Title:
What is Good for Goldman Sachs is Good for America The Origins of the Present Crisis

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Abstract:
Robert Brenner outlines the long-term causes of the present economic crisis. Rather than understanding the current downturn as merely a function of financial incompetence and miscalculation, he demonstrates that the US economy and that of the G7 has been slower growth in most of the major indices with each passing business cycle since the 1970s. In the last two cycles, asset bubbles inclined US consumers to take on more debt in order to spend and achieve limited GDP growth. Brenner outlines in detail how and why the financial sector played a key role in the creation and inflation of debt bubbles with new financial instruments. The implications for the US and the global economy are also outlined including the US current account deficit, trade imbalances, the rise of China and the East Asian economies as well as declining investment in the real economy and overcapacity in manufacturing worldwide.

WHAT IS GOOD FOR GOLDMAN SACHS IS GOOD FOR AMERICA

THE ORIGINS OF THE CURRENT CRISIS

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18 April 2009

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The crisis currently unfolding in the world economy is, without close comparison, the most devastating since the Great Depression, and could conceivably come to approach it in severity. This is because it manifests huge, unresolved problems in the real economy that have been literally papered over by debt for decades, as well as a financial crunch of a depth unseen in the postwar epoch. It is the mutually reinforcing interaction between weakening capital accumulation and the disintegration of the financial sector that has made the downward slide so intractable for policy makers and its potential for catastrophe so evident.

Analysts of the crisis have naturally taken as their point of departure the meltdown in the banking sector and securities markets, the epicenter of the earthquake. But from Treasury Secretary Hank Paulson and Fed Chair Ben Bernanke on down, they have also, with few exceptions, denied the profound, long standing, and worsening problems of the real economy. The crisis is very severe, they now grant, but its causes are to be found in problems within the financial sector, where it was initially isolated, even if it has by now extended far beyond it. By contrast, the economy's underlying fundamentals are strong, and remain beyond question. In March 2008, Paulson told NPR that, before the subprime crisis hit, "we had six years of very solid economic growth."[1] Bernanke, for his part, had, since early 2004, been propagating the idea of "The Great Moderation," the contention that over the last couple of decades, thanks especially to improved monetary policy, the economy had achieved greater stability and reduced inflation, making for better performance and a better longer term outlook.[2] In September 2008, as financial markets verged on collapse and Paulson proposed his mammoth bail-out of the banks, two hundred academic economists, many from Harvard, Chicago, and MIT and including a number of Nobel Prize winners, warned Congress in an open letter that "For all their recent troubles, America's dynamic and innovative private capital markets have brought the nation unparalleled prosperity. Fundamentally weakening those markets [through government intervention] in order to calm short-run disruptions is desperately short-sighted."[3] This is surely the current orthodoxy, or at least it was. But it could not be more misleading.

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[1] "All Things Considered," NPR, interview with Melissa Bloch, 13 March 2008.

[2] See Ben S. Bernanke, "The Great Moderation," Remarks at the meetings of the Eastern Economic Association, Washington, DC, 20 February 2004, and "The Benefits of Price Stability," Speech at the Center for Economic Policy Studies, Princeton University, Princeton, New Jersey, 24 February 2006, both at Federal Reserve website.

[3] "Economists Against the Paulson Plan: To the Speaker of the House of Representatives and the President Pro Tempore of the Senate," 24 September 2008.

The fundamental source of today's crisis is the steadily declining vitality of the advanced capitalist economies over three decades, business-cycle by business-cycle, right into the present. The long term weakening of capital accumulation and of aggregate demand has been rooted in a profound system-wide decline and failure to recover of the rate of return on capital, resulting largely—though not only--from a persistent tendency to over-capacity, i.e. oversupply, in global manufacturing industries. From the start of the long downturn in 1973, economic authorities staved off the kind of crises that had historically plagued the capitalist system by resort to ever greater borrowing, public and private, subsidizing demand. But they secured a modicum of stability only at the cost of deepening stagnation, as the ever greater buildup of debt and the failure to disperse over-capacity left the economy ever less responsive to stimulus. In a much-heralded attempt to break beyond the addiction to borrowing, in 1993 the Clinton administration, and later its EU counterparts, committed themselves to balancing the budget, a goal that was more than realized by the end of the decade. The economy would henceforth be liberated from the dead hand of the state, and driven ever upwards by the all-knowing, market. But, what this dramatic shift actually accomplished was to reveal the persisting stasis of the economy system-wide, no less shackled than before by its profound problem with profitability and capital accumulation. The resulting hit to demand helped push the advanced capitalist world into its worst cyclical downturn of the postwar period between 1991 and 1995, laying bare the system's lack of an engine and opening the way to a succession of major financial crises--from Japan to England and Scandinavia to Mexico and Brazil.

To stop the bleeding and insure growth, the Federal Reserve Board turned, from just after mid-decade, to the desperate remedy pioneered by Japanese economic authorities a decade previously, under similar circumstances. Corporations and households, rather than the government, would henceforth propel the economy forward through titanic bouts of borrowing and deficit spending, made possible by historic increases in their on-paper wealth, themselves enabled by record run-ups in asset prices, the latter animated by low costs of borrowing. Private deficits, corporate and household, would thus replace public ones. The key to the whole process would be an unceasing supply of cheap credit to fuel the asset markets, ultimately insured by the Federal Reserve.

As it turned out, easy money was made available throughout the entire subsequent period. The weakness of business investment made for a sharp reduction in the *demand* by business for credit. East Asian governments' unending purchases of dollar-denominated assets with the goal of keeping the value of their currencies down, the competitiveness of their manufacturing up, and the borrowing and the purchasing power of US consumers increasing made for a rising *supply* of subsidized loans. So the real cost of long term borrowing steadily declined. Meanwhile, the US Central Bank made sure that short term interest rates never rose to such an extent as to jeopardize profit-making in the financial markets by reducing the Federal Funds Rate at every sign of trouble. One has therefore witnessed for the last dozen years or so the extraordinary spectacle of a world economy in which the continuation of capital accumulation has come *literally* to depend upon historic waves of speculation, carefully nurtured and publicly rationalized by state policy makers and regulators—first in equities between 1995 and 2000, then in housing and leveraged lending between 2000 and 2007. What is good for Goldman Sachs--no longer GM--is what is good for America.

The substitution of asset price Keynesianism for the stodgy old fashioned version from 1996 was unable, any more than its predecessor, make any impression on the implacable underlying trend toward system-wide economic enfeeblement. It could not, however, but profoundly increase the system's exposure to crisis. Soaring share prices powered Alan Greenspan's "New Economy" boom, setting off a prodigious wave of investment and consumption of a sort not seen since the long postwar boom. Nevertheless, already by summer 1998, with the dollar soaring and the crisis originating in East Asia assuming global proportions, the US economic expansion began to run out of gas, as both non-financial corporate profits and share prices fell. The following autumn one witnessed the most frightening financial meltdown up to that juncture in postwar history, the dress rehearsal for the current collapse, and the world economy seemed headed for a deep cyclical downturn or worse. By means of an epic series of rate reductions, as well as other measures to ease credit, the Fed did succeed in transcending the crisis, reviving the stock market bubble, and placing the economy on life support for two more years. But it could not prevent the system from collapsing into serious recession in 2000-2001, when the historic crash of the Chairman's vaunted information technology stocks deprived the economy of its main motor, i.e. runaway equity prices. The steep fall in share prices revealed once again the depth of the economy's worsening difficulties with profitability and capital accumulation and its consequent dependence upon investment and consumer demand largely generated by borrowing, itself made possible by the wealth effect of rising asset prices.

The economy was now saved by its own enfeeblement. The successive crises of the world economy of 1997-1998 and 2000-2001 issued in a major decline in corporations' demand for loanable funds. East Asian sovereign lenders made possible still another record-breaking US stimulus program by covering the historic internal and external deficits that inevitably accompanied it. Long term interest rates thus continued to decline, providing the foundation for a new round of bubblenomics, this time in housing and leveraged lending. Mortgage interest rates fell dramatically and drove the greatest run-up of housing prices and household wealth since World War II. Household borrowing was enabled to increase in unprecedented fashion, making possible the stepped up personal consumption and residential investment that kept the economy turning over throughout the ensuing expansion. Nevertheless, even by 2003, private investment, jobs, and exports had still failed to reach their level of 2000, despite the powerful stimulus provided by the wealth effect of the expanding housing bubble, not to mention the Bush administration's Reaganesque budget deficits. The mortgage market had, moreover, peaked, as housing affordability began to weaken in the face of rocketing home prices, threatening a quick end to the ascent of household paper wealth and thus the economic expansion, while making manifest still again the economy's incapacity to drive itself forward on its own steam.

Just as in 1998, it required the dramatic intervention of the Federal Reserve to keep speculation increasing, the bubble inflating, and the economy growing. The Fed's gift of two years of below zero real short term interest rates, as well as its determination to invite and overlook an historic decline in mortgage lending standards--not to mention an unprecedented explosion of predatory lending—created the conditions for a sudden, massive increase in the origination of subprime mortgage loans from 2003 and the latter made it possible for the housing run up and the cyclical upturn to continue. Even so, it is more than doubtful if lenders could have been found in sufficient quantity to actually finance these dubious loans and sustain the expansion, had not the same extended decline in long term interest rates that had initially made possible the housing boom also forced down the rates of return on financial investments, driving investors on a frenzied search for higher yields. It was the illusion of elevated rates of return apparently available from securities backed by subprime loans that induced pension funds, insurance companies, hedge funds, local governments, and banks the world over to purchase in unending quantities the mortgage backed securities that ended up funding the subprime mortgage originations that kept the housing bubble expanding. Still another historic explosion of speculation, this time in global credit markets, thus proved indispensable to keep the real economy growing.

But it was testimony to just how lame the economy actually had become that, despite the greatest peacetime economic stimulus in American history--made possible by the return of huge federal deficits, as well as record household borrowing--the ensuing US business cycle, from 2001 through 2007, was, *pace* Henry Paulson, by far the weakest of the postwar period, and things were just about as bad in western Europe and Japan. When the housing bubble ran out of steam in 2006, a real economy that had depended for much of what vibrancy it possessed upon nonconforming mortgage borrowing descended inexorably toward recession, while a financial sector that had immersed itself in hugely overvalued assets backed by nonconforming mortgages plunged. Diving housing prices undermined household wealth, consumption demand, and the capital of financial institutions, and a serious recession, driven by the interaction between a declining real economy and a deteriorating financial sector, appeared on the agenda.

What suddenly turned the specter of a severe cyclical downturn or worse into the reality of catastrophic systemic crisis was a development in the financial sector of which few were aware, even among insiders—the rise of the "shadow banking system.". According to Wall Street mantra, the frenzy in the credit markets actually entailed little systemic danger, for the great banks upon which the economy depended for credit were ostensibly securitizing the mortgages that they had originated or purchased and selling them far and wide, dispersing risk among thousands if not millions of separated investors. But when the dust cleared in the aftermath of the initial credit crunch of early August 2007, it quickly became evident that the reality was just the opposite. In response to the intensifying competition and falling (risk adjusted) returns that were gripping the financial sector—and manifesting levels of greed and over-confidence amazing even for Wall Street--the country's greatest financial houses had managed to hold on to a stunningly large portion of the mortgage-backed instruments that they had issued, either on or off balance sheet, and were, astoundingly, funding these same assets by way of the short-term credit markets. So when the dizzying fall in housing prices had worked its way through the originate-and-securitize daisy chain, a large number of these institutions found themselves effectively deprived of their capital and without access to credit, de facto in bankruptcy. This would have been poetic justice, except for the fact that, as usual, the leading executives of these corporations managed to insulate themselves personally from the fate of their own corporations, and the horrific losses redounded primarily upon the heavily working class and minority purchasers of subprime mortgages.

The financial market meltdown undermined banks' capacity to advance funds to corporations and households at a time when they had already been radically tightening their lending standards in the face of the weakening of the economy set off by the housing bust. In this way, it very much sped up the unfolding of the crisis of consumption, employment, and profits in the real economy, which, by exacerbating the fall in the prices of residential real estate and thus of securities backed by residential mortgages, rendered the crash of the financial sector even more disastrous and less containable. But, in the end, the cutback in the supply of credit was only part of the story. The fundamental problem was not so much that corporations and households could not secure the credit that they needed, but that they would not or could not demand it. Corporations had done hardly any investing or employing and therefore hardly any borrowing for purposes of expansion throughout the entire business cycle. How could they be expected to start now, in the face of collapsing demand and plunging profits? Households had rescued the economy over the previous seven years with their historic burst of borrowing, consumption, and residential investment. But, confronted by plummeting home prices and the mountain of debt that they had accumulated, as well as a sinking labor market, how could they be expected to do anything but pull back on borrowing and spending and, by choice or necessity, to start once again to save?. The economy faced a self-reinforcing downward spiral of extraordinary ferocity, in which the signals of the market told private businesses and households alike to pull back as sharply as possible. Not just the will, but the capacity, of governments to stop the plunge would be put to the test.

THE LONG DOWNTURN, 1973-2007

Through spring 2007, it was nearly-universally accepted that the economy was strong. The expansion had proceeded unevenly, some admitted, according to the consensus, but the overall prospects for growth could hardly be more favorable. Nevertheless, though sometimes obscured by the successive, spectacular bull runs of the asset markets of the 1980s, 1990s, and 2000s, the reality was quite different. Between 1973 and the present, economic performance in the US, western Europe, and Japan has, by every standard macroeconomic indicator, deteriorated, business cycle by business cycle, decade by decade (with the exception of the second half of the 1990s). Equally telling, over the same period, capital investment on a world scale, and in every region besides China, even including the East Asian NICs since the middle 1990s, has grown steadily weaker.[4] Nor has the expansion of the world economy as a whole, appropriately measured, defied the general trend, *pac*e the exaggerated claims of officials and academics. According to the WTO, the average annual growth of world GDP in the years 2001-2007 was below that recorded in any other comparable period since 1950 aside from 1991-2000, and did not begin to approach the figures for the much-maligned 1970s, let alone the global boom of the 1950s and 1960s.[5] The bottom line, all rhetoric to the contrary, is that the most recent business cycle, which began in March 2001 and ended in December 2007, has been *the weakest in the last half century* in the US, western Europe, and Japan, and this despite the titanic government-sponsored stimulus. Lacking an engine to drive it once the housing bubble had begun to deflate, the economy was sliding toward recession well before the banking-cum-credit market crisis struck with a vengeance in mid-summer 2007.

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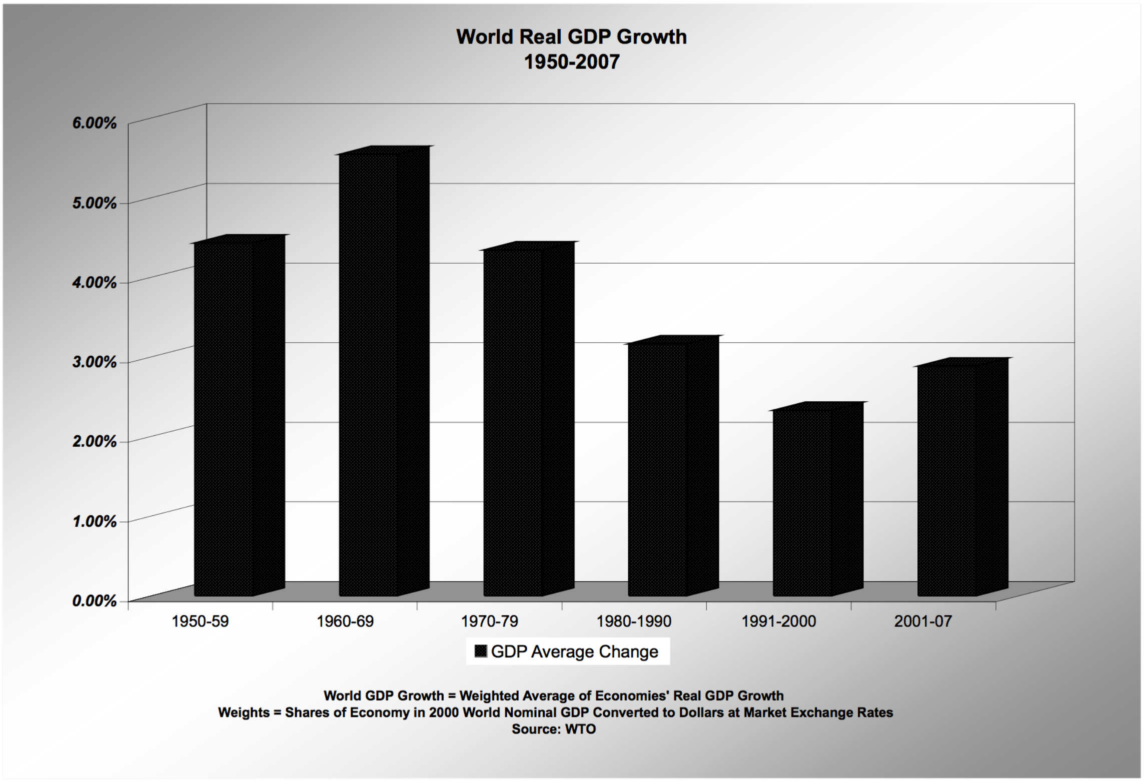
[4] IMF, "Global Imbalances: A Saving and Investment Perspective," *World Economic Outlook April 2005,* pp. 92-95, Figures 2.1, 2.2, 2.4.

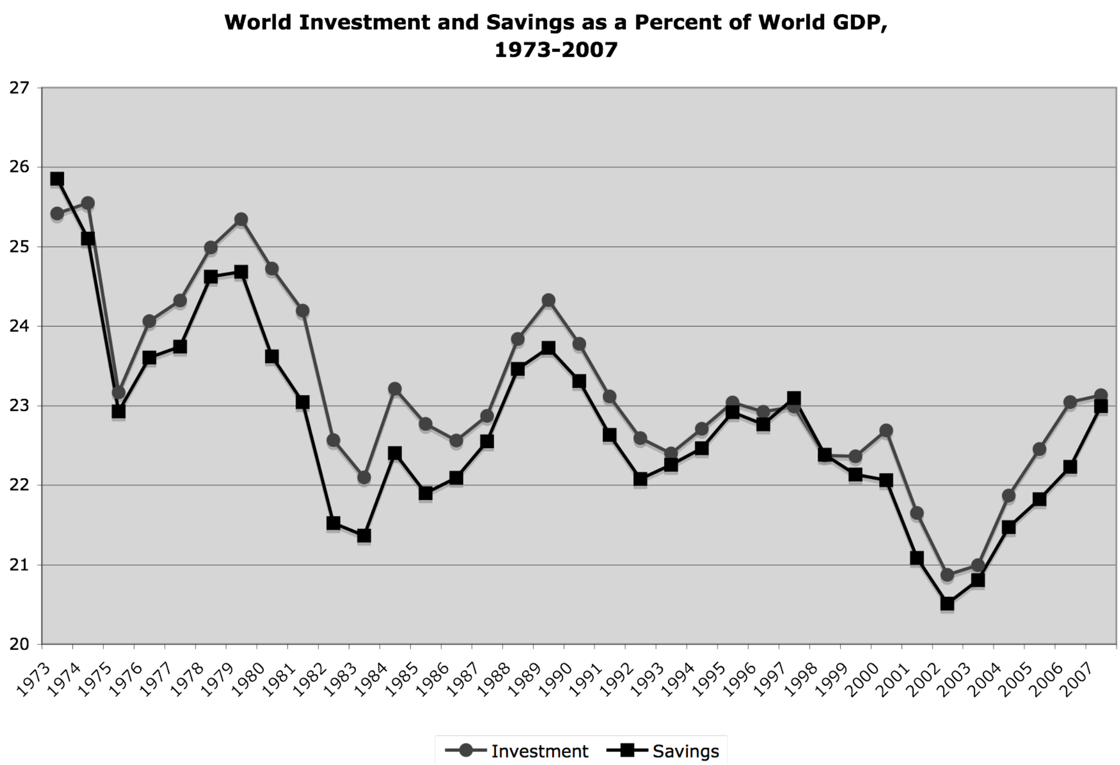
[5] **World merchandise exports, production, and gross domestic product, WTO International Trade Statistics, Table A1, WTO web site. For similar figures, see UN Department of Economic and Social Affairs.**

DECLINING ECONOMIC DYNAMISM, 1960-2007
(average annual per cent change)

GDP	60-69	69-79	79-90	90-00	2000-07
US	4.2	3.2	3.2	3.3	2.3
Japan	10.1	4.4	3.9	1.3	1.4
Germany	4.4	2.8	2.3	2.1	1.2
Euro 12	5.3	3.2	2.4	2.2	1.9
G7	5.1	3.6	3	3.1	
			2.9	2.5	2
Private Real Non-Residential Capital Stock (plant and equipment)					
US	3.9	3.7	3.0	2.9	1.8
Japan	12.5*	9.4	6.1	2.9	1.1**
Germany	6.7	5.2	3.3	2.4	1.2
Industrial	5.0	4.2	3.1	3.3	2.1
Total Economy Labor Productivity (GDP/worker)					
US	2.3	1.2	1.3	1.7	1.7
Japan	8.6	3.7	3	1.1	1.8
Germany	4.2	2.5	1.3	2.5	1.5
Euro 12	5.1	2.9	1.8	1.9	0.9
G7	4.8 (60-73)	2.8 (73-79)	2.6	1.9	1
Total Economy Real Compensation (per employee)					
US	2.7	1	0.8	1.9	0.6
Japan	7.5	3.9	1.7	0.8	0.1
Germany	5.7	3	0.8	2.3	0.2
Euro 12	5.8	3.2	0.6	1.1	0.4
Real GDP Per Capita	60-69	69-79	79-90	90-00	2000-07
US		2.2	2.1	1.9	1.4
Japan		4.1	3.2	1.4	1.5
Germany		2.9	1.9	1.5	1.2
Euro 15		2.8	2.0	1.9	1.6
Private Total Real Compensation		**(employment times compensation per employee)**			
US	4.4	3.5	2.5	3.2	1.3
Japan	6.9	6.4	2.9	1.8	0.7
Germany	2.5	-0.4	1.6	1.7	-0.3
Private Employment	60-69	69-79	79-90	90-00	2000-07
US	1.8	2.1	1.9	1.3	0.9
Japan	1.4	0.8	0.9	0.2	-0.3
Germany	0.2	0.3	1	0.4	0.2
EU-12	0.2	0.4	0.7	0.7	1.1
Real Personal Consumption Expenditure					
US	4.4	3.2	3.5	3.5	2.9
Japan	9	4.7	3.7	1.6	1.4
Germany	5.1	3.4	2.1	2.2	0.3
EU-12	5.6	3.7	2.3	2.1	1.6

OECD, *Historical Statistics, 1960-1995*, Paris, 1995, Table 2.15, 3.1, 3.2;
"Statistical Annex" in *European Economy*; OECD, *Economic Outlook Database,*
IMF, *World Economic Outlook Database,* Washington, D.C.,
Database, Tables 1 and 4; Armstrong et al, Capitalism Since 1945, p.356, Table A6
Andrew Glyn, 'Imbalances of the Global Economy,' *New Left Review* 34 (July-August, 2005).
Source: ERS International Macroeconomic Data Set
*Gross Stock **2000-06


World Real GDP Growth
1950-2007
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
1950-59
1960-69
1970-79
1980-1990
1991-2000
2001-07
GDP Average Change
World GDP Growth = Weighted Average of Economies' Real GDP Growth
Weights = Shares of Economy in 2000 World Nominal GDP Converted to Dollars at Market Exchange Rates
Source: WTO


World Investment and Savings as a Percent of World GDP,
1973-2007
27
26
25
24
23
22
21
20
1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007
Investment
Savings

The decreasing vitality of the advanced capitalist economies has been rooted in a major decline, and stubborn failure to revive, of the rate of profit, finding its fundamental (though not its only) source in a persistent tendency towards over-capacity in the global manufacturing sector, which originated with the intensification of international competition between the mid-1960s and mid-1970s. Manufacturing over-capacity emerged, was reproduced, and has been further deepened by way of an extended process of uneven development, in which a succession of newly-emerging manufacturing powers has been able, thanks to systematic state intervention and highly organized forms of capitalism, to realize the potential advantages of coming late, especially by combining ever increasing technological sophistication with relatively cheap labor and orienting production to exports for the world market. Germany and Japan, then the Northeast Asian NICs, then the Southeast Asian Little Tigers, and, finally the Chinese behemoth have thus made huge, but often redundant, additions of manufacturing capacity to the world market, tending to squeeze global prices and profits. Overcapacity has meanwhile been exacerbated and rendered chronic as a consequence of the reluctance of the great corporations at the core of the world economy to cede market share to their rivals even in the face of falling rates of return--their proclivity to fight to hold onto their established positions by cutting costs rather than switch to new unfamiliar lines, especially by falling back on their proprietary capital, above all their capacity to innovate.

Even as the millennium drew to a close, the rates of profit for *both* the manufacturing sectors *and* the total private economies of the US, Japan, and Germany, as well as Korea, were not close to regaining their former levels, and, despite much hype and misinformation to the contrary, they failed to do so during the current business cycle right up to the present. The decline, and failure to revive, of the rate of profit left firms with smaller surpluses to finance new investment and job creation, weakened their incentive to expand, and rendered them increasingly vulnerable to shocks, while driving them ever more compulsively to cut costs, especially labor costs. Because firms had no alternative but to slow the pace of their accumulation of new plant and equipment, they were unable to prevent a major slowdown in the increase of productivity, which placed further downward pressure on profits. Indeed, they have been able [in del] to avoid an even more profound decline in the rate of profit only by means of a deep and universal reduction in wage growth. This has meant that the advanced economies have been able to sustain their profitability only at the cost of a sharp decrease in the growth of consumer purchasing power and by virtue of ceaseless downward pressure on living standards. The long term slowdown, since 1973, in the growth of new plant and equipment, employment, and real wages--along with government cutbacks in the growth of social expenditures to aid profits—could not then but issue in the ever slower growth of investment, consumer, and government demand, and therefore of the growth of demand in aggregate (again with the exception of the later 1990s). It is the chronic weakness of aggregate demand, itself ultimately attributable to reduced rates of return that has long constituted the immediate source of the economy's declining health.

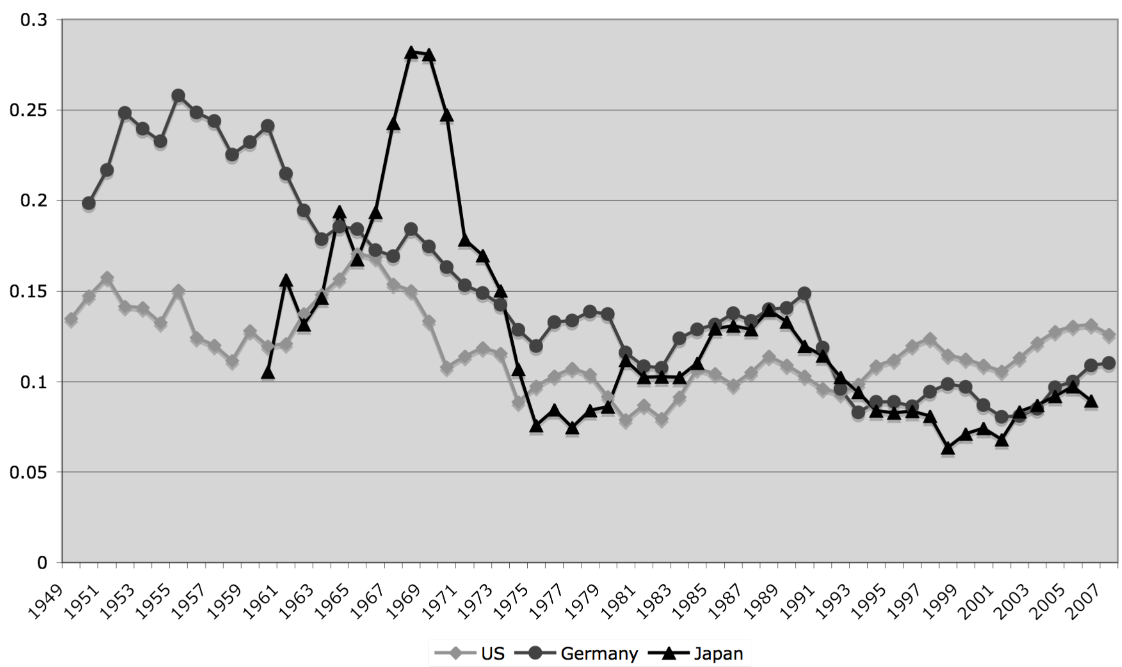
PROFIT RATES AND THE GROWTH OF COMPENSATION: US, Germany, Japan

(Business cycle averages)

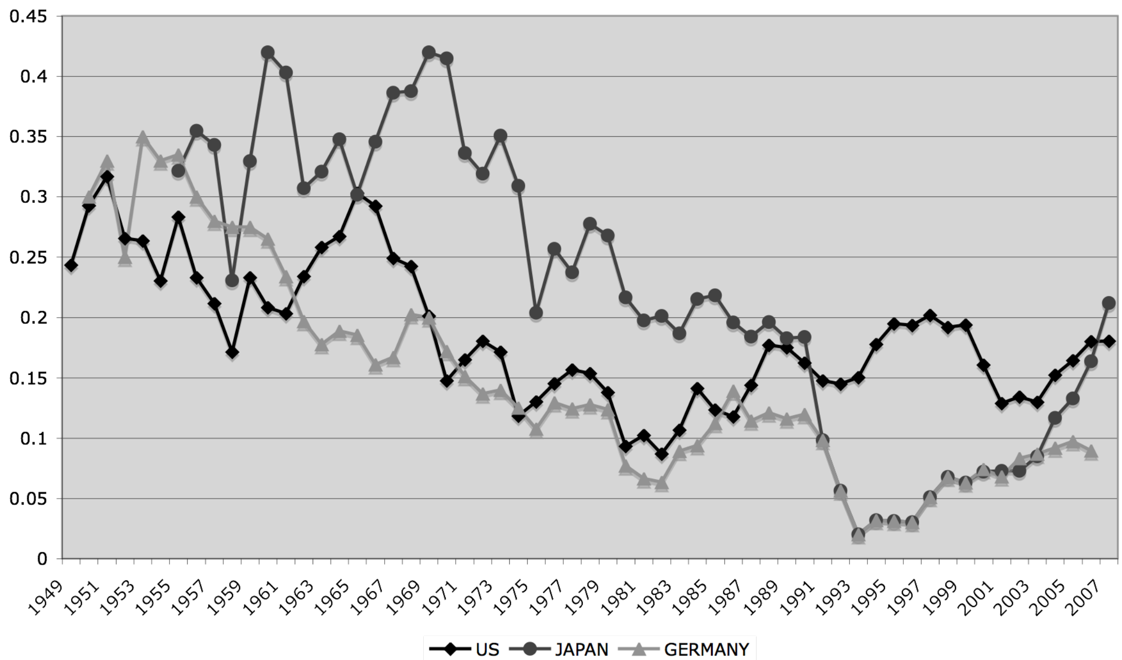
	1949-59	1960-69	1970-79	1980-90	1991-2000	2001-2007*
PRIVATE BUSINESS SECTOR						
US Non-Financial Corporate Profit Rate	0.133	0.146	0.105	0.098	0.108	0.100
US Non-Financial Growth of Real Compensation per hour	0.031	0.020	0.010	0.001	0.010	0.011
Germany Profit Rate		0.177	0.132	0.128	0.094	0.095
Germany Growth of Real Compensation per person		0.028	-0.005	0.009	0.012	-0.004
Japan Profit Rate		0.190	0.126	0.119	0.085	0.086
Japan Growth of Real Compensation per person		0.069	0.051	0.015	0.008	-0.001
MANUFACTURING SECTOR						
US Profit Rate	0.250	0.245	0.134	0.118	0.164	0.141
US Growth of Real Compensation per person	0.041	0.019	0.013	0.007	0.014	0.013
Germany Profit Rate		0.189	0.124	0.104	0.052	0.122
Germany Growth of Real Compensation per person		0.022	-0.001	0.014	0.027	0.004
Japan Profit Rate		0.364	0.297	0.198	0.103	0.083
Japan Growth of Real Compensatio per person		0.106	0.085	0.027	0.026	0.036

* 2001-2006 for Japan
Germany=West Germany thru 1990

Private Sector Net Profit Rates:
US, Germany, and Japan 1949-2007



Manufacturing Net Profit Rates
US, Germany, and Japan,1949-2007



KEYNESIANISM, STAGNATION, AND THE RETURN OF FINANCIAL CRISIS

All else equal, the build-up of over-capacity--resulting from the insufficient exit of higher-cost low profit means of production, especially in the core of the world economy, and the premature entry of highly-competitive lower cost producers, especially in the newly developing regions of East Asia--could have been expected to lead, sooner rather than later, to serious crisis. But the governments of the advanced capitalist economies were long able to forestall this outcome by making sure that titanic volumes of credit were made available to firms and households—through ever more varied, baroque, and risky channels. During the long boom of the first postwar quarter century, as profitability remained high and economic growth rapid, state budget *surpluses*-- not deficits--were the norm in western Europe and Japan, and even in the US government deficits were minimal. But, from the later 1960s and early 1970s, with the decline of profitability and ensuing slowdown of the growth of GDP and investment, governments were obliged to confront the growing insufficiency of aggregate demand, and the way they did so was through traditional Keynesian measures—i.e., by facilitating the ever greater increase of both public and private borrowing by incurring ever larger state deficits and accommodating the fiscal stimulus with easier credit. In this process, the US played an ever more dominant, and indispensable, role—especially after 1980, when governments across the world turned increasingly to austerity to aid profits and fight inflation, bringing about a slowdown in the growth of their domestic markets and rendering their economies ever more dependent upon exports and thus the American market of last resort. US federal deficits as a percentage of GDP thus grew ever larger as the long downturn extended itself, reaching their highest point during the 1980s and early 1990s, as an expression of the Reagan administration's record increases in military expenditure and reductions in taxes on corporations and the wealthy.

While keeping the advanced capitalist economies relatively stable, however, Keynesian demand management also left them increasingly stagnant, for, as time went on, governments could secure progressively less additional growth of GDP for any given increase in deficit spending—in the parlance of the era, less bang for the buck. The growth of public borrowing, as well as the additional private borrowing it made possible, did sustain purchasing power, and in that way prevented profitability from falling even further than it otherwise would have, keeping the economy turning over. The resulting additions of purchasing power were especially critical in reversing the severe cyclical downturns of 1974-5, 1979-1982, and the early 1990s, which were far more serious than any during the first postwar quarter century and would likely have led to profound economic dislocations in the absence of the large increases in government and private indebtedness that took place in their wake. Nevertheless, the ever increasing borrowing that sustained aggregate demand also led to an ever greater build-up of debt, which, over time, left firms and households less responsive to new rounds of stimulus and rendered the economy ever more vulnerable to shocks. Even more debilitating, it slowed the shakeout of high-cost low profit means of production required to eliminate overcapacity in the world system as a whole and in that way prevented profitability from making a recovery. As a consequence, in the leading economies, the increase of plant, equipment and software, as well the growth of wages and social spending, continued to slow from 1973 right through the first half of the 1990s.

Against this background of *both* ever slower increase of the world market *and* individual economies' ever increasing reliance upon it, economic accelerations in major regions had increasingly to take place as a zero-sum game. Because the growth of the global economic pie/global GDP continued to decelerate, these local expansions typically occurred by way of a kind of hydraulic dynamic, in which one leading economy or group of them took advantage of reduced exchange rates to undertake manufacturing-led, export oriented expansions, but heavily at the expense of others with correspondingly increased exchange rates. The economies hit with elevated exchange rates not only had to confront rising costs and declining international competitiveness. They also tended to experience major inflows of capital from abroad aiming to profit by way of the purchase of financial assets from the same currency appreciations that, while holding down their manufacturing sectors, were also driving up their financial markets. As often as not therefore currency run-ups that issued in manufacturing sector downturns also led to runaway asset price bubbles and busts.

From 1979-1980 onward a series of enormous swings in the value of the dollar thus played by far the greatest role in determining fluctuations in international competitiveness and manufacturing profitability and these in turn brought about successive waves of region-wide manufacturing-focused expansion and contraction, as well as a succession of asset price run-ups and crashes. When the greenback was low, particularly between 1985 and 1995-7, the US, along with those East Asian economies whose currencies were tied to the dollar, experienced impressive manufacturing-based expansions, but, in the process, forced Japan, Germany, and western Europe more generally into manufacturing-centered difficulties and eventually crises, accompanied in Japan by historic land and equity price bubbles and busts. When the dollar rose, as between 1980 and 1985 and again between 1995/7 and the present, one witnessed the opposite configuration, manufacturing-centered crises and soon financial expansions and contractions—in the US in the mid-late 1980s, in East Asia and the US in 1997-1998, again in the US and beyond in 2000-2002, and of course one more time in the US starting in 2007-2008. Long term system-wide slowdown was thus accompanied by a complex, regionally-based, manufacturing-driven boom-bust cycle, in which one after another economy or set of economies within the advanced capitalist world was forced for a time to bear the weight of global over-capacity by enduring an elevated exchange rate…and then rescued by the coordinated action of the leading countries, which only shifted the burden to another economy or set of them, opening the way to further disruptions.

Still, the effect of these switches in countries' and regions' exchange rates was anything but uniform or symmetrical because the impact of a rise in the dollar upon the world economy was so much more profound than the elevation of any other currency. This was not only because the US market was larger than all others. It was also because, with the dollar as the world's key currency, US economic authorities could, so much more readily than their counterparts across the globe, countenance rising current account deficits and so much more freely compensate for the negative impact of declining manufacturing competitiveness on growth by stoking domestic borrowing. Indeed, over the period from 1980 to the present—with the very important exception of the years 1985-1995/7--one witnessed the maturation of a kind of informal international Keynesian-cum-"New Bretton Woods" order, which proved indispensable for international economic expansion for much of the world outside of the US, although problematic for production based in the US.[6] In this emergent informal system, the demand generated by ever greater borrowing by US governments, households, and corporations, magnified by the high dollar, made for ever larger US manufacturing imports, manufacturing trade deficits, and current account deficits, and in that way drove the world economy forward, particularly the manufacturing export-oriented countries of western Europe and East Asia including Japan, which, as the opposite side of the coin, racked up ever greater manufacturing exports, manufacturing trade surpluses, and current account surpluses. All else equal, worsening US external balances could have been expected to self-adjust by generating a decline in the exchange value of the greenback and corresponding improvement in US competitiveness. But, to prevent this re-balancing, East Asian governments, especially Japan and later China, made ever larger purchases of dollar denominated assets so as to fund US external deficits at artificially low rates of interest rate, which they generally financed by printing ever greater amounts of domestic money. Their aim was to hold down their own exchange rates vis a vis the dollar and repress US interest rates, so as to subsidize US borrowing and consumption, in order to sustain their own export-dependent manufacturing growth machines. The US economy, with its elevated currency and reduced cost of borrowing, enjoyed cheap imports, declining inflation, subsidized over-consumption, and a pumped up non-traded goods sector—featuring booms in construction, retail trade, and land development. But it had to endure falling competitiveness leading to crisis and decline in its domestic manufacturing sector, along with increasing overseas investment by its multinational corporations. Since a rising dollar automatically rendered US stocks and bonds ever more valuable in terms of foreign currencies, the US also tended to experience vast inflows of private and public money from abroad, which, along with the cheap credit endowed by East Asian sovereign lenders, fueled spectacular asset price run-ups, the expansion of the financial sector, and a succession of profound and ever more threatening financial crises. East Asian economies, for their part, not only enjoyed pumped up manufacturing exports thanks to their reduced exchange rates, but, by virtue of the expansion of the money supply that financed the purchase of US dollars, experienced artificially cheap domestic credit, which drove domestic over-investment in industry, while opening the way for domestic asset bubbles. The outcome was paradoxical in the extreme: the very mechanisms that enabled the US to propel the world economy undermined its ability to continue to do so, while fueling the global industrial over-capacity that held down profitability and economic dynamism system wide.

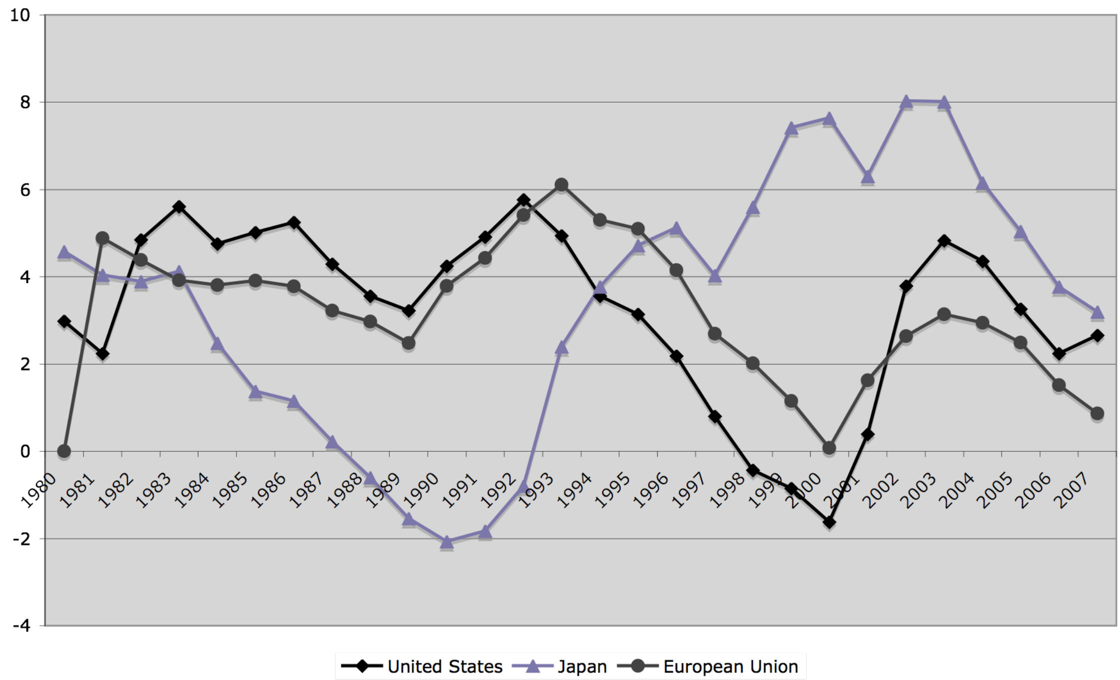
The trajectory of the slowing world economy after 1980 could hardly therefore have been more self-contradictory, and US policy-makers found themselves confronting a permanent double-bind. They could adopt, via a low dollar and creeping protectionism,

[6] For the new international Keynesian cum Bretton Woods system, see especially Richard Duncan, *The Dollar Crisis. Causes, Consequences, Cures*, Hoboken, New Jersey, 2005 and Michael Pettis, "Can China Adjust to the US Adjustment, RGE Monitor, 28 November 2008, on-line.

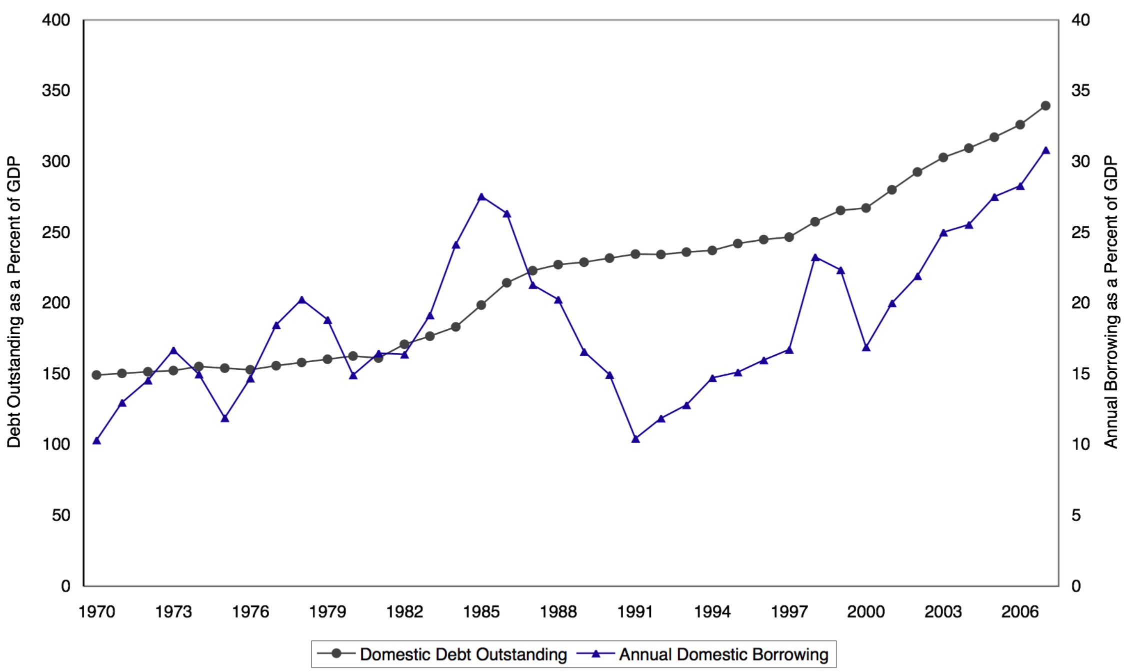
some version of the program for the regeneration of manufacturing that had been pursued by their predecessors during the later 1970s. This might begin to revive industry. But it would also put the US directly into conflict with its main trading partners and most potent competitors, tend to restrict global economic growth outside the US, and for that reason ultimately limit the expansion of US manufacturing and the US economy itself. Or, they could select, by way of a high dollar, the program of financial expansion, neoliberal globalization, and development of the non-traded goods sector that had been initially scouted by the Reagan administration between 1980 and 1985. This would harmonize with the needs, and facilitate the growth of, its main trading partners and most potent competitors. But it would also invite, as during the early Reagan years, ever greater current account deficits, the contraction of the US domestic manufacturing sector, and the onset of financial bubbles and meltdowns, tending to destroy the very capacity of the US hegemon to insure the growth and stability upon which the global economy depended. Between 1973 and 1995-1997, there would occur a slow and hesitant, but ultimately decisive, shift from the first of these approaches to the second…which would profoundly affect the path traced by the global economy to the present day and render it ever more vulnerable to system-wide crisis.

Yet, the fact remains that during the long period between 1973 and 1995, the US and the other advanced capitalist economies managed to maintain more than a semblance of stability by way of ever greater dependence upon borrowing, despite having to cope with reduced profit rates and ever slower growth. They could not avoid a succession of regionally-based manufacturing booms and busts or the reappearance, after three decades in which they were largely absent, of ever more threatening financial market crashes. But they did succeed for close to a quarter century in effectively warding off system-shaking crises, not to mention a 1930s-type depression, even if at the cost of deepening stagnation.

Government Deficits as a Percentage of GDP
US, European Union, Japan, 1980-2007



US Total Domestic Borrowing and Debt Outstanding, 1970-2007
(as percent of GDP)



IMPASSE AND TURNING POINT

Not until the 1990s did governments in the US and Europe, tilting to the right and guided by neoliberal thinking, finally seek to transcend slowing growth by breaking beyond their dependence on Keynesian credit creation. The consequences, largely unintended, were epoch-making. In his 1980 campaign for the presidency, the conservative Republican Ronald Reagan had promised to balance the budget, but ended up as the greatest Keynesian ever. It took a Democrat, Bill Clinton, to restore fiscal probity. From the very start of his administration, the newly-elected president, guided by his economic czar Robert Rubin, a former top executive at Goldman Sachs, and Alan Greenspan, chairman of the Federal Reserve Board, moved decisively toward macroeconomic balance, and the European Union eventually followed suit in the run-up to the Maastricht Treaty for a Single Currency. In 1993, Clinton began in earnest to reduce the Federal deficit by way of a major increase in taxation, as well as legislation to prohibit any increase in spending that was not compensated by an increase in revenue, and by 1998, expenditures and tax returns had come roughly into balance. Meanwhile, in 1994, with unemployment falling to 6 per cent—considered at the time to be "full employment"—the Fed suddenly radically tightened credit, doubling its rate from 3 per cent to 6 per cent over twelve months and precipitating the great international bond market crash of that year. But, although this fact does not loom large in most accounts of the period, this dramatic shift to what Clinton dryly termed Eisenhower economics turned out to be profoundly counter-productive and ultimately made necessary the introduction of a novel, much more powerful and far more dangerous, form of macroeconomic intervention, clearing a new, and treacherous, path forward for the economy.

The turn toward balancing the budget was intended to eliminate the twin, longstanding overhangs of debt and redundant productive capacity, bring down inflation and interest rates, reduce pressure in the labor market so as to bring down wage growth, and free the market to drive the economy, unimpeded by the heavy hand of the state. Its goal was to simultaneously increase the capacity of US manufacturing to stand up to intense international competition, allow higher profits in a non-traded goods sector weighed down by slow productivity growth, and nurture the financial sector. But, because profitability had still failed to recover system-wide, firms across the globe predictably responded to the decline of demand and intensification of competition brought about by the reduction of the federal deficit by seeking to retain market share by speeding up the scrapping of high-cost low profit means of production and reducing the growth of wages, employment, and investment, rather than by than increasing plant and equipment so as to raise productivity. The consequence was a major hit to aggregate purchasing power, at a time in which the advanced capitalist economies, already suffering a long term deceleration of growth, were particularly ill-prepared to absorb it

The Germans and Japanese faced an especially difficult situation, as the withdrawal of the customary subsidy to demand by way of US federal deficits occurred in the wake of the deep decline of the dollar against both the yen and D-mark that took place between 1985 and 1995. Governments in both countries provided temporary relief by way of massive but short-lived efforts at economic stimulus, Japan nurturing historic equity and land market run-ups, the FRG making massive expenditures on reconstruction in eastern Germany in the wake of Unification. But following Japan's elevation of the cost of borrowing to rein in its asset price bubbles and Germany's turn to austerity to counter accelerating inflation, both economies descended into crisis, as did western Europe as a whole. It did not make things easier that, in precisely these years, the East Asian NICs and Little Tigers, assisted by currencies that were tied to and declined with the dollar, were reaching the height of their postwar dynamism, raining down low-priced exports onto the world market in an ever wider range of industrial lines--not just apparel, shoes or consumer electronics, or steel and ships, but cars, chips, and computers—seriously exacerbating systemic over capacity.

After steadily losing steam during the 1970s and 1980s, the global economy hit its nadir during the first half of the 1990s. In this quinquennium, both western Europe and Japan sustained their most severe recessions since 1950, an expression of profound crises of profitability in their pivotal manufacturing sectors. The US experienced the so-called jobless recovery and its weakest five years of GDP increase during the postwar era up to that time. The world as a whole chalked up its worst growth performance for any comparable interval in the second half of the twentieth century. By the middle of the last decade of the twentieth century, the advanced economies thus faced an impasse. They had given up on traditional Keynesianism with a big political flourish. But the turn to macroeconomic governance by way of the free market had rudely exposed the economy's underlying frailty, its lack of motor to drive it. To make matters worse it coincided with the outbreak of a string of financial crises across the world economy, from Japan to the UK and Scandinavia to Mexico and Brazil. It appeared as if the economic system was not only doomed to ever slower growth, but suddenly risked an abrupt descent from long term deceleration of growth to serious crisis.

American policy makers faced an especially acute dilemma. During the previous dozen years or so, the US economy, albeit slowly and hesitantly, appeared to have laid the groundwork for a major revival, founded in a significant turnaround of its manufacturing sector, which was rooted in an impressive, if incomplete, revival of the manufacturing profit rate. The ascent of manufacturing profitability was conditioned by a significant shakeout of high-cost low profit means of production that took place during the recession of 1979-1982 and the years that followed. It was, however, primarily driven by a spectacular increase in international competitiveness and export dynamism, which was itself mainly derived from in the same deep, decade-long decline in the exchange rate of the dollar that proved so problematic for the Germans and Japanese. The US government had detonated the dollar devaluation by persuading its leading allies and rivals to agree to the Plaza Accord of 1985, explicitly to reverse the profound crisis that had gripped the US manufacturing sector especially as a consequence of the high dollar and high interest rates that prevailed during the previous half decade. The ensuing rise in the manufacturing profit rate, it cannot be overstressed, had, *by itself,* brought back profitability in the private sector as a whole near to its level of 1969 for the first time in a quarter century (though not to the peaks of the postwar boom), creating the possibility of a break beyond stagnation, at least in the US. From 1993-1994, the US economy accelerated and was suddenly looking stronger than it had in two decades.

Nevertheless, the US economy could not, in the end, transcend the stagnation that gripped the system as a whole, and the zero-sum game that that entailed. It remained impossible for the leading regional economies to long progress without sooner or later causing problems for their partners and rivals. The very same factors that were carrying the US economy to the verge of an economic breakthrough were wreaking havoc with western Europe and especially Japan, threatening global disruption. In March 1995, the Japanese yen reached an all time high of 79/$, and the country's manufacturing export machine seemed to be shutting down. Only months before, US economic authorities had felt obliged to bail out the Mexican economy to cut short a crisis that, spreading rapidly to South America, had shaken the world economy. A meltdown of the Japanese economy, the second largest in the world, posed a threat of an entirely different order, and the US saw little choice but to come to its rescue. With the so-called Reverse Plaza Accord of spring-summer 1995, the G-3 economies did a complete about face. By way of the Plaza Accord of 1985, the leading capitalist powers had agreed to drive up the mark and the yen to reverse the devastation of a US manufacturing sector ravaged by the high dollar. Ten years later, they did the opposite, agreeing to push down the mark and yen to revive German and Japanese manufacturing sectors that had been driven into crisis by the low dollar.

Still, if the short-term pressures that led to the ratification of the Reverse Plaza Accord are evident, its deeper motivations remain something of a mystery, in part because it brought about such a sudden and unexpected repudiation of a policy that seemed to be bearing fruit, but especially because it introduced the diametrically opposed approach that has persisted to the present day. The Clinton administration's turn to balanced budgets and tight money had been meant to complement its relentless pursuit of a low dollar in aid of revived US competitiveness and exports. With its move back to the high dollar, the administration reverted, in key respects, to Reagan-era economics. Construction, retail trade, and the non-traded goods sector more generally would now be favored to the detriment of manufacturing, as would consumption at the expense of investment, and imports at the expense of exports. The financial sector and financial markets would meanwhile take center stage. It was a truly major shift, and, in retrospect, it seems even bigger. This is because it turned out to mean the de facto abandonment of any real attempt on the part of the US to stand up to ever more powerful competition from East Asia, ultimately centered in China, and its all out embrace instead of integrated international production by way of supply chains, foreign direct investment and the re-location of industry to lower wage venues, not least China, and the penetration by the US financial services "industry" of every nook and cranny of the world economy. Only a decade earlier, an unusual, highly public, concerted political intervention by CEOs from the country's leading manufacturing corporations had obliged the Reagan administration to drop its high-dollar policy, de-emphasize its plan to make the US the financial center of the world, and move to encourage domestically-based manufacturing by way of the Plaza Accord, along with stepped up protection of industry. But, already by 1995, it appears that the most powerful economic forces within the US, led as always during the postwar epoch by multinational corporations and internationally-oriented banks, were ready to move on. They welcomed the Reverse Plaza Accord, along with the Clinton administration's turn to neoliberal globalization and the ascendancy of finance by way of free trade agreements, unchained capital markets, and deregulation, whatever the consequences for domestically-based production and international systemic stability.

But the fact remains that, whatever the thinking that lay behind it, the Reverse Plaza Accord could not help but pose an immediate and quite fundamental question. What would henceforth sustain the US economy's forward motion, and that of a world economy that so depended upon it? The revival of manufacturing had played the central role in preparing the recent impressive US economic revitalization, but, with the dollar now suddenly ascending instead of falling, that sector could no longer be expected to catalyze growth. Keynesian deficits had, over several decades, made possible stability if not dynamism, but they had now been politically ruled out of court. It would be only a matter of time before a new, far more radical, form of economic stimulus would have to be introduced, and the global economy thrust into uncharted territory.

STOCK MARKET KEYNESIANISM

From the start of 1995, US equity prices exploded upwards, with the S&P500 index rising 62 per cent by the end of 1996. By the end of 1994, the stock market had already experienced a remarkable twelve year ascent, during which equities had surged by 200 per cent, despite the plunge of 1987 and the mini-crash of 1989. But that spectacular climb in asset values had been more or less justified, and indeed driven, by a corresponding rise in corporate profits, the same revival of the rate of return that had brought the US economy by this juncture to the brink of a new take off. There can be no doubt that the long bull run of the stock market predisposed investors to continue to buy shares. But what actually drove equities to take flight was, almost certainly, a sudden sharp fall in the cost of borrowing, both short and long term. To help insure stability in the wake of the Mexican Peso and Southern American Tequila crises, the Fed abruptly discontinued its campaign to raise short term interest rates of the previous year and reduced the cost of short term borrowing, from 6.05 per cent in April 1995 to 5.2 per cent in January 1996, not to increase it again until 1999 (except for a lone quarter point increase in 1999). Meanwhile, to implement the Reverse Plaza Accord and bring down the yen, Japan cut its discount rate and, along with other governments in East Asia aiming to keep down their own currencies, unleashed a huge wave of purchases of dollar denominated assets, especially treasury bonds. The reduction in the cost of borrowing in Japan had the effect of pumping up the global supply of credit, as international financiers fabricated a very profitable carry trade, borrowing yen at low rates of interest, converting them into dollars, and using the proceeds to invest around the world, not least in the US stock market. The buying up of US government debt by the East Asians appears to have been the main factor in bringing about a stunning twenty-three per cent decline in the long term cost of borrowing over the course of 1995. As is usually the case with asset-price run-ups, it was the sudden major easing of credit that catalyzed the new rise of the stock market. But, by now, with the dollar ascending, the material foundations of the long term profitability recovery and associated rise in equity prices were crumbling. The stock market was climbing skyward without a ladder.

This is where Alan Greenspan and the Fed enter the picture. At the 24 September 1996 meeting of the Federal Open Market Committee, the body that sets short term interest rates for the US economy, Federal Reserve Governor Lawrence Lindsey expressed his worry that runaway increases in share prices were far exceeding the potential growth of corporate profits, and that a distorting bubble, which could not but make for a vast misallocation of capital and eventually a destructive bust, was in the offing. Fed Chair Greenspan did not for a moment deny Lindsay's observation. "I recognize that there is a stock market bubble problem at this point, and I agree with Governor Lindsey that this is a problem that we should keep an eye on." Greenspan acknowledged, moreover, that the Fed had ample means at its disposal to deflate the bubble, if it so chose. "We do have the possibility of raising major concerns by increasing margin requirements. I guarantee that if you want to get rid of the bubble, whatever it is, that will do it. My concern is that I am not sure what else it will do."[7] In fact, as

[7] FOMC Minutes, 24 September 1996, pp.23-25, 30-31 Fed Reserve web site; William A. Fleckenstein, *Greenspan's Bubbles. The Age of Ignorance at the Federal Reserve,* New York, 2008, p.135.

Greenspan made crystal clear at this meeting and subsequently, he had no interest in combating the bubble by any method whatsoever. The economy did seem to be gathering steam, but he was not sure that the expansion had fully taken hold, and he was reluctant to consider raising interest rates, let alone risk directly undermining the equity markets by raising margin requirements, unless and until he was certain it had.[8]

At the next FOMC meeting, on 13 November 1996, Governor Lindsey, supported by several others, re-stated his concern about over-valued share prices, as well as the threat of inflation, and recommended a significant interest rate increase. But Greenspan preferred standing pat and, as always, he won the day.[9] A few weeks later, on December 1996, Greenspan did give his famous warning about "irrational exuberance" in the equity markets. Yet not only did share values continue to rocket into the heavens, but the Fed did absolutely nothing about it. Greenspan not only failed to raise interest rates in the normal way as the economic expansion extended itself, increasing the Federal Funds rate on just one solitary occasion in the years 1995-1999, and that by just one-quarter of a percentage point. He also brought down the cost of borrowing at every point at which the stock market experienced the slightest tremor of fear, a fact not lost on equity investors, who soon came to take for granted the infamous "Greenspan put."

Still, there was a method to Greenspan's madness. The Fed chair well understood the downward pressure on the economy that was resulting from the rise of the dollar, the disappearance of the Federal deficit, and the declining capacity of the rest of the world to power its own expansion, let alone pull the US economy forward. With traditional Keynesianism off the agenda, he had to find an alternative way to insure that the growth of demand would be sustained. Although Greenspan did not explicitly refer to this, he was well aware that, during the previous decade, the Japanese had implemented a novel form of economic stimulus. In 1985-1986, following the Plaza Accord, Japan had faced a situation rather similar to that of the US in 1995-1996. A fast rising yen had put a sudden end to Japan's manufacturing-centered, export-led expansion of the previous half decade, was placing harsh downward pressure on prices and profits, and was driving the economy into recession. To counter the incipient cyclical downturn, the Bank of Japan radically reduced interest rates, and saw to it that banks and brokerages channeled the resulting flood of easy credit to stock and land markets. The historic run-ups of equity and land prices that ensued during the second half of the decade provided the increase in paper wealth that was required to enable both corporations and households to step up their borrowing, raise investment and consumption, and keep the economy expanding. The great Japanese boom—and accompanying bubbles--of the second half of the 1980s was the outcome.

Fleckenstein's volume provides a very useful narrative of the development of Greenspan's bubblenomics, to which I am much indebted.

[8] FOMC Transcripts, 24 September 1996, pp.30-31 Federal Reserve web site.

[9] FOMC Transcripts, 13 November 1996, pp.23-26, 35-37 Federal Reserve web site.

Greenspan followed the Japanese example. By nursing instead of limiting the ascent of equity prices, he created the conditions under which firms and households could borrow easily, invest in the stock market, and push up share values. As companies' stock market valuations rose, their net worth increased and they were enabled to raise money with consummate ease--either by borrowing against the increased collateral represented by their enhanced capital market valuations or by selling their overvalued equities--and, on that basis, to step up investment. As wealthy households' net worth inflated, they could reduce saving, borrow more, and increase consumption. Instead of supporting growth by increasing its own borrowing and deficit spending--as with traditional Keynesianism--the government would thus stimulate expansion by enabling corporations and rich households to increase *their* borrowing and deficit spending by making them wealthier (at least on paper) by encouraging speculation in equities—what might be called "asset price Keynesianism". The "wealth effect" of rising asset prices would, in this way, underwrite a boom for which the underlying fundamentals were lacking--notably, the prospect of sufficient rate of return on investment. Greenspan's stimulus program was a dream come true for corporations and the wealthy, as well as for banks and other financiers, who could hardly fail to profit on lending, by way of the Fed's unspoken commitment to moderate short term interest rates and to reduce them whenever this was necessary to prevent equity prices from plunging. Its implementation is incomprehensible apart from an accelerating shift to the right in the polity as a whole and ushered in what has been rightly termed the New Gilded Age. Nevertheless, it invited not only the blowing up, but also the bursting, of momentous asset price bubbles.

Much as in Japan, the Fed's buttressing of the stock market called forth a share price ascent of historic proportions, and one witnessed still another re-enactment of the classic drama of asset price run-ups familiar throughout history. The basic enabling condition was, as usual, low-cost access to credit, both long term—initially bequeathed by the Japanese and East Asians by way of their massive purchases of US treasury bonds in connection with the reverse Plaza Accord--and short term—provided, and seemingly assured, by the Fed. With credit made so cheap, and profit-making on lending rendered so easy, banks and non-bank financial institutions could not resist opening the floodgates and advancing funds without limit. Stepped up borrowing made possible jumped up investment in stocks, which drove up share values, thus households' wealth and firms' market capitalization. The resulting decrease in the ratio of debt to equity for stock market investors, as well as for corporations, made those investors and corporations more credit worthy, at least in appearance. Financiers could therefore justify to themselves, as they have always tended to do in such situations, further increases in lending for further purchases of financial assets, as well as for plant and equipment, paving the way for more speculation, higher asset prices, and of course still more lending--a self-perpetuating upward spiral.

The upshot was that US businesses and wealthy households were able to gain access to virtually unlimited funds, at the very time that firms' profitability was ceasing to rise and turning downward--not least as a consequence of the same ascent of the dollar that was helping share prices upward--and the economy was implicitly threatened with slowdown. Hitherto, throughout the postwar epoch, firms had depended almost entirely on retained earnings to finance the purchase of new plant and equipment and new hiring, eschewing much borrowing except at times of recession and rarely resorting to issuing shares to raise money. But now, either by borrowing to expand on an historic scale in the case of established corporations, or by making unprecedented sales of equity in the case of untested start-ups in the high tech sector, companies were able to finance a powerful wave of capital accumulation during the second half of the 1990s, featuring sharply stepped up investment and job creation, despite falling rates of return and eventually falling absolute profits. Meanwhile, the top twenty percent of households by income, who enjoyed most of the increase in paper wealth driven by rising share prices because they happened to own ninety per cent of all stocks, were underwriting *by themselves* an extraordinary boom in consumption, accounting *on their own*, in the process, for a sudden, and historic, reduction in the US personal savings rate. Between 1950 and 1990, the personal savings rate had averaged 10.5 per cent, and never fallen below 7.3 per cent; but it plummeted from 8.9 per cent in 1992 to *minus* 2.2 per cent in 2000. Why save, when the increase in the value of your assets is doing your saving for you? In the history of capitalism it's been common for equity price bubbles to arise as an overly exuberant expression of an economic boom driven by new technology, faster productivity growth, and rising profits--a sort of over-shooting by the asset markets of impressive gains in the real economy. But in the case of the expansion of the later 1990s, the causal chain was reversed. The New Economy boom materialized as a direct manifestation of the bubble in the stock market by way of its wealth effect, even in the face of declining returns on investment. Its reliance on this historic burst of speculation would soon be exposed.

SPECULATION-DEPENDENT ACCUMULATION

Between 1995 and 1997, the US enjoyed a brief lull before the storm, a kind of transition from the era of manufacturing-based profitability recovery to stock market-driven expansion, before the impact of the rising currency, always lagged by a couple of years, could take effect. For the first time in decades, the economy seemed to be functioning on all cylinders, harvesting the fruits of the significant increase of the rate of profit during the previous decade, while beginning to enjoy the wealth effect of fast-rising asset prices. US GDP, investment, productivity, and exports all increased impressively, and the accompanying rise of consumption and imports galvanized, for still another time, the rest of the world economy. Western Europe and Japan emerged from their doldrums and, for a moment, a synchronized global boom appeared to be taking shape.

Nevertheless, just beneath the surface, the same zero-sum game that had marked the evolution of the system for more than two decades against a background of decelerating growth of the economy as a whole was once again manifesting itself, insuring that the Indian Summer would be brief indeed. During that extended period, none of the leading economies had long sustained profitability and economic dynamism in the presence of a rising currency, or economic acceleration in the absence of a falling one, and, as it turned out, in this fundamental respect nothing had changed. The falling yen and the declining mark seemed to be setting the stage for new export-led recoveries in Japan and Germany. But, as the opposite side of the coin, the precipitous rise of the dollar, and the associated ascent of the East Asian currencies that were pegged to it, were destroying the hard-won competitiveness of both the US and East Asian manufacturing economies, detonating a chain reaction of crisis that would before long threaten to engulf the world economy, including the US.

The East Asian NICs and Little Tigers, led by Korea, had risen to great heights during the first half of the 1990s, not least by way of the vast increase in their competitiveness with respect to their Japanese rivals that resulted from the deep decline in the exchange rate of their currencies with respect to the yen that came with the precipitous decline of the dollar vis a vis the yen in this era. Motivated by rising rates of profit, capital accumulation across East Asia sharply accelerated, and by just past mid-decade region-wide annual capital investment had soared to almost four times its 1990 level, very much exacerbating the global over-supply of manufactured goods. But, when, from 1995, following the Reverse Plaza Accord, the dollar and thus local currencies vaulted upward without warning, these countries suddenly saw their relative costs of production soar, the weight of world over-capacity shift disproportionately in their direction as a consequence, and the profitability of the manufacturing sectors from which they drew most of their economic dynamism plunge.

Nevertheless, just as in the US, even as manufacturing profit rates flattened and commenced their fall across most of East Asia, asset prices throughout the region took off, carried upward by the same ascent of local currencies that was forcing down manufacturing profit rates and swelled by the influx from abroad of the same sort of speculative monies that were driving up the stock market in the US. So, as US share prices skyrocketed, parallel bubbles blew up in East Asia. Yet, the growing divergence between the region's falling profits on production and rising prices for financial assets could not long be sustained. From the beginning of 1997, as their exports collapsed, a succession of South Korea's leading *chaebols,* the great industrial-financial conglomerates that dominated its economy, went bankrupt, victimized by the same reliance on debt that had proved so profitable during earlier phases of phenomenal expansion. Capital flew from the region as fast as it had entered, currencies fell as a result, and asset markets crashed. When governments raised interest rates to counter capital flight, financial institutions failed, and the region's manufacturing and financial sectors entered into mutually reinforcing downward spirals.

The crisis in East Asia—which for two decades had been the only really dynamic region of the world economy--steadily worsened over the following year and a half, with devastating effects on the entire system. As the region's central manufacturing sectors entered their worst downturns ever, its asset markets continued their plunge, capital continued to exit, and local currencies continued to collapse. Distress sales from East Asia's producers now shot up and the prices of their goods buckled, placing enormous downward pressure on prices and profits across the globe. During the previous decade, staggering under the weight of the ascending yen, the Japanese economy had managed an extraordinary reorientation toward the apparently unstoppable East Asian economies. Japanese export companies had re-directed their capital and intermediate goods toward the northeast Asian NICS; Japanese transnational firms had re-located industry on the southeast Asian mainland; and Japanese banks had invaded the region to support the latter. But, when East Asia suddenly entered into crisis, these businesses found themselves in profound difficulty. Japan's nascent recovery was cut short almost before it started, and Japan quickly fell back into its long recession of the 1990s, from which it had only momentarily been able to escape. During the summer of 1998, the crisis spilled over into the less-developed countries. As the global economy slowed, the demand for and price of oil declined, and the Russian government defaulted on its debt. The Brazilian economy, which, like most of the East Asians, had persisted in pegging its currency to the dollar even as the greenback rose into the heavens, began to melt down soon after. Nor could the US economy itself, in the midst of an historic but highly unstable boom, remain immune.

Plunging competitiveness, consequent upon the surging dollar and exacerbated by the flood of ultra-cheap goods emanating from crisis-bound East Asia, made quick work of the façade of domestic productive dynamism in the US. In 1998, US goods exports, which had increased at the extraordinary annual rate of 13 per cent in 1997, totally collapsed, to a mere 0.6 per cent, and US producers came under stress. As early as the last quarter of 1997, corporate profits (net of interest) had begun to decline in absolute terms, and by summer 1998 were already about 15 per cent off the peak of the previous year. In sympathy, the S&P500 share index, having doubled between the end of 1995 and July 1998, dropped by 20 per cent in less than two months, destroying a hefty portion of the increase in corporate and household wealth that had provided the basis for the economy's advance. By September, a financial meltdown was suddenly in the offing, as interest rate spreads increased sharply and investment banks and hedge funds registered huge losses. Soon the enormous Long Term Credit Management (LTCM) hedge fund was obliged to admit to authorities that it was about to go bankrupt, and the international financial system, experiencing its worst crisis of the postwar epoch up to that time, appeared to be freezing up. With profits in the real economy heading downward and the wealth effect of the stock market already in reverse, a serious recession—or perhaps even worse--seemed inevitable.

What happened next—during the following several weeks and over the subsequent year and a half--could not have revealed more graphically and definitively the extraordinary degree to which an increasingly enfeebled real economy had come to depend on waves of runaway speculation, consciously nurtured by US economic authorities. The New York Fed, with the assistance of the country's top banks, quickly engineered a successful bail-out of LTCM, and Greenspan and his colleagues famously followed with three successive cuts in interest rates. When, less than a year later, in October-November 1999, the combination of fears of inflation and the Fed's own modest rate increases sent share prices into another funk, Greenspan did not hesitate to rush to the rescue of investors for still another time. Using the excuse of a possible breakdown of international computer networks at the turn of the millennium, Greenspan pumped sufficient liquidity into the banking system to bring about an astoundingly rapid reduction of the Federal Funds rate--from 5.5 per cent to below 4 per cent in a matter of weeks--opening the way to the decade's last and greatest convulsion of the equity markets. Meanwhile, to be sure that these interventions in the credit markets was totally sufficient, the Fed also induced the Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac make unprecedented amounts of additional money available to US borrowers, their loans totaling $600 billion in the years 1998-1999. The GSEs own borrowing to fund these advances amounted to no less than 30 per cent of total financial market borrowing during that two year interval. Ed Yardeni, chief investment officer of Deutsche Bank Securities was surely encapsulating the market consensus, when he asserted, not long thereafter, "Investors are worried about a hard landing. I am less concerned because I believe that the Fed is our friend."[10]

In view of such powerful and blatant official support for the stock market--and the implicit assurances that lay behind it—it should have surprised no one that share prices took off as they had not done since the 1920s, severing all connection with the real economy, its actual growth and profitability. In the brief period between the Fed's interest rate reductions of autumn 1998 and spring 2000, the S&P500 share index recovered the ground it had lost since the previous summer and shot up by a further 30 per cent, its price-earnings ratio reaching 35:1, the highest in all of US history. By the first quarter of 2000, the total value of the equities of US non-financial corporations, their market capitalization, had reached $15.6 trillion, more than triple its level of $4.8 trillion in 1994, with the consequence that, in that brief interval, the ratio between the market capitalization of non-financial corporations and non-financial corporate GDP leaped from 1.3:1 to 3:1, more than 75 per cent above the highest level previously reached during the

[10] P. Despeignes, "'Greenspan Put' Could Be Encouraging Complacency," *Financial Times,* 8 December 2000.

post-war period (1.7:1 in 1968). This was so, despite the fact that, in that six-year period, after tax non-financial corporate profits (net of interest) had risen by only 41.2 per cent. By contrast, it had taken fourteen years, from 1980 to 1994, for the ratio of non-financial corporate market capitalization to GDP to increase from 0.9:1 to 1.3, even though non-financial corporate profits had risen by 160 per cent in the intervening period. Still, according to Alan Greenspan, there remained no basis for asserting that this historic run-up of asset prices had reached bubble proportions. As he declared time and again, at least in public, "To spot a bubble in advance requires a judgment that hundreds of thousands of informed investors have it all wrong. Betting against markets is usually precarious at best."[11] Of course, in private it was another story. As we know from the FOMC transcripts, Greenspan had already identified this same stock market run-up as a bubble more than two and a half years previously, when it was still a mere embryo of what it was to become.

[11] "Testimony of Chairman Alan Greenspan Before the Joint Economic Committee," US Congress, 17 June 1999, Federal Reserve Board website.

CONTRADICTIONS OF BUBBLENOMICS

To dispel any remaining doubts on the part of investors, Alan Greenspan, along with the Clinton administration's council of economic advisors, did not hesitate to proffer a full-fledged rationale for the equity price run up and New Economy boom.[12] In this view, the US economy's unfettered financial markets—and in particular the pivotal role played by the US stock market in allocating capital—made it uniquely capable of technical advance and, in turn, rapid economic growth. It was the stock market's capacity to hot-house a technological revolution that was enabling the US to escape from two decades of stagnation and achieve an unprecedented boom--in sharp contrast to its still lagging rivals in continental Europe and Japan, with their underdeveloped financial systems. Share prices rose, in this vision, because the stock market was able to anticipate the ever increasing profits that New Economy productivity growth was in the process of endowing. The assumption was, of course, that "markets know best" and that equity markets are able to pick out the most promising firms--to be found, at this juncture, for the most part in the technology, media, and telecommunications sector (TMT). By virtue of their rising stock prices, such firms were thus enabled to finance stepped-up capital accumulation in advance of actual profit making, either by issuing highly priced shares or borrowing against the huge collateral represented by their increased market valuation. Lenders and fund managers would supply the cash, so as not to miss out on the extraordinary growth opportunities that the companies supposedly represented. The outcome, so the story went, was a dynamic investment boom, making for accelerated productivity growth, leading to even higher expected profits, equity prices, investment, and so forth—what Alan Greenspan termed a "virtuous cycle" of growth.

In reality the economic processes then unfolding worked in more or less the opposite direction from that posited by the theorists of free capital markets and the New Economy. Greenspan time and again asserted that, in response to the technological revolution that was then taking place, "*expectations* of earnings growth over the long term have been undergoing continual upward revision by security analysts since 1995…[and] have, in turn, driven stock prices sharply higher." But, in reality, far from heralding a new era of ever higher returns on investment in the real economy, the historic run up of the stock market brought about an equally historic mis-allocation of capital. Rather than rising on the wings of a productivity revolution, profitability fell sharply after 1997, driven down by the precipitous rise of the dollar, worsening over-capacity in the international manufacturing sector, and real wages that finally began to ascend after two decades of stagnation and decline. Between 1997 and 2000, after tax non-financial corporate profits net of interest *fell* in absolute terms by 26 per cent. But this did not prevent equity prices from exploding upward in an historic manner and detonating, by way of the wealth effect, the greatest wave of capital accumulation since the long postwar boom. In fact, the contribution of investment to the increase of GDP between 1995 and 2000 was greater than at any other time since 1945 and enabled the economy to grow faster than in any other comparable interval since 1973.

[12] See Greenspan's numerous speeches and reports to Congress in 1998-2000, as well as the Council of Economic Advisers, *Economic Report to the President 2001,* Washington, D.C. , 2001, which was issued at the start of that year.

The stock market bubble engendered not only massive over-investment in the aggregate, but a stunning mis-direction of capital among industrial lines. Unsurprisingly in view of the New Economy ideology so assiduously propagated by government economic officials and Wall Street publicists alike, equity prices for firms *outside* of information technology remained largely flat during the mania's final phase, from autumn 1998 through spring 2000. The record run-up of share values was thus confined in this interval almost entirely to the TMT sector, where stock prices outran profits in an unprecedented manner. The center of the action was of course the NASDAQ index, home of most New Economy companies, which rose by no less than 250 per cent between the last November 1998 and the March 2000. In the first quarter of 2000, the trailing (past year's) price-earnings ratio of NASDAQ firms reached the absurd figure of 400:1. The consequence was a gigantic mal-apportionment of capital to New Economy industries. Constituting just 8 per cent of GDP, the information technology sector accounted for no less than *one-third* of the growth of GDP between 1995 and 2000. Within that sector, the growth of telecommunications and the industries that supplied telecommunications components was truly phenomenal. Making up 3 per cent of GDP at most, these lines were by 2000 providing no less than one-quarter of economy-wide growth of investment in equipment and software.

In driving the US economy to heights unreached since the first post-war quarter century, the high tech bubble of 1998-2000 and the boom in high tech investment that it engendered brought a stunningly swift terminus to the global crisis of 1997-1998, ushering in, for a brief moment, a new global, export-led hyper-boom. As the dollar continued to skyrocket, not least vis a vis the plunging currencies of crisis-torn East Asia, US gross domestic purchases outpaced gross domestic output by ever greater amounts, and goods imports ascended upward to fill the gap, increasing at an average annual rate of more than 12 per cent (in real terms) and driving world exports into the stratosphere. The growth of US exports, meanwhile, was hemmed in by the weakness of the world economy outside the US and the latter's dependence upon the American market. Between 1997 and 2000, the US manufacturing trade deficit increased by a factor of 3.5, breaking new records every year, and was primarily responsible for a tripling of the US current account deficit in the same interval. With US demand for investment goods in general, and for information technology equipment more specifically, leaping skyward, East Asian producers in particular experienced a stunning turnaround, climbing from the depths of the worst depression in their history to a new export-powered miracle in the space of two years. By 2000, thanks to the American equity price run up, even Japan was emerging from the doldrums, sending enormous quantities of its high tech capital and intermediate goods to both the US and East Asia, and western Europe and Latin America were joining in, too. As former Fed Chairman Paul Volcker pithily summed up, "The fate of the world economy is now totally dependent on the growth of the U.S. economy, which is dependent on the stock market, whose growth is dependent upon about 50 stocks, half of which have never reported any earnings."[13]

[13] Quoted in David W. Tice, "Increasing Signs of Systemic Stress," *Prudent Bear,* 21 May 1999.

THE NEW ECONOMY'S ACHILLES HEEL: THE RATE OF PROFIT

No more than in Japan of the late 1980s and early 1990s could the contradictions inherent in bubblenomics be prevented from manifesting themselves for more than a moment. This was because, as in Japan, the very same mechanisms that drove the equity price run up and in that way the New Economy boom also pressed down on the rate of profit on the stock of plant, equipment, and software. The historic rise of US share prices attracted an enormous, indeed record-breaking, flood of money from abroad. Indeed, by the end of the decade, rocketing purchases of US financial assets by foreign investors were playing an indispensable part in allowing stock prices to reach historic highs and the bubble to live a longer life, amplifying still further the spectacular ascent of US investment and consumption. The Japanese, as well as other East Asian governments, had created the initial conditions for the asset price run-up with their enormous purchases of dollar denominated assets, particularly treasury bonds, in 1995-1996, not only driving up the dollar in aid of their manufacturers' exports, but helping mightily to hold down the cost of US borrowing. With the onset of East Asian crisis in 1997-1998, these states had been obliged to reverse direction and to liquidate dollar holdings in an effort to support their nose diving currencies, but private investors from the rest of the world rushed in to more than fill the gap. By the first half of 2000, investors from overseas were responsible for no less than 52 per cent of total net purchases of non-financial corporate entities—up from 25.5 per cent in 1999 and 8 per cent in 1998—and 44 per cent of total corporate bond purchases—up from 33 per cent in 1999 and 20 per cent in 1998. The dependence of the US asset price bubble, the US boom, and the nascent global expansion on foreign purchases of US financial assets could hardly have been more evident. In effect, by way of their purchases of financial assets, overseas investors were covering the exploding US current account deficit, keeping the dollar ascending, and preventing long term interest rates from rising even as the boom continued, so that US domestic demand could continue to increase and sustain the exports of their own economies. But the fact remains that in sustaining the impetuous rise of the greenback and thereby allowing still greater US imports, they were also further depressing US competitiveness, pushing down US profits, and sowing the seeds of destruction of the global expansion.

Extraordinary levels of investment in plant, equipment, and software did make for a very major speedup of productivity growth, notably in manufacturing where output per hour increased faster than at any previous time in the postwar epoch, and this did tend of course raise the rate of profit. But, spurred by easy access to finance, lacking justification in the rate of return, and obsessively focused on information technology, it also exacerbated industrial over-capacity, while extending its scope deep into the heart of the high technology sector. Between 1995 and 2000, industrial capacity in information technology quintupled, accounting by itself for roughly half of the quadrupling of industrial capacity that took place in the manufacturing sector as a whole, which also smashed all records. As a consequence, the gain in profitability deriving from increased productivity growth was counterbalanced by the decline in profitability that resulted from growing over-supply. The same thing had happened to Japan during its bubble years between 1985 and 1991.

Meanwhile, the deepening crisis in East Asia, initially set off by the same rise of the currency that was wreaking havoc in the US, compelled the region's governments to abandon their pegs to the dollar, opening the way to deep devaluations of their currencies against the greenback, which vastly increased the East Asians' international competitiveness. It also impelled East Asian industrial corporations to make more rapid use of already-paid-for plant and equipment so as to step up sales in general and exports in particular in an effort to compensate for their declining markups. The result was to drive down prices further, subjecting US producers to further downward stress on profits, and pressures on prices and profits only intensified as the frightening global downturn of 1997-1998 quickly turned to bubble-driven boom in 1999-2000. In 2000, world manufacturing output and exports, driven by US borrowing and the high dollar, rose by 6.4 per cent and 12 per cent, respectively, the fastest since 1973 in both cases, far exceeding the growth of demand system-wide, and world manufacturing export prices *fell* at their fastest rate of the entire postwar period (with exception of 1993).

As a consequence of the rapid increase of global manufacturing supply, capacity utilization in US manufacturing actually *fell* sharply during the last years of the decade, while manufacturing prices declined even faster than unit labor costs, despite the unprecedented increase in manufacturing productivity. Between 1997 and 2000, the rate of profit in the manufacturing sector declined by one quarter. Due to the historic wave of bubble-induced mis-investment that seized high tech, the carnage that took place in the information-communication-technology producing industries (ICT)--which are located partly inside the manufacturing sector, partly outside it--was several orders of magnitude greater. Alan Greenspan's pronouncements about a high-tech miracle making for ever-rising high tech profits were exposed as the fantasy they were, as the ICT sector's rate of return collapsed, falling from 22 per cent in 1997 to 4.6 per cent in 2000.[14]

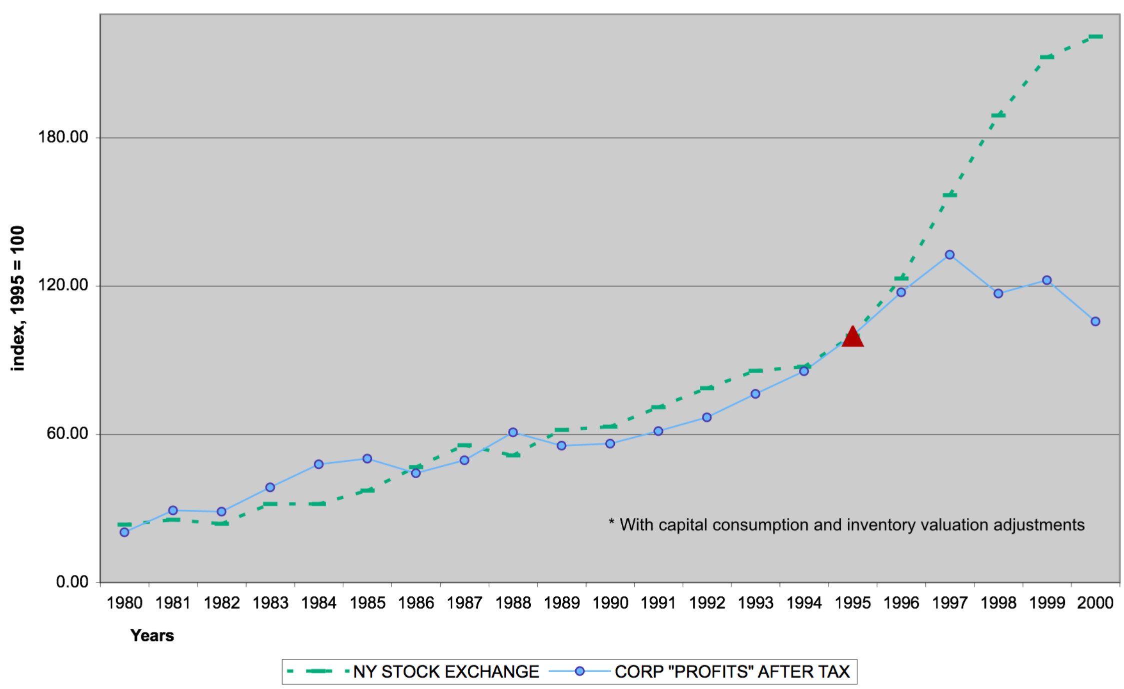
Meanwhile, benefiting from pretty much the same forces that were driving manufacturing, along with other industries producing tradable goods, into crisis, large parts of the economy that were shielded from international competition were surging ahead. It was a divergence that would become ever more marked as the economy's dependence upon rising asset prices to drive it forward became ever greater. Industries able to cater to the rise of bubble-driven household borrowing and consumption and/or gain from cheaper imports made possible by the rising dollar did particularly well, taking advantage of easy access to investment funds to step up spending on new plant, equipment and software, as well as on expanding employment. Riding the wave of an historic increase in demand for homes, the construction industry enjoyed what would turn out to be a decade long boom, its rate of profit breaking all previous records for the industry. Retail trade exploited the elevated dollar, the consumer spending spree, and ever cheaper imports, especially from East Asia, to break its historic dependence upon the fortunes of domestic manufacturing, accomplishing an impressive increase in

[14] Paul Lally et al, "Returns for Domestic Nonfinancial Business," *Survey of Current Business,* May 2008, p.20, Table 1. The information-communication-technology producing industries consist of computer and electronic products; publishing industries (including software), information and data processing services, and computer systems design and related services. Computer and electronics products are included in manufacturing the others outside it.

productivity growth, as well as its rate of profit. Hotel and restaurants was another industry focused on the consumer that prospered. The increasingly corporatized health services sector registered what has come to look like permanent growth, its profits quintupling between the end of the 1980s and beginning of the 2000s.

Between 1995 and 2000, the growth of GDP and capital stock in the non-manufacturing sector accelerated remarkably, to equal or better the figures for the long postwar boom, and the sector's productivity improved noticeably. But the same bubble-driven increase of demand that was the ultimate factor behind the non-manufacturing sector's prosperity also put definite limits on its dynamism. The economic expansion, which had originated as far back as spring 1991, assumed unprecedented length, extending itself to ten full years. As a consequence, private sector real compensation (wages plus benefits), which had hitherto stagnated throughout the expansion, suddenly sprang upward at the average annual rate of 3.0 per cent, squeezing profits across the economy, but especially outside of manufacturing where productivity growth, though slightly faster than up to 1995, still proceeded all too slowly. Between 1997 and 2000, profitability in the non-farm non- manufacturing sector declined by 20 per cent. Especially in view of the stock market bubble's inevitably brief half-life, the 1990s boom was not long for this world.

INDEX OF CORPORATE PROFITS NET OF INTEREST AFTER TAX VERSUS NEW YORK STOCK EXCHANGE COMPOSITE INDEX, 1980-2000



BUBBLENOMICS II

Beginning in March 2000, a string of disastrous corporate profits reports set off a long, deep plunge of equity prices that would ultimately, by September 2002, bring the S&P 500 and NASDAQ indexes down by 185 per cent and 400 per cent, respectively, The stock market crash deprived the economy of the engine that had become ever more indispensable in driving the economy's expansion since 1995-1997…which was of course the wealth effect of rising asset vales. With the wealth effect going into reverse, and nothing to pick up the slack, the economy entered into a frightening free fall. Faced with plunging surpluses, firms had little choice but to reduce investment and employment; meanwhile, to cut costs to restore their profit rates they sought to force down wages and secure more work for the same pay. The resulting hit to demand induced additional cutbacks further undermining demand and thereby profitability—the classic recessionary downward spiral. Between 1 July 2000 and 30 June 2001, the growth of GDP, of investment, and of aggregate real compensation (employment times real wages) all went negative, declining faster than at any previous juncture during the postwar period. Meanwhile during the course of 2000, the growth of real exports of goods and services, which had reached an impressive 8.7 per cent in 2000, dropped like a stone to *minus* 5.4 per cent.

Unsurprisingly, the plunge of profitability centered on manufacturing and especially high technology, where the stock market run up and investment boom had been centered. In the single year 2001, manufacturing real GDP, having increased by 4.7 per cent in 2000, plunged a staggering 6 per cent; capacity utilization dropped by 7.1 per cent; and employment in terms of hours plummeted 5.4 per cent. As a result, in 2001 alone, the rate of profit in the manufacturing sector as a whole fell by 21.3 per cent, to a level over a third down from its 1997 peak, while that of the manufacturing durable goods sector, site of all the high tech lines as well as most of the mainline industries exposed to international competition, dropped by 30 per cent in 2001 and a stunning 46 per cent from 1997. Between 1997 and 2001, as corporate indebtedness rocketed, manufacturing net interest as a proportion of manufacturing net profits rose from 19 per cent to 40.5 per cent, a post-war record. Partly as a consequence, by 2001, manufacturing profits after payment of interest had fallen a total of 44.4 per cent from their high point in 1997.

Traditional manufacturing industries such as apparel, textiles, and steel were hard hit, as were closely-related non-manufacturing industries, such as business services. But high technology lines--microprocessors, computers, and telecommunications components, as well of course as telecommunications itself—suffered the most, as they saw their ability to make use of the enormous addition to capacity that they had made during the previous half decade suddenly collapse. Capacity utilization in 1999-2000 in computers, communication equipment, and semi-conductors had reached 85.9 per cent; by 2001-2002, it had plunged to 59.7 per cent. The extraordinary depth of the crisis in high tech was revealed in an analysis of the 4200 companies listed on the NASDAQ Stock Index. The losses these firms reported for the twelve months following 1 July 2000 amounted to $148.3 billion. This was slightly more than the $145 billion in profits that they had realized during the entire five-year boom of 1995 to 2000. As one economist wryly noted, "What it means is that, with the benefit of hindsight, the late 1990s never happened."[15] So much for the New Economy.

The ensuing collapse of the American market of last resort quickly communicated itself to the rest of the world. Between 2000 and 2001, the growth of US real personal consumption expenditures was cut in half, with the consequence that the increase of real imports plunged from an 13.1 per cent in 2000 to *minus* 2.7 percent in 2001. The growth of world exports crumpled in sympathy, from 10.6 per cent in 2000 to -0.4 per cent in 2001, a fall of 11 percentage points in a single year. The dependence of the rest of the world on US demand could not have been more starkly revealed. The system seemed headed toward a deep recession.

To stem the tide, beginning in January 2001, the Fed lowered the cost of short-term borrowing with unprecedented rapidity, ultimately reducing the Federal Funds rate by 5.5 percentage points, from 6.5 per cent to 1 per cent over two and a half years. Nevertheless, as would become all too evident, this standard macro-policy prescription could do little to restore the health of the real economy. Designed to combat a cyclical problem of insufficient demand that had itself been precipitated by a previous Fed tightening to fight inflation—and premised on strong fundamentals--Greenspan's interest lowering campaign could make little dent in the structural problem of too much productive capacity making for deeply reduced rates of profit. Vastly over-supplied with means of production and heavily weighed down by debt, corporations had little motivation to increase investment and employment, so no interest in borrowing no matter how low the Fed made the cost of credit. On the contrary, they had every incentive to slow down capital accumulation and reduce costs by way of cutbacks on jobs and plant and machinery, while availing themselves of falling interest rates to pay down their debt. And that is what they did. It would be necessary to restore the real economy's business climate by reviving its profitability, especially by dispersing global over-capacity in manufacturing, before easier credit could have a hope of catalyzing self-sustaining growth.

But, if the channels by which the Fed could directly reflate the economy were largely clogged, channels through which a monetary stimulus might indirectly take effect still remained wide open. The increased access to liquidity that the Fed provided by reducing the short term cost of borrowing for the banks was not, for the most part, taken up by non-financial corporations; but their foregoing it rendered it more fully available to the asset markets. Of course, with the stock market plunging, declining interest rates could hardly detonate a new cyclical upturn by setting off another run-up of share prices, borrowing, and corporate and household spending, as it had in the 1990s. Still, the reduced cost of short term borrowing was eventually able to accomplish something quite analogous: this was to foster new asset price run-ups in the *other* most interest-rate sensitive sectors of the economy—namely, housing and leveraged investment in bonds of all sorts. It was the interaction between historic housing and credit market bubbles, made

[15] "Nasdaq Companies' Losses Erase 5 Years of Profits," *Wall Street Journal,* 16 August 2001.

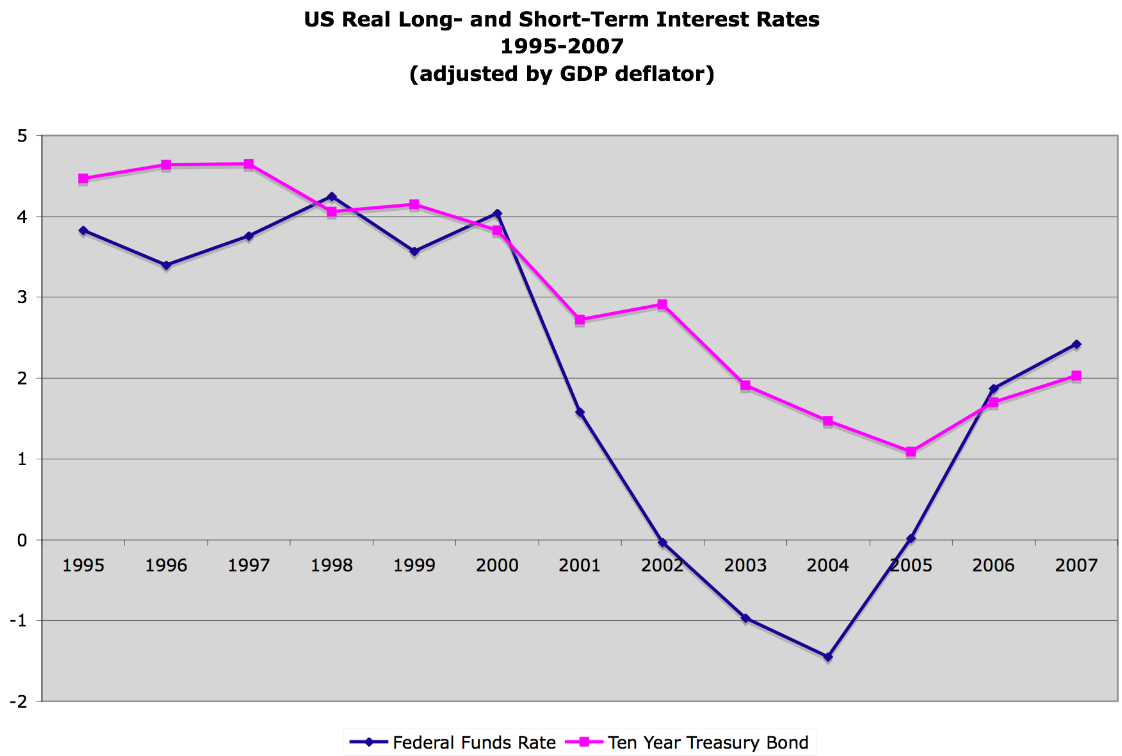
possible by a new round of record-breaking household and financial sector borrowing, that drove the new expansion—bubblenomics, round two.

Nevertheless, the Fed's campaign to bring down short term interest rates was incapable by itself of insuring a recovery by way of a new round of asset price Keynesianism focused on housing, because it could not directly bring about a reduction in the 30-year fixed mortgage interest rate that was still standard in the US housing market. Changes in the latter were determined by long term interest rates, dependent in turn upon the supply and demand for loanable funds in the world economy as a whole, which the Fed could certainly affect but could not fully determine. What actually created the foundation for the new cyclical upturn turned out to be an historic decline in the cost of *long term* borrowing. From 1995, the yield on ten year Treasury bonds fell more or less steadily and, to the surprise of many, it continued to do so through most of the ensuing expansion, until 2005—declining in this interval from 7.09 per cent to 4.29 per cent in nominal terms and 4.49 per cent to 0.89 per cent in real terms (adjusted by the consumer price index). How is this extraordinary, indeed epoch making, drop-off to be explained?

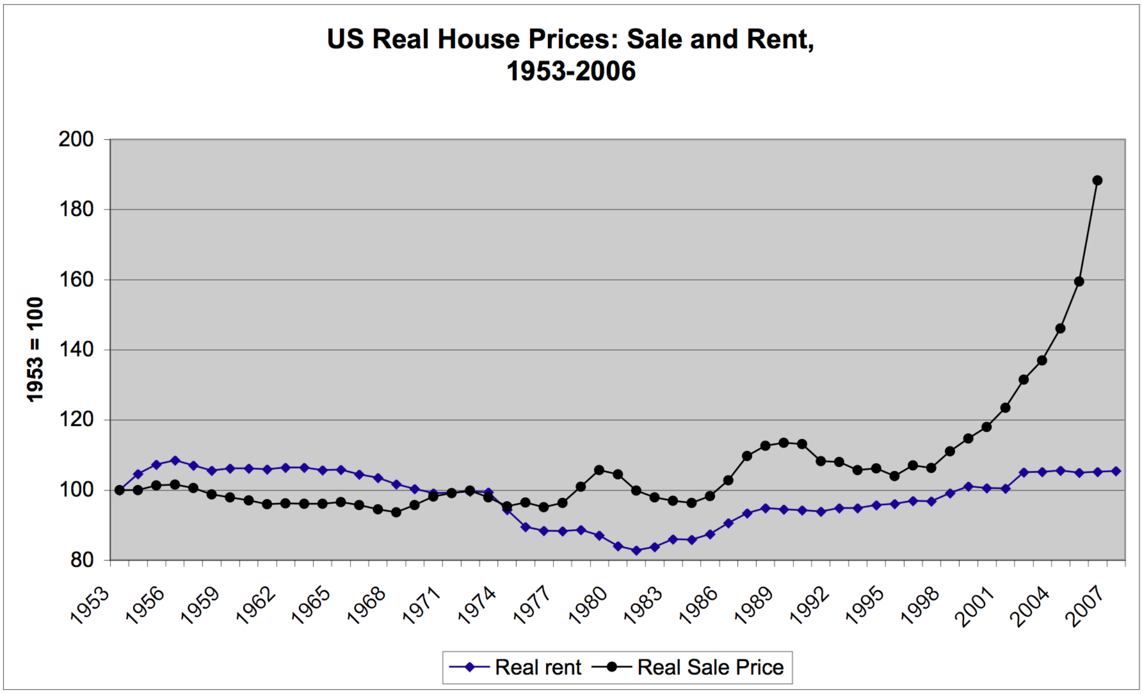
The economy was rescued, in effect, by its own debility. Between 1973 and the later 1990s, part and parcel of the long term system wide deceleration, the rate of investment on a global scale (investment/GDP) steadily declined. With their capital accumulation slowing, businesses' call for credit slowed correspondingly, reducing the pressure on long term interest rates. The world crises of 1997-1998 and 2000-2002 sharply accentuated this trend by bringing about a further slackening in the growth of plant, equipment, and software and of employment on a global scale, which further undermined the demand for loans, and the ensuing business cycle of the years 2001-2007 witnessed the slowest increase of investment, and of growth more generally, within the advanced economies, including the East Asian NICs and Little Tigers, since 1945. During the same interval, as the US federal budget once again skyrocketed and the current account deficit set new records year after year, East Asian governments made ever-greater purchases of dollar-denominated assets for the purpose of holding down the exchange rate of their currencies and reducing the cost of borrowing in the US so as to sustain competitiveness and subsidize demand for their exports. As a consequence, the supply of credit continued to ascend, further easing the cost of borrow0ing. Federal Reserve Board chairmen Alan Greenspan and Ben Bernanke deemed the unexpected failure of long term interest rates to increase a "conundrum" and evolved the convenient theory of a "world savings glut", originating mainly in East Asia, to explain it. They thereby rationalized record US borrowing and consumption in terms of a distinctive, if not implicitly irrational, East Asian failure to consume—which US policymakers just happened to desperately require to keep American interest rates down and enable the reflation of the enfeebled American economy on track. "The East Asians made us do it." Nevertheless, the supposed conundrum and its resolution are both redundant. There was no global trend toward increasing saving, only a decreased tendency to invest almost everywhere in the world outside of China.[16] It was, in effect, the worsening of the

[16] IMF, "Global Imbalances," pp. 92-95, Figures 2.1, 2.2, 2.4.

secular economic slowdown in the advanced capitalist countries plus the drive by East Asian states to sustain the region's investment-driven, export-dependent form of economic development that made for the continuous reduction of the real long term borrowing right through 2005-2006 that proved the saving grace for the US and global recovery.

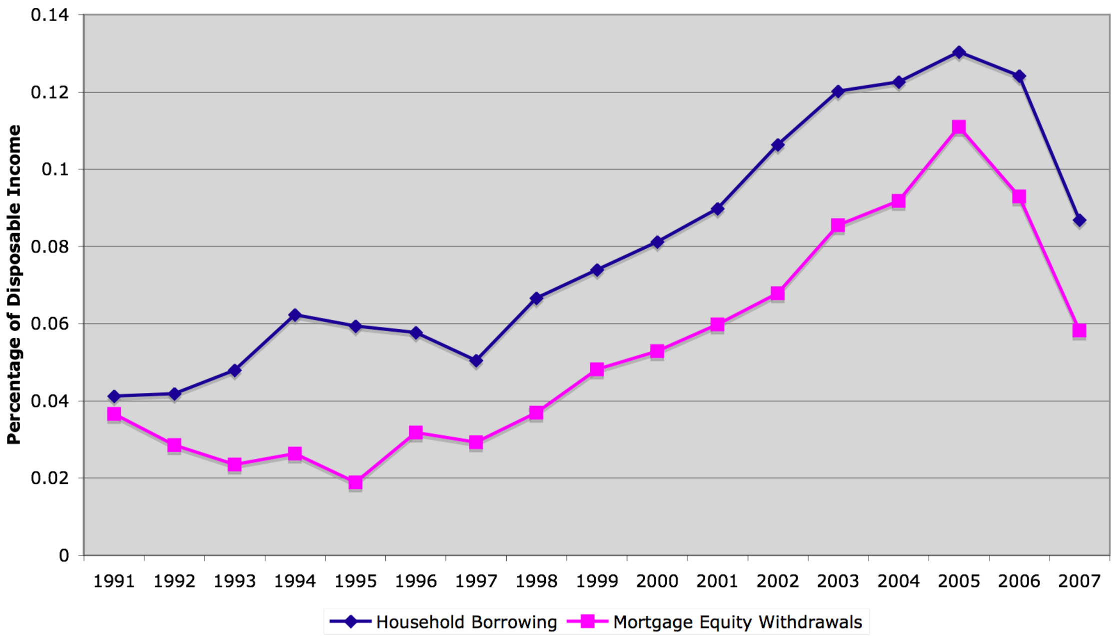


The housing price run-up was unprecedented. Throughout the whole of the postwar period, both long boom and long downturn, housing prices had remained essentially *flat in real terms,* increasing no more rapidly than prices in general, the rate of inflation. They had, also, unsurprisingly, closely traced the trend of housing rents, since house prices tend to express the same supply-demand pressures as rents and, all else equal, are nothing other than capitalized rents. But, from the middle of the 1990s, housing values suddenly began to outpace both the general price level and housing rents, and they raced ahead faster from 1997-1998. The ascent of housing prices was detonated by the enormous increase in paper wealth and purchasing power bequeathed by the stock market bubble, which very much enhanced the ability of better-off households to buy residences. The huge extension of housing mortgage credit by the GSEs Fannie Mae and Freddie Mac at the end of the decade surely helped to sustain it. But the fundamental enabling condition for the housing boom over the longer run was a steady and extended decline in nominal and real (long term) mortgage rates, which was a direct expression of the parallel, more general fall-off in the real long term cost of borrowing. In effect, the housing bubble took over where the stock market bubble left off--a phenomenon all the more extraordinary, and paradoxical, in that it took place, for the first time in living memory, in an era of falling share prices and recessionary economy—and its impact on economic growth was historic.

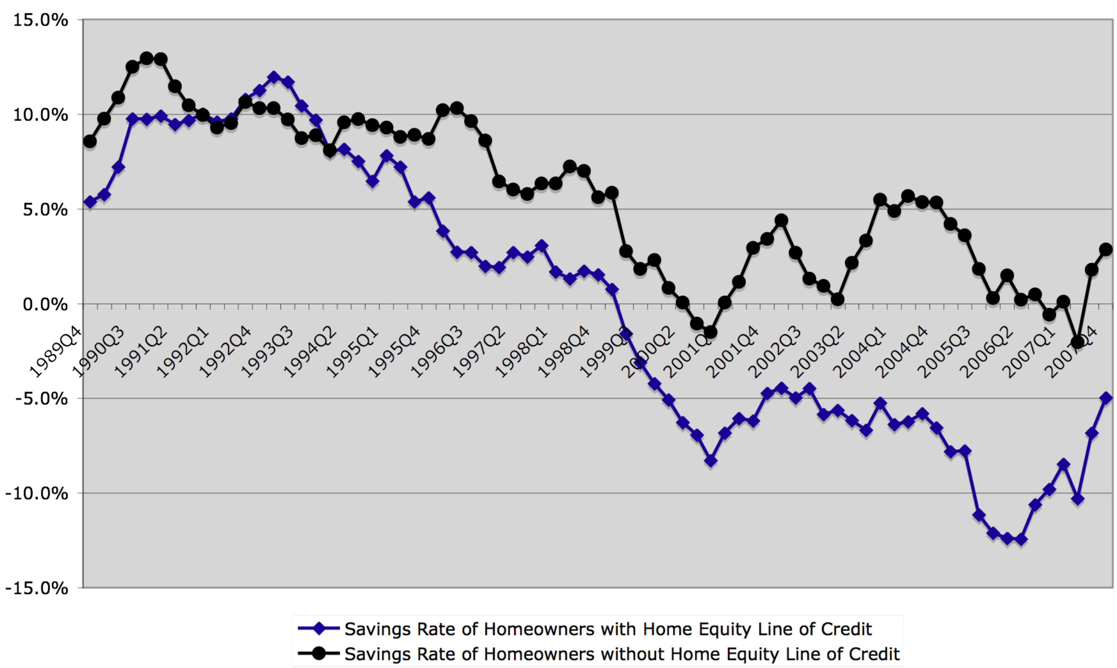


In much the same way as had the equity price run up, but to an even greater extent, the bubble in skyrocketing prices for residential real estate made for an epic spate of borrowing by driving up household wealth in historic fashion. Treating their homes like the proverbial ATM machine, households were able to re-finance their mortgages so as to extract ever more cash to make possible ever increasing expenditures. This they were able to accomplish, at least in theory, even while keeping their monthly payments constant and seeing the (apparent, on-paper) equity in their homes rising, thanks to lower interest rates and the appreciation of housing prices. So-called mortgage equity withdrawals (MEWs) rose in an unprecedented manner virtually through the length of the business cycle, enabling household borrowing in general and mortgage borrowing in particular to smash all previous records, both as a percentage of GDP and of personal disposable income. At the same time, just as during the equity price run up, households viewed the increase in their paper wealth deriving in this case from the run-up in housing prices as doing their saving for them. The personal savings rate thus continued **at or** near the postwar lows registered during the later 1990s, reaching it second lowest level since 1945 in 2006, at *minus* 0.6 per cent. Those households that took out home equity lines of credit (HELOC) in this interval entirely accounted for the decline, their rate of savings dropping from *minus* 6.6 per cent to minus 11.3 percent, while those households that refrained from mortgage equity withdrawals actually slightly increased their rates of savings during this interval, from *minus* .4 percent to .4 per cent. The upshot was that, in the brief period between 2000 and 2007, household debt doubled.

Mortgage Equity Withdrawals and Household Borrowing as a Percent of Personal Disposable Income 1980-2007



Home Equity Borrowing and Personal Savings Rate 1990-2007



The historic run-up of household borrowing, the decline in personal saving, and the accretion of household debt were what made possible the expansion of personal consumption and residential investment that, virtually unaided, drove the cyclical expansion. In view of the unsustainability of the increase of housing prices, households were, in reality, paying down their wealth to enable current spending. Still, the impact was phenomenal. Because wealth in the form of houses is so much more widely distributed than equities in the broad US population, the wealth effect of increases (or decreases) in housing values is far greater than that of equity prices. According to government estimates, consumption increases by $7-$8 for every $100 increase in wealth in the form of residential real estate, whereas it increases by only $3-$4 for every $100 increase in wealth in the form of equity. Between the 2000 and 2005, house prices rose by an extraordinary 51 per cent per cent, households' wealth in the form of housing by no less than 64 per cent. Personal consumption and residential investment were thus enabled to grow at average annual rates of 2.9 per cent and 6.0 per cent, respectively, and together they accounted for 98 per cent of the increase of GDP in the first five years of the business cycle, which began in March 2001.

Nor did US economic authorities confine themselves to asset price Keynesianism to propel the economy. They also turned to standard Keynesianism, reversing the trend to balancing the budget and creating mammoth Reagan-style federal deficits by way of increases in military spending and tax breaks for the corporations and the wealthy. The federal budget balance as a per cent of GDP plunged from a surplus that had reached 3.0 per cent of GDP in 2000 to a deficit of 3.6 per cent of GDP in 2003, an astounding increase in borrowing of 6.6 per cent of GDP—or about $700 billion--in just three years, an enormous further subsidy to aggregate demand. During the same interval, US economic authorities welcomed a major devaluation of the dollar, the real effective exchange rate of which declined by 8 per cent (although the greenback's fall against the US's key Asian trading partners was more limited). All told, it was an incitement to economic growth unprecedented in US history except during wartime.

SUBPRIME SUPER-CHARGE SAVES THE EXPANSION

Nevertheless, as during first round of asset price Keynesianism, the historic stimulus deriving from the record increase in household borrowing made possible by the unprecedented rise in residential real estate values soon showed itself incapable of overcoming the inertia of the debilitated real economy. In the brief period between 2000 and 2003, housing prices rose by 23 per cent, household wealth in the form of housing by almost one-third, by more than $3.5 trillion, total household wealth by about $5 trillion. Nevertheless, the economy proceeded fitfully at best. Throughout 2002 and much of 2003, the Fed worried out loud that the US might be falling into a Japan-type deflation in which prices actually declined, and went to great lengths to assure the public that, even were that to happen, it still retained the macroeconomic policy tools to push the economy forward.[17] In November 2002, concerned that the recovery was running out of gas almost before it started, the Fed brought down its short term rate another half a point. Yet, during the first half of 2003, GDP increased at an annualized rate of just 1 per cent, leaving aside the .9 per cent contributed during the interval by a big leap in military spending mainly related to the Iraq war. By June 2003, as Alan Greenspan would later emphasize, the Fed was still reporting that "conditions remained sluggish in most districts" and "saw no conclusive evidence of an appreciable overall strengthening in the…economic expansion." Greenspan therefore saw no alternative to bringing down the Federal Funds rate a further quarter point, to 1 per cent, its lowest level since 1958.[18] For the whole of 2003, three years into the business cycle, the levels of private employment, investment, and net exports, as well as nonfinancial corporate profits, all remained significantly *below* their levels of 2000, while even by the end of the year, the S&P500 stock index still languished about 500 points, or one-third, off its boom-time peak. The growth of consumption and residential investment, heavily dependent upon the housing price run-up, as well as the increase of government spending, mainly reliant on soaring military expenditures, were accounting for what little economic growth was taking place. Otherwise, there was little powering the economy. In fact, between 2000 and 2003, GDP growth averaged just 1.6 per cent; had it not been for housing, specifically the increase in mortgage equity withdrawals and expenditures on home construction and furnishings in that interval, it would have been a miniscule 1.1 per cent. Much as in 1998, the stimulative impact of the asset price bubble seemed to be reaching its limits. In the second half of 2003, large scale tax rebates plus further Iraq war spending gave the economy a major fillip, but these were obviously one-off affairs. Goldman Sachs economists worried that the incipient economic pick up would quickly "give way to a renewed slowdown as the temporary impulse peters out."[19] The question of the day

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[17] For the Fed's worry about deflation, see Fed Governor Ben Bernanke's famous speech, "Deflation: Making Sure 'It' Doesn't Happen Here," 21 November 2002, Federal Reserve Board web site. Cf. Greg Ip, "Fed Meeting Minutes Reveal Concern About Low Inflation," *Wall Street Journal,* 8 November 2002.

[18] FOMC Minutes 24-25 June 2003, Federal Reserve website; Alan Greenspan, "The Fed is Blameless on the Property Bubble," *Financial Times,* 7 April 2008.

[19] Quoted in Greg Ip, "If Current Recovery Loses Steam, Economy May Face Real Trouble," *Wall Street Journal,* 18 August 2003.

remained in 2003, as it had since the middle 1990s, from what source could the US economy find the impetus to propel itself forward?

Not only had the recovery yet to be secured, but its main drivers, the fall in interest rates and the debt-driven ascent of housing prices, were self-evidently self-limiting. The same rise in residential property values that made possible the fevered increase in borrowing that was powering the expansion was naturally making houses ever less affordable, tending to increasingly restrict access to the housing market and bring the bubble-dependent upturn to an early terminus. If the prices of residences were to be kept rising so as to continue to stoke the growth of GDP by way of increased household borrowing, consumption, and residential investment, it was essential for the Fed not only to keep short term rates down for as long as possible, but also to somehow enable ever less qualified borrowers-purchasers to buy homes at ever higher prices. To bring about the latter, the Fed adopted a conscious policy of lowering the standards for playing the game of mortgage borrowing, this by nurturing the newly emerging market in subprime and other kinds of nonconforming mortgages, which had been specifically designed to open up the housing market to as many as possible buyers who could not meet the prerequisites for a standard prime/conforming loan. To accomplish the former, it took the extraordinary step of maintaining the Federal Funds rate at 1 per cent for a full year, before very slowly and deliberately raising rates. It was the Fed's short term interest rate that determined the rate paid on the great majority of subprime mortgage loans.

In the middle of 2003, about the time of the Fed's final rate reduction, the US Realtors' Affordability index reached its peak for the business cycle, but from that point forward, following a brief fluctuation, it fell steadily and precipitously right into the present. More directly relevant, housing affordability for *first time buyers*, was already at a low ebb, as their median income could buy less than 90 per cent of the median priced home at prevailing mortgage rates and terms.[20] It was no coincidence that by February 2004, Alan Greenspan was making the pointed suggestion that "Americans might benefit if lenders provided greater mortgage alternatives to the traditional fixed rate mortgage." Just so that no one would miss the point, he went on to sing the praises of adjustable interest rates, which just happened to govern 80-90 per cent of subprime mortgage loans but less than 20 per cent of prime mortgage loans.[21] Mortgage lenders hardly needed this encouragement. They had already begun to introduce a flood of shaky new "affordability products": "state income" loans, which did not require borrowers to document their incomes; interest only loans, which allowed borrowers to pay only interest for a certain interval before having to compensate by coughing up a lump sum or reverting to elevated monthly payments for the remainder of the life of the loan; loans which required no down payment or allowed borrowing up to 125 per cent of equity; negative amortization loans, which enabled borrowers to add part or all of their monthly interest payments to the

[20] M. Zandi, "Housing from Boom to Bust," *Regional Financial Review,* August 2006, p.16.

[21] Alan Greenspan, "Understanding Household Debt Obligations, 23 February 2004, Federal Reserve Board web site; William A. Fleckenstein, *Greenspan's Bubbles. The Age of Ignorance at the Federal Reserve,* New York, 2008, pp.156-158; Mark Zandi, "Subprime Q&A," *Regional Financial Review*, February 2007, p.15.

principal; and, so-called hybrid loans, in which interest rates were fixed for a period--usually two years--at a low, "teaser" rate, and then reverted to adjustable rate mortgages for the remainder of the loan—usually twenty eight years. The all too inevitable result was that, according to the Federal Reserve's own survey of bank lenders, there began from 2003-2004 a steep plunge in the standards for lending, which continued unchecked until the housing boom fizzled in 2006.[22] Yet the Fed made no attempt to intervene, as this was clearly very much what Alan Greenspan and company wanted, and needed, to sustain the economic expansion.[23]

Already in 2003, total mortgage originations had reached their zenith for the business cycle, at $3.9 trillion. In that year, prime (or conforming) mortgages made up more than 60 per cent of the market. But, from that point onwards, as housing affordability fell, prime mortgage originations plummeted, declining by no less than 50 per cent in the next year 2004, and a total of 60 per cent by 2006. As a consequence, by 2004, total mortgage originations had already slipped by a shocking 25 per cent, to $2.9 trillion. Had non-conforming mortgage lending failed to shoot up at just this moment to partially offset the swoon in conforming lending, the housing bubble would likely have quickly expired, endangering the cyclical upturn, as US households had insufficient funds to keep both housing sales and housing prices rising, not least because, over the length of the business cycle, US real median family income failed to rise for the first time during the postwar epoch, while real wages for production and non-supervisory workers, about 80 per cent of the labor force, remained essentially flat. But, thanks to the Fed's remarkable reduction and subsequent holding down of short term interest rates, as well as the accompanying, equally spectacular, loosening of lending standards, subprime mortgage originations spiked upward in astounding fashion. Having languished at less than 5 per cent of the market for the years 2000-2002, they leaped from 7 per cent to 20 per cent of the market in the brief period from the second quarter of 2003 to the third quarter of 2004.[24]

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[22] E. L. Andrews, "Fed Shrugged as Subprime Crisis Spread," *New York Times,* 18 December 2008.

[23] The determination of the Fed, and the Bush administration more generally, to puff up the housing bubble led them to quash any and all efforts to rein in the explosion of predatory lending that unsurprisingly accompanied the fevered expansion of sub-prime lending. As early as 2000-1, Federal Reserve governor Ned Gramlich had urged Fed chairman Greenspan to send examiners into the mortgage lending affiliates of nationally chartered banks to investigate predatory lending, as many of these, like that of Bank of America, had already come under fire from state regulators and consumers. But Greenspan would have none of it. Nor would administration economic authorities allow state officials to move on their own. As the subprime market boomed, state attorneys general, individually and collectively, began to take action against predatory lenders, while legislatures in states like Georgia and North Carolina began to pass tougher laws against abusive lending practices. But the administration had its Office of the Controller of the Currency step in to protect the banks, invoking a clause of the 1863 National Bank Act to pre-empt all state predatory lending laws and render them inoperative. Andrews, "Fed Shrugged"; Eliot Spitzer, "How the Bush Administration Stopped the States from Stepping in to Help Consumers," *Washington Post,* 14 February 2008; Robert Berner and Brian Grow, "They Warned Us About the Mortgage Crisis. State Whistleblowers Tried to Curtail Greedy Lending—and Were Thwarted by the Bush Administration and the Financial Industry, " *Business Week,* 9 October 2008.

[24] Fleckenstein, *Greenspan's Bubbles,* p.158, Figure 10. Alan Greenspan denies that he knew about this indispensable vault of subprime mortgage originations—which he did so much to facilitate--until long after

This was a major turning point, for there can be little doubt that the subprime surge saved--indeed fired--the housing market, as from this point onward, non-conforming mortgage originations took over for prime mortgage originations in sustaining the housing bubble. In 2001, originations of subprime mortgages and their fraternal twin Alt-A mortgages, sometimes known as liar's loans for the reduced documentation that they require, together constituted less than 10 per cent by value of the mortgage market, and as late as 2003 they still made up just 13.5 per cent. But by the next year, 2004, as prime or conforming mortgage originations fell by $1200 billion, subprime plus Alt-A originations increased by $446 billion. As the share of the market made up by prime or conforming mortgages fell by 20 percentage points—from 61 per cent to 41 per cent—the share of the mortgage market taken by sub-prime plus Alt-A originations simultaneously leaped upward by 20 percentage points to partially compensate---from 13.5 per cent to 33.5 per cent of the total. By 2006 subprime and Alt-A mortgages composed 40.1 per cent of all mortgage originations, compared to just 34 per cent for conforming mortgages. In that year, non-conforming mortgage loans accounted for more than 25 per cent of the total of $7.4 trillion in mortgage loans outstanding.[25]

But the significance of the rise of non-conforming mortgage originations went well beyond its capacity to compensate for the decline of conforming originations. Paradoxically, subprime and Alt-A mortgage originations possessed far greater power to drive the housing bubble than did prime mortgage originations. Non-conforming borrowers were disproportionally drawn from a segment of the working class hitherto excluded from mortgage borrowing, households that would previously have made loans to buy houses had they not been prevented from doing so. They therefore represented huge latent demand for residential real estate. By contrast, those contracting for conforming mortgages came mainly from that segment of the population that had, all along, been able to satisfy their demand for home loans. The consequence was that, as the rise of subprime lending made for a sudden huge increase in the supply of mortgages and households previously denied loans came to constitute a rapidly rising share of the market, the demand for homes rose disproportionately and so did housing prices.[26] Then,

the fact, and publically acknowledged it only much later. "When in 2005 I first ran across the sharp spike in subprime mortgage originations estimated by a private vendor…I said, 'This makes no sense, markets don't move that fast.'" "'The Impact Was Larger than I Expected, '" *Wall Street Journal,* 8 April 2008 (interview).

[25] L. Randall Wray, "Lessons from the Subprime Meltdown," The Levy Economics Institute Working Paper No.522, December 2007, p.30, Table 1; Peter R. Fisher, "What Happened to Risk Dispersion?," Banque of France, *Financial Stability Review*, no. 11, February 2008, p.31, Chart 3; John Kiff and Paul Mills, "Money For Nothing and Checks for Free: Recent Developments in U.S. Subprime Mortgage Markets," IMF Working Paper 07/188, July 2007, p.6, Figure 3; Zandi, "Subprime Q&A," p.16. For Alt-A liar loans, see, eg., Lynnley Browning, "Airing the Depth of Troubles at Fannie Mae," *New York Times,* 9 December 2008; Fleckenstein, *Greenspan's Bubbles,* p.157

[26] This follows the ingenious study by Atif Mian and Amir Sufi, "The Consequences of Mortgage Credit Expansion: Evidence from the 2007 Mortgage Default Crisis," NBER Working Paper No.13936, April 2008. The authors were able to track, over time, mortgage borrowing in better-off zip codes where, initially, a preponderance of applicants succeeded in gaining acceptance of their mortgage applications and

too, non-conforming borrowers tended to make much smaller down payments than did conforming borrowers, and, as the housing bubble expanded, they advanced diminishing amounts, while turning to an ever increasing extent to mortgages requiring no down payment and/or demanding interest only or allowing negative amortization. Already by 2004, 25 per cent of all buyers and stunning 42 per cent of all first time buyers made no down-payment on their home purchase. For non-conforming borrowers, house prices thus mattered less, and they were willing to pay more for houses than were conforming borrowers.[27] Of course, the very same reduced interest rates and reduced requirements for lending that allowed so many with low incomes and imperfect credit to borrow also encouraged outright speculators to take an ever increasing share of the market. In 2004, according to the National Association of Realtors, 23 per cent of all house purchases were for the purpose of investment rather than occupation by the owner, and the proportion undoubtedly increased in subsequent years.[28] By opening up the housing market to non-conforming lending, the Fed had in effect paved the way for an historic explosion of what the financial economist Hyman Minsky termed "Ponzi finance"--the entry *en masse* into the housing market of households and financial operators who knew they had little hope in the medium run of covering the payments on their original mortgage and whose premise in buying the property was that its price would go up and enable them to refinance their loan or pocket the capital gain.[29]

The outcome was that, as non-conforming borrowing soared, prices for residential real estate leapt skyward accordingly. Housing prices had already been rising briskly at a 10 per cent annual pace between June 2002 and June 2003. Between June 2003 and June 2004, thanks to Greenspan's below zero short term interest rates and the take-off of sub-prime borrowing, they rocketed by 16 per cent, even despite the nose-dive that was taking place at that very moment in total mortgage originations. Whereas home values had increased by 17 per cent between the end of 2000 and the middle of 2003, they increased by 29 per cent between the middle of 2003 and the end of 2005. Once again, as in 1998, the Fed had taken extraordinary steps to save an asset price bubble, and an economic expansion in serious danger. The indispensability of Fed-nurtured non-conforming

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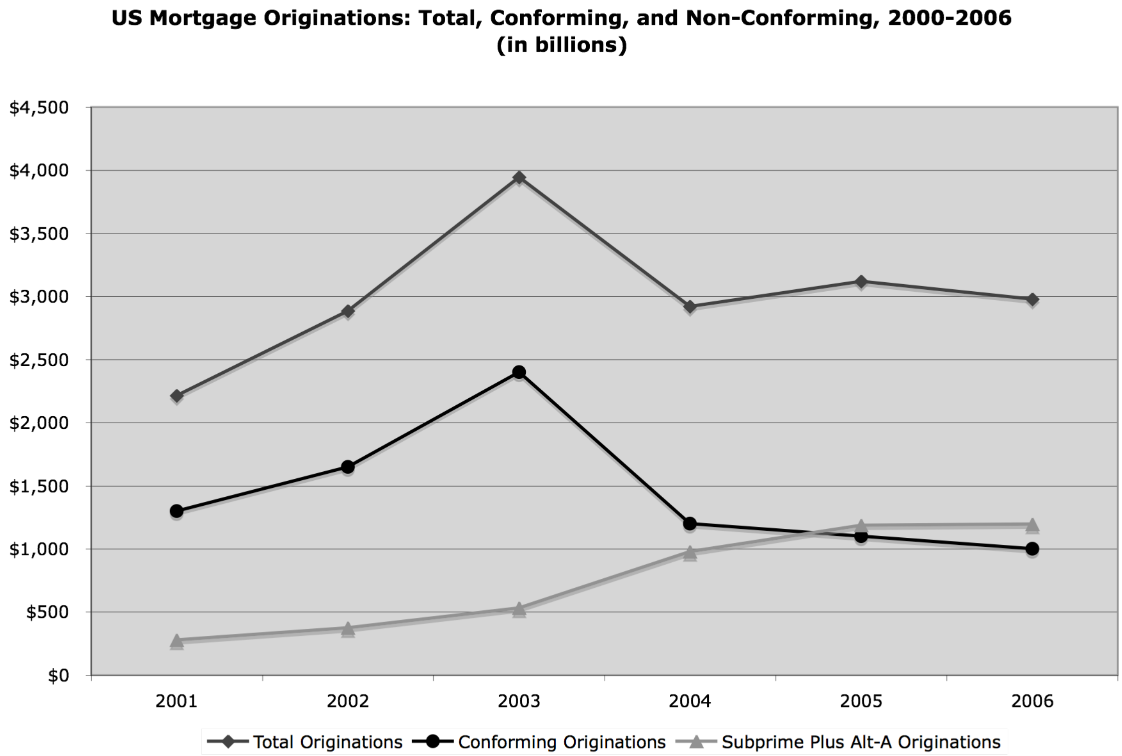
compare this to worse-off zip codes where a disproportionately large number of applicants were initially denied loans ("high latent demand" zip codes). The high latent demand zip codes experienced significantly higher home price increases than did those where latent demand was low, even though, it should be stressed, they experienced, in relative terms, negative income and employment growth over the period.

[27] "The Global Housing Boom," *The Economist,* 16 June 2005. "People are able and willing to pay more when you have zero down payment, negatively amortized. They can get into the home and the bet is not on them. The bet is on someone else [as to] what's going to happen in the future. "Credit Crisis Interview: Susan Wachter on Securitizations and Deregulation," Knowledge@Wharton, 20 June 2008. [NOTE: CUT REFERENCE TO See below]

[28] "The Global Housing Boom," *The Economist.*

[29] Government regulators gave their blessing to the ever more prominent role of Ponzi financing in the mortgage market by allowing lenders to make loans to borrowers if they could qualify at the initial "teaser" rate offered on "hybrid" (2/28) loans, even though that rate would automatically reset after two years, usually by a hefty two points (if not more). Zandi, "Sub-prime Q&A," p.19.

mortgage lending to keep housing prices bubbling, household borrowing ascending, and in that way the economy growing could hardly have been more evident.



CREDIT MARKET BUBBLE DRIVES SUBPRIME RUN-UP

Yet, a question immediately imposes itself, indeed *the* question. How was it possible actually to *finance* the upsurge of non-conforming lending that kept the housing bubble expanding? It was one thing for the Fed to pave the way for ever greater household mortgage borrowing by inviting into the mortgage market ever less qualified borrowers, as well as by keeping interest rates as low as possible for as long as possible. But it was quite another to find lenders willing to advance money to these same dubious high-risk mortgage applicants on a sufficient scale to keep house sales booming, household debt and personal consumption increasing, and the economy growing.

Of course, at a superficial level, the answer to this conundrum is by now well-known and encapsulated in the term "originate to distribute," designating the newly emergent system through which the financial system handled mortgages. Mortgage lenders--including specialized subprime lenders like New Century Financial or diversified national lenders such as Citigroup or Countrywide--no longer, as in the past, originated mortgages primarily in order to hold them so as to profit from the interest payments. Instead, in the new model, with the help of independent mortgage brokers, they originated mortgages with the intention of selling them to investment banks and profiting by collecting fees. Investment banks pooled the mortgages by the thousands in their own special purpose entities (SPEs) and then securitized them—i.e. turned them into securities backed by home mortgages (MBSs), which they sold on to investors, pension funds, insurance companies, local governments, hedge funds, and so forth. By virtue of their ownership of these securities, investors would receive monthly payments derived from the interest and amortization payments that backed or collateralized them.

Securities backed by non-conforming mortgages were but one of an ever expanding variety of asset backed securities concocted by Wall Street banks, which, during the previous couple of decades had seen to the securitization of virtually every type of loan—auto loans, credit cards, and student loans, to name but a few. Fannie Mae and Freddie Mac had pioneered the securitization of residential mortgages during the late 1970s and early 1980s. But they created their MBSs from pools of mortgages that were prime or conforming (meaning that they had had to meet clear and rigorous lending standards), and that were, typically, similar to one another (contracted for the same number of years, at same interest rate, and so on). Their bonds therefore constituted a fairly low risk, standardized, and transparent product----"plain vanilla" in the jargon—and could, for that reason, take their place in the security markets more or less easily and straightforwardly.

By contrast, in the new subprime era, investment banks created MBSs from pools of non-conforming mortgages that were, by their very nature, heterogeneous and risky, so had to be evaluated by ratings agencies, one-by-one, before they could be marketed. Moreover, if their MBSs were to secure the triple-A or double-A rating that they legally had to have if insurance companies, pension funds, and other such regulated institutions were to hold them in more than minimal quantities, they required "credit enhancement" to reduce their risk. Credit enhancement was most commonly accomplished by "structuring" the subprime loan pool--i.e. carving it up into tranches that provided like any other bond their own cash flow, but which were arranged hierarchically, so that the senior tranches would be paid first, the mezzanine tranches paid next (and only after the senior tranches had been fully paid), and the equity tranches last (and not unless and until the tranches above them received their returns). Each tranche was thus backed not by specific loans, but by a set of rules governing cash flows from the pool of loans, which determined that senior tranches would continue to receive their return up until the point that the tranches subordinate to them had defaulted. So senior tranches secured an extra cushion, and resulting reduction in their risk that corresponded to the proportion of the principal of the pool attributed to the lower tranches, and naturally received a lower rate of return than the subordinate tranches. Equity tranches, by the same token, were deprived of even the normal cushion, and offered an extra-high rate of return because of their correspondingly increased riskiness. It was by virtue of the senior/subordinate structure that senior pieces were able to secure investment grade status from the credit rating agencies and thus made attractive to risk averse, often regulated, investors like pension funds and insurance companies, even though their underlying collateral, non-conforming debt, was far from it, and that equity pieces were made attractive to investors, like hedge funds, who were seeking elevated profits by taking elevated risks. It cannot be overstressed that each "collateralized mortgage obligation" (CMO) was different from the next, structured to meet the specific demands of the diverse set of investors purchasing the cash flows from its various pieces, and sold one-by-one over the counter. For this reason, there could be no market in CMOs of the highly liquid sort that had previously been constituted by the MBSs created by the GSEs, and it was difficult to value them, to say the least.[30]

The answer therefore, at least in formal terms, to the question of how ever growing numbers of ever more problematic subprime and Alt-A borrowers could secure mortgage loans is that mortgage lender-originators believed that they could count on immediately selling them on to investment bankers for securitization. The latter believed, in turn, that they could find a market for securities backed by those same dubious mortgages, because they could cater to the differing tolerance/preference for risk of investors on a global scale, especially by way of their capacity to mitigate risk on senior tranches through the structure of collateralized loan obligations. The benefit for the financial system as a whole of this way of doing things was supposed to be to prevent the concentration of risk in the hands of individual institutions--notably commercial banks--and to disperse it far and wide among millions of separated and disparate investors. No

[30] For the basics concerning non-conforming mortgages, securitization, mortgage backed securities, and CMOs, see, eg., Faten Sabry and Thomas Chopflocher, "The Subprime Meltdown. A Primer," 21 June 2007, pp.4-7, NERA Economic Consulting, www.nera.com; Adam B. Ashcraft and Til Scheuerman, "Understanding the Securization of Subprime Mortgage Credit," Federal Reserve Bank of New York , Staff Report no. 318, March 2008, New York Federal Reserve web site; Kiff and Mills, "Money for Nothing and Checks for Free"; Zoltan Poszar, "U.S. Chartbook: Bank Balance Sheets Tested," *DismalScientist* (Moody's), 21 October 2007. It should be mentioned that investment banks might further enhance the credit of CMO senior tranches by including a higher level of principal than was strictly necessary to pay the interest on the bond (over-collateralization) and/or by directly insuring them by purchasing credit default swaps (CDSs) for them.

less an authority, and cheerleader for the financial sector, than Fed chair Alan Greenspan found in the new system of "credit risk transfer" the emergence of still another new paradigm, this one depending on "derivatives and the technologies that spawned them." With the "new paradigm of active credit management," said Greenspan, "concentrations of risk are more readily identified, and when such concentrations exceed the risk appetites of intermediaries, derivatives [like CMOs and CDSs] can be employed to transfer the risk to other entities. The result, according to Greenspan, was that "not only have individual financial institutions become less vulnerable to shocks from underlying risk factors, but also the financial system as a whole has become more resilient."[31]

Nevertheless, although the securitization of non-conforming mortgages and the structuring of the mortgage backed securities thus created by way of CMOs provided the indispensable pre-condition for the sale of non-conforming mortgages on a massive global scale, to invoke these processes to explain the expansion of non-conforming lending is merely to push the question back a step. This is because, at every point in the originate to distribute daisy chain, there were all too obvious problems of "misaligned incentives" and insufficient information--meaning that, at each step in the process, sellers lacked the motivation to fully inform buyers of the character and value of the goods they were selling, while buyers often lacked the capacity to sufficiently inform themselves about the goods they were buying, not least because sellers themselves often lacked that capacity themselves. The priority of non-conforming borrowers was to win approval of their loan applications, so they had little reason to bring to the attention of lenders their own weaknesses as borrowers. The priority of originators of non-conforming loans was to sell as many mortgages as possible so as to maximize fees. They therefore had little reason to look into the questionable character of the mortgages they were passing on to investment banks, and would in any case have had found it difficult to do so, in view of their lack of direct knowledge of either the borrowers or the properties and their total reliance on computerized credit scores. The priority of investment banks was to maximize sales of MBSs and CMOs so as to maximize their commissions. They therefore had little so reason to probe too deeply into the quality of the mortgages that backed the securities that they were selling to investors, and would, in any case, have found it hard to do so, in view of the enormous numbers of these mortgages and limited information that they received from the originators about each of them. Perhaps most egregious of all, the agencies that provided the ratings of the mortgage-backed instruments, ostensibly so that investors that contemplated buying them could properly evaluate them, were paid for this service by the same investment banks that sold them. They therefore had every incentive to provide them with the double-A or triple-A rating required by their employers, whatever the actual quality of the security, and would, in any case, have had insufficient information to properly assess them because, no more than the original lenders and investment banks, could they secure the necessary knowledge of the underlying mortgages and borrowers. Most directly to the point, they had little motivation to concern themselves too deeply with the broader assumptions they had to make in offering an evaluation of mortgage backed securities,

[31] "Banking: Remarks by Alan Greenspan at the American Bankers Association Annual Convention." 5 October 2004, Federal Reserve website.

and, as we now know, based their models on computerized credit scores, which were ineffective predictors of mortgage performance in the low-interest rate environment, as well as on the premise that the future would be like the recent past and on the expectation that there would be a continuation of the prior 50-year experience of home price appreciation. This was so despite the fact that, from the later 1990s, real house prices rose for the first time during the postwar period and nominal house price increase was entirely unprecedented. As the global ratings agency Fitch admitted, if prices were to decline by 1 percent to 2 percent for an extended period of time, their model would break down completely and impair tranches as high as double-A or triple-A. The structure of the originate and distribute system, the incentives it created and the knowledge it prevented, thus virtually guaranteed that MBSs/CMOs would, from the very start, be over-valued and their risk under-stated--and increasingly so. "Buyer beware" was clearly the order of the day and investors who were unaware were stepping into quicksand.[32]

Still and all, the market for MBSs and CMOs was hardly at all constituted by retail investors, let alone the sort of day traders who came to populate the market for equities in the last phase of the stock market bubble. On the contrary, it was mainly made up of highly-paid and presumably well-trained professionals representing giant institutions and managing billions of dollars whose very job it was to assess the quality of assets such as these and who possessed the best information that money could buy. These agents could not but have been aware of the multiple problems potentially lurking in the securities with which they were dealing. To understand the bubble in subprime lending, it is therefore necessary to comprehend what could have induced these ultimate investors, professional asset managers in virtually every case, to buy securities backed by non-conforming loans in such titanic quantities, *despite* their self-evidently questionable character.[33] This is the ultimate conundrum, and it can only be resolved by reference to the *other* bubble that had been expanding alongside the housing bubble since 2001 and simultaneously fostered by the Fed—that is, the boom in the broader market for credit of which the mortgage market was only a part. The subprime lending bubble emerged seamlessly from the expansion of the credit market bubble, and its chronology, magnitude, and ultimate collapse must be understood as a direct expression of the dynamics of that broader bubble.

The Fed's succession of interest rate reductions between January 2001 and June 2003 brought about a deep decline in the rates at which banks could borrow from one

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[32] For fuller analyses of the incentive and information problems in the originate to distribute model, and the systematic over-valuation of securities backed by non-conforming mortgages, see, eg., Jan Kregel, "Minsky's Cushions of Safety. Systemic Risk and the Crisis in the U.S. Subprime Mortgage Market," The Levy Economics Institute, Public Policy Brief number 93, 2008, to which I am much indebted, as well as Ashcraft and Scheuerman, "Understanding the Securitization of Subprime Mortgage Credit" and Kiff and Mills, "Money for Nothing and Checks for Free." The inadequacy of FICO scores in the current period was explained by HSBC Finance Director Douglas Flint, as reported by the *Wall Street Journal*, 8 February 2007. The ratings agencies premises were spelled out by the financial analyst Robert L. Rodriguez, in a speech before the CFA Society of Chicago on 28 June 2007. Kregel, pp.26-28, footnotes 8 and 12.

[33] See, especially, Fisher, "What Happened to Risk Dispersion?" for an especially clear and insightful posing of the problem.

another, and short term rates more generally. It opened the way for banks and financiers more generally to make virtually effortless profits in the traditional manner, by borrowing short term cheap and lending long term dear. Financiers thus scoured the world to buy longer term bonds (or direct loans) that offered the highest possible yields and funded these purchases by taking on short term loans at lower rates of interest. In this way, they hoped to profit not only on the disparity between long and short term yields, but also on the increase over time of the market value of their bonds (or direct loans). That appreciation would result from what they expected would be a further and continuing decline in the yield on the same kind of bonds that they had purchased, as other financial investors across the globe sought to profit in the same manner.

The results of the soaring demand for bonds were predictable. At first, banks in particular and financiers in general secured enormous profits, both by exploiting the initially large gap between the rates at which they could borrow and those at which they could lend and by profiting from the increasing market value of their securities over time. But, as they did, the yield on one asset after another plunged, and its spread—the difference between the rate of interest it paid and that paid by very low risk securities, particularly US Treasury bonds—narrowed dramatically. Yet the implications of the caving in of spreads were portentous. As yields declined across the board, investors of every sort were, in effect, required to assume ever greater risk to secure the same return. Nothing had changed to increase the likelihood that particular, individual debtors could and would honor their obligations; nevertheless, thanks to the generalized increase in the demand for their debt, the interest rate that they were obliged to pay inexorably declined, bringing down investors' rate of profit. A credit market bubble was inflating, and the dynamics were little different from those of the equity market bubble of the 1990s.

A turning point was reached sometime around spring 2003,[34] after which juncture borrowing became ever easier and securing decent returns on financial investments ever more difficult. In 2003, real investment by non-financial corporations in new plant and equipment remained more than 16 per cent lower than in 2000, and even by 2005 was still almost 5 per below its level of five years previously. As a consequence, the demand from business for loans plunged. After having averaged almost 4 per cent of GDP between in the years 1997-2000, net borrowing by non-financial corporations averaged just 1 per cent of GDP in the years 2001-2004, as businesses not only reduced their borrowing but paid down the enormous debts they had accrued during the years of the New Economy bubble. The pattern was the same throughout the whole of the advanced capitalist world.

Meanwhile, thanks mostly to East Asian governments, the supply of credit zoomed. In 2001-2003, as US economic authorities applied their stimulus—huge increases in military spending and tax cuts for the rich, as well as sharply reduced short term rates--and the economy began slowly to emerge from recession, the US federal and current account deficits once again ascended, the dollar threatened to buckle, and interest rates looked ready to take off. But, as they had during the first half of the 1980s under

[34] IMF, *Global Financial Stability Report*, Washington, D.C., September 2005, p.1.

not dissimilar similar circumstances, Japanese economic authorities saved the day by unleashing an unprecedented wave of purchases of dollar-denominated assets. Between the start of 2003 and the first quarter of 2004, with their activity reaching a peak around June 2003, Japan's monetary authorities created 35 trillion yen, equivalent to roughly one percent of world GDP, and used it to buy approximately $320 billion of US government bonds and GSE debt, enough to cover 77 per cent of the US budget deficit during fiscal year 2004. [35] Nor were the Japanese alone. Above all China, but also Korea, Taiwan, and other East Asian governments, were in the same period buying ever greater quantities of dollars. In 2003 and 2004, East Asian governments taken together increased their dollar reserves by $465 billion and $507 billion, respectively, enough to cover 90 per cent and 75 per cent, respectively, of the US current account deficit in those years, as well as the great bulk of the Bush administration's deficits.[36] This was more than sufficient to keep the long term rate of interest from ascending and the dollar from plunging.

In the context of the continuing decline of real long term interest rates, the Fed's historic easing of short term borrowing costs was like throwing a match on dry tinder. When Greenspan and company decided not only to reduce the Federal Funds rate to one per cent in June 2003 and to hold it there for almost a year, but also to bring it back up at just a quarter of a percentage point at a time, it left the inflation-adjusted cost of short term borrowing below zero for two full years. In effect, banks could access as much money as they wanted free of charge, with virtually no risk, especially since Greenspan alerted the markets in advance to every Fed move. It was no wonder that they opened the floodgates of credit. Nor was the collapse in the cost of borrowing, the ensuing buildup of liquidity, and the resulting upswing in the demand for financial assets confined to the US. It quickly became a global phenomenon.

With the US Federal Funds rate declining relative to the rate offered by the European Central Bank (ECB), the euro tended to rise vis a vis the dollar. In order to hold down its currency to defend the competitiveness of its industries, the ECB saw no alternative but to bring down its own short term rates toward the American level, and this detonated across the Continent the same sort of credit market bubbles as were expanding in the US--and in some countries like the UK and Spain the same sort of housing bubbles. Indeed, according to *The Economist,* between 2000 and 2005, the total value of residential property in developed economies rose by more than $30, an increase equivalent to 100 per cent of those countries' combined GDPs. Not only did this dwarf any previous housing price run-up, it was twenty five per cent larger than the global stock market bubble of the last five years of the 1990s, in which values rose by a mere 80 per cent of GDP. "In other words," the journal concluded, "it looks like the biggest bubble in history." Meanwhile, in order make their enormous purchases of dollars, East Asian governments printed vast amounts of their own currencies, unleashing in the process a

[35] Richard Duncan, "How Japan Financed Global Reflation," *Prudent Bear.com,* 17 May 2005.

[36] Nouriel Roubini and Brad Setser, "Will the Bretton Woods 2 Regime Unravel Soon? The Risk of Hard Landing in 2005-2006," New York University unpublished manuscript, pp. 1, 5-10, available at Roubini Global Macro website.

flood of easy credit and their own asset price run-ups. Soon the global supply of dollars was ascending at its fastest pace in three decades, and asset price bubbles became the norm world-wide. Even when the Alan Greenspan finally began his slow but steady elevation of its short term interest rate--which would raise the Federal Funds rate from 1per cent in July 2004 to 5.25 per cent in July 2006--the Bank of Japan sustained the worldwide flood of liquidity by continuing its own regime of super-low interest rates to prop up its lagging economy. Financiers poured into Japan to borrow yen short-term in order to lend long term across the world, and the global credit geyser continued to gush forth.[37]

The problem was, of course, that the emergence of unusually easy conditions for borrowing found its counterpart in the onset of unusually difficult conditions for financial profit making, as yields on longer term bonds declined and spreads on what had hitherto been regarded as risky assets were compressed. Tellingly, even as the expansion gained momentum, real yields (adjusted by the GDP deflator) on the bellwether ten-year treasury bond continued to descend, nose-diving from 2.91 per cent (on average) for 2002, to 1.91 per cent for 2003, to 1.37 per cent for 2004, and 1.09 per cent for 2005. This was a development unprecedented in the postwar epoch, and posed an unparalleled challenge for financial investors. Pension funds and insurance companies faced fixed obligations usually contracted in an earlier era of higher yields, but financed their investments with funds committed to them for the long term and, as regulated institutions, were limited in the assets in which they were allowed to invest, while prevented from using leverage to jack up their returns. In the words of two veteran financial analysts, they found themselves "needing to hit 8 per cent returns in a 4 per cent world."[38] Unregulated and risk-loving hedge funds, as well as investment banks, could, for their part, exploit the low cost of short term borrowing, but they still found themselves increasingly squeezed, because longer term returns on every asset were declining and the Federal Funds rate could be expected only to rise.

It was the search for better returns on financial assets, growing ever more desperate from the middle of 2003 onwards, that led financial investors to turn to bonds backed by non-conforming mortgages, and it was the resulting acceleration in demand for non-conforming mortgages for the purpose of securitization that motivated mortgage lenders to vastly step up their origination of subprime and Alt-A loans, even despite their questionable character. In 2001-2002, due to the New Economy bust and ensuing wave of corporate bankruptcies, lending to corporations offered high rates of interest, so investment banks had initially used pools of corporate bonds as collateral to create asset-backed securities and structured collateralized loan obligations (CLOs). But during 2003, as the credit market bubble blew up, the spreads on corporate bonds plunged, and banks increasingly turned to non-conforming mortgages for corporate bonds as the collateral

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[37] "The Global Housing Boom'; Jane D'Arista, "Broken Systems: Agendas for Financial and Monetary Reform," Presented at the 17th Annual Hyman Minsky Conference, 17 April 2008; "Still Gushing Forth," *The Economist*, 3 February 2006.

[38] Marc Summerlin and Loren M. Katzovitz, "Collateralized Debt Obligations: Who's to blame when the market blows up?" *The International Economy,* Summer 2007.

behind their asset-backed securities. The logic was straightforward, but all too superficial. The rate of interest on the underlying subprime and Alt-A mortgage loans was relatively quite high—usually about two percentage points higher than on prime mortgages. So, with the indispensable help of the ratings agencies, investment banks were able to provide investors with senior tranches of mortgage-backed securities that enjoyed triple-A or double-A ratings but nonetheless offered apparently unmatched yields, as well as unrated equity tranches of mortgage-backed securities that generated super-high returns. The issuance of securities backed by subprime and Alt-A mortgages, increased by 50 per cent in 2003, compared to 2002, then doubled by value in 2004 and increased by a further 50 per cent more in 2005.[39] As the flip side of the coin, the securitized share of the subprime mortgage market and thus the mortgage market in general surged dramatically. After having remained stable at about 31-32 per cent from 1997 to 2002, and creeping up to 36 per cent in 2003, the share of mortgages re-sold within one year of their origination leapt to 48 per cent in 2004 and 57 per cent in 2005. It was largely because mortgage lenders could suddenly bank on selling for the purpose of securitization their non-conforming loans that subprime and Alt-A mortgage originations surged as they did in 2003-2004, breaking new records every year through 2006.[40]

There was, of course, a catch: mortgage backed securities could offer returns that were relatively elevated only because their risk was also relatively elevated. As the hedge fund manager David Einhorn would later point out, the ratings agencies did their best to obscure this fact by giving the same nominal A rating to municipal bonds, corporate bonds, and collateralized debt obligations, despite the fact that their 10 year default rates were vastly divergent--1 per cent, 1.8 per cent, and 2.7 per cent, respectively.[41] These numbers were of course available to anyone who bothered to check, but money managers, under pressure from regulated institutions or simply greedy ill-informed clients to secure higher risk-adjusted returns than the market could offer, by and large looked the other way. Such were the dynamics of the credit market bubble that soaring speculation in securities backed by non-conforming mortgages was able to drive the explosion in the origination of non-conforming mortgages, even as their quality inexorably declined, and, in that way, keep housing prices rising, household borrowing and consumption growing, and the economy expanding.

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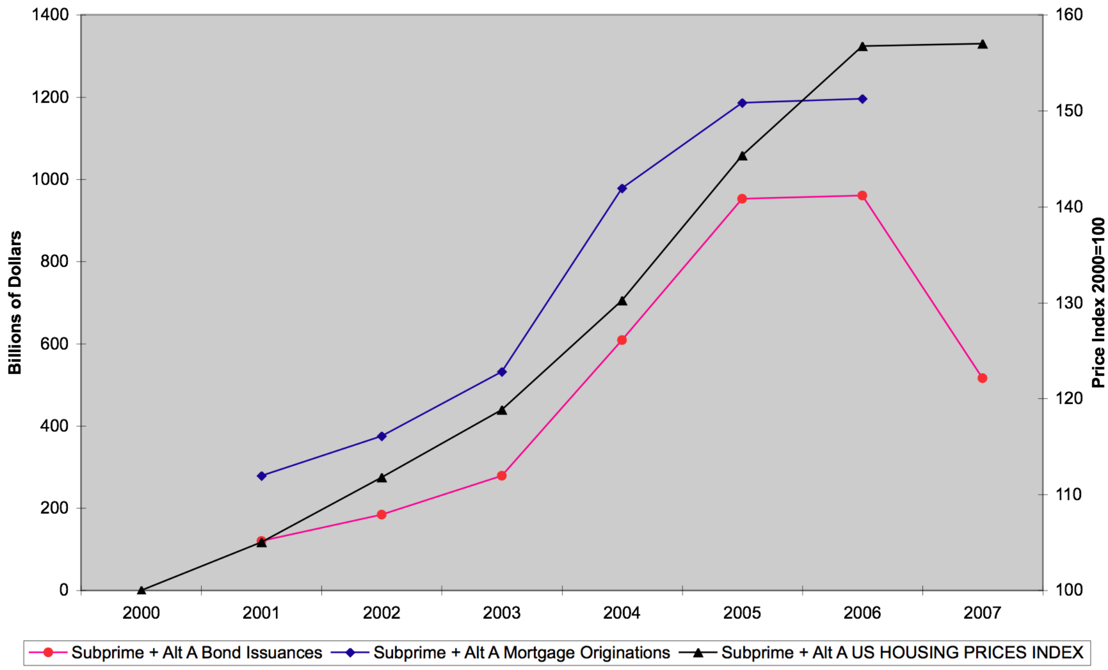
[39] Zoltan Pozsar, “The Rise and Fall of the Shadow Banking System,” *Regional Financial Review* (Moody’s Economy.com), July 2008, pp.13-15. I wish to thank Zoltan Pozsar of Moody’s Economy.com for the figures on annual issuance of sub-prime and Alt-A mortgage backed securities, as well as for many illuminating discussions of the financial crisis in general and the shadow banking system in particular.

[40] Mian and Sufi, “Consequences of Mortgage Credit Expansion,” Figure 3. I with to express my gratitude to Atif Mian and Amir Sufi for their generosity in providing me with figures on the proportion of mortgage originations that were securitized. Cf. Yuliya Demyanyk and Otto van Hemert, “Understanding the Subprime Mortgage Crisis,” Federal Bank of St. Louis, 29 February 2008, pp. 3-4, 28-29, as well as Kiff and Mills, “Money for Nothing and Checks for Free, ” p.6.

[41] David Einhorn, “Prepared Remarks,” 17th Annual Graham and Dodd Breakfast, Helbrunn Center for Graham & Dodd Investing, 19 October 2007 (on line). .

Non-conforming Mortgage Originations, Mortgage-Backed Security Issuance, and Housing Prices, 2000-2007



In view of extraordinary returns that they could apparently offer, investors could not get enough MBSs/CMOs, and, for that reason, neither could investment banks. Soon, in order to avoid the fees that mortgage originators charged them for mortgage loans, investment banks were themselves moving into the mortgage originating business, buying up wholesale lenders and finance companies. By 2006, according to Federal Reserve data, Wall Street banks had seized a commanding share—60 per cent—of the residential financing market, so could themselves provide a significant fraction of the subprime and Alt-A mortgages that they required for their MBSs/CMOs.[42] With investment banks increasingly in charge of mortgage lending, mortgage origination came to be driven to an even greater extent by the demand for MBSs/CDOs, rather than analyses of the credit-worthiness of the borrowers by the originators on-the-spot who were actually selling the loans.[43]

Investment banks and investors had initially turned to MBSs/CMOs to counter the generalized trend toward declining yields. But thanks to the sustained demand for them, these securities, too, were soon subjected to the same bubble-driven stresses as were pressing down on the credit markets as a whole. All else equal, interest rates on subprime mortgages compared to prime mortgages should have risen, as the insatiable demand for the former to collateralize MBSs/CMOs drove the disastrous decline in lending standards

[42] Gretchen Morgenson, "Crisis Looms in Mortgages," *New York Times,* 11 March 2007.

[43] Pozsar, "Shadow Banking System," p.15. See also Mian and Sufi, "Consequences of Mortgage Credit Expansion" and Demyanyk and Hemert, "Understanding the Subprime Mortgage Crisis."

previously noted. From 2003-4 onwards, only way to sell more mortgages was thus to accept ever less qualified borrowers on ever less favorable terms for lenders, and, from 2001 through 2006, the quality of sub-prime loans deteriorated markedly according to every indicator. Loan to value ratios fell; debt to income ratios declined; and the proportion without documentation soared. Nevertheless, interest rates on non-conforming mortgages, as well as the spread between sub-prime and prime loans, *fell* steadily throughout most of the period, inexorably determining a corresponding decline in the yields on the MBSs/CMOs that referenced them. As with most every other financial instruments, investors in MBSs/CMOs were having to pay ever more for ever less. Of course, once they had purchased their MBSs/CMOs, investors saw their value swell spectacularly as (long as) yields continued to decline and housing prices to rise. The possibility of realizing ever greater capital gains as the bubble expanded was undoubtedly what sustained the interest of many investors in buying and holding these securities, despite their declining rates of return. The dynamics were not qualitatively different from those that drove the high-tech dot-com stock market run-up in the last years of the 1990s.[44]

To continue to market securities that offered at least the appearance of extra-high profits in the face of declining rates of return on lending more generally, investment banks could not resist constructing ever more complex securities that could not but carry ever higher risk. Such is the nature of "financial innovation."[45] What this primarily came to entail was an ongoing process of *re*-securitizing, in which securities derived from less sellable, lower rated tranches were pooled together and restructured in the familiar three-tiered fashion, so that, with the help again of the ratings agencies, the pieces derived from the senior tier could secure triple A or double A ratings and still provide relatively high yields, while those derived from the unrated equity tier offered super-high profits. Investment banks thus collateralized debt obligations (CDOs) that were backed (for the most part) by unsold mezzanine pieces left-over from collateralized mortgage obligations CMOs, and, as the bubble got even bigger and yields still more compressed, they created "collateralized debt obligations-*squared*" that were backed (for the most part) by unsold mezzanine pieces derived from collateralized debt obligations. At the very top of the of the securitization bubble, some investment banks even issued CDOs-*cubed*, which were CDOs of CDOs of CDOs, constituted as before by re-cycled trances that were insufficiently attractive to be sold on a standalone basis so had to be re-structured, generally so as to provide the collateral for the newly-constituted senior and equity tranches of higher-power CDOs. Finally, when investors began to demand greater mitigation of risk for the increasingly chancy products they wished to purchase, investment banks did not hesitate to take out insurance on the securities they produced,

[44] Demyanyk and Hemert, "Understanding the Subprime Mortgage Crisis," p.7, Table 1, and p.21, Figure 7. The interest rate on subprime mortgages declined from 9.4 per cent in 2001 to 6.6 per cent in 2005.

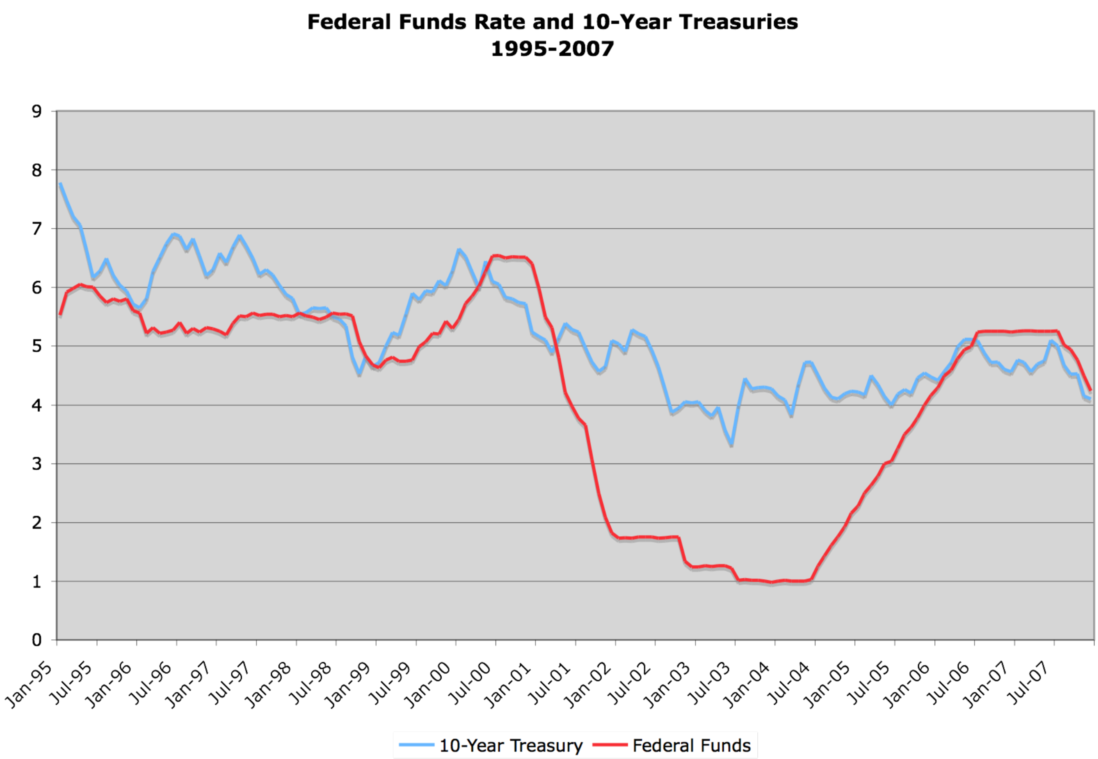
[45] In the words of John Kenneth Galbraith, every new financial instrument "is, without exception, a small variation on an established design, one that owes its distinctive character to the ... brevity of financial memory." Quoted in John Plender, "Financial Innovation: Blessing or Curse?" *Financial Times*, 7 January 2009.

"wrapping" (in the jargon) their CDOs and CDOs squared in what turned out to be absurdly-underpriced credit default swaps. In these ways, ever higher but increasingly wobbly towers of structured credit were built upon the ever shakier foundations of increasingly suspect non-conforming mortgages.[46]

[46] Pozsar, "Shadow Banking System," pp.15-17.

SHADOW BANKING SYSTEM SUSTAINS CREDIT MARKET BUBBLE

The ultimate turn of the screw took place from 2005 onward. Over the course of that year, Alan Greenspan's interest raising campaign brought the Federal Funds rate ever higher, but, in the meantime, far from ascending in tandem, long term interest rates continued to decline and flattened out, thanks to the ongoing weakness of the economic expansion and the enormous purchases of dollars by the governments of East Asia and (increasingly) the oil exporters, not to mention the rising wave of speculation that had been nurtured by the cheap credit policies of the world's leading central banks. The bond market teetered on the edge of inversion for much of the following period, and with the long term rate thus threatening to fall below the short term rate, it became excruciatingly difficult for banks and other financiers to profit in the traditional manner by borrowing short cheap and lending long dear. To continue to make money in this forbidding environment, financial investors had essentially two choices--to take on even more risky assets and/or to ramp up the leverage on their investments—and they often took both routes simultaneously. Led, remarkably, by the country's greatest banks, they invested in ever greater quantities of ever less liquid MBSs/CDOs and financed their activity by borrowing short term in the asset backed commercial paper (ABCP) market, which came into its own in response to their stepped-up demands for funds. In this way, they brought into being "the shadow banking system, " making possible the last convulsive phase of the credit market cum non-conforming mortgage bubble.



In the early days of CMOs/CDOs, investment banks had generally first lined up investors for their structured finance products and, only after having done so, had purchased the requisite collateral—non-conforming mortgages and securities backed by them. But, as the demand for these securities continued to escalate, they did not shrink from acquiring in advance ever greater quantities of mortgage loans, to make sure they had sufficient raw material for future deals, which they held, off balance sheet, in huge financial warehouses. These "conduits," as the latter were called, operated independently of the banks that set them up, financing themselves entirely by means of short-term borrowing, effectively infinite leverage. Conduits were intended to hold the mortgages (and other receivables) in their pipeline only temporarily, until the banks got around to using them as collateral for additional securities. Yet, at their peak in 2006-2007, conduits possessed a stunning $1.4 trillion in assets. The investment banks could only have built up such a mountain of assets on a two-fold assumption—not only that they could sell them on to investors, but that their value would in the meantime increase, or at least not decline. They were, in other words, betting on the bubble. The irony could hardly have been greater: the ostensible purpose of securitization was to disperse risk, but, as the credit market run-up continued, its actual result was massively to concentrate it--and not only in conduits.[47]

Despite all the talk about "originate and distribute," the nation's leading banks simply could not resist investing in and holding on to the dubious products that they were supposed to be passing on to other investors. As late as the start of 2003, commercial banks had barely $1 trillion in residential real estate assets on their books, including both whole loans and securities, composing about a 26 per cent of their assets; but, by the start of 2007, these numbers had soared to just about $2 trillion and just under 36 per cent, respectively. Between 2000 and 2007, mortgages on commercial banks balance sheets increased by 50 per cent, mortgage backed securities doubled, and home equity lines tripled. Nor were they alone. By the first half of 2007, banks, presumably investment banks for the most part, held an astonishing *60 per cent* by value of all CDO senior tranches outstanding. They could not but have believed they were quite a good investment. The enthusiasm was not confined to the US. Over the course of the business cycle, mortgage backed debt mushroomed into the largest part of the global fixed income (bond) market, so that, by the start of 2007, investors throughout the rest of the world owned mortgage backed securities amounting to an estimated $1.6 trillion, or 14 per cent of their total US financial holdings, up from $400 billion, or 7 per cent of the total, in 2000. Much as in the stock market run-up of the later 1990s, skyrocketing investment in US financial assets by the rest of the world was indispensable in fueling the credit market mania and in that way the housing bubble.[48]

Still, that was far from the whole story. In order to increase their own holdings of highly risky but for the time being highly profitable structured financial instruments collateralized by mortgage backed securities, the US's great money center banks were simultaneously establishing "structured investment vehicles"(SIVs), which, in the same way as conduits, functioned autonomously, financed themselves by borrowing short term

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[47] Pozsar, "Shadow Banking System," p.16.

[48] Mark A. Zandi, "Housing Crash," *Regional Financial Review,* September 2007, p.23, Chart 13; Zandi, "Subprime Q&A," p.21, Chart 14**;** Pozsar, "Shadow Banking System," p.16.

from the asset backed commercial paper market, and were highly leveraged, taking out fifteen dollars in debt for every dollar of equity. SIVs, also like conduits, operated off balance sheet, under the radar screen of most regulators and even most investors, in order to avoid potentially restrictive regulations and sustain the parent banks' reputations as prudent investors. Much as did traditional banks, SIVs borrowed cheap short term in order to lend/invest dear long term; there, however, the resemblance ended. Unlike commercial banks, they could not depend for their finance on a steady stream of deposits insured by FDIC, nor secure access to the Fed's discount window when they got into trouble. They had no protection from the sort of run on the bank that a multiplicity of depositors, deposit insurance, and the Fed's backing were designed to prevent and counteract. Operating on razor thin margins, they were thus left profoundly vulnerable, not just to a fall in price of the ever more dubious non-conforming mortgages that underpinned their securities but also to a rise in the cost of short term borrowing-- neither of which eventuality they had any reason to consider at all unlikely. Even so, by 2006-2007, SIVs owned $400 billion worth of assets, meaning that the total assets made up by mortgages and mortgage backed securities *held off balance sheet* by the country's leading banks, *over and above their on balance sheet holdings,* was roughly $1.8 trillion.[49]

Paradoxically, then, but in keeping with the stresses and inducements of the market mania, the turn to all-out, debt-financed speculative investment by the US's greatest financial institutions played a central and indispensable role in keeping the bubble in securities backed by non-conforming mortgages expanding, and in that way the bubble in non-conforming mortgages themselves expanding, even as the quality of those mortgages plunged to hitherto unplumbed depths. In the period from the start of 2005 through the middle of 2007, the issuance of securities backed by subprime and Alt-A mortgages leaped to an annual average of just under $1 trillion. Over the same two and a half years, the market in asset-backed commercial paper to which financial institutions increasingly turned to fund their on and off-balance sheet purchases of mortgage backed securities, having fluctuated in a narrow range between $600 and $700 billion from the start of 2001 through the end of 2004, exploded upward to $1.2 trillion. Meanwhile, during the same interval, an estimated $1.35 trillion worth of non-conforming mortgages were originated with less than 10 per cent equity (or more than 90 per cent debt), a large proportion of which were hybrids, contracted at teaser rates, which would automatically increase by very major two per cent within two years.[50] No more, apparently, than speculators in high tech equities during the last years of the stock market run-up could the nation's leading banks resist the attraction of the ever greater capital gains that continued to be offered by mortgage backed securities so long as housing prices continued to rise. But no less than the asset price ascent of 1998-2000, that of 2005-2007 was clearly a bubble. Simply put, the financial markets, and most especially their leading players,

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[49] Pozsar, "Shadow Banking System," p.16

[50] Pozsar, "Shadow Banking System," p.17-19 and especially Chart 5; Zandi, "Housing Crash," p.23. To clarify the figures on borrowing by way of the asset backed commercial paper market, it must be noted that, during these years, institutions turned to the "shadow banking system," specifically short-term finance by way of the asset-backed commercial paper market, not just to purchase mortgage backed securities, but a number of other financial instruments. All told, $6 trillion worth of credit was intermediated through the shadow banking system as of the second quarter of 2007, according to JP Morgan estimates, compared with $10 trillion intermediated through regulated banks funded primarily by deposits. Pozsar, p.17.

sustained by way of rampant gambling the housing run-up that sustained the expansion during its final couple of years, even as the material foundations for that run-up in housing, and thus the value of the securities in play, visibly disintegrated, opening the way to an asset market crash that could not help but have vast consequences for the real economy.[51]

In just the same way, then, as it had from 1998 onwards, the US central bank from 2003 onwards forcefully intervened to rescue an economic recovery that was running out of steam, by nurturing historic waves of speculation and asset price run-ups this time in housing, non-conforming mortgages, and securities collateralized by non-conforming mortgages. The crucial unstated premise of this intervention, as from 1998, was that the underlying economy, the so-called fundamentals, were sufficiently strong that the growth of borrowing and consumer demand made possible by the bubbles would eventually detonate a self-sustaining expansion powered by rising corporate investment and job creation. In that eventuality, a re-dynamized real economy would generate the rising demand to drive itself forward and, in the process, to support the continuing ascent of housing prices. Everything depended, then, on the actual condition of the real economy.

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[51] "Were problems in the subprime mortgage market apparent before the actual crisis of 2007? Our answer is yes, at least by the end of 2005. Using only data available at the end of 2005, we show that the monotonic degradation of the subprime market was already apparent. Loan quality had been worsening for five consecutive years at that point. Rapid appreciation in housing prices masked the deterioration in the subprime mortgage market and thus the true riskiness of subprime mortgage loans. When housing prices stopped climbing the risk became apparent." Demyanyk and Hemert, "Understanding the Subprime Mortgage Crisis," p.29. See also "Global Housing Boom."

RECORD BREAKING STIMULUS, HISTORY MAKING WEAKNESS

Only in the second half of 2003 and 2004 did the US economy finally accelerate somewhat, kicked forward by tax rebates and Iraq war spending increases, and, most notably, the stepped up stimulus from record household borrowing made possible by an expanding housing price bubble that had, in this same interval, gained new life from skyrocketing subprime mortgage borrowing, itself driven upward by the broader bubble in the credit markets. Not until this juncture did US real imports leap upwards and enable world exports and world GDP to accelerate. It was once again the take off of US debt-driven demand, very much helped along on this occasion by ultra easy credit and rising asset prices on a global scale, that drove the world economy from recession to expansion.

Nevertheless, already by 2004 US GDP growth had reached its highest point for the expansion—at a mere 3.6 per cent, the lowest such peak for any postwar business cycle--and henceforth declined precipitously. During the first five years of the business cycle, between 2000 and 2005, it averaged just 2.3 per cent, markedly lower than in any other comparable period during the postwar epoch. Of this increase, moreover, the bubbling housing sector, by way of its effect in raising expenditures on personal consumption and on home construction and home furnishings, accounted, on average, for no less than 0.7 percentage points per year, or about *30 percent of total GDP increase* during the interval. It also accounted for at least *50 per cent of all jobs* created in these years.[52] Had it not been for housing, the average annual increase of GDP between 2000 and 2005 would have been a miniscule 1.6 per cent-- even despite the additional shot in the arm provided by soaring federal budget deficits in this period--and employment would have been strongly in the negative. In the same five year interval, the increase of both non-residential investment and net exports was *less than zero*, so that personal consumption and residential investment were left to drive the economy virtually by themselves. For the business cycle as a whole (2001-2007 inclusive), not only was GDP increase by far the worst since 1945, but so was the increase of plant, equipment, and software, of employment, of total real compensation (jobs times real wages), and of net exports. Despite the fact that total borrowing and debt outstanding as a percentage of GDP reached unprecedented levels, the US economy performed markedly worse than during any comparable interval in the postwar era. GDP growth fell in 2005 and again in 2006, and by 2007, the economy was sliding into recession. What had gone wrong?

In unleashing a second round of asset price Keynesianism, the Fed confronted far less promising prospects than with round one. During the 1990s, by fostering the equity price run-up, the Fed had enabled corporations to undertake a powerful wave of investment, productivity, and employment growth and to drive a powerful expansion, even if one with clay feet and a short half-life. But, in the wake of the enormous accumulation of over-capacity, the deep decline in profitability, and the huge build-up of

[52] The calculation of the contribution of housing to GDP growth comes from *Economy.com* (Moody's), courtesy of Mark Zandi, to whom I wish to express my thanks. The estimate of housing's contribution to private sector employment growth comes from Merrill Lynch, reported in Bob Willis, "Existing Home Sales Rose 2.0%," *Bloomberg.com*, 26 August 2006.

non-financial corporate debt that resulted, not to mention the collapse of the stock market, the Fed had no hope of repeating that performance. Above all, the remarkable expansion of plant, equipment, and software that had made possible the significant (if often exaggerated) jump in productiveness of the New Economy era was not only a thing of the past, but had left the economy with a major overhang of superfluous productive power. Alan Greenspan and his colleagues were therefore obliged to rely on the wealth effect of rising housing prices, which did nothing for the economy except to transfer wealth to house owners from non-owners and open the way for the increase of current consumption at the expense of future consumption. Personal consumption plus investment in residences would have to drive the economy, while corporations prepared themselves to reassume responsibility for economic growth. Yet, while households played the part assigned to them, non-financial businesses refused to perform as the Fed had hoped.

Facing rates of profit that were at or near postwar lows at the start of the business cycle in March 2001, non-financial firms had little choice but to focus their efforts on restoring their rates of return. Yet, what businesses had to do to revive profitability was incompatible with what the economy required in order to expand. Confronting over-supplied markets and constricted surpluses, corporations were obliged to hold down investment and employment. To cut costs, they unleashed a vicious campaign of layoffs, speed up, and wage repression against their workers, so as ratchet up the rate of exploitation in aid of higher rates of return. They took advantage of the bubble-driven increase in consumption demand that the Fed had facilitated to raise capacity utilization so as, again, to raise their rates of profit, as well as to avoid the large-scale shedding of redundant means of production that would have been unavoidable in its absence. Finally, they sought to benefit from the depressed cost of borrowing and historic run-ups of asset prices, including eventually corporate equities, by allocating their profits in unprecedented proportions to the purchase of financial assets, not least their own shares, and used much of what that remained to fund dividend payouts to stockholders. The overall result was not only to restrict the rise of productiveness and to help stoke the epoch-making asset price bubbles, but, above all, to further limit the growth of aggregate demand and in that way reduce even further their own incentive to employ and invest, leaving the economy vulnerable to collapse when the bubbles deflated. In a sense, the impact of Greenspan's bubble-driven reflation was to mitigate the recession of 2001 by extending its effect throughout the business cycle, while postponing the shakeout of the economy needed to restore its dynamism and creating a crippling mountain of debt.

A manufacturing sector in crisis was at the heart of the problem. Plagued by the long term over-hang of excess capacity on a global scale, which had been made worse by the over-investment and mis-investment engendered by the wealth effect of the stock market bubble, and held back by a lack of competitiveness exacerbated by the over-valued dollar, not to mention increasingly powerful competition from East Asian producers, especially China, the manufacturing sector drove the economy into cyclical downturn and exerted powerful downward pressure on growth throughout the ensuing expansion. With their profit rates plumbing depths previously witnessed during the postwar epoch only at the time of the recessions of 1974-1975 and 1980-1982, manufacturers were obliged from 2001 onwards to hold back on capital accumulation and seek to cut costs in radical fashion. Throughout the whole of the ensuing business cycle, they continually shed employees, bringing about by 2007 an unprecedented loss of 3.3 million workers, or 20 per cent of the manufacturing labor force, and precluding any increase in private sector employment (measured in hours). They also managed to hold the growth of real compensation (wages plus benefits) per employee to 1.3 per cent, compared to 1.4 per cent between 1990 and 2000, with the consequence that, over the course of the business cycle, *total* real compensation in the manufacturing sector (number of employees times compensation), which had increased at an average annual rate of 1.05 per cent during the 1990s cycle, actually *declined* at an average annual rate of 1.9 per cent, exerting an enormous drag on the economy-wide growth of aggregate demand. During the same interval, manufacturing investment, which had increased at an average annual rate of 5 per cent during the 1990s business cycle, collapsed, *falling* at an average annual rate of 2 per cent per, with the consequence that the manufacturing capital stock (plant, equipment, and software) actually *contracted* by 2.5 per cent. The growth of manufacturing imports, meanwhile, outran manufacturing exports, making for still another subtraction from the growth of the sector and the entire economy. In view of the manufacturing sector's failure to grow, it is understandable that, despite the massive cost-cutting campaign undertaken by business, the manufacturing rate of profit for the business cycle averaged 14 per cent less than for that of the 1990s, and at its peak in 2007 remained 10 per cent below that of 1997.

The US economy was now paying the price for the system-wide build-up of superfluous manufacturing capacity, as well as the high dollar, and the cost was huge. From the early-mid-1980s to the mid-late 1990s, the revitalization of the US manufacturing sector, reliant on the low dollar, had laid the basis for the recovery of the US economy as a whole, by playing the central role in a major recovery of the profit rate. As late as 1995, profits of the manufacturing sector amounted to 42 per cent of total corporate profits and 51 per cent of non-financial corporate profits; by 2006, however, these figures had fallen to 30 per cent and 36 per cent, respectively. During the 1990s business cycle, the growth of manufacturing output had still accounted for 21 per cent of the total increase of GDP that took place. But during the cycle that ended in 2007, it was responsible for just 7 per cent. Had manufacturing been able to sustain its contribution to growth of the previous decade, the rate of economy-wide expansion would have been 15 per cent higher than it actually turned out to be.

The Bush administration's unswerving commitment to the free market, pro-finance, pro-globalization perspective initiated by Clinton-Rubin-Greenspan, as well as the asset price Keynesianism that the latter had also pioneered, placed out of court any possibility of a change in state policy, of political economy, that might have slowed the decline of US manufacturing, perpetuating the problems that had plagued the sector and indeed the US economy as a whole, from 1995-1997. During the years of the stock market bubble, investors from the rest of world had been willing to fund the US's gargantuan current account deficits, because they thought they would make fabulous profits by pouring money into the New Economy, both financial assets and direct investment. They had indeed played an indispensable role in keeping the stock market rising and real long term interest rates falling through the end of the century, while driving the currency ever higher. But, in the wake of the stock market plunge and recession of 2000-2002, interest in US assets by private investors around the globe quickly waned. In the years 1999-2001 inclusive, annual purchases of equities and direct investments in the US by the rest of the world averaged $142 billion and $286 billion dollars, respectively. But for 2002-2004 inclusive, the analogous figures were just $49.5 billion and $79.5 dollars, respectively. Thus, when, in the same interval, to reflate the economy, US economic authorities sharply reduced short term interest rates and vastly increased the federal budget deficit, they rendered US dollar denominated assets even less attractive than otherwise and risked a flight of capital that would push up long term interest rates, force down asset prices, and end up squelching the recovery, or worse. In fact, during 2002, a serious run on the dollar did begin to materialize and the real interest rate on 10-year treasurys rose. Nevertheless, as noted earlier, from the start of 2003 onwards, East Asian governments, led by Japan and China, countered the outflow of funds by making record-breaking purchases of dollar-denominated assets. Their intervention kept long term interest rates declining, asset prices rising, household borrowing expanding, and consumption growing, sustaining the Bush administration's hyper-expansionary policies and keeping the economy turning over. But, as before, the cost of US dependence on East Asian sovereign lending was enormous.

The same record breaking purchases of dollar denominated assets that saved the expansion could not but keep the dollar rising vis a vis East Asian currencies and US competitiveness falling vis a vis East Asian manufacturing. The commitment of US economic authorities to avoid recession in the short term could only sustain US economic weakness over the longer term. To put the same point in different terms, if US economic authorities wished to keep their reflation on track, they had to relinquish any thought of coercing by political means the East Asian governments to revalue their currencies, as they had Japan at the time of the Plaza Accord. There was much talk in Washington of pressuring Beijing to allow the renminbi to rise, but this was mainly for domestic consumption. Any suspension of Chinese purchases of the greenback would have detonated a bond market crash, killing growth. In any event, the Bush administration, like the Clinton-Rubin administration that preceded it, was evidently more interested in buttressing the foreign investment of its multinationals and globalization of its financial services by way of an elevated exchange rate vis a vis East Asian currencies than in than in supporting the exports of its domestically-based manufacturers by way of dollar devaluation.

Under these conditions, the US manufacturing sector had no hope of avoiding a continuation, and intensification, of the same pressures upon it from international producers, especially in East Asia, that it had already been undergoing since the middle of the 1990s, when the dollar had initiated its ascent—pressures of the same sort it had been subjected to in the early 1980s. Between 1997 and 2000, as between 1980 and 1985, the US manufacturing trade deficit had increased in an unprecedented manner and, in so doing, accounted for the similarly unprecedented ascent of the current account deficit in these years. Yet between 2000 and 2005, it rose much higher, establishing an historic peak every single year and constituting the major factor in pushing the current account deficit as a percent of GDP by 2005 a remarkable 50 per cent above its then-record level of 2000. All to symptomatically, during the same interval, the US share of the world market in manufacturing, having remained roughly flat at 11-12 per cent for the long interval between 1987 and 2000, suddenly dropped by a shocking 25 per cent, from 12.1 per cent to 9 per cent, to its lowest level of the postwar period. It was not simply coincidence that that the Chinese share of that market simultaneously increased by 3 per cent. US manufacturing was clearly in unprecedented difficulty

Yet if the sort of manufacturing revival that had taken place between the mid-1980s and mid 1990s was off the agenda, what then would propel the economy forward? This, of course, had been the question of the day, since 1995-1997, when the manufacturing-based US economic recovery had run out of steam following the Reverse Plaza Accord. Could the ostensible high tech miracle, in which Alan Greenspan had placed so much faith, finally save the day by promoting a new expansion of capital investment making for ever high levels of productivity growth and in turn profitability? The Fed chair unquestionably continued to believe that it could. But things turned out otherwise. The information-communication-technology producing sector itself--which had seen its aggregate rate of return plunge by some 23 percentage points and actually go negative between 1997 and 2001--struggled to revive its profitability, and, even by 2006, it had had barely brought it back to half its level of 1997. The sector was, in any case, far too small to have much effect by itself on the economy-wide rate of profit. As to inciting a new wave of capital accumulation in the economy beyond the information-communication-technology sector, neither the promise of information technology, nor indeed any other factor, could overcome the continuing stagnation of business investment that plagued the economy as a whole for the length of the business cycle.

It is true that the performance of that huge sector of the economy that was shielded from the world market and international competition did diverge significantly from that of manufacturing. Industries that could take advantage of the high dollar, easy credit, or the debt-driven consumer spending made possible by the run-up in housing values once again prospered, as the economy continued to follow the bifurcated path that had its origins in the first half of the 1980s and come into its own during the second half of the1990s. Benefiting from the unprecedented ascent in the demand for homes, the construction industry enjoyed an historic boom that found its origins before 1995. The long standing dependence of retail trade for its own expansion on the growth of domestic manufacturing had been broken by the rocketing currency and rise of East Asia during the second half of the 1990s. Thanks to the continuing rise of private consumption expenditures, as well as the record breaking increase of imports, especially from China, it continued to do very well in the new millennium. Hotels and restaurants, too, enjoyed ongoing prosperity. These industries were disproportionately responsible for the (all too modest) increase of employment, output, and profits in the real economy throughout the recovery that began in 2001. But for the economy to look to them for its growth was plainly problematic, in view of the fact that they were so heavily reliant for their expansion on a housing bubble capable of delivering declining bang for the buck and with a minimal half-life. Like manufacturers, if not to the same extent, firms in the non-manufacturing sector had experienced a sharp fall in profitability in the last years of the

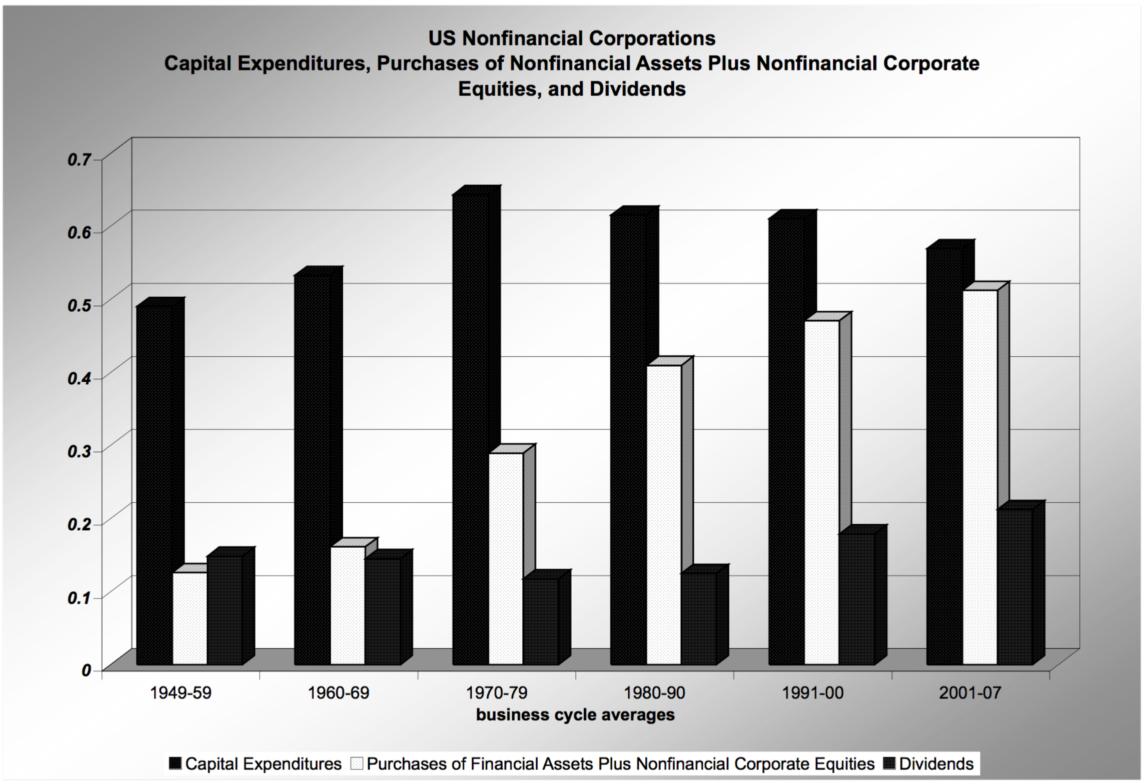
1990s, and were obliged, in order to restore their rates of return, to hold back on capital accumulation and focus on cutting costs. As a consequence, over the course of the business cycle, the non-manufacturing sector sustained slower growth of GDP, employment, and plant, equipment and software than in any other comparable period since 1945, and this despite the record stimulus. As the housing price run up grew shakier with each passing year, the prospects of this huge sector of the economy for sustaining its expansion grew ever bleaker.

With the economic pie growing so slowly throughout the length of the cycle, non-financial businesses, including both manufacturers and non-manufacturers, were thus compelled to attempt to revive their profit rates to an extraordinary degree by means of redistributing income from workers to themselves. This they accomplished perhaps as effectively as at any other time in the history of American capitalism, not simply by holding wages down, but by imposing a brutal speed up so as to raise measured productivity growth, if not actual economic efficiency. In the non-financial corporate sector as a whole, from the last quarter of 2001, when the cyclical expansion began, through the third quarter of 2006, when earnings peaked, profits rose by 83.5 per cent, compensation by just 20.5 per cent. Put another way, out of the total *increase* in non-financial corporate net value added (GDP minus depreciation) that took place in this interval, profits composed an astounding 40 per cent. As a consequence, non-financial corporations were able to increase their profit share by about one-third in that brief period.

Nevertheless, recovery by way of redistribution was by its very nature limited. A slow growing pie left only so much to redistribute. Productivity growth without investment was restricted because speedup could be taken only so far. As the expansion went on moreover and more workers were hired, wage growth could not but begin to grow faster. By 2007, despite the extraordinary increase in exploitation, the profit rate in the non-financial corporate sector fell just short of the 1997 high, while average profitability for the business cycle as a whole remained a bit below that for the business cycle of the 1990s…which was itself about the same as that for the 1980s and the much maligned 1970s, and thus remained far below that for the long post war boom, even despite the enormous slowdown in the growth of wages that had occurred in the interim. The cost to the economy of the limited profitability comeback that occurred was, in any case, enormous. By holding down the increase in investment, employment, and wages, non-financial corporations could not but suppress the increase of demand in the aggregate. They therefore ended up worsening the business climate, undermining further their own incentive to expand. It was the aggravation of the long-standing problem of aggregate demand during the course of the business cycle that left the economy so profoundly dependent for its expansion upon the housing bubble, and so vulnerable to crisis when the bubble began to deflate.

Companies' reduced prospects for making profits by means of capital accumulation only enhanced their motivation to pay out their surpluses to their stockholders, rather than invest them in new plant and equipment or new hiring.

While Greenspan, Bernanke, and Paulson sought to outdo one another in touting the economy's health, corporations expressed their own appreciation of their economic prospects by making dividend payouts as a percentage of gross profits (net profits plus depreciation), that were entirely unprecedented. Meanwhile, they engaged in an historic splurge of financial investment. Their purchases of non-financial corporate equities either in the form of stock buybacks or by way of the huge speculative wave of debt-financed mergers and acquisitions (largely undertaken by so-called private equity companies) broke all records, and their purchases of other financial assets came close. Taken together, purchases by non-financial corporations of non-financial corporate equities plus other financial assets soared to levels never before reached during the postwar period, averaging over the course of the business cycle no less than 91 per cent of capital expenditures and in 2007 reaching an astonishing 170 per cent. The turn by non-financial corporations from spending on plant, equipment, and software to expenditures on financial assets hardly have been more telling or decisive.



The pattern across most of the advanced capitalist world was very similar, with the critically important qualification that in few other places could borrowing and investment in financial assets play a role at all comparable to that in the US (the UK is of course the major exception). In 2000-2001, in Germany and Japan, private sector rates of return plunged to their lowest levels of the postwar period, and in these countries, as virtually everywhere across the global economy, firms sought to restore their profitability in the same manner. They held back on capital expenditures and employment, and prioritized paying down their debts. Meanwhile, they unleashed an enormous assault on workers' compensation and organizations, very much aided in the process by the spectacular increase in the global supply of wage labor resulting from the emergence of China, as well as Eastern Europe. Some did better than others, at least in certain respects. By repressing wages, expanding exports, and keeping investment and employment growth to a minimum, German producers were able to bring about a spectacular increase in the rate of profit in the country's manufacturing sector. But the unavoidable outcome was to repress the growth of the domestic market, with the consequence that the average rate of profit in Germany's private sector outside of manufacturing experienced a major fall. As a result, in Germany, as in Japan, the average rate of profit for the private economy as a whole during the business cycle of the 2000s failed to rise above the already very reduced figures of the 1990s, languishing in both places, as in the US non-financial corporate sector, at the lowest levels of the postwar epoch.

Between 2001 and 2007, in Japan and German, like the US, the growth of investment, measured in terms of the growth of the capital stock (plant, equipment, and software) was far and away the slowest for any comparable interval during the postwar period. In the same years, in Japan and the Euro 15, as well as Germany and the US, both the growth of real compensation per employee (wages plus benefits) and the increase in employment for the economy as a whole were also the slowest for any comparable interval in the postwar era, with the inexorable result that so was the increase of total real compensation (real compensation per person times employment). The unavoidable consequence of this extreme repression of wage and job growth was that in the US, Germany, Japan, and the Euro 15, the increase of real personal consumption expenditures during the business cycle of the 2000s was also the slowest for any comparable interval in the postwar era. Simply stated, despite the enormous subsidies to purchasing power that were provided by the wealth effect of the historic asset price bubbles, as well as the return just about everywhere to old fashioned Keynesian budget deficits, the struggle to revive profit rates that had sunk to postwar lows left the growth of aggregate demand at postwar lows across the advanced capitalist countries, making for the worst economic performance since the end of the 1940s. It was therefore not all that surprising that once the bubbles began to burst in 2006-2007, especially when housing prices began to plunge, that the global economy faced its most serious recession of the postwar period…or something significantly worse.

DEEPENING CRISIS

It did not take a rocket scientist to predict that, like the stock market bubble of the 1990s, the housing bubble of the 2000s could have only a very limited half life, or that, once it burst, the economy would plunge. Never before in postwar history had housing prices risen for any significant interval faster than prices in general or than rents. Yet, between 1998 and 2006, they had increased in real terms by a stunning 68 per cent. Nor was it of course at all a mystery how this took place. Rising home values certainly could not be explained by any increase in the capacity of households to afford residences. Quite the contrary. Between 2000 and 2007, real wages for production and non-supervisory workers rose by a *total* of just 2.2 per cent, while real median family income failed to increase at all, for the first time in postwar history. What enabled housing prices to skyrocket as they did, especially from 2003-2004 was the entry into the housing market of ever greater numbers of ever less qualified households, which were encouraged to take out mortgages requiring no down payment and interest-only monthly payments, and which could hope to hold on to their newly-purchased residences only if housing prices continued to rise and enabled them to re-finance. It was the archetypal Ponzi investment scheme, but the economy had come to depend upon it. Bubbling house prices were thus indispensable for driving the economy, as they were essential in making possible the increase in household borrowing that enabled the consumption and residential investment that together accounted for *98 per cent* of the growth of GDP that took place during the length of the business cycle. As the contribution of the housing price run up disappeared, the economy would be left to an ever greater extent to drive itself. Yet, since non-residential investment and net exports had both contributed *less than zero* to GDP growth between 2000 and 2007, and private employment measured in hours had failed to rise in that interval, businesses could hardly have been expected to suddenly take responsibility for the expansion, just as the increase in demand deriving from the housing bubble was disappearing.

Housing prices peaked in 2006, and, since that time, the film of housing-driven expansion has been running backward ever faster, the causal chain that drove economic growth proceeding in the opposite direction. Just as they rose in historic fashion, housing values have fallen with unprecedentedly rapidity, declining by 25 per cent between 2006 and the end of 2008, and it is expected that they will end up falling by at least 40 per cent from their peak. Mortgage equity withdrawals have naturally collapsed and gone into the negative. As a consequence, the growth of real personal consumption expenditures, which had peaked at 3.6 per cent in 2004, fell slowly but steadily to 2.8 per cent in 2007 and then dropped to 0.2. per cent in 2008, while residential investment plummeted a an annualized rate of 18 per cent in the last three quarters of 2006 and continued to fall at the same speed in 2007 and 2008. There was no way that non-residential investment or net exports could take up the slack. The growth of nonresidential investment sped up somewhat from 2004, but it never contributed more than .7 percent point to GDP in any year, and it added less to growth in 2006 and 2007 than residential investment subtracted from it. It had been hoped that the continuing decline of the exchange rate of the dollar (limited vis a vis the East Asian currencies) might fuel a turnaround, and the trade deficit did begin to shrink as imports fell sharply. But, since the rest of the world depends so much on US imports to drive it, the result was to undercut global growth and in turn the demand for US output, so the increase in American export growth was minimal, and temporary.

It is crucial to emphasize that the descent into recession was already well in progress before the outbreak of the financial crisis in July-August 2007. Nonfinancial profits peaked with housing prices in the middle of 2006 and then declined by 10 per cent by the third quarter of 2007. During the first half of 2007, already-weak jobs growth had fallen by 50 per cent compared to 2005 and 2006, adding substantially to the downward pressure on the economy. In the second quarter of 2007, the increase in real total cash flowing into households, which had run at about 4.4 per cent in 2005 and 2006, fell near to zero. In other words, when one adds up households' real disposable income plus their home equity withdrawals, plus their consumer credit borrowing, plus their capital gains realization, one finds that the money that households actually had to spend had stopped growing by that point, this again before the financial crisis first hit during summer 2007.

Of course, the onset of the credit market cum banking meltdown very much exacerbated the downward plunge of the economy, but it can in no way be considered an exogenous factor. The global credit market, by way of the run-up in mortgage backed assets, was the ultimate source of the subprime mortgage bubble, thus the historic heights to which housing prices ascended, thereby the record rise of household borrowing, and therefore much of the expansion itself. It was inevitable that the bursting of the housing bubble would not only directly reverse the process of economic growth, but also weaken a financial sector so deeply invested directly or indirectly in housing, generating a self-sustaining downward spiral in which a slowing real economy led to a reduction in bank lending and lessening bank lending exacerbated the decline of the real economy. Much of the severity of the ensuing crisis was thus inherent in the expansion itself, its extreme weakness in historical terms and its dependence upon a housing price run up that was itself driven by an historic credit market bubble. The economy had lost much of its capacity to drive itself forward when the revival of manufacturing and of private sector profitability came to an end in 1995-1997 and had had to proceed from that point forward the record-breaking growth of debt, itself reliant on ever greater asset price run-ups. In the wake of bursting of these bubbles, the economy, lacking an internal engine, could not but swoon.

In February 2007, Mark Zandi, chief economist for Moody's Economy.com was already commenting that "ill performing mortgage securities could be the catalyst for a rapid re-pricing of risk" and that "the odds of such a financial event feel uncomfortably high given the razor-thin yield spreads across global bond markets."[53] Since investors in mortgage backed securities had during the previous couple of years had turned to such a great extent to the asset-backed commercial paper market to finance their purchases, it could be virtually guaranteed that a prospective increase in the cost of borrowing would profoundly affect the market in CMOs/CDOs and vice versa, since investors in the asset backed commercial paper market predicated their loans on the continuation of the CMO/CDO bubble and vice versa. As it turned out, the CMO/CDO market was squeezed

[53] "Subprime Q&A," p.21.

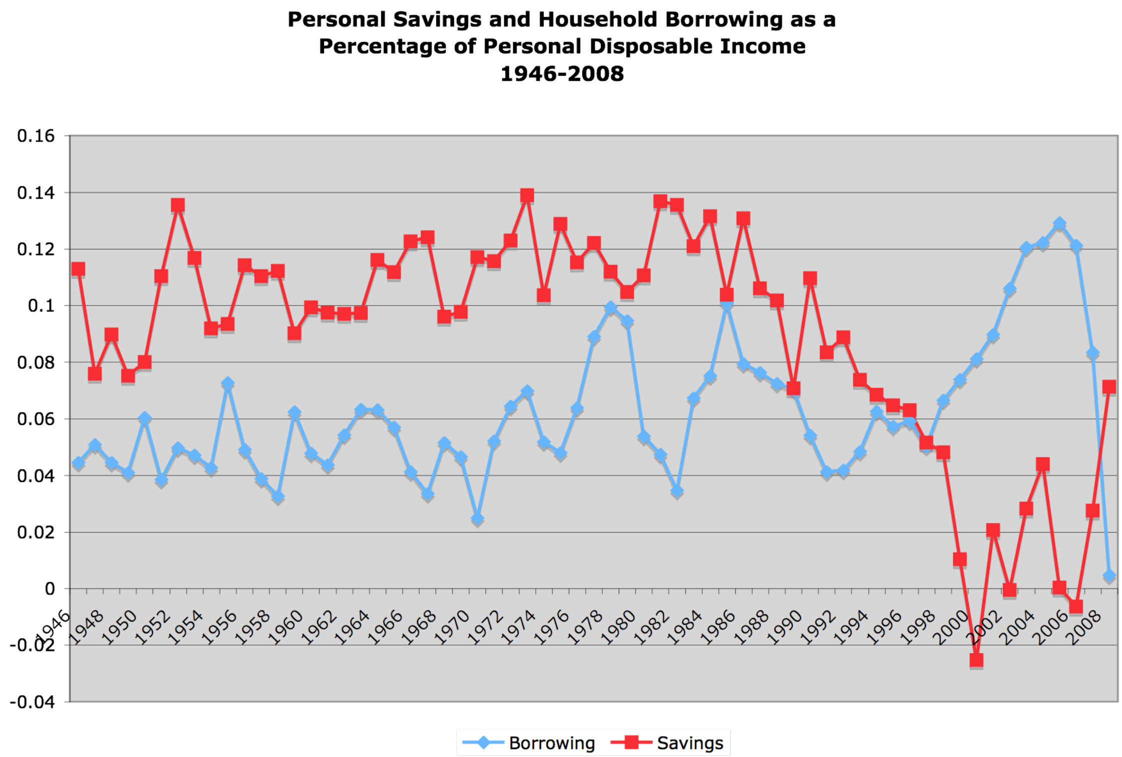
from both sides simultaneously. During the first half of 2007, interest rates began to rise unexpectedly (or failed to fall as expected) and, with housing prices falling, subprime mortgage originators began to go bankrupt in terrifying numbers.[54] It was only a matter of time that units set up to invest in CMOs/CDOs would be hard hit. Hedge funds that had been sponsored by Bear Stearns and UBS were the first major casualties. But almost as soon as they went down in July-August 2007, the asset backed commercial paper market completely dried up, and the market in CMOs/CDOs crashed. In view of that market's dependence upon on the perpetuation of the absurdly low cost of borrowing and given what had long been known about so much of the underlying collateral for these securities—the vastly overvalued houses only nominally owned by non-conforming borrowers who could not afford them and had little chance of holding on to their mortgages once home prices ceased to rise—how could it not have?

Of course, as has been stressed, what determined that the crisis of the financial sector would turn out to be so catastrophic was that, rather than selling them on to other investors in accord with the originate-to-distribute model, the leading financial houses, both commercial banks and investment banks, had themselves invested--either directly or indirectly by way of conduits and SIVS--to such an enormous extent in CMOs/CDOs, and with such a high degree of leverage. As a consequence, these institutions sustained titanic losses, which have mounted ever higher as housing prices have continued to dive as the real economy has continually weakened. It was already evident by the first part of 2008, that, thanks to the collapse of asset-backed securities, many of the countries greatest banks were de facto bankrupt, their liabilities far weighing their assets. And since their problem was insolvency not liquidity, no amount of lending to them could save them.

Nevertheless, the banks' profound crisis and their incapacity to lend was, and is, only part of the problem. Even in its absence, lenders would have—as they did—radically cut back on their offer of loans to businesses and households as the economic outlook darkened, just as they radically increased it so long as the boom seemed in progress. In any case, the ultimate difficulty was—and is--not the insufficiency of the supply of credit, but the lack of demand for it. Corporations had held back on investment and employment through the length of the business cycle, borrowing little and then mainly to buy financial assets. They would certainly not start contracting loans and expanding now, as consumer spending plunged, demand fell, and profits dived, no matter how easy and cheap it was to borrow. Households had constituted the main force behind the economic expansion, providing the demand to drive it forward by way of their rising personal consumption expenditure and soaring residential investment by means of borrowing at an historic pace. But, confronting the disappearance of their wealth as the prices of their homes collapsed and facing the mountain of debt that they had accumulated over the course of the housing bubble, not to mention a sinking labor market, how could they be expected to do anything but pull back on borrowing and spending and, by choice or necessity, to start once again to save? In the years 2004-2006, household borrowing as a percentage of GDP had soared to 9 per cent, far above all previously recorded levels, imparting a huge fillip to growth. But already by 2007, it had

[54] Fisher, "What Happened to Risk Dispersion?"

fallen by a third and in 2008 collapsed to zero. In 2006, the personal savings rate had plunged to *minus* 0.6 per cent, a near historic low; but already by 2007 it had jumped to 2.8 per cent and during 2008 it rocketed to 7.1 per cent. By the second half of 2008, personal consumption expenditures were diving at an annualized rate of *minus* 4 per cent, GDP at an annualized rate of *minus* 3.4 per cent.



By the end of 2008, with nothing to induce expenditures by either businesses or households, the economy was experiencing a self-reinforcing downward spiral in which falling consumer demand made for declining profits, which brought about cutbacks in both investment and employment, which reduced aggregate demand, and had entered into free fall. With the banks understandably refusing to lend in this environment, how could a government bailout, however enormous and unfair, bring about an increase of the supply of credit to the economy? Why, in any case, would private businesses or households seek to borrow? Throughout the previous seven years, the Fed's below zero real short term interest rates, record household borrowing, soaring federal budget deficits, and a falling dollar had already come to constitute a de facto Keynesian stimulus of historic proportions, but the economy had barely budged. With a plunging real economy exacerbating the unprecedented financial meltdown and vice versa, how could the governments' new self-described Keynesian interventions, however titanic, hope to stem the tide? Where, when, and how it would all end was anybody's guess.