travellers' walking times within many terminals have been maximised to increase exposure to shops.

The impact on prices was greatest in sectors in which competition had been limited by licencing especially in the utilities and land transport. Electricity, gas and telecoms prices fell in real terms between privatisation and 1997, but water and rail prices rose substantially in real terms with UK rail prices becoming the highest in Europe despite the fact that half of rail revenues still come from public subsidies. The National Audit office reported in 2002 that prices were generally lower and standards of service higher, with regulated companies able to invest heavily and cut costs⁷⁹ Huge investments were made by BT and the water companies, and rail passenger numbers reversed the previous decline to increase faster than anywhere in Europe although road congestion probably played some role in this. Some of this would in Parker's view have happened anyway. International energy prices fell over the 1990s; technological changes led to falling telecoms charges and to ways of overcoming previous shortages of supply. Large investments would have needed to be made by nationalised companies just as much as by private firms⁸⁰.

The impact of privatisation on industrial efficiency has been judged in most studies to have been limited. This was surprising because privatisation improved corporate governance, and freed companies from political interference and from Treasury financial controls which were likely to have constrained investment. Commercial objectives including profitability became more dominant and firms improved efficiency in marketing, innovation and finance, and were

⁷³ Parker D (2012) Op. Cit. page 505.

⁷⁴ Parker D (2012) Op. Cit. page 520

⁷⁵ Parker D (2012) Op. Cit. page 520

⁷⁶ East Coast Rail has subsequently been re-privatised

⁷⁷ Parker D (2012) Op. Cit. page 517

⁷⁸ Bortolotti and Sinalco (2004) pp 5-12

⁷⁹ National Audit Office (2002)

⁸⁰ Parker D (2012) Op. Cit. page 516

able to diversify into overseas markets, becoming large multinational companies. Even so, studies across privatised companies have concluded that either there were no long run effects on UK output or that it was tough regulation rather than privatisation per se that gave rise to welfare gains for consumers⁸¹. A NIESR study of international productivity found some catch up by the mid-1990s in privatised sectors from the UK's low levels in 1979, but some of this occurred prior to privatisation⁸². Studies of individual privatisations show mixed results. Only some detected clear performance gains and a number confirmed that the main gains occurred in the run up to privatisation. Green and Haskel concluded that there is '*very little evidence that the transfer of a public undertaking to a private one raises efficiency*'⁸³. In general however efficiency gains were, as expected, more likely when accompanied by competitive markets or effective regulation.

Pre-privatisation efficiency gains and effective regulation might not have occurred without privatisation but could have done so with sufficient political will. But this was a lot to ask at a time when nationalised industries employed large numbers of voters, and when trades unions were major funders of the Labour Party. Parker (2012) concludes that '*the strident claims of ministers during the 1980s and 1990s about the benefits of privatisation were exaggerated and the true picture is more of a mixed one*'⁸⁴. It should also be borne in mind again that any efficiency gains at company or sector level only lead to macro-economic gains if redundant labour is re-employed in productive activity. The persistently high unemployment of the 1980s and 1990s suggests that there was no full re-employment and fits our observation above that, far from improving, the trend growth in GDP per hour deteriorated substantially from the early 1980s.

It is true that the retreat of state involvement in the UK has avoided repetitions of some of the commercial failures of the corporate age including nuclear power (AGRs), Concorde and launch rockets. However other countries, and notably France, persevered longer with these technologies and now have more successful firms in these areas than does the UK. Nor were government commercial failures confined to the corporate period. Commercial blunders were equally possible in a regime of liberal markets, as shown by the mis-selling scandal over privatising pension provision as personal pensions in 1985, and the attempt to privatise vocational training as individual learning accounts in 2000⁸⁵.

Regional Balance

Crucially for economic growth, business investment grew more slowly after 1979 and from 1990 ceased to grow at all. In both periods the UK had the lowest level of business investment of any advanced economy. This was accompanied by much less favourable performance of manufacturing output in the later period. Manufacturing output grew rapidly until 1973 but has expanded little since then. The UK now has proportionately the smallest manufacturing sector of any OECD country. Regional inequalities in per capita GDP have also widened since 1979 reflecting a collapse in manufacturing employment in much of the north and midlands. As a result there are now large tax revenue flows out of the Greater South East to support public expenditure in other regions (the current outflow of revenues is estimated to be 7% of GDP of the Greater SE⁸⁶). The reduction in international trade barriers, a key plank of liberalisation, has played an important role in the declining importance of manufacturing through easing the path of firms to relocate production in lower cost countries. This has also increased markets for UK-based service exports but these are heavily concentrated in London and the South East.

⁸¹ Bacciocchi, Florio and Grasseni (2005) and Florio (2004)

⁸² O'Mahony M (1999)

⁸³ Green and Haskel (2001) p74

⁸⁴ Parker D (2012) Op. Cit. page 525.

⁸⁵ King A and Crewe I (2013) chapters 5 and 9

⁸⁶ Oxford Economics (2010) Regional Winners and Losers in UK Public Finances. Oxford Economics Ltd, Economic Outlook. The Greater South East consists of London and the South east and Eastern regions.

THE UK'S RELATIVE PERFORMANCE

We conclude from the previous sections that the evidence for an absolute improvement in UK economic performance after 1979 is mixed. Inflation was lower and industrial disputes were reduced in number and impact. However the level of GDP per head was generally lower than would have been the case had the pre-1979 trend continued and is now much lower. In addition the growth rate of productivity clearly deteriorated after the early 1980s. Crafts (2011) argues that competitive conditions in British product markets were strengthened but fails to explain why reforms from the 1970s, which abolished or weakened constraints to competitiveness, failed to raise the trend growth rate for UK productivity (GDP per hour) or for per capita GDP⁸⁷. Much of the support for the liberal market reforms comes from a belief that the UK's economic performance improved relative to Western European competitors (although not relative to the USA) and it is to this issue that we now turn⁸⁸.

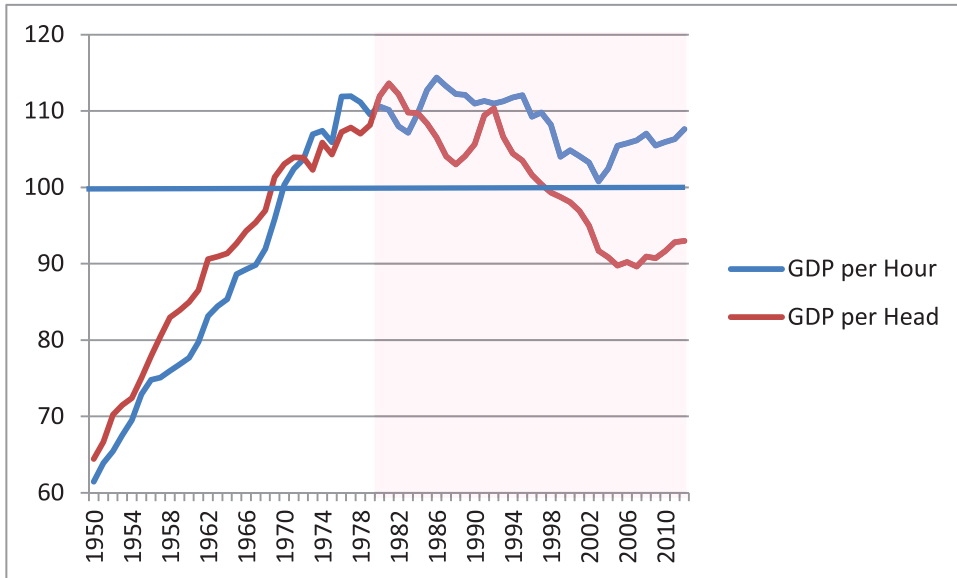
GDP per Head and Productivity

Other than the support of what we regard as inappropriate theories currently dominant in much of university economics, it has been the UK's improved performance *relative* to major European competitors that has underpinned the consensus around the economic benefits of market liberalisation. In the immediate post-war years, levels of productivity and per capita GDP in the UK were well above those of most of Western Europe. The advantage had disappeared by 1979 as productivity in other EU countries improved faster than in the UK, but after 1979 the UK matched or bettered growth in per capita GDP in the original EEC members (chart 12). There is however little evidence, as we have seen, that this improvement in relative growth was caused by any improvement in the actual growth of UK GDP. Rather, it was caused by a dramatic slowing in the growth of continental EU economies from the early 1970s onwards. GDP in constant prices in these economies grew rapidly at an annual rate of 4.5% per annum from 1950-73, slowing to 2.5% per annum in 1973-9 but the only 1.6% per annum from 1979-2007 (chart 13).

⁸⁷ Crafts (2011) also presents no real explanation for the marked slowdown in EU productivity growth from the 1970s despite the growing international movement towards liberalisation in the form of reduced tariffs and freer capital flows. However individual chapters on European countries in Bean and Crafts (1995) did address this issue.

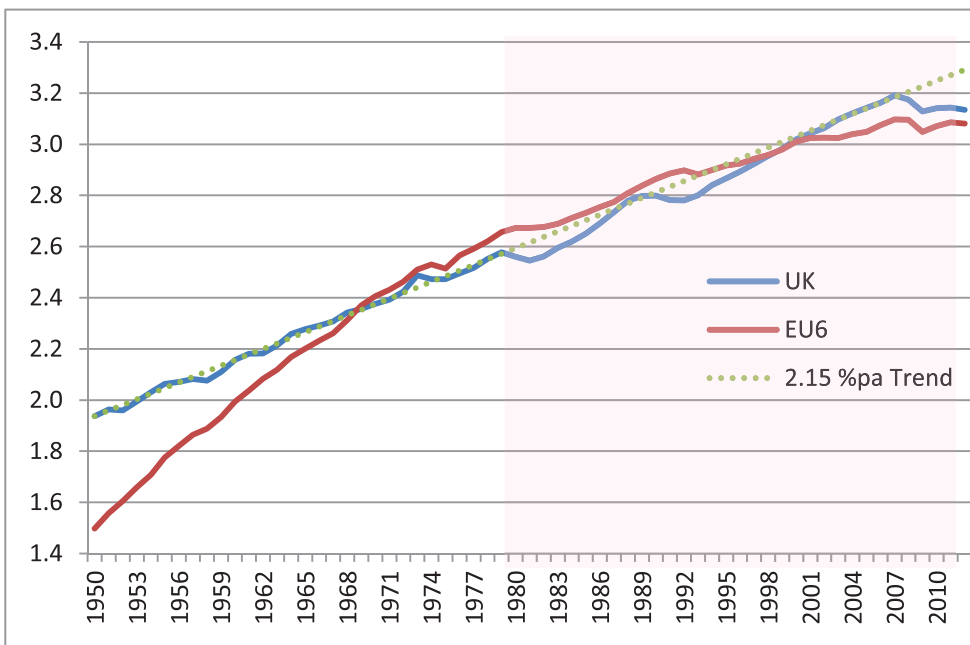
⁸⁸ It is now generally forgotten that there was initially as much concern about the UK falling behind the USSR as behind the EEC. (Kynaston (2014) chapter 6.)

Chart 12 Productivity: EU6 as a percent of the UK



Sources of data: Conference Board Total economy database Data in US\$ at 1990ppp. The EU6 consists of Belgium, France, West Germany, Italy, Luxemburg and the Netherlands

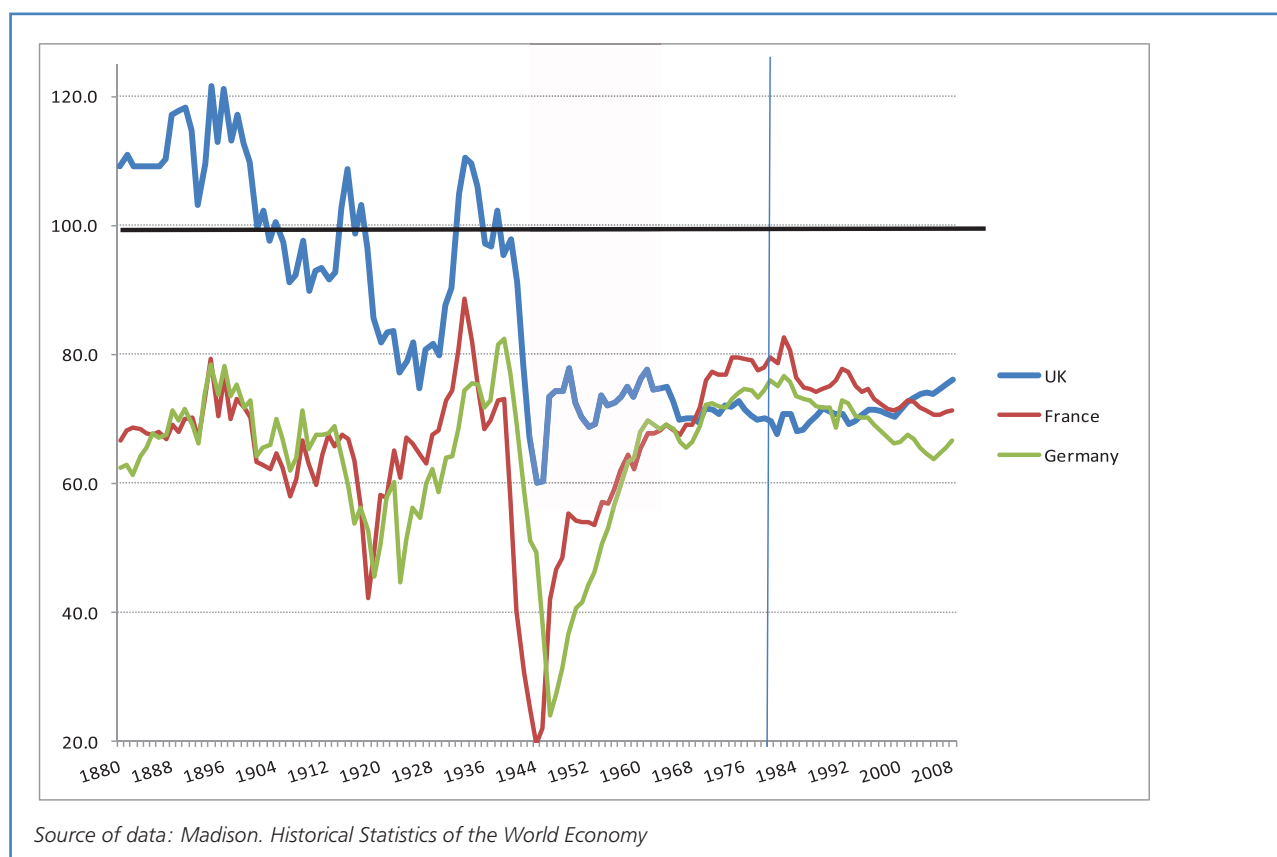
Chart 13: GDP per Capita in US\$ ppp (log scale)



Sources of data: Conference Board Total Economy Database. Note: (W Germany's GDP per Head is estimated after 1989 by assuming the same growth rate as for Germany as a whole. Crafts (2011) gives a figure for 2007 based on German national sources which is close to the one estimated here.

The war-affected economies of Western Europe experienced rapid post-war recoveries with rapid catch-up to the international technology frontier aided by political stability and expanding free-trade within the EU and under GATT trade rules⁸⁹. Madison's historical data on economic productivity levels (GDP per head) suggests that the recovery of France and Germany from the low war-ravished levels of 1945 continued rapidly until around 1960, and more sedately until the early 1970s when they regained the levels relative to the USA previously experienced in the interwar and pre-WW1 periods (chart 14). The UK gained less from post-war reconstruction, having suffered much less wartime damage, and was initially much less far behind the technology frontier⁹⁰. Growth in per capita GDP in the UK was more typical of an economy closer to the technology frontier both before and after the 1970s, even though the UK has never managed to close the whole of the wide productivity gap with the US that opened up during and after WW2. After 1970 there was little further European convergence towards US levels of per capita GDP⁹¹. This interpretation suggests that the panic around economic decline that swept 1970s Britain was unwarranted and that already by the late 1970s the UK was matching productivity growth in the European Economic Community (EEC). To the extent that the decision to join the EEC in 1973 was taken to gain access to fast-growing markets, this decision was based on a false premise.

Chart 14 GDP per Head (% of USA)



As we noted above, GDP per head is not a direct measure of productivity. It is influenced by labour productivity (GDP per hour worked) but also determined by other factors including the proportion of the population working and the number of hours worked per employee. The general rule for productivity in a globalised world economy is

⁸⁹ Abramovitz M and David P A (1996) The authors suggested that the post-war catch up proceeded better than in the inter-war period because incentive structures were better and because US technology became more cost effective in European circumstances.

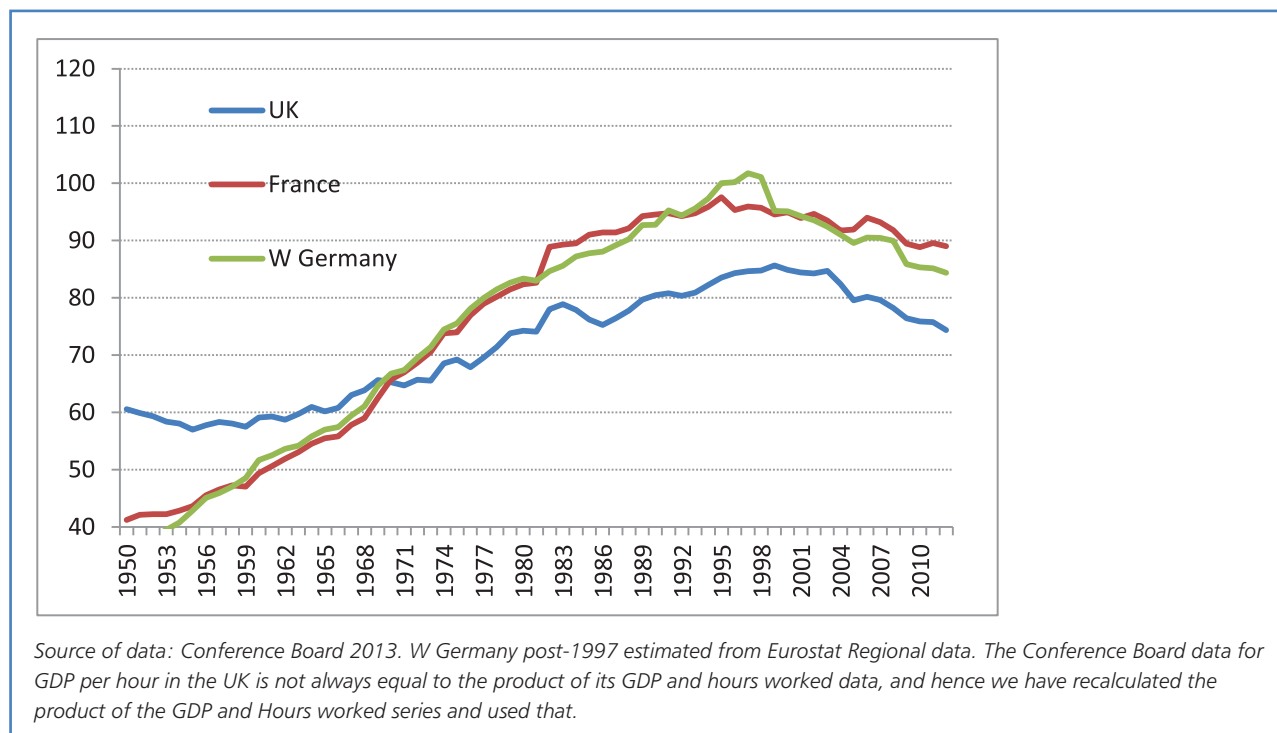
⁹⁰ Like the USA the UK also gained from war-related R&D and production in industries including aircraft, telecommunications and radar, and chemicals. See Barnett C (1986) *The Audit of War* e.g. page 146 showing a tenfold increase in aircraft production between 1938 and 1943.

⁹¹ In his Milliman lecture R E Lucas (2011) argues that the failure of EU economies to fully converge on US levels of GDP per head depends on the greater regulation of markets in the EU. This appears to confuse productivity (GDP per hour worked) with per capita GDP. The main reason for higher US levels of per capita GDP lies in the longer hours worked in the US. The USA is unusual among advanced economies in not reducing its working time as it became richer. This may be a consequence of a much less regulated labour market.

that countries tend to catch up with the technologically most advanced economy through inward investment, competition and the transfer of ideas.

Differences in the rates of European convergence to the technology frontier, as represented by the USA, are shown in chart 15. In France and Germany labour productivity (GDP per hour worked) converged more rapidly towards the US level over the post-war decades than was the case in the UK. Consistent rapid convergence occurred until 1980 when France and West Germany reached 90% of the US level of productivity but convergence slowed after that and went into reverse from the mid-1990s. Note that the 1980 date at which the productivity trend slowed for France and West Germany was later than for GDP per head. The 1973 turning point for *GDP per head* was influenced by declining employment rates in France and Germany.

Chart 15. Productivity Convergence: GDP (PPP) per Hour Worked (USA=100)



There was clearly something deficient in the UK performance, since the UK's rate of convergence was under half the rates achieved by France or Germany. The particularly poor UK performance in the 1950s is in line with Barnett's charge that in the immediate post-war years the UK prioritised spending on welfare and defence and chronically neglected investment in industry and is thoroughly analysed in Bean and Crafts (1995)⁹². Productivity growth picked up from the early 1960s when competition policy had been strengthened (even if it was weakly applied), and governments became concerned about slow growth and moved towards indicative planning through the setting up of the National Economic Development Council (NEDC) in 1962⁹³. The important point in relation to economic liberalisation, however, is that the UK convergence trend of 1969-79 did not accelerate after 1979. Indeed, a slower convergence trend continued until the mid-1990s when it stalled at 85% of the US level and began to fall further behind the USA. Indeed almost two-thirds of the post-war catch-up in productivity occurred prior to 1980 and relative to the USA the UK is currently much where it was in 1979.

French and West German productivity converged to close to the US level by the early 1990s. From this date French and German productivity slowed down to below the long-term US rate of just less than 2% pa. Because the slower

⁹² Barnett C (1995) See for instance chapter 8 See Annex A for more detail on the problems of post-war industry. We agree with Bean and Crafts (1995) who argue (p142) that the post-war focus on welfare spending was unavoidable.

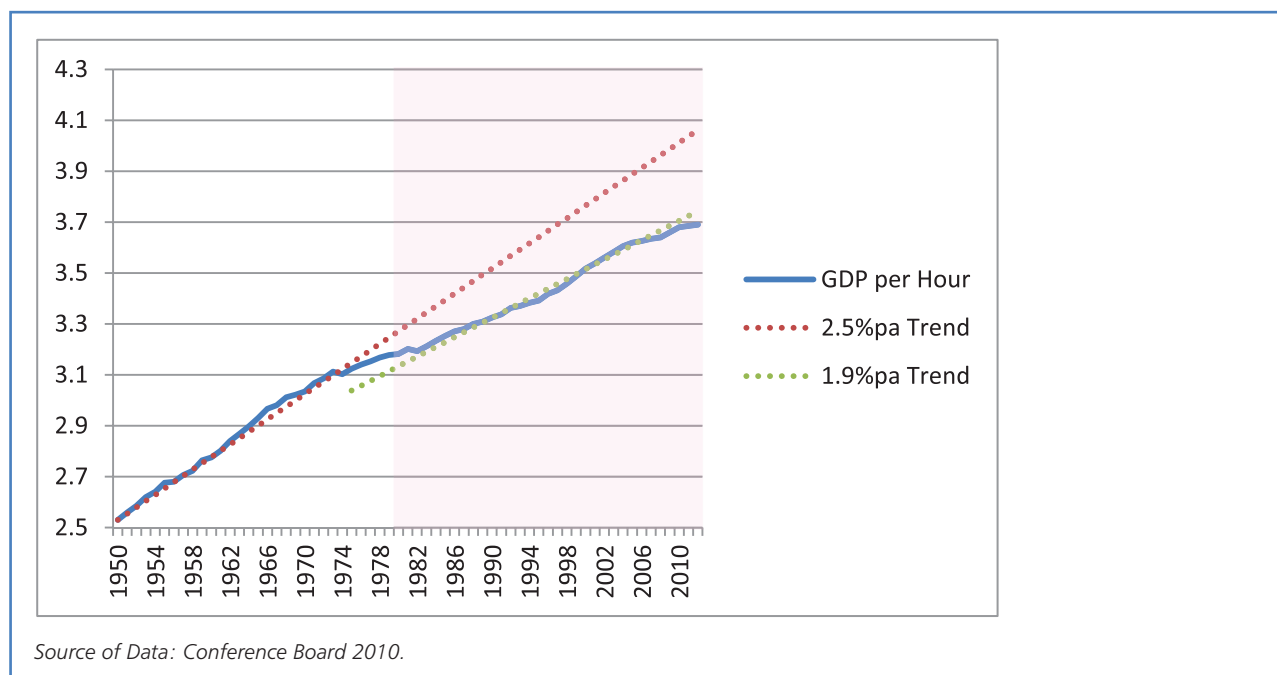
⁹³ The NEDC was abolished by the Conservative Government in 1980.

UK convergence continued for a few further years the gap between the UK and France or Germany narrowed a little after 1990. UK productivity levels have however remained well below those of France and the US (and West Germany). UK productivity also remained below the level that would have prevailed if the pre-1979 convergence trend had continued right up to the present. There is thus little in this record to suggest that free market reforms improved UK performance. Productivity in the UK remains well below that of major competitors and is not converging.

Productivity has grown a little more slowly in all of the major European economies since the mid-1990s. The US productivity spurt of the late 1990s, due largely to Walmart and other large US retailers (and to financial dealers), was not reflected in Europe where higher population densities mean that planning regulations constrain the development of very large-scale retail operations. In the current recession US productivity growth has again outpaced that in Europe, as US employment fell more rapidly than in Europe.

In the USA itself there has also been little evidence that deregulation and other liberal market policies since 1980 have boosted productivity. In the period up to 1970, with fixed exchange rates, US productivity grew at 2.5% pa, Since the Reagan era the trend rate has dropped below 2%, with only minor and temporary changes including the productivity spurt of the late 1990s (chart 16). The favourable performance of US productivity relative to Europe has happened even though productivity growth in the USA has been below its post-1983 trend since 2006 (chart 16).

Chart 16 GDP per Hour in the USA (log scale)



The argument that liberal market policies were responsible for the UK's improved productivity performance *relative* to other EU economies amounts to a case that these policies enabled the UK to avoid the slowdown in productivity growth that occurred in France, West Germany and other EU economies after 1980. This argument seems implausible because by 1980 France and Germany were much closer than the UK to the US technology frontier (chart 15). In fact it took another 18 years for the UK to slowly reach the productivity position relative to the USA which France and West Germany had already achieved by 1980. Indeed UK productivity has never been closer to the USA level than France and West Germany had achieved by 1980. This interpretation is supported by the calculations of Crafts and Toniolo which indicate that most of the European productivity slowdown after 1973 was due to narrower scope for convergence to the US technological frontier⁹⁴. It is true that per capita GDP grew faster

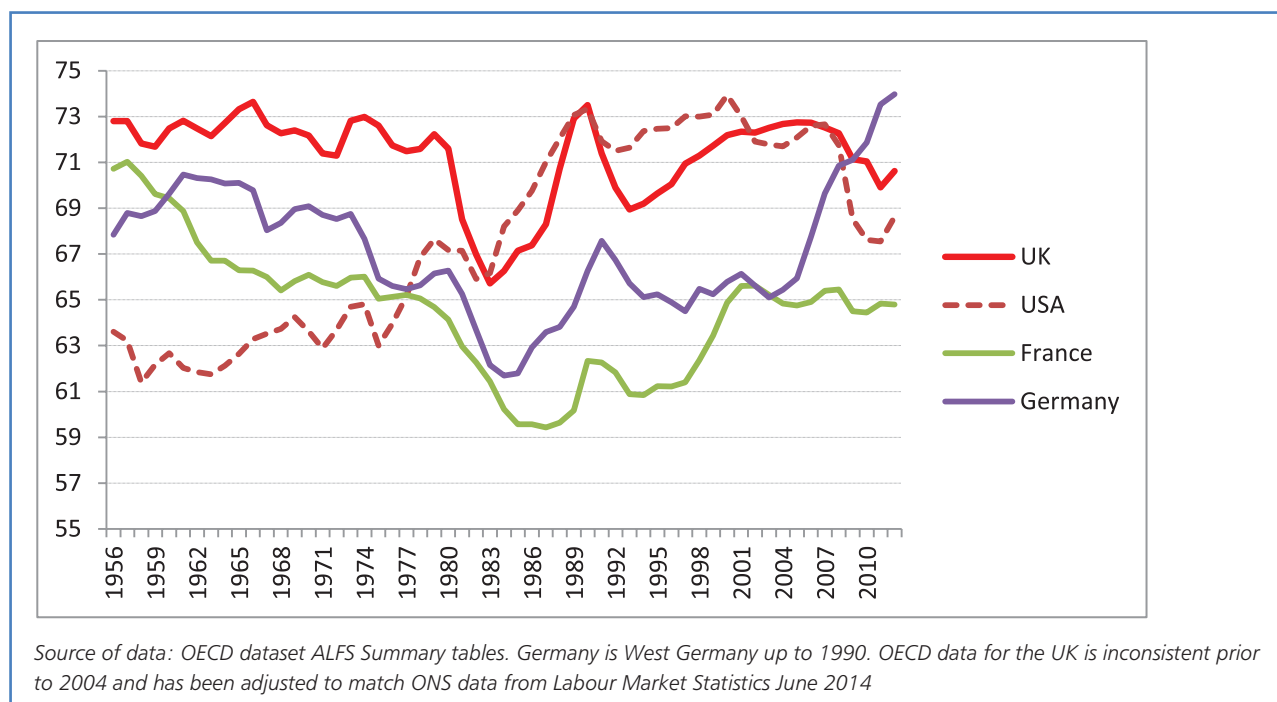
⁹⁴ Crafts and Toniolo (1996) page 18.

in the UK compared to France, West Germany and the EU6 after 1980, but as shown above this was due to a higher employment rate and longer hours of work rather than higher productivity. The need for longer hours and for both partners in a couple to work may be regarded as influenced by low productivity and low wages and in this sense not wholly voluntary.

Employment Rates and Hours Worked

While productivity in the UK remains below US, French and West German levels, other components of per capita GDP bring the UK closer to France and Germany, but not the USA. The UK employment rate has always been relatively high, while that in France and Germany has always been lower (chart 17). There is evidence that low productivity workers are disproportionately excluded from employment by institutional arrangements in countries with low employment rates⁹⁵.

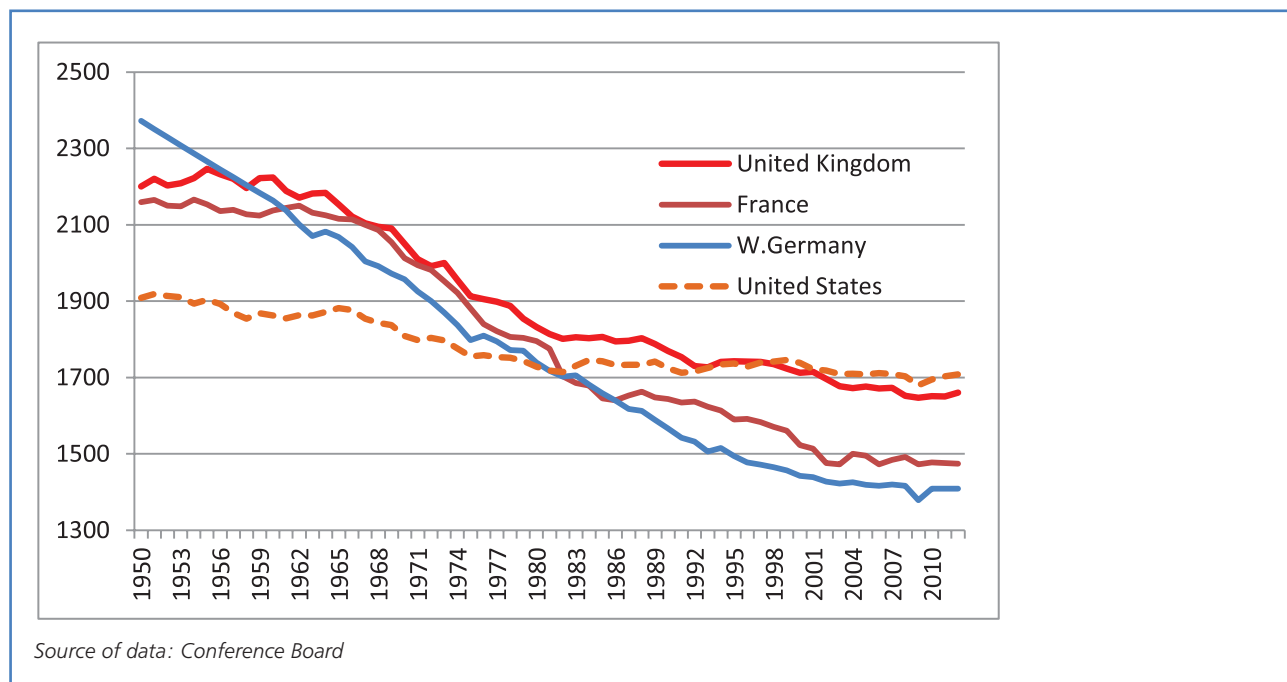
Chart 17 Employment Rates. Persons Employed as % of Population Aged 15-64



⁹⁵ Crafts (2006) op cit p12. W Lewis makes the same point for France in the McKinsey report on Productivity (W.W.Lewis,2005, The Power of Productivity. Wealth, Poverty and the Threat to Global Stability).

The number of hours worked by employees tends to fall as countries become richer. This has happened in all western economies, but occurred much more slowly in the USA than in Western Europe (chart 18). Until 1979 the UK behaved like a European economy with falling working hours per employee, but after 1979 the slower decline in hours worked was much closer to the USA. The longer hours culture in the UK was led by the financial sector and represents one aspect of the Americanisation of the UK economy in the Thatcher era. In the USA the decline in the number of hours worked was at an even slower pace after 1980 and the USA now works longer hours than any western economy. Since US employees used to have shorter hours than Europeans until the 1980s, the current long hours are unlikely to represent a cultural preference for income over leisure. An important reason is the low number of days of annual holiday in the US, and one reason for this is likely to be job insecurity. Whatever the reason, the longer hours worked in the USA and the UK serve to raise the level of per capita GDP relative to those in the rest of the EU. In the UK this goes some way to compensate for low levels of labour productivity.

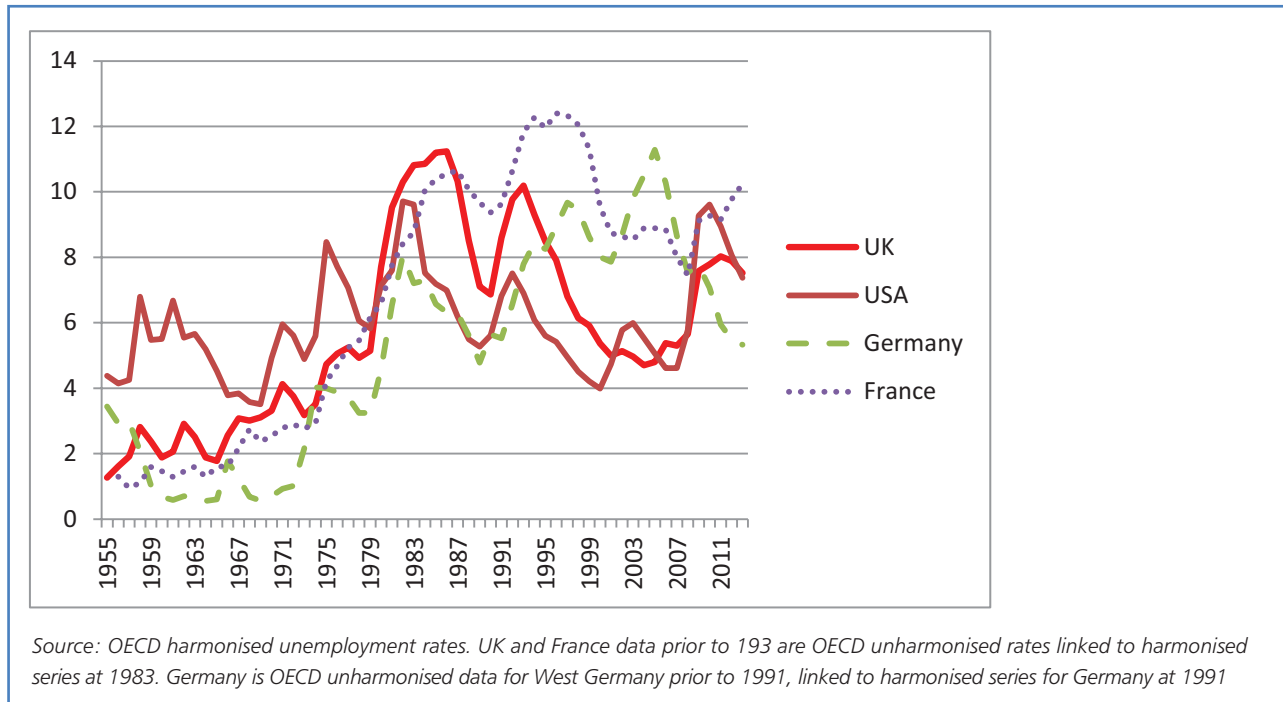
Chart 18 Annual Hours Worked per Employee per annum



Unemployment

As shown earlier UK unemployment rates were generally much higher after 1980 than in earlier decades. The same was not true of the USA where unemployment was only temporarily higher after 1980 (chart 19). In West Germany unemployment remained higher after 1980 than previously but the contrast with earlier years was less than for the UK. German unemployment rates rose above the UK after unification in 1991 but have subsequently dropped to a level well below the UK level. Unemployment in France was similar to that in the UK before 1980 but has been consistently higher since the mid-1980s. The high unemployment rates in France in recent decades are viewed as a consequence of labour market regulations which make dismissal difficult and hence deter employers from employing people on short-term or casual contracts, especially the young⁹⁶.

Chart 19 Unemployment Rates (% of civilian labour force)



Comparisons between the UK and France or Germany are clouded by differences in the number of recipients of sickness or disability benefits. In the UK the estimates that 3% of the labour force on such benefits can be considered to be hidden unemployed has already been noted. In France and Germany the number of the unemployed 'hidden' with disability benefits is estimated to be much lower. OECD statistics on disability benefit recipients show that proportionately 75% more recipients were present in the UK compared with France or Germany⁹⁷. If the difference between the UK and France or Germany in the level of hidden unemployment was equal to the difference between UK and French or German recipient rates (i.e. close to 3% of the labour force) then this could account for most of the gap in unemployment rates between the UK and France or Germany since the mid-1980s. The USA also had a proportion of its working-age population in receipt of disability benefits under half that in the UK for the entire period since 1980. Research covering recent years suggests that disability benefits in the USA are not being used as a replacement for unemployment benefits⁹⁸.

Our conclusion is that it is difficult to draw lessons on the impact of UK liberal policies on unemployment from international data due to the problem of hidden unemployment and other differences in benefits. It is clear that

⁹⁶ W. W. Lewis (2005)

⁹⁷ <http://www.oecd.org/employment/emp/42699911.pdf> and <http://www.oecd.org/unitedkingdom/46462479.pdf> Several countries have higher proportions of their working-age population of disability benefits than the UK. These are mainly in Scandinavia and the Netherlands.

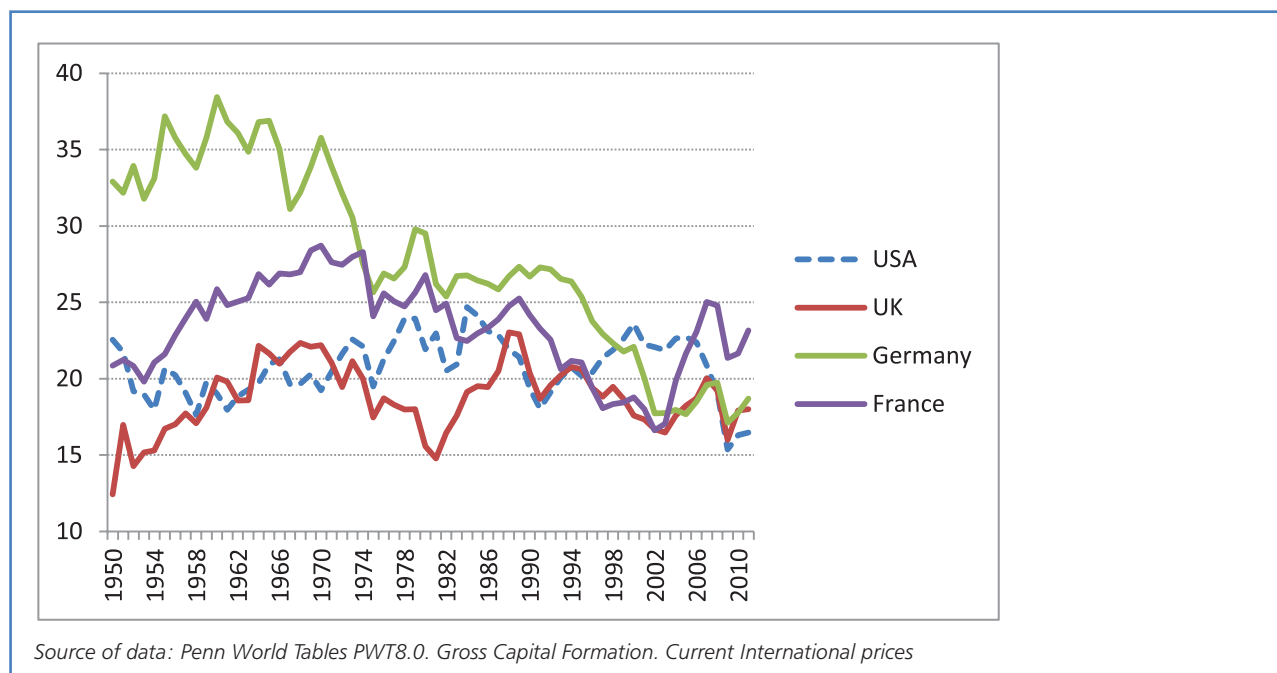
⁹⁸ Mueller et al (2013)

unemployment in the UK has been higher since 1980 than in earlier decades even without hidden unemployment. This is also true for France, and perhaps Germany although unification complicates the comparisons here. It is not so obviously true for the USA although unemployment has reached a high level since 2008. Disability benefit recipients in the USA have doubled as a proportion of working-age people since 1980, but the incidence remains half that in the UK. It is unlikely that hidden unemployment is a major issue in the USA. However there has also been a large increase since 2008 in the number of discouraged and other workers (those who want a job but have ceased searching and hence dropped out of the official unemployment data)⁹⁹. US employment rates have also fallen sharply since 2008 although US employment rates have generally been much higher since 1980 compared with earlier decades (chart 17). Cultural factors such as higher female and elderly participation were important but the fact that rising female participation did not displace males, as it did in the UK, suggests that job availability in the USA was better after 1980.¹⁰⁰ In contrast, the history of employment rates in the UK provides no evidence for a better job creation record after 1980. Instead, male employment rates declined as females joined the labour force in greater numbers.

Investment

Productivity levels in any country depend heavily on the amount of capital equipment and infrastructure available to each worker. It is difficult to compare capital stock across countries but long-run data on annual investment give a good impression of the likely relativities in capital stock. Looking at this it immediately becomes clear that investment in the UK has always been very low as a percentage of GDP (chart 20 and table 3). It was particularly low in the 1950s and in the recessions of 1980-1 and 2008-9. In the period since 1982, for which we have IMF

Chart 20 Total Investment as a Percentage of GDP (nominal prices)



data, the UK had the lowest level of total investment of any major economy (chart 21). The figures in charts 20 and 21 include both private and public investment and hence include household investment (housing) which does not directly influence productive activity and labour productivity. We do not have separate figures for business investment for the entire period since 1950 but an OECD study decomposed total investment for the 1980s and

⁹⁹ The US Bureau of Labor Statistics reported that those not in the labour force but who wanted a job and were available to work numbered 2.5 million in 2013 (1.6% of the labour force) and had increased by 965,000 between 2007 and 2013.

¹⁰⁰ Female employment rates in the USA rose rapidly between 1963 and 1990 (from 40% to 65%) and have not risen since then. Male employment rates remained close to 80% throughout the period until 2008 suggesting that, unlike the UK, there is little evidence of females displacing males in work.

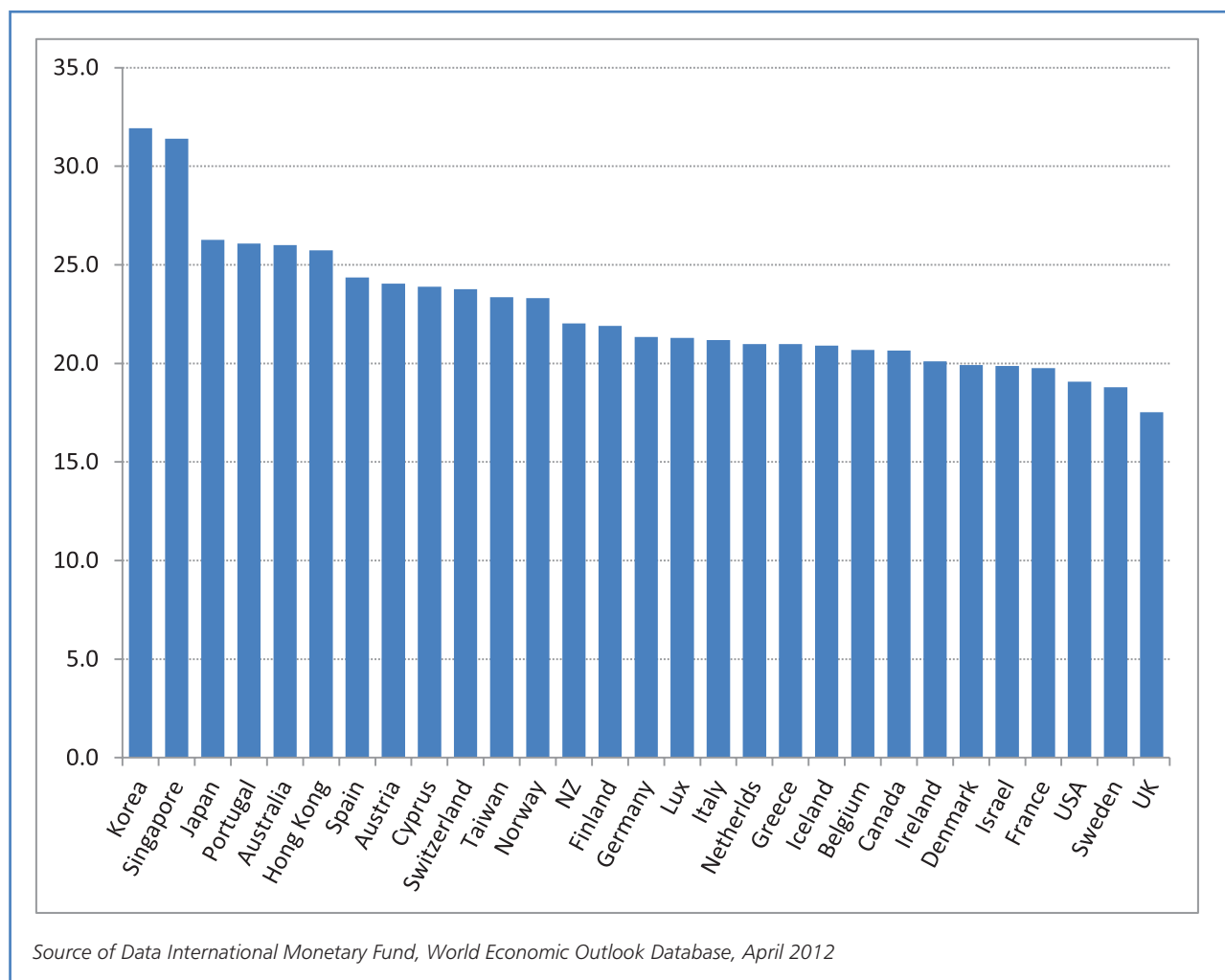
1990s¹⁰¹. This study showed that in these decades the UK had the lowest *business* investment of any OECD country in both decades, although the level was only slightly lower than the USA. Household investment and public investment were also close to the lowest of any OECD nation.

Table 3 Investment as % of GDP UK=100

UK=100	France	USA	Germany	Finland
1950-2009	135.6	123.2	147.1	168.6
1950-79	147.8	119.6	190.1	194.4
1980-09	124.8	126.3	133.2	145.5

Source of data: Penn World tables 8.0

Chart 21 Total Investment as a Percentage of GDP (nominal prices) Mean 1982-2011



Investment is weakly related to growth since faster-growing economies need additional capital. However there is also a wide difference in investment rates between economies at similar rates of growth. Far Eastern countries, including Japan, tend to have high capital output ratios and their companies 'sweat' their capital less than the companies of the Anglo-Saxon nations. Countries with large raw material resources to be exploited but small populations also tend to have higher levels of investment. Australia and Norway are both in the latter category. The

¹⁰¹ Pelgrin F, Schich S, and de Serres A (2002)

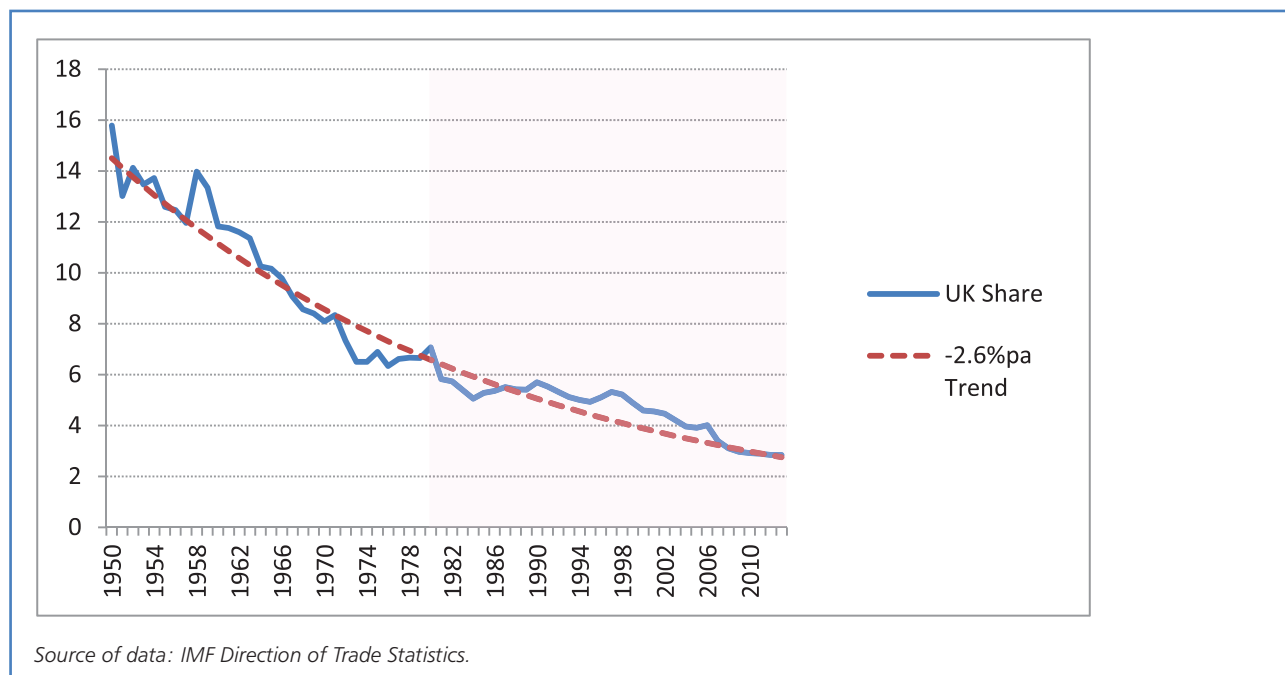
UK and USA are not in these categories and have low ratios of business investment (and household investment) to GDP. Even so, the UK appears to have had a particularly low level of business investment. Between 1980 and 2000, business investment in the UK was for instance 12.5% below the average for Nordic countries (excluding Norway). There is thus little evidence that the UK's bias towards low business investment was improved during the post-1979 liberal market period.¹⁰² One factor is a tendency for companies to move production and investment to lower cost countries. This tendency has grown in most western economies but may be more developed in the UK.

¹⁰² Since we do not have figures for business investment prior to 1980 this contention is not proved. However as shown in chart 20 total investment was lower than in other major countries. Since public sector housing investment was relatively high in the pre-1980 period, and house building for the post 1982 period was 50% higher, it seems likely that business investment was low in this period. The likelihood is that business investment was lower than other major economies in both periods.

THE UK SHARE OF WORLD TRADE

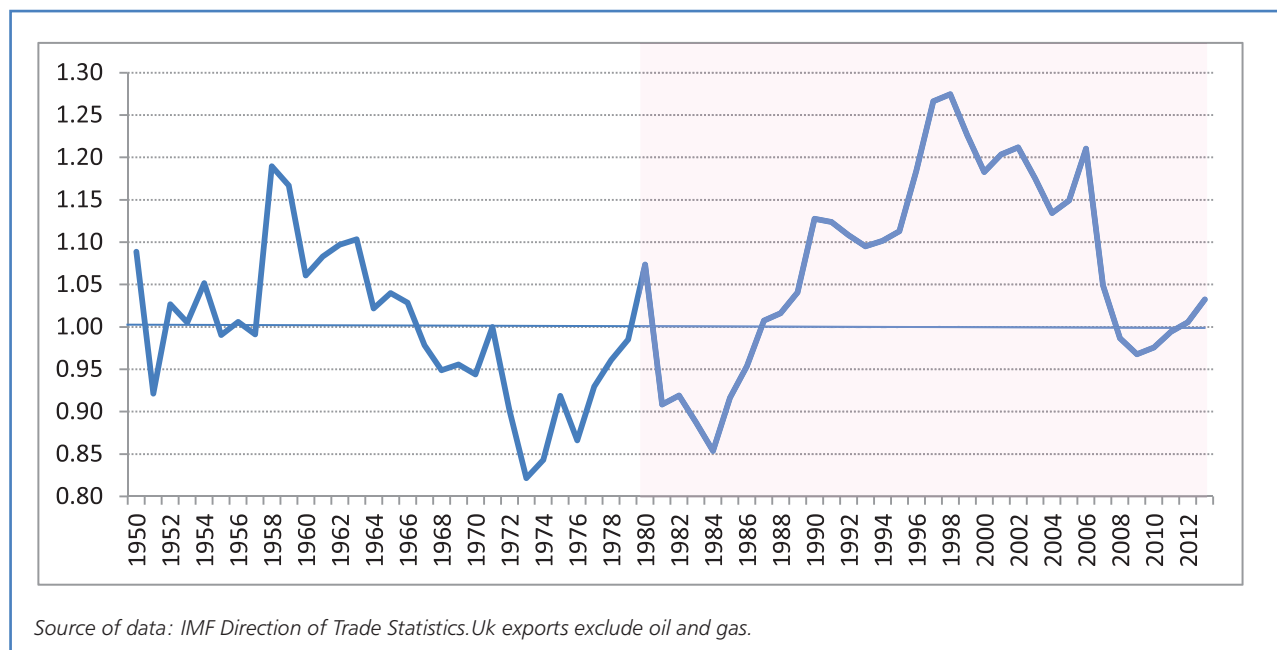
Another set of facts used to suggest an economic revival from the 1970s onwards concerns the UK's share of world trade. At the end of WW2 the UK share of world non-oil goods exports was almost 14%, or six times its share of world population¹⁰³. This share fell rapidly over the 1950s and 1960s, but stabilised at around 5% from 1981 until the mid-1990s, after which it declined rapidly once more, reaching 3% by 2008 (chart 22). The UK share of world non-oil goods trade had fallen by close to 2.6% p.a. up to 1979 and by 2008 was very close to this pre-1979 trend (chart 23). Over the 15 years from 1984-1999 the UK share of world trade improved relative to the previously falling trend, indicating an improvement in competitiveness. From the late 1990s this improvement went sharply into reverse and by 2008 the share was close to what it would have been had the pre-1979 trend continued. Since 2008 the rate of decline has again been close to the long-term trend of -2.6% per annum.

Chart 22 UK Exports of Non-Oil Goods as a % of World Non-Fuel Goods Exports (-2.6% pa trend)



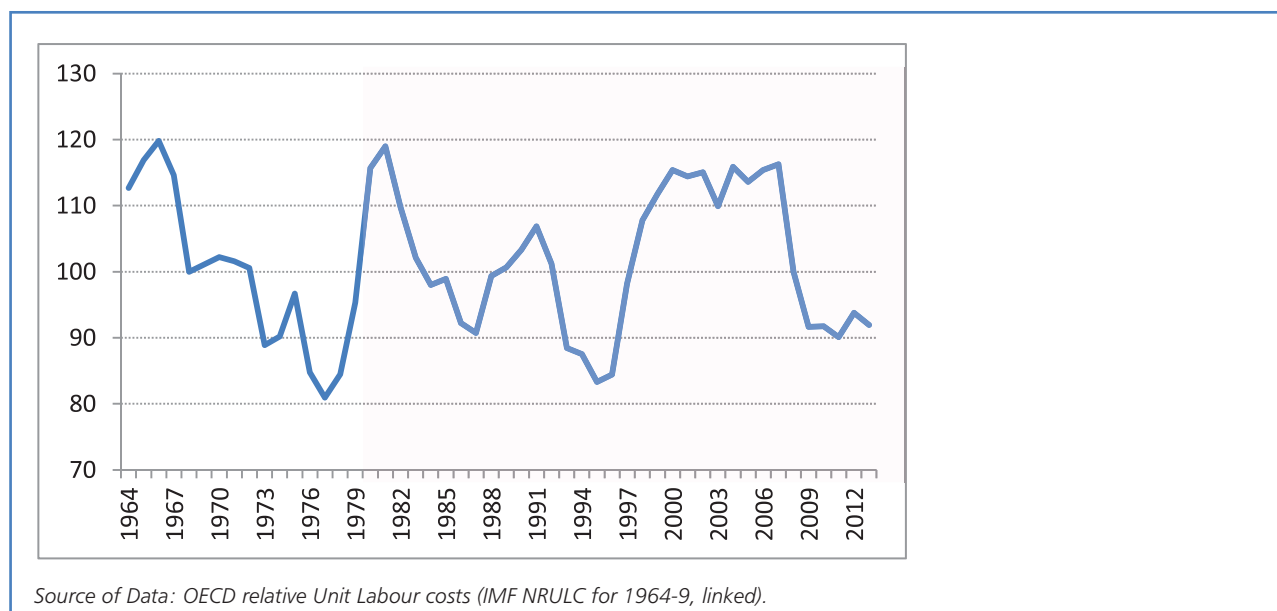
¹⁰³ The decline in the share of world trade shown in the chart above is part of a longer decline. The UK share of world exports of manufactures was 30% in 1870 and 14% in 1910. (Barnett C (1995) p 11.

Chart 23 Ratio of UK Share of World Non-Oil Goods Exports to -2.6% pa Trend Source of data: IMF Direction of Trade Statistics. UK exports exclude oil and gas.



The accelerated downturn from 1998 suggests a reaction to two factors. One was the rapid rise in exports from the BRIC countries after 1999¹⁰⁴. However, there was limited impact on European goods exports. The share of goods exports from the EU14 countries (i.e. excluding the UK) fell by only 3% (a single percentage point of world trade) between 1999 and 2007). The much larger 18% fall in the UK share of world trade between 1999 and 2007 is likely to have reflected the 28% increase in UK relative unit labour costs between 1996 and 1998 caused by a sharp appreciation of Sterling (chart 24). Similarly, the improved performance from 1984-1999 reflected generally

Chart 24 UK Relative Unit Labour Costs 2008=100

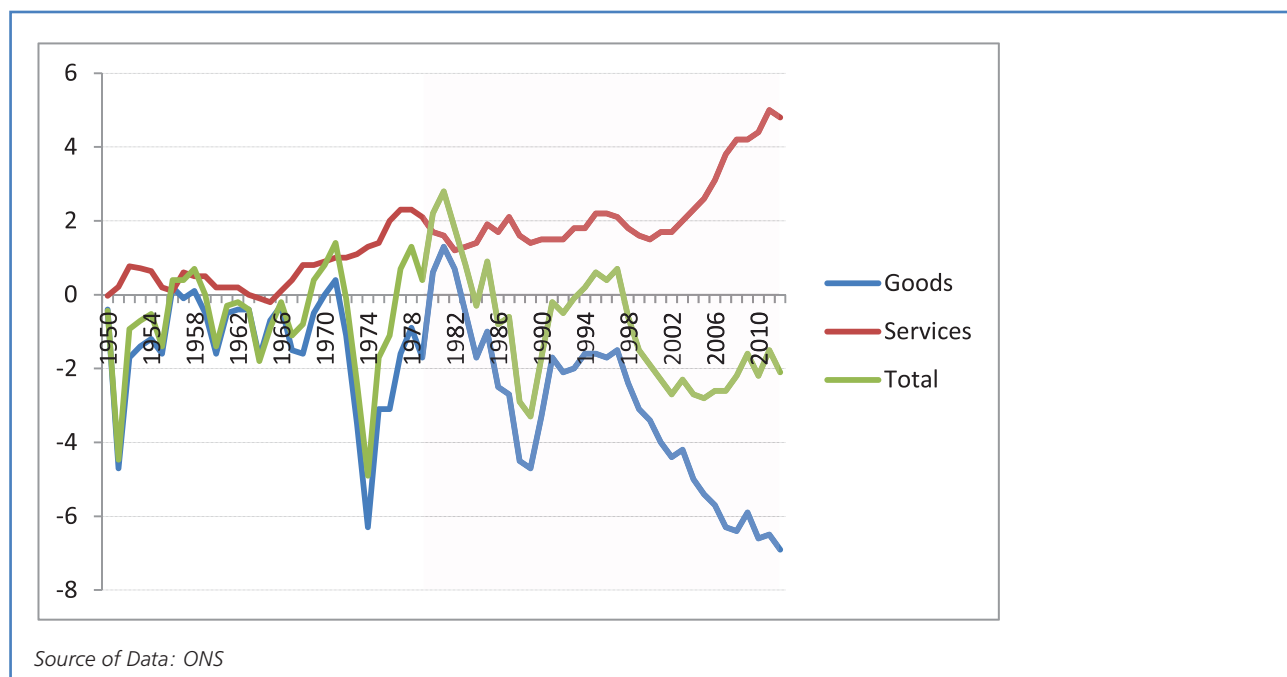


¹⁰⁴ BRIC countries are Brazil, Russia, India, China and South Africa. Goods exports from this group of countries constituted 5% of world trade in 1980 and only 6.6% by 1999. After that the rise was much more rapid reaching 14% by 2007 and 18.7% by 2013. These figures are based on data from the IMF's Direction of Trade database.

low unit labour costs over this period. There is evidence however that BRIC exports have displaced those from the EU since 2007. The UK fully reflected the 20% fall in the EU14 share of world non-oil goods exports between 2006 and 2009 but has subsequently recovered a little following the depreciation of Sterling in 2008 (chart 23). The impact of the BRICS on UK trade also depends of course on whether the advance of the BRICS led to faster growth in world trade as a whole. The evidence is that the BRICS did accelerate the growth of world trade between 1999 and 2007, but this looks like a cyclical rebound. Over the longer term the growth of non-oil world trade (in dollars and deflated by the US CPI) has been close to 6.25% per annum since 1973.

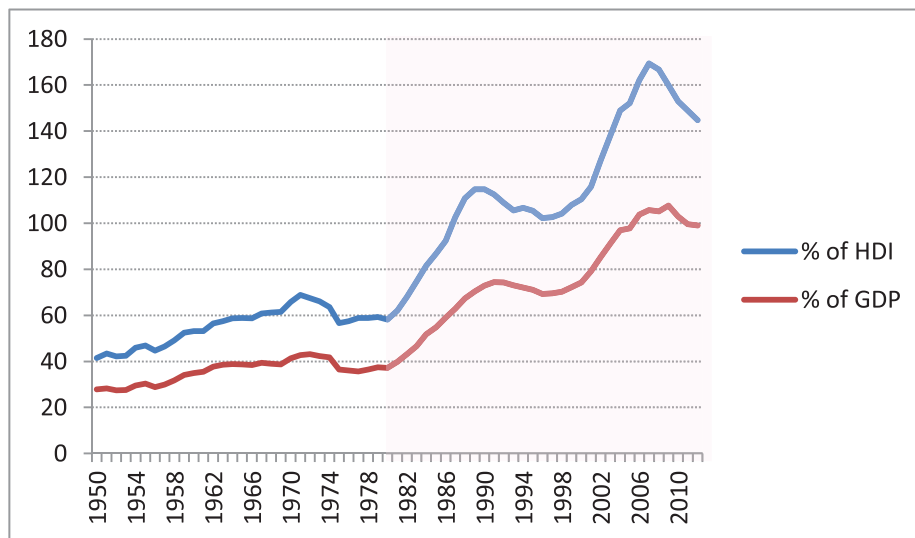
One further point to note is that the UK balance of trade was closer to balance prior to 1979 than it has been subsequently, as it had to be in an era of fixed exchange-rates (chart 25). The trend in per capita GDP was thus maintained with a more favourable trade balance before the 1970s than subsequently. The deteriorating trade balance after 1979 was largely due to a strongly worsening balance of goods trade, despite the build-up of North Sea oil production. The services balance was little changed through most of the period since 1979 until 2002 but has improved considerably since then.

Chart 25 UK Trade Balance (% of GDP)



The unfavourable goods and services balance over recent decades is the counterpart of an excess of domestic expenditure over domestic income. In part this excess has occurred because of rising household debt which has allowed spending to grow faster than income. The level of household debt has risen from around 60% of household income to over 160% in the most recent years (chart 26). Our econometric estimates suggest that around 18% of increases in household debt contribute to private sector spending (through new house-building, spending associated with moving home, and other spending financed through equity release). If so, then the rise in household debt since the early 1980s, equivalent to 100% of private sector disposable income, may have raised private expenditure by around 15% over the 30 years from 1980 to 2010.

**Chart 26 Financial Liabilities of the Household sector
(% of Household Disposable Income/GDP)**



Source of data: ONS national Accounts

DISCUSSION

The main contention of this paper is that financial liberalisation was the only aspect of the liberal market reforms introduced into the UK, initially in 1971-73 and more consistently from 1979, which materially increased the rate of economic growth. The freeing up of finance led to a huge, and eventually unsustainable, expansion of household borrowing. This temporarily accelerated the growth of consumer spending and hence GDP and of house prices, but in 2008 contributed to a banking crisis and the longest recession for over a century. Other than this unsustainable boost to demand from *financial* liberalisation there is little evidence that other liberal market policies taken together improved the trend rate of economic growth in the UK even temporarily, although they may have been advantageous in other ways.

The list of reforms includes: floating exchange rates; trade union reform and hence lower inflation; lower marginal income tax rates, leading to higher rates of company formation but also to greater income inequality; the abolition of controls on wages, prices, capital movements and the location of industrial investment; privatisation; and increases in rates of company formation. Other liberalising measures, including the reduction of tariff barriers and the strengthening of competition law, may have been more important in raising productivity, but the main reforms had occurred before 1979. It is the post-1979 or Thatcherite reforms which are the focus of attention here.

The most powerful evidence for the claim that most liberal reforms had little positive macro-economic impact is the fact that the growth rate of real per capita GDP did not accelerate after 1979 while productivity growth clearly slowed. If we make due allowance for the fact that the growth of world trade was significantly slower after 1979 than in previous decades, then per capita GDP in the UK did exceed the adjusted previous trend after 1979, but only in periods when household indebtedness became very high¹⁰⁵. Per capita GDP has sunk far below this trend since 2008 and seems unlikely ever to regain it. In other words the only factor raising growth in per capita GDP above its pre-1980 trend (adjusted for the slowing of world trade) was expanding household indebtedness, and this has proved to be a temporary influence. Evidence that the growth rate was poor in the post-1979 liberal period also lies in the consistently high level of unemployment which has averaged 8% since 1979, (not including the concealed unemployed on sickness benefits), compared with 3% in the three previous decades. The expansion of the female labour force (and latterly migrants and the working-elderly) has greatly increased labour supply but the economy has failed to expand fast enough to fully absorb this labour.

The performance of UK goods exports has also been only temporarily better since 1979 than if the pre-1980 declining trend in share of world trade had continued. The liberal market reforms were one attempt to stem the rate of decline in the UK share of world trade. Joining the EEC in 1973 in the expectation of tying the UK economy to fast growing markets had been another. While post-1979 liberal reforms may have had some success in improving management and industrial relations, they have also allowed UK firms to relocate production to emerging economies helping the extreme de-industrialisation of the UK economy. As far as EU membership is concerned, the UK actually joined one of the world's slower growing trade blocs, as growth slowed permanently in France, West Germany and other EEC nations just as the UK acceded¹⁰⁶.

The relatively poor UK trade performance in goods means that the UK manufacturing sector declined rapidly. All of other EU9 economies have maintained proportionately larger manufacturing sectors than the UK. It is clear that other EU9 nations have also exceeded the UK in rising to the challenge of more intensive international competition

¹⁰⁵ Periods of debt-induced faster growth misled policy makers. For instance, because the average growth rate in GDP was 2.8% pa between 1997 and 2008 the Treasury made the mistake of assuming that this was a sustainable long-term trend (they actually said 2.75% pa) and advised the Labour Government accordingly. The Government viewed its spending plans as 'prudent' in the light of this trend, but might not have done so had it known that the sustainable trend was significantly lower at 2.2%pa. A steadily lower trajectory for public spending might have reduced the public debt to around 20% by 2008 instead of 40% and better prepared the public finances for the looming crisis.

¹⁰⁶ Recent data suggests that Commonwealth markets have now grown faster since 1973 than EU9 markets. See World Economics, Commonwealth Growth Monitor. James Waterson 1/6/2012.

for manufactures. The brighter side of UK exports has been in exports of services which grew rapidly from 1992-2007. Volumes have subsequently declined but even so remain at a high level, although not high enough to offset the deteriorating balance of trade in goods.

It cannot in our view be convincingly argued that liberal market policies improved the UK's performance *relative* to France, West Germany and other EU member states. The UK's *relative* performance did improve after 1979 but this came not from any acceleration in UK growth but instead from a slowdown in the growth of the continental European economies. Nor can it be reasonably argued that liberal market policies prevented UK growth slowing down in the same way as in the European economies. These European economies had made good use of their rapid post WW2 recoveries to converge their productivity levels almost to US levels. Once that was achieved there was little prospect of further rapid growth, and their growth was bound to slow down. The UK was different. Firstly, it suffered much less war damage and never had a rapid post-war recovery stage. Secondly, the UK's relatively poor post-war productivity record meant that it never converged as close to the US productivity frontier and had less reason for an economic slowdown. The slower growth of world trade since 1979, much of it due to the European slowdown, should have reduced UK growth, but even allowing for this there is little to suggest that liberal market policies led to improved economic growth in the UK.

Lord Maurice Glasman, a Labour peer, describes the 'story' told by Margaret Thatcher in 1979 as one of "a brave people who were stifled and controlled by a bureaucratic state that penalised the good and rewarded the bad, stifled innovation, while generating feckless welfare dependency"¹⁰⁷. If so, this was a false prospectus. Welfare dependency¹⁰⁸ rose by 50% during the Tory period in office and remains at this level today. Neither did government spending fall significantly. David Parker, the official historian of privatisation, takes the view that privatisation had much less impact on the economy than was claimed by its progenitors. OECD research shows that less regulated labour markets do not lead to a better economic performance. Recent research from the IMF suggests that increasing inequality is not associated with faster growth in GDP or higher productivity. The idea that high inequality is necessary for enterprise and innovation also receives little support from the data. Levels of business investment in the UK have remained low compared with all major competitors. Expenditure on R&D has also remained lower than competitors and indeed the UK is the only major country in which R&D expenditure has been trending downwards relative to GDP. The erosion of manufacturing and increased foreign ownership have both played a role in this. Attempts to reduce taxation through lower public spending were also only temporarily effective and did not survive the first post-Thatcher recession in 1990-1. Similarly the boost given to company formation by reducing the top rate of income tax was relatively small and was largely undone by the 1990-1 recession.

It is more difficult to directly estimate the economic impact of improved labour relations and fewer industrial disputes. Common sense indicates that this should be a good thing in itself but not entirely if the result has been a weakening of wage bargaining power that has allowed a resurgence of extreme income inequality. We note that the UK economy grew consistently and well through the 1950s and 1960s even with poor industrial relations, as it did in the USA with extra-ordinarily high strike levels by British standards.

Few would now argue for a return to the wide economic controls of the 1960s and 1970s. Wage and price controls are unnecessary in an era of low international inflation and it is unlikely that they would be needed even if trade unions were much stronger than now. Some wage control has been re-introduced in the form of a minimum wage reflecting a need experienced since Victorian times to prevent 'sweated labour'. Price control is also evident through the utility and transport regulators and the Labour Party currently proposes further price control over the electricity and gas oligopoly, but general price controls are no longer relevant. Although a significant regional problem persists in the UK, as it has since the 1920s, locational controls are no longer necessary.

¹⁰⁷ Financial Times July 1 2014. 'Conformist mediocrity from Ed Miliband will not win Labour Votes'.

¹⁰⁸ Spending on social benefits (excluding pensions) as a percentage of GDP

Current UK governments attempt to steer both inward and domestic investment to the north and west through grants and other incentives. The Irish Republic has also shown that low corporation tax is a particularly powerful tool to attract inward investment and the current coalition government is reducing corporation tax to the low rate of 20% and may consider a much lower rate for Northern Ireland. The de-industrialisation of parts of the north, especially the main regional cities, is in any case now largely complete, and heavy-handed location controls which may damage business efficiency are not relevant.

One apparent success of the liberal period since 1979 has been employment creation. Despite the loss of much traditional manufacturing, a net addition of 4.7 million jobs occurred between 1979 and 2013. However two thirds of these jobs (3.0 million) were in the (largely) public sector health, social care and education sectors. Under current government expenditure plans public sector jobs will be reduced back to the levels of the 1970s in an attempt to reduce public debt levels. Another million were in retail and wholesale distribution and real estate activities. Both of these latter private sector groups were heavily supported by expanded household borrowing and the job gains cannot, in our view, be expected to continue. Abnormally low interest rates since 2008 have greatly assisted companies' cash-flow, and have helped the restoration of the job losses that occurred in the recession of 2008-09 but, in our view, this is unlikely to last. The result of the unexpectedly good employment creation record since 2008 has been a slowing in the growth rate of labour productivity, and a widening productivity gap with the USA. Already all of the long-term productivity catch-up with USA since 1980 has been reversed and this wide gap will not be narrowed in future unless the UK GDP growth trend accelerates or else employment is cut to accelerate productivity growth.

Our conclusion is that liberal market policies are not a necessary requirement for satisfactory growth of the UK economy. Just as the 'Rogernomics' liberal reforms in New Zealand did not accelerate growth of the economy, or indeed Reaganomics in the USA, the evidence is that UK growth was slower and more volatile after 1979 compared with the previous 'corporatist' era except when household debt was rising. It does not follow that all such reforms should be reversed, but it does suggest that there is a greater potential choice of economic regime than is usually admitted by many economics commentators. This choice, in our view, should attempt to avoid some of the socially damaging aspects of a liberal regime, such as high unemployment, increased cyclical volatility and greater inequalities in income and wealth. Financial deregulation, the main cause of increased cyclical volatility, is being unwound but the re-introduction of regulations that worked well for decades could be taken much further than is currently proposed. Higher government spending (perhaps with higher taxation) is likely to be necessary to maintain effective demand, and the Nordic economies show that this can work well albeit with competitive export sectors. Stronger trades unions are likely to be necessary for a less unequal distribution of incomes, and although this a fraught area of policy, agreements between government and unions work reasonably well in some countries. Free trade and capital movements have worked well to bring greater prosperity to over a billion people in emerging economies, and the UK should strive to succeed within the existing trade rules but more could be done to ensure that UK-owned firms serve the UK national interest through such things as protecting national ownership and control¹⁰⁹. Greater government involvement in business is likely to be necessary to reverse the decline in manufacturing and in R&D spending. While we accept that competition is generally beneficial for productivity, free markets are not the end of the story. Sometimes existing businesses need to be rescued from mistakes or external circumstance as Rolls Royce was in 1971. Sometimes sectors need support and protection from foreign take-over,

¹⁰⁹ As one example, the sale of the iconic British-owned company Cadbury to the American Kraft corporation (now Mondelez International) in 2010 lacked much in the way of economic logic but although unpopular was not opposed by government since no vital national interest appeared to be at stake. However control was transferred to Zurich (where the corporation tax rate was a third of that in the UK) following the take-over, and the firm is now believed to pay little in corporation tax in the UK. However a Financial Times report (20/6/2013) stated that Cadbury adopted aggressive tax avoidance schemes before the take-over paying only around 6% of profits in tax in the decade prior to 2010. Kraft quickly closed the Cadbury factory near Bristol, breaking a prior undertaking, having relocated the Terry's factory in York to Poland in an earlier take-over in 2005. We can also note that the Financial Times (29 April 2014) opposed the major bid by Pfizer of the USA for one of the UK's two major pharmaceutical firms, AstraZeneca (which accounts for 2.5% of UK exports) and the bid was withdrawn. Pfizer would have gained considerable tax advantages from the proposed merger by moving its legal entity to the UK but has a record of closing major R&D centres and plants in the UK and was felt likely to do so again.

as perhaps should have been afforded to UK-owned investment banking after the 1987 'big bang', although such protection should always involve major reforms to prevent support becoming permanent.

A belief in the economic benefits of liberal market reforms is so entrenched that it will be difficult to change to a different variety of capitalism. It is not widely recognised that the UK economy has grown more slowly since 1979 compared with previous decades. The fact that other major economies have also slowed has disguised the failure of liberal policies to correct the UK's historic industrial weaknesses. Satisfaction has been taken from the fact that the UK ceased growing more slowly than major western European countries after the 1970s, even though the reason was not any acceleration in the UK but a slowing of the European economies after their post-war reconstruction phase. Since 1980 the UK has become a more Americanised economy in several key respects but few have pointed out that US economic growth also deteriorated in the Reagan and post-Reagan periods. As in the UK, per capita GDP in the USA seems unlikely ever to climb again even close to the 2.4% per annum trend which it managed to follow comfortably before 1980 and struggled to follow from 1980 to 2007.

The UK economy before 1980 had many unsatisfactory aspects. The poorly functioning industrial system inherited from the early industrial revolution was never fully reformed. Liberalisation changed much about this system but without accelerating growth in GDP or productivity. Instead it exchanged old problems, such as poor industrial relations and relatively high inflation for new ones including high unemployment and soaring income inequality. The main achievement of the pre-1980 system was the maintenance of full employment. This was underpinned by policies of demand management which kept the UK economy operating at close to full capacity. This in turn maintained a reasonable level of investment, both public and private, which in turn was good for innovation. Even with greater inflation and a higher rate of strikes, productivity could grow at a satisfactory rate. Since 1979 governments have not aimed to maintain full employment by managing aggregate demand but have instead targeted inflation, directly or indirectly. As a result aggregate demand has usually been too low to maintain full employment, and household debt accumulation has been the main, albeit temporary, source of demand to fill the deficiency. Now that this source has largely exhausted itself we are left with a slow growing economy.

The future implications of the analysis in this paper are worrying. The trend in productivity growth in a UK economy heavily denuded of manufacturing by decades of globalisation is unlikely to be much above 1.4% per annum, as indicated by the analysis in annex C. Growth in the employment rate has offset declining productivity growth since the early 1980s but this offset cannot be sustained in future. With the employment rate in 2014 once again close to a peak, there will be little or no future secular growth in employment rates. These projected trends in productivity and employment would result in slow growth in per capita GDP growth in the UK in future, at a rate below 1.5% per annum. Even worse, projected decline in the proportion of working-age people, due to an aging population, will reduce the long-term trend in growth of per capita GDP by a further 0.5% per annum. If the average number of hours worked per employee continues to decline, even at the slow rate of recent decades, a further 0.3% per annum will be subtracted from the growth rate of per capita GDP. The trend growth rate of per capita GDP would then be only 0.6% per annum. If this sounds alarmist, we should note that observed growth over the decade to 2014 has been only 0.4% per annum. We thus expect the UK to experience the secular stagnation that Lawrence Summers projects for the USA, but the reasoning involves fundamental trends in sectoral productivity and demographics rather than the demand-side factors invoked by Summers.

It is not the intention of this report to suggest detailed policies to counter this bleak projected future. We need now to reconsider the choice of economic policy regime and to accept that a wider range of economic policy options is open to us than merely continuing with the liberal market approach. The best guide to a better system in our view would be the experience of the Nordic economies since these have managed to combine competitive international trade sectors with high social spending and lower inequality to produce growth rates at least as good as ours.

ANNEX A INDUSTRIAL MODERNISATION IN THE UK

The 'corporatist' policy period prior to 1980 is widely regarded as a deep failure. For instance Janan Ganesh (Financial Times May 6 2014) states that Mrs Thatcher's service to her country "was to save it from shambolic corporatism". The perception at the end of the 1970s was that the economy suffered from a 'British disease' of poor industrial relations, low productivity and high inflation that only liberal market policies could cure. It is certainly true that much was wrong with industrial relations and management across a range of industrial sectors prior to the 1980s. Strike-prone trades unions, avoidable industrial disruption and a belief that unions were responsible for low productivity and for the high inflation of the 1970s generated much public support for the introduction of free-market policies that would 'allow management to manage'.

It is necessary to say something about industrial change through this period and the changes that occurred after 1980. It is also necessary to square a view of an archaic and occasionally shambolic industrial sector with the case argued in this study that the macroeconomic performance during the pre-1980 decades was generally better than in the 'liberal market policy' period after 1980 even if some aspects of policy and economic performance were clearly worse. We also argued that innovation was if anything more impressive in the decades before 1980 than in the following decades. The first point to note is that although industrial relations were eventually much improved after 1980, this was at the expense of the industries which formerly had the worst records. Several of these industries were largely closed down and no longer exist in the UK. These include coal, shipbuilding, motor cycles and much of steel, machine tools and textiles. Liberal market policies extinguished rather than reformed these sectors. Secondly, this decline of manufacturing could have maintained economy-wide economic growth rates if all of the labour had been re-employed and at similar or higher wage and productivity levels, but this did not happen. Unemployment remained permanently higher and productivity grew more slowly than before 1980.

Major problems were inherited from the immediate post-war period and indeed from much earlier. Although war damage was only a fraction of that in Germany or even France, the UK suffered from the accumulated problems of an outdated industrial system and in Barnett's opinion the poor industrial relations of the industrial revolution had never been reformed. Barnett also took the view that reforms and re-investment of industry were put aside after the war as governments prioritised imperial defence and building a welfare state, including housing, over industrial recovery. Barnett's view of the economy in 1950 was that: *'Most of the country's energy still derived from out of date coalmines with the majority of British export goods still Victorian staples manufactured on time-expired machinery in cramped old works; with those goods still being conveyed to Victorian ports via Victorian goods-yards in primitively-braked steam trains chuffing along poorly maintained track equipped for the most part by mechanical semaphore signalling; and with those goods, if moved by roads, still being loaded into vehicles barely half the capacity of an American long-distance truck, and trundled at 20mph along mostly single-carriageway routes through the narrow streets of medieval villages and market towns, and on down to cobbled alleyways and yards beside dockside warehouses largely dating from the first industrial revolution'*¹¹⁰.

There was plenty of evidence that many of the UK staple industries were uncompetitive once international tariff barriers fell and once war damaged competitors recovered. Some of this was inevitable change including the decline of textiles and clothing in face of low wage competition, although there was no equivalent of Italian advantages in design and quality. Over-manning was rife in some industries and particularly in newspaper printing and ship building¹¹¹. Several high wage European economies maintained shipyards long after UK yards disappeared except for defence-related work. The motor industry was particularly affected by industrial disruption, and after

¹¹⁰ Barnett (1995) p322

¹¹¹ This problem was long lasting. A comparative study of the nationalised Harland and Wolff shipbuilder in 1991 showed that the Kawasaki yard in Japan, producing similar ships, had a level of labour productivity five times that of the Northern Ireland yard. This was the case despite superior capital equipment at Harland and Wolff in all categories except hand tools. (study undertaken for the Northern Ireland Department of Economic Development, 1991)

many government-led attempts at re-organisation it was eventually replaced by foreign-owned companies, suggesting that poor management was a root cause of problems. It was notable that the chemical and aircraft industries, with more scientists among their management generally did better. Even so, the huge economies of scale in aircraft production (and computers) meant that British ambitions to out-compete US producers had to be abandoned. Less understandable was the failure to sustain profitable nuclear or machine tools industries even with large-scale government support. Long established and formerly successful machine tools companies proved too conservative, with too much family involvement, to fend off competition from Germany and later Japan¹¹².

In hindsight successive governments supported failing industries for too long and invested too much in sectors for reasons of national prestige or job preservation rather than economic development. The coal industry was an extreme case with union obstruction even to collecting statistical evidence on which pits were economic and which were not. In 1974 a hapless Bennite 'Plan for Coal' envisaged a major expansion in an industry that was clearly in decline, and uncompetitive with low cost foreign producers. Whether it would have been possible to replicate in the 1980s the orderly 1950s run-down of West Durham pits is hard to say, but in the event free-market priorities led to a major and at times violent confrontation followed by the almost complete closure of the industry. Judgements on whether to save failing firms or industries are however rarely as clear cut at the time as they appear with the benefit of hindsight. The rescue of Rolls Royce in 1971 was a significant U turn in the Heath Government's policy of abandoning 'lame ducks' but the company subsequently prospered and today is a vital part of the UK's remaining high technology manufacturing base.

Poor industrial relations dominated much academic writing both at the time and subsequently. Wildcat strikes were common, sometimes over apparently trivial issues. Actual strike rates in the UK were lower than most competitor countries in the 1950s, but some thought this was due to weak management failure to stand up to unreasonable union demands¹¹³. Strike rates rose into the 1960s, with most stoppages in the form of unofficial disputes. Part of the cause was the rise of the shop steward, i.e. trade union representatives at shop floor level. By the early 1960s there was more than one shop steward for every hundred union members¹¹⁴. Shop stewards often demanded better conditions than their unions had negotiated at national level and were able to succeed in the context of full employment¹¹⁵. Unions were also still legally able to operate closed shops even though the majority of public opinion opposed this as early as 1960¹¹⁶.

It was inevitably the failures that attracted notice but other views existed. An American study group in 1960 concluded that British unions generally welcomed technological change as ways of achieving better pay and conditions for their members¹¹⁷. A number of factors contributed to the fact that economy-wide labour productivity grew at consistently faster rates before 1980 than under the later liberal market regime. One factor was nationalised industry which had a generally good record of productivity growth in the 1950s and 1960s¹¹⁸. Secondly, there is evidence that both growth and decline of private sector industries was more vigorous in the 1950s and 1960s than in the post 1979 period, leading to a rapid increase in labour productivity. Fast growing sectors like motor vehicles, aircraft, electrical equipment and chemicals paid high wages and attracted labour from traditional sectors like textiles and clothing which declined rapidly¹¹⁹. This process was facilitated by full employment which led to strong competition for labour between firms and industries. Some low-wage sectors temporarily solved their problems of labour shortage through

¹¹² When the large linen machinery firm, Mackies, failed in the early 1980s and was taken into public ownership, there were eleven members of the Mackies family involved in running the company. The new government owners quickly dispensed with the services of all but one (personal communication, department of Economic Development, Northern Ireland).

¹¹³ Kynaston D (2014) p145

¹¹⁴ Kynaston D (2014) p147. One strike-organising shop steward in Glasgow was Alex Ferguson, later Sir Alex and celebrated manager of Manchester United.

¹¹⁵ Stevenson T E (1957) pp 33-40

¹¹⁶ Kynaston D (2014) p151.

¹¹⁷ Kynaston D (2014) p146.

¹¹⁸ Foreman-Peck J and Millward R (1994)

¹¹⁹ Wragg R and Robertson T (1978). Statistics from Fothergill and Gudgin (1978) show that whereas employment between 1950 and 1975 rose by 89% in pharmaceuticals and 41% in electrical machinery, it fell by 59% in mining, 44% in textiles, 40% in shipbuilding and 28% in clothing. More recent Census of Employment and BRES data for 1975-2010 shows that all major industrial sectors lost large proportions of their employment and there was much less difference between sectors. While mining and textiles and clothing lost over 80% of their jobs, the figure was two-thirds in chemicals, electronics, electrical machinery, mechanical engineering, and transport engineering.

large-scale recruiting from the New Commonwealth but this avenue was blocked in the 1960s through immigration controls. The sectoral structure of British industry thus changed rapidly through the 1950s and 1960s. After 1980 there was less diversity of growth rates between manufacturing sectors and all industrial sectors lost jobs. The fastest growing sectors for employment in this period were real estate followed by professional services (which includes solicitors and architects), both connected to rising household debt and house purchase.

Modernisation of public infrastructure proceeded slowly over the 1950s. It eventually picked up speed in the 1960s with motorway and new port construction and the replacement of steam trains with diesel and electric locomotives and automatic signalling. Yet 19th century industry was still heavily supported, especially in coal even though some new pits were sunk to increase productivity. New technologies, in electricity generation including nuclear, computers and aerospace were encouraged, even if several initiatives proved to be costly failures, at least in commercial terms. These included Concorde, the UK space programme and the AGR nuclear programme. Poor industrial relations lasted into the 1980s after Labour's proposed 'In Place of Strife' legislation was overturned by trade union pressure in 1969. The last six years of the 1970s saw price inflation average at over 15% per annum.

The establishment view of the economy in 1979 was captured well in a valedictory despatch from Nicholas Henderson, the UK ambassador in Paris, to David Owen, the Foreign Secretary¹²⁰. The ambassador bemoaned Britain's diminished standing in the world. He pointed to Britain lagging far behind France and Germany in growth of per capita GNP, percentage of world trade and productivity, but leading in strikes. He singled out *'inefficient management ... lack of incentives with top rates of income tax at over 80%'*. *"How could they [managers] improve productivity, when they faced a closed shop, shop floor bargaining, and a process of arbitration in which employees invariably won? How could industry compete when compelled to negotiate with a hundred and fifteen trades unions and Germany had seventeen"*. Writing in 1971, Anthony Sampson had added the view that *"comparing the British industrial atmosphere to the Continental, it is hard to avoid the impression that the British zeal for industrial organisation has somehow exhausted itself. At the root of the lack of productivity and exports, there is often, I suspect, the basic difficulty that both workers and management are bored with their jobs; in reports of the causes of strikes and absenteeism, the most obvious factor tends to be left out – that factories and mines are dehumanising places; that conditions of mass-production are increasingly intolerable except to people who have only recently escaped from conditions of abject poverty"*¹²¹. There is something in Sampson's view but it compounds inherent aspects of production with poor management. The introduction of Japanese car companies to the UK in the 1980s showed that it was possible to conduct mass car production in the UK with high productivity and few industrial relations problems.

The liberal market policies of the Thatcher governments aimed to tackle the problems of poor industrial relations and high inflation through exposing most of the economy to market competition with legal constraints on trade union action. As stated above, much modernisation was achieved not through reforming traditional industries, especially not in manufacturing, but through closing down those industries most affected by the British disease. The theory of free markets, and Schumpeter's ideas of creative destruction¹²², suggest that these losses would be made good by the growth of new industries and that productivity should expand in the process. Although this has happened to some degree and particularly in the growth of private services sectors with demand much supported by burgeoning debt, it did not accelerate the growth in either aggregate output or productivity. Nor have UK skills policies meshed sufficiently with the rapid switch to service sector activities. Unlike the successfully managed run-down of exhausted coalfields in the 1950s North-East, free-market changes were largely unmanaged and involved long periods of very high and wasteful unemployment, both manifest, and hidden. The experience of unemployment also contributed to the reduction in industrial disruption as did the extinction of industries such as coal, and also to the fall in inflation although this was largely a global matter.

¹²⁰ Annan N (1990) p 453

¹²¹ Sampson A (1971) p. 669

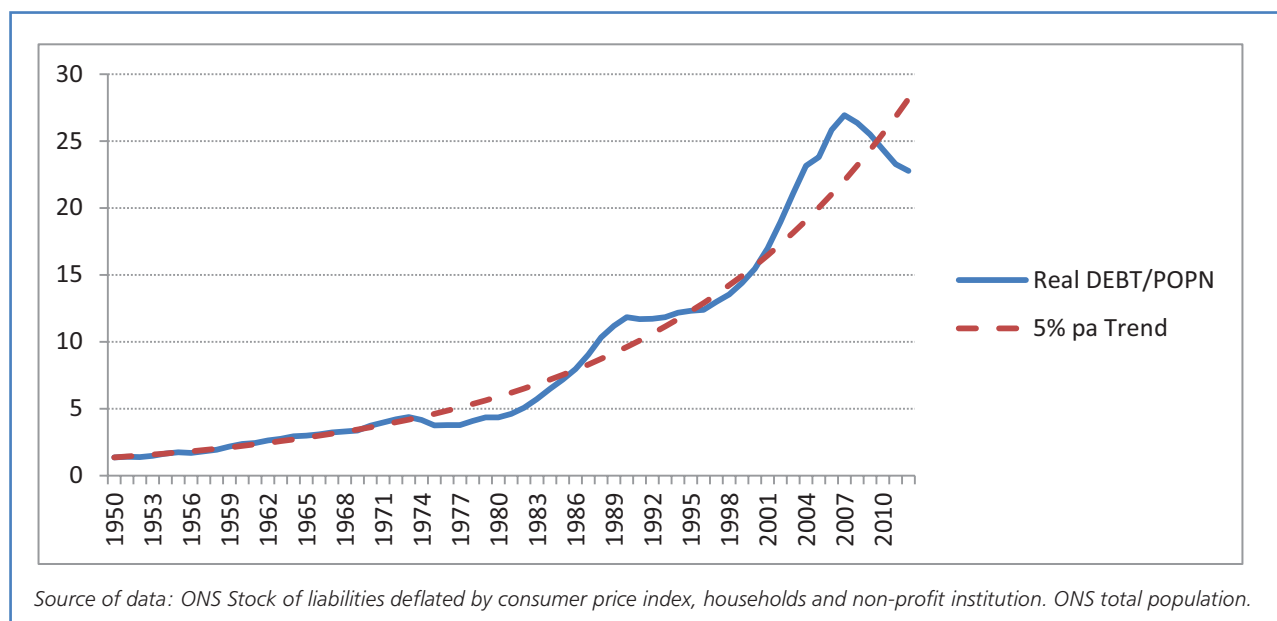
¹²² Schumpeter J.A. (1942) Capitalism, Socialism and Democracy.

ANNEX B THE RELATIONSHIP BETWEEN HOUSEHOLD DEBT AND GDP

This annex examines the relationship between the stock of household debt (liabilities) and GDP. As shown in chart 26 in the main report the stock of debt has risen over six decades from 40% of household disposable income (30% of GDP) in 1950 to 145% (100%) in 2012, peaking at 169% (105%) in 2007. These ratios were relatively stable prior to 1980 but accelerated sharply there-after as restrictions on bank and building society lending were removed. The ratio of debt to household disposable income doubled over the 1980s and we believe it was a failure of the economics profession of the time to anticipate the consequences of this rise that led to their unfounded pessimism about the prospects for economic growth in the 1980s.

If we look instead at the growth of household debt per head of population in real terms (deflated by the consumer price deflator) a rather different pattern emerges. Real debt rose steadily at 5% per annum until 1973. After 1973 a further rise did not begin until 1980, but although volatility has been much greater, the long-term trend has continued at close to the same 5% per annum (chart B1).

Chart B1 Real Stock of Household Sector Liabilities per Head (£000, 2010 prices)

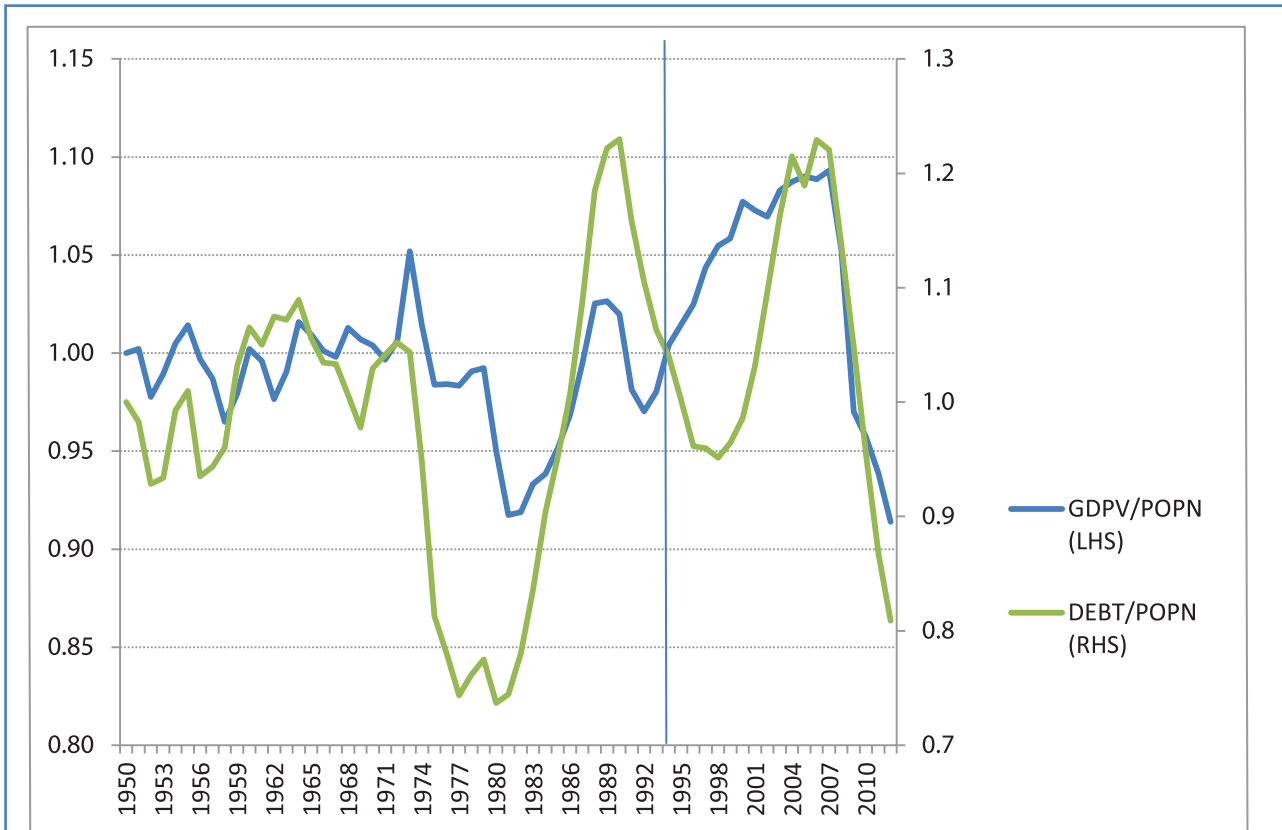


Why has the trend been both consistent and rapid? As a baseline we might expect household debt to grow in line with incomes and hence with GDP. This would generate a 2.5% p.a. trend in real terms. In practice, debt grows at closer to the rate of house prices and these have grown 2.5 to 3% p.a. faster than GDP in real terms. The mean house price has itself been boosted by the amount of debt. The mean house price has usually been around 8.5 times average post-tax income per head of population, with large peaks in 1951, 1973, 1989 and 2007. (The high peak of close to 15 times disposable income in 2007 is unusual in that, for the first time, it has not fallen back to around 8. Instead a relatively small fall in 2008 and 2009 was quickly reversed and the ratio remains at over 13).

In our view the change in the stock of debt (liabilities) boosts GDP in a cyclical manner. If we plot the deviations of household debt from a 5% p.a. trend against the deviations from trend of GDP there is a broad correspondence (chart B2). The GDP trend in this case is the lower trend from chart 2 in the main report. This a 2.55% p.a. trend from 1950-79 and a 2.2% p.a. after 1979 as world trade grew more slowly. The deviations from trend are larger for debt than for GDP but the timing is similar. The main discrepancy is that GDP recovered after the 1991-2

recession well before debt stopped falling in 1996. The main reason for this discrepancy is likely to be the boost given to GDP growth by the 15% fall in the trade-weighted value of Sterling between 1991 and 1995.

Chart B2 Real Debt and GDP (both per Capita). Both Relative to their Trends (trend=1.0)



Source of data: ONS statistics. Stock of liabilities deflated by the consumer price index, households and non-profit institutions. Total population. Real GDP. The trend for debt is 5% p.a. The GDP trend is 2.55/2.2% p.a.

To investigate the relationship more closely we have estimated an OLS regression equation for real consumers' spending fitted on annual data over the period 1963-2012. The equation below follows a conventional error correction mechanism (ECM) representation of an autoregressive distributed lag structure with consumption depending over the long-term on disposable income and both financial and housing wealth. Also included are cyclical influences from the change in disposable income and the change in debt (new borrowing less repayments). The rate of new firm formation is also added as a variable since the data includes spending by unincorporated businesses. The equation takes the following form in Table B1:

Table B1 Consumption equation in ECM representation, 1963-2012

	$\Delta C_t = \beta_0 + \beta_1 C_{t-1} + \beta_2 YD_{t-1} + \beta_3 NFA_{t-1} + \beta_4 HW_{t-1} + \beta_5 NF_{t-1} + \beta_6 \Delta YD_t + \beta_7 \Delta FL_t + \beta_8 \Delta FL_{t-1} + \beta_9 \Delta NF_t + \beta_{10} D2001 + \beta_{11} D2005$											
	<i>const</i>	C_{t-1}	YD_{t-1}	NFA_{t-1}	HW_{t-1}	NF_{t-1}	ΔYD_t	ΔFL_t	ΔFL_{t-1}	ΔNF_t	$D2001$	$D2005$
Coefficients	8114	-0.61	0.46	0.022	0.013	0.07	0.55	0.10	0.08	03.7	1273	13974
t-ratios	(1.4)	(-7.6)	(7.5)	(7.7)	(3.2)	(2.7)	(6.9)	(3.3)	(2.7)	(7.0)	(2.7)	(2.8)
	$\bar{R}^2 = 0.93$		Breusch-Godfrey serial correlation LM test p-value 0.94				ARCH test for heteroskedasticity p-value 0.65					
	Pesaran-Shin Bounds test for co-integrating relation: F test 27.4, critical value 4.67											

Where:

C_t is real consumer spending.

YD_t is real disposable income of households

NFA_t is net financial assets of households (deflated by the CPI)

HW_t is the value of dwellings owned by households (deflated by the CPI)

FL_t is financial liabilities of households (deflated by the CPI)

NF_t is new firm formation (number of new firms registered for VAT)

$D2001$ and $D2005$ are dummy variables taking a value of unity in 2001 and 2005 respectively and otherwise zero.

Δ is the difference operator indicating an annual change in the variable.

Table B2 Long-run cointegrating relation

	$C_t = \alpha_0 + \alpha_1 YD_t + \alpha_2 NFA_t + \alpha_3 HW_t + \alpha_4 NF_t + \alpha_5 D2001 + \alpha_6 D2005$						
	<i>const</i>	YD_t	NFA_t	HW_t	NF_t	$D2001$	$D2005$
Coefficients	13351	0.76	0.036	0.021	0.12	-20949	22992
t-ratios	(1.48)	(30.37)	(6.83)	(4.67)	(2.13)	(-2.65)	(2.56)

The equation has satisfactory econometric properties. Lag lengths were chosen using information criteria. Tests for residual serial correlation and heteroskedasticity are satisfactory and the Pesaran-Shin bounds test indicates the presence of a cointegrating relation among the variables as shown in Table B2. The statistically significant coefficient

on lagged consumption of -0.61 in Table B1 can be interpreted as the rate of convergence of consumption to its long-run value given in Table B2.

The important coefficients for present purposes are those on the change in debt (new borrowing less repayments, FL_t). These coefficients sum to 0.18 indicating that annual consumption increases by 18% of the change in real financial liabilities. Most of these liabilities consist of long-term debt secured on dwellings (i.e. mortgages). Our interpretation of this relationship is that new mortgage debt to finance existing (rather than new) dwellings leads to additional spending on among other things removal companies, furniture, furnishings, kitchen and bathroom equipment etc. With a chain of buyers and sellers a single loan can be associated with several sets of purchases. In addition, the final seller in the chain accrues a lump sum of cash and some of this may be spent on consumption. There may also be some "equity withdrawal" along the chain of buyers and sellers which leaks into consumption. The purchase of dwellings also involves the services of lawyers, and estate agents. These costs are in theory counted in the National Accounts as fixed investment although notionally the cost of transferring ownership of land (as distinct from structures) should be excluded. It is unclear how comprehensively these transactions costs are accounted for.

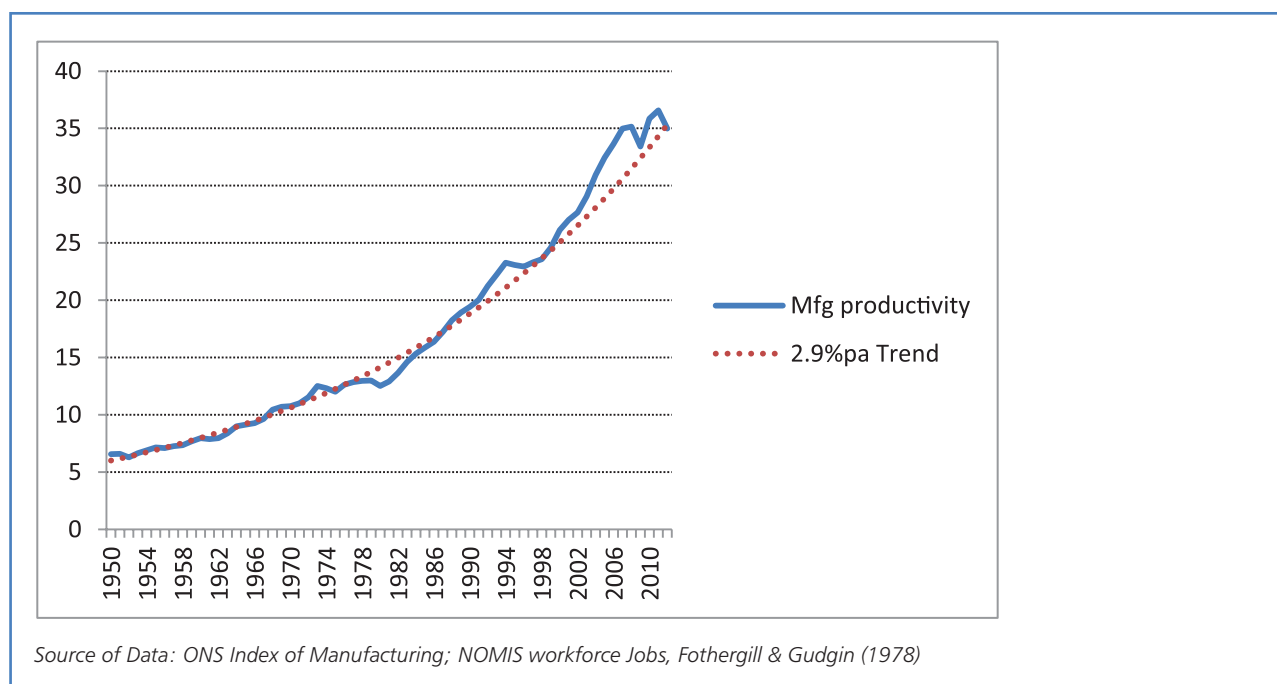
Changes in household debt also influence the price of dwellings and hence the housing wealth variable (HW_t) in the equation above. Housing wealth has increased from 70% of GDP in the 1950s to 270% today. The rise was particularly sharp between 1995 (146%) and 2007 (286%). With a long-term coefficient of 0.021 on the HW_t variable, the impact of the rise in housing wealth between 1995 and 2007 is equivalent to 4% of real consumer spending. This can be considered an indirect impact of rising debt and one that acted particularly strongly in the long economic boom from 1995 to 2007. Added to the direct effect of additional borrowing, described in the previous paragraph, we estimate that the impact was to add an annual 9% to consumer spending between 1995 and 2007, an annual rate of 0.7%.

More generally, household debt rose by 7% p.a. in real terms over the period 1979-2007 compared with 4.4% p.a. over the previous three decades. The above econometric equation for real consumer spending suggests that a 7% p.a. increase in real household debt directly raised real household consumption by 1.25% p.a. This in turn would raise real GDP by 0.9% p.a. The same calculation for the earlier 1950-79 period suggests that rising debt boosted real consumer spending by 0.44% p.a. and GDP by around 0.3% p.a. The increase in the boost to GDP in the post-1979 period was thus of the order of 0.6% p.a. The indirect impact via rising house prices had less impact over this long period, but is estimated to have added an extra 0.1% p.a. to growth in GDP. The observed growth in real GDP over the period 1979-2007 was 2.9% p.a. Without the boost from faster growth in household sector liabilities we estimate that growth would have been 2.2% p.a. If UK Governments had realised that the underlying growth rate was 2.2% p.a. instead of 2.75% p.a. or more, it seems likely that public spending would have risen more slowly and that public debt would now be much lower.

ANNEX C THE IMPACT OF SECTORAL CHANGES ON AGGREGATE PRODUCTIVITY

Growth in labour productivity in the economy as a whole is the weighted average of productivity growth in its component sectors. If fast growing sectors become smaller over time this will tend to depress the growth of aggregate productivity. In the UK, productivity has tended to grow faster in manufacturing than in services or non-manufacturing sectors taken together. The growth rate of productivity in UK manufacturing has been close to 2.9% per annum for many decades (chart C1), whereas the growth rate for non-manufacturing sectors taken together has been close to 1.5% per annum.

Chart C1 Index of manufacturing output divided by manufacturing employment

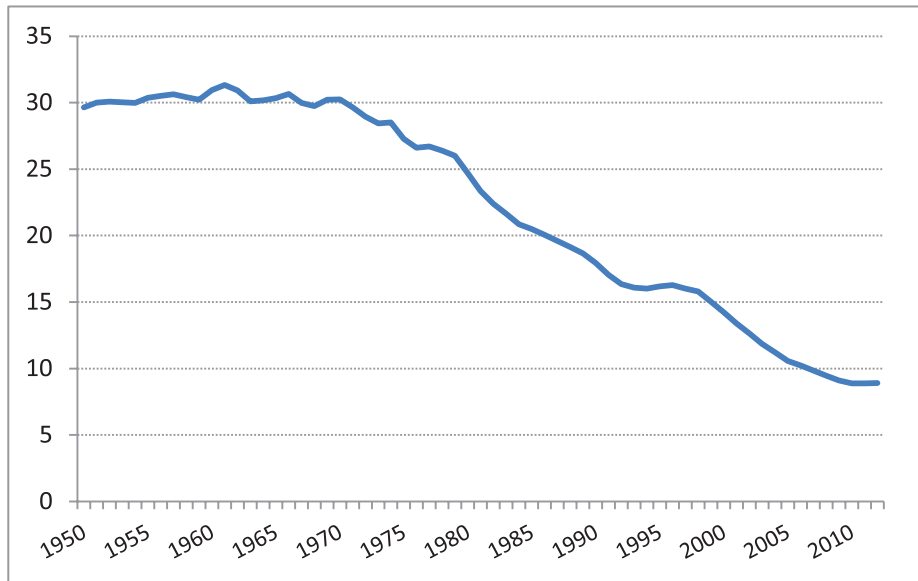


Until 1970 manufacturing accounted for close to 30% of all people employed in the UK, but this proportion began to fall rapidly after 1970 (chart C2). By 2012 manufacturing employed only 9% of all employed people and accounted for only 10% of gross value added. At any given time the level of aggregate productivity is the sum of the productivity in its component sectors weighted by employment, i.e:

$$\frac{Q}{E} = \frac{1}{E} \sum_i q_i = \sum_i \left(\frac{q_i}{e_i} \right) \frac{e_i}{E} \quad (C.1)$$

Where q_i and e_i are respectively output and employment in sector i ; and Q and E are aggregate output and employment. A sector like manufacturing with fast growing productivity tends to have a falling share of total employment and hence it is difficult to assess *a priori* what the impact will be on aggregate productivity.

Chart C2 Manufacturing share of total employment in the UK



Source of data: ONS National Accounts Workforce Jobs; Historical Labour statistics

In order to investigate the impact of sectoral differences in productivity growth on aggregate productivity growth we have constructed a small simulation model. The model has the following initial values which approximate to the situation in the UK in 1980:

- Manufacturing output (GVA in constant prices) = 35; non-manufacturing output = 65; total output = 100
- Manufacturing employment = 30; non-manufacturing employment = 70; total employment = 100
- Hence the initial level of productivity (constant price GVA per employee) is 1.1666 in manufacturing; 0.9286 in non-manufacturing and in 1.000 in aggregate.
- The initial price level in both sectors and in aggregate = 1.00
- Current price GVA is equal to constant price GVA multiplied by the sectoral price
- The capital output ratio is set at 1.00 in each sector, giving an equal return on capital across sectors
- Initial population is 225 and population of working age is 150

The model is run over time on annual values for up to 75 years. The variables are determined as follows:

- Aggregate real output grows at 2.5% per annum.
- Productivity grows at 3% per annum in manufacturing and 1.5% p.a. in non-manufacturing.
- Real output in manufacturing is determined by the following equation:

$$q_m/q_{m-1} = \alpha(q_T/q_{T-1})p_m^{-\beta}$$

where:¹²³

- q_m and q_T are real output for manufacturing and the total economy respectively
- p_m is the price level for manufactures (initial year = 1.00)
- α is income elasticity of output for manufactures
- β is the price elasticity of output for manufactures.

¹²³ The equation is a convenient representation, for simulation purposes, of the relationship between the growth of total output and the growth of manufacturing output. The parameter, α , if less than unit, generates a decline in manufacturing output over time. This parameter is not strictly speaking an income elasticity but has the same purpose. The other parameter, β , is a conventional price elasticity.

- Current price GVA is obtained as the sum of wages and profits
- Wages are set equal to 70% of aggregate current price GVA and are always the same in each sector
- Profits are set as a mark-up on wages at 1.42 (i.e. profits are 30% of current price GVA)
- Price level for manufactures p_m is obtained as the ratio of current price GVA to constant price GVA
- Aggregate price level is set constant at 1.00 for all years. Hence the sectoral prices can be interpreted as relative prices
- Aggregate productivity is given by aggregate output divided by aggregate employment
- Population both total and of working age grow at 0.5% per annum
- Other variables are obtained by addition or subtraction since the two sectors sum to the aggregate economy

Results

The model was first run with a unitary coefficient of output for manufactures and a price elasticity of -0.35 (indicating that a one percentage point fall in the relative price of manufactures leads to a 0.35% per annum rise in output. The results of running the model with 3% per annum productivity growth in manufacturing and 1.5% per annum in non-manufacturing is a relatively constant growth of aggregate productivity at close to 1.95% per annum (chart C3). In this case the share of manufacturing employment remains quite high (chart C4), and the share of real output actually rises and it is this which leads to a relatively constant growth rate for total productivity.

Although the elasticities used in the previous paragraph are reasonable they predict a share of manufacturing current output and employment much higher than has actually occurred in the UK since 1980 and shown in chart C2. The decline in the manufacturing share in the 34 years from 1980 to 2014 can be reproduced with an income-coefficient for manufacturing output of 0.97 indicating a fall of 3% per annum relative to the growth of aggregate real GVA. The impact upon aggregate productivity growth rates is shown in chart C3. In this case the annual growth rate of productivity for the total economy falls to 1.4% per annum in 30 years, and there-after begins to converge very slowly towards 1.5% per annum. As we know, the decline in the share of manufacturing was due to competition from lower cost producers and off-shoring of production by domestic firms, combined with increased imports of manufactures. While the manufacturing share of current price GVA fell to 10% by 2012 the share of manufactured goods in consumer spending remains at 45%. This process of globalisation is estimated to have reduced the growth rate of total economy productivity by 0.35% pa on average over the period 1980-2012. This is less than the 0.45% per annum reduction in trend actually observed between the pre-1980 and post-1980 periods. The conclusion is that the decline in manufacturing due to globalisation is responsible for most but not all of the decline in total economy productivity.

Chart C3 Simulation Results: Annual % Growth of Productivity: Total Economy

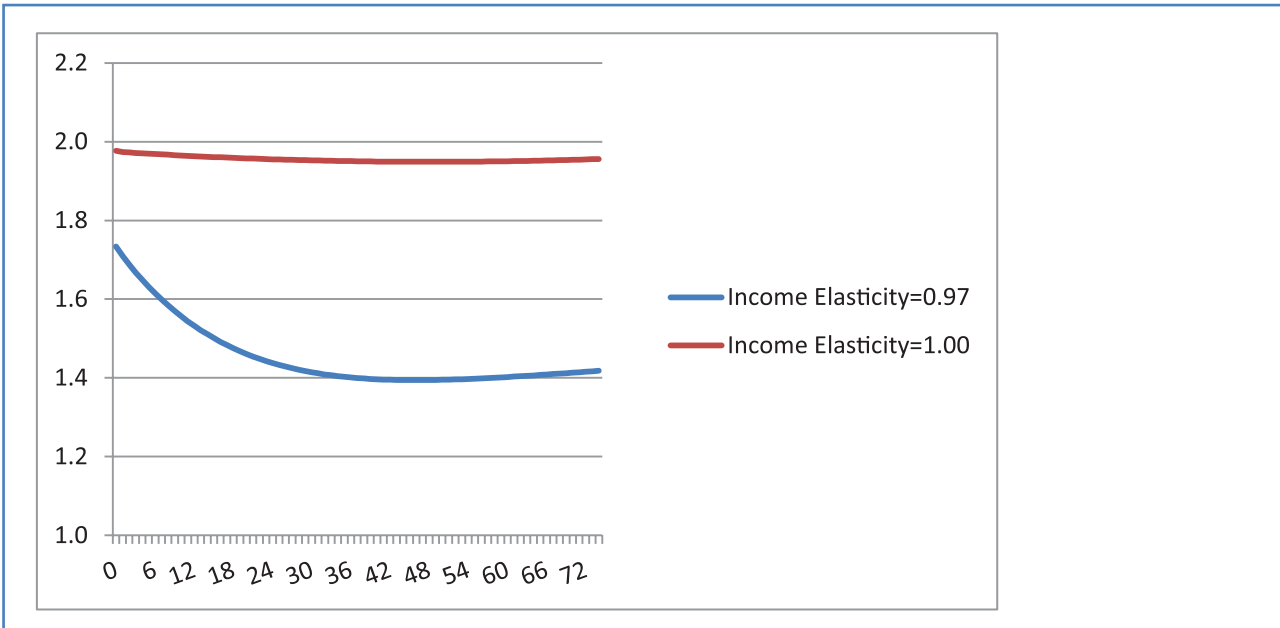
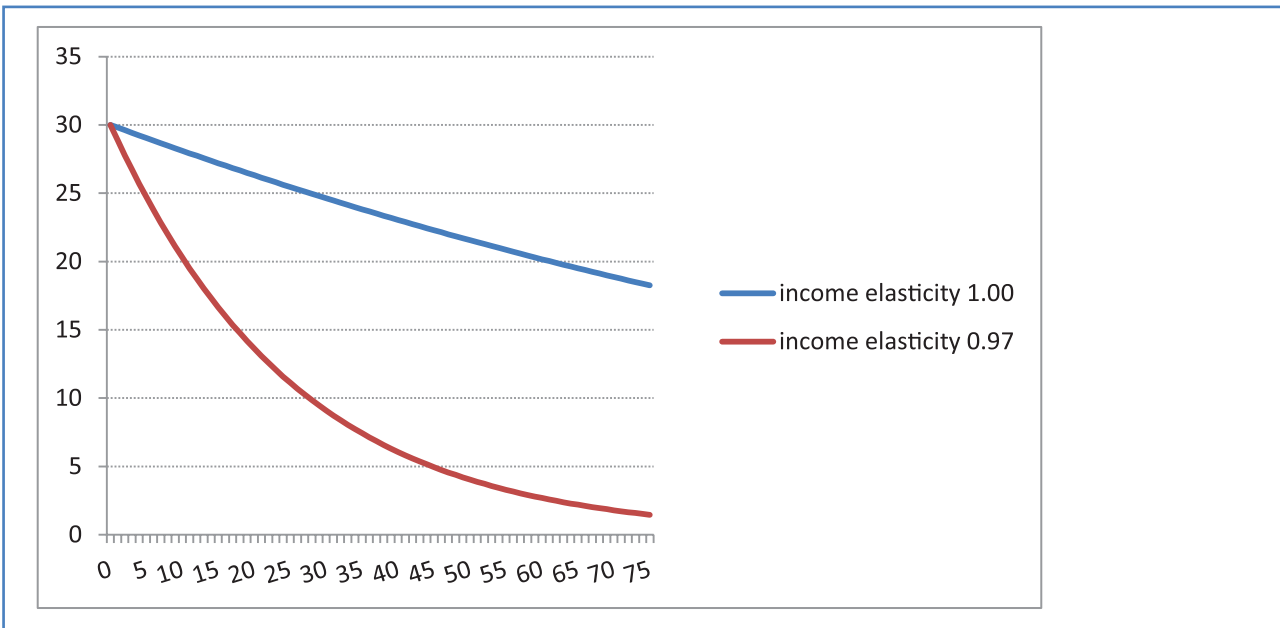


Chart C4 Manufacturing Employment Share of Total Employment



This theoretical analysis would predict that the growth rate of productivity for the economy as a whole should have fallen to 1.4% per annum as the share of manufacturing fell to 10%. UK productivity (real GDP per employed person) is currently still below its 2007 level and we expect it remain so until at least 2016. It seems unlikely that the growth rate of UK productivity will exceed 1.4% per annum over a period as long as two decades from 2007. If this is correct it suggests that the underlying growth rate of productivity in the UK is now around 1.4% per annum.

One puzzle remains. This is why aggregate productivity in the simulation should fall to 1.4% per annum when assumed growth of productivity in both manufacturing and non-manufacturing was higher than this. The reason for this counter-intuitive result can be seen in the following expression in which ‘%(..)’ indicates a percentage growth in the variable within the parentheses:

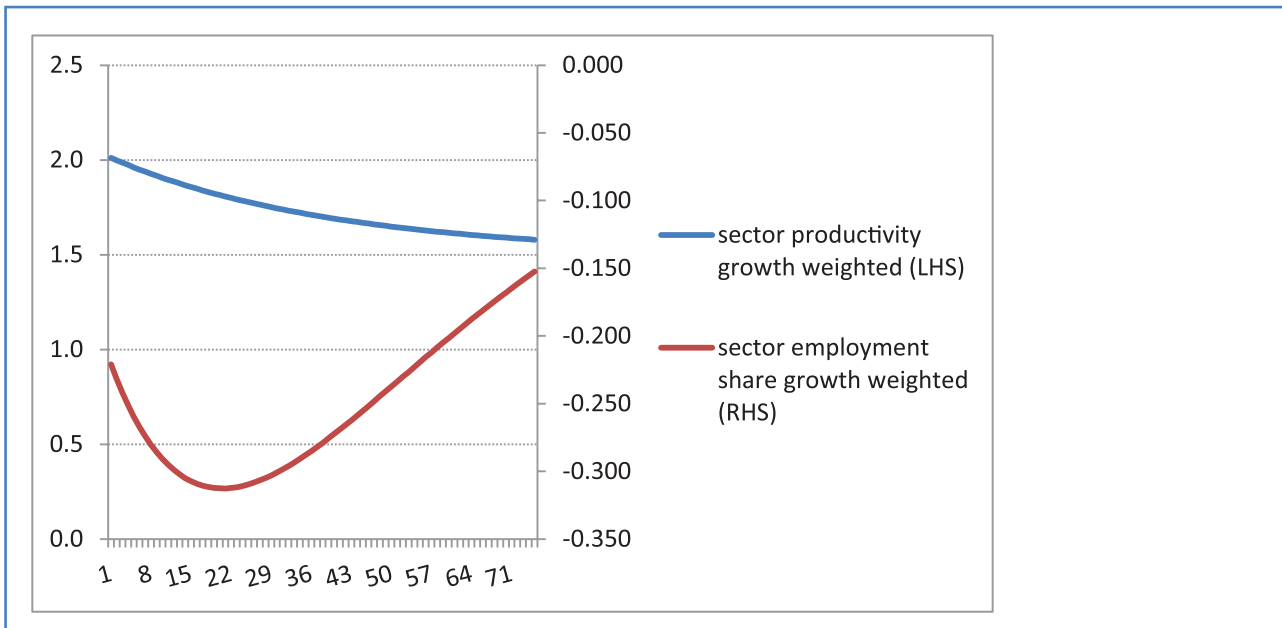
$$\% \left(\frac{Q}{E} \right) = \frac{E}{Q} \frac{d \left(\frac{Q}{E} \right)}{dt} = \sum_i \left(\% \left(\frac{q_i}{e_i} \right) + \% \left(\frac{e_i}{E} \right) \right) \frac{q_i}{Q} \quad (\text{C.2})$$

The first term on the right-hand side of the formula is the sum of the growth rates in sector productivities weighted by the sector’s share in output. As we can see this alone does not equal the growth rate of aggregate productivity. An extra contribution is involved and this is described by the second term on the right-hand side of equation C.2. This is the sum of the percentage change in the share of sectoral employment in total employment, again weighted by the sector’s share in output. The individual contributions of these two components are shown in chart C5 for the case with an income elasticity for manufacturing of -3% per annum relative to the growth of the total economy. The sum of weighted sector productivity growths converges, as expected, on the growth rate of the sector with slower growth of productivity; in this case the growth rate of non-manufacturing (1.5% per annum).

The second component, the weighted growth of the sector employment share, is initially negative and becomes increasingly negative until it reaches a minimum after 21 years. After this it slowly converges on zero. This second term is the inter-sectoral effect of employment re-allocation resulting from productivity growth, whose impact on the aggregate depends on the relative productivity *levels* (see *equation C.5 below*). If employment is re-allocated from high to low productivity sectors, this second term is negative, reducing the overall aggregate productivity growth. During a transition, when employment shares are rapidly changing, it is possible for the aggregate productivity change to lie outside the weighted average of sectoral productivity growth rates.

It can be noted that total output (GVA) per capita in this model grows by assumption at 2% per annum. This is implicitly assuming that real demand can be expanded at this rate by monetary or fiscal policies. We have already shown that with a relative income elasticity of -3% on manufacturing output growth, the growth of aggregate productivity declines from 1.75% per annum to 1.4% per annum as manufacturing employment falls from 40% of all jobs down to 10%. The reason that this decline in growth of total productivity does not depress growth in per capita GVA is that the latter is boosted by a rising employment rate. In this model the employment rate rises from 66% (of working-age population) to 79% as manufacturing declines from 40% of jobs to 10%. In other words, falling productivity growth is offset by a rising employment rate.

Chart C5 Components of Growth Rates in Aggregate Productivity.



Derivation of Equation C.2

Aggregate productivity is defined as an employment-weighted sum of sector productivities:

$$\frac{Q}{E} = \sum_i \left(\frac{q_i}{e_i} \right) \frac{e_i}{E} \quad (\text{C.1})$$

where $Q = \sum_i q_i$ and $E = \sum_i e_i$

Aggregate productivity must lie between the minimum and maximum sectoral productivity. The same property does not in general hold for percentage rates of change of aggregate productivity.

A formula for aggregate productivity growth rate

Differentiate with respect to time:

$$\frac{d(Q/E)}{dt} = \sum_i \left(\frac{d(q_i/e_i)}{dt} \frac{e_i}{E} + \frac{d(e_i/E)}{dt} \frac{q_i}{e_i} \right) \quad (\text{C.4a})$$

Re-express as:

$$\frac{d(Q/E)}{dt} = \sum_i \left(\frac{e_i}{q_i} \frac{d(q_i/e_i)}{dt} \frac{q_i}{E} \frac{q_i}{e_i} + \frac{E}{e_i} \frac{d(e_i/E)}{dt} \frac{q_i}{e_i} \frac{e_i}{E} \right) \quad (\text{C.4b})$$

Define the proportional change in the ratio $\% \left(\frac{q_i}{e_i} \right) = \frac{e_i}{q_i} \frac{d(q_i/e_i)}{dt}$ etc. then the above formula can be re-expressed:

$$\frac{d(Q/E)}{dt} = \sum_i \left(\% \left(\frac{q_i}{e_i} \right) + \% \left(\frac{e_i}{E} \right) \right) \frac{q_i}{e_i} \frac{e_i}{E} \quad (\text{C.4c})$$

Hence:

$$\frac{E}{Q} \frac{d(Q/E)}{dt} = \% \left(\frac{Q}{E} \right) = \sum_i \left(\% \left(\frac{q_i}{e_i} \right) + \% \left(\frac{e_i}{E} \right) \right) \frac{q_i}{Q} \quad (\text{C.4d})$$

This can conveniently be re-expressed as:

$$\% \left(\frac{Q}{E} \right) = \sum_i \% \left(\frac{q_i}{e_i} \right) \frac{q_i}{Q} + \sum_i \% \left(\frac{e_i}{E} \right) \frac{e_i}{E} \left[\frac{q_i/e_i}{Q/E} \right] \quad (\text{C.5})$$

In this form, the expression shows that the percent change in aggregate productivity can be decomposed into two parts. The first is the output-weighted sum of sectoral percent productivity changes, which must lie between the minimum and maximum sectoral productivity change. This is the direct intra-sectoral impact of productivity growth on the aggregate. The second is the inter-sectoral effect of employment re-allocation resulting from productivity growth, whose impact on the aggregate depends on the relative productivity *levels*.

A second formula

From the definition of aggregate productivity, define:

$$z = \frac{Q}{E} \quad (\text{C.6})$$

And differentiate logarithmically

$$\frac{\dot{z}}{z} = \frac{\dot{Q}}{Q} - \frac{\dot{E}}{E}$$
$$\frac{E}{Q} \frac{d(Q/E)}{dt} = \sum_i \left(\left(\frac{\dot{q}_i}{q_i} \right) \frac{q_i}{Q} - \left(\frac{\dot{e}_i}{e_i} \right) \frac{e_i}{E} \right) \quad (\text{c.7})$$

In this form, the aggregate productivity growth rate is the difference between the output-weighted sectoral sum of output growth and the employment-weighted sectoral sum of employment growth.

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