



# The Economic Consequences of Mr Osborne

Victoria Chick and Ann Pettifor  
with Geoff Tily  
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**Prime**

# **The Economic Consequences of Mr Osborne: Fiscal consolidation: Lessons from a century of UK macroeconomic statistics**

By Victoria Chick and Ann Pettifor with Geoff Tily

*Fiscal consolidation does not 'slash' the debt, but contributes to it, as the extent of economic recovery becomes increasingly uncertain Prof. Victoria Chick and Ann Pettifor examine a century's worth of macroeconomic evidence to argue that contrary to conventional wisdom we need to 'spend away the debt'.*

## 1. Introduction

In this paper we investigate, by means of a century of UK data, the possibility of improving the government's fiscal position by cutting expenditure. The period before the second world war provides examples of genuine 'fiscal consolidations', that is, episodes when government spending actually fell in money terms. These periods are contrasted with fiscal expansions. Spending figures are shown alongside outcomes for the ratio of government debt to GDP, interest rates, unemployment, GDP and prices. Outcomes for the public finances are seen as running almost entirely contrary to today's conventional wisdom, which is derived from microeconomic thinking: when sustained, fiscal consolidation increases rather than reduces the public debt ratio and is in general associated with adverse macroeconomic conditions. The analysis is extended to the post-war era, in which government expenditure never actually falls, but the pattern is sustained: when expenditure rises comparatively rapidly, the debt ratio falls and the economy prospers, and when it levels off, the debt ratio worsens and macroeconomic indicators are less favourable.

A summary analysis over all episodes is given in section 2; section 3 details each of the episodes, and section 4 presents an interim discussion of the main results, drawing on Keynes's multiplier theory, and an overview of the outcomes for inflation and interest rates and the associated theoretical explanations. Exposition of the historical background is limited and largely restricted to footnotes, where possible, for reasons of length. There is some discussion of monetary policy, because it is important to the context for and impact of fiscal initiatives. The sources for data used in all tables are given in Annex 1, which also includes charts of key measures over the century from 1909 to 2009. The data are defined as follows:

- government expenditure is measured as the final consumption and fixed capital formation of central and local government; transfer payments are deliberately excluded;
- government debt is measured as a share of GDP;
- interest rate figures are for the yield on long-term government bonds; and
- prices are measured by the GDP deflator.

The analysis points to a fundamental error in contemporary discussions. It is not possible to assess the stance of fiscal policy from estimates of the public sector deficit. Keynes's macroeconomics and the empirical evidence discussed here indicate that an expansionary fiscal policy will lead to growth in activity and employment, so that, with spare capacity, high government expenditure reduces the deficit. On the basis of an analysis of the deficit, conventional wisdom now holds that fiscal policy was not important in the Great Depression for both the US and the UK (see Romer, 2009 and Crafts, 2010).

Finally, the same reasoning is part of the justification for excluding transfer payments from any analysis of the relationship between government expenditure

and debt. Benefit expenditures are also an *outcome* of fiscal policy. While transfers are hence excluded from the main analysis, the discussion also includes a fairly extensive analysis of these expenditures as an outcome of policy in section 5.

## 2. Summary of results

In section 3, ten episodes, defined according to changes in government expenditure, are examined. Summary statistics for the government debt ratio and government expenditure are shown in Table 2.1 and plotted in Figure 2.2. Each data point corresponds to the average annual change in (i) government debt as a percentage of GDP and (ii) the percentage growth in government expenditure in money terms.<sup>1</sup> As above, the government expenditure figures are based on final demand and exclude transfer payments, such as benefits and interest payments. From an economic point of view, final demand is a direct contribution to aggregate demand and follows most directly from deliberate policy action, while any effect of transfers on aggregate demand must work through their redistributive effect. From an empirical point of view, data on transfers are distorted by outcomes, so that a policy that successfully expands employment will reduce benefit expenditures. Similar reasoning to the latter point has led us to use only expenditure and not taxes to measure the fiscal stance. The debt ratio rather than the deficit is used in order to avoid the identification problem that using deficit data would entail. Moreover, the debt ratio is the central preoccupation of the bond market.

Table 2.1: Annual average change in government finances

	Expenditure	Debt, % GDP
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1909-13	4.3	-1.5
WWI, 1913-18	62.7	17.4
1918-23	-20.9	13.2
1923-31	2.2	-0.9
1931-33	-5.4	5.0
1933-39	18.3	-7.0
WWII, 1939-44	38.1	10.6
1944-47	-24.5	17.0
1947-76	10.1	-6.8
1976-2009	7.6	0.4

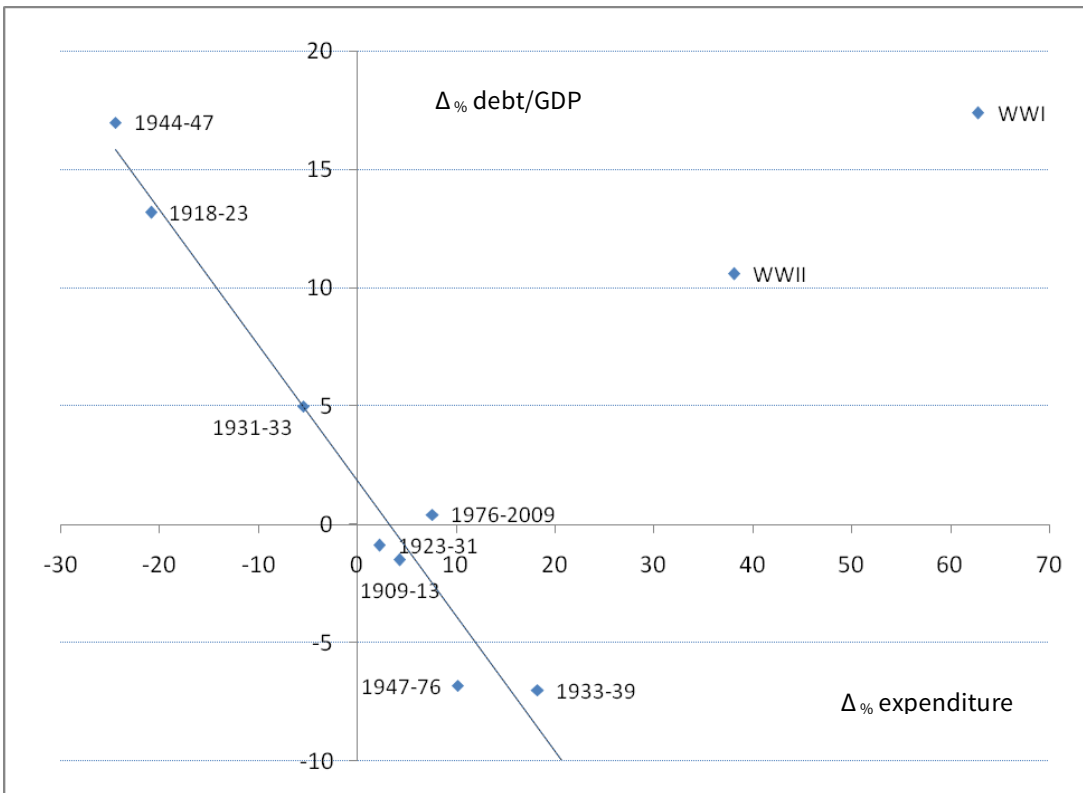
<sup>1</sup> For the calculation of growth rates, years of peak and trough expenditure are used in both adjacent periods; average levels exclude the opening peak or trough year.

Figure 2.2 shows there is a very strong negative association between government expenditure and the government debt, excluding the two outliers for the World Wars. As public expenditure increases, public debt falls, and *vice-versa*. A simple regression (excluding the World Wars) shows an  $R^2$  of -0.98:

$$\Delta\% \text{ debt/GDP} = 1.8 - 0.6 \Delta\% G.$$

Even in war, when the debt ratio rises, it does so by a good deal less than the increases in government expenditure. Plainly, with a small number of observations, the equation is not very robust, but the negative association is very strong.<sup>2</sup>

Figure 2.2: Changes in government expenditure and debt



Source: see annex 1

<sup>2</sup> Annex 2 gives regressions and diagnostics for annual data points and for averages by decades. While a negative association is still evident, from the perspective of single-year outcomes, increases in expenditure can be associated with increases in debt and *vice-versa*. This indicates how the overall conclusions follow most certainly when the actions of the authorities are sustained for more than one year

### 3. Analysis of individual episodes

#### A. Expansion 1: 1909-1913

The period of the run-up to the First World War was a ‘golden age of Liberalism’, under Campbell-Bannerman and then Asquith. The foundations of the welfare state were laid, with old age pensions, health and unemployment insurance, and differential rates of income tax. Government expenditure rose modestly (4 per cent a year), the government debt ratio fell and unemployment was low by modern standards. Monetary policy was based on the gold standard, without undue strains; however, long-term interest rates continued a steady upward trajectory that had begun with the Boer War (1899-1902).

Table 3A: Expansion 1

	<b>Government Expenditure</b> £million	<b>Nominal GDP</b> £million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
1909	197	2143	9.2	33	3.0	3.3	7.7	-0.4
1910	206	2233	9.2	33	3.1	3.5	4.7	0.3
1911	211	2316	9.1	30	3.2	2.3	3	1.5
1912	221	2378	9.3	29	3.3	-0.3	4	3.1
1913	233	2517	9.3	27	3.4	5.2	3.6	0.7

## B. Expansion 2: WWI, 1913-1918

Wartime fiscal expansion was associated with a rise in the debt ratio. In the First World War public expenditure rose from £233m in 1913 to £1850m in 1918, and debt rose from 27 to 114 per cent of GDP.<sup>3</sup> Unemployment fell to nearly zero, though one must be aware that the statistics disguise the human cost behind this figure. The interest rate on long-term government debt continued to rise from 3.4 to 4.4 per cent. In volume terms, the economy grew by 9 per cent over the course of the war; prices nearly doubled.

Table 3B: Expansion 2

	<b>Government Expenditure</b> £ million	<b>Nominal GDP</b> £ million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
1913	233	2517	9.3	27	3.4	5.2	3.6	0.7
1914	354	2553	13.9	26	3.5	0.8	4.2	0.7
1915	1062	3139	33.8	36	3.8	10.1	1.2	10.8
1916	1341	3588	37.4	61	4.3	-0.1	0.6	13.8
1917	1691	4537	37.3	90	4.6	0.5	0.7	26.9
1918	1850	5243	35.3	114	4.4	-1.8	0.8	18.6

<sup>3</sup> This expansion was aided by the development of 'Bradburys' (named after the Permanent Secretary to HM Treasury), which permitted the money supply to be extended beyond the limits set by the gold standard, to which Britain continued to adhere through the war.

### C. Consolidation 1: post-WWI and the ‘Geddes Axe’, 1918-1923

After World War I, the interim report of the Cunliffe Committee (1918) advocated deflationary monetary and fiscal policies so that the pre-war parity of sterling could be regained. Expenditure was cut sharply between 1918 and 1920, and then a further round of cuts was implemented between 1921 and 1923. Based on the recommendations of an independent committee, the latter cuts are known as the Geddes Axe.<sup>4</sup> Table 3C shows nominal expenditure falling over the period from £1850m to £483m and public debt as a share of GDP rising from 114 to 180 per cent. The post-war macroeconomic outcomes were nasty. There was a very sharp rise in unemployment and fall in GDP – especially in money terms; a severe dose of inflation was followed by a severe deflation. Government bond yields remained virtually static in nominal terms, but in real terms yields rose to a very high level as prices fell (not shown, but derived by comparing interest rates with the GDP deflator growth).

Table 3C: Consolidation

	<b>Government Expenditure</b> £ million	<b>Nominal GDP</b> £ million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unem- ployment rate</b>	<b>GDP deflator growth</b>
1918	1850	5243	35.3	114	4.4	-1.8	0.8	18.6
1919	968	6230	15.5	136	4.6	-8.7	6	17.8
1920	591	5982	9.9	133	5.3	-6.7	3.9	20.3
1921	648	5134	12.6	150	5.2	-5.8	16.9	-10.5
1922	555	4579	12.1	170	4.4	3.5	14.3	-16.1
1923	483	4385	11.0	180	4.3	3.1	11.7	-8.0

<sup>4</sup>The Committee on National Expenditure was appointed in August 1921 by David Lloyd George. It was chaired by Sir Eric Geddes (business background, leading Minister in the war, Conservative MP).



### D. Expansion 3: 1923-31

Although the severe austerity of the immediate postwar period was relaxed slightly, policy was still driven first by the ambition to return to gold at the prewar parity and then, after the standard was re-established in 1925, the need to fulfil its conditions, until the ambition was given up in September 1931 (see Chick, 1999). Since British prices and wages were above those in the US and other major trading partners, this meant a continuation of broadly deflationary policies. In this period, that policy was carried out mainly by restriction of credit<sup>5</sup> and high interest rates: public expenditure, with the exception of 1928, expanded slightly (by about 20 per cent over the nine years). It rose most sharply between 1924 and 1925. GDP rose through 1929 but then the crisis had its effect, bringing income in 1931 down virtually to its level in 1923. The debt/GDP ratio fell until 1931. Unemployment was high throughout the period but rose sharply in 1930-31.

Table 3D: Expansion 3

	<b>Government Expenditure</b>	<b>Nominal GDP</b>	<b>Expenditure as share of GDP</b>	<b>Government debt</b>	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
	<b>£ million</b>	<b>£ million</b>	<b>%</b>	<b>% GDP</b>				
1923	483	4385	11.0	180	4.3	3.1	11.7	-8.0
1924	495	4419	11.2	176	4.4	3.0	10.3	-1.4
1925	534	4644	11.5	167	4.4	5.0	11.3	0.3
1926	557	4396	12.7	175	4.6	-4.6	12.5	-1.4
1927	566	4613	12.3	167	4.6	7.0	9.7	-2.4
1928	550	4659	11.8	165	4.5	1.7	10.8	-1.1
1929	556	4727	11.8	162	4.6	2.4	10.4	-0.3
1930	569	4685	12.1	162	4.5	-0.1	16	-0.4
1931	575	4359	13.2	173	4.5	-5.1	21.3	-2.4

<sup>5</sup> See e.g. *CW* XIX Part I, p. 97.

### **E. Consolidation 2: into the Great Depression and the May Committee, 1931-1933**

With the Great Depression growing in intensity and the gold standard constraining the use of monetary policy, there were regular financial crises through 1930 and 1931. In February 1931 the Chancellor set up the ‘Economy Committee’, under Sir George May (the Secretary of the Prudential Assurance Company). Their Report was published on 31 July; it called for a reduction of £97m in public expenditure.<sup>6</sup> The Labour Government imploded; on 24 August the National Government was formed and, within a month (21 September), took the UK off gold. The May proposals were not implemented in full, but, between 1931 and 1933, government expenditure was cut by about 10 per cent. Nominal GDP fell by 2.3 per cent, and government debt rose from 173 to 183 per cent of GDP. Unemployment was around and even over 20 per cent for the duration.

At least by 1933 a floor had been put under the collapse. For Keynes this would have been a consequence of the greater freedom of monetary action afforded by leaving gold, rather than fiscal consolidation. The Bank of England reduced discount rates over 1932. Then, HM Treasury, on the advice of Keynes, took direct action on long-term interest rates: in the conversion operation of June 1932, interest on the 1917 War Loan was reduced from 5 per cent to 3½ per cent (which can be seen in the interest rate figures for 1932 and 1933).<sup>7</sup>

Table 3E: Consolidation 2

	<b>Government Expenditure</b>	<b>Nominal GDP</b>	<b>Expenditure as share of GDP</b>	<b>Government debt</b>	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
	<b>£ million</b>	<b>£ million</b>	<b>%</b>	<b>% GDP</b>				
1931	575	4359	13.2	173	4.5	-5.1	21.3	-2.4
1932	538	4276	12.6	177	3.8	0.3	22.1	-3.6
1933	514	4259	12.1	183	3.4	1.1	19.9	-1.4

<sup>6</sup> Equivalent to 2.4 per cent of GDP and to £34 billion in 2009. The report included recommendations to reduce unemployment benefit by 20 per cent, to cut wages for teachers, the armed forces and the police and to reduce public works expenditures.

<sup>7</sup> The actions were aided by the instigation of ‘exchange management’, whereby exchange rates were managed at fixed parities by the Bank of England buying and selling sterling rather than manipulating discount rates (the Exchange Equalisation Account was set up for these purposes, with large-scale cash resources). Some degree of capital control was instigated for the conversion operation.

## F. Expansion 4: public spending, 1933-1939

In October 1932, correspondence in *The Times* between leading economists instigated a debate on the desirability of additional public expenditure to reduce unemployment.<sup>8</sup> In 1934, nominal expenditure increased by 3.6 per cent and was allowed to grow at a rapidly accelerating pace throughout the rest of the 1930s. The extent of this expansion, from 12 to 23 per cent of GDP, is not widely appreciated, with conventional wisdom holding that the conversion to ‘Keynesianism’ came after the war (or at least with mobilisation, though that did not start in earnest until 1937). The economy recovered: real GDP rose by an average annual rate of 4 per cent, the unemployment rate was halved and the public debt fell from 183 to 141 per cent of GDP.<sup>9</sup> The long-term rate of interest was reduced to a historic low of 2.9 per cent in 1935 and 1936, but the authorities then allowed it to drift upwards to 3.7 per cent in 1938 (perhaps partly reflecting the return of some measure of price inflation).

Table 3F: Expansion 4

	<b>Government Expenditure</b> £ million	<b>Nominal GDP</b> £ million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unem- ployment rate</b>	<b>GDP deflator growth</b>
1933	514	4259	12.1	183	3.4	1.1	19.9	-1.4
1934	535	4513	11.9	177	3.1	6.8	16.7	-0.7
1935	591	4721	12.5	168	2.9	3.8	15.5	0.9
1936	668	4905	13.6	162	2.9	3.1	13.1	0.6
1937	782	5289	14.8	150	3.3	4.3	10.8	3.7
1938	937	5572	16.8	147	3.4	3.0	12.9	2.8
1939	1359	5958	22.8	141	3.7	3.9	9.3	4.4

<sup>8</sup> The opening letter of 17 October was organised by Professor Pigou of Cambridge and was signed by Professor D. H. MacGregor of Oxford, Walter Layton, Josiah Stamp, Arthur Salter and Keynes. The most notorious of the critical letters was from the LSE economists, T. E. Gregory, Friedrich von Hayek, Arnold Plant and Lionel Robbins. Keynes entered the debate most substantially with his March 1933 series of articles in *The Times*, ‘The Means to Prosperity’, later collected and published as a single volume (*CW X*, pp. 335–66).

<sup>9</sup> Though note the repercussions on unemployment of the 1938 US recession, when US fiscal and monetary stimulus was temporarily withdrawn.

## F. Expansion 5: WWII, 1939-1944<sup>10</sup>

The great increase in government expenditure from £1.4 bn in 1939 to a wartime maximum of £5.2 bn in 1944 led to a corresponding rise in government debt. It was not possible for private activity to keep pace, given the extent of the re-orientation of the economy to wartime production and the associated reliance on US imports. Again, the whole labour force was deployed. In volume terms the economy grew by about 20 per cent, significantly more than in World War I and presumably an important factor in the overall war effort. In spite of the rise in the government debt ratio, the interest rate on government bonds was maintained at three per cent.<sup>11</sup>

Table 3G: Expansion 5

	<b>Government Expenditure</b> £ million	<b>Nominal GDP</b> £million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
1939	1359	5958	22.8	141	3.7	3.9	9.3	4.4
1940	3212	7521	42.7	121	3.4	14.4	6	8.6
1941	4337	8831	49.1	131	3.1	6.0	2.2	9.0
1942	4806	9591	50.1	149	3.0	1.0	0.8	7.2
1943	5163	10208	50.6	168	3.1	1.8	0.6	4.5
1944	5206	10272	50.7	194	3.1	-4.5	0.6	6.0

<sup>10</sup> The period is defined by peak annual expenditure, not the actual end of the war.

<sup>11</sup> This was achieved by changes to debt management policy, including the development of Treasury deposit receipts (TDRs), a mechanism that obliged banks to lend to the government at very low interest. Note that Keynes had originally advocated a long rate of 2½ per cent (which was the rate that prevailed in the US).

### G. Consolidation 3: Demilitarisation, 1944-1947

The manner in which the economy was restored to a peace footing contrasted markedly with the process after World War I. Government expenditure was reduced from £5.2 to £2.2 bn between 1944 and 1947. The public debt ratio rose sharply to 1946 but then fell for the first time in 1947. Unlike after World War I, the level of activity was maintained at the greatly elevated wartime levels; critically, nominal GDP was not permitted to contract, except in 1945. While macroeconomic outcomes were not perfect, the authorities managed a fairly seamless transfer of the conduct of activity from the public to the private sector. These processes demand a separate study, but private demand was no doubt fostered by the continuation and extension of the cheap money policy,<sup>12</sup> government incentives for investment, Keynes's schemes in *How to Pay for the War*<sup>13</sup> and, of course, by the macroeconomic effects of not letting government expenditure fall below the share of the economy established towards the end of the 1930s.

Table 3I: Consolidation 3

	<b>Government Expenditure</b> £ million	<b>Nominal GDP</b> £ million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unem - employment rate</b>	<b>GDP deflator growth</b>
1944	5206	10272	50.7	194	3.1	-4.5	0.6	6.0
1945	4365	9831	44.4	232	2.9	-6.2	1.3	3.0
1946	2575	9959	25.9	252	2.6	-0.6	2.5	1.9
1947	2156	10655	20.2	245	2.8	-2.4	3.1	9.0

<sup>12</sup> For example in 1945 the rate on Treasury bills was reduced from 1 to ½ per cent and the rate on TDRs from 1 1/8 to 5/8%; Dalton also pushed downwards on the long-term rate.

<sup>13</sup> Keynes proposed an income tax scheme, where higher payments to reduce consumer demand during the war would be released to boost consumer demand after the war. The extent to which Keynes's proposals were adopted has not been addressed; they were opposed by many, with rationing generally preferred to Keynes's desire to use the price mechanism.

## H. The long expansion from 1947-2009 and the 1976 consolidation

From 1947 to the present, nominal public expenditure has been on an uninterrupted upward trajectory, with every year registering positive growth (Table 3I.1).

Table 3I.1: Annual data for 1947-2009

	<b>Government Expenditure</b> £million	<b>Nominal GDP</b> £million	<b>Expenditure as share of GDP</b> %	<b>Government debt</b> % GDP	<b>Interest rate</b>	<b>Real GDP growth</b>	<b>Unemployment rate</b>	<b>GDP deflator growth</b>
1947	2156	10655	20.2	245	2.8	-2.4	3.1	9.0
1948	2505	11974	20.9	217	3.2	2.6	1.8	7.3
1949	2748	12726	21.6	201	3.3	3.3	1.6	2.5
1950	2871	13308	21.6	197	3.6	3.2	1.6	2.4
1951	3363	14784	22.7	178	3.8	2.7	1.3	7.1
1952	3985	15983	24.9	164	4.2	0.1	2.2	8.9
1953	4178	17121	24.4	154	4.1	3.8	1.8	4.1
1954	4194	18126	23.1	149	3.8	4.1	1.5	0.0
1955	4261	19490	21.9	141	4.2	3.5	1.2	5.9
1956	4573	20956	21.8	133	4.7	0.9	1.3	5.6
1957	4757	22105	21.5	125	5.0	1.7	1.6	3.5
1958	4805	23050	20.8	121	5.0	0.3	2.2	3.4
1959	5100	24348	20.9	116	4.8	4.3	2.3	1.6
1960	5366	25977	20.7	109	5.4	5.3	1.7	1.6
1961	5709	27413	20.8	105	6.2	2.3	1.6	3.2
1962	6124	28711	21.3	102	6.0	1.1	2.1	3.1
1963	6341	30409	20.9	101	5.8	4.3	2.6	1.5
1964	6959	33228	20.9	93	6.3	5.5	1.7	4.4
1965	7769	35888	21.6	87	6.5	2.2	1.5	5.6
1966	8510	38189	22.3	84	6.7	1.9	1.6	4.0
1967	9498	40281	23.6	80	7.1	2.5	2.5	3.8
1968	10179	43656	23.3	81	8.1	4.2	2.5	3.7
1969	10644	47023	22.6	74	8.9	2.1	2.5	4.8
1970	11879	51696	23.0	66	9.7	2.2	2.7	8.0
1971	13333	57670	23.1	60	8.5	2.1	3.5	9.5
1972	15010	64621	23.2	58	9.9	3.7	3.8	7.7
1973	17689	74545	23.7	51	12.3	7.2	2.7	8.0
1974	21747	84513	25.7	50	17.1	-1.3	2.6	14.9
1975	28963	106717	27.1	45	14.8	-0.6	4.2	26.6
1976	33538	126274	26.6	47	14.5	2.6	5.7	15.3
1977	35423	146973	24.1	48	10.5	2.4	6.2	13.8

1978	39512	169344	23.3	49	12.3	3.2	6.1	11.7
1979	45704	199220	22.9	46	11.8	2.7	5.7	14.7
1980	56666	233184	24.3	43	12.1	-2.1	7.4	19.3
1981	62528	256279	24.4	46	13.9	-1.3	11.4	11.3
1982	67533	281024	24.0	44	10.2	2.1	13	7.6
1983	74271	307207	24.2	43	9.9	3.6	12.2	5.4
1984	79317	329913	24.0	45	10.0	2.7	11.5	4.5
1985	83862	361758	23.2	45	9.9	3.6	11.7	6.0
1986	90387	389149	23.2	46	10.1	4.0	11.8	3.2
1987	96391	428665	22.5	46	9.4	4.6	10.5	5.5
1988	102418	478510	21.4	43	9.1	5.0	8.3	6.3
1989	113277	525274	21.6	39	9.7	2.3	6.3	7.2
1990	127018	570283	22.3	35	10.4	0.8	5.8	7.8
1991	138023	598664	23.1	34	9.8	-1.4	8	6.4
1992	145431	622080	23.4	35	8.6	0.1	9.8	3.8
1993	147423	654196	22.5	39	6.6	2.2	10.3	2.9
1994	152998	692987	22.1	46	8.5	4.3	9.4	1.6
1995	157621	733266	21.5	49	7.8	3.1	8.6	2.6
1996	160626	781726	20.5	52	7.7	2.9	8.1	3.7
1997	161139	830094	19.4	53	6.4	3.3	6.9	2.7
1998	168400	879102	19.2	49	4.6	3.6	6.2	2.3
1999	182251	928730	19.6	47	4.9	3.5	6	2.1
2000	194199	976533	19.9	45	4.7	3.9	5.4	1.1
2001	208117	1021828	20.4	43	5.1	2.5	5.1	2.2
2002	228029	1075564	21.2	42	4.8	2.1	5.2	3.0
2003	253328	1139746	22.2	41	5.0	2.8	5.1	3.1
2004	274333	1202956	22.8	43	4.5	3.0	4.8	2.5
2005	275179	1254058	21.9	42	4.1	2.2	4.9	2.0
2006	308854	1325795	23.3	43	4.3	2.9	5.4	2.8
2007	320255	1398882	22.9	45	4.5	2.6	5.3	2.8
2008	346528	1448391	23.9	52	4.1	0.5	5.7	3.0
2009	368089	1396474	26.4	68	4.6	-5.0	7.6	1.5

As a share of GDP, government expenditure has fluctuated around a rate of about 22 per cent, a figure that has been remarkably stable, beyond the large upward movement in the 1970s and to a lesser extent the 1980s (see Table 3I.1 and also the decade averages in Table 3I.2).<sup>14</sup>

<sup>14</sup> Note that the figure for 2009 is greatly distorted by the severity of the decline in GDP.

Table 31.2: Government expenditure as % of GDP, decades

50s	60s	70s	80s	90s	00s
22.4	21.8	27.3	23.3	21.4	22.5

The 1970s were, of course, a defining moment in British post-war economic history, culminating in the 1976 fiscal consolidation. The key events are well known, if often over-simplified. The endgame was disunity in the Labour Cabinet over a policy of cuts in public expenditure when unemployment was rising, a crisis of confidence in sterling and the famous call on the IMF at the end of the year (see eg Cairncross, 1992, Chapter 5). The loan for exchange support was conditional on control of the public deficit and reductions in government expenditure (that were already being imposed by HM Treasury under the Chancellor Denis Healey) . While nominal government expenditure was not reversed, its growth was reduced substantially and there was a real decline in 1977.

Table 31.3: Growth of government expenditure (per cent)

	Nominal	Real
1975	33.2	5.8
1976	15.8	1.7
1977	5.6	-1.2
1978	11.5	1.8

The dynamics of the government debt as a share of GDP echo the change in fiscal stance. Between 1947 and 1975, the debt fell each year. The first rise in the government debt of the post-war era was over 1976 to 1978; since then, the underlying trend of improvement ceased, and the debt has fluctuated with the state of the economy.

The IMF loan marked a decisive shift in macroeconomic philosophy between two quarter centuries that has extended through to the present (though changes to monetary policies had been underway for some time before 1976: see below). Outcomes in this longer time-frame can be assessed by switching perspective to annual average figures (also, the absence of periodic deflations means that more emphasis needs to be given to real figures):<sup>15</sup>

<sup>15</sup> Moving outside macroeconomic statistics, Figure 2A of the Report of the National Equalities Panel (Hills *et al.*, 2009) shows figures for the UK income distribution from 1937 to the present as a ‘U-shape’ trajectory, or ‘inverse Kuznets-curve’. The base of the U coincides with the mid-1970s, marking the point when the continuous improvement in the



Table 3I.4: The long expansion

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<b>Average over years: 2009</b>	<b>1947-1976</b>	<b>1976-</b>
Government expenditure (% GDP)	22.7	22.5
Government expenditure (real growth) <sup>16</sup>	2.3	1.4
Change in public debt (percentage points)	– 6.8	+ 0.6
GDP (real growth)	2.7	2.2
Unemployment	2.3	7.7
GDP deflator (growth)	6.1	5.4
Nominal interest rate	7.0	7.9
Real interest rate	0.9	2.5

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So, just as in the data on levels for the first half of the twentieth century, higher rates of growth in real government expenditure coincided with reductions in the public debt, higher GDP growth and much lower unemployment – and *vice versa*.

In money terms, high government expenditure and high GDP in the first period contrasted with lower government expenditure and lower GDP in the second period, so that the actual ratio was virtually static. The public debt was reduced by the preserved high level of post-war activity and subsequent growth. Again, interest rates were lower in the first period; real rates in the second period were 2½ times as high as in the first period. This will also have been an important factor in the relative economic performance (section 4.4).

Rather than real outcomes, macroeconomic debate has tended to focus on inflation. The choice of dividing line might distort the respective performances, but not to any great extent. Figures for the growth in the GDP deflator by decade are shown in Figure 3J.5.

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income distribution after the war was halted and the progressive deterioration to the present level of inequality began.

<sup>16</sup> These figures exclude government investment, so they are likely to be an underestimate in the earlier period. The more recent figures are based on ‘outcome’ indicators, derived by the UK Centre for Measurement of Government Activity of the Office for National Statistics, which are less useful as an indicator of the pressure of demand. This is likely to mean that government demand is understated in the second period.

Figure 31.5: GDP deflator, growth

50s	60s	70s	80s	90s	00s
4.3	3.6	13.0	7.6	3.6	2.4

In general, the analysis shows that increased government expenditure led to higher GDP in both nominal and real terms. Furthermore, the policies that supported employment and public debt improvements were not associated with significantly higher inflation. Outcomes in the 1970s do not disprove this rule. In the early years of the 1970s, in the wake of a surge in inflation across the world following the US actions in Vietnam and the ‘Great Society’ programme, there were major changes in the monetary environment.<sup>17</sup> The Bretton Woods Agreement was terminated and, especially in the UK, there was a major relaxation of credit control; the approach to monetary and fiscal policy became very reckless. The causes of the inflation of the 1970s were multifaceted, and it is a oversimplification to regard it only as a cumulative effect of expansionary policy.

#### 4. Interim conclusions

##### 4.1 Spending, debt and activity

The empirical evidence runs exactly counter to conventional thinking. Fiscal consolidations have not improved the public finances. This is true of all the episodes examined, except the consolidation after World War II, where action was taken to bolster private demand in parallel to public retrenchment.

Fiscal expansion is less straightforward to unravel, but no less clear-cut. In World War I, policy was less refined, but the authorities were still successful in arranging financing to support a substantial expansion in public expenditure and public debt. Post-war policy was deflationary, with the aim of returning to the gold standard at prewar parity. The effects were punishing, especially to labour income (see Chick 1999), even before the repercussions of the Great Depression. The fiscal expansion and monetary reforms of the 1930s were then a reversal of this position; they resulted in a steady reduction in unemployment (Figure 4.1.1), recovery in GDP (Figure 4.1.2) and improvement to the public finances (Figure 4.1.3).

<sup>17</sup> Hyman Minsky dates financial liberalisation from 1966, with the start of the Eurobond market.

Figure 4.1.1: Unemployment rate

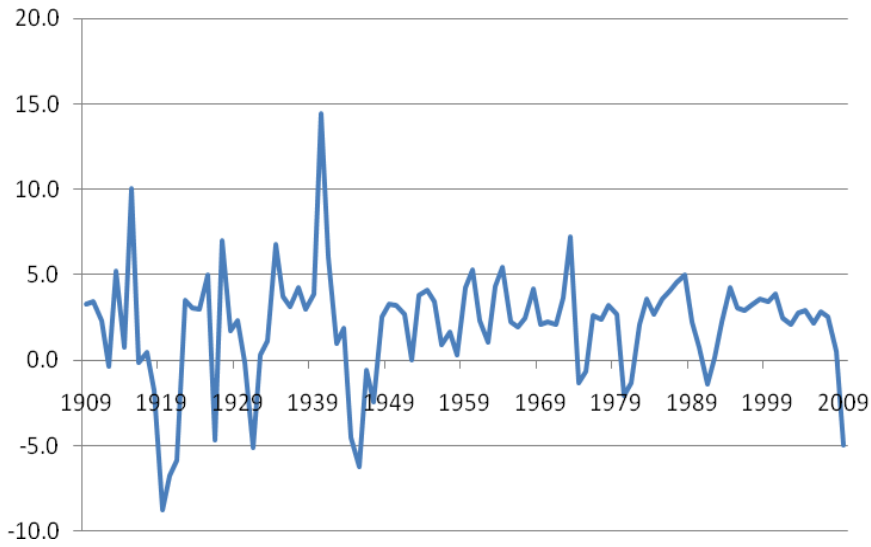
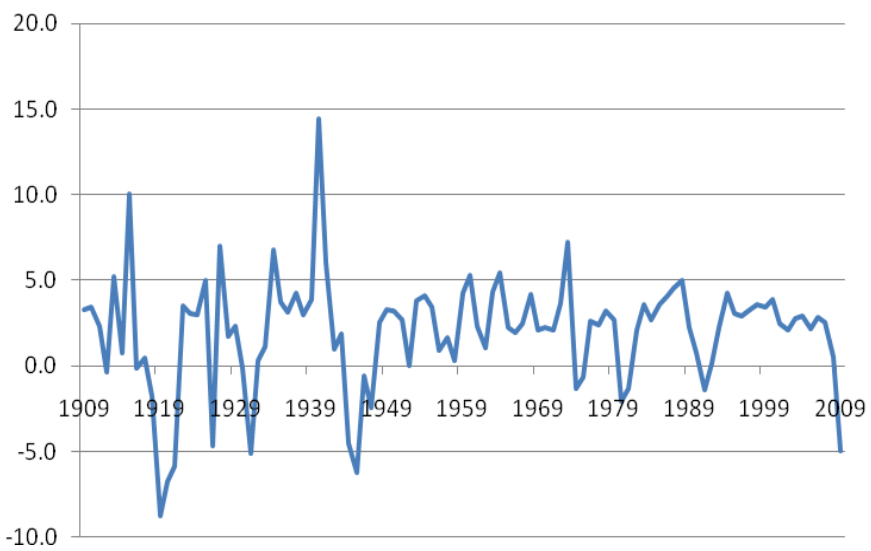
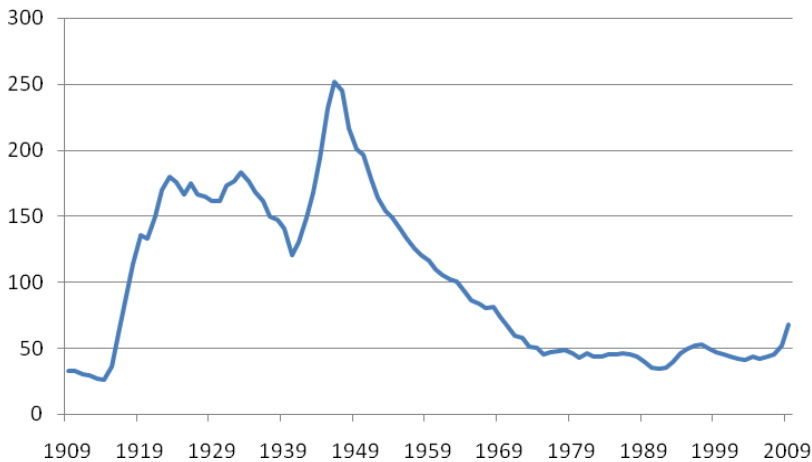


Figure 4.1.2: GDP growth

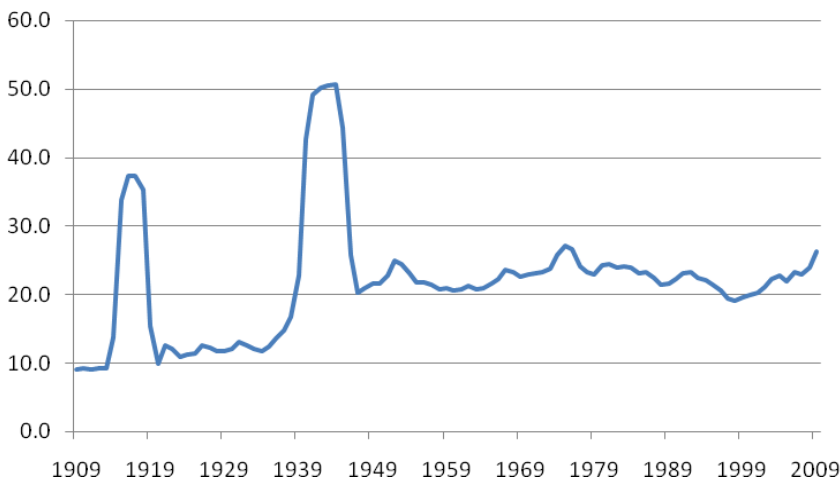


**Figure 4.1.3: Public debt, % GDP**



The financing of World War II was highly effective, in part reflecting the lessons of the 1930s. Any notions of consolidation had been dismissed in post-war policy discussions: the authorities focussed on employment and economic expansion to reduce the debt. The approach was completely successful; within only two years, the debt was on a downward trajectory, and the wartime production and employment gains were preserved and extended through to the 1970s. After World War II, government expenditure had effectively doubled as a share of the economy relative to the 1920s (Figure 4.1.4).

**Figure 4.1.4: Government expenditure, % GDP**



The positive outcomes of this substantial change are inexplicable according to conventional economic analysis, and the quarter century after the war is rightly known as the ‘Golden Age’. A return to what is commonly understood as a more market-orientated economy from 1976 has not seen any reduction in government expenditure as a share of GDP, and the performance on the government debt, let alone all measures of real outcome, severely deteriorated.

## 4.2 Keynes's theory

Keynes's policy prescriptions began to be implemented in the early 1930s. He set a new course for monetary policy after Britain left the gold standard in September 1931. His (and others': see n. 8) advocacy of public works expenditure began to bear fruit from 1934. In his *Means to Prosperity* (1933), he had set out the multiplier theory, which demonstrated the self-financing property of public expenditure.

From Keynes's macroeconomic perspective, the public sector finances are not analogous to household finances. A household can reduce its deficit by reducing its spending, but the public sector is too important for that; what happens to its deficit depends on the reaction of the economy as a whole. Keynes turns Say's Law on its head: "For the proposition that supply creates its own demand, I shall substitute the proposition that expenditure creates its own income" (*CW XXIX*, p. 81). Given spare capacity, public expenditures not only are productive in their own right, but also foster additional activity in the private sector, according to the multiplier. Increased production means increase incomes, which, from the point of view of government, means higher tax revenues and lower benefit (and, later, debt interest) expenditures. He even went as far as claiming "Look after the unemployment, and the budget will look after itself" (*CW XXI*, p. 150). The actual outcome for the public sector finances depends on the value of the multiplier and rates of taxation and benefit expenditure, though the results discussed above indicate that he was not far from the mark (especially looking at matters as a share of GDP).

Conversely, reducing expenditure would normally reduce income. A reduction in public expenditure will be accompanied by rising income *only* if it is outweighed by an expansion in private expenditure. Such an expansion will have to be vigorous: any contraction in public expenditure will always have substantial adverse effects on private demand. There will be reverse multiplier effects as public sector unemployment increases and also as expenditure on procurement from the private sector is reduced; in addition, confidence is likely to be shaken.<sup>18</sup>

## 4.3 Inflation

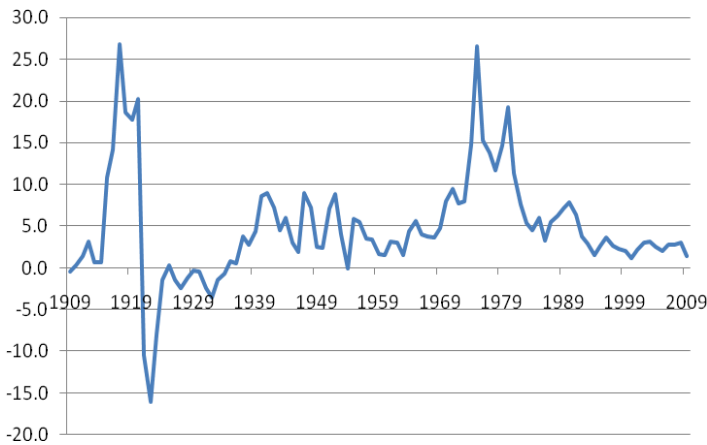
In contrast to the real multiplier of 'Keynesian economics', Keynes's multiplier is a money concept. But, given spare capacity, most of the increase in income following an increase in government expenditure (or reduction in the rate of interest) would go to real output and employment. Again, outcomes support Keynes's position. The figures in section 3 show the 1930s expansion and recovery coinciding with only a

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<sup>18</sup> Issues of counterfactuals merit some discussion here. In each of these episodes, it could be that the change in public expenditure merely coincided with a parallel change in private expenditure. But this would require many coincidences. Moreover, in the event that a private sector recovery was underway, the public expansion would still have accelerated and increased the improvement (and *vice versa*). The same charge has more force against recent analyses of successful contractions, the most influential seemingly being Alesina and Ardagna (2009) (note this appears to be influential in the City of London, eg Broadbent, 2010). Jayadev and Konczal (2010) have decisively rebutted this work, carefully and systematically showing that "examples of successful consolidation are typically conditional on culling a deficit during a boom and not during a slump" (p. 7).

modest level of inflation (see also Figure 4.3.1). Equally, the rate of inflation did not greatly differ in the two halves of the post-war expansion (as the decade figures in Table 3.1.5 also show), in spite of the improved real performance in the first half. Conversely, the two consolidations of the inter-war period were accompanied by price deflations.

Figure 4.3.1: GDP deflator, growth



As the theory suggests, so long as expansionary policy is directed carefully and timed well, excessive inflation is unlikely. Instead, especially in the face of a slump and at a time of high indebtedness, the concern should be of consolidation leading to deflation, which most regard as far more dangerous.

The exceptional circumstances of the inflation of the 1970s have already been discussed (section 3I). Nonetheless, while we reject the notion that Keynes’s approach inevitably leads to excess inflation, the issue merits further discussion that is beyond the scope of this paper. Certainly, the pressures from wages that emerged in the late 1960s-70s also followed changes in the allocation of increased income between the factors of production, following developments in industrial and social relations in an age of near full employment. While there were undoubted practical challenges that were not well met by British policymakers, these changes do not invalidate or devalue Keynes’s underlying economic reasoning.

From the narrower purposes of this paper, the key issue is the use of expansionary fiscal policy to reduce public debt. As seen, reductions in the public debt depend on increases in income. The latter involve higher real output and increased prices, as activity is restored. However the public debt as a share of GDP is reduced primarily by higher activity rather than higher prices. In general any inflation will affect both the numerator and denominator of the debt ratio. To state the obvious, the periods of high inflation in the late 1910s and 1970s were not periods of rapid debt reduction.<sup>19</sup>

<sup>19</sup> The coefficient on ‘prices’ is not significant when the GDP deflator is included as an additional explanatory variable in the regression in section 2. (We owe this result to Mark Hayes.)

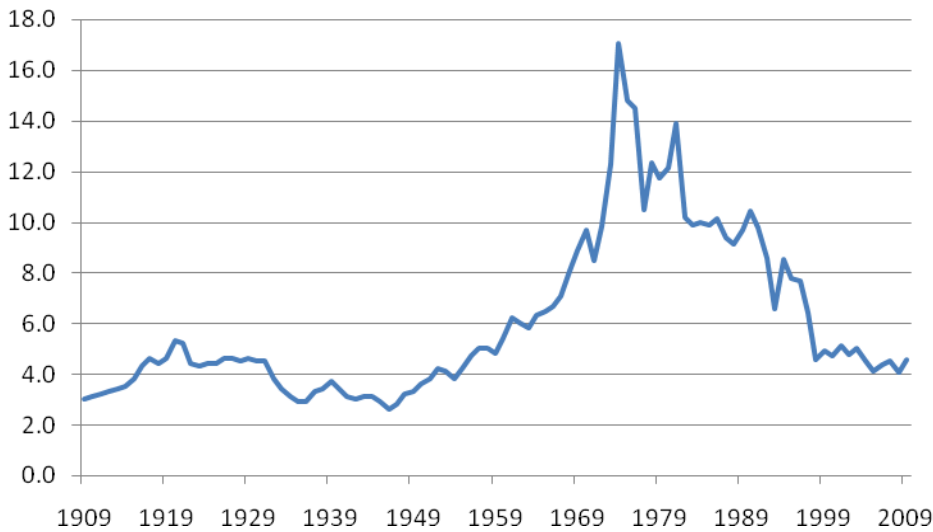
#### 4.4 Interest rates and monetary policy

Finally, considerations related to interest rates have not been given much prominence but are of great importance. The proposition that higher debt levels will push up interest rates is examined for each of the episodes examined in the first half of the twentieth century (Table 4.4.1 and Figure 4.4.2). The figures in the table decisively rebut any notion that higher debt levels are associated with higher interest (the correlation coefficient over this period is  $-0.2$ ). Over these years it became understood that the long-term rate could be brought under the control of the authorities, whatever the planned extent of government expenditure. While that control was rapidly abandoned after the war, low real interest rates prevailed throughout the duration of the ‘golden age’ (as shown in Table 3I.4).

Table 4.4.1: Interest rates and public debt ratios

	Average debt / GDP	Average Interest rate
1909-13	30	3.2
1913-18	65	4.1
1918-23	154	4.8
1923-31	168	4.5
1931-33	180	3.6
1933-39	158	3.2
1939-44	153	3.1
1944-47	243	2.8

Figure 4.4.2: Interest rate



This ‘cheap money’ was central to Keynes’s strategy for post-war economic policy (Tily, 2010 [2007]), and the trajectory of long-term interest rates throughout the second half of the twentieth century was of great importance from a macroeconomic perspective. In the golden age, the low real rates not only facilitated government activity but also fostered high and relatively stable rates of private investment.<sup>20</sup>

Finally, it should be emphasised that each of the fiscal and monetary expansions were facilitated and permitted by wider considerations of financial architecture, monetary and debt management policy. In particular, any rapid growth in public expenditure requires the utilisation of credit creation to bridge the gap between expenditures and revenues. The authorities have created various mechanisms (Bradburys, Treasury deposit receipts and now ‘quantitative easing’) to facilitate this process, including taking advantage of low discount rates. There is a great deal of overlap between any debate about financial regulation and reform and any debate about fiscal policy.

<sup>20</sup> In real terms, gross fixed capital formation grew by 4.6 per cent a year in the earlier period and 2.6 per cent in the later. By decade, average annual growth was as follows:

50s	60s	70s	80s	90s	00s
5.5	5.9	1.4	4.4	2.5	1.4



## 5. Transfers

The correct treatment of transfers is dictated by both empirical and macro-theoretical considerations. The *theoretical* reason for separating transfers from direct public expenditure follows from the direct income generation the latter provides. Transfers do not generate income but shift it around from one group to another: benefits shift income from the employed and better-off to the unemployed, disabled and poor. Interest payments shift income from taxpayers in general to holders of government bonds. The first of these redistributions will typically raise aggregate expenditure, as it redistributes income to those with higher marginal propensities to consume. The second is likely to reduce the overall marginal propensity. But these effects are secondary to the primary effect of expenditure.

In the *statistics*, which are entirely about outcomes, transfer expenditures are partly determined by these primary expenditures: if an expansionary policy is successful, then transfer expenditures on benefits and interest payments will be reduced (the latter with a lag). Outturn data supports this view. Figure 4.2.1 shows a derived time series for transfers as a share of GDP, disaggregated between interest payments and other (see Annex 1 for sources). Interest payments rise sharply with the First World War (particularly with the issue in 1917 of the 5% War Loan); they begin to fall with the advent of the cheap money policy in the 1930s, including the conversion of War Loan in 1932 (sections 3E & F); the same policies then meant that the rise of payments into the Second World War was greatly moderated. The trajectory of interest payments after the War seems to reflect average levels of debt, the lags between reductions in debt and retiring of long-dated bonds, and also the very high (real) rates of interest that prevailed in the early 1980s. The very low figures in the most recent periods are striking, given the hysteria about present levels of debt, even though they are expected to rise in the future.<sup>21</sup> Other transfer payments are seen rising steadily over the whole period. Since the 1970s they have remained at a very elevated share of GDP, reflecting, at least in part, higher levels of unemployment and hence high levels of expenditure on various benefits (Figure 4.2.2 shows, for the post-war period only, ‘net social benefits’ as a share of GDP, to capture more closely the share of the change accounted for by benefits).

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<sup>21</sup> The March *Budget* 2010 document Table C9 shows central government gross debt interest payments rising from £30.8 billion in 2009-10 to £41.6 billion in 2010-11, but this is still hardly extreme as a share of GDP.

Figure 4.2.1: Transfers as a share of GDP

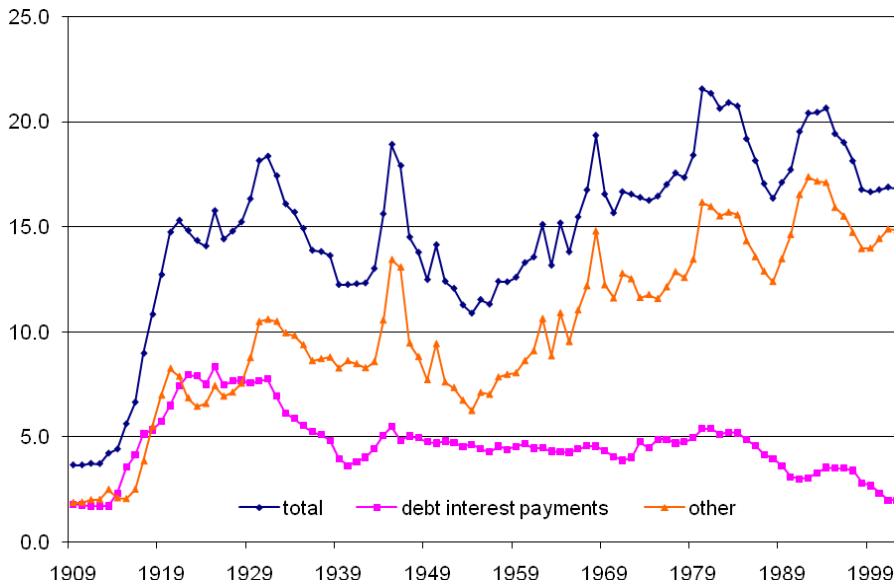
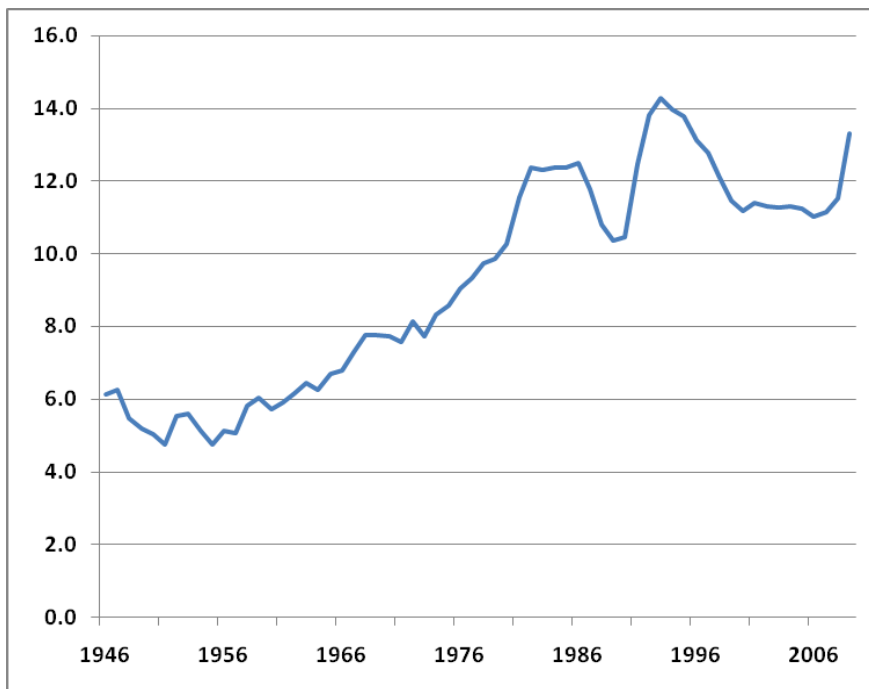


Figure 4.2.2: Net social benefits, % of GDP



Overall the outturn data for transfers and the fuller aggregate measure ‘general government expenditure’ (GGE) show the importance of macroeconomic considerations. Table 4.2.3 summarises the experience after World War II. While general government final consumption and investment expenditures (‘government expenditure’) held fairly steady across the whole period, transfers and GGE were significantly higher in the second of the two post-War periods.

Table 4.2.3: Wider measures of expenditure, % GDP

	1947-76	1976-2009
GG final consumption and investment	22.7	22.5
Transfers	14.2	18.5
GGE	36.9	41.0

Transfers data are obviously affected by a number of considerations: for ‘other’, most important is the extent and generosity of the benefits system and the number of claimants; for interest payments, the average levels of debt, the maturity structure of funding and the level of interest rates. While debt interest payments must have been a very important restraint on aggregate demand before 1932, their significance ever since has gradually diminished, to an extent that most – seemingly – do not appreciate. Benefit transfers may have increasingly supported the MPC as an ‘automatic stabiliser’, but this must be set against the counterfactual of higher employment and income. To disentangle all of the various effects would be a major exercise and is left for others. Nonetheless the point is established: to use GGE in the basic analysis will muddle the clear-cut effects of direct expenditure with the ambiguous redistributive effects of transfers and to some extent confuse effect with cause.<sup>22</sup>

Lastly, the use of the public deficit as a guide to the fiscal policy stance is a variant of the erroneous interpretation of transfers. For it will be affected by changes not only in benefit payments but also in revenues from taxation. Notably, Christina Romer (2009) has used this approach to argue that Roosevelt’s spending “was quite small”. In doing so, she seriously understates the importance of fiscal policy to the recovery from the Great Depression.<sup>23, 24</sup>

<sup>22</sup> The summary regressions of expenditure and debt can be repeated using GGE figures, with only a marginal deterioration in analytics. In fact the slope will be higher, since GGE figures are so much higher than public expenditure figures, and hence the growth rates of the independent variable are lower and within a narrower range. But the estimates are spurious because the authorities cannot completely control the independent variable.

<sup>23</sup> She has concluded: “*One crucial lesson from the 1930s is that a small fiscal expansion has only small effects.* I wrote a paper in 1992 that said that fiscal policy was not the key engine of recovery in the Depression. From this, some have concluded that I do not believe fiscal policy can work today or could have worked in the 1930s. Nothing could be farther from the truth. My argument paralleled E. Cary Brown’s famous conclusion that in the Great Depression, fiscal policy failed to generate recovery ‘not because it does not work, but because it was not tried’” (Romer, 2009, her emphasis).

<sup>24</sup> Crafts and Fearon (2010) and several others writing in the latest issue of the *Oxford Review of Economic Policy* also make this mistake.

## 6. Conclusion

In conventional debate there is a tendency to regard the consequences of fiscal expansion as highly contentious and uncertain. There was no such ambiguity in Keynes's view. He was wholly optimistic that an expansion in public expenditure would lead to a recovery from a slump.

This paper constitutes an attempt at a systematic empirical assessment of Keynes's claims for the UK. It is somehow proper and satisfactory that it is to Keynes himself that we owe the possibility of this work and the means to test his own theory. Charles Feinstein's careful account of historical estimates have been combined with modern national accounts estimates to assess the macroeconomic consequences of episodes of sustained expansion and contraction. The results are *unambiguously* in favour of expansionary policy.

As we write, in late 2010, the extent of the economic recovery is increasingly uncertain, not least because it depended on a prior (and ill-judged) stimulus that has been withdrawn. Under such conditions, the consolidation set by the coalition government, if sustained, will do further and severe damage to an economic and social situation that is already of grave concern. The proper course is for large-scale public works expenditures, financed at only a small premium over the Bank of England's present discount rate of half a per cent. Moreover, these should be only part of a far more extensive review of the monetary mechanisms and conditions that have steadily undermined the performance of the world economy since at least the 1980s. While this must wait for another day, it should not be forgotten that the 'debt crisis' is 'only' a symptom of a far greater narrative.

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## Annex 1: Data sources

Government expenditure is used as shorthand for the final consumption expenditure and gross fixed capital formation of general government, where general government corresponds to central government (CG) plus local authorities (LA). The data are based on the components of GDP(E) and hence exclude transfers, especially benefit and debt interest payments. The use of general government in part follows international convention. The UK is peculiar in emphasising ‘public sector’ aggregates, which also include public corporations; according to national accounts definitions, these are ‘market’ producers that are allocated to sectors according to considerations of ownership/control. While the behaviour of public corporations might be of related interest, their expenditures are semi-autonomous and thus not central to the question of the economic impact of a deliberate policy of government expenditure. GDP is measured at market prices. Data from the mid-1940s are drawn from the National Accounts dataset (corresponding to the ‘UK output, income and expenditure’ dataset released at the end of February 2010). Before that, Charles Feinstein’s (1976) estimates are used (Tables 2, 3, 5 and 39). No attempt has been made to adjust for Southern Ireland before 1919, and splicing is quite crude. Perhaps unsurprisingly there is no sectoral breakdown for gross fixed capital formation (GFCF) in World War II; so this allocation is based on guesstimates, with a third of the total allocated to general government in 1939 and a half of the total for 1940-45. Pre-1948 data for the GDP deflator are at factor cost (Table 61).

Fuller ‘general government expenditure’ (GGE) figures are used for the discussion in section 5, though, strictly, GGE is not a national accounts term.<sup>25</sup> The figures are not readily available for either recent or pre-ONS years. The figures for 1909 to 1946 are taken from Feinstein’s figures for ‘total expenditure’ on his CG and LA current accounts (Tables 12 and 13), with gross fixed capital formation added (though any capital transfers are not available). From 1946, figures from the ONS ‘Public sector finances: supplementary data’ (PSF) are used, adding together general government final consumption (ANLR) and general government net investment (ANNV) and removing depreciation (NMXO). The overlap indicates a good match.

The estimate for transfers is derived as the difference between GGE and ‘government expenditure’. Interest payments are drawn from Feinstein (Table 14) and from the PSF data, ‘interest paid to private sectors and the rest of the world’ (ANLO). Net social benefits are also found in the PSF data (ANLY).

PSF data: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=805&Pos=&ColRank=1&Rank=422>  
Government debt figures were taken from the ‘public finances databank’ on the HMT website, Table A10: [http://www.hm-treasury.gov.uk/d/public\\_finances\\_databank.xls](http://www.hm-treasury.gov.uk/d/public_finances_databank.xls)

These do not correspond to the figures for public sector net debt in the National Statistics ‘Public Sector Finances Statistical Bulletin’, presumably because the historic figures related to general government. Data from 2005 to 2009 are drawn from the Maastricht figures, which are defined as general government gross consolidated debt: <http://www.statistics.gov.uk/pdfdir/maast0310.pdf>

Interest rate estimates are from Homer and Sylla (1991), Table 59, the annual average yield for 2½ per cent consols. From 1963 the figures are joined to the gross flat yield of 2½ consols, from *Financial Statistics*, table 7.1D (ALJF; the match in the overlap is reasonable)

Unemployment data are taken from the labour market statistics dataset. Historical information (for 1909-1994) comes from the January 1996 *Labour Market Trends* (pp. 6-7). These are headed ‘administrative unemployment rates’. They match almost exactly with figures for ‘insured unemployment as a percentage of insured employees’ shown in Feinstein’s Table 58. The series then matches closely the LFS unemployment rate (MGSX), which is used from 1995 to the present.

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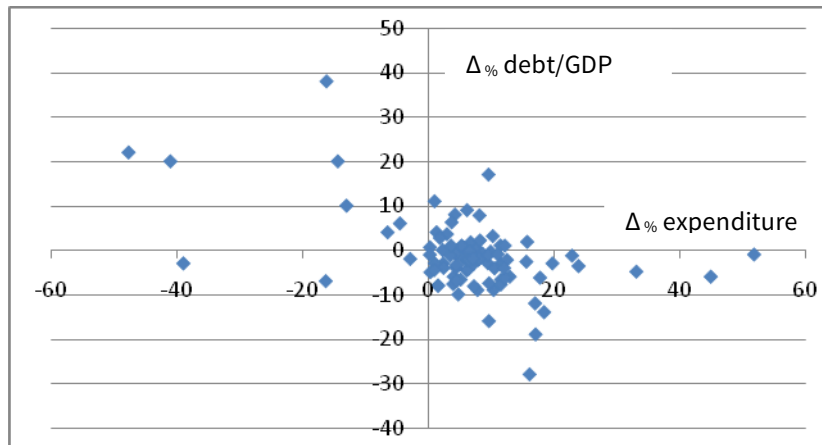
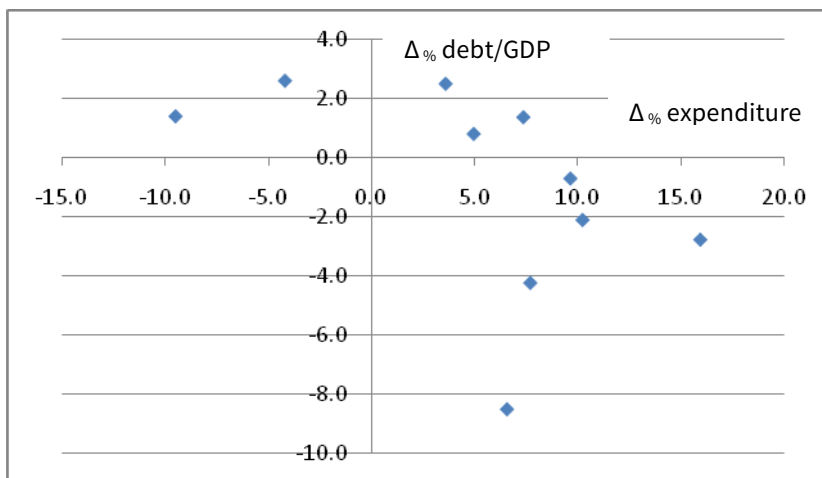
<sup>25</sup> HMT now use what they call ‘Total managed expenditure’, which includes public corporations.

## Annex 2: Debt and government expenditure: further discussion

The charts below show figures for changes in debt and expenditure for decades and individual years, both excluding 1914-18 and 1939-44. Simple regressions are as follows:

	Correlation coefficient	Slope	Intercept
Years	-0.5	-0.8	5.1
Decades	-0.5	-1.0	4.2

Note that not grouping the datapoints into episodes leads to larger negative estimate of the slope and hence an implied greater impact of public expenditure in terms of reducing debt. It is surely reasonable to suggest that grouping should help to reduce rather than increase potential sources of error.



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# Prime

*Policy Research in Macroeconomics is a company limited by guarantee  
Incorporated in England and Wales  
Company no. 07438334*

*Registered office:  
30 Percy Street  
London  
W1T 2DB*

*The PRIME team can be contacted at:  
[info@primeeconomics.org](mailto:info@primeeconomics.org)*

*51 Clarence Gate Gardens  
Glentworth St  
London NW1 6QS*

*For more information, please visit:  
[www.primeeconomics.org](http://www.primeeconomics.org)*