

GDP Growth, Interest Rates and Inflation

(In 1970 the average annual wage could buy 1.1 average house; in 2017 it could buy 0.11. So much for GDP growth of 5% p.a.)

Lee and Werner posted a paper destined for the Journal of Ecological Economics in 2018. According to Lee and Werner there is essentially complete agreement amongst all schools of economic thought, that lower interest rates stimulate economic growth; they extrapolate to a belief that when the Bank of England lowers 'Bank Rate' (the overnight rate of interest at which it lends to commercial banks) it is trying to boost growth of the economy. Lee and Werner's object is to test, against the data, whether low interest rates **cause** the economy to grow. Of course, they cannot show causation, but they can test whether or not a fall in interest rate precedes a rise in 'growth'. Their answer is the complete opposite – not only does increased rate of 'growth' **lead** a change of interest rate (rather than lag it), but raised rate of 'growth' correlates with a **raised** interest rate (rather than a fall).

I propose to return to the question of how to determine the growth of the economy, but wish first to consider why the Bank of England tinkers with the base rate of interest on the overnight loans it offers to its commercial bank customers, which we call "Bank Rate" or "Base Rate". Explicitly 'Friedmanite' central banks such as the Bank of England (BoE) are tasked with maintaining the stability of the currency by controlling inflation at a steady rate of 2%. The Bank of England currently uses two methods to manipulate the purchasing power (in Britain) of the pound (i.e. the cost of the basket of goods in the Consumer Price Index). These are: [i] rate of interest charged on overnight loans from the Bank of England, and [ii] asset purchase (i.e. Quantitative Easing).

The idea behind the first is presumably the monetarist belief that the quantity of money in circulation directly affects prices; doubling the money will double the price of goods (and halve the value of the money). And of course, money nowadays is mostly credit, rather than coin. I have no idea what volume of business flows into and out of the BoE reserves every night, nor what a commercial bank would do if the BoE said "sorry, you cannot borrow from us this evening." I imagine that Bank Rate is largely operating as a signal. If Bank rate rises, all the lenders in the country gleefully raise their rates. If the economy stagnates and the Governor fears a recession, he will signal a willingness to encourage lending by lowering base rate. However, when base rate is essentially zero he cannot use that tool to encourage inflation; he turns to Quantitative Easing.

The idea behind Quantitative Easing seems to be as follows. The Treasury issues gilt-edged IOUs at such an interest rate that they do not all get sold. The Bank of England buys (up to 70% of) them, so holding down longer-term interest rates. If the Bank of England buys these 'assets' from commercial banks these latter acquire (in exchange) money they can lend out, or reserves at the BoE they can use as surety against extending credit to smaller customers. You might ask where the BoE gets the money with which to buy the Gilts? But remember, it has the power to print notes; so it (therefore) does not need to; it simply gives the liquid asset of digital cash in exchange for the gilt-edged IOU. It can always swap

it back again. In many ways QE is simply doing, for longer-term interest rates, what the BoE routinely does for its overnight Bank Rate. But the process injects 'broad money' (in the form of credit) into circulation, and that can cause inflation if it gets into the hands of the general public. There can be a delay, of months or years, depending on what the commercial banks do with their new money (sit on it or lend it out); and on whether the general public borrow that money to build factories or to fund purchases. But it will eventually cause inflation, unless the BoE swaps back the IOUs it purchased.

Lee and Werner's question (whether low interest rates *cause* the economy to grow) is timely in that there seems to be a growing disconnect between the efforts of the central bank and the performance of the economy. However, the performance of the economy is a preoccupation of the government, and above all of the media. It is not the concern of the BoE. The BoE is focussed on "keeping inflation low and stable".

For two centuries Britain has watched the economies of other countries grow faster than its own. This growth represents capital accumulation and in its early phase is logarithmic (auto-catalytic). It is usually measured as gross domestic production (GDP), which is a compilation of all the incomes of all the people in an economy, expressed in the local currency. If we do not grow as fast as our competitors we lose market share; and we *cannot* grow as fast because we are no longer in the logarithmic phase of growth.

Because *nominal* GDP is expressed in local currency, it reflects not just accumulation of capital, but also *inflation*. Let us consider a peculiarly simple but quite plausible form of inflation in which, at the beginning of every financial year, all prices and all wages rise abruptly by 5%. The citizens and businesses would be no better off; nor worse off. A bag of flour would cost 105% of what it did the previous year, but citizens would soon realise that their salary would stretch exactly as far as before. At the end of the year the macroeconomists would note a 5% jump in nominal GDP, but this is *not growth – except to 'the media'*. Any sensible discussion of GDP must start by correcting nominal GDP for the change in value of the currency (using e.g. RPI or more recently CPI). (See also my post on Growth; and on Coppola Comment.)

Let us now look at the data of Lee and Werner. They plot the "year-on-year growth" in nominal (i.e. uncorrected) GDP over a period of 50 years from 1960, presumably taking the published GDP for each 3-month interval and subtracting that of 12-months before (thereby introducing a 6-month offset into the profile; any growth in the 12 months to December 1970 being ascribed to December 1970 and not to June 1970). On the same graph they plot interest rates on 3-month Treasury bills or (on another graph) 10-year government bonds. These interest rates are not simply base rate, but are complex reflections of (a) instantaneous base rate, (b) what the markets think will happen to base rate and (c) what the markets think will happen *to inflation* over the period of the loan.

My interpretation of their data is that in all 4 major economies the rate of inflation rises and falls irregularly (but with a tendency towards a 5-7 year periodicity) over the 50 years of the study, *causing* a similar fluctuation in nominal (i.e. uncorrected) GDP, and (with a slight lag) the 3-month and 10-year interest rates. Lags are the essence of the over-shoots and under-shoots of the

business cycle. If information were instantly available to businesses and bankers, and if the spreading of rumours and building of factories were instantaneous, there would be no business cycle.

(It would be interesting to compare, for each time-point, (i) the 3-month rate, (ii) 10-year rate, (iii) base rate, (iv) inflation rate, and (v) '**corrected**' **GDP growth-rate ascribable to that time-point**; but that was not done.)

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‡‡ There are old men in pubs remembering when beer was 20p a pint and their first car cost £600. In 1970 the average house cost £4975 and the average annual wage was £5700 [<http://www.independent.co.uk/news/uk/this-britain/1970-vs-2010-40-years-when-we-got-older-richer-and-fatter-2017240.html>; <https://www.theguardian.com/uk/2004/mar/05/health.drugsandalcohol>]. So in 1970 the annual wage was equivalent to 28,500 beers or 9.5 cars, or 1.1 houses. Today our average annual wage of £25,000 is equivalent to 8,000 beers or 2.5 average cars, or 0.11 average houses. But these figures do not capture the whole picture, or you might think we were considerably worse off now than in 1970. We work less, live longer, fly to the sunshine for our holidays. We throw away worn clothes and broken umbrellas, and play with our smartphones in front of our flat-screen TVs. I have not met anyone who would prefer 1970 to 2017. Nor would I, even if it meant being young again – I think.

★★ If the real (i.e. corrected) GDP of Britain increased 5% on the previous year, what has increased? To simplify, it could be the population, leaving us identically well off on a *per caput* basis; or we could all work longer days; or (finally) it could be that a new machine makes 110 shirts *per diem* instead of a mere 100. That new machine could be bought on credit if interest rates were temptingly low. Believing that is easy; proving it is hard.