

Declaring victory at half time

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Why debt-deflation causes depressions

"Declaring victory at half-time" is a syndrome which afflicts the entire debate (and debates within the debate: see **Appendix**) over our current economic situation: optimists are of the opinion that the crisis is all over now, while pessimists think it's only just begun. On this front, as always, I regard history as the best indicator of who may be right, and I can't commend highly enough the site [New from 1930](#), which from January 1 2009 began publishing summaries of the Wall Street Journal from January 1 1930. The last few entries include these pearls of wisdom from February 1931:

An Old-Timer believes **the market rally "will do more to restore prosperity than anything else."** Total security values have increased over \$20B since start of year; barring another dive in the market, this assures a recovery since the 10M-15M US owners of stock feel richer. Bulls say the ease with which considerable profit-taking has been absorbed recently is "the surest indication of a strong healthy market." Market has rallied very substantially; "if it runs true to form, it will have one of those 'healthy reactions' that will, according to the bulls, strengthen its 'technical position.'" "The buying power of the people and the corporations still is large ... In other words, **the country never was in a better position to stage a comeback after a depression** ... (Feb. 25th)

One banker cites plenty of evidence that the backlog of consuming power is largest its been in years: corp. inventories are down 20% from a year ago, and even more from 2 years ago; corps. are holding more cash; production of many products is below requirements; products have been wearing out for 18 months of deferred buying; security values up \$20B since Jan. 1; easy credit; record-breaking savings deposits. Last year there were few rallies on which to sell; this year there have been few dips on which to buy. Public interest has grown this year, but is still small compared to 1928 and 1929; **"a market with a growing public interest is a dangerous market to sell short."** (Feb. 26th)

Yeah, right: in both 1930 and 1931, the belief was widespread—at least in the financial community—that the Depression was over, and recovery was just around the corner. As [Australia's Alan Kohler noted](#) when he first discovered this blog, at least early on during the Great Depression, people didn't realise that they were in it. They too, were declaring victory at what turned out to be not even half-time.

Ultimately, the debate over whether we're in a complete recovery or merely a temporary recess from the GFC will only be resolved by time. But well-informed theory can also give a guide as to what we can expect, and here I regard Hyman Minsky's [Financial Instability Hypothesis](#) and Irving Fisher's [Debt Deflation Theory of Great Depressions](#) as the outstanding guides. However they are complex theories, especially when most economists have been mis-educated by neoclassical economics into ignoring money, debt, and

disequilibrium dynamics. So the following numerical example might make it easier to understand their arguments:

- Imagine a country with a nominal GDP of \$1,000 billion, which is growing at 10% per annum (real output is growing at 4% p.a. and inflation is 6% p.a.);
- It also has an aggregate private debt level of \$1,250 billion which is growing at 20% p.a., so that private debt increases by \$250 billion that year;
- Ignoring for the moment the contribution from government deficit spending, total spending in that economy for that year—on all markets, both commodities and assets—is therefore \$1,250 billion. 80% of this is financed by incomes (GDP) and 20% is financed by increased debt;
- One year later, the GDP has grown by 10% to \$1,100 billion;
- Now imagine that debt stabilises at \$1,500 billion, so that the change in debt that year is zero;
- Then total spending in the economy is \$1,100 billion, consisting of \$1.1 trillion of income-financed spending and no debt-financed spending;
- This is \$150 billion **less** than the previous year;
- **Stabilisation of debt levels thus causes a 12% fall in nominal aggregate demand.**

What about if debt doesn't actually stabilise, but instead grows at the same rate as GDP, so that the debt to GDP ratio stabilises? Then we get the following situation:

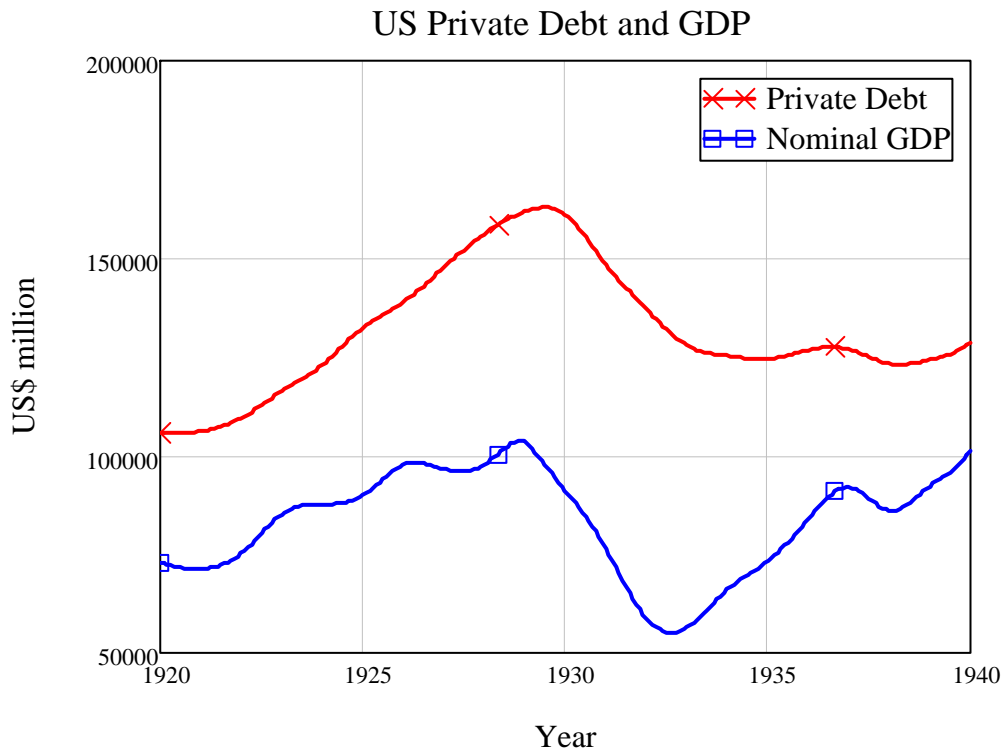
- In the first year, total demand is \$1,250 billion, consisting of \$1,000 billion in income and \$250 billion in increased debt;
- In the second year, total demand is also \$1,250 billion, consisting of \$1,100 billion in income and \$150 billion in increased debt;
- Nominal aggregate demand is therefore constant;
- But after inflation, **real aggregate demand will have contracted by 6%.**

This is the real danger posed by debt: once debt becomes a significant fraction of GDP, and its growth rate substantially exceeds that of GDP, the economy will suffer a recession **even if the debt to GDP ratio merely stabilises.**

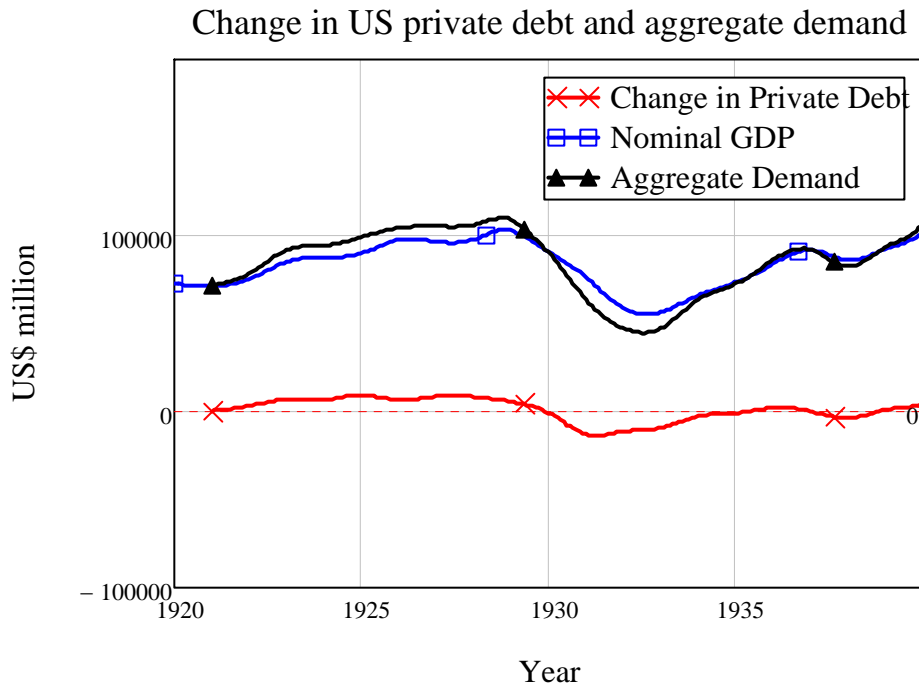
A debt-dependent economy has no choice but to record rising levels of debt to GDP every year to avoid a recession. Unfortunately, this makes a debt-servicing crisis inevitable at some point, especially when a large fraction of the increase in debt is financing Ponzi-speculation on asset prices, since this adds to debt without increasing society's capacity to finance that debt.

That is why falling debt levels caused the Great Depression, as Irving Fisher argued back in 1933, and the phenomenon is obvious in the empirical data. The next few charts illustrate this argument.

Private debt and GDP levels in the USA from 1920 to 1940:



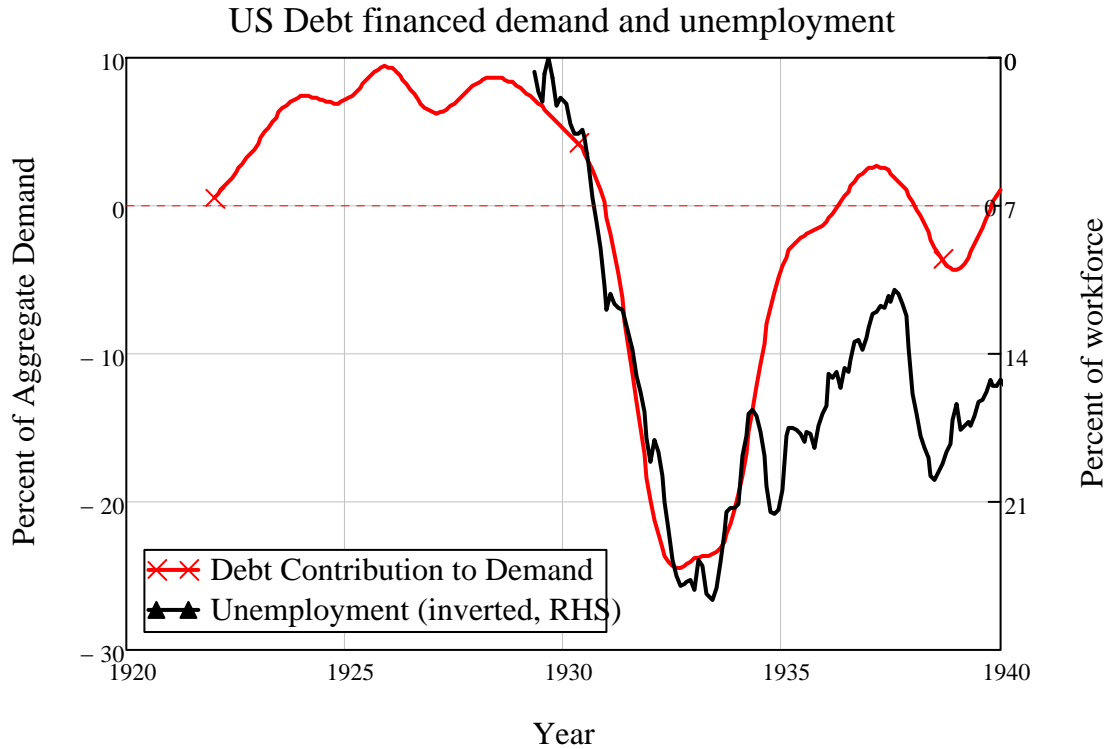
The change in private debt, added to GDP to show aggregate demand as the sum of GDP plus the change in debt:



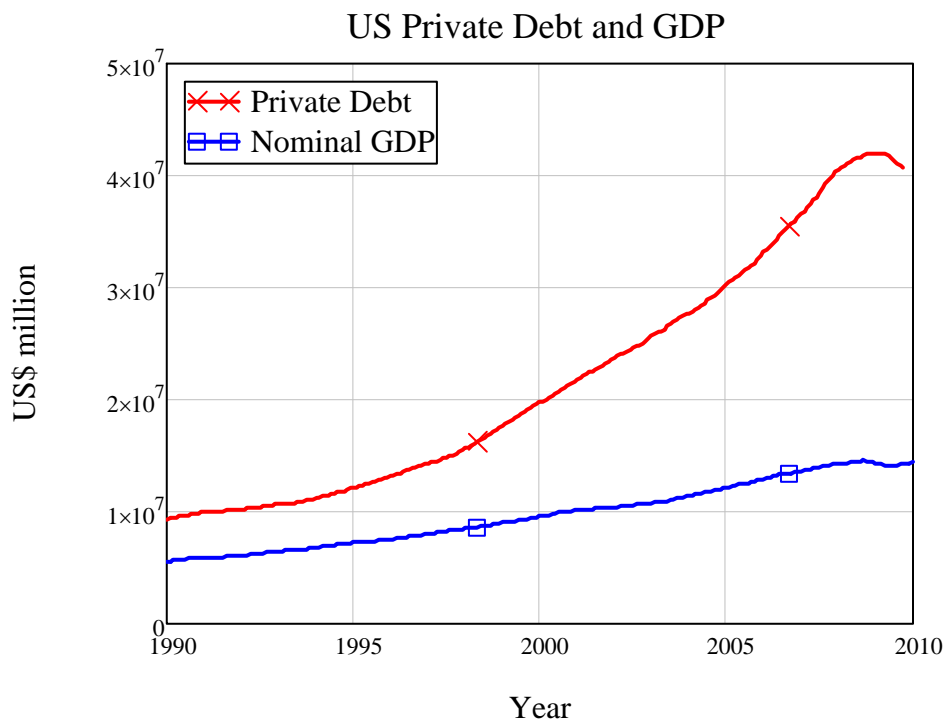
Now I calculate the proportion of aggregate demand that is debt-financed, by dividing the change in debt by the sum of GDP plus the change in debt. The formula is:

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

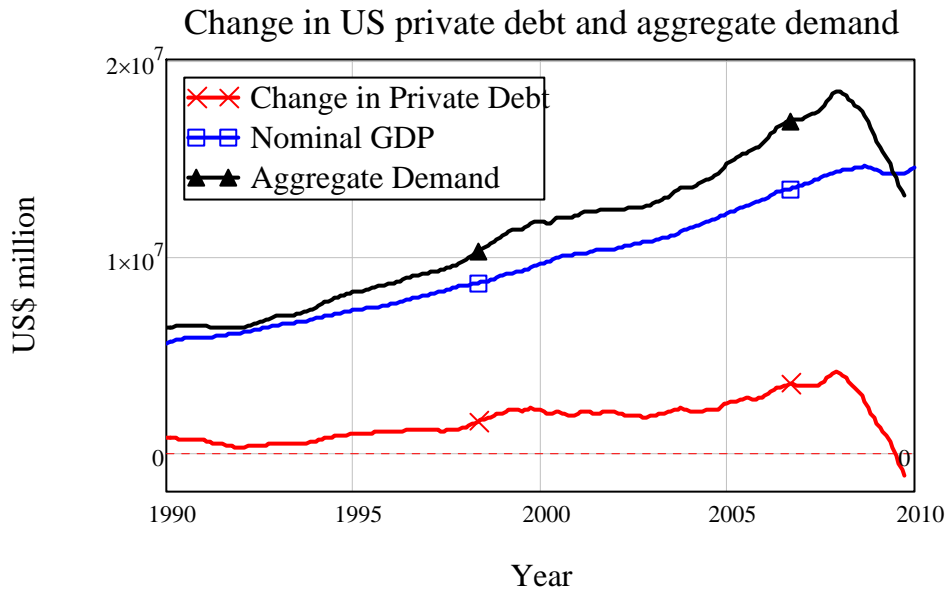
The correlation of the fraction of demand that is debt financed (lagged one year since the data is end-of-year annual) with unemployment is minus 0.77. Roughly speaking, this tells us that when the debt-financed fraction of demand rises, unemployment falls, and the correlation of these two series accounts for 77% of the change in unemployment between 1920 and 1940:



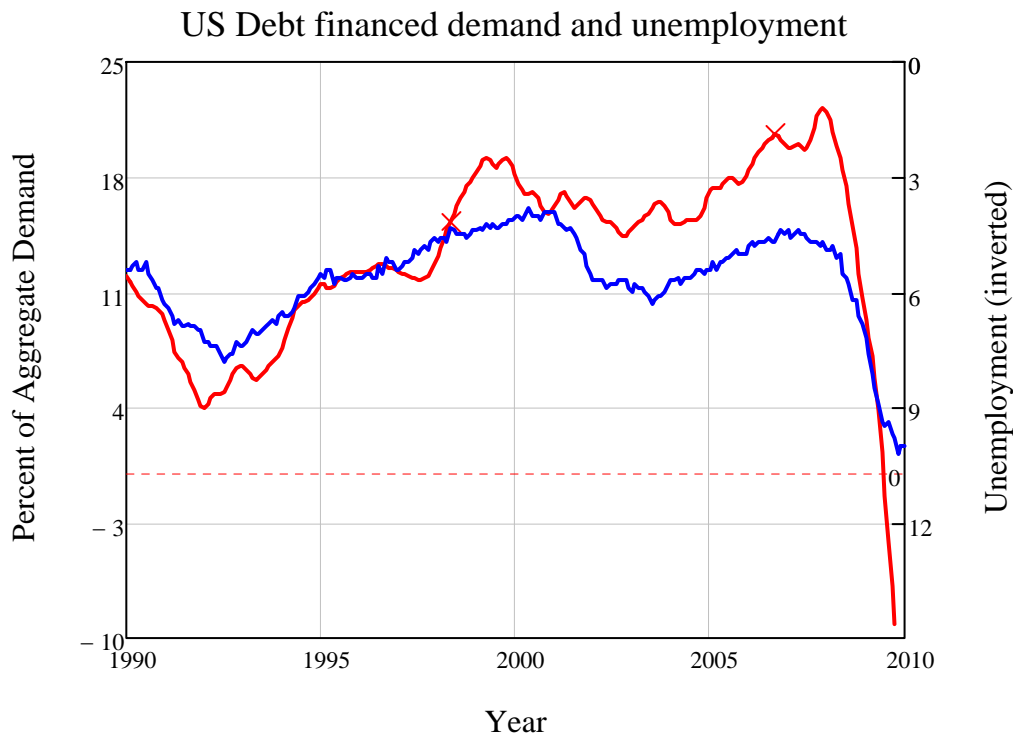
Now let's repeat the same exercise with the data from 1990 till 2010. Firstly, private debt and GDP levels in the USA from 1990 to 2010:



The change in private debt, added to GDP to show aggregate demand as the sum of GDP plus the change in debt:



Finally, the correlation of the fraction of demand that is debt financed (unlagged since we now have quarterly data on debt) with unemployment (the correlation coefficient is now minus 0.84):



This is why debt-deflation matters, and it's also why we are barely at the half-time mark in the GFC. Though government spending has countered the fall in debt-financed spending to some degree, that fall has only hit 40% of the level that applied during the Great

Depression, even though debt levels are substantially higher (relative to GDP) than they were back then.

The numerical example given above is, by the way, not too far removed from the empirical data for both Australia and the USA prior to the GFC. In the year before the crisis, Australia's GDP was roughly A\$1.1 trillion, and the increase in debt that year was A\$260 billion, which was a 17% increase on the previous year; for the USA the comparable figures were roughly US\$14 trillion, a US\$4.5 trillion increase in debt, and a peak rate of growth of debt of about 10% p.a.

The example also illustrates why the rate of inflation matters, and why a low rate prior to a debt crisis is a serious danger. If inflation is high when the crisis hits (say 20% p.a.) then most of the decline can be taken by a fall in the rate of consumer price inflation itself. But if the commodity inflation rate is low, then the hit will be taken by asset prices and actual output as well as by a fall in the inflation rate.

The process can be countermanded to some degree by the government running a deficit, which counteracts the fall in aggregate demand caused by private deleveraging. But the government deficit would need to be far higher than current levels to return us to prosperity if nothing is also done about the astronomical level of private debt.

With the deficits that are being contemplated today, I expect the outcome to be that the rest of the OECD will "turn Japanese" and enter a long-running, low level Depression. Actions that limit those deficits—or even worse, force countries in crisis like Greece to impose austerity measures to reduce deficits back to zero—will turn this from a drawn-out Depression into a sudden and deep one.

Of course, at the same time that economic policy makers—misled by neoclassical economics—are imposing austerity programs on national governments, they are trying to restart the private debt binge mechanism that gave us the crisis in the first place. On this point I recommend the post on [Vox](#) by Peter Boone and Simon Johnson, "[The doomsday cycle](#)".

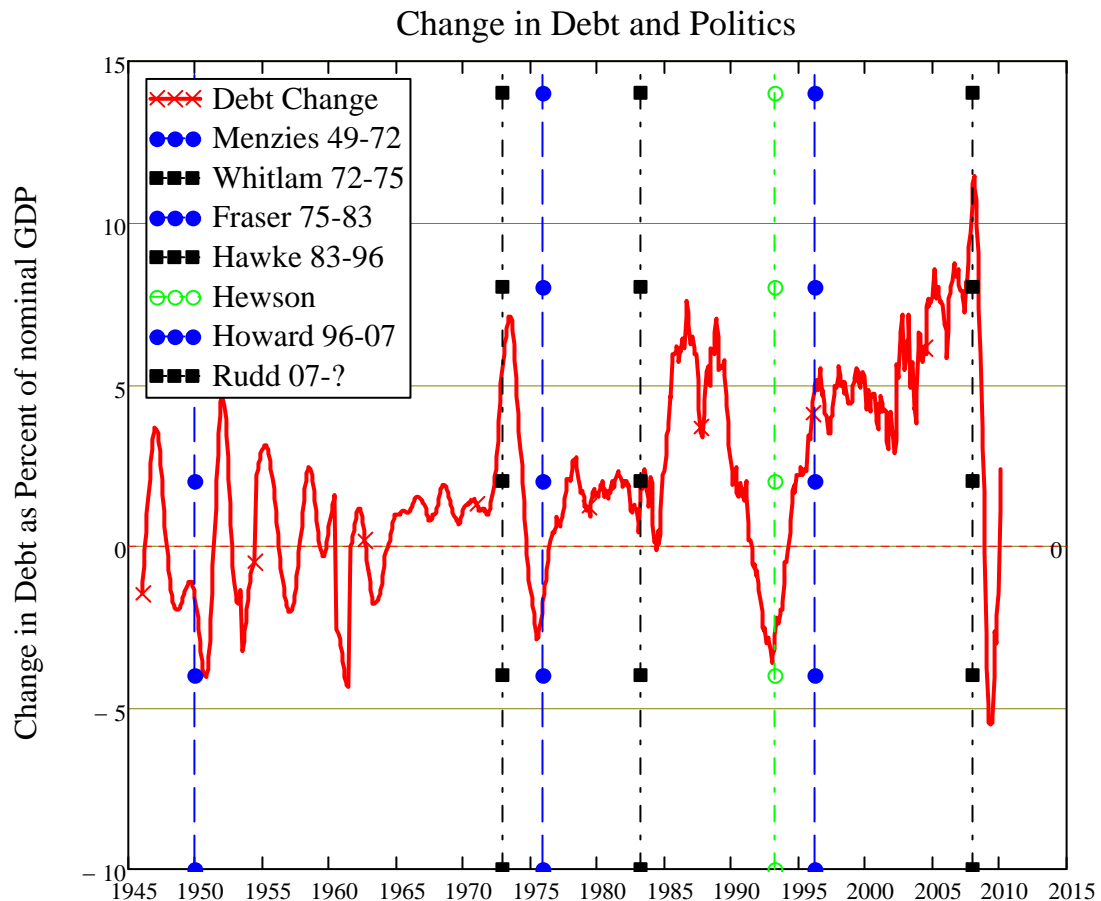
Why has Australia done so well?

Australian Government policy during 2009 boosted household disposable income dramatically, and Gerard Minack of Morgan Stanley recently pointed out just how much: "household disposable income increased by 10.1% over the year to the September quarter, while labour income – the biggest component of household income and traditionally the largest swing factor – increased by just 0.4%." (Morgan Stanley Australia Strategy and Economics, February 24, 2010: The Odd Expansion). The primary factors driving household disposable incomes higher were the government's stimulus package (which boosted incomes by about 4%) and the RBA's rate cuts (which added another 5% to disposable incomes).

As Gerard commented when he first publicised this outcome (Morgan Stanley, Downunder Daily October 9, 2009: Antipodean Lessons), "If that's recession, bring it on!". It's unheard of for household incomes to rise during a recession, and that's a major reason why Australia avoided a downturn last year.

But it's not the only reason: the other one, as my numerical example above illustrates, is what happened to debt levels. In our debt-dependent economies today, a recession almost always means a fall in debt levels relative to GDP (while a Depression results from absolutely falling debt). We began that process early in 2008, only to dramatically reverse direction in 2009 so that, once again, debt was growing faster than GDP.

The key cause of this was that other government policy, the [First Home Vendors Boost](#), which enticed Australians back into mortgage debt in droves (both First Home Buyers who actually received the Boost, and the Vendors who sold to them who took levered the extra \$15-40K The Boost added to the sale price into another \$100-200K for their next house purchase). This policy gave us the fastest turnaround in debt levels in our post-WWII economic history. The next chart shows the annual change in the private debt-financed fraction of aggregate demand against the backdrop of political change in Australia, from the conservative Liberal Party, whose victories are marked in blue, to the progressive Labor Party, whose victories are shown in black (one anomaly, when the Liberals certainly should have won but were defeated by a brilliant negative campaign by the Labor Party, is shown in green).



Note that the period prior to 1965 had as many periods of the debt to GDP ratio falling as rising—which is the sign of a cyclical but non-Ponzi economy. Then from 1965 on, the trend was for debt ratios to rise faster than GDP except during the recessions of 1973-76 and 1990-94. The period of the Howard Government involved the longest sustained period of rising private debt ever—though notably this trend for rising debt began while the Labor Party's Paul Keating was still Prime Minister.

Then the GFC hit virtually as Rudd came to office, and the rate of growth of private debt plunged—a similar coincidence to the one that had done the Whitlam government in decades earlier (note that the debt bubble whose bursting brought Whitlam undone had also commenced under the preceding Liberal government of Billy McMahon).

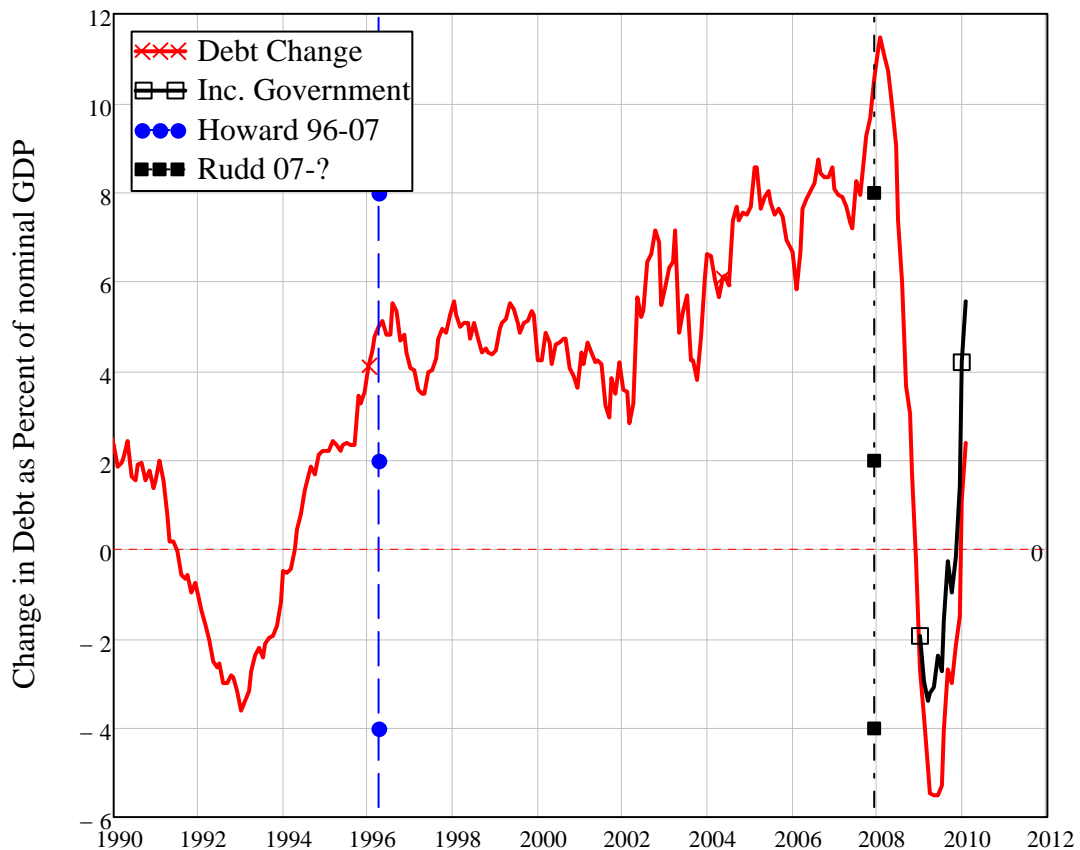
Rudd deserves no blame for the bursting of the debt bubble—as I warned since December 2005, this was inevitable and when it happened, a serious global recession would begin (because the phenomenon was global and not merely limited to Australia). But his government does deserve whatever is deserved—credit or blame—for the rapid turnaround in debt. This wouldn't have happened without the First Home Vendors Boost, since as is illustrated below, the only source of this increase in private debt has been rising mortgage debt.

Had this trick been pulled back in the 1990s, then Rudd would have received credit for it in the long run, since it would have set off a prolonged boom as debt to GDP ratios rose for many years and gave us a strong if illusory recovery from the preceding recession.

But this is 2010: household debt has risen from under 30% to almost 100% of GDP, and I simply don't believe there's capacity for it to continue rising. So I expect that the trend will rapidly reverse itself back into a falling private debt to GDP ratio, and the recovery this rising debt has helped engineer will evaporate.

That will leave government spending as the one prop to keep the Australian economy afloat, and it is a prop that shouldn't be underestimated, as the next chart illustrates: though the private debt to GDP ratio turned around from falling at 5% p.a. to rising at 2% p.a. courtesy of government policy, the increase in government debt added another 3% to the mix.

Change in Debt and Politics

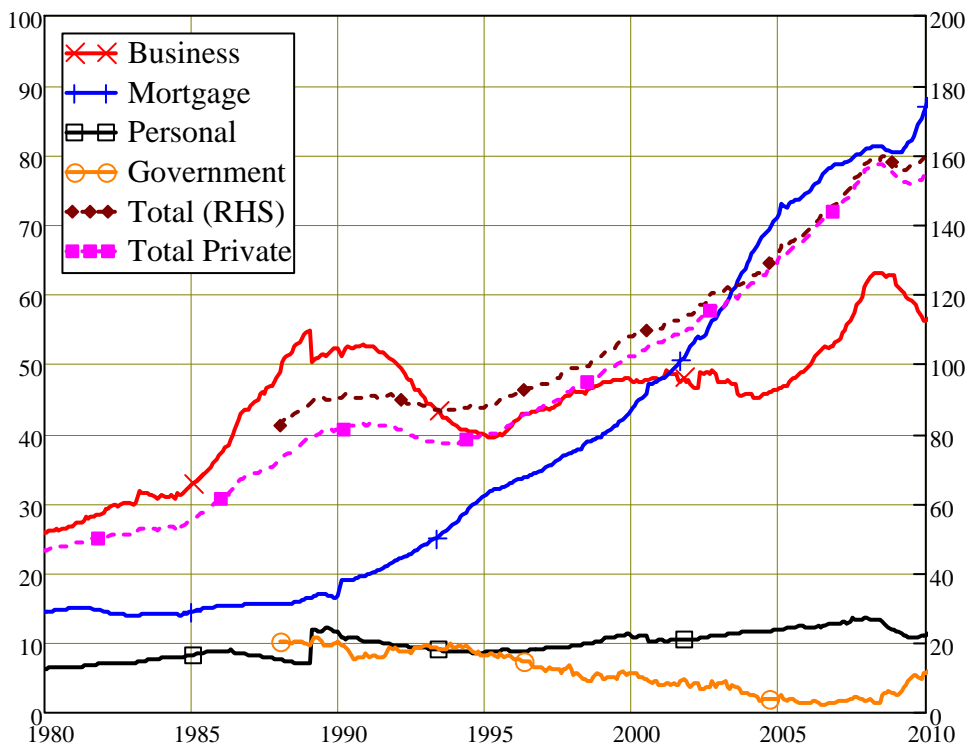


The sum of changing private and government debt thus substantially boosted spending in the Australian economy in 2009—enough to stop the GFC in its tracks here. But in 2010, it is highly unlikely that the private sector will continue re-leveraging. That will leave increased government debt-financed spending as the only boost.

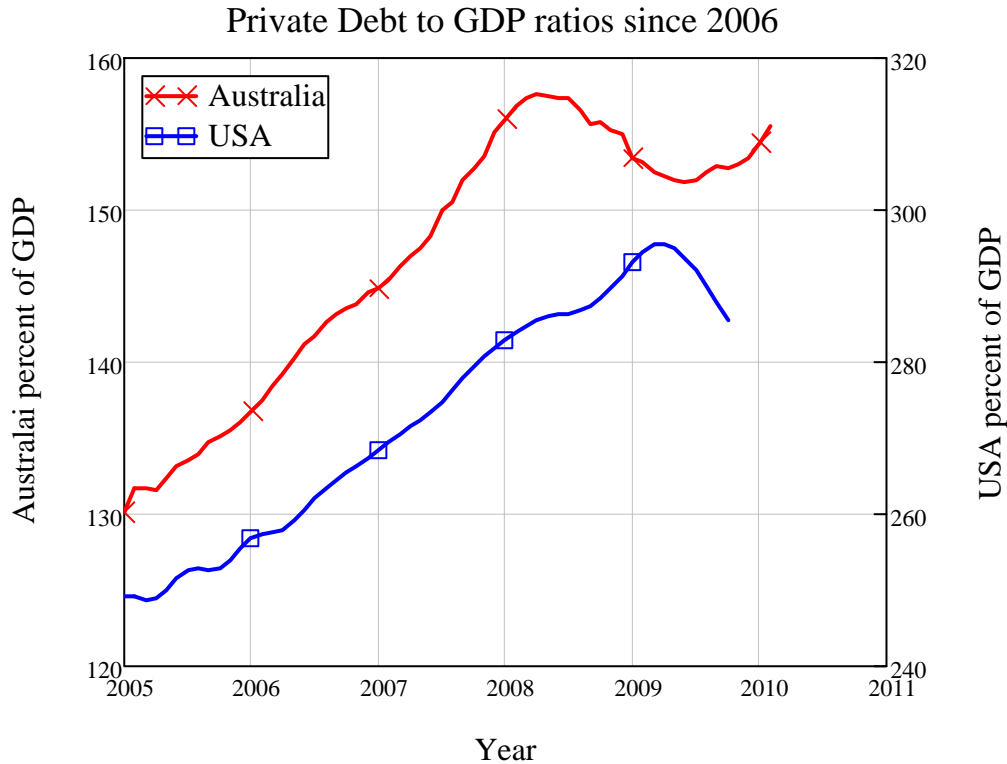
If the government's contribution remains at about the level of 2009—roughly a 3% boost—and the private sector continues the deleveraging it was doing before government policy kicked in—at a rate of close to 6% p.a.—then the net outcome will still be a falling debt to GDP ratio. While that is necessary in the long term to get us out of the Ponzi cycle we have been trapped in for the last 4 decades, it will still mean pain: private sector deleveraging will outweigh government sector pump-priming.

The reason is simple: so much debt has been taken on already by the Australian private sector that its capacity to take on any more is virtually exhausted. Even as households slapped on more mortgage debt under the influence of the FHVB, other personal debt was falling (until just recently) and the business sector has been rapidly deleveraging—and even so, business debt today still exceeds the peak it reached in 1990.

Debt to GDP Ratios



So the Australian gambit out of the GFC—get back into debt as fast as possible—may soon run its course. Australia should then find itself in the same situation as in the rest of the OECD—deleveraging. The fact that it took the "hair of the dog" approach to a debt-hangover (get drunk again on debt the next morning) is readily apparent in this comparison of Australian and US private debt levels: Australia actually began to delever before the USA did, but just as they hit deleveraging with a vengeance, Australia's aggregate private debt started to grow once more.



Just like the "hair of the dog" approach to getting over a hangover, this may work once or twice, but not forever: the ultimate destination is DA: "Debtors Anonymous". Australia has merely delayed its entry into the club.

Some positive lessons

That said, there are some positive lessons in why Australia has fared better than the USA given the composition of its rescue package. Obama's package and the actions of the Federal Reserve have been strongly directed at the financial system, as [Obama's speech](#) explaining his package acknowledged. The basis for this policy bias was the proposition that it was more effective to "rescue the banks" than it was to "rescue the borrowers", which in turn relies upon the "money multiplier" model of money creation:

"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. Obama (2009, page 3)

This perspective on money creation was shown to be false over 30 years ago by Basil Moore Moore (1979), and even staunch neoclassicals have contradicted it in good empirical research Kydland and Prescott (1990). Yet still it is the basis of advice that Obama receives from his economic advisers.

In fact, following this model may be one reason that the USA has had substantially less success with its bailout than has Australia. The static equilibrium money multiplier model

portrays money given to banks as being easily levered to additional credit money to borrowers, when in fact from a dynamic perspective, putting money into banks' reserves during a credit crunch results in a far smaller level of circulation than if the money is put into depositors' accounts.

I have recently developed a model of endogenous money creation based on Moore's work and that of the European Circuitist School Graziani (1989), and those these models are very skeletal they can explain why Australia's rescue has been more effective than America's when a comparable sum of government money was deployed.

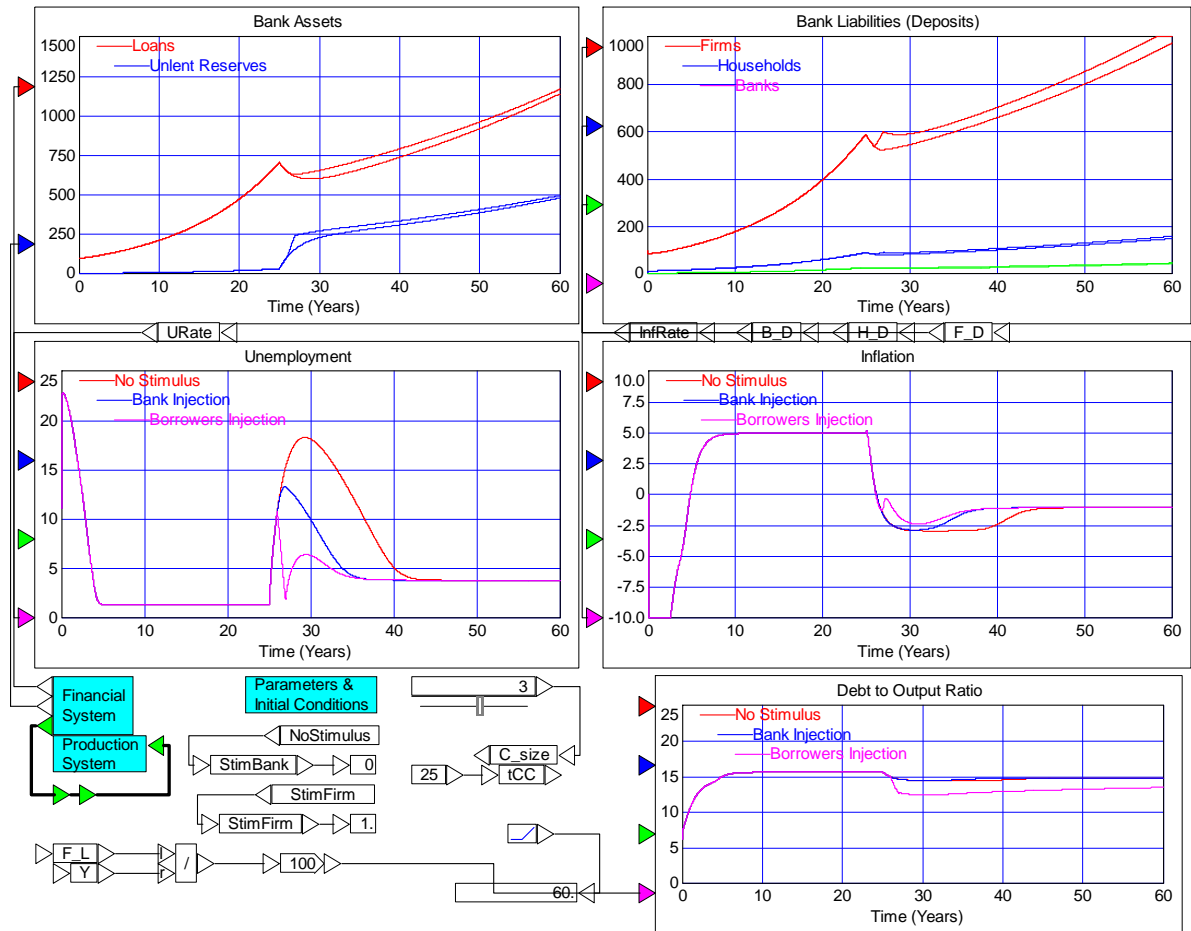
Though the model is a superficially foreboding set of differential equations, its financial essence is rather easily understood when the financial flows are laid out in a 'double-entry book-keeping format' as shown in the first table below (the second table explains what each entry in the first table represents). This model considers a pure credit economy with three classes –capitalists, workers and bankers – where all transactions occur via bank accounts maintained by the banking sector. The government rescue is then shown as a *deus ex machina* injection of fiat money that can be made into either the banking sectors reserve or to the firm sector's deposit accounts.

Each row in the table is a specific financial transaction—accrual of interest, payment of wages, etc.

Bank Accounts		Assets (Reserves & Loans)		Liabilities (Deposits)		
		Reserves (B_R)	Loans (F_L)	Firms (F_D)	Workers (W_D)	Banks (B)
1	Compound Interest		A			
2	Pay Interest		-B	-B		+B
3	Deposit Interest			+C		-C
4	Wages			-D	+D	
5	Worker Interest				+E	-E
6	Consumption			+F+G	-F	-G
7	Loan Repayment	+H	-H	-H		
8	Money relending	-I	+I	+I		
9	Money creation		+J	+J		
1	Rescue Banks	+K				
0	Rescue Firms			+K		

Action		Description	Terms
1	Compound Interest	Outstanding debt F_L is increased at the rate of interest on loans r_L .	$r_L.F_L$
2	Pay Interest	Accrued interest on outstanding debt is paid. This involves a transfer from the firm sector's deposits F_D to the bank sector's income account B_i , and the recording of this transfer on the debt ledger F_L .	$r_D.F_L$
3	Deposit Interest	Interest is paid (at the lower rate r_D) on the balance in the firm sector's deposit account	$r_D.F_D$
4	Wages	This is a transfer from the firm sector's deposit accounts to workers' deposit accounts W_D , using two insights from Marx: firstly that the surplus in production is distributed between workers and capitalists (in shares that sum to 1 in this model—so workers get $1-s$ and capitalists get s); secondly that there is a turnover period (τ_S as a fraction of a year) between M and M+ (see Capital II Chapter 12).	$(1-s).F_D/\tau_S$
5	Worker Interest	The deposit interest rate times the balance in workers' accounts.	$r_D.W_D$
6	Consumption	This employs the concept of a time lag—the length of time it takes workers to spend their wages is 2 weeks (say) or 1/26th of a year so that τ_W equals 1/26. Wealthier bankers spend their account balances much more slowly.	$W_D/\tau_W+B/\tau_B$
7	Loan Repayment	The rate of loan repayment is proportional to the outstanding level of loans divided by the time lag τ_L in loan repayment (for a standard housing loan this would be shown as $\tau_L=25$)	F_L/τ_L
8	Money relending	The rate of new money creation is the balance in the banking sector's unlent reserves, divided by a turnover lag representing how rapidly existing money is recycled.	B_R/τ_R
9	Money creation	The rate of new money creation is the balance in the firm sector's deposit account, divided by a time lag that represents the length of time it takes for the money supply to double.	F_D/τ_M
10	Rescue Banks	This is a ' <i>Deus Ex Machina</i> ' injection of 100 currency units one year after the crisis begins, for a period of one year, into either the banking sectors reserves B_R or the firm sector's deposit accounts F_D .	100
	Rescue Firms		

The model is shown as a systems dynamics flowchart below, with three simulations of a credit crunch: one where no policy intervention occurs (in red), one where the sum of \$100 (billion) is injected into the reserve accounts of the banks (in blue), and the other where the same sum is injected into the accounts of the debtors in this model, the firms (in purple).

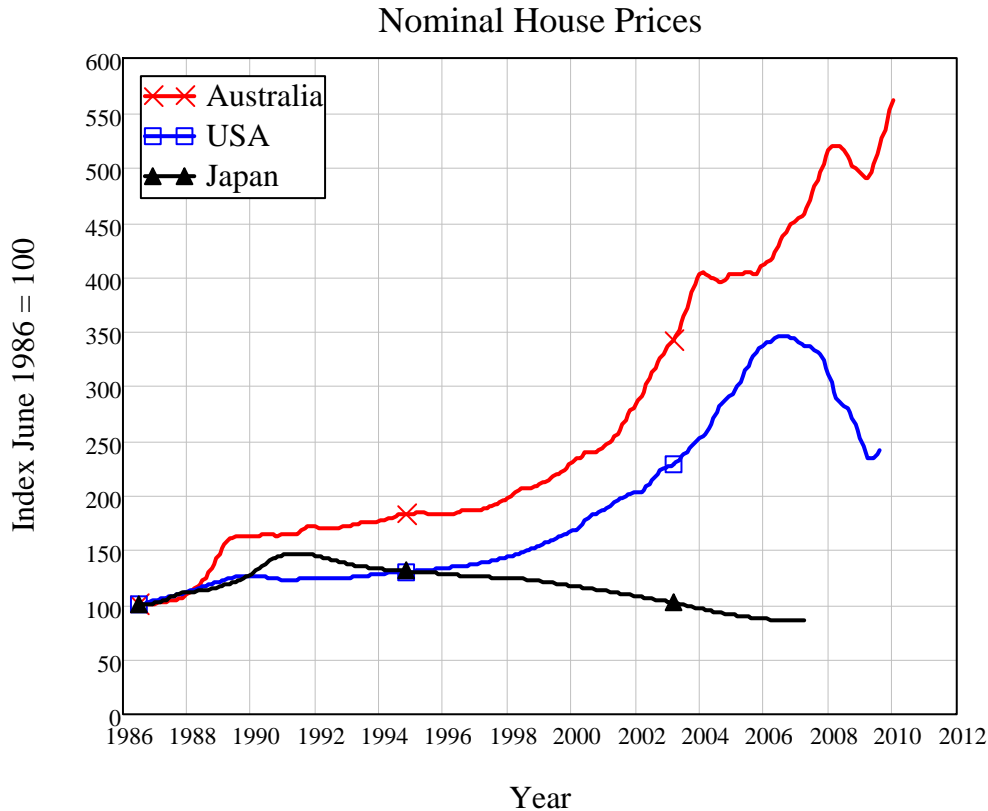


The difference between the three scenarios is stark. If nothing is done, unemployment peaks at 18% and takes 15 years to return to the higher equilibrium value implied by the lower financial turnover parameters; if the banks are rescued, unemployment peaks at 13% and the economy returns to equilibrium after 10 years; while if the debtors are rescued, the recession is over in less than 2 years and unemployment peaks at only 10%.

Much more work is needed to develop a general model of money creation applicable to the mixed credit-fiat world in which we actually live. But this basic model emphasizes the superiority of a dynamic Post Keynesian approach to economic policy over the neoclassical approach that failed to see the GFC coming, and now advises remedies that weaken rather than strengthen the impact of government policy.

Appendix

I took part in a debate entitled "The Great Residential Housing Debate - the next Bubble or a legitimate Boom?" at the annual conference for the Australian investment management firm [Perennial Investment Partners](#) in late February 2010; I put the Bubble case and Chris Joye of [Rismark International](#) presented the Boom case (here is my [paper](#) and my [presentation](#)). As is well-known, Australia is one of the few countries in the OECD not to experience two quarters or more of falling GDP as a result of the GFC, and probably the only country that has not experienced a fall in its property market.



The conference was held twice, firstly in Melbourne on Wednesday February 24th, and then in Sydney on Friday 26th. There were roughly 400 people in the audience on both occasions, all of whom were customers of Perennial—with the majority (roughly 75%) being financial planners. The conference employed an electronic voting mechanism that let participants answer general questions, as well as rate the speakers. In our debate, it was used to work out where people stood on the "Bubble vs Boom" spectrum both before and after the debate. A "1" indicated a complete Bear who expected property to crash and advised getting out now, while a "10" was a complete Bull who advised "Buy, Buy, Buy".

Prior to our debate in Melbourne, the average score was 4.9. This surprised me, because I expected the audience to be generally pro-property; however a score of below 5.5 indicated that overall the audience was bearish on property (since the average of the ten numbers from 1 to 10 is 5.5).

After our debate, the score was 5.2—a small move in favour of the bullish position, but still slightly in the bearish camp. Chris commented that this was "about even" and "too close to call" as he left the stage, which I thought was a fair enough summary of the outcome.

So I was stunned when the Australian national Internet daily paper [Crikey](#) asked me to respond to the report Chris had given them of the Melbourne debate ("[Reflections on Cage Match Mk 1](#)"), which included the statements that:

So I think I pretty comprehensively monstered Steve Keen at our debate in Melbourne yesterday. That was certainly the feedback from those who attended (there were 500)...

While I felt I was able to intellectually tear Steve apart limb-by-limb, I will say this: he is a lovely guy. Very diplomatic and humble in defeat...; and

Unfortunately, the electronic scoring in yesterday's debate was a bit convoluted: it measured the shift in the audience sentiment from bearish (Steve) to bullish (Chris) before and after the event. On that basis, I won. But I think a simpler Chris versus Steve voting system would have made the difference much more striking...

Huh? The rest of the post was of a similar vein—though there were occasional caveats such as "As I noted in my presentation, Steve has made some valid criticisms of conventional economics, and its neglect of debt capital market imperfections. And he deserves some kudos for anticipating a credit crisis" (gee, thanks!), even this was immediately followed by "But whatever strengths he possesses are overwhelmed by his propensity to make silly statements."

I had no intention of commenting on the debate prior to seeing this hit a national news site, but of course this couldn't be ignored—though at the same time it didn't deserve to be taken seriously. So I took a facetious approach—opening [my reply](#) with "I don't know what Chris consumed after our talk at Perennial's conference yesterday, but if he has any spare I'd like to try it at a party tomorrow night", and concluding with the advice to Chris that, "Next time, after a conference, don't consume anything, just take a cold shower" (I also pointed out the statistical fact Chris apparently missed, that the middle point in scores from 1 to 10 is not 5, but 5.5).

And so we proceeded to Sydney. There the audience was slightly less bearish than in Melbourne: the average score prior to the debate was 5.3, just slightly below the neutral level. But after the debate, there was a significant shift towards the Bear case. The post debate score was 4.6.

Chris had made the classic mistake of declaring victory at half-time, only to get a cold shower with the full-time result.

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