

8. The coming depression and the end of economic delusion

Steve Keen

1. NEOCLASSICAL FALLACIES AND THE FAILURE TO FORESEE THE CRISIS

My differences with the standard neoclassical model of the economy are legion and have literally filled a book. *Debunking Economics* (Keen, 2001) focused on the flaws in the micro side of neoclassical economics, because that is the wellspring from which all neoclassical economic fallacies emanate. As a derivative product of a flawed microeconomics, neoclassical macroeconomics is born deformed. But it adds key weaknesses of its own.

The most important of these are its obsession with equilibrium modeling, its ignorance of the role of credit and debt in a market economy, its refusal to acknowledge class divisions in economic function, income distribution and power, and lastly, in the associated realm of finance, the unjustified quarantining of finance from economics, and the reduction of uncertainty to risk.

It follows that my own perception of how the economy operates is that it is a demand-driven dynamic system that normally operates far from equilibrium, in which credit and debt dynamics play the primary role in determining demand, where class differences in both economic roles and income distribution play out in cyclical and sometimes secular trends, and where finance and economic performance are inextricably linked, because uncertainty about the future means that economic actors extrapolate current trends using simple ‘rules of thumb’ that have unexpected consequences over time.

My models of this system generate complex endogenous cycles, in which economic breakdown can occur when a rising level of debt overwhelms the economy’s capacity to service that debt (Keen, 1995, 2000). I am also now developing strictly monetary models that can simulate a ‘credit crunch’, with changes in key financial flow rates – an increased rate of debt repayment, and a decreased rate of new money creation – being

sufficient to generate depression-level unemployment (Keen, 2009). In terms of economic theory, my foundations are, in reverse chronological order, Minsky, Richard Goodwin, Schumpeter, Sraffa, Keynes and Marx. I regard Minsky's financial instability hypothesis as the crystallization of an alternative non-neoclassical thread that runs through all these authors, though each has to be individually consulted to shape a complete vision of how the economy operates.

This vision, and the history of economic thought behind it, couldn't be further removed from conventional neoclassical thought, whether that is 'old school' IS–LM/AS–AD thinking, or 'new wave' rational expectations, representative agent macroeconomics.

Both are inherently equilibrium frameworks – IS–LM and AS–AD are inherently static, while the pretensions to dynamics of SDGE models ('stochastic dynamic general equilibrium') would be laughed at in a proper dynamic discipline such as engineering.

They are also showcases of how little practising neoclassical economists actually know about neoclassical economics. Joan Robinson once described the IS–LM and AS–AD models as 'bastard Keynesian'; these modern neoclassical models are effectively bastard neoclassical, but carry falsified documents of paternity. Although they are touted as having 'rigorous microeconomic foundations', those foundations involve denying fundamental conclusions from 'rigorous microeconomic theory'.

These conclusions range from the impossibility of deriving 'well-behaved' market demand curves even if individual consumers' preferences are 'well behaved' (the so-called Sonnenschein–Mantel–Debreu or SMD conditions), through Sraffa's proof that the marginal productivity theory of income distribution does not hold in a multi-product world, to the erroneous calculus behind the 'model' of perfect competition (these and other issues are detailed in *Debunking Economics*).

Unaware of these underlying realities of rigorous microeconomics, today's neoclassical economists have built models that purport to analyse the macroeconomy using concepts that have all been debunked by microeconomic research. To take but one aspect here, the construct of the 'representative agent' is central to these models, yet one of the discoverers of the SMD conditions wrote that 'Only in special cases can an economy be expected to act as an "idealized consumer"' (Shafer and Sonnenschein, 1982: 672).

That such models have achieved an apparently close fit to past empirical data says more about the capacity of modern econometric techniques to manipulate parameter-dense models than the relevance of the models themselves to the real world. Their empirical fits would now be falling apart.

The old-fashioned IS–LM framework, based on the work of John Hicks, has already been thoroughly debunked – by John Hicks. As Hicks pointed out in his retrospective apology, ‘IS–LM – an Explanation’ (Hicks, 1990), the IS–LM model was inspired, not by Keynes’s *General Theory*, but by a preceding and rightly neglected paper of Hicks’s in which he tried to build a dynamic model of a ‘bread economy’ (Hicks, 1935). The intention of that paper, and some of the arguments in it, were laudable. Hicks observed that theories ‘built upon the hypothesis of a stationary state [are] quite satisfactory under that hypothesis, but incapable of extension to meet other hypotheses, and consequently incapable of application’. He also noted that the then extant theories of capital were based on equalities that would apply in a steady state, since ‘once we leave stationary conditions, these convenient equalities disappear, and theories based upon them cease to be applicable’ (ibid.: 456–7).

Unfortunately, the final execution suffered. Being unaware of mathematical techniques to handle flows in continuous time, Hicks proceeded to introduce time by slicing the future into ‘short sections, each of which can be treated as constant’ (ibid.: 457), which he equated to a week. Every Monday – and only on Monday – the market opened, and set wages and the rate of interest. Production then ensued over the week, taking those prices as given. In effect, expectations of changes in prices over that week were set to zero: there would be no change in expectations for the production period.

Then, despite his correct opening argument that existing, static theories presumed equalities that applied only in a static state in equilibrium, he used equalities to decide how to handle key relations in his dynamic model (which was only stated verbally rather than in difference equation form). A key step here was the use of Walras’s Law to argue that capital markets could be left out of his model because ‘if the market for labour is in equilibrium, and if the market for bread is in equilibrium, the market for loans must be in equilibrium too’ (Hicks, 1935: 465). He later used the same thinking to exempt the labour market from consideration when developing the IS–LM model.

Minsky, on the other hand, realized that a growing economy would be characterized by *disequilibrium*, with aggregate demand *exceeding* aggregate supply, and therefore by debt rising over time.

If income is to grow, the financial markets, where the various plans to save and invest are reconciled, must generate an aggregate demand that, aside from brief intervals, is ever rising. For real aggregate demand to be increasing, given that commodity and factor prices do not fall readily in the absence of substantial excess supply, *it is necessary that current spending plans, summed over all sectors, be greater than current received income* and that some market technique exist

by which aggregate spending in excess of aggregate anticipated income can be financed. It follows that over a period during which economic growth takes place, at least some sectors finance a part of their spending by emitting debt or selling assets. (Minsky, [1963] 1982: 7; emphasis added)

Imposing equilibrium conditions on a model of a growing economy is therefore oxymoronic, something that Hicks himself later came to appreciate (Hicks, [1980] 1982). Reflecting adversely on his creation, Hicks explained that while it may have been valid to hold expectations constant, and even to presume equilibrium in his model with its time period of a week, neither assumption was valid when considering a growing economy over the time period relevant to macroeconomics of at least a year. In particular, Hicks reasoned, the LM curve itself could not be derived if equilibrium – and hence constant expectations of the future – were assumed, because ‘there is no sense in liquidity, unless expectations are uncertain’ (ibid.: 152). Hicks concluded scathingly that:

I accordingly conclude that the only way in which IS–LM analysis usefully survives – as anything more than a classroom gadget, to be superseded, later on, by something better – is in application to a particular kind of causal analysis, where the use of equilibrium methods, even a drastic use of equilibrium methods, is not inappropriate . . .

When one turns to questions of policy, looking towards the future instead of the past, the use of equilibrium methods is still more suspect. For one cannot prescribe policy without considering at least the possibility that policy may be changed. There can be no change of policy if everything is to go on as expected – if the economy is to remain in what (however approximately) may be regarded as its existing equilibrium. (Ibid.: 152–3)

The problems with Hicks’s logic went further than Hicks himself was able to appreciate. The belief that a third market could be left out of consideration if the other two were in equilibrium did not apply out of equilibrium: thus even if the IS–LM model accurately characterized the economy, and even if the Walras’s Law equalities applied in a growing economy, only at the point of intersection of the two curves could two curves only be used. Away from that point, the third market would not be in equilibrium and the dynamics become not two-dimensional, but three-dimensional.

Just as neoclassical developers of DGSE models are unaware of their bastard paternity, practitioners of old-style IS–LM neoclassical modelling are unaware of theirs. The IS–LM model continues to adorn neoclassical macroeconomic textbooks, with no mention of these problems, and those who are raised on these texts continue to invoke the names of Keynes and Hicks, without being aware that Keynes was not even midwife to this creation, while the father has disinherited his child.¹

In addition to sharing dubious paternity, both old and new neoclassical models suffer from the key problem of model-building, ‘omitted variable bias’. Neither class of models includes private debt as a variable, yet it should now be clear to everyone – even neoclassical economists – that excessive levels of private debt are *the* cause of the current crisis. Even without their other deficiencies, omission from consideration of this crucial argument means that their models would have failed to foresee this crisis.

My models do include debt, are explicitly disequilibrium in nature, and did predict this crisis as a feasible – though not inevitable – outcome of a debt-financed system, as long ago as 1995. A decade later, and much closer to the eventual crisis, neoclassical macroeconomists congratulated themselves on the apparent reduction in economic volatility in what they later dubbed ‘The Great Moderation’ (Bernanke, 2004a). Bernanke’s comments on this, when he was a Federal Reserve governor, deserve to be recorded as the systemic equivalent of Fisher’s unfortunate utterance about the stock market during the Great Crash:

As it turned out, the low-inflation era of the past two decades has seen not only significant improvements in economic growth and productivity but also a marked reduction in economic volatility, both in the United States and abroad, a phenomenon that has been dubbed ‘the Great Moderation’. Recessions have become less frequent and milder, and quarter-to-quarter volatility in output and employment has declined significantly as well. The sources of the Great Moderation remain somewhat controversial, but as I have argued elsewhere, there is evidence for the view that improved control of inflation has contributed in important measure to *this welcome change in the economy*. (Bernanke, 2004b; emphasis added)

By way of contrast, I concluded my 1995 paper with the statement that:

this vision of a capitalist economy with finance requires us to go beyond that habit of mind which Keynes described so well, the excessive reliance on the (stable) recent past as a guide to the future. The chaotic dynamics explored in this paper should warn us against accepting a period of relative tranquility in a capitalist economy as anything other than a lull before the storm. (Keen, 1995: 634)

Technically, I use systems of ordinary differential equations to model the economy, rather than the mixture of comparative statics – and, in some cases, difference equations – that characterize most neoclassical modelling (and quite a bit of post-Keynesian economics as well). Although this modeling is initially more complicated than the simplistic mathematics used in standard neoclassical models, there is a substantial infrastructure of

sophisticated dynamic modelling engines that make it relatively straightforward as additional complexity is added.

Programs such as *Mathcad*, *Mathematica* and *Maple* make working directly in differential equations a breeze, while a multitude of ‘systems engineering’ programs (*Simulink*, *Vissim*, *Vensim*, to name but three) enable flowchart depictions and modelling of dynamic processes. Their widespread non-use in economics is a sign of how primitive this discipline is compared to the sciences and engineering when it comes to modelling dynamic processes.

These programs, and the mathematical techniques that underlie them, are also implicitly non-equilibrium in nature – designed to model the system when it is not in equilibrium. This removes the need for all the contortions neoclassicals get into when they try to model dynamic processes as if they are in equilibrium throughout, which are the main source of the apparent sophistication of these models. The maths is actually much easier when you don’t have to force every last expression into an equilibrium straitjacket.

2. LEVERAGE, BURSTING BUBBLES AND THE RECURRENCE OF ‘IT’

The fundamental cause of the crisis was the bursting of a debt-financed speculative bubble, which is the fourth such bubble in the post-Second World War period (previous ones bursting in 1966, 1987–89 and 2000; see Figure 8.1). The first bubble manifested itself only in the stock market; the second and third bubbles occurred in both asset markets, while the third resulted in the highest levels of asset market overvaluations ever recorded (see Figure 8.1).

Each of these asset bubbles has been debt-financed: without leverage, asset prices could not have exploded so far above consumer prices and dividend flows. After each bubble burst, most of the debt still existed, and of course still had to be serviced. In a pre-Federal Reserve system, possibly the first and almost certainly the second would have induced a debt-deleveraging-driven depression, which, though painful, would have resulted in a secular reduction of debt levels. By 1990, debt had reached levels equivalent to those that had triggered the Great Depression – 175 per cent of GDP in the USA (see Figure 8.2). Although there is no necessary reason why this level of debt must trigger a depression, as Mark Twain put it, ‘history doesn’t repeat, but it sure does rhyme’, and debt levels this high were on song for a secular crisis.

Instead, in what became known as ‘The Greenspan put’ (<http://>

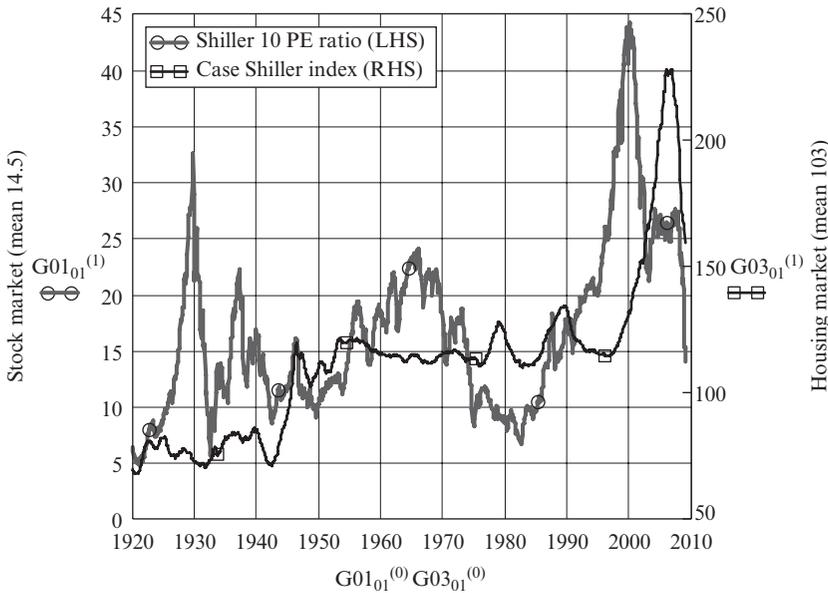


Figure 8.1 US asset market bubbles, 1920–2010

en.wikipedia.org/wiki/Greenspan_put), the Federal Reserve rescued the market from this and many subsequent financial follies. This intervention included verbal assurances of support, injections of liquidity to keep market participants solvent, and reductions in the cash rate to effectively increase the profitability of any speculative positions that had been compromised by the crash. The last policy is obvious and well known; the former were just as important, as a Federal Reserve Discussion Paper records:

In testimony given in 1994 to the Senate Banking Committee, Chairman Greenspan indicated that ‘[t]elephone calls placed by officials of the Federal Reserve Bank of New York to senior management of the major New York City banks helped to assure a continuing supply of credit to the clearinghouse members, which enabled those members to make the necessary margin payments’. Contemporary newspaper articles reported similar information: ‘John S. Reed, the chairman of Citicorp, has been quoted as saying that his bank’s lending to securities firms soared to \$1.4 billion on Oct. 20, from a more normal level of \$200 million to \$400 million, after he received a telephone call from E. Gerald Corrigan, president of the New York Federal Reserve Bank.’ Alerted by calls about the developing credit crisis from Mr. Phelan [Chairman of the NYSE] and others, the Fed leaned heavily on the big New York banks to meet Wall Street’s soaring demand for credit. (Carlson, 2007: 18–19)

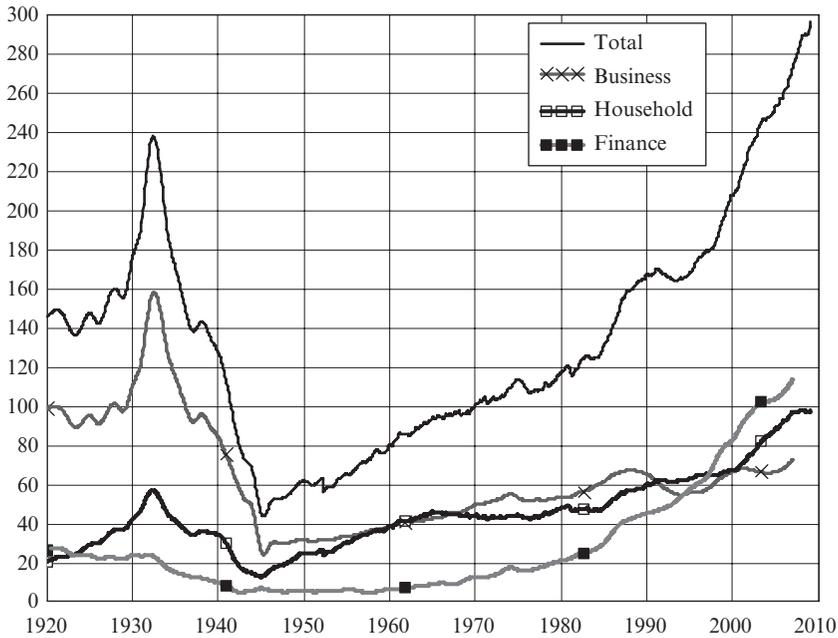


Figure 8.2 US private debt-to-GDP ratios

The 1987 intervention first led to a transference of the speculative focus from Wall Street to Main Street, with the commercial and residential property bubble that finally collapsed into the Savings and Loans crisis. An economic revival began when the rescue from that crisis encouraged private lending to accelerate once more: The USA's debt-to-GDP ratio, which had fallen from 170 per cent in mid-1991 to 163 per cent in mid-1993, began an unbroken ascent to its current peak of 290 per cent – almost 120 per cent higher than it had been when the Great Depression began, and 50 per cent higher than the peak it was driven to during the Great Depression by the effects of collapsing real output and plummeting prices.

The apparent success of the 1987 intervention encouraged its recurrent application in a series of crises, with the consequence that the recession after then dot-com bust in 2000 was unusually brief. Neoclassical economists, and especially the Federal Reserve, misread this as a sign that they had finally tamed the trade cycle. Far from taming the cycle, the practice of rescuing Wall Street from its every folly, while simultaneously ignoring rising asset prices and the debt that was financing them, is the reason why this bubble has gone on so much longer, and led to so much worse an economic crisis, than ever before.

Therefore, although I differ with the Austrian school of economics in both my underlying analysis of capitalism and my preferred solutions to this crisis, I concur with them that government intervention has made this crisis far worse than it would have otherwise been. Where I differ from them is that, while they would see such a system as a nirvana, I would still expect a Minskian financial cycle that culminated every 20–30 years in a financial crisis like those that peppered the nineteenth century. They just wouldn't be as big and as systemically threatening as the one that misguided, neoclassically inspired government regulation has given us this time.

3. A JUBILEE – MAKING SURE THAT 'IT' WILL NOT HAPPEN AGAIN

Many economists, particularly neoclassical ones, are becoming 'born-again Keynesians' who recommending public debt-financed government spending, and/or inflating the money supply as solutions to this crisis. Neither will work. The former will fail because there's no point in replacing private debt with public – which is what Japan has done since its bubble economy burst at the end of 1989. The Japanese government debt to GDP ratio has exploded from 50 per cent to 180 per cent, and its economy is still mired in a depression two decades later.

The reason I expect conventional 'Keynesian' policies to fail is that deleveraging will swamp any attempt governments might make to reflate their economies. To take the example of Australia, its government has implemented a stimulus package worth A\$42 billion – or more than 3 per cent of its GDP. But with private debt exceeding A\$2 trillion, even a 5 per cent reduction in private debt will remove A\$100 billion from circulation – equivalent to 9 per cent of its GDP. The same principle applies wherever private debt dwarfs the scale of GDP – and that is the case across the entire OECD.

Similarly, 'the logic of the printing press', to quote Bernanke (Bernanke, 2002), will fail to cause the intended inflation because the conventional 'money multiplier' model of credit creation on which it is based is wrong. While 'printing money' does cause hyperinflation in a Zimbabwe, a prerequisite is the elimination of debt so that fiat money is all there is. Achieving that end in the USA would require at least a 30-fold increase in base money, since even after Bernanke's quantitative easing in 2008, base money is still equivalent to less than one 25th of the outstanding level of private debt. I simply cannot imagine anyone in authority in the USA countenancing such an increase in fiat money.

Instead, debt has to be reduced by writedowns – a policy that is already contained in aspects of the current Obama rescue plans, but has to go much further. The question is, how much further? Before I discuss this, I'd like to propose an analogy to illustrate the dilemma this solution poses.

Imagine that you are a doctor who has as a patient a mountaineer who climbed too high with too little insulation, and now has severe frostbite in both feet. You know you must amputate them to prevent him contracting gangrene.² Should you operate before you receive his consent?

If you did, you could save his life – and the remainder of his legs – but he may well sue you for making him into a cripple. Your operation would be blamed for his plight, rather than his own preceding foolishness. So you have to wait until you get consent, by which time – for a particularly stubborn patient – gangrene may already have claimed a calf as well. After an operation with consent, your patient may worse off than if you had operated immediately, but at least then he will thank you for saving his life.

I feel the same about my preferred remedy to overcome this crisis. It has been caused by the disease of excessive debt, and it will persist as long as that debt remains in excess of the capacity of the real economy to service it. So abolishing anywhere from most to all of the debt by legislative fiat would be the fastest way to end the disease. But many legacies of the disease would still remain, and the cure itself would have drastic consequences.

The legacies would include both deficient demand and deficient supply. From my monetary perspective, aggregate demand is the sum of GDP plus the change in debt.³ By the end of this debt bubble, the increase in debt was financing up to 23 per cent of aggregate demand in the USA. Given that the change in debt is far more volatile than growth in GDP, the change in debt comes to dominate economic performance as debt levels rise relative to GDP. This is evident in the correlation revealed in Figure 8.3 between the contribution that change in debt makes to demand and the unemployment rate: there was little or no correlation in the data pre-1970, but as debt levels rose the correlation becomes unmistakable: in our debt-dependent economies, unemployment fell when the rate of change of debt increased.

The same mechanism is now working in reverse. As change in debt tends to zero and below, unemployment will inevitably skyrocket. To accelerate this process by abolishing debt immediately would make it seem that the policy caused the problem, and not the initial excessive reliance upon debt. By terminating any possibility of debt-financed consumption, it would immediately expose the 20 per cent or more hole in aggregate demand that is effectively already there.

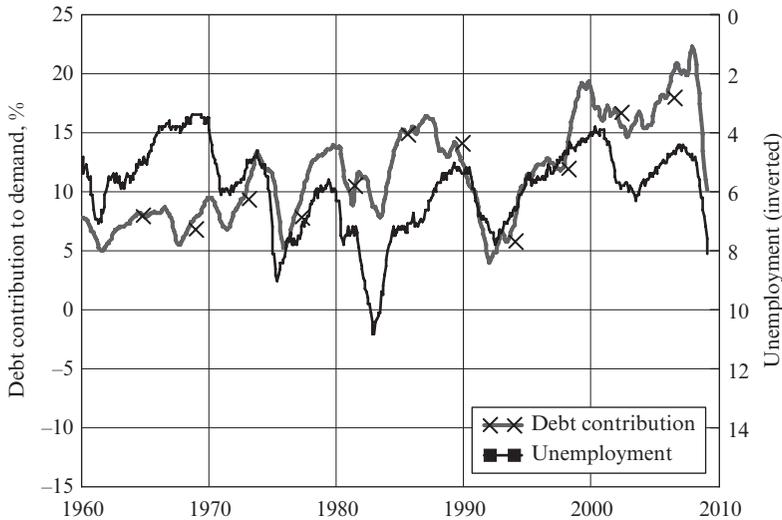


Figure 8.3 Debt contribution and unemployment, USA

The abolition of debt would also instantly bankrupt the financial system. This would not matter if it were realized that the financial system was already effectively bankrupt,⁴ but the abolition of debt would be blamed for the bankruptcy of the financial system, were it done before it was apparent that the alternative was even worse.

Finally, this financial bubble has been accompanied by the movement offshore of much of the industrial capacity of the West – and the English-speaking nations in particular – with the resulting deficiency in the capacity of workers to engage in mass consumption ameliorated by rising household indebtedness. The latter will collapse – whether quickly by debt abolition, or by a continuation of the current gradual and painful adjustment.

Ultimately, nations such as the USA are going to have to confront the problem that they do not have the factories needed to employ the people who can no longer be ungainfully employed in finance, insurance, real estate and the retailing of imported durable consumer goods. If this experience of inadequate capacity to employ the unemployed is experienced after a ‘pre-emptive strike’ of debt abolition, the abolition rather than the debt will be blamed.

Therefore, as with the medical analogy, a policy as drastic as the abolition of debt won’t be contemplated until the alternative of trying to keep the financial system afloat while pump-priming the economy has proven

to be a failure. So I can't see my medium-term remedies being taken seriously for several years. With those caveats, I'll discuss my preferred solutions.

The first is debt abolition, as in a biblical 'Jubilee'. I had originally favoured the more moderate course of reducing the debt to a level that would have been responsible in the first instance – for example, in the case of housing loans, resetting them to a level whose servicing requires 30 per cent or less of household income – a policy that is already part of one of the Obama Administration's plans.

But this is to see the remedy in the light merely of overcoming our current crisis. This, I now believe, understates its importance in history. The irresponsible lending that has caused this crisis is unprecedented in the history of capitalism – and quite possibly in the history of humanity – and the responsibility for it rests firmly with the lenders rather than the borrowers.⁵ We need to send a message through history that this scale of irresponsibility will never be tolerated again. A complete debt jubilee, with all debts abolished, and complete ownership of all encumbered assets transferred to the borrowers, would send that message.

That would of course cause chaos with the distribution of wealth and income, but the existing distribution itself is hopelessly mired in the insanity of the debt bubble anyway. It would eliminate the income of many retirees, who would have to go onto public pensions instead – but by then they might already be in a similar plight due to collapsing asset values. It would cause political chaos – but that will come our way anyway, and could well be far worse if decisive action were left to demagogues who had overthrown existing governments, as occurred after the Great Depression.

The financial system would also have to be nationalized for a decade or so, drastically reduced in size, and compelled while nationalized to carry out the one necessary function of a financial system – the provision of working capital for non-financial firms. Banks could then be returned to private ownership after the economy had largely recovered from the depression.

Reindustrialization will also be essential. The debt bubble went hand in hand with the deindustrialization of the West, as production was shifted from high-wage OECD nations to low-wage developing ones. This dramatically expanded the profitability of companies that could avail themselves of low wage costs, but reduced the capacity of workers to sustain a mass consumption lifestyle. The reduction was papered over by the debt bubble, but that debt-financed source of demand is now gone, and it would certainly not recur in a post-jubilee world. As a result, we face a demand deficiency of at least 20 per cent compared to current levels, while at the

same time as much as 20 per cent of the workforce of nations such as the USA and the UK will be structurally unemployed. We will have to generate both the demand and the productive capacity needed to employ people who were previously unproductively employed in the FIRE economy ('finance, insurance and real estate'), and the overblown offshoots of the retail and service industries that it supported.

This reindustrialization will surely be seen as protectionism by the current political elite – but most of these won't hold on to power for long anyway, if the 1930s are any guide. Countries that can no longer employ 20 per cent of the workforce won't be able to resist pressure to reindustrialize for the benefit of their own populaces, however neoclassical economists might describe the resulting policies.⁶

Although a demand deficiency would immediately be exposed by a debt jubilee, one immediate positive aspect of debt abolition would also be a substantial boost to demand, as the proportion of income that was committed to debt servicing was eliminated.⁷ That in itself could be a sufficient stimulus to increase economic activity across the globe – and indirectly benefit trading partners who might directly suffer via the rebirth of more nationalistic industrial policies. The longer-term benefit is that we set the scene for a re-engineering of our financial system in a way that would, with luck, reduce the prospects of another debt crisis in the distant future.

Once we escape from this crisis, we cannot rely on regulation to prevent a recurrence. Regulation not only failed us in the current bubble, but made it at least twice as bad as any previous one, as so-called regulators became instead cheerleaders for speculation. Minsky's comment that 'Stability – or tranquility – in a world with a cyclical past and capitalist financial institutions is destabilizing' (Minsky, 1982: 101) applies to the regulators as much as it does to the speculators.

Instead, long-term reform has to remove the incentives the current system provides that encourage the non-bank public to take on debt, since there is no prospect of designing a financial system that does not have a fundamental incentive to extend debt during periods of stable growth.⁸ To tackle the problem of excessive debt, we therefore have to focus not on the supply side, which will always be willing to provide excess credit during a boom, but on the demand side.

The key incentive that entices the non-bank public to take on excessive debt is the prospect of leveraged profits from asset price speculation in both the stock and housing markets. These incentives can be reduced by relatively simple redefinitions of financial assets, which have the virtue that they would be much harder to abolish than regulations such as the Glass–Steagall Act.

The first is to redefine shares so that they last 25 years. A share would be issued for \$1, it would grant voting rights and confer dividends for its life, it could be bought and sold on a secondary market, but it would be redeemed for \$1 by the issuing company 25 years after it was issued. The objective of this reform is to limit the volatility in share prices, and hence to limit the prospects for gain from leveraged speculation during a bubble.

The second is to revise how houses are valued, so that valuations are based on the imputed rental income of the property and the maximum loan that can be secured against a house is some multiple (say, ten times) of the annual imputed rent. This would not eliminate speculation on house prices, but would penalize lenders who lent more than this limit by removing their security. It would also not stop buyers competing over properties, but a higher price would mean a lower level of leverage rather than a higher one as it does now. This would replace the current positive feedback loop between leverage and house prices with a negative one, so that house price bubbles would no longer occur.

These reforms are not glamorous – they may even appear pedestrian, compared to those of grandiose institutions. But grand institutions in economics have failed the test of time, over and over again. With these reforms, the only national institutions needed to enforce them would be ones with a history of independence: the law courts.

The intent of these reforms is to tame the secondary market in assets, which I see as the source of capitalism's most damaging instability. Instability is an inherent feature of a capitalist system, and in its industrial manifestations that is a good thing; but financial instability, as Minsky long ago argued and this current crisis has made critically obvious, is a very bad thing. I believe these changes would limit financial instability, without damaging the legitimate role of finance in providing working capital and investment funds for new ventures.

However, I am pessimistic about the odds of such simple yet profound reforms being enacted. The political process, even in a crisis, is dominated by expediency, and piecemeal reforms and institutional solutions to a systemic problem are far more likely to result. If so, we are likely to experience another such crisis – if we survive this one – in 50 to 70 years. I hope that by then, with the historic record of this crisis and the Great Depression before it, we will finally corral what Marx aptly named 'the roving cavaliers of credit' and limit the damage they can do to a sophisticated market economy.

NOTES

1. One example of this ignorance during the crisis was Brad Delong's (2009) attack on a Marxist, where he opined in response to Harvey that 'it is at this point that we draw on neoclassical economics to save us – specifically, John Hicks (1937), 'Mr. Keynes and the "Classics"', the *fons et origo* of the neoclassical synthesis'. Although he chided Harvey for not having read Hicks, Delong was clearly unaware that Hicks himself had disowned IS–LM analysis.
2. Could any medical doctors please forgive me if my analogy doesn't strictly comply with medical knowledge? I also realize that operating without consent is unthinkable.
3. This perspective necessarily combines commodity and asset markets, since aggregate spending buys both commodities and assets.
4. This realization has probably dawned in the USA, but the ideology of the free market is preventing Americans from admitting this fact and nationalizing the system.
5. At the same time, however, irresponsibility is endemic to a financial system, a topic I return to in my long-term proposals.
6. The arguments in favour of free trade are also as neoclassical, and as suspect, as the arguments in favour of deregulated finance. See Rodriguez et al. (2001).
7. The argument that such a policy wouldn't boost demand because it would simply transfer spending power from creditors to (ex-) debtors is wrong. Under the current burden of debt, borrowers are drastically reducing consumption to avoid insolvency – hence the precipitous collapse in the level of car sales and other long-lived and credit-financed consumer goods. Creditors certainly haven't taken up this consumption slack – they too are responding to the prospect of bankruptcy by reducing both consumption and investment. Debt abolition would almost certainly stimulate spending much more than it stifled it.
8. Proposals for new monetary systems based on commodity backing, or 100 per cent money schemes, ignore the evidence that a financial system is credit driven, and the simple existence of loans means that commodity-based 100 per cent money schemes will break down over time. Attempts to enforce them would also stifle the system's capacity to provide the new credit that is needed for legitimate investment by new entrepreneurs, as Schumpeter argues (Schumpeter, 1934: 95–108).

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