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KEYNES

A Very Short Introduction

OXFORD

Epilogue: The view from 2010

When I wrote on Keynes 15 years ago, Keynes's star was fading. By common consent, the Keynesian age had collapsed in theoretical disarray and policy disorder, victim of simultaneous inflation and unemployment which Keynesian economists could not explain and Keynesian policy-makers could not control. It was in this situation that classical economics – the economics Keynes had apparently overthrown – made a big comeback, and governments reverted to a modified pre-Keynesian policy stance. Markets were deemed to be optimally self-regulating; the macroeconomic task of government was restricted to maintaining 'sound money'; government's task in the micro-economy was to free up markets in order to lower the 'natural rate of unemployment'. The revival of classical economics and its theory of economic policy was enormously helped by the fall of Communism in 1990. This made possible for the first time since 1914 the restoration of a single world economy based on balanced budgets, free trade, and unrestricted capital movements – the pre-1914 recipe for economic success. 'Globalization' was the name given to this worldwide extension of the market system.

My 1995 account of Keynes's contribution to economics was swayed by these theoretical and real-world happenings, but there was a lot of life left in my Keynes. As I wrote, 'the deflationary policies pursued over the last fifteen years have left high and persisting unemployment in their wake – as indeed Keynes predicted such policies would'. In other words, economies did not bounce back quickly to full employment and rapid growth after a shock. Events since then have brought Keynes back to more vigorous life. The so-called 'Great Moderation' after 1997/8 which seemed to vindicate the new regime of deregulated markets lasted less than ten years: from today's perspective, it resembles nothing so much as the 'roaring twenties'

which preceded the Great Depression of 1929–32. With the financial collapse of 2007–8, ‘new classical’ belief in self-regulating markets has proved to be as illusory as the old classical belief.

My ideas of what was significant in Keynes, and his legacy, have shifted, partly because the world has changed. Below I indicate the five topics that have taken on greater significance since the first edition of the book came out.

The role of uncertainty

I would now assign a much greater weight to uncertainty in Keynes’s thinking than I did in 1995. It was not that I was unaware of it. Indeed, I would not alter a word of the first paragraph of [Chapter 1](#). But I did not place it at the heart of my account of Keynes’s theory. In this, I followed the conventional treatment. The purpose of the *General Theory* was to explain how an economy could get stuck in a low employment trap, not how it had arrived there. In other words, it was an equilibrium theory.

This seemed the right model for the time, because the world wanted to know how to get out of the trap. The theory of the multiplier showed how much extra demand needed to be pumped into a depressed economy to bring it back to full employment. The income/expenditure model was thus the bit of Keynes most suitable for the policy-maker, and this was the form Keynes gave it in his great book, asides apart.

In the *General Theory* expectations were taken as given. Aggregate demand was simply expected income. Why one level of income was expected rather than another was not explained. But any theory which seeks to explain the *movement* of an economy through time requires a theory of expectations.

This is where Keynes’s theory of uncertain expectations comes in. What causes economies to collapse is the existence of *uncertain* expectations. Uncertainty plays a minor part in the plot of the *General Theory*. It enters

the picture only after the statement of the positive part of his theory, which assumes given expectations. Yet it is obvious, I think, that without uncertain expectations there would be no plot. The collapse of investment which drives the economy into a slump would not happen, interest rates would automatically rebalance any discrepancy between *ex ante* saving and investment, and the classical theory would be the relevant one for all circumstances. Yet what was a ‘digression’ in the *General Theory* became its central message when Keynes restated the ‘simple fundamental ideas’ which underpinned his theory in an article entitled ‘The General Theory of Employment’, published in the *Quarterly Journal of Economics*, February 1937. Economists like Shackle (1967), Minsky (1975), Chick (1992), and Davidson (1972, 2007) have based their interpretation of Keynes on the 1937 article.

Many commentators have argued that Keynes had little or nothing to say about financial instability. This is wrong: the instability of investment as a cause of crisis is a continuous theme in his writing (see, for example, the *Treatise on Money*); with its cause – inescapable uncertainty about the future – clearly identified. Equally clearly, Keynes identifies predictable knowledge of the future as the key tacit assumption behind the classical theory of the self-regulating market. If we knew what tomorrow would bring, there would never – assuming rational behaviour – be a financial or economic crisis.

Keynes’s view that uncertain expectations are the root cause of financial crisis may be contrasted with today’s conventional view that the banking collapse of 2008–9 was caused by the ‘mispricing of risk’. Behind this lies the notion that risks can be correctly priced, but that markets were impeded from discovering these correct prices by information or incentive failures. The key to the prevention of further crises is therefore better ‘risk management’, by the banks and by the regulators: more transparency, better risk models, and, above all, better incentives to evaluate correctly the risks being run. The argument seems to be between those who say risks are always correctly priced – the Efficient Market Hypothesis – and those who concede that imperfect information and/or the wrong incentives can cause market prices to deviate from the correct prices given by ‘fundamentals’.

In contrast, Keynes made a key distinction between risk and uncertainty. Risk is when probabilities can be known (measured); uncertainty exists when they cannot be known (or measured). His original insight was that the classical theory of the self-regulating market rested on the epistemological claim that market participants have perfect information – a claim revived in the theory of rational expectations. Grant this, and the full employment assumption follows; deny it, and it collapses. Keynes's economy is one in which our knowledge of the future is 'usually very slight and often negligible' and expectations are frequently subject to disappointment. This renders the accumulation of wealth 'a peculiarly unsuitable subject for the methods of the classical economic theory'. Models which assume that we have calculable probabilities for all future contingencies are essentially fraudulent prospectuses.

What was it that rendered large parts of the future impervious to probabilistic calculation? Keynes gave the example of an apple endowed with 'human' characteristics. Newtonian physics tells us that it will always fall to the ground, at a speed dictated by the force exerted on it divided by its mass. But no such prediction can be made about the 'human' apple.

It is as though the fall of the apple to the ground depended on the apple's motives, on whether it is worthwhile falling to the ground, and whether the ground wanted the apple to fall, and on mistaken calculations on the part of the apple on how far it was from the centre of the earth.

Some part of the uncertainty attaching to the speed of the apple's fall can be put down to mistakes on the apple's part ('mistaken calculations') which are in principle correctible. However, the main 'human' characteristics with which Keynes equips his apple are 'motives' and 'intentions'. It is these which break the link between economics and physics, and which make economics a 'moral' and not a 'natural' science. Keynes's point is that economics 'deals with introspection and values... with motives, expectations, psychological uncertainties'. The future can't be predicted, because the future is unpredictably changeable. It is unpredictably changeable, in large part, because it is what we choose to make it. This view implies a large restriction on the applicability of econometrics.

Basically, Keynes believed it could be applied only to those fields in which risk is measurable. This excluded many of the risks incurred in investment markets.

The main technique we adopt to cope with an uncertain universe is to give risk numbers. This is what mathematical forecasting models do, using some version of Bayes' theorem to transform prior into posterior probabilities. This gives us the assurance we need to invest. But it is a fake assurance. While repeated betting on horses allows you to update your 'priors' to match the 'true' merits of the horses, no amount of data on past economic events brings you any closer to their true likelihood of occurring in the future, because the future is bound to be different from the past. What we do is to use mathematics to *invent* a world of calculable probabilities which we take to be an accurate reflection of the real world.

Thinking about the future as calculable is not foolish. In fact, it is the only rational basis of individual action. It is also compatible, as Keynes notes, with a considerable measure of stability. Mathematical forecasts can shape the future they claim to predict, by shaping our expectations. They may produce what economists call 'bootstrap' equilibria, paths which are what they are not because the world is what it is, but because beliefs about the world are what they are. They tell a story about the future which gives confidence, as long as nothing happens to shake confidence in the story.

Why does investment break down? Keynes's answer is that the technique for transforming uncertainty into calculable risk is based on the convention that 'the existing state of affairs will continue indefinitely, except in so far as we have specific reasons to expect a change in the near future... we are assuming, in effect, that the existing market valuation, however arrived at, is *uniquely* correct in relation to our existing knowledge, and that it will only change in proportion to changes in our knowledge'. This convention is philosophically flawed, 'since our existing knowledge does not provide a sufficient basis for calculated mathematical expectation'. Nevertheless, by using the convention, the investor can 'legitimately encourage himself with the idea that the only risk he runs is that of a genuine change in the news *over the near future*', which is unlikely to be very large. 'Thus investment becomes reasonably "safe" for the individual investor over short periods,

and hence over a succession of short periods... if he can fairly rely on there being no breakdown in the convention.’ Keynes believed that ‘it has been... on the basis of some such procedure as this that our leading investment markets have been developed’.

The flaw in the method is that it abstracts from uncertainty by assuming that the future will be a succession of very short intervals, for each of which we can expect to have reliable information. In practice, the prospective yield (discounted future cash flow) of an investment over a number of years is subject to all kinds of unknowns about future interest rates, inflation rates, exchange rates, choice of interest rates for ‘discounting’, and so on. The assumption of the Efficient Market Hypothesis that all the relevant information about the future prices of securities is already contained in their current prices is as heroic as is the belief that econometric analysis will give us reliable information about the future course of microeconomic and macroeconomic variables. The first fails to explain how current prices can diverge from so-called ‘intrinsic values’; the second assumes knowledge about things about which there is no scientific basis to form any calculable probability. Contrary to the current orthodoxy that expectations are realized on average, Keynes believed them to be disappointed on average, with rare moments of satisfaction. He also believed that uncertainty forced professional investment into speculation, since speed of transactions was the key to avoid being left holding the bad penny when the music stopped.

Expectations so precariously based are liable to be swept away, because, as Keynes says, ‘there is no firm basis of conviction to hold them steady’ – that is, to be able to distinguish between new relevant information and ‘noise’. Suddenly everyone starts revising their bets.

The practice of calmness and immobility, of certainty and security, suddenly breaks down. New fears and hopes will, without warning take charge of human conduct. The forces of disillusion may suddenly impose a new conventional basis of valuation. All these pretty, polite techniques, made for a well panelled board room and a nicely regulated market, are liable to collapse.

This is as good a theoretical explanation as I know of for the meltdown in the autumn of 2008.

However, the story is only half told. Investment depends on what Keynes calls the marginal efficiency of capital (MEC) – roughly, the expected rate of return over cost – as compared to the rate of interest. If MEC is greater than the rate of interest, investment takes place; if less, it falls. In the classical picture, the rate of interest, being the price that equilibrates saving and investment, adjusts automatically to any change in the MEC. Keynes accepted that the volume of investment depends on the rate of interest, but denied that the rate of interest was determined in the market for saving and investment. Rather, it is the price for parting with money. This is his liquidity-preference theory of the rate of interest. Money plays a key part in Keynes's narrative of investment breakdown. Holding money is an alternative to buying investments. Keynes was the first economist who clearly identified the role of money as a 'store of value'. What he called 'liquidity preference' rises when the 'convention' supporting investment collapses. A rise in liquidity preference can retard the fall in the rate of interest necessary to bring about a recovery of investment in face of a fall in expected profitability. Indeed, a fall in the expected profitability of investment and a flight into money are two sides of the same coin. This is essentially what happened in 2007–8. Liquidity suddenly dried up as banks enlarged their cash balances and stopped lending. Indebtedness played a larger part in the freeze-up than it did during the time of the Great Depression, but the essential motive for the flight into money – loss of confidence in the future – was the same. The rise in liquidity-preference when the MEC collapses is Keynes's main explanation of why the market system lacks an automatic correction mechanism.

Keynes's equilibrium method also cut him off from a theoretical explanation of how involuntary unemployment comes about. It is defined as a situation in which there are more people willing to work for a lower real wage than there are employed. The question then is: why does not competition between workers bid down real wages sufficiently for all to find jobs? Or to put it another way: how can Keynes's under-employment equilibrium be a real equilibrium if it contains disequilibrium prices? A major theoretical weakness of the post-war Keynesians was their inability

to explain persisting unemployment except in terms of ‘sticky’ wages, and their inability to explain why wages were sticky. Axel Leijonhufvud goes some way to filling this theoretical gap within a (non-Keynesian) theory of long-period full employment. As he points out, the main innovation of the *General Theory* was to create a model in which the system reacts to a disturbance by quantity not price adjustments. Following a shock, output and prices both adjust. But prices adjust slower than output because people don’t know what the new equilibrium price is. So they trade at disequilibrium prices. There is no auctioneer to establish a ‘vector of market clearing prices’ before trade starts. Further, only in the very long run need long-term interest rates conform to underlying physical transformation possibilities and inter-temporal household preferences. Uncertainty may thus cause real wages and long-term interest rates to remain for years above the rates needed for full employment.

The debate about the stimulus

When the financial system crashed in 2008, dragging down the real economy with it, governments stepped in everywhere with ‘stimulus packages’ made up of a mixture of printing money, providing tax rebates or subsidies for private spending, and big increases in loan-financed public spending. This was all according to Keynesian prescription. Even Robert Lucas, high priest of Chicago economics, admitted that ‘we are all Keynesians in the foxhole’. But signs of economic recovery rapidly brought about a resumption of normal intellectual service. Most economists and many policy-makers are calling for a swift withdrawal of the stimulus on the ground that it will bankrupt governments or lead to inflation or both. What this rapid turnabout shows is that the model of the economy which Keynes had tried to blast out of the minds of economists in the early 1930s is still firmly lodged there. It wavers in moments of panic, but quickly reasserts itself. In fact, the current debate about the stimulus is a replay of the debate between Keynes and his critics at the time of the Great Depression.

In 1929, with British unemployment standing at 10% of the insured workforce, Keynes and Hubert Henderson wrote a pamphlet entitled *Can Lloyd George Do It?* In this, they proposed a big programme of public works, to be financed by loan, to induce a ‘cumulative wave of prosperity’. The British Treasury attempted to refute the proposal using an argument developed by its then only economist, R. G. Hawtrey. Hawtrey had claimed that, with a fixed money supply, any loan raised by the government for public works would ‘crowd out’ an equivalent amount of private spending. Employment could be increased only by credit expansion – or what was then called inflation. The prime minister, Stanley Baldwin, was fed the lines ‘we must *either* take existing money *or* create new money’.

Keynes riposted: ‘Mr. Baldwin has invented the formidable argument that you must not do anything because it means you will not be able to do anything else.’ Yet the Treasury argument of 1929 was restated in 2009 in almost identical terms by Professor John Cochrane of Chicago University:

If money is not going to be printed, it has to come from somewhere. If the government borrows a dollar from you, that is a dollar that you do not spend, or that you do not lend to a company to spend on new investment. Every dollar of increased government spending must correspond to one less dollar of private spending. Jobs created by stimulus spending are offset by jobs from the decline of private spending. We can build roads instead of factories, but fiscal stimulus can’t help us to build more of both.

The policy implication of this argument is that the fiscal stimulus was a mistake and should be withdrawn as soon as possible in order to create room for private spending. And this has been the almost unanimous call of conservative politicians and commentators. This call would be correct if the economy were at full employment. But coming at a point when production and employment had fallen by 5%, it was plainly nonsensical. Government spending to put the unemployed to work is not taking away employment from those already in work: it is adding to the amount of employment. It is equally obvious that increased government spending will have to be financed initially by printing money, because any fall in aggregate spending will have led to a collapse in the money supply. But as the new money is

spent, there will be extra dollars for the government to borrow without 'taking it away' from the owners of existing dollars. Keynes explained all this clearly in 1937, when he pointed out that an investment decision may involve 'a temporary demand for money... before the corresponding saving has taken place'. Thus, though extra investment (private or public) could not be limited by a 'shortage of saving', it could exceed the supply of financial facilities 'if the banking system is unwilling to increase the supply of money and the supply from existing holders [of inactive balances] is inelastic'. In this situation, the central bank could always create the 'finance' for additional investment, private or public, by printing more money. If the investment takes place, 'the appropriate level of incomes will be generated out of which there will necessarily remain over an amount of saving exactly sufficient to take care of the new investment'.

Contemporary Hawtreyans argue that printing money is a necessary and sufficient condition for a revival of private spending. There is no need for extra government spending on public works and so on. When the central bank buys government and corporate securities, it adds to the cash reserves of banks and companies. These purchases enable banks to expand their deposits (loans) and companies to expand their investments. Thus, 'open-market operations', carried out to any extent necessary, will be sufficient to produce recovery from even a severe slump.

Keynes certainly believed something like this when he wrote the *Treatise on Money* in 1929–30. Monetary policy, he thought, would be sufficient to rescue an economy from a slump except in the exceptional circumstance when the expectation of profit had fallen below the minimum interest rates at which banks were prepared to lend. By 1932, he thought this circumstance had come to pass. 'It may still be the case', he said in his Halley-Stewart lecture of 4 February 1932,

that the lender, with his confidence shattered by his experience, will continue to ask for new enterprise rates of interest which the borrower cannot expect to earn... If this proves to be the case there will be no means of escape from prolonged and perhaps interminable depression except by direct state intervention to promote and subsidise new investment.

The long Japanese stagnation of the 1990s brought into prominence the idea of a 'liquidity trap'. Keynes asked: why someone should hold money for any purpose other than the transactions and precautionary motives, when he could obtain an income by investing it in bonds? Keynes found that the necessary condition for such speculative money-holding is 'the existence of *uncertainty* as to the future rate of interest'. If the rates of interest ruling in future could be foreseen with certainty, 'it must always be more advantageous to purchase a debt than to hold cash as a store of wealth'. However, if the future rates of interest were uncertain, the outcome could be quite different. If interest rates rise, a capital loss is suffered, with the loss being higher the more long-dated is the bond. Keynes warned that, for an investor thinking of acquiring a bond with a life of n years, '... if a need for liquid cash may conceivably arise before the expiry of n years, there is a risk of loss being incurred in purchasing a long-term debt and subsequently turning it into cash, as compared with holding cash'. Keynes's conclusion was that, when there were enough investors who expected the next move in interest rates to be upwards, they would hold at least part of their wealth in the form of money rather than bonds. They would do this even if they would be foregoing income in the immediate future. In the extreme – when bond yields had fallen so low that the only sensible expectation was a future rise in the bond yield (i.e., the only sensible expectation was a capital loss) – investors would keep idle any extra money balances that might be injected into their portfolios. The economy would be in a liquidity trap: people would accumulate money balances without limit. Open-market operations could not rescue it. Only fiscal policy could. Keynes did not believe that a pure liquidity trap – in the sense that the LM curve is flat – had ever arisen, though the United States in the 1930s had come close to it. But clearly any flattening of the LM curve, even if short of a trap, reduces the effectiveness of monetary policy. Keynes did not worry too much about the trap, since, if it happened, while monetary policy would be disabled, the government would be able to borrow unlimited amounts at a nominal rate of interest for its own spending.

Keynes's liquidity trap discussion has been heavily criticized for being analytically incomplete. He postulated only two alternatives – holding cash

or buying bonds. But savers may express their desire for liquidity by increasing their demand for other liquid assets such as equities. If investors have a choice between money, bonds, and equities, and one allows for the increase in money to alter inflation expectations, Keynes's trap disintegrates. However, this does not, it seems to me, rescue the case for monetary policy as a sufficient cure for a slump. Quantitative easing has undoubtedly had a positive effect on stock market prices. But most of it has not yet (at the time of writing, February 2010) filtered into the real economy. It has bid up prices of existing assets, but not stimulated new investment, because lenders are still asking more from borrowers than borrowers can expect to earn. The general proposition is that the emergence of asset bubbles, just as much as a flight into money, can signal a dearth of investment opportunities. Keynes's 'speculative motive' for holding money should not be confused with the desire for cash alone.

Global imbalances

Keynes's 1941 plan for an international clearing union was designed to overcome the global imbalances of his day, namely the blocking of balance of payments adjustment by the tendency of the United States to accumulate gold reserves, which imposed deflation on the rest of the world. Recent years have seen East Asia and the Middle East start on their process of reserve accumulation.

Keynes's perspective on global imbalances was formed not just by the disturbances of the interwar years but by his reading of monetary history. He thought that throughout history the desire to hoard savings had been stronger than the desire to invest them, because at all times vague fears lie below the surface, denting our optimism, and creating a permanent bias towards preserving existing value rather than creating new value. This was his explanation of why the world had stayed poor for so long. He believed that investment came in bursts of optimism, which he called 'animal spirits'. We can trace these investment upsurges in history – from the

railway boom of the 19th century to the dot.com boom which ended in 2000. But normally people preferred to hoard rather than invest their money, that is to say, there was a permanently high level of liquidity preference which exerted a permanent upward pressure on interest rates. Hence, Keynes's support for the medieval usury laws, which he saw as an attempt to prevent people making money by hoarding money.

Keynes's theory of economic history was influenced by Jevons's famous description of India as the 'sink of the precious metals'. 'The history of India at all times', he wrote in the *General Theory*,

has provided an example of a country impoverished by a preference for liquidity amounting to so strong a passion that even an enormous and chronic influx of the precious metals has been insufficient to bring down the rate of interest to a level which was compatible with the growth of real wealth.

Keynes believed that from ancient times onwards, the Orient's propensity to hoard influxes of the precious metals had set the Occident a permanent deflationary problem. Shortage of gold in the West had been relieved from time to time by discoveries of gold and silver in the New World, and by Western seizure of Oriental temple and palace hoards.

Keynes would thus have seen the global imbalances of today as the reappearance of an ancient pattern, though with a modern twist.

In a system of floating exchange rates, balance of payments adjustment is, in theory, automatic: movements in the exchange rates of currencies correct any imbalance in trade flows. This is as true of a gold standard (in which domestic currencies are convertible into gold) as of a fiduciary standard. The situation is more complicated when countries are committed to allowing their currencies to be freely converted into gold at a fixed rate. In this case, a country running a current account deficit cannot devalue its currency in terms of gold: it has to deflate its domestic prices. By contrast, the country gaining gold has the option to inflate its domestic prices, 'hoard' (sterilize) its accumulating gold, or make foreign loans. This is what led Keynes to write in 1941:

the process of adjustment is *compulsory* for the debtor and *voluntary* for the creditor. If the creditor does not choose to make, or allow, his share of the adjustment, he suffers no inconvenience. For whilst a country's reserve cannot fall below zero, there is no ceiling which sets an upper limit. The same is true if international loans are to be the means of adjustment. The debtor *must* borrow; the creditor is under no... compulsion [to lend].

The deficit country deflates its domestic prices (or costs of production) by raising interest rates; whence, in Keynes's view, unemployment. For, as he wrote in 1925, the policy of credit restriction to lower prices can only attain its end '*by the deliberate intensification of unemployment*'. The chief 'hoarder' in the interwar years was the United States, whose super-competitive position, fortified by an undervalued exchange rate, enabled it to drain gold from the rest of the system, including Britain.

Keynes's Clearing Union plan of 1941 was designed to retain the advantages (as he saw them) of a fixed exchange rate system while avoiding the asymmetric costs of adjustment. As I explain on p. 113 of this volume, the essential feature of the Keynes plan was that creditor countries would not be allowed to 'hoard' their surpluses, or charge punitive rates of interest for lending them out; rather, these surpluses would be automatically available as cheap overdraft facilities to debtors through the mechanism of an international clearing bank whose depositors were the central banks of the union. The Keynes plan was vetoed by the United States, which was not prepared to allow its 'hard-earned' surpluses to be automatically placed at the disposal of 'profligate' debtor countries. Instead, the Bretton Woods Agreement of 1944 set up an International Monetary Fund to provide short-term financial assistance, on conditions, for countries in temporary balance of payments difficulties. But the onus still lay on the debtor country to deflate its wages and prices to restore balance of payments equilibrium.

That the Bretton Woods fixed exchange rate system, which lasted from 1949 to 1971, did not reproduce the deflationary character of the interwar system was entirely due to the 'dishoarding' policies of the United States. America flooded the 'free' world with dollars, to such an extent that by the 1960s it was starting to run a balance of trade deficit itself. The boot was

now, so to speak, on the other foot, but the logic of the deficit country having to deflate was circumvented by the fact that the dollar became the world's chief reserve asset. In his book *Indian Currency and Finance* (1913), Keynes had endorsed the gold exchange standard as being in the forefront of monetary evolution. Broadly speaking, it envisaged one or two countries only staying on the gold standard, with the rest of the world holding their reserves in these currencies, which because of their convertibility into gold would be 'as good as gold'. As sterling faded, the dollar became the world's sole 'key' currency. As its trade deficit widened, the United States printed an increasing quantity of dollars to cover its unrequited imports. The surplus countries accumulated American dollar liabilities which they invested in US Treasury bonds. The United States did not have to restrict domestic credit by raising interest rates since the dollars it printed came back to it. In the absence of what would have been a major deflationary force, the world economy boomed for twenty years.

The flaw in the system, as pointed out by Professor Triffin of Yale University, was that the increase in the liabilities of the key-currency country was bound to raise doubts about its ability to redeem these liabilities in gold. This brought about the predicted collapse of the gold-exchange standard in 1971. The dollar became inconvertible, and a new international reserve currency, the IMF's Special Drawing Rights (SDRs), was set up. But without the essential element of conversion of dollar balances into SDRs, the dollar continued to be the world's main reserve currency in a mixed world of floating, fixed, and managed exchange rates.

In the 1990s, the need for reserves unexpectedly revived, mainly to guard against speculative movements of hot money which could drive exchange rates away from their equilibrium values. Starting in the 1990s, East Asian governments unilaterally erected a 'Bretton Woods II', linking their currencies to the dollar, and holding their reserves in dollars. This reproduced the expansionary benefits of Bretton Woods I, but at the cost of an increasingly unbalanced reserve position, as the dollar became progressively overvalued against the super-competitive renminbi.

A Keynesian analysis would put the global imbalances at the heart of the current economic meltdown. Keynesian unemployment is triggered off by

an imbalance between saving and investment which is liquidated by a fall in output. The imbalance can be initiated either by an increased desire to save or a reduced desire to invest, or by a mixture of both. Assume a closed economy, as Keynes did in the *General Theory*. And then postulate the following: an increased desire to save (by the Chinese) unmatched by an increased US desire to invest subjects the US economy to deflationary pressure. This was offset by an inflow of dollars invested in US Treasuries, which enabled Alan Greenspan to keep the Fed funds rate abnormally low. But the ensuing credit expansion resulted not in a surge in investment but the build-up of a debt-fuelled private asset and consumption boom. The situation was unsustainable because no new resources were being created with which to pay back either domestic or foreign borrowing. Between June 2004 and July 2006, the Federal Reserve, seeking to dampen inflation and return short-term interest rates to a more normal level, raised the federal funds rate from 1% to 5.25%, and held it there until August 2007. This brought about a collapse in the housing boom, and through its repercussions on the balance sheet of the banks which had provided or securitized housing mortgages, of the banking system. As Keynes explained in his account of Britain's 1914 banking crisis: 'If A owes B money, and B owes it to C, and C to D, and so on, the failure of A may involve the failure of the whole series.'

This is not unlike what happened at the end of the 1920s. Judged by commodity prices, there was no danger of US inflation in 1927. Hence, by raising its funds rate from 3.5% to 5% in July 1928, the Fed was imposing an act of deflation on the US economy. As Keynes wrote in October 1928:

I cannot help feeling that the risk just now is all on the side of a business depression and deflation... If too prolonged an attempt is made to check the speculative position by dear money, it may well be that the dear money, by checking new investments, will bring about a general business depression.

This is essentially what I believe happened in 2007–8.

Keynes's political economy

At present, the reform agenda for averting future crises concentrates entirely on reforming or restructuring the banking system to prevent imprudent lending. These reforms are very necessary. But there is a common assumption that once the crisis is over, macroeconomic policy can continue as before – that is, with a single target: the inflation rate. However, there will continue to exist many risks which cannot be properly managed because they are unmeasurable. So part of the risk-reduction role has to be assumed by the government. This implies an extension of the macroeconomic functions of government.

Keynes's recipe for a less uncertain economy consisted of three main elements: measures to stimulate investment, measures to stimulate consumption, and a reform of the international monetary system to prevent the transmission of unemployment from one country to another.

The first duty of the state is to ensure enough investment in the economy to maintain continuous full employment. Although cutting taxes might give a temporary boost to investment, it will have only a weak and uncertain effect on profit expectations. For the same reason, Keynes doubted the success of a purely monetary policy in maintaining a full employment level of investment. The ground for this scepticism has already been explained. The attempt by the monetary authority to reduce long-term interest rates to below the rate the market considers (from historical experience) to be the 'safe' or 'normal' rate, by inducing people to sell bonds for cash, 'is perhaps the chief obstacle to a fall in the rate of interest to a very low level'. The problem of maintaining full employment thus arises from 'the association of a conventional and fairly stable long-term rate of interest with a fickle and highly unstable marginal efficiency of capital'. Keynes's solution to the problem is to use monetary policy to establish a permanently low long-term rate of interest. For '*any* level of interest which is accepted with sufficient conviction as likely to be durable *will* be durable... '. For this reason, he did not want to use interest rates to manage the business cycle: the exact opposite of present practice. Nevertheless, he believed that

it 'seems likely that the fluctuations in... the marginal efficiency of capital... will be too great to be offset by any practicable changes in the rate of interest'. Hence, apart from keeping interest rates permanently low, investment needed to be 'socialized'. Keynes wrote: 'I expect to see the State... taking an ever greater responsibility for directly organising investment' and 'I conceive, therefore, that a somewhat comprehensive socialisation of investment will prove the only means of securing an approximation to full employment'.

By 'socialization of investment', Keynes did not mean nationalization. Socialization of investment need not exclude 'all manner of compromise and devices by which public authority will co-operate with private initiative'. This single throwaway line in the *General Theory* reflects Keynes's thinking on 'public-private partnerships' which came out of his involvement in Liberal politics in the 1920s. In essence, he sought to expand the public-utility component of investment to give greater stability to the investment function. Today, he would have seen the big institutional investors like pension funds as a major support for stability. A steady stream of publicly inspired investment would reduce fluctuations to modest dimensions, which could be readily controlled, if so wished, by speeding up or slowing down elements in the investment programme. Such investment would not necessarily be profit-maximizing. But provided it yielded positive returns, there would be a gain. If markets had perfect information, public investment would be inefficient. But with uncertainty, there is a gain as against having no state investment at all, because of the losses due to uncertainty.

Keynes's political economy would also have used the taxation system to stimulate private consumption, since an 'increase in the habitual tendency to consume will in general [i.e., except in conditions of full employment] serve to increase the inducement to invest'. The rationale for this is that the poor spend a higher proportion of their incomes than do the rich. Marriner Eccles, chairman of the US Federal Reserve Board from 1934 to 1948, spelled out the logic of this position better than Keynes managed himself:

A mass production economy has to be accompanied by mass consumption. Mass consumption in turn implies a distribution of

wealth to provide men with buying power. Instead of achieving that kind of distribution, a giant suction pump had by 1929 drawn into a few hands an increasing proportion of currently produced wealth. This served them as a capital accumulation. But by taking purchasing power out of the hands of mass consumers, the savers denied to themselves the kind of effective demand for their products that would justify a reinvestment of their capital accumulations in new plants. In consequence, as in a poker game when the chips were concentrated in fewer and fewer hands, the other fellows could stay in the game only by borrowing. When their credit ran out, the game stopped.

The same 'suction pump' was in operation in Britain and the United States in the run-up to the 2007 crisis, access to credit compensating for the growing inequality of wealth and incomes.

Finally, Keynes would have wanted a major reform of the international monetary system. The chief need is to reduce the amount of global reserves. Between 2003 and 2009, measurable global reserves have increased from \$2.6 trillion to \$6.8 trillion -an average annual rate of increase of about 15% at a time when global GDP grew at an annual rate of 4.4%. In 2003, global gold reserves amounted to 7% of total reserves; in 2009, the figure was 12%.

This flight into liquidity amounts to a large increase in deflationary pressure. Reserves are a way of insuring against uncertainty. What is required is to lower the cost of insurance by reducing uncertainty. A package of measures to achieve this would need to include internationalization of reserves, controls on hot money flows, and agreement on exchange rates.

China has proposed creating a 'super-sovereign reserve currency', but without any detail. The first step has to be funding of existing dollar holdings through the issue of SDRs. There is a precedent here in the proposal for IMF funding of the sterling balances, which Britain rejected in 1944, only to accept in 1978 in a move which finally wound up the sterling area. Agreement would be needed on the rate of future creation of IMF resources, and the terms on which they would be lent out. In conjunction

with a ‘Tobin’ tax or quantitative controls on short-term financial transactions, these measures would greatly reduce the need to hold such large reserves. But there also needs to be agreement on exchange rates. Large swings in currency values much unjustified by changes in competitive conditions is a major cause of uncertainty in today’s world. In short, we need a return to elements of the rejected Keynes Plan of 1941. Keynes would have said that unless the global monetary system is fixed, there will be a return to protection, and globalization will recede.

Towards a new economics

Keynes claimed his theory was more ‘general’ than classical economics because it encompassed a variety of economic situations exhibiting different states of knowledge. The question is: how central is the Keynes case? If the capitalist growth engine is subject to genuine ontological indeterminacy, then its mediocre performance and frequent breakdowns are explained. If, on the other hand, uncertainty can be plausibly modelled as an information problem, to be overcome by learning and by more efficient data processing, then Keynes’s case is marginalized, and the classical theory is reinstated as the central case. The comeback of classical economics consisted in marginalizing the Keynes case, and reinserting its own theory of the self-regulating market based on ‘perfect information’ as the ‘general case’. The breakdown of the self-regulating market in 2007–8 suggests to me that Keynes’s theory is the ‘general’ one. But what would an economics that takes uncertainty seriously look like?

The fundamental issue involves the role of maths in economics. The older generation of economists used maths for a strictly limited purpose: to make more precise their intuitions about the real world, not to create an axiomatic system whose virtue lay in its unrealism. There has to be a return to an economics that allows room for important observations of economic behaviour which cannot be expressed in maths. Keynes himself was hostile to exaggerated precision: whether or not he was the author of the phrase ‘it

is better to be vaguely right than precisely wrong', this summed up his own approach. It remains to work out the teaching of economics, the production of economic textbooks, and the professional standards of economic journals to reflect these principles.

Conclusion

One clear conclusion emerges from this brief epilogue: that is, the need for a greater role for government in the management of the economy. A greater role for government in turn requires the intellectual rehabilitation of the state as a potentially rational economic actor, rather than a mere vote-seeker. It is decades since anyone was able to write, as Keynes did in 1936, of the state being 'in a position to calculate the marginal efficiency of capital-goods on long views and on the basis of the general social advantage'. We need to think about a structure of the state which allows its investment function to be separated from the political incentives facing politicians.

We do not need a new Keynes; we do need the old Keynes, suitably updated. He will not be our sole guide to the economic future, but he remains an indispensable guide.