THE FIRST GREAT DEPRESSION OF THE 21ST CENTURY

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The general economic crisis that was unleashed across the world in 2008 is a Great Depression. It was triggered by a financial crisis in the US, but that was not its cause. This crisis is an absolutely normal phase of a long-standing recurrent pattern of capitalist accumulation in which long booms eventually give way to long downturns. When this transition occurs, the health of the economy goes from good to bad. In the latter phase a shock can trigger a crisis, just as the collapse of the subprime mortgage market did in 2007, and just as previous shocks triggered general crises in the 1820s, 1870s, 1930s and 1970s.[1] In his justly famous book, *The Great Crash 1929*, John Kenneth Galbraith points out that while the Great Depression of the 1930s was preceded by rampant financial speculation, it was the fundamentally unsound and fragile state of the economy in 1929 which allowed the stock market crash to trigger an economic collapse.[2] As it was then, so it is now.[3] Those who choose to see each such episode as a singular event, as the random appearance of a 'black swan' in a hitherto pristine flock,[4] have forgotten the dynamics of the history they seek to explain. And in the process they also conveniently forget that it is the very logic of profit which condemns us to repeat this history.

Capitalist accumulation is a turbulent dynamic process. It has powerful built-in rhythms modulated by conjunctural factors and specific historical events. Analysis of the concrete history of accumulation must therefore distinguish between intrinsic patterns and their particular historical expressions. Business cycles are the most visible elements of capitalist dynamics. A fast (3-5 year inventory) cycle arises from the perpetual oscillations of aggregate supply and demand, and a medium (7-10 year fixed capital) cycle from the slower fluctuations of aggregate capacity and supply.[5] But underlying these business cycles is a much slower rhythm consisting of alternating long phases of accelerating and decelerating accumulation. The various business cycles

are articulated into these basic waves.[6] Capitalist history is always enacted upon a moving stage.

After the Great Depression of the 1930s came the Great Stagflation of the 1970s. In that case the underlying crisis was covered up by rampant inflation. But this did not prevent major job losses, a large drop in the real value of the stock market index, and widespread business and bank failures. There was considerable anxiety at the time that the economic and financial system would unravel altogether.[7] For our present purposes, it is useful to note that in countries like the US and the UK the crisis led to high unemployment, attacks on unions and on institutional support for labour and poor people, and inflation which rapidly eroded both real wages and the real value of the stock market. Other countries, such as Japan, resorted to low unemployment and gradual asset deflation which stretched out the duration of the crisis but prevented it from sinking to the depths it did in the US and the UK.

Regardless of these differences, a new boom began in the 1980s in all major capitalist countries, spurred by a sharp drop in interest rates which greatly raised the net rate of return on capital, i.e. raised the net difference between the profit rate and the interest rate. Falling interest rates also lubricated the spread of capital across the globe, promoted a huge rise in consumer debt, and fuelled international bubbles in finance and real estate. Deregulation of financial activities in many countries was eagerly sought by financial businesses themselves, and except for a few countries such as Canada, this effort was largely successful. At the same time, in countries such as the US and the UK there was an unprecedented rise in the exploitation of labour, manifested in the slowdown of real wages relative to productivity. As always, the direct benefit was a great boost to the rate of profit. The normal side effect to a wage deceleration would have been a stagnation of real consumer spending. But with interest rates falling and credit being made ever easier, consumer and other spending continued to rise, buoyed on a rising tide of debt. All limits seemed suspended, all laws of motion abolished. And then it came crashing down. The mortgage crisis in the US was only the immediate trigger. The underlying problem was that the fall in interest rates and the rise in debt which fuelled the boom had reached their limits.

The current crisis is still unfolding. Massive amounts of money have been created in all major advanced countries and funnelled into the business sector to shore it up. But this money has largely been sequestered there. Banks have no desire to increase lending in a risky climate in which they may not be able to get their money back with a sufficient profit. Businesses such as the automobile industry have a similar problem because they are saddled with large inventories of unsold goods which they need to burn off

before even thinking of expanding. Therefore the bulk of the citizenry has received no direct benefit from the huge sums of money thrown around, and unemployment rates remain high. In this respect, it is striking that so little has been done to expand employment through government-created work, as was done by the Roosevelt Administration during the 1930s.

This brings us to the fundamental question: how is it that the capitalist system, whose institutions, regulations and political structures have changed so significantly over the course of its evolution, is still capable of exhibiting certain recurrent economic patterns? The answer lies in the fact that these particular patterns are rooted in the profit motive, which remains the central regulator of business behaviour throughout this history. Capitalism's sheath mutates constantly in order for its core to remain the same. A full explanation of the theoretical dynamics is beyond the scope of this essay, but we can get a good sense of its logic by examining the relation between accumulation and profitability. In what follows I will focus on the United States because this is still the centre of the advanced capitalist world, and this is where the crisis originated. But it must be said that the real toll is global, falling most of all on the already suffering women, children and unemployed of this world.

ACCUMULATION AND PROFITABILITY

'The engine which drives Enterprise is … Profit.'[8] (J.M. Keynes)
'Sales without profits are meaningless.'[9] (Business Week)

Every business knows, at the peril of its extinction, that profit is its *raison d'être*. The classical economists argued that it is the difference between the profit rate (r) and the interest rate (i) which is central to accumulation. The reason is that profit is the return to active investment, while the interest rate is the return to passive investment. A given amount of capital may be invested in producing or selling commodities, in lending money, or in active speculation. The rate of profit in each case is its return, fraught with all the risks, uncertainties and errors to which such endeavours are subject. As business people come to learn, '[t]here are known knowns. There are … known unknowns…But there are also unknown unknowns'.[10] On the other hand, the same amount of capital could just as well be invested in a savings account or a safe bond, earning interest in quiet and relative safety. The interest rate is the benchmark, the safe alternative, to the rate of return on active investment. Marx argues that it is the difference between the two rates, which he calls the rate of profit-of-enterprise ($r - i$), that drives active investment. Keynes says much the same thing: he calls the profit rate the marginal efficiency of capital (MEC), and focuses on the difference between it and the interest rate as the foundation for viability of

investment. Neoclassical and post-Keynesian economics also focus on this same difference, albeit in a roundabout manner: production costs are *defined* to include an 'opportunity cost' comprising the interest equivalent on the capital stock, so that 'economic profit' is the amount of profit-of-enterprise and the corresponding rate of profit is simply the rate of profit-of-enterprise $(r - i)$.[11]

Consider the following illustration. Suppose that the firm's annual profit is $100,000. Suppose the current interest rate is 4 per cent and the firm's beginning-of-year capital stock is $1,000,000. Then the firm's capital could have instead earned $40,000 if it had been put into a safe bond. From a classical point of view, we can think of the firm's total profit as having two components: $40,000 as interest equivalent and $60,000 as profit-of-enterprise. Neoclassical economics disguises all of this by treating the hypothetical interest equivalent as a 'cost' on a par with wages, materials, and depreciation. As a consequence, its definition of economic profit is already profit-of-enterprise ($60,000). Post-Keynesian economics typically adopts many neoclassical concepts, of which this is one.

The rate of profit is the ratio of annual profit to beginning-of-year capital stock, i.e. $r = \dfrac{\$100,000}{\$1,000,000} = 0.10$. The corresponding rate of profit-of-enterprise (*re*) is the amount of profit-of-enterprise divided by the capital stock, which yields $re = \dfrac{\$60,000}{\$1,000,000} = 6\%$. It is easy to see that the rate of profit-of-enterprise equals the difference between the profit rate and the interest rate: $re = r - i = 10\% - 4\% = 6\%$.

Two further considerations become important at an empirical level. First, profit as listed in national accounts is neither total profit (P) nor profit-of-enterprise (PE) but something in between. National accounts define economic profit as actual profit net of actual interest paid. So if the firm under consideration had *borrowed* half of its total capital ($500,000), it would have to pay out $20,000 in actual interest payments (4 per cent of its total debt of $500,000). Hence the national accounts measure of profit ($P' = \$80,000$) is actual profit ($P = \$100,000$) *minus* actual interest paid on actual debt ($20,000). Therefore in order to measure actual profits we need to add actual monetary interest paid to the profit figure listed in national accounts. We can then calculate the level and rate of profit-of-enterprise in the previously discussed manner.[12]

Secondly, it is important to note that all rates of profit will be *real* rates, i.e. inflation-adjusted, if we use current-dollar profit flows in the numerator and the current-cost capital stock (capital measured in terms of its current-price equivalent) in the denominator. In this way both the numerator and the denominator reflect the *same* set of prices, which is the essence of a real measure.[13] This is obvious in the case of the profit rate (r) when both P and K reflect current prices. But it also applies to the rate of profit-of-enterprise (re) whose numerator is excess of current profit over the current interest equivalent on the beginning-of-the-year current-cost capital stock ($P - iK$). Measured in this manner, the rate of profit-of-enterprise $re = r - i$ is a real rate.[14] Further details, derivations and considerations of the specificity of national account measures of profit and capital are presented in the Appendix: Data Sources and Methods.

With this in hand, we turn to the analysis of the events which led to the current crisis. First and foremost are the movements of the rate of profit.

POSTWAR PATTERNS IN US ACCUMULATION

The general rate of profit

Figure 1 displays the rate of profit for US nonfinancial corporations, which is the ratio of their profits *before* interest and profit taxes to the beginning of year current cost of their plant and equipment. Also displayed is the trend of the rate of profit (see the Appendix for details). As previously explained, we need a measure of profits before interest payments because we will subsequently compare this amount to the interest equivalent on the same capital stock in

Figure 1: Actual and Trend Rate of Profit, US Nonfinancial Corporations 1947-2010
(Profit = Earnings Before Interest and Taxes)
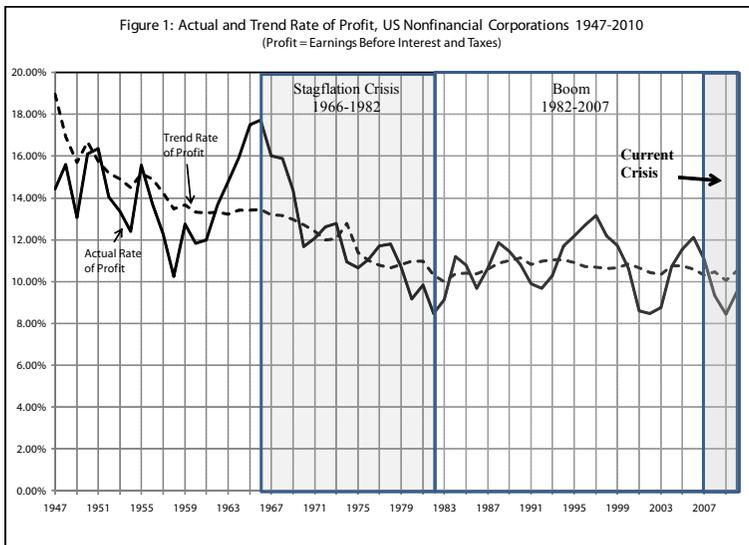
order to derive profit of enterprise. Since published profits of nonfinancial corporations are net of actual interest payments, we add this latter amount back to their published profits. This expanded measure of nonfinancial corporate profit captures a part of the profits of financial corporations, since the latter firms derive their revenues from interest payments.

We see that the actual rate of profit is subject to many fluctuations, and can be greatly influenced in the short run by particular historical events. For instance, the big run–up of the profit rate in the 1960s reflects the corresponding escalation of the Vietnam War. Wars are generally good for profitability, at least in the early stages. The fitted trend of the rate of profit also displayed in Figure 1 is designed to distinguish between structurally driven patterns in the rate of profit and short run fluctuations arising from conjunctural events such as the Vietnam War. We see that the trend rate of profit drifted downward for thirty-five years, but then stabilized. The question is: what happened to reverse this pattern?
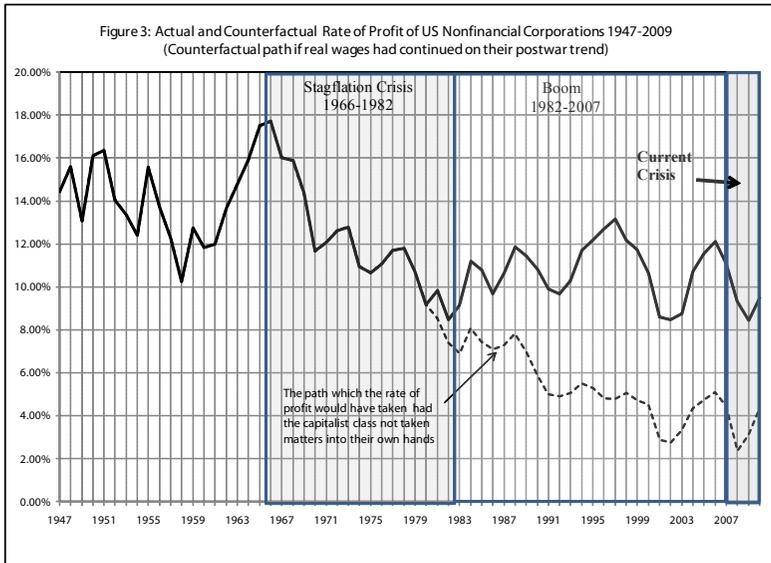
Productivity and real wages

Figure 2 provides the central clue. It depicts the relation between hourly productivity and hourly real compensation (real wages) in the US business sector from 1947-2008. Real wages tend to grow more slowly than productivity, i.e. the rate of exploitation tends to rise. But beginning with Reagan in the 1980s, real wage growth slowed down considerably. This is made evident by comparing actual real wages since 1980 to the path they would have followed had they maintained their postwar relation

Figure 2: Hourly Real Wages and Productivity, US Business Sector 1947-2010 (1992 = 100)
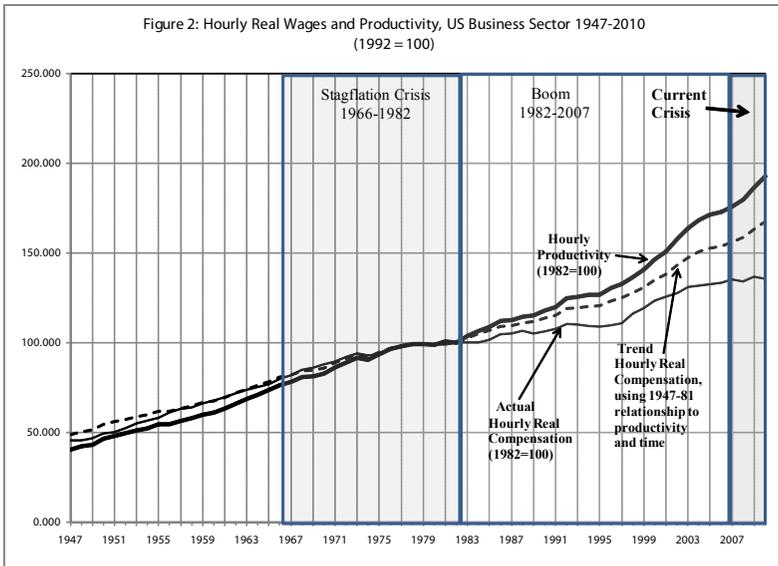
to productivity. This departure from trend was brought about through concerted attacks on labour in this era. We will see that its impact on the profit rate was dramatic, because employee compensation is large in relation to profit.

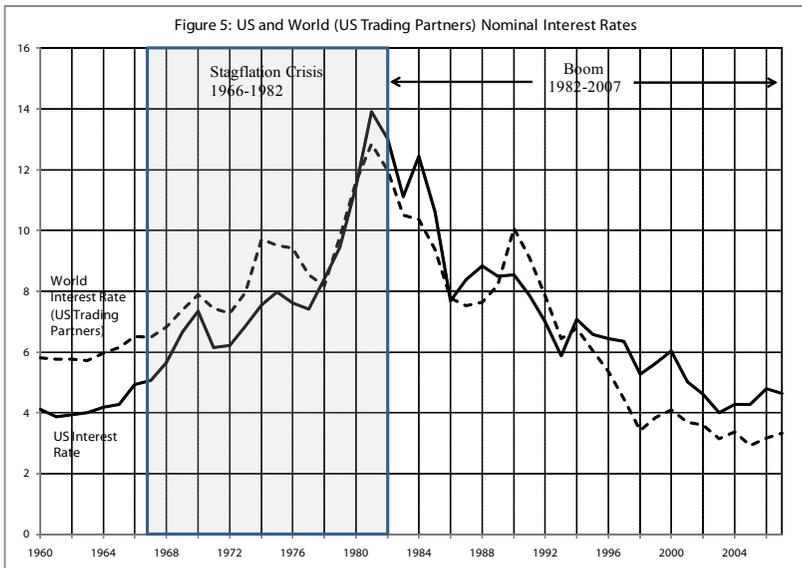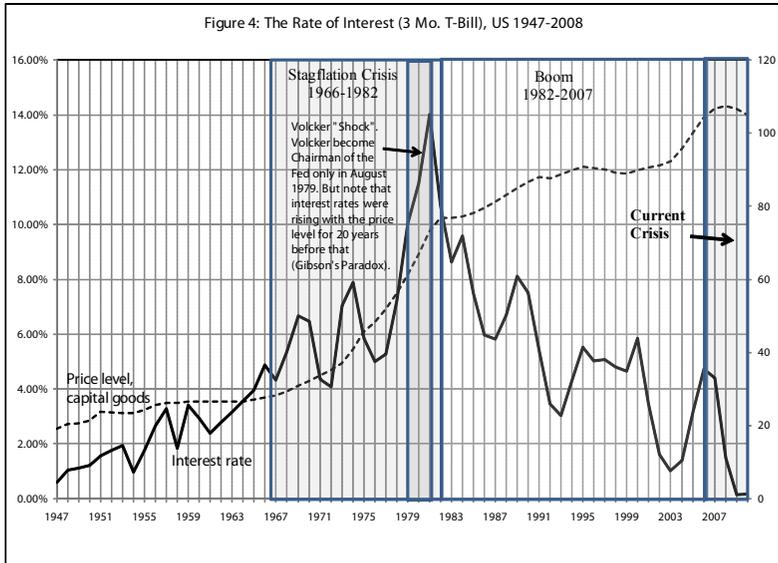*Impact on profitability of the suppression of real wage growth*

Figure 3 depicts the great impact that the suppression of real wage growth had on profits. It shows the actual profit rate as well as the counterfactual path it would have followed had corporate nonfinancial real wages maintained their postwar relation to corporate nonfinancial productivity. The repression directed against labour beginning in the Reagan era had a clear purpose: it fuelled the boom of the latter part of the twentieth century.

Figure 3: Actual and Counterfactual Rate of Profit of US Nonfinancial Corporations 1947-2009
(Counterfactual path if real wages had continued on their postwar trend)

The extraordinary fall in the interest rate

We have just seen that the fall in the rate of profit was suspended by means of an unparalleled slowdown in real wage growth. But this is only part of the explanation for the great boom which began in the 1980s. At the beginning of this essay I emphasized that capitalist accumulation is driven by the difference between the rate of profit and the rate of interest, i.e. by the rate of profit-of-enterprise. And it is here that we find the other key to the great boom: the extraordinary sustained fall in the interest rate which began at more or less the same time. Figure 4 tracks the 3-month T-Bill rate of interest in the United States, as well as the price index for capital goods (p_k) shown on the chart as a dotted line. In the first phase, from 1947–1981,

this interest rate rose twenty-four fold, from 0.59 per cent in 1947 to 14.03 per cent in 1981. In the second phase, from 1981 onward, it fell equally dramatically, going from 14.03 per cent to a mere 0.16 per cent in 2009. In order to separate market influences from policy interventions it would be necessary to discuss the theory of competitively determined interest rates –
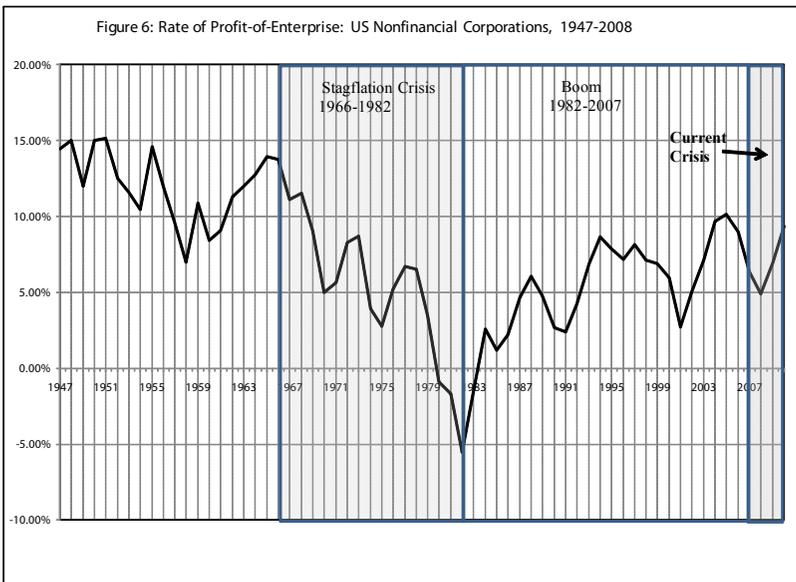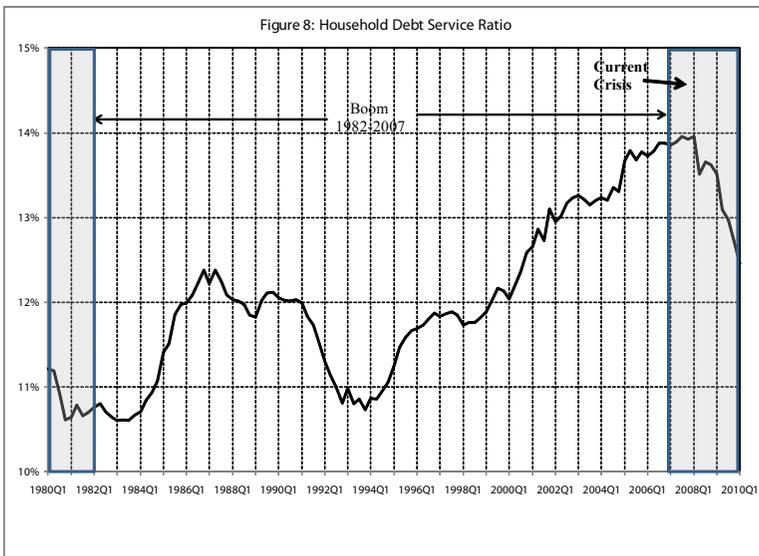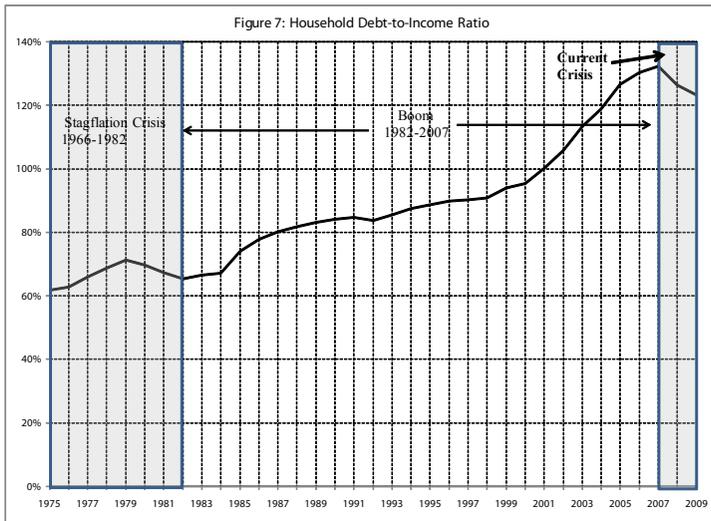

Figure 4: The Rate of Interest (3 Mo. T-Bill), US 1947-2008

Figure 5: US and World (US Trading Partners) Nominal Interest Rates

which is not possible within the scope of this essay.[15] In any case, whatever the relative weights of market factors and policy decisions, the long rise and subsequent long fall in the interest rate was also evident in most major capitalist countries. Figure 5 shows this by comparing the US interest rate to the average interest rate of US trading partners. Among other things, this demonstrates that the dynamics we observe in the US were characteristic of the capitalist centre as a whole.

The rate of profit-of-enterprise and the great boom after the 1980s

We can now put all of these elements together. The difference between the general rate of profit (measured gross of monetary net interest paid) and the rate of interest is the rate of profit–of–enterprise. This is the central driver of accumulation, the material foundation of the 'animal spirits' of industrial capital. Figure 3 showed that the general rate of profit was pulled out of its long slump by a concerted attack on labour which caused real wages after 1982 to grow much more slowly than in the past. Figures 4–5 showed that the interest rate fell sharply after 1982. Figure 6 shows that the net effect of these two historically unprecedented movements was to greatly raise the rate of profit–of–enterprise. *This* is the secret of the great boom that began in the 1980s.

The great boom was inherently contradictory. The dramatic fall in the interest rate set off a spree of borrowing, and sectoral debt burdens grew

Figure 6: Rate of Profit-of-Enterprise: US Nonfinancial Corporations, 1947-2008

Figure 7: Household Debt-to-Income Ratio

Stagflation Crisis 1966-1982

Boom 1982-2007

Current Crisis

Figure 8: Household Debt Service Ratio

Boom 1982-2007

Current Crisis

dramatically. Households, whose real incomes had been squeezed by the slowdown in real wage growth, were offered ever cheaper debt in order to maintain growth in consumer spending. In consequence, as shown in Figure 7, household debt–to–income ratios grew dramatically in the 1980s. Secondly, once the rate of interest has been lowered to zero (it is 0.0017, i.e. 0.17 per cent, at this very moment), there is nowhere else to go on that score. Yes, the gap between this base rate and the rate at which businesses or consumers borrow (the prime rate, the mortgage rate) can still be squeezed

by the state. But this gap is the source of the profit of the financial sector, which takes in money at one rate and lends it out at the other. So the possibilities for narrowing the gap are limited.

But so what if debt-to-income ratios grow? After all, if debt is cheaper, one can afford more of it without incurring a greater debt-service (ratio of amortization and interest payments to income). And indeed, as shown in Figure 8, while the debt-to-income ratio grew steadily in the 1980s the corresponding debt-service ratio stayed within a narrow range: households were borrowing more but their monthly payments did not go up much. But in the 1990s as debt continued to grow, debt-service also began to rise. By 2007 the debt wave crested at a historic high, and then plunged in 2008 as debt fell even faster than incomes in the throes of the unfolding crisis.

This brings up an important point. From the side of workers, the decline in the interest rate spurred the increase in household borrowing which for a while helped them maintain the path of their standard of living despite the slowdown in real wages. From a macroeconomic side, the resultant surge in household spending *added* fuel to the boom. The primary impetus for the boom came from the dramatic fall in the interest rate and the equally dramatic fall in real wages relative to productivity (rise in the rate of exploitation), which together greatly raised the rate of profit-of-enterprise. The same two variables played different roles on different sides. But the dice were loaded.

LESSONS FROM THE GREAT DEPRESSION OF THE 1930s

As the current crisis has deepened, governments all over the world have scrambled to save failing banks and businesses, often creating staggeringly large sums of new money in the process. All advanced countries have so-called automatic stabilizers, such as unemployment compensation and welfare expenditures, which kick-in during a downturn. But these are meant for recessions, not depressions. Governments have been far less enthusiastic about creating new forms of spending to directly help workers. Indeed, even on the question of deficit spending there exists a deep divide between two different policy camps.

These divisions were clearly visible at the recently concluded G-20 meetings in Toronto in June 2010. On one side was the orthodoxy, which pushed for 'austerity', this term being a code word for cutbacks in health, education, welfare and other expenditures which support labour. Jean-Claude Trichet, head of the European Central Bank said at these meetings that 'the idea that austerity measures could trigger stagnation is incorrect'. 'Governments should not become addicted to borrowing as a quick fix to stimulate demand.… Deficit spending cannot become a permanent state

of affairs,' said German Finance Minister Wolfgang Schauble. Part of the motivation for this stance arises from a faith in the orthodox economic notion that markets are near perfect and quick to recover. After all, the nonfinancial corporate rate of profit-of-enterprise in Figure 6 shows a decided upturn in 2010. And for some investment banks, money has been like oil in the Gulf of Mexico: just waiting to be skimmed off the top. In 2010, Goldman Sachs' first-quarter earnings were $3.3 billion, double that of the year before, making it the second most profitable quarter since they went public in 1999. In the optimistic light of orthodox theory, this suggests that happy days are almost here again. European central bankers also retain a searing memory of the deficit-financed German hyperinflation of the 1920s and its subsequent devastating social and political consequences. Finally, there is the practical question of the potential benefits for European capital of austerity programmes. European labour survived the neoliberal era in better shape than US and British labour and, as Reagan and Thatcher showed, a crisis provides the perfect cover for an attack on labour. From this point of view the possibility that austerity may make things much worse for the bulk of the population is an acceptable risk if it weakens a hitherto resistant labour force.

The American side at the G-20 meetings expressed a different set of concerns. In the US alone, household wealth has already fallen by trillions of dollars and new housing sales are now below 1981 levels. Moreover, the International Labour Organization has recently warned that a 'prolonged and severe' global job crisis is in the offing – something which must be taken very seriously by an imperial power already tangled in multiple wars and global 'police actions'. Finally, here too there is a critical matter of history. President Barack Obama urged EU leaders to rethink their stance, saying that they should '*learn from the consequential mistakes of the past* when stimulus was too quickly withdrawn and resulted in renewed economic hardships and recession'.[16] The 'consequential mistakes' to which Obama refers had to do with events in the 1930s. The Great Depression triggered by the stock market crash in 1929 led to a sharp fall in output and a sharp rise in unemployment from 1929-32. But over the next four years output grew by almost 50 per cent, the unemployment rate fell by a third and government spending grew by almost 40 per cent. Indeed, by 1936 output was growing at a phenomenal 13 per cent. The rub was that the federal budget went into deficits of almost 5 per cent over these same four years. So in 1937 the Roosevelt administration increased taxes and sharply cut back government spending.[17] Real GDP promptly dropped, and unemployment rose once again. Recognizing its mistake, the government quickly reversed itself and

substantially raised government spending and government deficits n 1938. By 1939 output was growing at 8 per cent. It was only then that the US began its build-up for a possible war, and only in 1942 that it was fully engaged. Figure 9 depicts the growth rate of GDP during these critical years.

There are several lessons that can be taken from these episodes. First, cutting back government spending during a crisis would be a 'consequential mistake'. This is Obama's point. Second, it is absolutely clear that the economy began to recover in 1933, and except for the administration's mis-step in cutting government spending in 1937, continued to do so until the US build-up to the Second World War in 1939 and its full entry in 1942 (Pearl Harbor being December 7, 1941). It is therefore wrong to attribute

Figure 9: Real GDP Growth in the Great Depression, 1929-1942
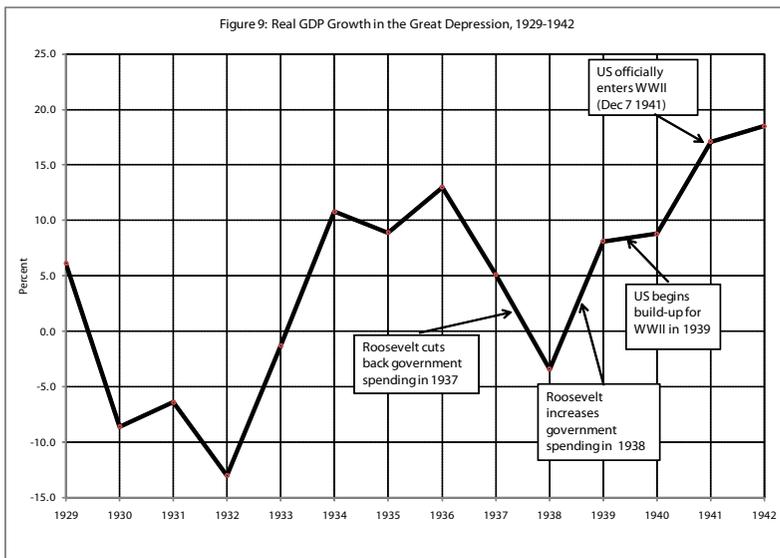
the recovery, which had begun *nine* years before the war, to the war itself. The war itself *further* stimulated production and employment. Third, it is nonetheless correct to say that (peacetime) government spending played a crucial role in speeding up the recovery. Fourth, the government spending involved did not just go towards the purchase of goods and services. It also went toward direct employment in the performance of public service. For instance, the Work Projects Administration (WPA) alone employed millions of people in public construction, in the arts, in teaching, and in support of the poor.

SOME POLICY IMPLICATIONS FOR THE PRESENT PERIOD

Government spending can greatly stimulate an economy. This is evident during times of war, which are most often accompanied by massive, deficit

financed, government spending. In the Second World War, for instance, in 1943-1945 the US ran budget deficits averaged *25 per cent*. By contrast, the budget deficit today, in the second quarter of 2010, is less than 11 per cent. In any case, it is important to note that a war is a *particular* form of a social mobilization which serves to increase production and employment. In such episodes, some part of the resulting employment is derived from the demand for weapons and other supporting goods and services and the demand for other items which this in turn engenders. But another part is direct employment in the armed forces, government administration, security, maintenance and repair of public and private facilities, etc. So even during a war we have to distinguish between two different forms of economic stimuli: direct government *demand* which stimulates employment provided that businesses do not hold on to most of the money or use it to pay down debt; and the direct government *employment* which stimulates demand provided that the people so employed do not save the income or use it to pay down debt.

The same two modes could equally well be applied to peacetime expenditures in a social mobilization to tackle the crisis. In the first mode government expenditures are directed towards businesses and banks, with the hopes that the firms so benefiting will then increase employment. This is the traditional Keynesian mode: stimulate business and let the benefits *trickle-down* to employment. In the second mode the government directly provides employment for those who cannot find it in the private sector, and as these newly employed workers spend their incomes, the benefits *rise-up* to businesses and banks. The requirement that monies received be re-spent is a crucial one. Huge 'bailout' sums have been directed in recent times towards banks and nonfinancial businesses in every major country of the world. Yet these funds have most often ended up being sequestered there: banks need them to shore up their shaky portfolios and industries need them to pay off debts. Quite correctly, neither sees any point in throwing this good money after bad in a climate in which there is little hope of adequate return. Thus not much of the massive bailouts have trickled down. But if the second mode were to be employed, the matter is likely to be very different. The income received by those previously unemployed has to be spent, for they must live. The second mode therefore has two major advantages: it would directly create employment for those who need it the most; and it would generate a high rise-up effect for businesses who serve them.

What then prevents governments from creating programmes for direct employment? The answer of course is that stimulus of business is the preferred mode for capital. Indeed, since the direct employment of labour

subordinates the profit motive to social goals, it is correctly seen as a threat to the capitalist order – as 'socialistic'. Moreover, it would interfere with the neoliberal plan to make further use of cheap global labour, whose existence not only allows for cheaper production abroad but also helps keep real wage growth in check at home. So the question of our time is whether we can have social mobilization to combat the consequences of a Great Depression without being tricked into wars. This is a global question, because unemployment, poverty, and environmental degradation are entirely global. But mobilizations, by their nature, begin locally. The goal is to make them spread, against the resistance of powerful interests and craven states.

APPENDIX: DATA SOURCES AND METHODS

This appendix details the sources and methods of the variables displayed in Figures 1-9. Most of the data is from the US Bureau of Economic Analysis National Income and Product Accounts (NIPA) and Fixed Asset (FA) tables available online at http://www.bls.gov. Other sources are listed below.

Figure 1: $r = \dfrac{P}{K(-1)}$, and the trend value of r (*rtrend*)

P is the sum of nonfinancial corporate profits from NIPA Table 1.14, line 27, up to the first quarter of 2010; and nonfinancial corporate net monetary interest paid from Table 7.11, line 11 *minus* line 17, which is only available annually up to 2008 and was extended to 2010 using trends of the individual components. Corporate profit as listed in NIPA is net of actual net monetary interest paid, so we need to add the latter item back in order to get profits before interest. This gives us the NIPA equivalent of the familiar business accounting measure 'Earnings Before Interest and Taxes' (EBIT). This step is necessary because we will subsequently subtract the interest *equivalent* on all capital (not just actual net interest paid on borrowed capital) in order to get the mass and rate of profit-of-enterprise (see the calculations for Figure 6 below).

The denominator of the profit rate is the capital advanced for the year. Since NIPA lists the capital stock at the end of the year, it is necessary to use the current-cost nonfinancial corporate capital stock of the *previous* year ($K(-1)$). The end of year capital stock is listed in FA (Fixed Assets) Table 6.1, line 4. The FA data was available annually until 2008, and was extended to 2009 using its log trend.

rtrend was calculated by running a LOESS regression in Eviews 5 on P and $K(-1)$ with bandwidth = 0.50. LOESS is a nearest-neighbour type of regression with a polynomial of degree 1 (linear) and local tricube weighting. This technique is not sensitive to short run fluctuations in the data, which

makes it useful for estimation of trends. *rtrend* was generated by dividing the fitted (trend) value of *P* by *K(-1)*.

Figure 2: Business sector hourly productivity and actual and counterfactual hourly real compensation.
Hourly productivity and actual real compensation are available from the US Bureau of Labor Statistics (BLS), under the heading of 'Major Sector Productivity and Costs Indexes', at www.bls.org. The 2010 figure was for the first quarter. The ratio of productivity (*y*) to real employee compensation (*ec*) follows a steady trend in the postwar 'golden age' 1960-1981, which was captured by regressing ln(ec) on ln(*y*) and a time trend (the latter was not significant). This trend was then forecast over 1982-2009 to estimate the (counterfactual) path that *ec* would have followed if the previous trend had been maintained (*ecc*). Using 1960-1981 yields a more modest counterfactual wage path than the one derived from using the whole period from 1947-1981. I chose the more modest option so as to avoid overstating the benefit to profitability of the real wage slowdown beginning in the Reagan-Thatcher era.

Figure 3: The actual rate of profit (r) compared to the counterfactual rate of profit (rc)
The previously calculated variables were used to create the ratio of hourly counterfactual employee compensation to actual hourly compensation (*z = ecc/ec*). Beginning in 1982, actual total nonfinancial corporate employee compensation (*EC*) was multiplied by *z* to estimate the total compensation that employees would have received (*ECCc*) had wages remained on their pre-1982 path. The difference (*ECc − EC*) represents the profit that has been gained from the real wage slowdown. Adding this to actual profit gives estimated counterfactual profit, and dividing the latter by the lagged capital stock *K(-1)* then gives an estimate of the counterfactual rate of profit.

Figure 4: The interest rate and the price level
The interest rate is the 3 month T-bill rate, available in Table 73, first data column in *The Economic Report of the President* published by the BEA on http://www.gpoaccess.gov/eop/tables10.html. The price level used is the price of new capital goods, since that is the relevant indicator the purchasing power of profit. This is available in NIPA Table 1.1.9, line 7 (fixed investment deflator).

Figure 5: The US and US-Trading Partner interest rates
The US interest rate has been described above. US trading partner weights taken from the Federal Reserve Board Indexes of the Foreign Exchange

Value of the Dollar (http://www.federalreserve.gov/releases/h10/Weights) were used to derive a weighted average of interest rates taken from the International Financial Statistics (IFS) of the International Monetary Fund (IMF). I am greatly indebted to Amr Ragab for these calculations.

Figure 6: $re = r - i$, where both r and i have been previously described.

Figures 7–8: Debt-to-Income and Debt-Service ratios
Figure 7 is the ratio of household debt to personal disposable income. The former is obtained from the Federal Reserve Bank's *Flow of Funds* Table D3, line 2; and the latter from NIPA Table 2.1, line 26.
Figure 8 is the ratio of debt service (amortization and interest payments on outstanding mortgage and consumer debt) to personal disposable income, which is listed as the variable DSR in *Flow of Funds* table called 'Household Debt Service and Financial Obligations Ratios' available at http://www. federal reserve.gov/releases/housedebt/default.htm.

Figure 9: Real GDP growth during the Great Depression, 1929-42
Real GDP growth is directly available from 1930 onward in NIPA Table 1.1.1, line 1. The growth rate for 1929 was calculated using data for 1928-1929 (794,700, 843,334) available in *The World Economy: Historical Statistics*, OECD Development Centre, Paris 2003.

NOTES

1   The Crisis of 1825 has been viewed as the first real industrial crisis. The Crisis of 1847 was so severe that it sparked revolutions throughout Europe. Maurice Flamant and Jeanne Singer-Kerel, *Modern Economic Crises*, London: Barrie & Jenkins, 1970, pp. 16-23. The nomenclature 'The Long Depression of 1873-1893' is from Forrest Capie and Geoffrey Wood, 'Great Depression of 1873-1896', in D. Glasner and T. F. Cooley, eds., *Business Cycles and Depressions: An Encyclopedia,* New York: Garland Publishing, 1997. The Great Depression of 1929-1939 is well known. The timing of the Great Stagflation of 1967-1982 is from Shaikh, 'The Falling Rate of Profit and the Economic Crisis in the U.S.', in R. Cherry et al., eds., *The Imperiled Economy*, New York: Union for Radical Political Economy, 1987. Both the name and the timing of the worldwide economic crisis which erupted in 2008 remain to be settled.

2   John Kenneth Galbraith, *The Great Crash, 1929*, Boston: Houghton Miflin, 1955, chs. I-II, and pp. 182, 192. Galbraith was ambivalent about the possibility of a recurrence of a Great Depression. As a historian, he was only too aware that financial 'cycles of euphoria and panic … accord roughly with the time it took people to forget the last disaster'. John Kenneth Galbraith, *Money: Whence It Came, Where It Went*, Boston: Houghton Mifflin Company, 1975, p. 21. He noted that these cycles are themselves the 'product of the free choice and decision of hundreds of thousands of individuals', that despite the hope

for an immunizing memory of the last event 'the chances for a recurrence of a speculative orgy are rather good', that 'during the next boom some newly rediscovered virtuosity of the free enterprise system will be cited', that among 'the first to accept these rationalizations will be some of those responsible for invoking the controls … [who then] will say firmly that controls are not needed', and that over time 'regulatory bodies … become, with some exceptions, either an arm of the industry they are regulating or senile'. Galbraith, *The Great Crash, 1929*, pp. 4-5, 171, 195-96. Yet as a policy maker he continued to hope that none of these events will come to pass.

3   Floyd Norris, 'Securitization Went Awry Once Before', *New York Times*, 29 January 2010.

4   David Smith, 'When Catastrophe Strikes Blame a Black Swan', *The Sunday Times*, 6 May 2007.

5   Shaikh, 'The Falling Rate of Profit'; J.J. van Duijn, *The Long Wave in Economic Life*, London: Allen and Unwin, 1983, chs. 1-2.

6   E. Mandel, *Late Capitalism*, London: New Left Books, 1975, pp. 126-27.

7   Shaikh, 'The Falling Rate of Profit', p. 123.

8   John Maynard Keynes, *A Treatise on Money*, New York: Harcourt, Brace and Company, 1976, p. 148.

9   Lewis Braham, 'The Business Week 50', *Business Week*, 23 March 2001.

10   Donald Rumsfeld, 'DoD News Briefing – Secretary Rumsfeld and Gen. Myers', United States Department of Defense, 12 February 2002, available from http://www.defense.gov.

11   Eckhard Hein, 'Money, Credit and the Interest Rate in Marx's Economics: On the Similarities of Marx's Monetary Analysis to Post-Keynesian Analysis', *International Papers in Political Economy*, 11(2), 2004, pp. 20-23; Karl Marx, *Capital, Volume III*, New York: International Publishers, 1967, ch. XXIII; Shaikh, 'The Falling Rate of Profit', p. 126n1.

12   I have previously argued that current-cost *gross* stock is the appropriate measure of capital. Shaikh, 'Explaining the Global Economic Crisis: A Critique of Brenner', *Historical Materialism*, 5, 1999, pp. 106-7. But this measure is no longer estimated by most national accounts, because they have recently switched to the assumption that capital goods depreciate geometrically over an *infinite* lifespan. This assumption 'is widely used in theoretical expositions of [neoclassical] capital theory because of its simplicity', despite the fact some regard it as 'empirically implausible'. Charles R. Hulten, 'The Measurement of Capital', in E. R. Berndt and J. E. Triplett, eds., *Fifty Years of Economic Measurement: The Jubilee of the Conference of Research on Income and Wealth*, Chicago: University of Chicago Press, 1990, p. 125. The 'infinite tail' which it assumes also causes many problems. Michael J. Harper, 'The Measurement of Productive Capital Stock, Capital Wealth, and Capital Services', BLS Working Paper No. 128, US Bureau of Labor Statistics, 1982, pp. 10, 30. The infinite-life assumption makes it impossible to calculate gross stock measures because these rely on the use of the specific life spans of individual capital goods. In a forthcoming work I will show how gross stock measures can be calculated by combining previously available information on the useful lives of specific

capital goods with newly derived rules for the behaviour of chain-weighted aggregate capital stocks. These new capital stock measures change the observed patterns of the rate of profit from 1947-1982, but have only a limited impact on the patterns from 1982 onward which are the focus of this paper.

13   A rate of profit is by definition the ratio of money magnitudes. Thus we can write it as $r = P/K$ where both profit P and capital K are measured in current prices. Alternately, we can deflate the denominator by the price index of capital p_K to turn current-cost K into $K_R \equiv K/p_K$, the real (inflation adjusted) capital stock. To preserve dimensional homogeneity in the ratio we then must also deflate the numerator by p_K to turn nominal profit P into $P_R \equiv P/p_K$, the real mass of profit measured in terms of its purchasing power over capital. The ratio of the two real measures is once again r.

14   In measuring the rate of profit-of-enterprise we are making no assumption about the determination of the nominal interest rate. The standard neoclassical Fisher hypothesis is that the real rate of interest (i_r) is *defined* as the difference between the nominal interest rate (i) and some rate of inflation expected by the representative investor (p^e). Under the further assumption that the real rate of interest is exogenously given, this implies that the nominal interest rate follows the (expected) rate of inflation. But under rational expectations, the expected inflation rate will track the actual rate of inflation. So the argument boils down to the hypothesis that nominal interest rates track the *rate* of inflation – a proposition which has been so widely disproved that it only survives in textbooks. Pierluigi Ciocca and Giangiacomo Nardozzi, *The High Price of Money: An Interpretation of World Interest Rates*, Oxford: Clarendon Press, 1996, p. 34. The opposite finding, known since the times of Tooke and Marx, rediscovered by Gibson, and remarked upon by Keynes, is that interest rates mostly track the price level rather than its rate of change. This observation has proved so disconcerting to the orthodoxy that it is now embalmed under the heading of 'Gibson's Paradox'. J. Huston McCulloch, *Money & Inflation: A Monetarist Approach*, New York: Academic Press, 1982, pp. 47-49.

15   In order to assess the extent to which the remarkable movements in the interest rate were policy driven, it would be necessary to develop an adequate theory of the competitive determinants of this variable. Such a theory is possible, but its presentation is beyond the scope of the present paper. Suffice to say that it would link the interest rate to the price level *and* to the costs of banking. On the price side, it would explain the pattern which dominates the 1947-1981 phase, in which the nominal interest rate rises alongside the price level (as in 'Gibson's Paradox'). It would also allow for explicit policy interventions, such as the so–called 'Volcker Shock' which increased the interest rate from 10.4 per cent in 1979 to 14.03 per cent in 1981. It is worth recalling that Paul Volcker became Chairman of the Federal Reserve Bank of the United States only in August 1979, whereas interest rates had been rising along with the price level for three decades prior to that. On the cost side, such a theory would explain how the interest rate could fall relative to the price level when banking costs were falling, and could even fall absolutely despite a rising price level – as was the case from 1981 onward. Only then could we judge the relative influences

of market forces and policy on the postwar path of the interest rate.

16   Emphasis was added to the Obama quote. All quotes are from the report: 'G20 Summit: An Economic Clash of Civilizations', *The Christian Science Monitor*, 25 June 2010.

17   'Roosevelt and the inflation hawks of the day were determined to pop what they viewed as a stock market bubble and nip inflation in the bud. Balancing the budget was an important step in this regard, but so was Federal Reserve policy, which tightened sharply through higher reserve requirements for banks… During 1937, Roosevelt pressed ahead with fiscal tightening despite the obvious downturn in economic activity. The budget … was virtually balanced in fiscal year 1938… The result was a huge economic setback, with GDP falling and unemployment rising'. Bruce Bartlett, 'Is Obama Repeating the Mistake of 1937?', *Capital Gains and Games Blog*, 25 January 2010, available from http://www.capitalgainsandgames.com.