

Surely you're joking, Mr Keynes?

Mark Harrison, University of Warwick, takes a critical look at two questions that have been widely debated in the last few months: One is that we should borrow our way out of recession; the other is that we can spend our way of debt.

The British government has argued that its rising debt is too large in proportion to GDP; fiscal consolidation is required to control the debt; taxes have already been raised, and the rest of the burden must fall on public spending. Already unpopular with many of those concerned about social justice and welfare, this policy is all the more open to attack when private demand is weak, and external bodies such as the IMF (2011a) have urged 'flexibility' on the Chancellor.

What good purpose is served by fiscal consolidation? RES *Newsletter* readers have discussed this since July 2010, when the editor called for an exchange of views. A paper by Victoria Chick and Ann Pettifor (2011) has provided one focus for discussion. I will comment on their work too, but first I would like to place it in a wider context.

A common criticism of expenditure cuts is that they are premature, because private demand is currently weak. Those who take this view accept budget cuts are necessary at some point; they claim only that the timing is wrong, a matter that can reasonably be debated. Going further, more radical opponents have asserted that the case for fiscal consolidation is flawed or even feigned: in fact, they argue, fiscal consolidation cannot control the public debt, and debt reduction is not necessary in the first place.

In the public arena, an articulate opponent of fiscal consolidation has been the journalist Johann Hari (2011a), who wrote on February 11, 2011:

Beneath Cameron's entire agenda runs the biggest lie of all: that Britain is facing an 'unprecedented' level of debt. In reality, Britain's national debt has been higher as a proportion of GDP for 200 of the past 250 years.

The Observer repeated this claim in an editorial of June 5, 2011. On March 29, Hari (2011b) continued:

Here's the lie. We are in a debt crisis. Our national debt is dangerously and historically high. We are being threatened by the international bond markets. The way out is to eradicate our deficit rapidly. Only that will restore 'confidence', and therefore eco-

nomie growth. Every step of this program is false, and endangers you.

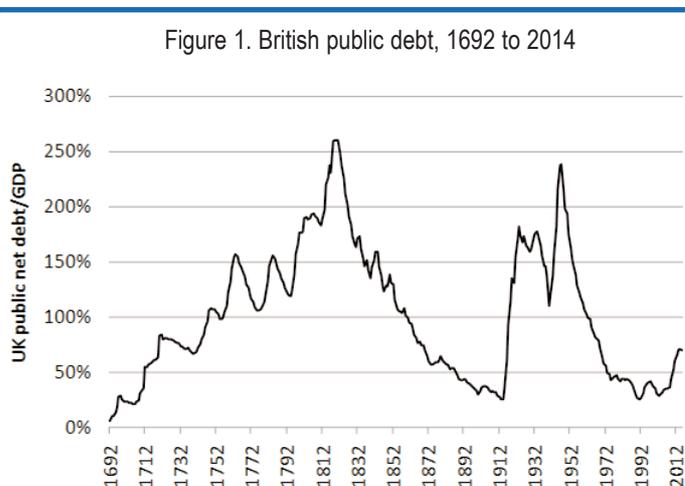
Citing a working-paper version of Chick and Pettifor (2011), he concluded:

It turns out that if all you do is fixate on paying your deficit down now, and so you smother your economic growth, you will end up not being able to pay your debts off anyway. That's what just happened to our nearest neighbor Ireland, may she rest in peace. And it's what has happened throughout British history.

To summarize, there are two views of the British public finances that for some reason can be found together. One is that we have the scope to borrow our way out of recession; the other is that we can spend our way of debt. There are good grounds to think that both are false, and I will try to set out the reasons.

Should we borrow our way out of recession?

Figure 1 shows the evolution of Britain's public debt burden since 1692. Is it true that Britain's current debt level is historically modest? Yes, clearly — although the true number of years in which Britain has had higher debt than now is 169 (not the claimed 200) of the last 250.



Note: Figures from 1692 to 2010 are by Chantrill (2011). I updated them with forecasts for 2011 to 2014 from OBR (2011).

What else is of interest in these figures? Because the level of debt today is the sum of past changes, we could also look at its rate of change. Generally, the debt ratio rose from 1692 to 1815 and from 1913 to 1945 in association with frequent wars. It fell from 1815 to 1914, and after 1946, when Britain was mainly at peace. Interestingly, there were just 36 years in 316 up to 2008 when the debt grew faster as a percent of GDP than in 2009 to 2011. One run of years when the public debt climbed faster was 1915 to 1919. Another was 1941 to 1946. In short, Britain's debt has grown recently at rates normally exceeded only in major wars.

In some general sense, however, it's true: Britain's debt today is not high by the standards of most years before the 1970s. If much higher debt was sustainable then, why not now? There are important reasons why Britain today cannot handle the 200 per cent plus debt ratios that characterized the 1820s (after the Wars of the Austrian and Spanish Successions, the Seven Year' War, and the Napoleonic Wars) and the 1950s (after World Wars I and II).

Generally, the world has changed. In past eras of high debt, Britain faced low long term borrowing costs — less than 4 per cent in 178 of the 227 years from 1729 to 1955. This includes a year such as 1819 when the debt/GDP ratio reached its post-Napoleonic peak of 260 per cent (but it would not include any year from 1956 onwards) (Officer 2011). In the eighteenth and nineteenth centuries, an integrated global capital market developed in which the British economy was the major borrower and lender. There was little credible competition with British bonds. British public debt remained universally acceptable despite its relative abundance. The United States has enjoyed a similar position since World War II, but soon perhaps no longer.

Before the twentieth century, moreover, the British government did not have major commitments to social spending at home. The spending of the central government was principally on administration and defence. As a use of government revenue, interest payments did not have to compete with major entitlement claims. This helped government guarantees to remain credible.

The two world wars broke up the global capital market. Although no longer the world's financier, in the mid-twentieth century Britain could continue to manage a much higher debt ratio than today's by closing the domestic capital market. Exchange controls prevented British savers from lending abroad and protected British bonds from competition. With alternatives kept out of the market, British public debt continued to be acceptable at home.

These conditions no longer exist. There is a global capital market once more. Today, no one has to lend to the British government for lack of alternatives. British bonds have no specific advantage for foreign lenders (as they had in the eighteenth and nineteenth centuries), and domestic

lenders can pick and choose among bonds issued by many countries (something they could not do in the mid-twentieth century). For this reason alone, a debt that was sustainable decades or centuries ago is not sustainable now.

And for another reason: the balance between the real interest and real growth rates, which decides the sustainable primary budget balance, will also surely be less favourable to the UK in the coming years than in the past. In short, whether or not it is true, or overstated, it is irrelevant that 'Britain's national debt has been higher than it is now for 200 of the past 250 years.' The conditions of those 200 years have gone. Whether that is for better or worse can be debated, but it is a fact.

Historically, having a debt twice the size of the national income has been a sign that something went terribly wrong: a run of major wars, for example. Faced with the worst recession in 80 years, the British government was right to let its budget go into deficit temporarily. At that moment an increase in Britain's debt was inevitable. Now it looks essential to bring it back under control over a few years.

Can we spend our way out of debt?

If debt reduction is necessary, how can it be done? Both the Treasury and the Office of Budget Responsibility give a common answer: through fiscal consolidation, they expect Britain's public debt will grow more slowly, peak in 2014 at around 70 percent of GDP, and then start to fall. Spending cutbacks will eventually win.

Chick and Pettifor (2011) tell a contrasting tale of the Keynesian multiplier, in which fiscal consolidation is self-defeating. Expenditure cutbacks reduce private incomes, they argue, and so tax revenues. Debt may rise and GDP will certainly fall, pushing *up* the debt ratio. In fact, they suggest, the government should spend its way out of debt.

How good is this story? You can write the theory many ways, but ultimately it's an empirical question. Quite rightly, Chick and Pettifor (2011a) ask how the public debt has responded historically to changes in public spending. Specifically, they regress ΔD , the change in the debt ratio (in percentage points) on ΔG , the percent change in nominal government purchases. The latter is the policy instrument, because it is the one thing over which the government has discretion. Reasonably, they exclude public transfers, which are endogenous to the state of the economy. The data come from a century of annual observations, condensed into ten sub-periods of varying length. Two of these are the world wars, which they exclude as exceptional. With eight peacetime data points, and the data transformed into annual averages, they find:

$$\begin{aligned} \Delta D &= 1.8 - 0.6 \Delta G \\ N &= 8 \quad R^2 = 0.98 \end{aligned} \tag{1}$$

The negative slope coefficient is what, on their account, makes fiscal consolidation counterproductive. Correspondingly, the government can spend its way out of debt. In fact, the equation implies that the debt/GDP ratio will fall only when public spending growth exceeds 3 per cent per year.

How robust is this relationship? Two modifications suggest themselves. The editor (in *RES Newsletter* no. 150) and Booth and Shackleton (2011) proposed going to the annual data and allowing for lagged causation. Chick and Pettifor (2011b,c) have defended the use of data averaged over multi-year periods, based on the need to allow for ‘lags of uncertain length.’ But if the lags are uncertain, perhaps we should try to pin them down. As for the loss of information involved, they say: ‘There is nothing in principle wrong with taking averages. From the statistical point of view you lose degrees of freedom but reduce random variation in the data.’ But this presumes that only noise is lost; if part of the signal is lost as well, then averaging is not recommended.

Another modification is suggested by both data and concepts. Observationally, Figure 1 illustrates how the public debt has moved systematically up and down over long periods. The positive intercept in Equation 1 suggests that the debt ratio drifted upwards across the twentieth century by 1.8 percentage points a year, even when public spending remained unchanged. As for official forecasts, they expect the Osborne budget cuts at first only to slow the growth of the public debt; not until 2014 will it start to fall relative to GDP. In short, debt has momentum.

What is the source of this momentum? In accounting terms, the debt is a stock and government purchases are an inflow. As a result, spending changes affect the second difference of the debt, not the first (as Equation 1 assumes). Intuitively, debt may continue to accumulate even if spending is cut, and will stop growing only when the deficit is completely eliminated.

I reexamine the issue using the data that Chick and Pettifor supply. I copy their approach in the important respect that I look for a link from nominal government purchases to the public debt. I depart from them as follows. I look for a causal link that is observable with a fixed lag, using all the yearly data and the percent change in public spending in the previous year as the independent variable. My dependent variable is the second, not first difference of the debt ratio in the current year — or think of it as the acceleration of the debt.

Figure 2 plots the second difference of the debt ratio against the lagged change in public spending. Using ‘(-1)’ to refer to the previous year, the regression equation is:

$$\Delta^2 D = -0.01^* + 0.15^{**} \Delta G(-1) \quad (2)$$

N = 99 R² = 0.24

significance: * $p = 0.07$, ** $p = 0.00003$

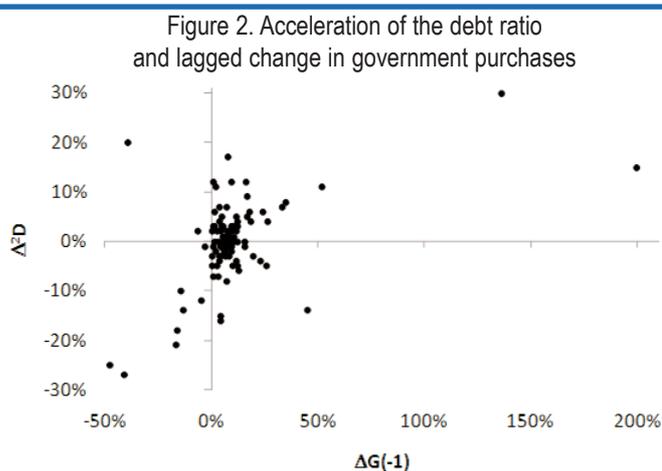


Figure 2. Acceleration of the debt ratio and lagged change in government purchases

Notes: $\Delta^2 D$ is the second difference of the public debt/GDP ratio, in percentage points of GDP, in the current year. $\Delta G(-1)$ is the percent change in nominal government purchases in the previous year. Data are from Chick and Pettifor (2011).

This reverses the Chick-Pettifor result reported in Equation 1. The slope coefficient is positive and highly significant; the constant term is small and only just different from zero. The momentum of the debt is all-important. Government purchases do not control the change in the debt, which is largely inherited, but they do control its acceleration. On average over the past century, a ten percent increase in government purchases has speeded up the accumulation of the debt in the following year by 1.5 per cent of GDP.

I estimated four other variants on Equation 2 (data and full results are available at <http://go.warwick.ac.uk/markharrison/data/publicdebt/>). First, I converted nominal government purchases to real terms using the GDP deflator that Chick and Pettifor provide. The estimated relationship was virtually unchanged. Second, returning to nominal spending, the relationship suggested by Figure 2 has prominent outliers: 1916 and 1941 can be seen on the far right, and 1920, 1921, and 1947 on the left. I dropped these years; the intercept remained close to zero, and the slope coefficient remained positive, slightly larger, and still highly significant. Third, I allowed for ‘uncertain lags’ by adding the change in public spending in the current year and two more lags on the right hand side. Only the coefficient on public spending in the previous year was significant, and its sign, size, and significance were nearly unchanged. Fourth, I estimated an equation with the first difference of the debt ratio as the dependent variable, adding an AR(1) term to the right hand side with the change in public spending in the previous year. The coefficient on public spending remained of similar size and significance to that of Equation 2.

I’d never claim that this is the best that can be done; many variables are omitted, for example. I do claim that the interpretation that Chick and Pettifor have proposed is not robust. The same data tell a different story when exploited more fully and with a little more structure. It remains true that, once the public debt is set on a particular course, it is hard to change that course quickly. But this is only momen-

tum that takes time to reverse; there is no evidence of destabilizing pushback from Keynesian multipliers.

Conclusion

To sum up: I have taken aim at two common beliefs about the British public finances. One is that we should borrow our way out of recession; the other is that we can spend our way of debt. These beliefs are based on intriguing stories. But, like many good stories, they are fictions. Our country cannot spend its way out of debt. In today's world, we can afford to borrow much less than in the past, and that may be just as well.

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Appendix

Table A-1 gives full details of results reported in the text

Dep. var.	(1) $\Delta 2D$	(2) $\Delta 2D$	(3) $\Delta 2D$	(4) $\Delta 2D$	(5) ΔD
Intercept	-0.0145	-0.0074	-0.0195	-0.0122	-0.0124
P-value	6.9E-02	3.3E-01	1.8E-02	1.7E-01	9.6E-02
AR(1)	...	...	...	...	0.7368
P-value					1.2E-18
ΔG	...	...	...	-0.0048	...
P-value				8.8E-01	
$\Delta G(-1)$	0.1524	0.1646	0.2265	0.1536	0.1364
P-value	2.6E-07	8.3E-07	3.3E-04	1.1E-05	9.3E-07
$\Delta G(-2)$	...	...	...	0.0108	...
P-value				7.4E-01	
$\Delta G(-3)$	...	...	...	-0.0304	...
P-value				3.2E-01	
N	99	99	94	97	99
R-Squared	0.2404	0.2226	0.1316	0.2493	0.5810
F	30.7	27.8	13.9	7.6	66.6
P-value	2.6E-07	8.3E-07	3.3E-04	2.3E-05	7.3E-19

Notes. ΔD is the first difference and $\Delta 2D$ is the second difference of the public debt/GDP ratio, in percentage points of GDP, in the current year. ΔG is the percent change in government purchases in the current year (nominal in columns 1 and 3 to 5, real in column 2); '(-1)' refers to one before the current year and so on.

(1) This regression is reported in the text as Equation 2.

(2) As column 1, but government purchases are in real terms, based on the GDP deflator listed in Table A-2.

(3) As column 1, dropping years when extreme values of the independent variable were reported (1915, 1919, 1920, 1940, and 1946).

(4) As column 1, with additional lagged values of the independent variable.

(5) This regression uses the first difference of the debt ratio as the dependent variable and its one-year lagged value as an additional independent variable.

Table A-2. Data and variables, 1909 to 2009

Symbol	Definition	Source
G	Government expenditure on goods and services, £m	Chick and Pettifor (2011)
D	Public debt, % of GDP	Chick and Pettifor (2011)
DP	GDP deflator, % change on previous year	Chick and Pettifor (2011)
P	GDP deflator, % of 2001	Calculated from DP
RG	Government expenditure on goods and services in real terms, £m and 2001 prices	Calculated as G divided by P

Reference: Chick, Victoria and Ann Pettifor, 2011. 'The economic consequences of Mr Osborne. Fiscal consolidation: lessons from a century of UK macroeconomic statistics', PRIME (Policy Research in Macroeconomics), May 31, 2011, at <http://primeeconomics.org> (accessed 5.8.11).