

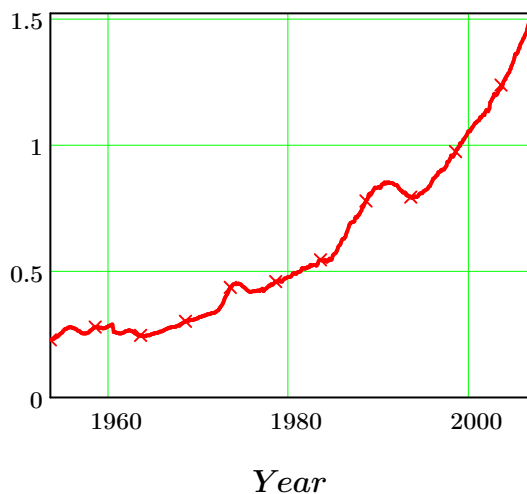
Ceci n'est pas une equilibrium



The Reserve Bank Governor's evidence to the Parliament last month bears a resemblance to Magritte's most famous painting "This is not a pipe". When asked by Sharon Bird (ALP, Cunningham) to confirm that "cheaply available credit" had inflated asset prices, Glenn Stevens confirmed that it had, but then continued:

"The rough statistic that I have quoted many times was that the average rate of interest was about half; that meant you could service twice as big a debt. Guess what? That is exactly what occurred, and that had a very profound effect on asset values." (Hansard Proof, p. 32)

Debt to GDP Ratio



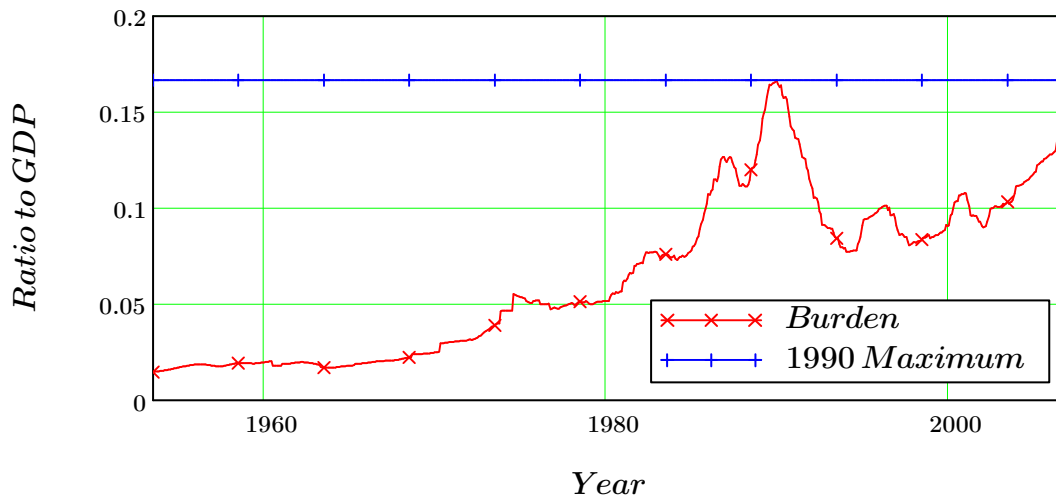
In a rough sense, this statement is factual: the average interest rate in 1990 was about 20 per cent, versus about 10 per cent now; and debt in 1990 was equivalent to 82 per cent of GDP, versus 152 per cent now.

The surreal aspect of the RBA Governor's answer is the implication that this was an equilibrium adjustment: interest rates roughly halved, debt roughly doubled, and overall the burden of debt was the same. Here, Stevens is mistaking an image of the economy for the economy itself.

That humans often confuse an image with reality was Magritte's consciously surreal point: his painting was an image of a pipe--it was not actually a pipe. The unconscious surrealism in the RBA Governor's statement is that, because most economic models assume the economy is always in equilibrium, he, like most economists, appears to believe that the actual economy is also in equilibrium.

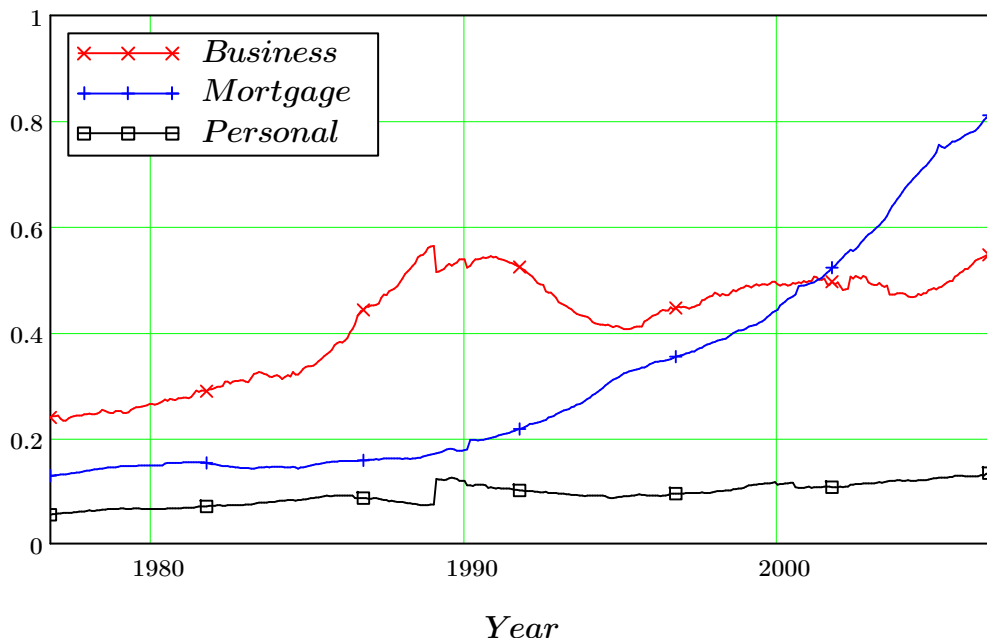
A closer examination of the data makes it obvious that this belief is false. The factor that the Governor appears to believe is in equilibrium is the interest repayment burden (the average interest rate multiplied by the debt level and divided by income). Certainly the interest rate burden today is similar to that of 1990--Glenn Stevens's two points of reference in his reply to Sharon Bird's question. But far from representing an equilibrium, the 1990 level represents the maximum that this burden has ever reached. Given that "the recession we had to have" began in 1990, no-one should be "relaxed and comfortable" that we are once again approaching that maximum.

Interest Repayment Burden



Disaggregating the debt data also indicates that the "halve the interest rates, double the debt" explanation of what happened after 1990 doesn't hold water. Businesses were the big borrowers in the 1980s: business debt blew out from 26.5% of GDP in 1980 to 56.4% in 1989. After 1989, business reduced its debt levels to a low of 40.7% in 1995, and business borrowing has only just returned back to the 1989 level this year--despite a halving of interest rates. Clearly, business learnt its lesson from the debt crisis of 1990 (though unfortunately, the current spate of leveraged takeovers implies that this lesson has recently been forgotten)--and of course, many debt-prone businesses disappeared in the 1990s via bankruptcy

Debt to GDP Ratios



In contrast, the household sector has gone on a borrowing binge. In 1990, mortgage debt was just 17.8% of GDP. It has now grown to more than 4.5 times as much: 82.2% of GDP, and still growing at a rate of over 6% per annum.

In reality, these two very different responses to the 1990s and the subsequent drops in interest rates were not equilibrium adjustments that kept the interest burden constant, but two very different

disequilibrium responses.

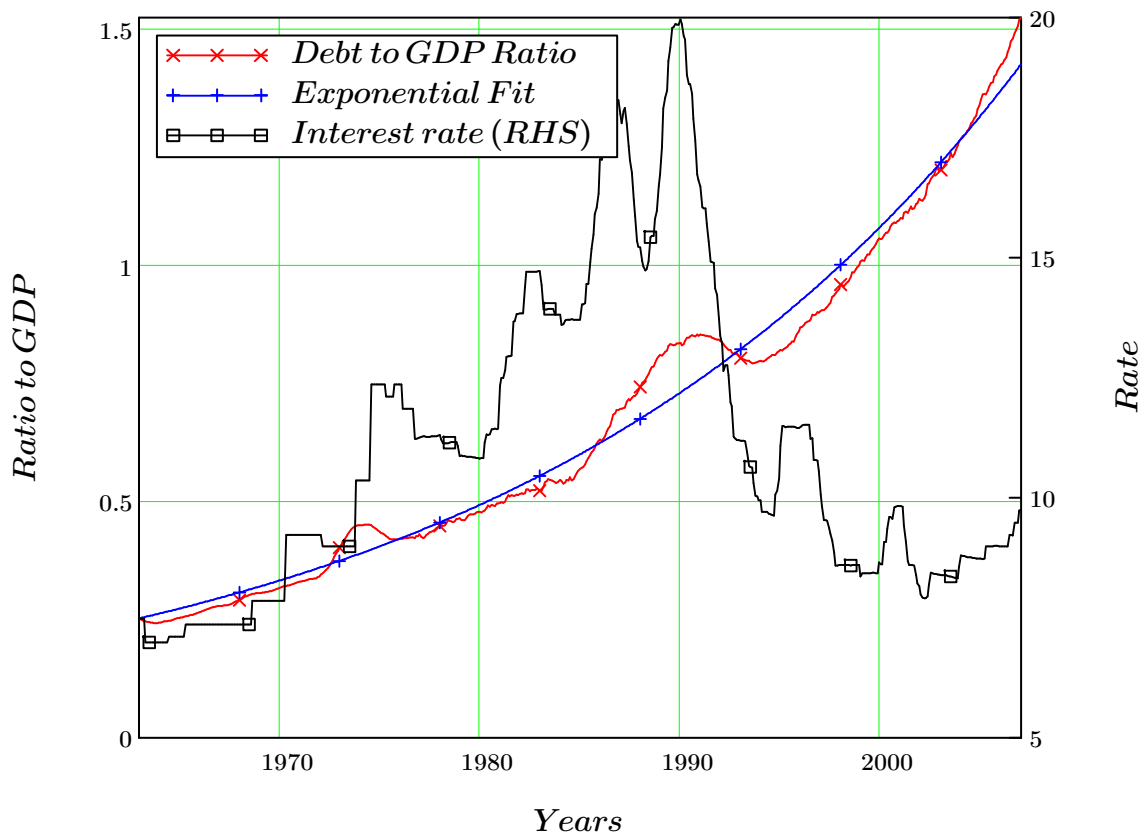
The business sector indulged in a euphoric speculative bubble in the 1980s, focused on the stock market and commercial real estate. The subsequent crash and burn experience shied business off leveraged speculation for over a decade--though this game has recently recommenced.

The household sector indulged in its own speculative bubble on residential property from the mid-1990s till the early 2000s. Sydney and to some extent Melbourne have started to experience the "crash and burn" aftermath, but there are good reasons why the downside of this bubble is less steep than that which brought the business sector undone in 1990.

The common factors to both bubbles were euphoric expectations of future capital appreciation, and leverage. While expectations are difficult to quantify, we have a ready measure for leverage, and there the absence of equilibrium is starkly apparent.

If the RBA's equilibrium explanation of debt levels were correct, then the debt to GDP ratio would rise when interest rates fell, and vice versa. In fact, starting in 1963 (when interest rates were 3 per cent lower than they are now), the debt to GDP ratio has risen exponentially at an average annual rate of 3.9 per cent. This is no idle, hyperbolic claim: the correlation of the actual data to the exponential fit shown below is 0.99.

Exponential Growth of the Debt to GDP Ratio

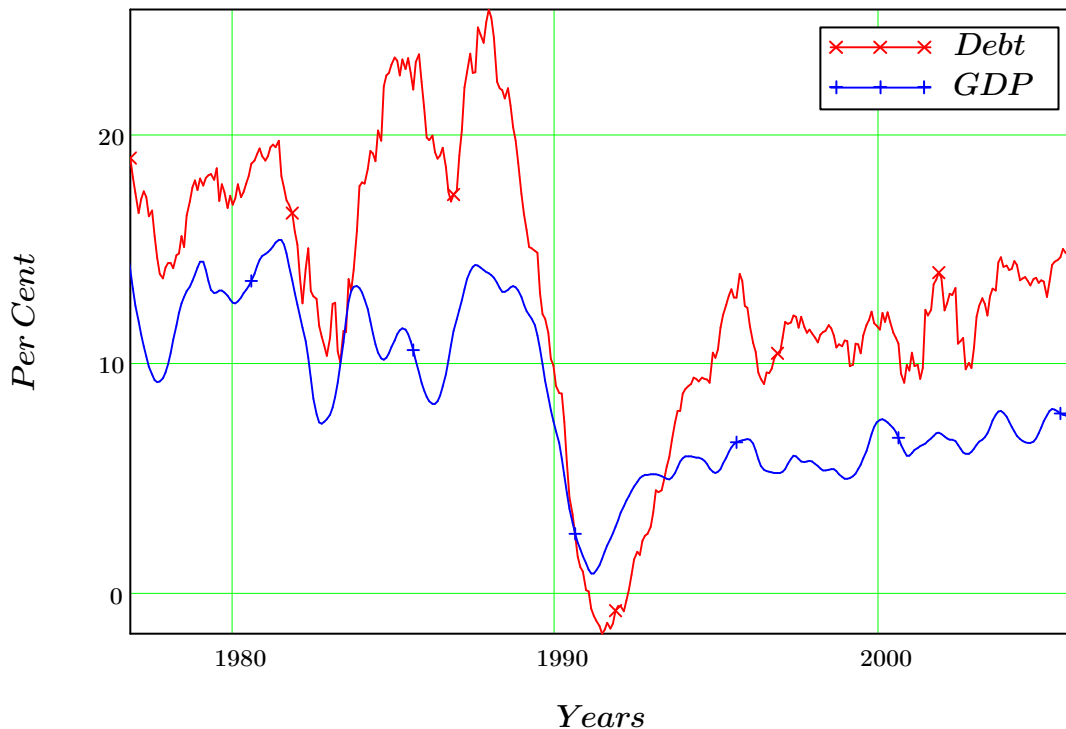


In layman's terms, a correlation coefficient of 0.99 says that whatever model you are testing explains 99 per cent of the variation in the data. The model here is simply the statement that "the debt to income ratio grows exponentially over time", and it has been an accurate model **for the last 44 years**. Yet if the RBA's equilibrium logic were correct, the debt to GDP ratio should simply be the mirror image of interest rates, and this model should fail abjectly.

The trouble is that this model *can't* hold forever, because if it did, ultimately debt servicing would consume more than 100 per cent of income. The model must break down at some time in the future, because effectively it is a model of national economy bankruptcy. We therefore have to address the question of what will happen when the debt to GDP ratio stops growing.

The strong implication from past data is that, when the debt to GDP ratio stops growing, so does the economy. This effect will be all the more pronounced now that increases in debt account for so much more of aggregate spending than ever before (the correlation between annual change in debt and annual change in nominal GDP is 0.84; though issues of serial correlation arise here, the very issue of the relation between debt and income is ignored by conventional economic theory).

Annual Rates of Change of Debt and Nominal GDP



The Committee was therefore quite correct to worry about the impact of debt on the economy. Government Deputy Whip Stewart McArthur asked the following question:

I want to raise the matter of the savings policy and the escalation of household debt and credit card debt, both in terms of the magnitude to which some households are in debt and in terms of their ability to service it. But it is really about the magnitude. If there was a downturn, what would that do to the economy? (p. 34)

The answers from the RBA Governor and Deputy Governor were intended to allay the politicians' fears about private debt levels. Unfortunately, their reassurances relied on us inhabiting an equilibrium world. We do not, and for that reason the politicians' fears were warranted.

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References

- Proof Committee Hansard, *House of Representatives Standing Committee on Economics, Finance and Public Administration*, Reference: Reserve Bank of Australia annual report 2006, Wednesday, 21 February 2007, Perth
- Data was derived from the RBA Bulletin Statistical Tables.
- US data (see below) comes from the FRB's Flow of Funds historical tables
- Magritte image: <http://en.wikipedia.org/wiki/Image:MagrittePipe.jpg>

Notes

- I have recently revised my definition of annual GDP to use the ABS's rolling 4 quarter sum approach (previously I used the US approach of multiplying the last available quarter by four). For this reason, my debt to GDP ratio has jumped over the 150% barrier; using my previous US-based approach, we still have some way to go to get to that level
- US private debt is over 160 per cent on their measure (see below); it is highly likely that the arguments I've put about debt and the Australian economy apply with similar force to the American.
- From next month (April 2007) I will produce a report on US debt as well as Australian debt.
- For interviews, please contact Lyn Danninger at the UWS Media Office: (02) 9678-7075; (0410) 564 803; l.danninger@uws.edu.au; or myself on (0425) 248 089; s.keen@uws.edu.au

Private Debt to GDP Ratios

