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THE GREAT DEPRESSION AND ITS LEGACY

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1. Introduction.

The foundations of knowledge, which include language and economics, can be subject to intellectual earthquakes.¹ Such earthquakes test the robustness of established views and may lead to previously unanticipated directions for thought. A classic example is the impact of the Great Depression on the direction of economics as it led to the development of an obligation for the government to run counter-cyclical economic policies and subsequently to the growth of national income accounting, which laid the basis for the development of macroeconomic modelling. These earthquakes expose fissures between different schools of thought and economics continues to be torn between those who are broadly-speaking, expansionists and those who are more conservative.²

It is now hard to turn on the TV, our tablets or open the newspapers without some commentary on the most recent or breaking economic story. The global financial crisis has dominated headlines for the best part of a decade and has probably driven a generation of economists to think about the financial sector in the same way that earlier generations were driven to think about unemployment. It was probably during the twentieth century that the economy began to take centre stage in the public debate. A series of crises related to managing adjustment after World War One, which was called the Great Slump and the Great Depression in the 1930s, promoted not only executive discussion of economic policy but also the need to collect data and explore the relevance of different theories of adjustment. The debates between Hawtrey, Pigou and Keynes entered the public arena and their echo continues to be heard today: For the Treasury View of Sound Money replace with Austerity today.³ The subsequent development of macroeconomic stabilisation policy, which we shall consider in more detail next time, seemed to be a huge success during the so-called post-war 'Golden Age' but cracks in the foundations ultimately undid the practice. The near loss of monetary control in the 1970s awaked an interest in macroeconomic theory for deriving aggregate behavioural equations from optimisation problems in which agents solved for intertemporal and intratemporal decision rules subject to an economy-wide resource or budget constraint. The hope was that such models would be usable for policy analysis in terms of

¹I sometimes wonder whether Isaiah Berlin's separation of thought into the *Hedgehog and the Fox* is a suitable classification to think about micro-founded macroeconomics versus the more subtle form of political economy that many seem to wish we used instead. I would like to think that such models provide a suitable single lens from which to start.

²See, for example, Ayres, 1946.

³In part to help with post war reconstruction, after WWII, Pigou (1948) was commissioned to write the economic history of the immediate period after the Great War and it remains a clear exposition of the classical position.

welfare because the fundamental relationships were stable in the face of changes in policy. Traditional economic models, which are heavily reliant on econometric estimation, were thought to fall foul of the Lucas Critique. Such models attached, as do some heterodox and agent-based approaches, more importance to external realism rather than to internal coherence. In contrast, the macroeconomic models with micro foundations that became popular in the 1990s attach more importance to internal (logical) coherence than to external realism *per se*.

But let us start at the beginning of macroeconomics. The backdrop, what I think is right to call, the Keynesian revolution was the set of Classical postulates that can be summed up with the view that interest rates can always move to clear good markets. First, output can be thought of as either one of three equivalent quantities: the production of goods (supply), expenditure on those goods (demand) or income (wages, profits or rents) collected by the factors of production in the process of production. We can think of total income being consumed (spent) or saved (or, equivalently, used to buy claims on assets). These savings can be used to buy investment goods (expenditure) and the market for these savings and investments clear at the 'natural rate' of interest.⁴ Movement in interest rates will ensure that the expenditure is brought into line with production and income at some level where the factors of production are fully employed.

Keynes turned this observation inside out. In essence, he argued that it was not interest rates that adjusted to clear the market for savings - also known as financial assets - but income. This means that if there is an excess of savings, which are a function of aggregate income, then households will tend to reduce their consumption, which will drive down the level of overall income until savings equals investment. In this story it is not interest rates that are the final target of policy but the level of expenditure and income, or what came to be known as aggregate demand. Perhaps this is all very well-known now. But it was the revolutionary insight in the inter-war.

Of course, we now also have been reminded that the flow of savings to investment can be disrupted in financial crises. And so behind the veil of the classical scheme was an institution acting to maintain this flow in an orderly manner. We must not forget the importance of central banks in the Classical scheme. The Bank of England, and other central banks, had adopted the role of helping to eliminate panics and ensure some ongoing financial stability. The development of tools to deal with crises was a long process, involving as much intuition as much scientific analysis. Walter Bagehot (1873) outlined his understanding of these principles in his description of the lender of resort function that central banks should adopt in a crisis:

- 1) It should lend freely at a rate of interest relative to the pre-crisis interest rate that was high but only to borrowers with good collateral i.e. the kind of assets that the central bank would normally accept anyway;
- 2) The valuation of these assets should be at some point between the pre-panic (high) price and the panic (low) price;
- 3) Institutions with no good collateral cannot be lent to and they should be allowed to fail.

It is certainly possible to ascribe the regularity of banking crises in the US in the late 19th and early 20th to the absence of first the national central bank, the Federal Reserve System, until 1914 and then the twin adoption of the Glass-Steagall Act in 1933 and the Banking Act of 1935, which introduced deposit insurance and separated commercial from investment banking and widened the powers of the Federal Reserve System.⁵ It is possible to argue that the classical system had at its heart a fragility not connected with Keynesian notions of insufficient demand but more a propensity to dislocate the transfer of savings to investment because of financial crises. But let us first turn to the facts.

2. The Economic History.

The period following World War I, produced a temporary boom but a longer period of dislocation, called the Great Slump. Despite the deflation induced by the need to return to the Gold Standard at the pre-suspension gold price, which implied an overvalued exchange at US\$4.86, the economy was in a sustained recovery by 1922.⁶ The Bank of England had a considerable degree of independence in the employment of Bank Rate and this was held lower than other advanced countries. The deflation acted to increase the real value of debt, transferring net wealth from debtors to creditors. But overall economic performance, in

⁴See Chadha and Perlman (2014) for more on the natural rate of interest.

⁵See Allen and Gale (2007) on this point.

⁶Moggridge (1972) has produced the classic history of this policy decision.

terms of aggregate income, was remarkably steady.⁷ We can compare the progression of income in the UK with that of the leading industrial nation after WW1, the US, and find that the start and end-point of GDP in the inter-war years looks very much the same but in the US there was a substantially more volatile ride.

In fact, the fiscal position, as measured by debt to GDP acted as quite a constraint on fiscal policy. It seems difficult to imagine, from a modern perspective, how much more loose fiscal policy might have been in this period when public debt was bumping along just under 200% of national income. So even though average bond rates and the average yields on government debt were well under 5% in this period, the sheer quantity of debt outstanding meant that a large primary surplus on government accounts of 6-8% was eroded back to a slightly negative balance once interest payments had been accounted for and this helps understand better, it seems to me, better the Treasury View.

Although Bank Rate and, correspondingly, the interest rate on government debt remained low, interest rates in the corporate bond market were volatile and sensitive to shocks and we note that rates move sharply up after the two inter-war recessions and persistently so in the 1930s, which may suggest that there were some supply disruptions in limiting the availability of loanable funds. Consistent with this observation is the limited contribution from investment for economic growth in both recoveries: both seem to be more heavily dominated by consumption of the private and subsequently public variety. The appreciation in the nominal exchange rate in the period up to 1925 follows from the policy to 'return to gold'. The concurrent deflation meant that the real exchange rate was broadly stable, which may nevertheless still have been above the equilibrium exchange rate.

After a de facto suspension during the Great War, and eventually a formal suspension of the gold standard in 1919, there was no concerted effort to seek devaluation in the gold price of Sterling. In fact most efforts were driven towards seeking an early resumption of convertibility. The re-adoption of the gold standard at the pre-war rate has often been portrayed as an overvaluation at an unsustainable rate. And slowdown in subsequent economic performance would seem to add some weight to this observation, as the overall price level continued to fall, albeit at a slower rate than prior to the re-adoption of gold. Narrow and broad money remained reasonably stable fractions of GDP but as the 1930-31 recession took hold both measures of velocity fell markedly. And the real sign of dislocation was in the burgeoning unemployment rate, which had been at unacceptable levels of over 10% for most of the 1920s but then peaked at over 20% in 1931 in the middle of the second recession, over the same time real wages had risen by nearly 20%. The immediate response involved cheap money with Bank Rate cut to 2% for the rest of the 1930s and it was only by around 1936 that government consumption played a major role in explaining output growth.

3. Over in Europe.

The famous four hyperinflations in Germany, Hungary, Austria and Poland in the early 1920 had all be caused by the growth of unbacked fiat money issuance or what we now call the monetisation of debt.⁸ The increase in the Hungarian price level is mirrored by the fall in the value of the Crown on the New York foreign exchange market. The hyperinflations were only solved when a form of co-ordination between monetary and fiscal regimes was adopted that implied an independent central banks and an obligation only to sell debt to private or overseas individuals who would value the debt in terms of the likely present value of the taxes that back it.

We cannot be exactly sure what impact these hyperinflations had on the policy makers in the UK. But Keynes wrote in 1924, it is common to speak as though, when a government pays its way by inflation, the people of the country avoid taxation. We have seen this is not so. What is raised by printing notes is just as much taken from the public as is beer-duty or an income tax. What a government spends the public pays for. There is no such thing as an uncovered deficit. But in some countries it seems plausible to please and content the public, for a time being at least, by giving them, in return for the taxes they pay, finely engraved acknowledgments on water-marked paper. The income tax receipts, which we in England receive from the surveyor, we throw into the wastepaper basket: in Germany they call them bank-notes and put them in their pocketbooks; in France they are terms Rentes and are locked up in the family safe. And I take this observation to mean that the Treasury would have been very wary of pushing expansionary fiscal policy, as it perhaps has always been and always will be.

⁷Do recall that this aggregate data was constructed mostly after WWII, so economic agents operating at the time could not have known with any degree of certainty the state of national income.

⁸Sargent (1982) tells the story very well.

4. The Policy Arena.

The dominant economist at this time was, of course, Keynes. And although he wielded great influence over the Treasury and the Bank of England, the two revolutions in inspired in terms of economic theory and policy had not yet ran their course. Economic fluctuations were predominantly viewed as the revelation of nature rather than the obligation of government to attenuate. The one Treasury official who might be described as an economist of note after Keynes exit in 1919 was Hawtrey who felt that the trade cycle was mostly a monetary phenomenon and accordingly was hugely influential, along with the Governor of the Bank of England, in maintaining policies of cheap money.⁹ The overriding objectives of policy seem to have been a fear of inflation, which was exacerbated by the continental experience, and the need to balance the budget. Without a clear theory of the relationship between prices, output and interest rates and without much of a statistical snapshot of the economy, it was very hard to formulate counter-cyclical policy. The first set of national accounts was not presented to the Treasury until 1941.¹⁰

Indeed, it appears that neither the exchange rate nor the Budget were viewed as instruments of economic policy. Actually, the economy was mostly insulated from the worst impacts of the Great Depression by the fortunate accident of Gold Standard exit. For which the Treasury seemed relieved and a member of the Labour Government in 1931 famously said: Nobody told us we could do this. Perhaps the ultimate expression of a change in the tack of policy toward output might be thought of as having being expressed in the publication of the *Employment Policy* White Paper of 1944, which stated that: the Government accept as one of their primary aims and responsibilities the maintenance of a high and stable level of employment after the war. Of course, in part such a commitment reflected the politics of mass unemployment before the war and the need to provide some comfort for those fearing a postwar slump of the type that had occurred after the Great War. But there was also a sense that the theoretical insights developed in the inter-war period and harnessed during the war economy, alongside genuine statistical innovation had perhaps led to a fundamental increment to the question of how to sustain the level of aggregate demand in an economy around its full employment level.

5. The Multiplier.

That the astounding insight in this period now seems almost laughably obvious, reminds how path-breaking insight can become conventional. In a static world there is a level of income and some is consumed with the rest saved to provide income in future periods. This can be thought of as a simple endowment economy, in which money simply facilitates inter-generational trade. But let us now suggest that the level of consumption continues to be a function of income but also that income is a function of the level of consumption. In this world, anything that induces a change in consumption may have persistent effects on the level of output. What modern economists now call, and indeed yearn for in their models, an amplification and persistence channel was perhaps first articulated in the form the multiplier.

Let us suppose that planned expenditure in terms of consumption, investment, government spending and net exports is related to the level of income (or supply) in an economy. But with each one unit increase in income, expenditure increases by something less than one unit because some fraction is saved. Clearly this economy will be in equilibrium when planned expenditure equals income.

Now let us consider some autonomous increase in expenditure, for example, from the pocket of a benign overseas oligarch - should such a person exist. This will act to raise the level of expenditure for every level of income. But will also induce ultimately a higher level of income. This is because the higher level of overall expenditure produced by combined efforts of the domestic economy and the oligarch delivers more overall income into the hands of domestic consumers. Some fraction of this extra income will also be spent and this will act to raise overall income once again. This second increase in overall income will also lead to some smaller increase in consumption and a further smaller increase in overall income. The process will continue until planned expenditure from this higher level of income equals the actual level of higher income. This process, by which the final level of output is increase by more than the initial increase in expenditure, is the multiplier.

We may want to replace our notion of a benign oligarch with a democratic government that raises its consumption, or lowers its taxes or even in terms of the 'animal spirits' of investors who rely on confidence to motivate their decisions. But any of these shocks may be able to set up a multiplier process. A question for any macroeconomist, and one which has not been adequately

⁹I draw heavily here on the discussions in Peden (1988) and Dow (1998).

¹⁰Peden, p. 42.

answered to this day, is what is the size of the multiplier from a given change in the government's fiscal position? We could even ask ourselves what is the multiplier from a change in the availability of loanable funds from the banking sector or changes in house prices. The answer will depend on whether the increase is considered temporary or permanent and on how households on average respond in terms of the split between consuming and saving. And thus we need to know what happens to interest rates.

6. 'Mr Keynes and the Classics'.

Now we can take this view of the impact of expenditure on final income to solve for the equilibrium level of output in interest rate space. Hicks (1937) suggested that we should interpret the many possible levels of output when the economy was under full capacity as points at which the goods market (for investment and saving) and the money market (for liquidity and money) both clear simultaneously. This analysis of the IS-LM schedules in a world of fixed prices has the advantage of involving a general equilibrium for asset and goods markets and also allowing us not only to think about the causes of output fluctuations in terms of these two schedules but also to consider the efficacy of policies that alter the levels of expenditure or the stock of money. The goods market can be considered to have cleared when savings equals investment. And as income rises we may save a higher quantity of income, even if the savings rate is constant. This means that for the goods market to clear, at higher levels of income we need lower interest rates to induce a higher demand for the savings that are so generated. We therefore can draw the equilibrium in the goods market as a downward sloping curve in interest rate-output space and the schedule can be shifted out (in) by autonomous increases (decreases) in the demand for goods.

In the money market, we shall assume that households hold the available stock of money for two reasons: a transaction and speculative motive. In the first instance they hold money in proportion to their expenditure, which is in turn linked to their income. And in the second instance, they hold money for the purchases of speculative assets and this demand is inversely related to the interest rate. The interest rate might be thought of as the cost of funding, the opportunity cost of purchasing assets or the discount factor on the expected returns from holding assets. With higher levels of income, the household will wish to hold more money for transactions but if the quantity of money is fixed we need to substitute out of speculative money holdings. And this substitution can only be achieved if we increase the opportunity cost of holding speculative assets with higher interest rates. The equilibrium in the money market is therefore upward sloping and schedule can be shifted out (in) by increases (decreases) in the money stock.

We are now in a position to consider the two sides of the inter-war debate in IS-LM space.¹¹ Consider an LM schedule for which the demand for speculative money is very sensitive to changes in interest rates. And an IS schedule for which the overall demand for goods is not very sensitive to changes in interest rates. We can think of this position as broadly corresponding to the developing Keynesian attack on the existing orthodoxy. In this scenario, an increase in expenditure can increase output with little or no negative feedback from the effects of higher interest rates in the money market. Even more so, any effects on interest rates are able to be offset by relatively small increases in the money stock. For schedules of this type, some form of fiscal policy may be particularly helpful in stimulating activity.

The orthodox opposition to this view involves an inelastic demand for money and a spending schedule that is somewhat more sensitive to changes in interest rates. In this case, any autonomous shift in the money stock and induce higher demand for goods by reducing the interest rate. And any attempt to use government spending will only tend to increase the prevailing interest rate, as any potential extra demand is simply 'crowded out' by higher interest rates. Indeed, under this scenario a negative movement in the LM schedule can induce quite a large fall in output, a point to which we shall return.

The broader picture is that this interpretation of the macroeconomic determination of output under fixed or sticky prices not only allowed us to consider the question of the multiplier accounting for any impact on interest rates. But also consider the efficacy of fiscal or monetary policy, as well as the extent that outcomes might be co-ordinated or conflict with each other. These questions framed under IS-LM dominated post-war economic thinking.

¹¹With apologies to Roger Middleton from whose excellent 1985 book I have learnt much.

7. So what did happen?

Rather heroically and with the benefit of nearly a century of hindsight we might want to ask a number of questions based on this IS-LM framework. In a series of famous debates, macroeconomists have continued to debate the extent to which the two inter-war recessions might have been related to shifts in the IS or LM curves. The monetarist position is broadly one that argues that monetary policy was prematurely tightened and this drove interest rates up and output down. And the proto-Keynesian view placed a greater weight on changes in expenditure in a demand deficient environment. Indeed it is questionable whether prices were even considered stable in this period, as the sustained deflation would according to Pigou eventually have a wealth effect, as the real value of money balances would increase, and cause the money curve to move out. We can plot the output level and Bank rate, from 1919-1939 in the same space as the IS-LM curve and imagine a large number of possible shapes and shifts that could explain the observed quantities and prices. The art of identification is to place sufficient restrictions on these possibilities to emerge with one answer.

And so we can use modern techniques based on the impact of an IS shift on output and interest rates (they move in the same direction) and the impact of an LM shift on output and interest rates (they move in an opposite direction) to decompose movements in output and ascribe them to shifts in either curve. Essentially we generate many possibilities for the shifts and slopes of both curves and keep trying different ones and present the results of the most likely sequence: it is a trained guess.

It would appear from the face value of this analysis that both recessions were more obviously related to shifts in the LM schedule. If we were to believe this result, it would suggest that monetary policy rather than fiscal or expenditure was more to blame for the recessions and perhaps a fiscal solution was not the way forward. But as you would expect from an economist, allow me to argue with these, my own, results. There are a number of uncertainties in this estimate: (i) can we assume that the slopes of the schedules were the same throughout this exceptional period?; (ii) what if the data on output is measured with error or noise?; (iii) surely the high levels of unemployment must have meant that shifts in spending played an important role in explaining output growth; (iv) can we proxy economy-wide interest rate by Bank Rate alone?; (v) how do we deal with expectations of income and interest rates in this static framework?; and (vi) what about the possibility that changes in the aggregate price level may have induced shifts in output that are not well explored in this simple framework? These problems of identification and the relationship between policy and response plague economics today and certainly cause me to attach a health warning of extraordinary size to these results.

8. Concluding Remarks.

The classical economy suggested that there was a unique market clearing equilibrium, which swept up any fragments in the real side of the economy in terms of the demand for and supply of goods. The price level in this economy had no secular trend as the gold standard seemed to deliver long run price stability, albeit at some cost in terms of year to year variance. The financial sector was insulated by high levels of liquidity and capital, and, in any case, the Bank of England and other national central banks had long adopted some form of Bagehot's principles in a crisis.

The shock of two recessions, exit from the Gold Standard - which had been an accidental fixture since 1717 - and ultimately the large and persistent levels of unemployment convinced many that the classics needed to be recast. Keynes offered an answer. There was not necessarily a unique, full employment equilibrium and output was for the most part demand determined. This meant that something called macroeconomic policy might usefully be developed to manipulate demand through the money markets or goods markets to bring about a level of output consistent with full employment. In a world where the private sector seems to fall down on the job, the natural replacement is the State, which can marshal and collect information, well-meaning public officials and 'great minds' to help co-ordinate a better outcome for the macro economy. This change in tack was set in stone by the famous 1944 White Paper on Employment.

But if the State can help households and firms offset the negative impact of events, or what economists call shocks, it is not such a great intellectual leap for the State to take ultimate responsibility for economic stability. In a world that continues to be divided between monetarists and Keynesians, or progressive and conservative or expansionists and contractionists, we do need to remember that society has a choice, and perhaps a responsibility, to implement policies that influence demand. It is the evolution of that responsibility in the Golden Era we shall examine next time.

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