

The Great Residential Housing Debate - the next Bubble or a legitimate Boom?

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Debates over house prices resemble the debate in [The Name of the Rose](#) between the ascetic Benedictines and their richly robed rivals from the Vatican, who argued over whether Jesus did or did not own his own clothes: each side argues past each other, making different allusions to support their side while all the time avoiding the key issue.

I'll leave my Benedictine contributions to the end, and start with the core dispute: at issue is whether we live in a stable economy, or in one that is inherently cyclical—and subject to not merely cycles, but Booms of false wealth that are followed by Busts of widespread unnecessary misery. Whether housing does or does not always go up in price is an important but nonetheless peripheral component of that dispute.

I stand firmly in the Boom and Busts camp. Allied on the “stable” side is the majority of the profession of economics—the modern-day equivalent of the monks of the medieval Vatican.

The religious analogy is deliberate, because I believe that economics is far more accurately portrayed as a religion than a science: its scientific pretences are a sham. Continuing with the religious metaphor, the situation in economics now is akin to the time of the Reformation, when the Protestant movement was challenging the hegemony of the Catholic Church. Just as Protestants rejected the Papacy's practice of selling indulgences as the path to Heaven,¹ the critics of the dominant school of thought in economics—which is known as “Neoclassical” economics—reject the Neoclassical use of “assumptions” to avoid curly problems in their proofs that Stability (if not Heaven) exists on Earth.

The key defender of this practice was Milton Friedman (Friedman 1953), whose name is invoked by the faithful every time a critic objects to some ridiculous assumption that a Neoclassical economist makes to “simplify” some argument. “Assumptions don't matter”, you are told, “All that counts is whether the theory's predictions are accurate.”

The Global Financial Crisis is fair enough proof that, as a theory, Neoclassical economics is wildly *inaccurate*. The gap between the expectations that Neoclassical economists had for the end of the 21st century's first decade, and what actually transpired, is breathtaking. They predicted Heaven, and we find ourselves, if not in Hell, then at best in Purgatory.

Writing in May 2007, the OECD's Chief Economist had this to say about the immediate economic future:

“the current economic situation is in many ways better than what we have experienced in years... Our central forecast remains indeed quite benign: a soft landing in the United States, a strong and sustained

¹ For those who are wondering, I'm an agnostic ex-Catholic.

recovery in Europe, a solid trajectory in Japan and buoyant activity in China and India.

In line with recent trends, sustained growth in OECD economies would be underpinned by strong job creation and falling unemployment." (OECD Chief Economist Jean-Philippe Cotis, *OECD Economic Outlook* June 2007, (OECD 2007, p. 9))

Federal Reserve Chairman Ben Bernanke, who is portrayed as an expert on the Great Depression ([he isn't](#)) was equally Panglossian about the global economy as the *GFC* loomed. His statements underestimating the probable impact of the subprime crisis are legendary, but I regard [his comments](#) on what he and most Neoclassical macroeconomists called "*The Great Moderation*" as the most apt expression of his naivety:

As it turned out, the low-inflation era of the past two decades has seen not only significant improvements in economic growth and productivity but also a marked reduction in economic volatility, both in the United States and abroad, a phenomenon that has been dubbed "the Great Moderation." Recessions have become less frequent and milder, and quarter-to-quarter volatility in output and employment has declined significantly as well.

The sources of the Great Moderation remain somewhat controversial, but as I have argued elsewhere, there is evidence for the view that improved control of inflation has contributed in important measure to *this welcome change in the economy*. (Bernanke 2004; emphasis added)

Why were they so unaware of where the economy was actually headed? Fundamentally, because this "assumptions don't matter" mantra encouraged an abuse of assumptions which was at least as reprehensible as the medieval Church's abuse of indulgences that so enraged Martin Luther.

Most people outside the economic (that was a typo but I think I'll stick with it!) priesthood believe that this "assumptions don't matter" mantra is employed in economics the same way that a cartographer might use it to draw a map: if you're developing a map for cars, you can ignore the terrain ("let's assume the landscape is flat"), so long as you accurately record the roads at a reasonable scale.

Instead, economists used the assumption in a delusional way: a scientific equivalent of how neoclassical economists use assumptions would be for NASA to plan a lunar landing on the assumptions that the Moon has a breathable atmosphere and is made of edible Green Cheese. Rather than using assumptions to clear away extraneous issues (the topography of the landscape) to focus on the key issues (where the roads are), Neoclassical economics used them to ignore key issues (that, for example, an economic road they propose building goes over a cliff).

Lest that seem too harsh, here are a sample of conundrums that arose in the course of core economic theories, and how the theoreticians handled these conundrums.

I'll start with the man most responsible for the delusion that Stock Market prices accurately value companies, [William F Sharpe](#). He developed a serviceable theory of how an *individual* stock market

investor might decide which shares make up his/her ideal portfolio, using the concepts of a “risk free” borrowing rate, a personal set of expectations about the future returns of all companies on the market, and a personal preference for the avoidance of risk. But then he faced the quandary of how to aggregate from a single investor to the entire market—since obviously investors differ in the rates they can borrow money at, their expectations of the future, and their tolerance for risk.

How did he manage this aggregation? *By assuming that all investors can borrow money at the same rate, and that they share the same **accurate** expectations about the future:*

In order to derive conditions for equilibrium in the capital market we invoke two assumptions. First, *we assume a common pure rate of interest, with all investors able to borrow or lend funds on equal terms.* Second, we assume homogeneity of investor expectations: *investors are assumed to agree on the prospects of various investments—the expected values, standard deviations and correlation coefficients described in Part II.* (Sharpe 1964, pp. 433-434; emphasis added)

At least he then had the decency to note how absurd these assumptions were: “Needless to say, these are highly restrictive and undoubtedly unrealistic assumptions.” But he then nevertheless proceeded with them, on the basis that “assumptions don’t matter”:

However, *since the proper test of a theory is not the realism of its assumptions but the acceptability of its implications*, and since these assumptions imply equilibrium conditions which form a major part of classical financial doctrine, it is far from clear that this formulation should be rejected—especially in view of the dearth of alternative models leading to similar results.

He didn’t make explicit the most absurd aspect of this theory—the assumption that, in addition to agreeing with each other about the future, investors are also correct about how the future will turn out—but this was later admitted by his colleagues in a paper (four decades later) that detailed the manifest empirical failure of this theory:

Sharpe (1964) and Lintner (1965) add two key assumptions to the Markowitz model to identify a portfolio that must be mean-variance-efficient. The first [sic] assumption is complete agreement given market clearing asset prices at $t-1$, investors agree on the joint distribution of asset returns from $t-1$ to t . *And this distribution is the true one—that is, it is the distribution from which the returns we use to test the model are drawn.* (Fama and French 2004, p. 26; emphasis added)

Fama and French did a public service by finally admitting (after decades of championing this theory) that it was an empirical failure, but we shouldn’t have had to wait four decades to find that out: any theory that has as absurd an assumption as that at its core has to be wrong. It is not a simplifying assumption, but a counter-factual one: it is directly contrary to what we know to be the case. This is typical of how economists have used assumptions.

Crucially for the *GFC*, economists applied this same approach to how they considered the roles of money and private debt in the economy—which is the key reason why they didn’t see a crisis approaching when it was brewing right under their noses. Here the direct responsibility for the systemic ignorance of Neoclassical economists on the nature of money and credit lies once again with *The Fountainhead* himself—Milton Friedman.

Friedman began one of the key papers for which he was awarded the Nobel Prize in Economics with the following statement:

IT IS A COMMONPLACE of monetary theory that nothing is so unimportant as the quantity of money expressed in terms of the nominal monetary unit—dollars, or pounds, or pesos. Let the unit of account be changed from dollars to cents; that will multiply the quantity of money by 100, but have no other effect. Similarly, let the number of dollars in existence be multiplied by 100; that, too, will have no other essential effect (Friedman 1969, p. 1)

A defensible proposition, you might think? Certainly it is taught to all novice economists that way, while the belief that the nominal price of goods matters (its price in dollars as opposed to its price relative to other commodities) is derided as “the money illusion”.

However, Friedman continues with a caveat that points out the absurdity of this “commonplace”:

provided that all other nominal magnitudes (prices of goods and services, and quantities of other assets and liabilities that are expressed in nominal terms) are also multiplied by 100.

Hello? On which planet is your debt level automatically increased at the rate of consumer price inflation?² In the real world in which we live, debts are denominated in nominal terms and don’t change simply because current prices change. Debt therefore forms the link between our past expectations and the way the world actually turns out to be. Nominal magnitudes therefore matter.

Friedman’s proviso above shows that his “nominal magnitudes don’t matter” assumption is an instance of what Musgrave, in his excellent critique of Friedman’s crazy methodology, called a “Domain assumption”: it’s an assumption that describes the context in which the model you build will be correct. If you can find somewhere that the assumption applies, then the theory will work there; but if the assumption doesn’t apply then the theory will be false.

Yet Friedman applied the assumption to model the impact of money on the economy, and it is implicitly behind the decision by almost all economic modelers to work in “real” terms and ignore “nominal” factors like money and credit. Take for instance one of the macroeconomic models that the RBA uses: its developers note that

² Actually, there is such a planet, and it’s called Iceland—only the economic Neanderthals in charge there indexed debts to the level of inflation (so that if the change in the CPI came in at 17% all debts were increased by the same amount) but didn’t similarly index money wages and “all other nominal magnitudes”, which would have been necessary to completely implement Friedman’s fantasy.

While the details of the model have changed, its core features have not. The model remains small, highly aggregated, empirically based, and non-monetary in nature. (Andrew Stone 2005, p. 1)

The fact that economists—even those working for a Central Bank—believe it valid to model an economy without considering the role of money, credit and debt emanates directly from this fallacious assumption that nominal magnitudes don't matter (except insofar as they contribute to inflation). The omission of money and credit from the vast majority of economic models is based not on their empirically established irrelevance, but on the use of counter-factual assumptions—as rare instances of cogent empirical research establish.³

My final instance of relying upon a counterfactual assumption is probably the most important of all: the pervasive assumption that the economy can be modeled as if it is in equilibrium, or will always tend towards equilibrium after any disturbance.

This furphy arose from attempts by 19th century economists to model the economy using the mathematics they knew in the 19th century. Even then, mathematics was quite capable of modeling systems out of equilibrium, but economists saw these techniques as far too difficult, and thought it would simplify things to abstract from disequilibrium. Marshall put it this way:

“The Mecca of the economist lies in economic biology rather than in economic dynamics. But biological conceptions are more complex than those of mechanics; a volume on Foundations must therefore give a relatively large place to mechanical analogies; and frequent use is made of the term “equilibrium”, which suggests something of statical analogy... (Marshall, “Principles”, 8th edition, p. 19)

Jevons put a similar perspective:

“If we wished to have a complete solution ... we should have to treat it as a problem of dynamics. But it would surely be absurd to attempt the more difficult question when the more easy one is yet so imperfectly within our power.” (Jevons 1871 [1911]: 93)

Though their judgment proved to be wrong, these Founding Fathers couldn't be faulted at the time—they couldn't know how difficult and misleading equilibrium modeling could turn out to be, or how much dynamic modeling techniques would improve in the late 20th century. But the product of this orientation was an economics that deliberately excluded consideration of processes that apply only in disequilibrium.

³ The fathers of “Real Business Cycle Theory”, Kydland and Prescott, found that reality contradicted theory on the role of credit in the economy—“The fact that the transaction component of real cash balances (M1) moves contemporaneously with the cycle while the much larger nontransaction component (M2) leads the cycle suggests that credit arrangements could play a significant role in future business cycle theory. Introducing money and credit into growth theory in a way that accounts for the cyclical behavior of monetary as well as real aggregates is an important open problem in economics” Kydland, F. E. and E. C. Prescott (1990). “Business Cycles: Real Facts and a Monetary Myth.” Federal Reserve Bank of Minneapolis Quarterly Review **14**(2): 3-18.—and yet did nothing to develop a credit-based theory of the business cycle.

This brings me to my third and most relevant example of the impact of bad assumptions on economic theory: how Ben Bernanke treated Fisher's "Debt-Deflation Theory of Great Depressions" (Fisher 1933).

Fisher himself was himself guilty of making absurd assumptions prior to the Great Depression. As the pre-1930s version of William F. Sharpe, he developed a model of finance that effectively extended the standard "supply and demand" model to the market for loanable funds. That extension had several conundrums however: unlike commodity markets, the loan market involves receiving something now (a loan) in return for a promise of something in the future (payments that include interest). There is thus both a temporal issue—demand could exceed supply at some points in time, and be below it at others—and the problem that the promise to pay may not be kept. Fisher dealt with these conundrums in the time-honoured fashion of neoclassical economists: he assumed them away:

(A) The market must be cleared—and cleared with respect to every interval of time.

(B) The debts must be paid. (Fisher 1930, p. 495)

With these assumptions, he had a model of financial markets that were in continuous equilibrium. Then he made (and gambled) his fortune on these models being an accurate depiction of reality. He was doing really well until October 15th 1929, when he made the following famous statement in his column in the New York Times:

"Stock prices have reached what looks like a permanently high plateau. I do not feel that there will soon, if ever, be a fifty or sixty point break below present levels, such as Mr. Babson has predicted. I expect to see the stock market a good deal higher than it is today within a few months."

He lost US\$106 million (in year 2000 dollar terms) in the ensuing Crash. To his credit, after it he applied his mind to why he had got it so wrong. A core part of his new argument was that the concept of equilibrium had to be abandoned: economics had to be modeled as a disequilibrium process:

We may tentatively assume that, ordinarily and within wide limits, all, or almost all, economic variables tend, in a general way, toward a stable equilibrium...

But the exact equilibrium thus sought is seldom reached and never long maintained. New disturbances are, humanly speaking, sure to occur, so that, in actual fact, any variable is almost always above or below the ideal equilibrium...

It is as absurd to assume that, for any long period of time, the variables in the economic organization ... will "stay put," in perfect equilibrium, as to assume that the Atlantic Ocean can ever be without a wave." (Fisher 1933, p. 339)

Fisher argued that two key disequilibrium factors—"over-indebtedness to start with and deflation following soon after" (Fisher 1933, p. 341)—can set off a chain reaction of disequilibrium dynamics that leads to Depression. Bernanke completely missed this *because he interpreted Fisher from an equilibrium perspective*. He noted that though Fisher had an impact on policy makers, Fisher's idea:

was less influential in academic circles, though, because of the counterargument that debt-deflation represented no more than a redistribution from one group (debtors) to another (creditors). Absent implausibly large differences in marginal spending propensities among the groups, it was suggested, pure redistributions should have no significant macroeconomic effects. (Bernanke 2000, p. 17)

Bernanke's point is defensible *in equilibrium*. However, in disequilibrium, changes in debt levels when debt is excessive can have large macroeconomic effects. In equilibrium, aggregate demand equals aggregate supply (GDP). But in disequilibrium, aggregate demand equals aggregate supply *plus the change in debt* (where this demand is necessarily spread across asset markets as well as goods and services).

When debt levels are small, this disequilibrium contribution can be neglected; but when debt is large, then very volatile changes in debt can actually have a much larger impact on employment and expenditure than the larger but much more stable level of aggregate supply.⁴ This is easily illustrated by looking at the contribution that the change in debt makes to aggregate demand—which I define as the ratio of the change in debt to the sum of GDP plus the change in debt:

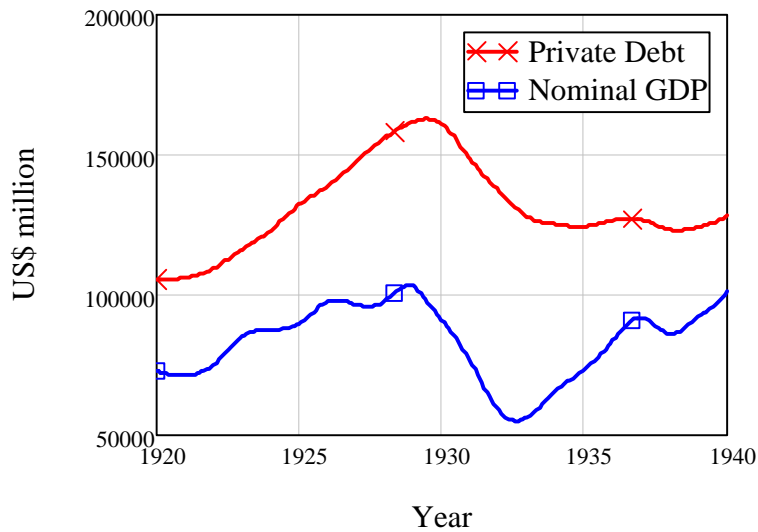
$$\text{Debt Contribution to Aggregate Demand} = \frac{\text{Change in Debt}}{\text{GDP} + \text{Change in Debt}}$$

Figure 1 shows the levels of private debt and GDP in the USA from 1920 to 1940. Obviously both rose during the 1920s, only to collapse severely during the 1930s. Fisher argued that the attempts by debtors to reduce debt levels actually caused the decline in GDP, as aggregate demand fell well below aggregate supply and suppressed economic activity: in his pungent phrase—which I call “Fisher’s Paradox”—he asserted that:

the very effort of individuals to lessen their burden of debts increases it, because of the mass effect of the stampede to liquidate in swelling each dollar owed. Then we have the great paradox which, I submit, is the chief secret of most, if not all, great depressions: The more the debtors pay, the more they owe. (Fisher 1933, p. 344)

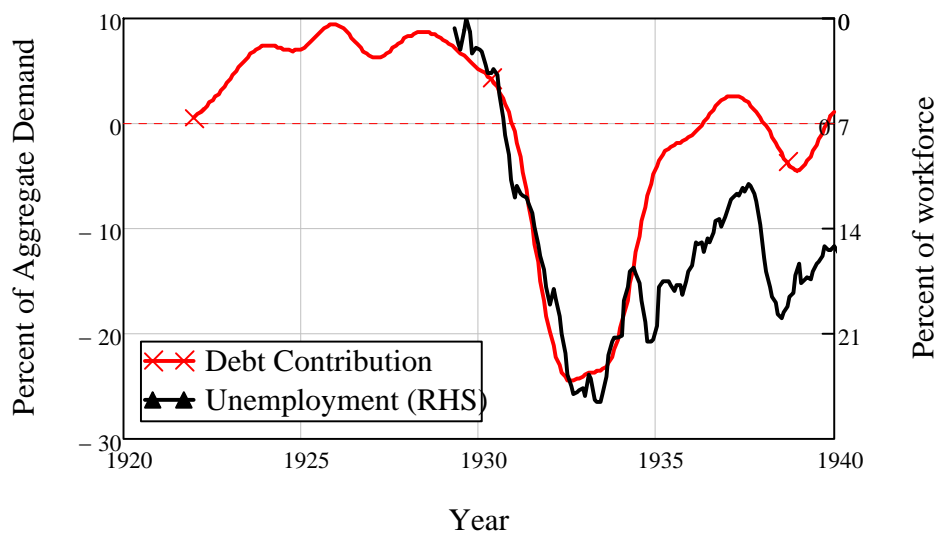
⁴ This aggregate demand is necessarily spread over asset markets over commodity markets; in contrast, the conventional approach considers only demand for goods, and ignores demand for existing shares and houses.

Figure 1: US private debt and GDP, 1920-1940



This relationship is illustrated by the correlation between changes in the debt-financed component of aggregate demand, and unemployment. Figure 2 graphs the debt-financed component of demand on the left hand scale (lagged one year, since the pre-1950 data is annual), and the unemployment rate on the right hand scale (inverted, so that zero unemployment is at the top of the chart and 28 percent unemployment at the bottom). The correlation between the two series is -0.77 —when the debt contribution to demand fell, unemployment rose. So this one factor accounts for up to three quarters of the level of unemployment during the Great Depression.

Figure 2: Debt contribution to demand (lagged) and unemployment, USA 1920-1940

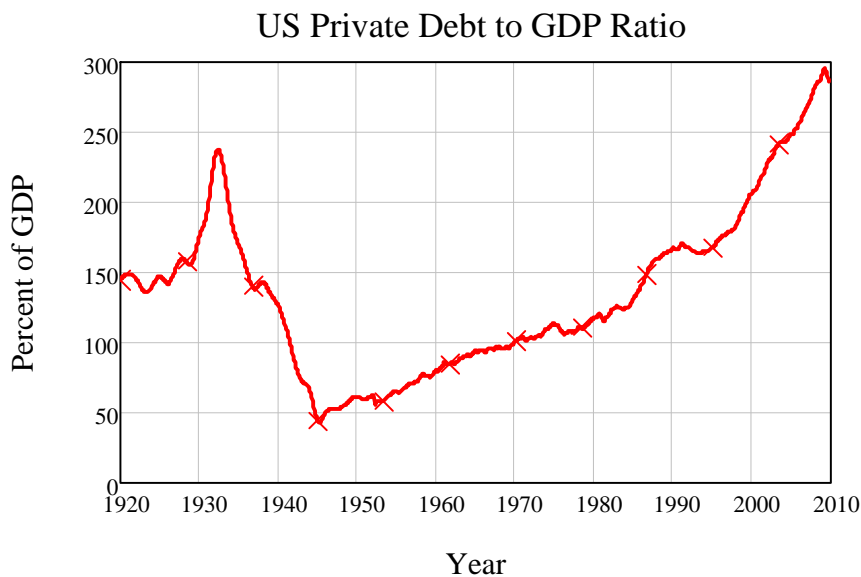


Had Fisher's advice about how to do economic modeling, and his warnings about the dangers of excessive private debt been heeded, it is quite possible that the tragedy of the Global Financial Crisis

could have been avoided—because we would have learnt of the dangers of excessive private debt and developed mechanism to limit its growth. Unfortunately, because Fisher’s advice was ignored, economists developed equilibrium models of the economy, and ignored—and arguably even encouraged—the growth of private debt.

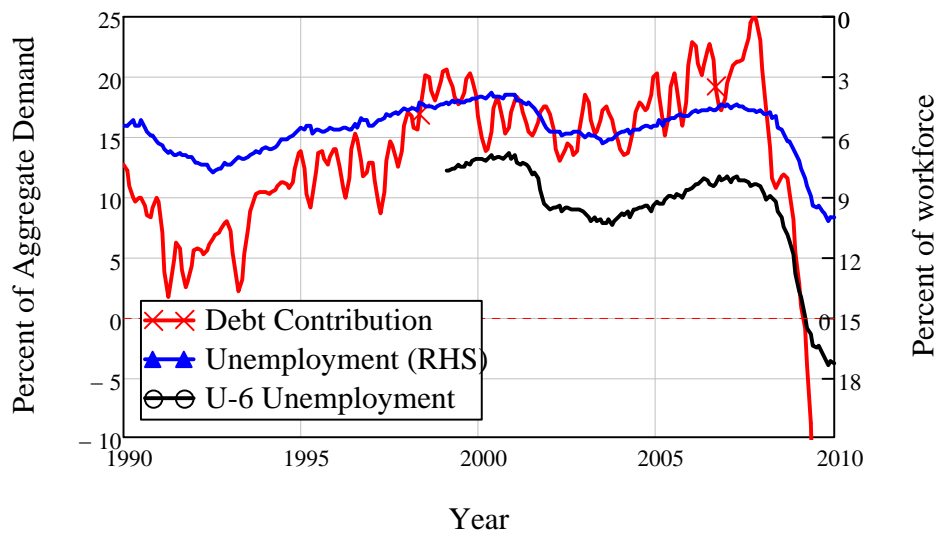
All the rescues of the financial sector since the Stock Market Crash of 1929 allowed financial institutions to avoid failure due to irresponsible lending, and led to them developing yet more means to extend debt to yet more debtors. Each new debt instrument was welcomed by the US Federal Reserve, rather than being criticised, and debt levels rose far beyond those that applied before the Great Depression began. As Figure 3 shows, the ratio of private debt to GDP exceeded the 1929 levels of 175% in 1997, and has since hit almost 300%.

Figure 3: USA private debt to GDP ratio



Borrowers are now starting to do what they did in the Great Depression—reduce their debt levels—and this reduction in aggregate demand is the main factor behind the rise in unemployment in the USA. Figure 4 shows (using quarterly data) the correlation between the debt-financed component of aggregate demand and unemployment in the USA in the last 2 decades, and at -0.85 it is even stronger than the correlation during the 1920s-1940s.

Figure 4: Debt contribution to demand and unemployment, USA 1990-2010



This “disequilibrium, debt-deflation” approach to economics can explain not only the slump, but the boom that went before it—because then rising debt turbocharged aggregate demand. As Figure 4 illustrates, the 1990s recovery was due, not to better monetary policy, as [Bernanke argued](#) (“improved control of inflation has contributed in important measure to this welcome change in the economy”, Bernanke 2004), but to the debt-funded component of aggregate demand rising from just above zero to 25 percent.

By ignoring Fisher’s disequilibrium approach, Bernanke was ultimately left with only one possible cause of the Great Depression—the Federal Reserve itself. As he famously remarked to Milton Friedman on the latter’s 90th birthday:

Let me end my talk by abusing slightly my status as an official representative of the Federal Reserve. I would like to say to Milton and Anna: Regarding the Great Depression. You’re right, we did it. We’re very sorry. But thanks to you, we won’t do it again. (Bernanke 2002)

In fact, by following Milton Friedman’s methodology and analysis of money, Greenspan and Bernanke did “do it again”: by ignoring the growth in private debt, by positively encouraging Wall Street’s debt-driven fantasies, and by letting a debt-bubble turbocharge economic performance, only to lead to a period of deleveraging that gave us the *GFC*.

It didn’t have to be this way: economics could have identified the real cause of the Great Depression and, if not prevented the *GFC*, at least not been culpable in it, had they built on Fisher’s disequilibrium and credit-driven perspective on the economy. One economist did—Hyman Minsky—and he constructed what he called “the Financial Instability Hypothesis” (*FIH*). My knowledge of this rival theory is why I was able to [predict the *GFC*](#) (Bezemer 2009, p. 19).

The Financial Instability Hypothesis

Minsky captured the basic proposition in the *FIH* in one classic sentence:

Stability—or tranquility—in a world with a cyclical past and capitalist financial institutions is destabilizing. (Minsky 1982, p. 101)

That sentence contains everything that is not in neoclassical economics: the economy as inherently cyclical, fundamentally financial, and with an unstable equilibrium.

The *FIH* starts by considering an economy when it is growing in relative tranquility after a recent economic crisis. Because of the crisis, both borrowers and lenders are conservative about debt, and only relatively conservative projects are undertaken. However the combination of a relatively tranquil economy and conservative investment behaviour means that most of these projects succeed.

Two things gradually become evident: “Existing debts are easily validated and units that were heavily in debt prospered: it paid to lever” (Minsky 1982, p. 66). As a result, both firms and banks come to regard the previously accepted risk premium as excessive. Investment projects are evaluated using less conservative estimates of prospective cash flows, so that with these rising expectations go rising investment and asset prices. The general decline in risk aversion thus sets off the growth in debt-financed investment, which is the foundation both of the boom and its eventual collapse. Stability, as Minsky put it, is destabilizing—in stark contrast to the Neoclassical belief that the economy’s equilibrium is stable.

The economy enters what Minsky called its “euphoric” phase, where both lenders and borrowers believe that the future is assured, and therefore that most investments will succeed. Asset prices are revalued upward as previous valuations are perceived to be based on mistakenly conservative grounds. Financial institutions now accept liability structures both for themselves and their customers “that, in a more sober expectational climate, they would have rejected” (Minsky 1982, p. 123). The money supply expands as lenders race to secure market share, and willingly finance more and more reckless economic activity (anyone for a private equity takeover of Qantas?).

Then Ponzi investors—today we might call them Madoff investors⁵—enter the mix, since rising asset prices make leveraged speculation on asset prices profitable. Asset price inflation driven by leveraged speculation on asset prices is thus a core component of Minsky’s model.

Ponzi investment doesn’t add to productive capacity—it simply profits from making assets more expensive—so that they drive up debt servicing without increasing the economy’s capacity to pay those debts. This is one of the many processes that ultimately undermine the boom (others include non-Ponzi investors being forced into the asset market by rising financing costs that are in part due to Ponzi behavior).

⁵ A US correspondent informs me that the correct pronunciation of Bernie’s surname is not Mad-Off but Made-Off.

As soon as the asset price bubble falters, the Ponzis go bankrupt, investment evaporates, the endogenous expansion of the money supply goes into reverse, and the economy slumps back into a debt-induced systemic crisis—which is where it originally began.

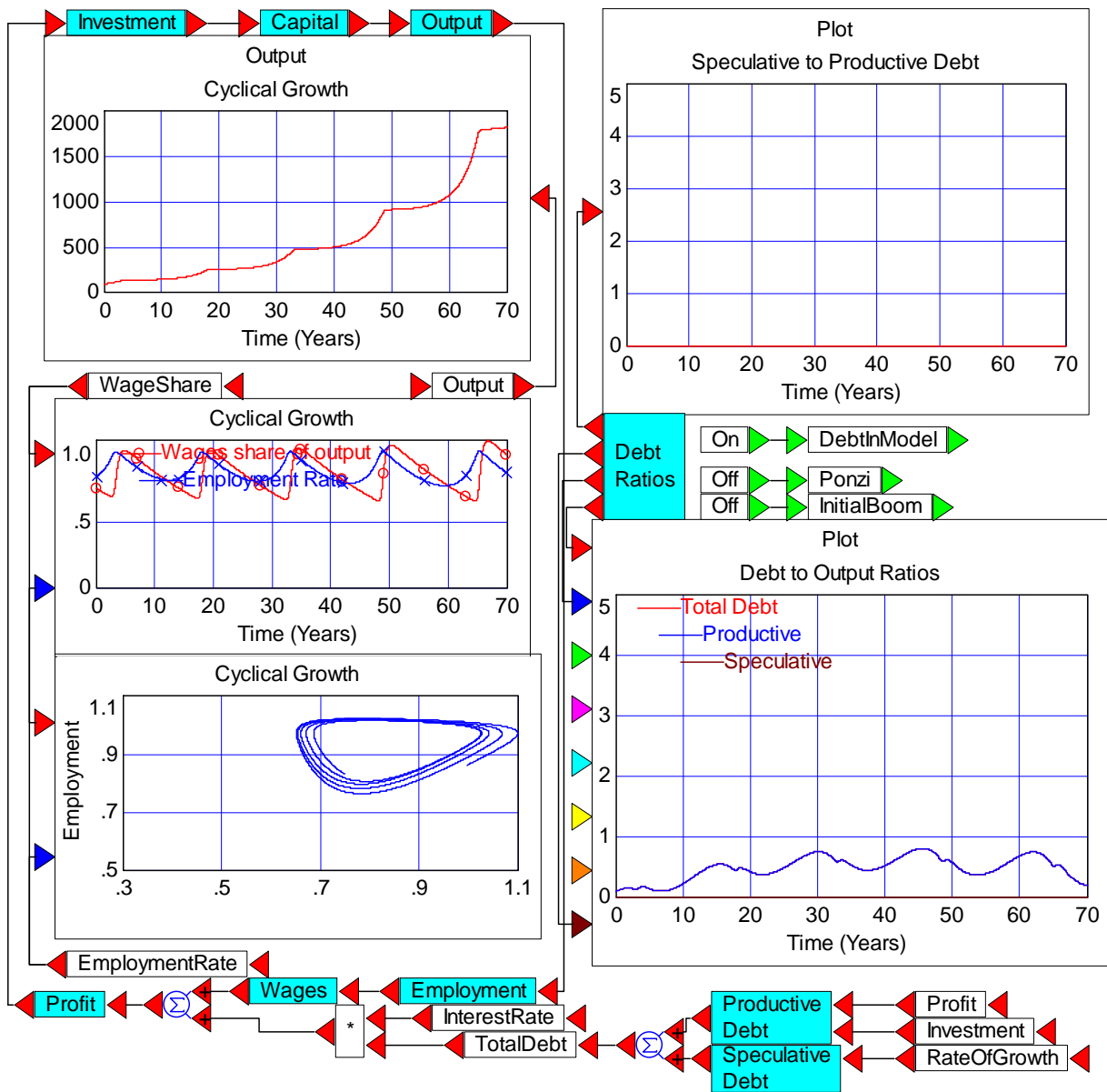
Minsky argued that this process of a debt-financed boom followed by a bust had a secular as well as a cyclical component, which led ultimately to the Great Depression:

- Firms borrow money to finance investment during a boom;
- But have to repay some of it during a slump;
- As a result, the debt to Income ratio tends to rise in series of booms/busts; and
- Ultimately—especially with an overlay of Ponzi borrowing on top of borrowing for productive purposes—one boom will occur where debt accumulation passes the “point of no return”;
- This results in a runaway economic collapse that we call a Depression.

My mathematical models of Minsky’s hypothesis emphasise the importance of the Ponzi Finance component of Minsky’s thinking. If debt is strictly used to finance productive investment, then the runaway process doesn’t occur:⁶ debt grows relative to GDP, but it doesn’t overwhelm the economy.

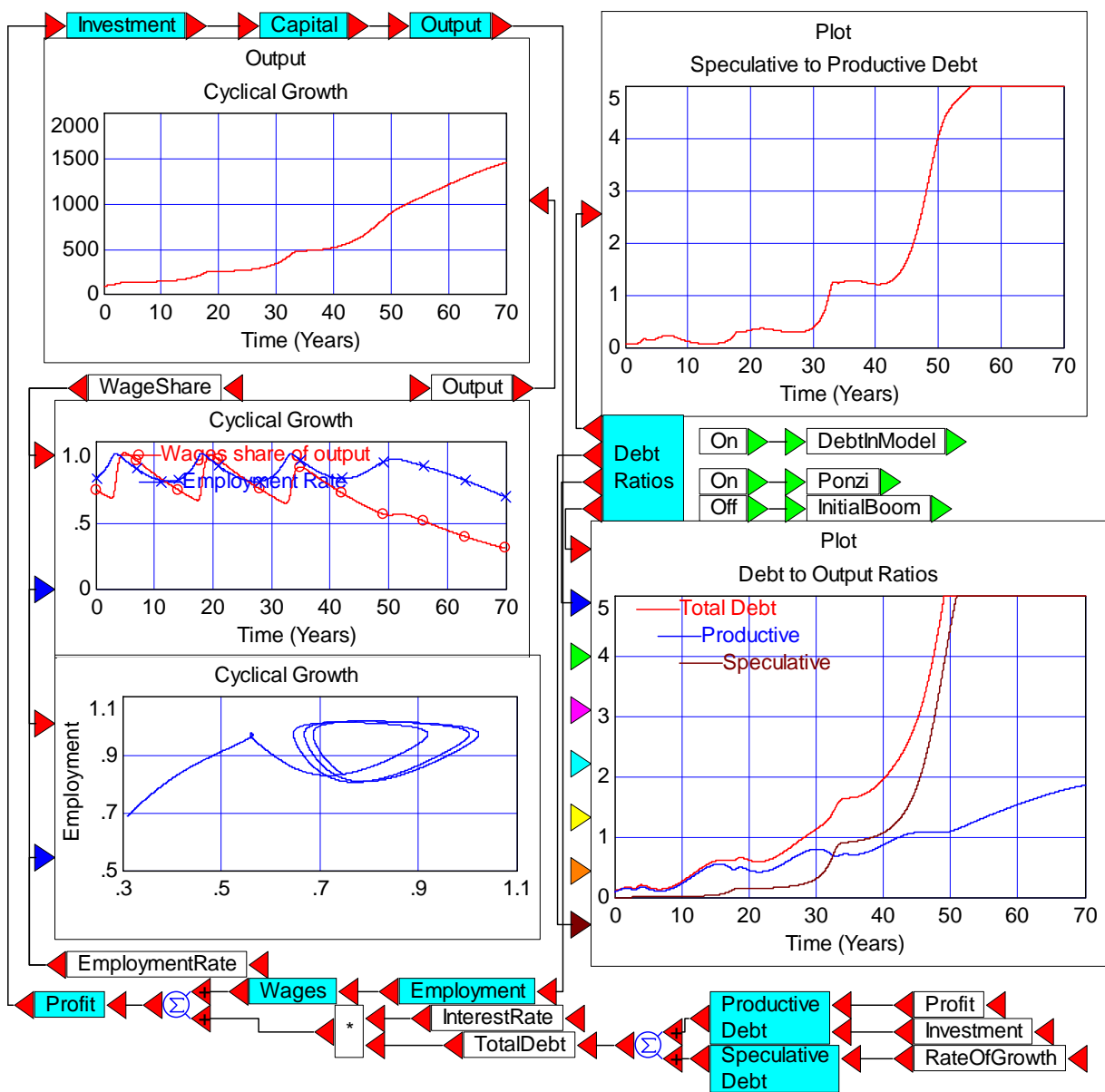
⁶ Unless extreme initial conditions are assumed: the further the model starts from equilibrium, the more likely it is to breakdown.

Figure 5: Minsky model without Ponzi finance



If on the other hand Ponzi financing exists—so that lenders finance unproductive speculation on asset prices as well—then the economy will ultimately accumulate so much debt that it overwhelms the debt-servicing capacity of the economy.

Figure 6: Minsky model with Ponzi finance



Ponzi Schemes and Economic Crises

Charles Ponzi's original scheme was an attempt to profit from arbitrage on the price of International Postage Coupons (*IPCs*). These enabled the sender of a letter in one country to give the recipient in another a coupon that could be used to buy a postage stamp for a return letter. Prices had been set prior to World War I, and not adjusted after it even though exchange rates were radically different after the War.

Ponzi realised that it was feasible to send US Dollars to Italy, convert the Dollars to Lire, buy *IPCs* there, shop them back to the USA and sell them for a profit. He tried to interest the Big End of Boston in this,

but couldn't persuade them—probably because they understood that something that sounded too good to be true was indeed untrue—so he opened a shopfront business that offered ordinary punters a 50% return on their money in 45 days.

Before he'd worked out the logistics of the scheme, he had his first depositor—and then several more. 45 days later, he still hadn't worked out the logistics—but the first punter turned up at his door demanding \$150 in return for the \$100 he'd "invested". Ponzi did all that he could in the circumstances (short of declaring bankruptcy)—he gave the punter his money back, plus \$50 from that given by later depositors (Zuckoff 2005). His Scheme took off like wildfire from there, as more and more people told of their fantastic profits from "investing" with Ponzi. And then, of course, it collapsed once the exponential increase in new depositors tapered off but the queue of existing investors still demanded their promised return.⁷

That is a Type I Ponzi Scheme: it's a simple "money in, money out" Scheme, with nothing being done with the money in the meantime. Such Schemes are normally short-lived (Ponzi's lasted under a year) and localised.⁸

Far more dangerous is a Type II Ponzi Scheme. Here the Scheme drives up the price of some class of assets, so that sale of those assets is the apparent source of the profits. This is a "money in, asset price up, sell asset, money out" process: people invest in the Scheme, and gain ownership of an asset whose price rises because of the demand from the Scheme itself. Early investors then sell the asset class for a higher price than they paid for it. The apparent success of the Scheme drags in more investors, driving the price of the asset class higher still, and the continued success of the Scheme is dependent on an ever-increasing stream of new investors.

Fundamentally, a Ponzi Scheme is a means to make money without producing anything: it is a way to get rich via unearned income. It is therefore dependent on the source of unearned income, which can be either (a) someone else's income or (b) debt. When one starts, other people's income is sufficient; when it becomes widespread, the only way to sustain it is for debt levels to rise. Since (individual) profits are being extracted (both by the Ponzi Financier and the Ponzi "Investors"), but no additional income is being generated, and debt must be serviced, debt must rise faster than incomes to sustain the Scheme.

Type II Ponzi Schemes therefore must collapse, once the debt servicing requirements of the Scheme exhaust the available income. In my simple model, this occurs when interest payments on outstanding debt exceed the gap between output and wages: from that point on debt accumulates while income stagnates.

⁷ There's much more to Ponzi's Scheme and life than this, and I do recommend reading Zuckoff's excellent biography.

⁸ Madoff's worked for much longer because he promised a much lower rate of return (12% a year versus Ponzi's 50% every 45 days) and he profited from piggybacking on the far larger Type II Ponzi Bubble of post-1987 Wall Street.

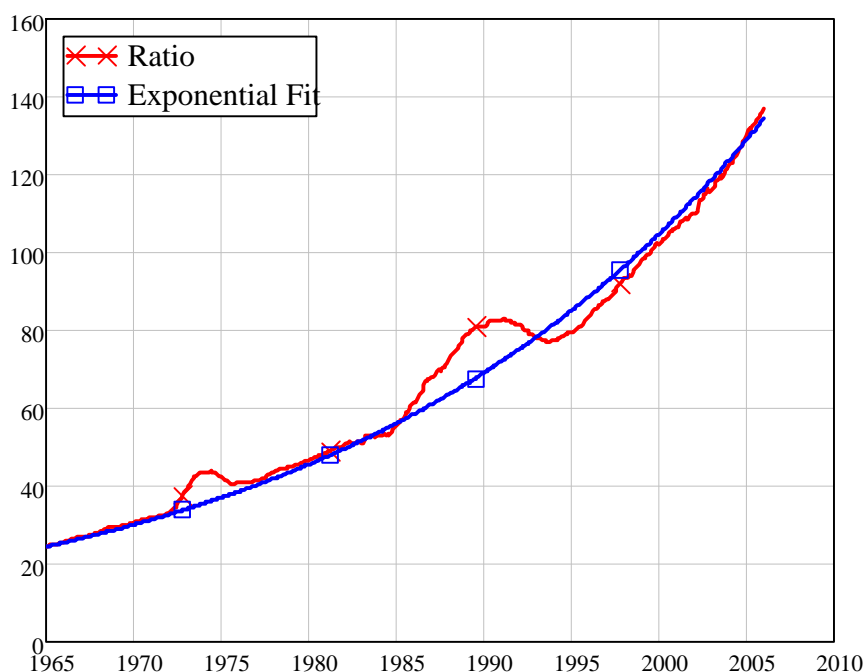
The Ponzi Economies

I'd be happy if my model were merely a toy—with such a vision of what can happen, I'd frankly be happier if it didn't apply in reality. Unfortunately, when I took a close look at Australia's (and the USA's) debt to GDP data, I realized that in large measure it did.

In December 2005, while drafting an Expert Witness report for the NSW Legal Aid Commission in a predatory lending case, I commented that the private debt to GDP ratio “has been rising exponentially”. I expected to have to revise this—such a statement was surely hyperbole, and as an Expert Witness rather than a barrister, I couldn't rely on hyperbole.

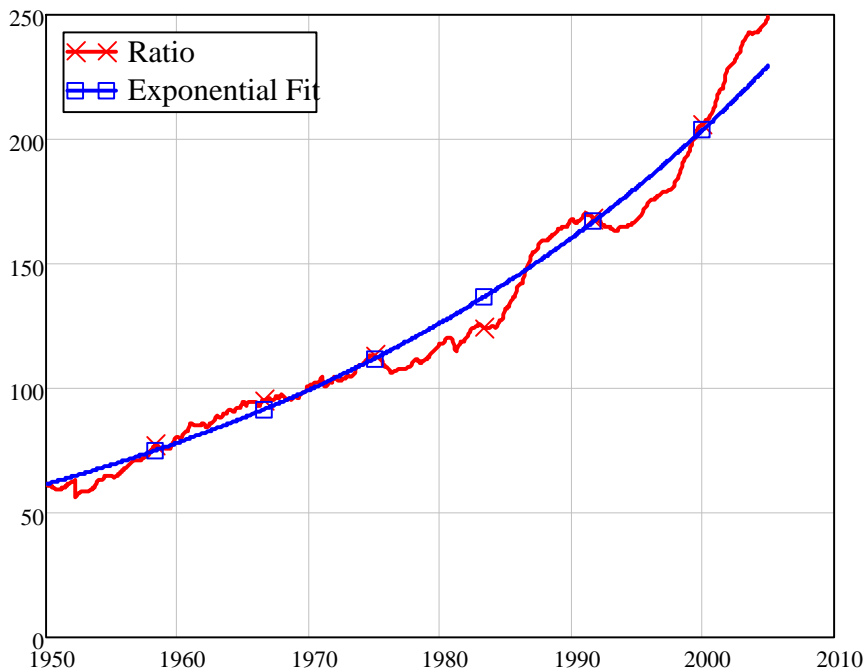
Then I downloaded the data and produced the plot shown in Figure 7.

Figure 7: Australia's debt to GDP ratio 1965-2005



The only factors that stopped this being a purely exponential increase were two popped super-bubbles on top of the overall exponential trend. Even so, the correlation of this raw data with a simple exponential was 0.99. This trend had to break, and usher in recessions (as had the popping of the two super-bubbles in 1972-76 and 1984-1994). I also thought that was likely to be “The Big One”—especially since the same process was evident in the USA, and at roughly twice the Australian level (see Figure 8): we couldn't get out of this coming recession the way we had the previous two, by piling yet more debt on top of existing debt.

Figure 8: USA debt to GDP ratio 1950-2005



This expectation was confirmed by looking at the breakdown of debt over time: the '80s bubble had more than doubled business debt to GDP, after which it dropped sharply in “the recession we had to have” (only to rise past the old peak in the height of the China Boom and Private Equity frenzy leading up the GFC); the post-1990s recession period had seen the mortgage debt ratio increase almost fivefold.

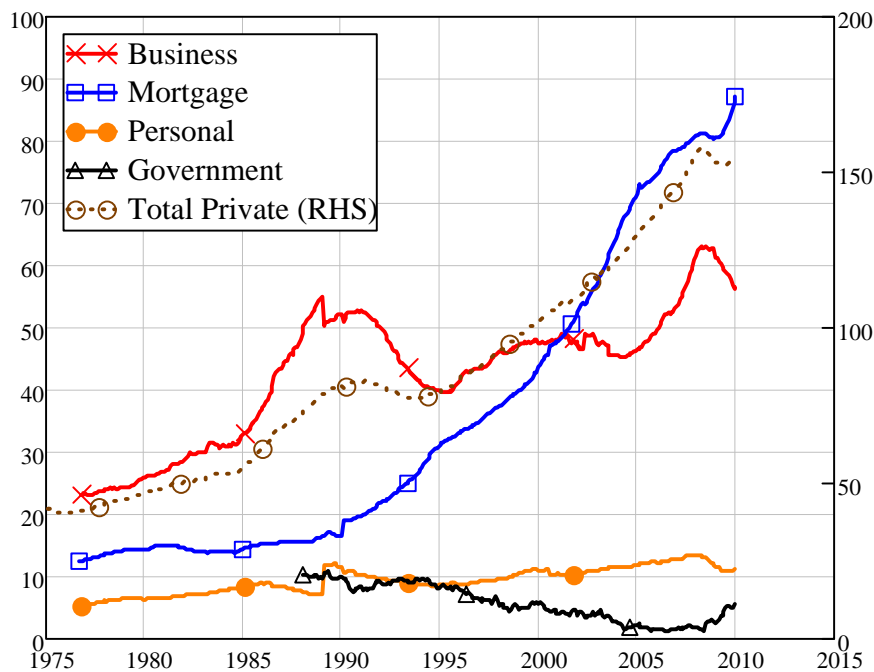
Two things were obvious from this data.

Firstly, the focus of Ponzi activity in Australia as well as America was the household sector (with the target of speculation being primarily the housing market in both countries, in contrast to the 1920s when the Stock Market was the primary Ponzi playground). Secondly, with households and businesses already carrying record levels of debt, when the crisis broke there would be no-one left to lend to (except the Government).

The Australian data was more definitive on the first point than the American: business debt had fallen sharply after the 1990 recession, and only in 2005 did it start to rise again (to a new record in 2008), while mortgage debt, which had been quiescent for over a decade, accelerated *as the 1990s recession began*,⁹ and it increased more than fourfold in under two decades.

⁹ This indicates that it is primarily the actions of the lenders in pushing debt that explains the growth in debt, an issue I explore in the post [The Roving Cavaliers of Credit](#).

Figure 9: Australian debt to GDP ratios



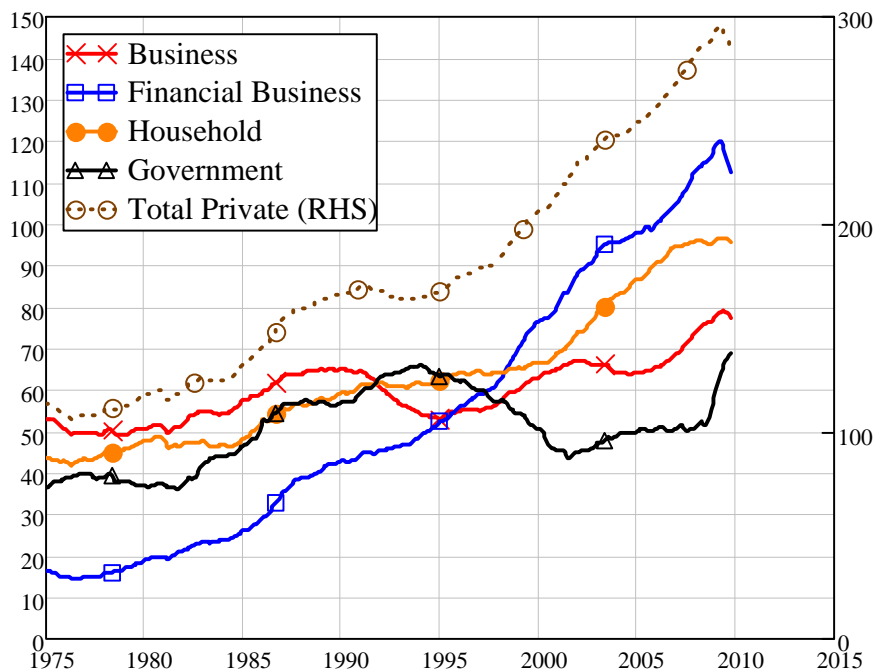
In the USA, nonfinancial business debt had also plunged after the 1990s recession, though it rose to a new peak during the DotCom boom (funny that), fell and then recovered to a new all-time high in March 2009 (from where it is now falling).

Household debt had also risen, but from a higher initial base (almost 50% of GDP versus about half that in Australia) and at a *slower* speed: the US household debt to GDP ratio grew at 2.8% p.a. between 1985 (when its accelerated growth began) and 2008; Australia’s ratio grew at 6.9% p.a. between 1990 and 2008. Today, household debt in Australia is slightly higher, as a proportion of GDP, than in America.

The standout difference between the two countries was the rise in financial sector debt in the USA— from 15% of GDP in the mid-1970s to 120% at its peak in early 2009 (the RBA does not provide a breakdown of nonfinancial business debt, but it must be substantially lower than in the USA).

Finally, in the aggregate (including financial sector debt), the USA’s debt level was twice Australia’s. The USA was in for a treat when deleveraging began, and it would be no picnic in Australia either.

Figure 10: USA debt to GDP ratios

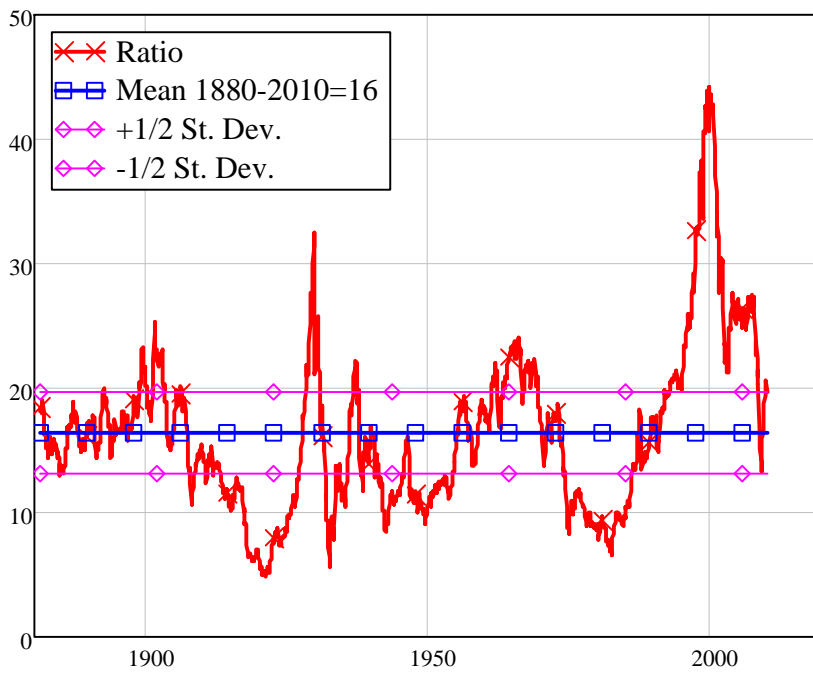


Finally, in both countries—and to some extent the rest of the OECD—rampant Ponzi-financed asset bubbles were afoot. Neoclassical economists claim that such things are obvious only after they have burst. Minsky argued that the clear and simple sign of an asset bubble was a divergence between commodity prices and asset prices (largely shares and real estate)—subject to the one proviso that the capitalisation of undistributed profits gives a legitimate reason for share prices to grow faster than commodity prices over time. On this metric the asset bubbles were obvious in both countries.

Robert Shiller’s data for the [10 Year Trailing Earnings to Price Ratio](#) implements the basic idea in Minsky’s metric—that ultimately sales of goods are the real basis of asset prices, so that a sustained divergence between commodity and asset prices is the sign of a Ponzi-financed bubble.¹⁰ On that basis a bubble is clearly obvious from 1995, when the monthly ratio moved more than half a standard deviation above its long term average and kept on going, reaching 4.2 standard deviations above the mean by the peak in 2000.

¹⁰ And without the complication noted above of a systemic growth of asset prices faster than the CPI given capitalisation of undistributed earnings.

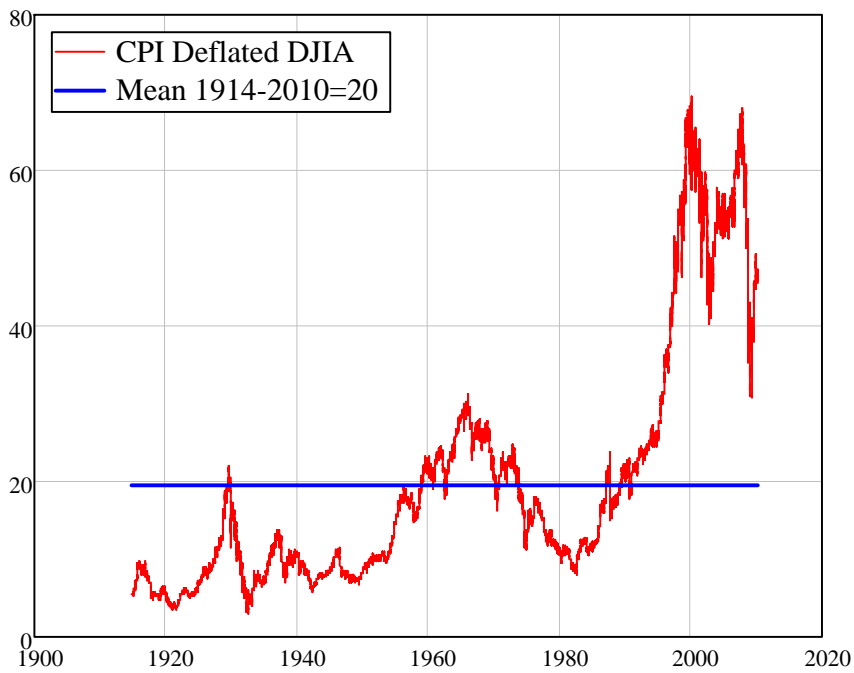
Figure 11: Ten year lagged earnings to price ratio, S&P 500



The same conclusion arises from looking at the CPI deflated value of the JDIA. Though the deviation from the average is no longer important, the acceleration away from it clearly began in 1995.¹¹

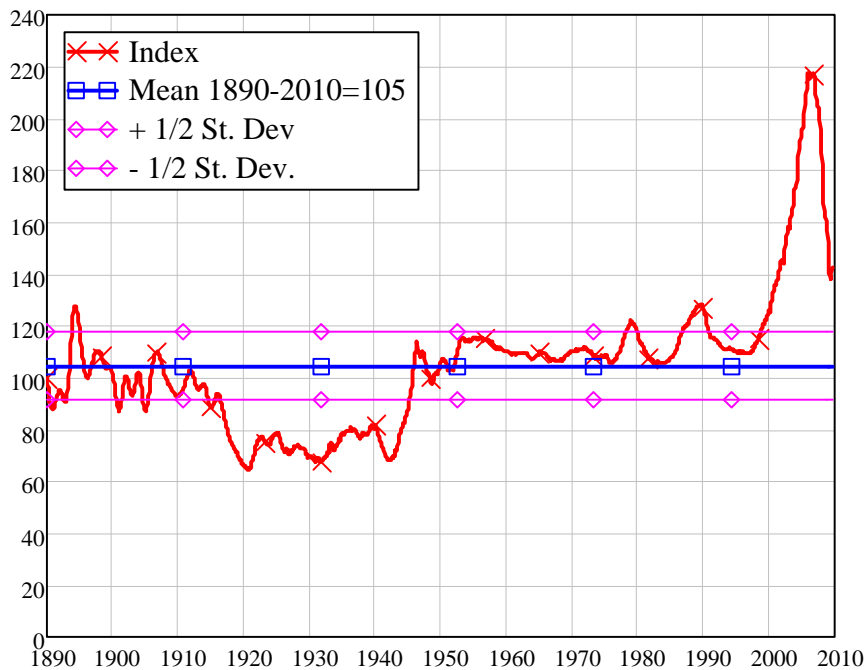
¹¹ This data mixes weekly and daily data and I have not yet written a routine to calculate an exponential trend that could be used in place of an average.

Figure 12: CPI-deflated DJIA



The bubble in American housing is also obvious. It commenced in 1997, breached the $\frac{1}{2}$ standard deviation mark in 1998, and also hit 4.2 standard deviations above its long term mean by its peak in mid-2006.

Figure 13: CPI-deflated Case-Shiller House Price Index



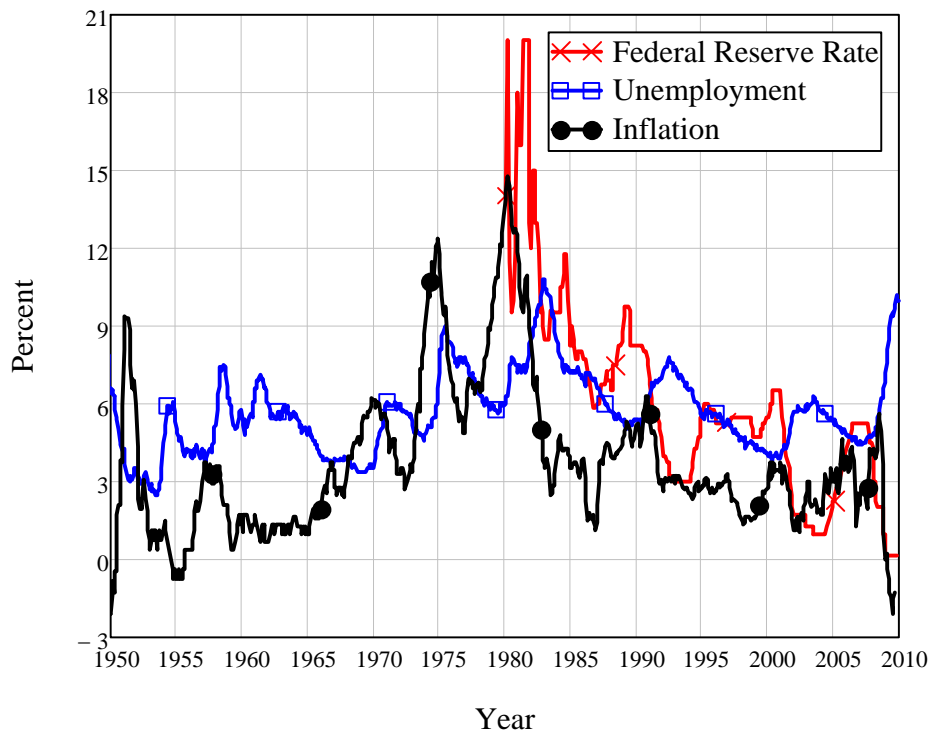
I'll leave consideration of the Australian asset price data until the next section, but given the US and Australian data as it stood in 2005, I expected—from my Minskian point of view—that “the mother of all financial crises” was just around the corner.

Since I knew that Neoclassical economists had no idea this crisis was approaching, I felt obliged to raise the alarm for two reasons: to alert the public to a crisis it had no formal warning was approaching, and point out that Neoclassical economics was not merely misleading, but positively dangerous to the health of the economy—since it had encouraged many of the Ponzi developments that were the root cause of the crisis.

I therefore took the highly unusual step (for an academic) of engaging in media commentary from December 2005; in November 2006 I established a newsletter that I sent out to journalists prior to the RBA's monthly meeting; and in March 2007 I started the blog www.debtdeflation.com/blogs.

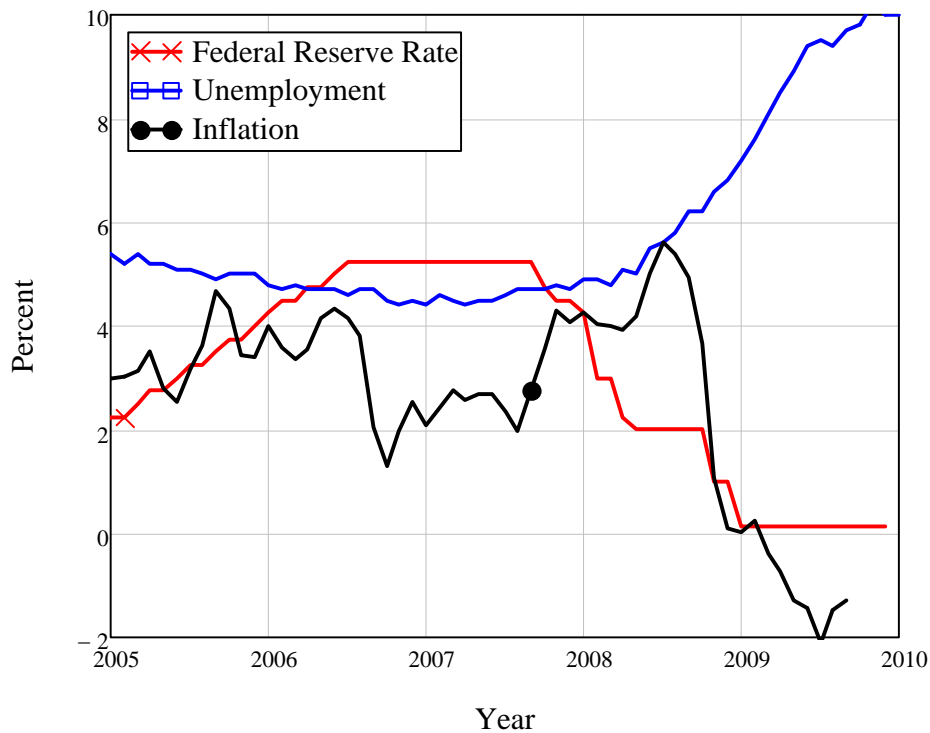
Then in mid-2007, the Global Financial Crisis began. Unemployment, which had been approaching levels that were last commonplace in the 1960s, exploded; inflation, which had begun to rise at rates last experienced in the inflationary 1980s, collapsed into outright deflation.

Figure 14: A long term view of the GFC in America



“The Great Moderation” that Bernanke had been trumpeting gave way in an instant to “The Great Recession”.

Figure 15: A short term view of the GFC in America



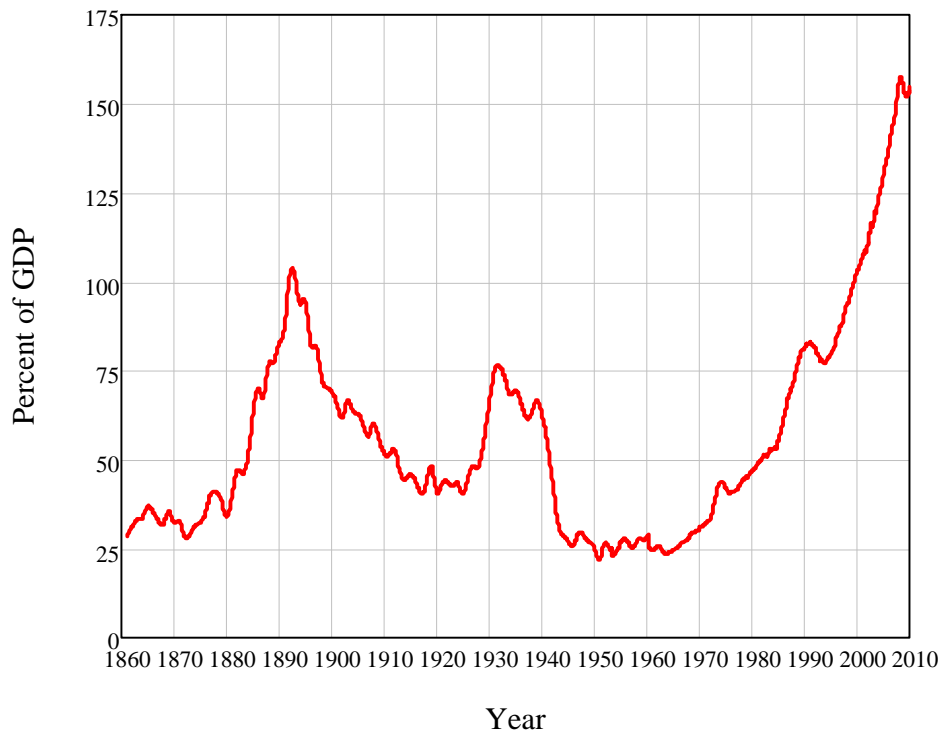
That then is a Minskian background to the GFC, which clearly makes sense of something that Neoclassical economists like Ben Bernanke still cannot comprehend. But there is one apparent problem with this analysis—Australia.

Prior to the crisis, Australia clearly fitted the same “Ponzi economy” analysis that I have applied above to America. However its experience to date has been very mild. I will detail why I believe this has been the case after I put the Ponzi perspective on our economic performance in the leadup to the GFC.

The Antipodean Ponzi

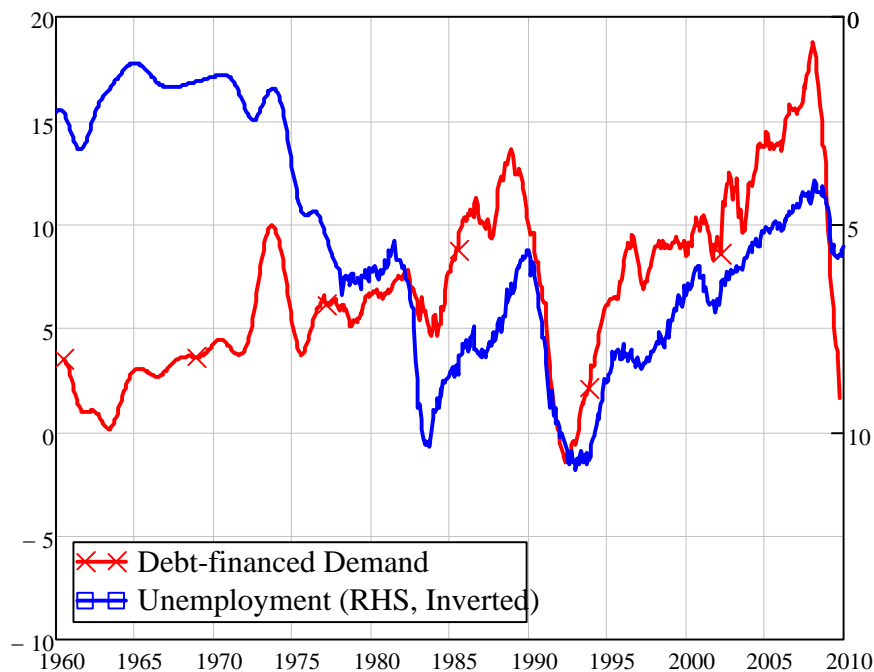
Though Australia’s aggregate private debt level is half America’s, this is still the biggest debt bubble in Australia’s history. The debt ratio today is 50% higher than the highest level we have previously experienced—in 1892, at the height of the 1890s Depression (see Figure 16).

Figure 16: Australia's long term private debt to GDP ratio



Debt-financed demand has also played as key a role in economic performance as in America. Our recovery from the 1990s recession was debt-driven, with unemployment falling from 11% to under 4% only as debt-financed demand rose from -2% of aggregate demand at the depth of the recession to over 18% of aggregated demand at the start of 2008.

Figure 17: Debt-financed demand and unemployment, Australia



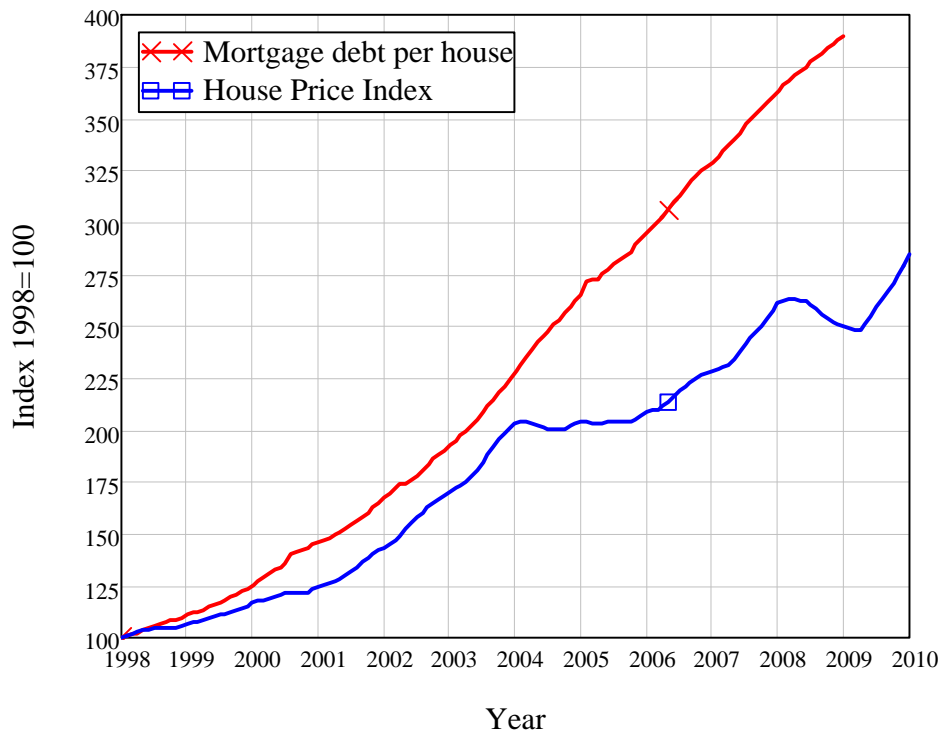
My expectations that Australia would face a recession when the debt bubble stopped growing were therefore based predominantly on domestic factors: though international contagion would be important, a slowdown in the rate of growth of debt—when it had been responsible for almost 20% of demand in the economy—would have to cause a recession.

As note earlier, “Ponzi finance” is a key component of Minsky’s analysis of financial instability, and it generates a debt-financed bubble in asset prices, where the debt level rises faster than the asset prices.¹² Though in recent decades Australians have been encouraged into share price speculation, the key asset class for Ponzi investment in Australia has always been housing. As Figure 18 indicates, though house prices have risen virtually threefold since 1998, the debt per house has risen by a factor of 4.¹³ The fivefold increase in Mortgage debt in the last 12 years is, to my Minskian eyes, the primary issue identifying Australian house price as a component of a Type II Ponzi Scheme.

¹² Contrary to popular belief, increasing the price of an asset without increasing the number of quantity of assets is not production.

¹³ Mortgage debt per house is calculated as total mortgage debt (taken from RBA Statistical Bulletin Table D02) divided by the total stock of occupied houses (ABS 4102, Table 1).

Figure 18: Debt per house compared to the house price index



A most excellent recession?

Australia initially feared as devastating a crisis as America was suffering, or worse—on the basis of the adage that “when America sneezes, Australia catches a cold”. But to date it seems that “when America gets pneumonia, Australia sneezes”. What happened?

I would be churlish if I did not admit that Australia got through 2009 much more easily than I had expected. Some of those factors reflect ways in which Australia indeed is different to the rest of the world—an argument that I tended to downplay in 2008, but must give some credence to now. Other aspects relate to the scale of government action worldwide (and particularly in Australia) to avert the crisis, and the relative effectiveness of the policies undertaken by the Australian government. However other aspects relate to policy moves that I expect will backfire on the economy in 2010.

The five factors that I see as explaining why Australia’s performance to date has been so much better than that of the USA in particular are:

1. The scale of the debt problem;
2. The government’s “Go Early, Go Hard, and Go Households”¹⁴ stimulus packages;
3. The RBA’s 4% cut to rates and the fact that our mortgages are predominantly floating rate;
4. The China stimulus; and

¹⁴ To cite Ken Henry’s alleged advice to Rudd and Swan.

5. The First Home Vendors Boost (yes, I know it has a different name, but I prefer to call it as it is).

Taking each point in turn:

1. Though Australia's private debt burden is 50% higher than it has ever been before, it is nonetheless that about half that facing America. Therefore the scale of deleveraging we face is also less. More importantly, as I detail later, government policy has actually reversed deleveraging—though I do not believe the reversal is permanent.
2. Australia's stimulus went very directly to households, whereas the US stimulus was largely directed at recapitalizing banks. On this front, America was following sound economic advice, whereas Australia was riding on gut instinct. Australia therefore did the right thing and America got it wrong, because that "sound economic advice" is bunkum.

Obama justified the focus of his rescue package on the banks in the following way:

There are a lot of Americans who understandably think that government money would be better spent going directly to families and businesses instead of banks – 'where's our bailout?,' they ask...

The truth is that a dollar of capital in a bank can actually result in eight or ten dollars of loans to families and businesses, *a multiplier effect* that can ultimately lead to a faster pace of economic growth. ([President Obama's Speech, April 2009](#); emphasis added)

The "multiplier effect" that Obama referred to there was the "money multiplier", the argument that \$1 deposited with a bank will ultimately lead to \$10 of money being created. The bank receiving the dollar obeys the Reserve Ratio Requirement by keeping 10 cents, and lends out the other 90; the loan recipient then deposits the 90 cents with another bank that duly holds on to 9 cents and lends out the other 81; over time this iterative process means that \$1 of government money to banks will create an additional \$9 of credit money. This is the "more bang for your buck" on which Obama, following the guidance of his Neoclassical economic advisers, was relying.

Unfortunately, the money multiplier doesn't exist. It is an empirically fallacious argument that was debunked thirty years ago by the Post Keynesian economist Basil Moore (Moore 1979; Moore 1983), and even by those arch-Neoclassicals Finn Kydland and Edward Prescott (Kydland and Prescott 1990).

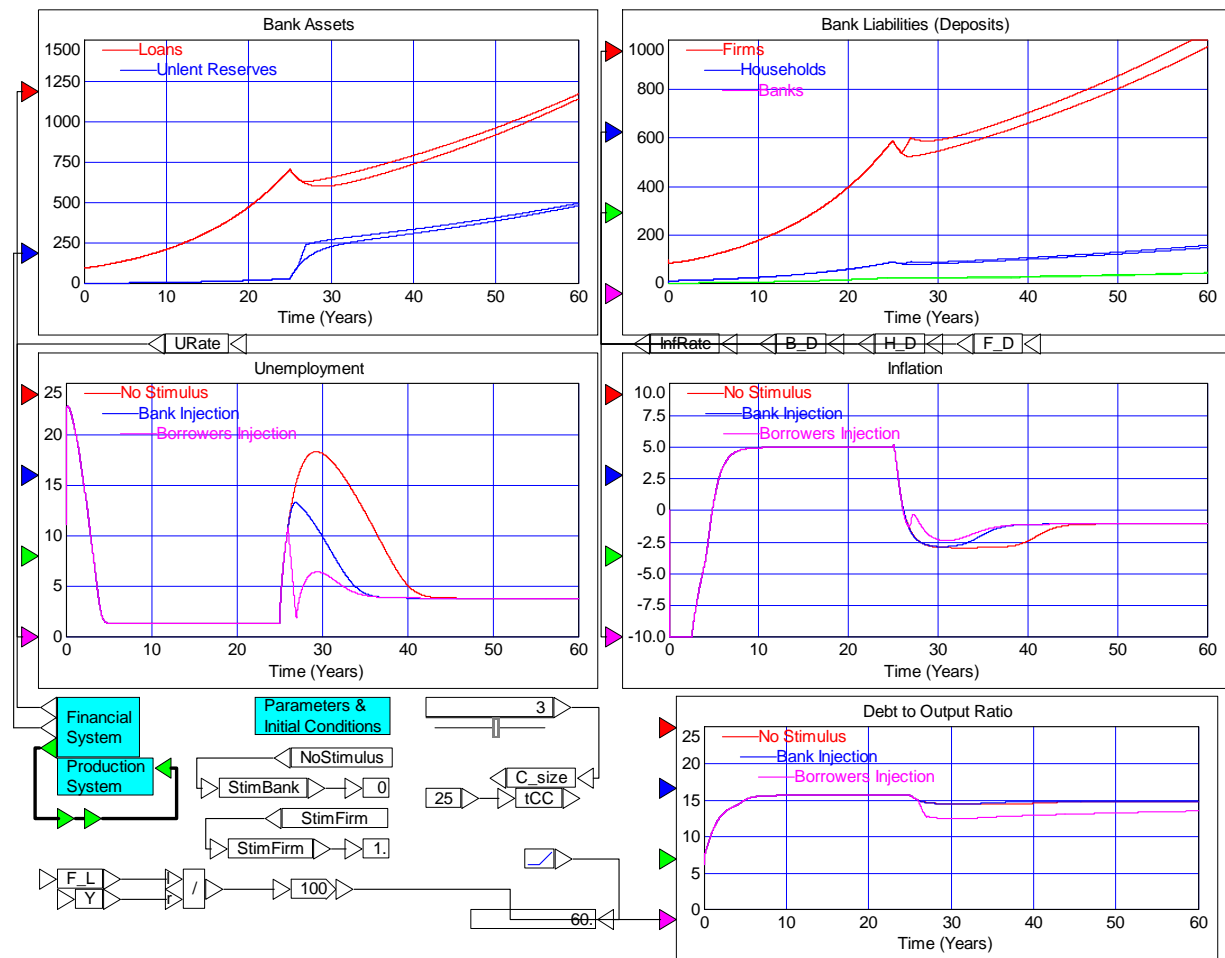
The fallacy is transparently obvious in the current crisis: for the money supply to rise by \$10 trillion in response to Bernanke's \$1 trillion injection of Base Money in 2008, *private debt levels would need to rise by \$9 trillion*. Since no-one in America (apart from the Government, and even then unwillingly) wants to touch debt with a barge pole right now, that simply wasn't going to happen.

In fact, in the real world the money supply is determined largely by banks' willingness to lend—*loans create deposits*. Since banks are less willing to lend during a crisis, giving the bailout money to them simply increased the level of unlent reserves. On the other hand, during a crisis borrowers actually try to repay debt more rapidly, and they largely have no choice but to go on spending on consumer goods. So

giving money to consumers and firms rather than banks will directly add to circulation, as the Australian experience showed.

I have successfully reproduced this comparison of rescuing the banks versus rescuing the debtors in a model of a pure credit economy (Keen 2009; Keen 2009, p. 24-31). Giving a government stimulus to the borrowers, as in Australia, is far more successful at stimulating the economy than is refinancing the bankers.

Figure 19: Bailing out the debtors is far more effective than bailing out the banks



The government stimulus was also massive and unprecedented, increasing household disposable incomes by 4% in 2009—an unheard of outcome during a recession.

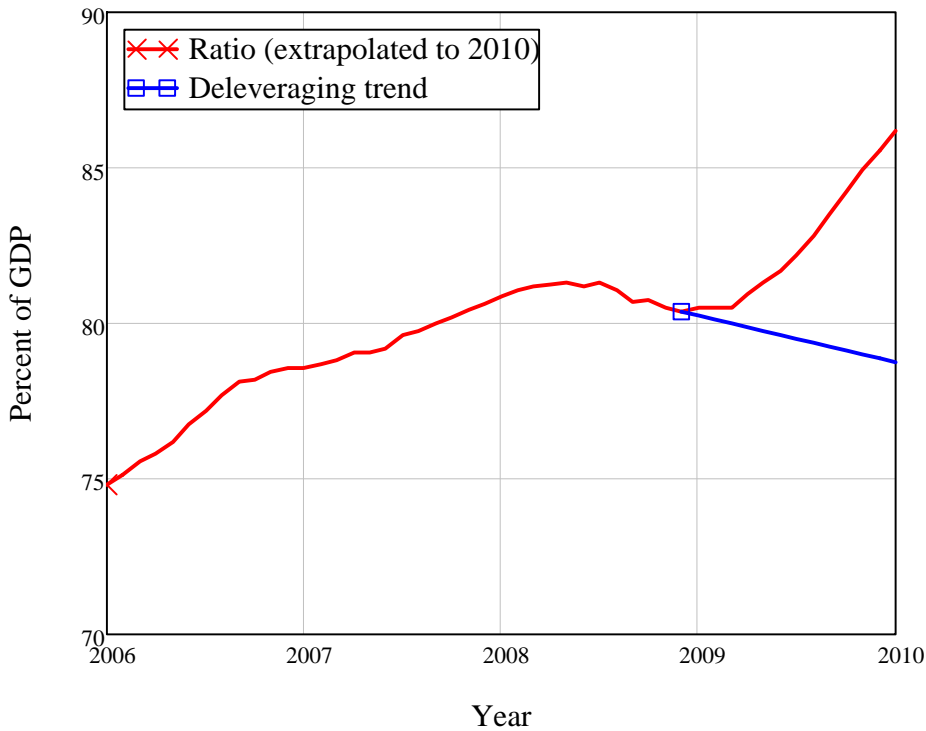
3. Even more potent were the 4% cuts in official interest rates, which—given that the household sector’s debt to disposable income ratio was then over 150%, and that most mortgages here are variable rate—added another 5% to disposable income.
4. It certainly helps being China’s quarry rather than merely the recipient of the output of its factories. China had implemented one of the biggest stimulus packages on the planet, and directed its banks to lend, lend, lend—instructions that a Chinese banker takes very seriously

when issued by the Central Committee of the Communist Party of China.¹⁵ Chinese lending [rose 95% in 2009](#) over 2008 levels, boosting its money supply by over 27%—a monetary stimulus that went as directly to our miners as some of Rudd’s \$960 did to Chinese manufacturers.

5. Finally, we reach possibly the most potent factor of all: the doubling of the First Home Owners Grant, which goes by the name of the First Home Owners Boost, but which I prefer to call the First Home Vendors Boost—because that’s who got the money (and then some).

Before this Boost was introduced, both households and businesses were busily deleveraging—which is the factor that I predicted would bring on a serious recession. Shortly after the Boost came in however, the tendency for household debt to fall stopped and then went into rapid reverse. By the end of the policy itself, mortgage debt had risen by 6% of GDP—which represents a A\$75 billion injection into the economy (versus, had mortgage deleveraging continued at its pre-Boost rate, potentially a further A\$17 billion fall in spending).

Figure 20: Mortgage debt to GDP and the pre-FHVB trend

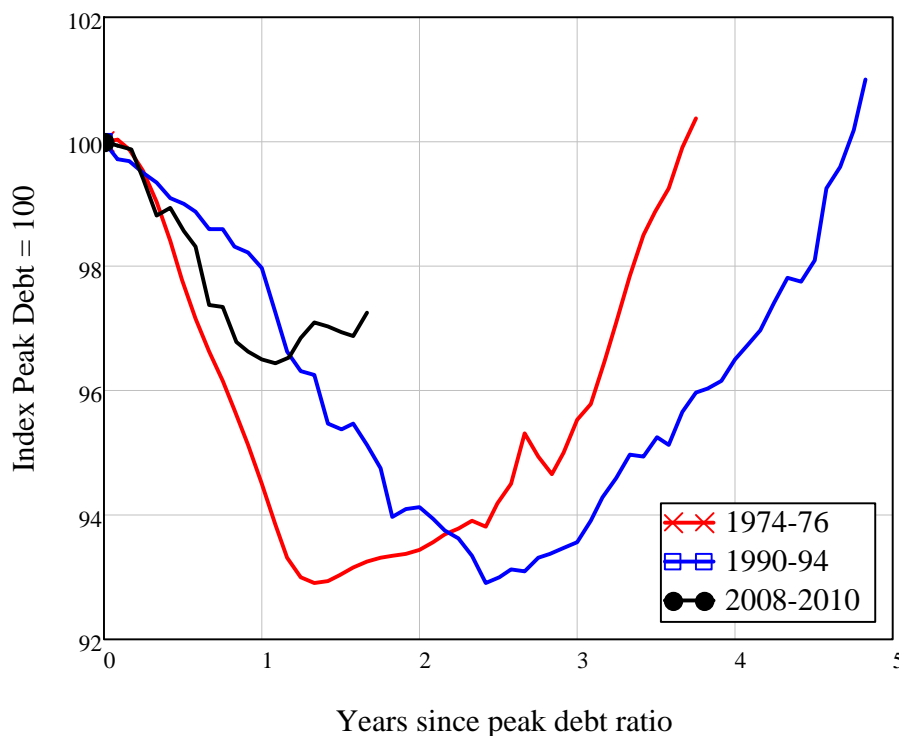


¹⁵ I well remember a tour of China I organized for Australian journalists in 1979, just after the fall of the Gang of Four. An anomalous pair of statistics had turned up just before the tour began: Chinese light industry output had risen 17%, but heavy industry had fallen by 7%: how could these two contradictory things happen, our party of largely economic journalists wondered? We got our answer from a meeting with the Mayor of Shanghai and an official who title was the “Economic Boss” of Shanghai: the Central Committee of the Communist Party of China had issued a directive to “promote light industry”. So what did they do? “We stripped heavy industry factories and turned them into light industry”.

A major reason why Australia avoided the GFC is therefore because it deliberately renewed the debt bubble on which the pre-GFC prosperity was based. This is now obvious in the turnaround in our private debt to GDP ratio, which has started to rise again—in contrast to the USA, where the ratio is falling rapidly (see Figure 23 on page 34).

The speed at which we have gone from deleveraging to re-leveraging in this crisis is also very rapid, compared to our experience in 1974 and 1990. In 1974 the turnaround took 15 months; in 1990, it took 29 months; this time it has taken just 13 months to go from falling to rising debt levels. The decline in debt has also been much milder: a 1.8% fall this time versus falls of roughly 7% (compared to the peak debt level) in the previous two recessions. Our debt to GDP ratio is also substantially higher now: 157% of GDP at its peak versus 83% in 1990 and 44% in 1974. I hope I am not the only person wondering whether this performance is sustainable.

Figure 21: Fall and subsequent rise of private debt to GDP ratio



Can The Dream Continue?

Recent ABS figures on unemployment imply that the GFC is over for Australia, and only good times lie ahead. As reported widely in the media on February 11th, the seasonally adjusted unemployment rate fell by an unexpected 0.2% to give a rate of 5.3%, 0.3% below the peak to date.¹⁶ This is in strong

¹⁶ The largely unreported original data showed a 0.5% increase in unemployment, from 5.5 to 6%. Of course, unemployment always does rise in Australia during summer, as new entrants come into the workforce, so this could rightly be discounted.

contrast to the USA, where the peak was 10%, and even Neoclassical economists expect it to go higher in 2010.

However, I will remain a curmudgeon and see this undoubted Swallow as a not yet the sign of Spring. The key cause of the GFC—the excessive level of private debt—has not been addressed, and the deleveraging that I anticipated in Australia has been delayed but not avoided. Several of the key factors that gave us such an excellent recession are also not likely to continue into 2010—specifically the boost to disposable incomes from rate cuts, China’s stimulus, and the First Home Vendors Boost.

The RBA is now returning to the “fight inflation all the time” orientation that it had up until March 2008, when the GFC first caught it by surprise. Its three rate rises to date have reduced household disposable income by roughly 1 percent—reversing 20% of the stimulus they imparted in the last 2 years. I expect the RBA to reverse direction if the economy fails to continue improving, but for now, its impact is deflationary.

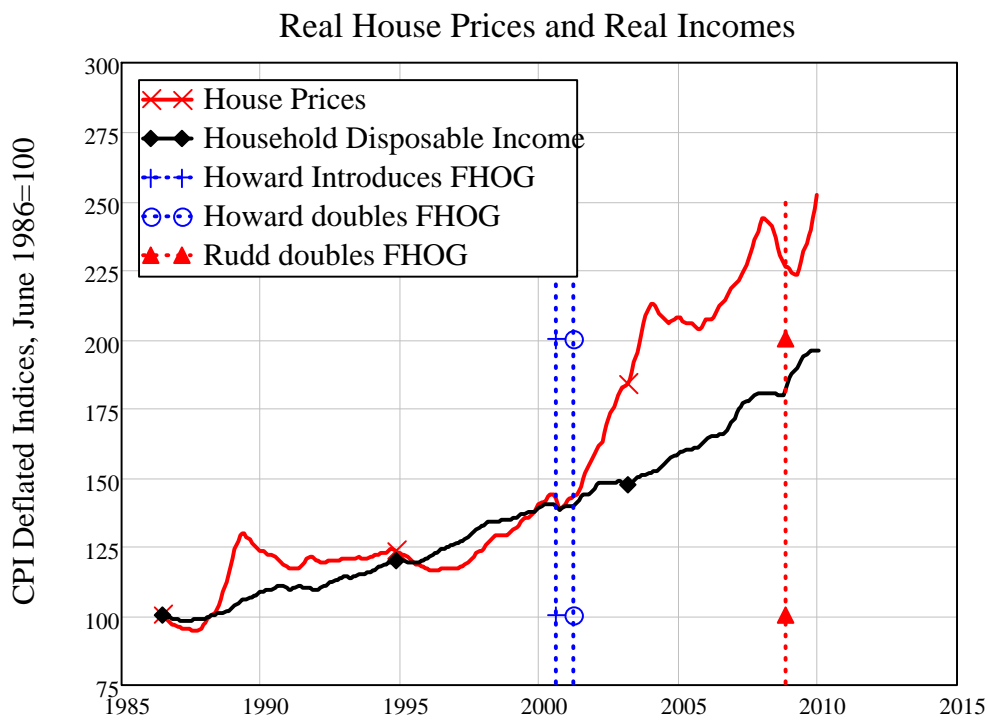
The stimulus from China is now being tempered by its [recent decision to increase the reserve ratio](#)—a decision that would have no impact in an OECD nation but will have an immediate one on pending in China—and hence Chinese demand for Australian commodities.

Finally the artificial housing boom inspired by the FHVB will likely go into reverse as buyers who would have bought in 2010 but were instead inspired to do so in 2009 are no longer in the buying pipeline—and new would-be buyers face a potentially prohibitively higher price than in 2009.

Figure 22 shows the impact that the First Home Buyers Grant has had on house prices relative to disposable incomes. I know better than to confuse correlation with causation, but I also think I can spot a smoking gun when I see one: Howard’s (re-)introduction of the Scheme, followed by its doubling as a Treasury-inspired way to boost the economy when a recession was feared in the early 2000s, reversed a nascent trend for house prices to fall and then clearly set off a bubble in house prices relative to incomes—when coincidentally, rising real disposable incomes over time had brought the house prices to disposable income back into alignment with the June 1986 ratio.

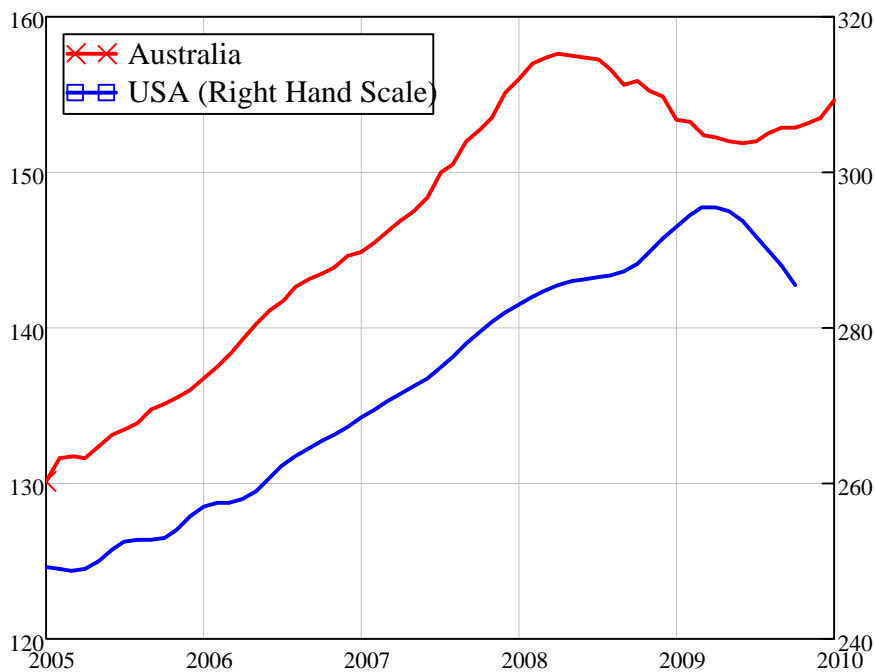
Rudd’s doubling of the Grant in 2008 clearly had the impact that Treasury advised it would have, a reversal of the trend for house prices to fall. Both sides of Parliament also hoped for this outcome, since both believed that the GFC had been caused by falling house prices, and arresting that fall was thus a way of avoiding a crisis here.

Figure 22: Real house prices and real incomes and the First Home Buyer Grant



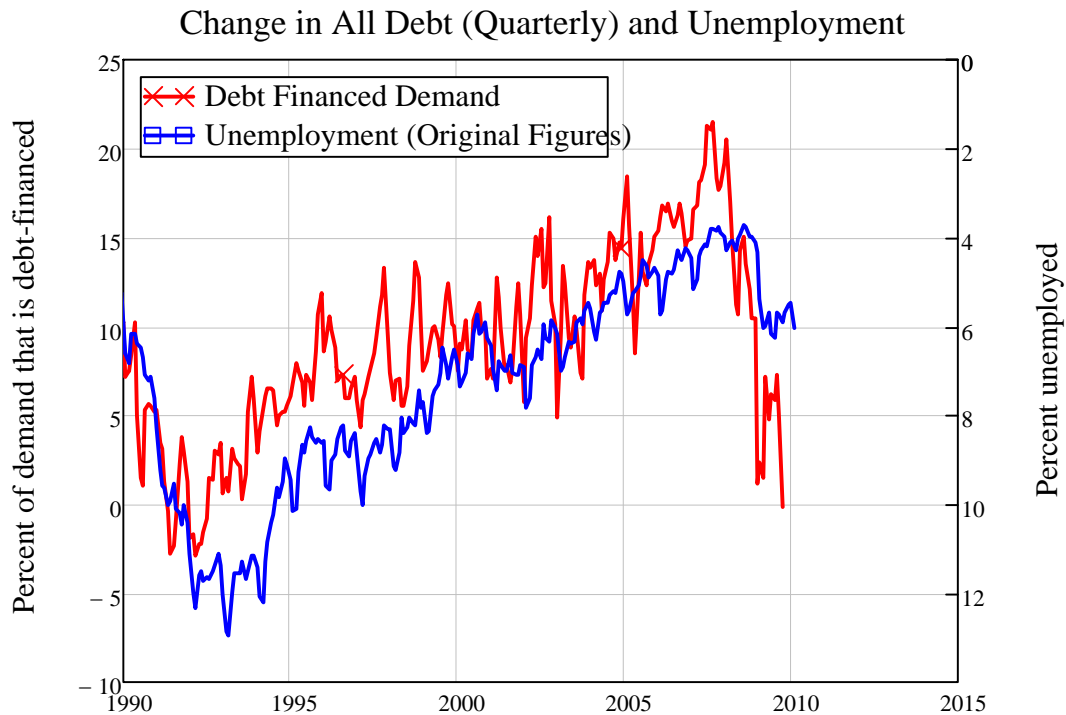
So Australia's in part "hair of the dog" approach to curing a hangover has worked to date. In contrast to the rest of the OECD, private debt levels are rising in Australia (see Figure 23 and Figure 23 on page 34; this is entirely due to the FHVB, since the business sector continues to delever—see Figure 9 on page 18).

Figure 23: The recent trends in private debt to GDP ratios



Continued leveraging up by the household sector will thus depend on the perception by investors that another bubble is on, and they had better pile in now to profit. I stand by my pre-GFC argument that this route is not sustainable, especially if house prices prove to be fragile this year given the withdrawal of the FHVB and changes in bank leverage levels (as I discuss later). Though we have in part relied upon this technique to do so well early on, I believe that this is one recession we can't get out of by piling on more private debt. I expect the trend to deleveraging by the household sector to re-assert itself at some point in 2010.

Figure 24: Correlation between all debt-financed demand (including government) and unemployment, Australia

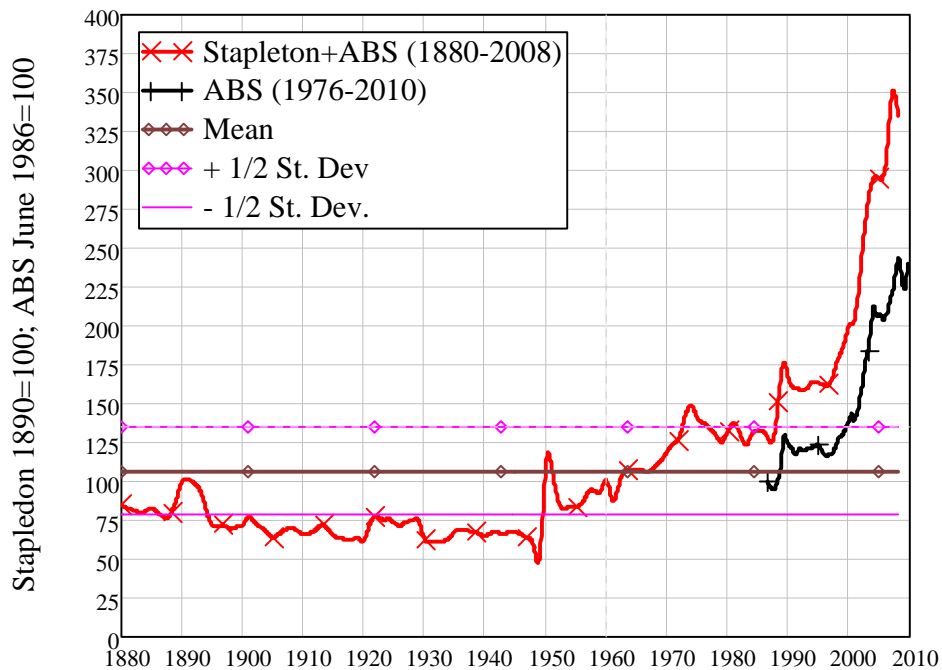


This will be especially so if Australia's housing bubble starts to unwind in 2010, after the artificial boost it was given by the Government last year.

No Housing Bubble in Australia?

Now for my Benedictine contribution. Australia does not have as accepted a long term house price index as Case-Shiller, but there is Nigel Stapledon's PhD that applied a similar methodology to data derived from monthly sell and buy offer data gleaned from newspaper advertisements in Sydney and Melbourne. I have taken Stapledon's data and tacked onto it the ABS house price series from mid-1986, deflated by the CPI (the original ABS data with an index date of mid-1986 is shown for reference purposes). The chart is therefore comparable to Figure 13 for the USA.

Figure 25: CPI-deflated Stapledon-ABS Australian House Price Index

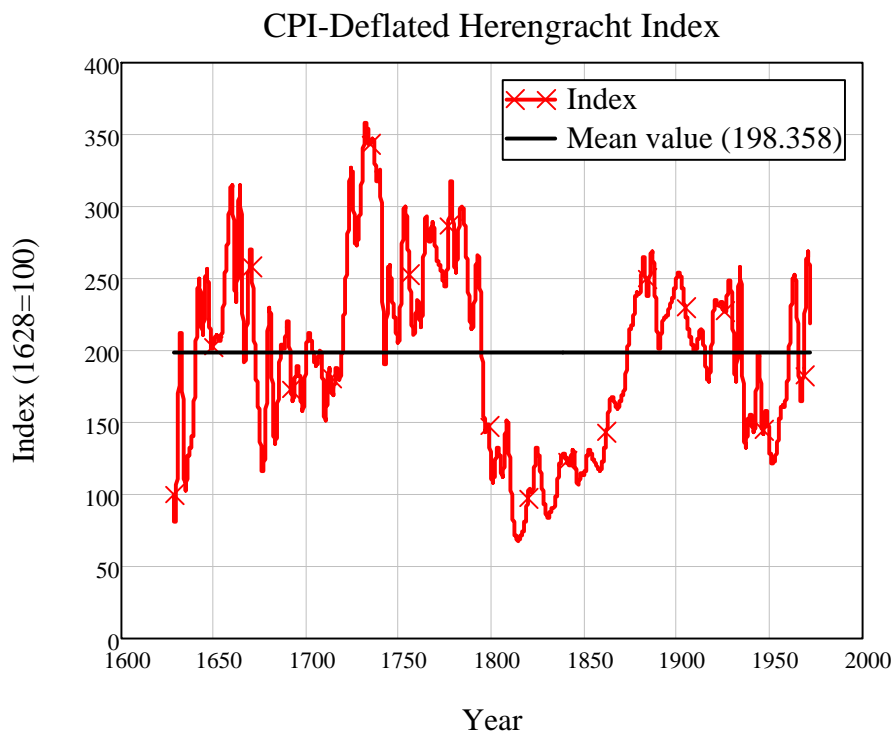


Clearly Australia’s housing story is very different to the US in the long term (there was a government regulation whose removal was responsible for the jump in prices in the late 1940s and the probably suppressed nature of house prices before then), and in the very recent term as well—since 1987 when a large bubble burst but didn’t quite return prices to the post-1950 average. There are two ways to interpret this data—either Australia has been in a sustained housing bubble since the late 1980s, or Australia really is different to the rest of the world (as best exemplified by Amsterdam’s Herengracht canal’s 350-year long price series—see Figure 26), and house prices here can indeed forever rise faster than consumer prices.

I contend that, though there are significant differences between Australia’s economy and that of the rest of the OECD, ultimately we will dance with the rest of the world on the way out of this Ponzi-financed bubble, as we did on the way in. The Ponzi-finance driven and government-sponsored bubble here has proven more durable than in the rest of the world (have you wondered how our house prices might look without not merely the FHVB but also without negative gearing, the exemption of the family home from capital gains tax, and the halving of the capital gains tax rate?), but ultimately it will burst—and given the change in conditions from 2009 to 2010, this could well be the year that a burst starts that the government will be unable to arrest.¹⁷

¹⁷ Even if the government reintroduces the First Home Vendors Boost. If I can borrow Paul Keating’s phrase here, the FHVB is a soufflé that is unlikely to rise twice.

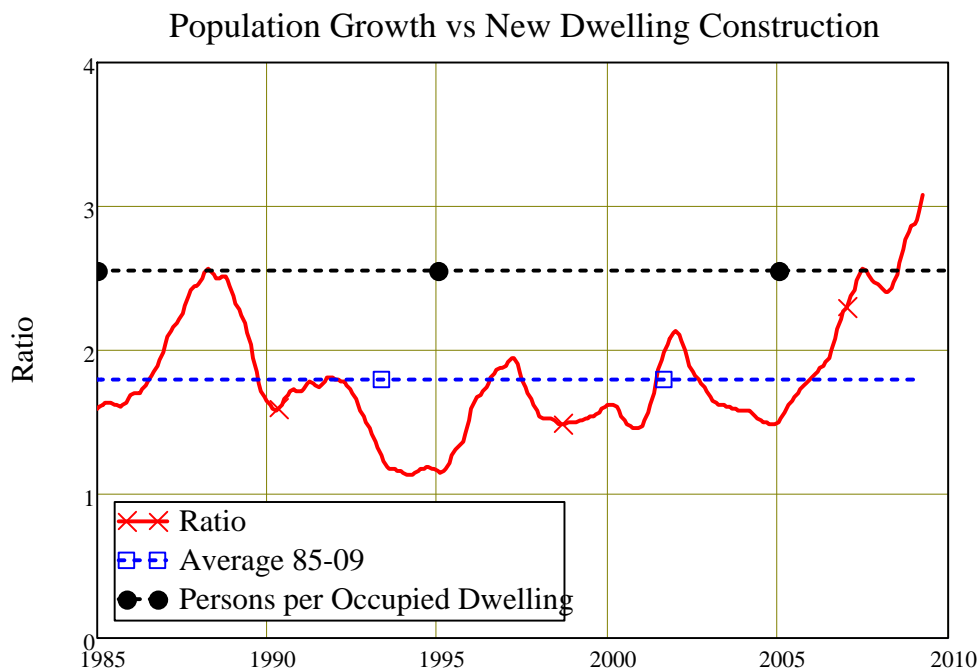
Figure 26: Real house prices in Amsterdam's best street, 1628-1973



The population argument

There is no doubt that our higher rate of population growth, and especially large scale immigration, has boosted demand. But a close look at the rate of population growth in the last 25 years, compared to the rate of house construction, implies that *if* the population argument was all there was to it, then house prices should have been falling up until 2008.

Figure 27: Population growth and new dwelling construction compared to the average occupancy ratio



A government-sponsored bubble?

I stick by the argument I made in my first Debtwatch Report in November 2006, that “increasing subsidies to home buyers (as happened in 1991 with the doubling of the First Home Buyers' grant) will be worse than doing nothing at all.” Though Boost has turned deleveraging into leveraging, and added as much as \$75 billion to expenditure in the economy over what would have happened without it, it will necessarily lead to a slump in demand from First Home Buyers in 2010, and it has enticed a large number of new buyers into financial stress in what I termed [“Australia’s Subprime Lite”](#).

Borrowers themselves are therefore more likely to be cautious about debt this year, and added to this we now have the first signs of banks reversing a three-decade long proclivity to increase mortgage gearing ratios.

“Don’t mention the leverage”

Sometimes I feel like I’m watching an episode of Fawlty Towers when I hear the “supply and demand” case put for the rise in house prices, without ever a mention of the impact of bank leverage on them. In the “supply and demand diagram” way of thinking that most economists employ,¹⁸ this is like concentrating on the horizontal (volume) side of the demand curve while forgetting the vertical (price) side.

¹⁸ I don’t, because I know that supply and demand analysis is both empirically and theoretically invalid.

In a standard market there is no problem with that per se (one is equivalent to the latter), but in an asset market the price you can pay reflects both your own money *and the amount a lender is willing to top it up by*—the Loan to Valuation Ratio (LVR).

Those of us old enough to remember the '60s know that back then the best you could get from a bank was a loan to valuation ratio of 70%. In the last decade, banks have been willing to offer LVRs of up to 95%. Now one bank (Westpac) has announced that it will be cutting its LVR from 92% to 87%. Figure 28 shows the impact this change will have on someone with a \$50,000 deposit. For an ordinary buyer, that will drop the maximum sum they can bid from \$625,000 to \$384,615; for a First Home Buyer, then the reduced deposit post the FHVB will bring their bidding power down to \$330,769.

Figure 28: Leverage and house prices

	With FHVB	After FHVB		
Buyer's Deposit	\$50,000	\$43,000		
Bank's LVR	Maximum Old Bank Loan	Buyer's Old Bidding Power	Maximum New Bank Loan	Buyer's New Bidding Power
100%	Infinite	Infinite	Infinite	
99%	\$4,950,000	\$5,000,000	\$4,257,000	\$4,300,000
98%	\$2,450,000	\$2,500,000	\$2,107,000	\$2,150,000
97%	\$1,616,667	\$1,666,667	\$1,390,333	\$1,433,333
96%	\$1,200,000	\$1,250,000	\$1,032,000	\$1,075,000
95%	\$950,000	\$1,000,000	\$817,000	\$860,000
94%	\$783,333	\$833,333	\$673,667	\$716,667
93%	\$664,286	\$714,286	\$571,286	\$614,286
92%	\$575,000	\$625,000	\$494,500	\$537,500
91%	\$505,556	\$555,556	\$434,778	\$477,778
90%	\$450,000	\$500,000	\$387,000	\$430,000
89%	\$404,545	\$454,545	\$347,909	\$390,909
88%	\$366,667	\$416,667	\$315,333	\$358,333
87%	\$334,615	\$384,615	\$287,769	\$330,769
86%	\$307,143	\$357,143	\$264,143	\$307,143
85%	\$283,333	\$333,333	\$243,667	\$286,667
84%	\$262,500	\$312,500	\$225,750	\$268,750
83%	\$244,118	\$294,118	\$209,941	\$252,941
82%	\$227,778	\$277,778	\$195,889	\$238,889
81%	\$213,158	\$263,158	\$183,316	\$226,316
80%	\$200,000	\$250,000	\$172,000	\$215,000
79%	\$188,095	\$238,095	\$161,762	\$204,762
78%	\$177,273	\$227,273	\$152,455	\$195,455

77%	\$167,391	\$217,391	\$143,957	\$186,957
76%	\$158,333	\$208,333	\$136,167	\$179,167
75%	\$150,000	\$200,000	\$129,000	\$172,000
74%	\$142,308	\$192,308	\$122,385	\$165,385
73%	\$135,185	\$185,185	\$116,259	\$159,259
72%	\$128,571	\$178,571	\$110,571	\$153,571
71%	\$122,414	\$172,414	\$105,276	\$148,276
70%	\$116,667	\$166,667	\$100,333	\$143,333

Of course house prices won't drop that much courtesy simply of Westpac's decision. I do not expect other lenders to increase LVRs in response to Westpac's competitive decision to drop them, and many borrowers who believe they need a higher LVR to buy will go elsewhere (and Westpac may be glad to wish them farewell), but the average LVR is still likely to fall slightly. This, combined with a slump in First Home Buyers as a direct consequence of the increase in their numbers last year, will reduce bid prices for houses below the \$550,000 level.

Vendors will likely respond by not selling for as long as they can afford not to—so volumes are likely to drop. Buyers will also try to save to make up for the loss of the Boost and the fall in LVRs—which will also reduce market activity.

Ultimately however some sellers will have to accept a lower price (though not as low as first offered)—especially if some of those sellers are the worst-affected fraction of the 45% of last year's crop of First Home Buyers who are now suffering mortgage stress, according to [Fujitsu Research](#). Prices will start to fall in a context of private sector deleveraging, and Australia will learn that, while somewhat different to the rest of the world, it cannot maintain immunity to the biggest financial crisis since the Great Depression.

The debt-financed bubble that has driven Australian house prices ever higher will ultimately burst. I stick by my expectation that this will give us a similar outcome to Japan, where house prices fell 40% over about one and a half decades.

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