Westpac submission to the Inquiry into the future monetary policy framework

Summary

- Westpac fully endorses the current monetary policy framework, which has worked well for NZ.
- In our view, the best way to assist monetary policy is by focussing on policies that enhance productivity.
- Frequent alterations to the Policy Targets Agreement, as well as frequent monetary policy reviews, have undermined the public perception of the Government's commitment to inflation targeting. Adjustments to the PTA should be made less frequently, and enquiries into monetary policy should be held less frequently. We were encouraged to see no change in the PTA at the Governor's reappointment.
- A firmer commitment to the monetary policy framework ("it is set in stone") would give the public and markets a clear message, tone down inflation expectations (from a reduced risk of perceived 'policy creep') and better allow monetary policy to work.
- If there is a change to the PTA, the inflation target should be specified as a point, rather than a range.
- NZ's monetary policy framework is considered international best practice, with numerous other countries gravitating toward NZ's framework. NZ should be strongly endorsing the framework, not questioning it.

Term of Reference 1: To consider the causes of inflationary pressures

Inflationary pressures over recent years in New Zealand have arisen from very strong demand growth on the back of excellent economic conditions. There has also been a slowdown in productivity growth that has lowered the economy's ability to increase production without creating inflation. And a trend increase in inflation expectations has entrenched inflation at a higher level than it was in the 1990s.

1) **Demand-side causes of inflationary pressures in New Zealand**
   - Strong economic conditions this decade, including historically good GDP growth rates and very low unemployment, have been the main cause of inflation pressures. It is a real credit to New Zealand's inflation targeting regime that we have managed to enjoy such a sustained period of strong economic growth without enduring deleterious inflation.
   - Much of the inflationary pressure has come via the housing market. But the housing market is only a proximate cause of inflation. One underlying cause of the strong housing market has been the strong economy. Other underlying causes are outlined in detail in *Appendix 4 "Bubble Schmubble", Appendix 5 "House Values: shifting foundations", and Appendix 6 "Household Debt: why has it soared"*, In summary:
     - Lower average interest rates compared to the 1990s have reduced the cost of borrowing and driven up asset prices around the world, including New Zealand property.
     - Macroeconomic stability has created good job prospects and given New Zealanders greater confidence to borrow and purchase houses.
     - A surge in migrants increased demand for housing.
     - The increase in the top marginal tax rate in 2000 made investment property more valuable as a tax shelter, pushing up house prices.
     - An increase in the average inflation rate has increased the long-run nominal capital gain that property investors can expect. These enhanced capital gains are tax free in New Zealand, whereas the higher nominal mortgage rates that accompany inflation are tax-deductible. Interaction between inflation and the tax system has had a surprisingly large influence on house prices in New Zealand.
   - Interest rates were too low in 2003. This boosted demand over 2004, creating inflationary pressures that are still being dealt with today (see *Appendix 1 "Monetary Policy: would you like fries with that"*).

2) **Supply-side causes of inflation pressure**
   - New Zealand's potential for non-inflationary output growth has fallen, due to much lower productivity growth. Lower potential output growth has made the Reserve Bank's job of controlling inflation much harder (see *Appendix 2 "Growing Pains"*).
   - Much of the inflation in New Zealand has been in less competitive sectors, such as central and local government, health, and utilities.

3) **Inflation pressure caused by rising inflation expectations**

   A trend increase in inflation expectations has fuelled inflation pressure this decade. Higher inflation expectations have been the result of successive increases in the mid-point of the Reserve Bank's inflation target band. Between 1996 and 2002 the PTA was altered three times, and each change involved an increase in the inflation target or a "loosening" of the definition of price stability. A rationale has been given for each change. But the frequency and direction of the changes have given the impression that Governments are able to raise the inflation target as a way of ensuring looser monetary policy during their three-year term of office. New Zealand's monetary policy regime is less immune to the "political cycle" than many imagine. Financial markets as well as ordinary New Zealanders, therefore, are rationally factoring in the risk of future increases in the inflation target, which raises inflation expectations and makes the Reserve Bank's job of controlling inflation harder.

   A second cause of higher inflation expectations has been the Reserve Bank's apparent strategy of operating with inflation around the top of its target band, on average. There is now a widespread belief in financial markets that the Reserve Bank is targeting inflation closer to 3% than 2%, and this has been built into expectations. This raises questions about the usefulness of having a band for inflation at all – the bottom half of the band is redundant. A point target, as recommended by Lars Svensson in the 2000 review of monetary policy, would create a more credible anchor for expectations, and would clarify the Governor's task.

Term of Reference 2: To consider the effectiveness of current monetary policy in controlling inflation

The New Zealand economy has displayed remarkable resilience and flexibility. And since inflation targeting was introduced in 1989, New Zealand has delivered very creditable growth and inflation performances. It is remarkable that inflation has remained so stable through such challenging conditions as the Asian Financial Crisis, the worldwide "China effect", and the current house price boom. **Inflation targeting has worked.**

The OCR has proven an extremely effective tool for implementing inflation targeting. Indeed, New Zealand's monetary policy arrangements are considered international best practice for monetary policy and have subsequently been adopted by over 30 countries worldwide. Westpac feels that any deviation from this internationally accepted norm should be backed by solid research and evidence. We note that no rigorous evidence to substantiate some popular notions about monetary policy has been forthcoming.

- There is no evidence to substantiate the notion that the OCR has less influence over long-term interest rates than it used to *(see Appendix 1)*.
- It is misleading to suggest that fixed mortgages have suddenly made the OCR less effective. New homebuyers must take out new mortgages, and therefore it is the marginal mortgage rate that matters most for the housing market *(see Appendix 1)*.
- Recent experience suggests that monetary policy has a potent effect on economic activity. During 2003 the Reserve Bank cut interest rates in an environment of booming migration and a strong economy. The unsurprising consequence was a housing market boom in late 2003, and extremely strong GDP growth in 2004. Over 2004 the Reserve Bank steadily normalised rates, eventually increasing the OCR to a contractionary level in early 2005.[1] Again, the unsurprising consequence was a sharp economic slowdown in late-2005 and early-2006 *(see Appendix 1)*.

The role of the exchange rate in controlling inflation

The exchange rate has played a key role in stabilising inflation over the past two decades. But the volatility of the exchange rate has aroused intense public interest. Our comments are:

- New Zealand's floating exchange rate has been very successful as a "buffer", insulating the economy from external shocks. When New

[1] We consider the neutral nominal OCR to be 6.25%. The OCR was increased to 6.5% in January 2005, and to 6.75% in March 2005. Note that our estimate of the neutral nominal OCR was more like 5.75% in the late 1990s, because inflation was lower then.

Zealand's dominant export prices plummeted in 1998, the exchange rate fell and cushioned the blow for the economy. New Zealand's dominant export prices are currently skyrocketing, and the exchange rate is rising alongside. One effect of the higher exchange rate will be to distribute the benefit of high export prices to all New Zealand consumers, by giving them greater purchasing power over imported goods and services.

- We sympathise with those exporters and import-competing firms who are facing a higher exchange rate but are not enjoying higher world prices. However, we believe that the alternatives to a floating exchange rate would be worse. If the exchange rate had not risen this decade then interest rates would need to have been far higher to control inflation. If we had a fixed exchange rate regime, then adjustment to world shocks would have to come through the real economy. Shocks like the Asian Crisis or an outbreak of Foot and Mouth disease would result in far higher unemployment and much greater economic dislocation under a fixed exchange rate than under a flexible exchange rate.
- Among OECD currencies, the New Zealand dollar is unusually volatile. That is because New Zealand is unusually small, and has an unusually narrow focus on agricultural exports.
- Reserve Bank research suggests that altering interest rate policy with the aim of reducing volatility in the exchange rate would be prohibitively costly in terms of increased volatility of inflation and the real economy.[2]
- Interest rates are not the only factor influencing the exchange rate, and may not even rank among the most important factors. The exchange rate is a relative price so what is happening in other countries is of paramount importance. Currency values are influenced amongst other things by: relative growth; relative inflation; commodity prices (adjusted for commodity prices, New Zealand's trade weighed exchange rate is currently only at its long run average); and relative interest rates. We believe the current exchange rate is justified by the extraordinarily high level of commodity prices. We are concerned that the popular notion that the Reserve Bank is responsible for the high NZD is not backed by any real evidence.

[2] Reserve Bank Discussion Papers DP2003/09, DP2006/04 and DP2006/05.

Term of Reference 3: To examine the interaction of monetary policy with other elements of the economic policy framework including fiscal policy.

In our view, fiscal policy (including migration policy) should be set with a medium term focus. It should be left up to monetary policy to deal with short-term cyclical fluctuations in the economy. This view is consistent with accepted wisdom in the economics profession. Fiscal policy acts with such a long lag that any attempt to fine tune it would probably cause more harm than good.

Term of Reference 4 & 5: To examine the New Zealand economy's capacity for non-inflationary growth and how it can be improved. To examine the role of productivity in the economy, how it can be improved, and the constraints upon it.

- Compared to the 1990s, the Reserve Bank's job has become tougher. That is because the speed limit for the economy has slowed in the 2000s *(see Appendix 2)*.
- In recent years, most of New Zealand's growth has come from throwing more inputs into the production process. Productivity growth has been on the slide. With lower growth in labour supply expected, NZ's growth potential will slip further unless our productivity performance is turned around.
- NZ's multifactor productivity growth has slowed from 2.3% p.a. in the second half of the 1990s to 0.5% p.a. over 2001 – 2006. Between the same periods, New Zealand's potential growth rate (i.e., the rate at which the economy can grow without it proving inflationary) has dropped from close to 4% to sub 3%.
- If NZ had maintained the trend rate of productivity growth of the 1990s into the 2000s, nontradable inflation would now be closer to 2% than 4% (see "RBNZ as collateral damage", page 19, *Appendix 2*).
- NZ's poor productivity performance not only spells bad news for the long-term improvement in NZ's living standards, it is also coming at the cost of higher interest rates and exchange rate now.
- In our view, the best way to assist the central bank in its ongoing fight against inflation is to raise the growth potential of the economy. Thus, Government should be most concerned with addressing supply-side, rather than demand-side, issues. **The key focus should be on enhancing New Zealand's productivity performance.** A

productivity commission would pay greater dividends than an enquiry into the monetary policy framework.

- National productivity growth stems from a complex interaction of factors. But it is ultimately government policy, institutional and cultural factors that will determine success in improving productivity. For the government, this means their focus should be on policies that will enhance market efficiency and innovation, promote the accumulation of knowledge and increase the diffusion of new technologies.
- Two key areas for ensuring increased productivity are education (basics such as literacy and numeracy, meaningful qualifications that provide a reliable signal to employers, targeted training, and a tertiary education system that focuses on quality rather than quantity) and health. After all, a healthy and educated workforce is paramount. However, other areas the Government could usefully target (and to an extent, generally do) to raise productive potential are:
  - A closer look at the tax incentives behind overinvestment in housing and underinvestment in productive resources.
  - An examination of the interaction of the tax and benefit systems to encourage greater labour force participation.
  - Reducing company tax rates to encourage investment.
  - More generous depreciation rates to encourage investment (particularly R&D).
  - Reduced compliance costs.
  - Changes to the RMA to reduce obstacles to investment in critical infrastructure areas, particularly electricity generation and supply.
  - Targeting of skilled migrants, but ensuring that qualifications (e.g., plumbers, electricians, doctors, engineers) are recognised from a broader range of countries. This is necessary to break down the 'closed shop' industry associations. At the least, credits for foreign qualifications should be recognised, rather than having to start from square one to be able to practice.
  - Ensuring increased competition in key sectors, particularly utilities and communication.
  - Ongoing pursuit of free-trade agreements.
  - A co-ordinated savings focus.

Term of Reference 6: To examine the recommendations from recent examinations of monetary policy including the joint Treasury and Reserve Bank of New Zealand's report entitled Supplementary Stabilisation Instruments.

- We concur with the sentiments expressed in the Supplementary Stabilisation report: "there are no simple, or readily implemented, options that would provide large payoffs in the near-term, without significant complications and costs".
- A more detailed consideration of the Mortgage Interest Rate levy, and its potential problems, is provided in *Appendix 6, "Taxing times (and mortgages)"* .
- There is much that the Government can do to assist the Reserve Bank. But the focus should be on the medium term and doing what is right for the economy structurally. Unintended consequences can lurk when policy is short-sighted or interventionist.

Term of Reference 7: To consider additional measures that could enhance monetary policy in New Zealand.

- Westpac fully endorses the current monetary policy framework, which has worked well for NZ.
- In our view, the best way to assist monetary policy is by focussing on policies that enhance productivity.
- Frequent alterations to the Policy Targets Agreement, as well as frequent monetary policy reviews, have undermined the public perception of the Government's commitment to inflation targeting. Adjustments to the PTA should be made less frequently, and enquiries into monetary policy should be held less frequently. We were encouraged to see no change in the PTA at the Governor's reappointment.
- A firmer commitment to the monetary framework ("it is set in stone") would give the public and markets a clear message, tone down inflation expectations (from a reduced risk of perceived 'policy creep') and allow monetary policy to better work.
- If there is a change to the PTA, the inflation target should be specified as a point, rather than a range.
- NZ's monetary policy framework is considered international best practice, with numerous other countries gravitating toward NZ's framework. NZ should be strongly endorsing the framework, not questioning it.

Appendix 1

5 April 2007

Monetary policy: would you like fries with that?

- **The Official Cash Rate has been very effective at slowing an overheated economy and keeping inflation low.**
- **There is no need for 'supplementary instruments'.**

The Reserve Bank has been concerned that monetary policy may be losing its punch, and that supplementary measures may be required to augment the work of the Official Cash Rate and exchange rate. We do not think that the monetary tools are broken. Any supplementary instruments[1] should stand on their own merits, not on the mistaken notion that the monetary tools have lost their efficacy. For clarity of message, we'd prefer that the monetary policy burger came without extras.

In the following, we highlight why we think the existing monetary policy tools are effective. We seek to dispel some of the misperceptions that are being promulgated to promote the potential introduction of supplementary monetary policy instruments.

It didn't slow by itself

Economic growth slowed to 1.5% at the end of 2006, from 4.5% two years prior. This dramatic slowdown occurred despite a robust world economy (with global growth in its strongest phase since the late 1960s / early 1970s), very strong NZ commodity prices, the ongoing housing boom, and fiscal policy turning from contractionary to expansionary. The prime cause of the slowdown was tighter monetary conditions (i.e., higher interest and exchange rates). To be able to slow the economy against such a strong backdrop, monetary policy clearly still packs a wallop.

[1] Possible measures include bank capital requirements (or linking to cyclical risk), tax treatment of LAQC's, tax on property intended for resale, mortgage interest levy, discretionary loan to value ratio limit.

The market has responded

Wholesale interest rates have fully responded to Reserve Bank increases in the OCR. Table 1 compares the increases in wholesale interest rates and retail mortgage rates since their low points in mid 2003. Wholesale interest rates have increased by more than the OCR all the way out to the three year part of the swap curve. Even 5 year swaps have now increased almost as much as the OCR (221 bps v 250bps). Any central bank in the world could not reasonably hope for greater wholesale interest rate responses to monetary policy moves.

Table 1: Interest rate changes, in basis points, since their mid 2003 lows

	As at February 2007	As at 4 April 2007
OCR	225	250
90 day bank bill rate	273	287
1 year swap rate	290	303
2 year swap rate	259	280
3 year swap rate	230	257
4 year swap rate	209	233
5 year swap rate	189	221
New customer floating mortgage rate	246	266
1 year fixed mortgage	244	272
2 year fixed mortgage	217	264
3 year fixed mortgage	190	245
4 year fixed mortgage	169	223
5 year fixed mortgage	144	199

Starting point

The RBNZ has faced a few headwinds in terms of getting full traction from their OCR moves. These include contraction of bank margins, customers moving from floating to fixed mortgages, and customers extending their fixed rate terms. But the starting point

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

www.wib.westpac.co.nz

is all important. These factors will not prove to be such a headwind in the future, so any OCR moves from now will have even more impact.

Since 2003, bank margins on fixed rate mortgages dropped from around 120bps in 2003, to 60bps in early 2007. (In late March / early April 2007, those margins have been partially restored to around 90bps). But it is easier for margins to shift from 120bps to 60 than it would be for them to move from 60bps to zero!

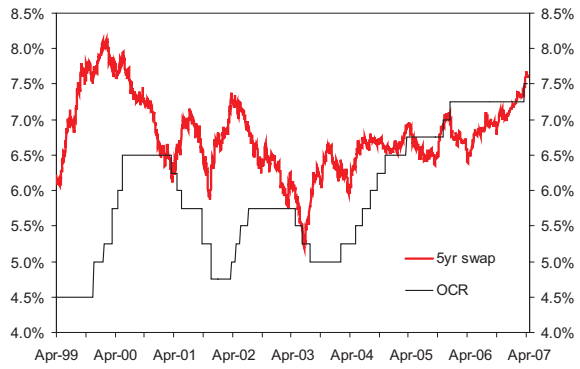
Fixed rate mortgages have increased from 60% of total mortgages in 2003 to 85% currently (partly due an inverted yield curve, and partly due to higher margins on floating rate mortgages). While the fixed rate share can move from 60 to 85%, it is impossible to move from 85 to 110%!

Borrowers have also been extending the duration of their fixed rate mortgages. The average fixed rate term has increased from 1.27 in 2003 to 1.82 years. With now only 20bps of difference between a one and four year fixed mortgage rate, the incentive to lengthen duration is less.

The popularity of fixed mortgage rates means many people are actually paying something lower than the current interest rates, at least until their mortgages roll over. But this does not make interest rates any less effective. It is the current interest rate that matters for new borrowing/saving decisions, not the average rate being paid by other people. A few people may live 'hand to mouth', but most are forward looking – if they expect to roll on to a higher mortgage rate in the future, they will tighten their belts now. We think that the RBNZ's focus on the 'effective mortgage rate' is misleading. In the US the majority of mortgages are at 30-year capped rates,[2] yet we have never heard anyone say that it takes a whole generation for US monetary policy to have its effect!

Regardless of all the above, Table 1 illustrates that mortgage rates out to 3 year fixed terms have either increased more than, or in line with, OCR increases.

Figure 1: 5 year swaps vs OCR



Even 5 year fixed rates have increased almost 200bps, despite convergence of long-term global interest rates.[3]

Stock of debt matters

The stock of household sector debt has increased from around 60% of household disposable income in 1990, to 180% currently. That means that any interest rate increase ultimately has a bigger impact on household debt servicing costs, because the quantum of debt has increased so markedly. In terms of impact on household debt servicing relative to income, a 32bps increase in the effective mortgage rate now is equivalent to a 50bps increase 5 years ago.[4]

Mixing it up

One complaint about the OCR is its effect on the exchange rate. There are certainly many hard-working exporters, especially in the manufacturing sector, who are struggling against the headwind of a high NZD. But it is not obvious that interest rates are entirely to blame. The New Zealand dollar appreciated 25% in 2003, a year in which the OCR was cut by 75 basis points. Last year the currency fell and then rose, but the OCR was steady all year. The New Zealand dollar is a commodity currency – when world commodity prices rise, the New Zealand dollar rises.

The rise in the New Zealand dollar has been a big factor in keeping inflation low, by making imports cheaper. Without the inflation-dampening exchange rate, interest rates would have risen much higher this cycle. That probably would have been even less popular than the high exchange rate! The Reserve Bank cannot control the mix of monetary conditions, but using the OCR, it can control inflation.

Two wrongs don't make a right

The inflation pressure that the RBNZ is currently facing is partly of its own making. With the benefit of hindsight, the RBNZ made a major policy mistake in 2003. The OCR was cut from 5.75% to 5.00% on fears of global deflation. However, these cuts occurred at a time of around 4% GDP, a positive output gap, net migration inflows in excess of 40,000, core inflation above 3.5% and rising, double digit house price growth, unemployment dropping, and high capacity utilisation at 0.91. The RBNZ tested the speed-limit of the NZ economy, and the economy was found wanting.

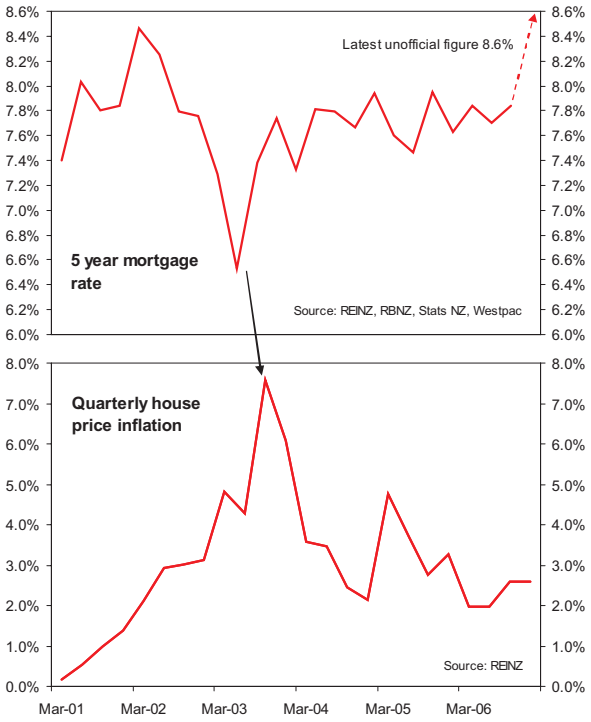
---

[2] In the US, the standard mortgage is a 30-year fixed rate. However, with no prepayment penalties when refinancing, it is effectively a 30-year capped rate. "Adjustable rate mortgages (ARMs)" have risen from 18% of the total in 2003, to 25% in 2005. The interest rate on ARMs resets after 3, 5, 7 or 10 years depending on the loan.

[3] Our latest issue of DownUnder Swap and FI Focus, 2 April 2007 has more on the OCR's effect on mortgage rates.

[4] See our Bulletin *A Dysfunctional Tool*, 7 March 2006.

Figure 2: Low mortgage rates fuelled house price boom in 2003



The cuts of 2003 are evidence that the OCR works very well indeed. Interest rates were cut, the housing market boomed, consumers borrowed to the hilt, and the economy expanded at an unsustainable pace. As there are long lags between monetary policy, economic growth, and inflation, the policy mistake of 2003 impacted on inflation outcomes right through to the first part of 2006. The long and protracted period of high interest rates ever since has been catch-up.

Safe as houses

If the effectiveness of monetary policy is being measured by what has happened to house prices, then this is the wrong yard-stick. Monetary policy should be solely measured on its ability to deliver a stable price level, not its ability to target a specific asset price. After all, the Reserve Bank Act states that the primary function of the Bank is "stability in the general level of prices". There have been strong fundamental factors behind the increase in NZ house prices, with the success of the RBNZ being partly responsible. Interest rates are lower and less variable than they were in the 1990s, and output variability has been reduced. Lower interest rates have lowered the cost of borrowing and allowed households to take on more debt. In turn this has pushed up the value of houses. The more stable macroeconomic environment has delivered the willingness to take on more risk. To boot, the increase in the top marginal tax rate increased the value of housing as a tax shelter. Our research suggests that, given fundamentals, most of the increase in house prices were justified. That adjustment to fundamentals in debt and house prices[5] has largely run its course, but the RBNZ trying to halt the correction was like King Canute trying to stop the tide from coming in.

Singing a different tune

The RBNZ could usefully change tack in its communications and start singing its own praises. The RBNZ has been successful in slowing the economy, it has kept the cash rate relatively stable, and inflation has quickly come back within the target band. This is despite true headwinds coming from the oil price shock in 2005/2006 and a marked drop in NZ's productivity performance reducing its potential growth rate.

We think that clarity of the RBNZ message would be enhanced if it sticks to the traditional monetary transmission mechanisms. Credibility is not enhanced if the central bank is intimating that its tools are not working well. To us, monetary policy is packing as much – if not more – punch than ever. For supplementary tools to be introduced, at the potential cost of unintended consequences and dilution of the central banks message, they must stand on their own merits. The current tools are not broken.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250
Dominick Stephens, Economist, Ph: (64-4) 381 1414

[5] See our Bulletins *Household Debt: Why it has soared,* 16 Feb 2007 and *Bubble, Schmubble*, 16 March 2007.

Growing pains

In recent years, most of New Zealand's growth has come from throwing more inputs into the production process. Productivity growth has been on the slide. With lower growth in labour supply expected, NZ's growth potential will slip further unless NZ's productivity performance is turned around.

New Zealand's growth rate is determined by the rate of growth of inputs (capital and labour) and productivity. With already strong capital growth, prospects of slower growth in labour, and a very disconcerting drop in trend productivity, New Zealand's potential growth rate (on unchanged fiscal policy) has fallen from 3.5-4.0% over the past decade to around 2.75% over the next 4 years. This spells bad news for the Reserve Bank – they cannot accommodate as much growth in the economy without it proving inflationary. And the drop in productivity performance spells even worse news for the long-term improvement in NZ's living standards.

In this article, we utilise a growth accounting framework to shed light on prospects for NZ's potential growth rate. We discuss the key reasons behind the reduction in New Zealand's growth potential, and canvass the implications.

Accounting for growth

"Growth accounting" measures an economy's growth in output by the combined growth of its inputs. Growth accounting is based on a production function with at least three inputs: labour, capital and multifactor productivity (MFP). While the first two factors are directly measurable, MFP is not. The end result is that MFP tends to be a catch-all component. MFP can be influenced by technology, changes in the composition of capital and labour, changes in the quality of capital and labour, and changes in the production process.

As Table 1 illustrates, from 1995 – 2006 potential growth was around 3.5%. However, this period was very much a game of two halves.

Between 1995 and 2000, growth in inputs only averaged 1.6% p.a. Productivity growth was very strong at 2.3% p.a., delivering growth outcomes averaging almost 4%. Since the new millennium, NZ's growth performance has predominantly come from throwing more inputs into the production process (with input growth of 2.6% p.a.). But the productivity performance has slipped dramatically, taking NZ's growth potential with it.

At a broad level, we will estimate NZ's potential growth by examining prospects for growth in labour input, the capital stock, and productivity.

Table 1. Growth in the measured sector, average per annum

March years	Labour input	Capital input	Total inputs	Multifactor productivity	Economic growth
1995 - 2006	1.5	2.9	2.1	1.4	3.5
1995 - 2000	1.1	2.4	1.6	2.3	3.9
2001 - 2006	2.0	3.4	2.6	0.5	3.1
2007 - 2011	1.0	3.5	2.1	0.7	2.8

Workers unite

One of the remarkable achievements of the NZ economy in the past 15 years has been its job generating capability. An additional 610,000 jobs have been created (a 40% increase), the labour force participation rate has increased from 64% to around 68.5%, and the unemployment rate has dropped from 10% to sub 4%. In other words, more people have been making themselves available for work, and even more people have been getting work.

Over the 5 years to December 2006, hours worked have increased by an average of 2.3% p.a. However, growth in the supply of labour is unlikely to be sustained at that pace due to the unemployment rate now being a very

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

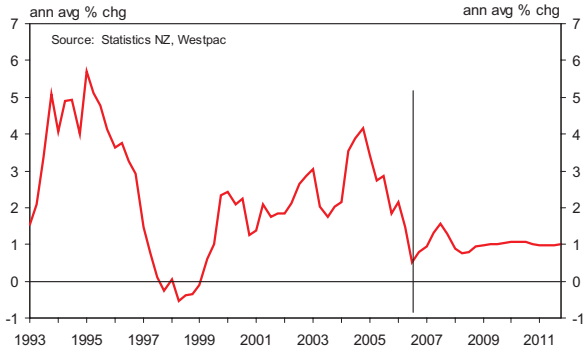
www.wib.westpac.co.nz

low 3.7% (i.e., there isn't much in the way of low hanging fruit), net migration appears to be stable around 10 – 15,000 p.a., and incentives for labour force participation are heading in the wrong direction.

The labour force participation rate is likely to trend down in the future because the interface between the tax and benefit system has become highly skewed, leading to high effective marginal tax rates for working families (i.e., there is less incentive to work). Also, population aging will knock 1 percentage point off the labour force participation rate in the next 5 years, and a total of 2.5 ppts over the next decade.[1] And the just introduced increase in annual leave (from 3 to 4 weeks) will further restrict labour supply.

We estimate that these combined factors will shave a full percentage point off yearly growth in labour input over the coming 5 years. Trend growth in labour input will drop toward 1.0% p.a., and risks being even lower.

Figure 1: Growth in hours worked

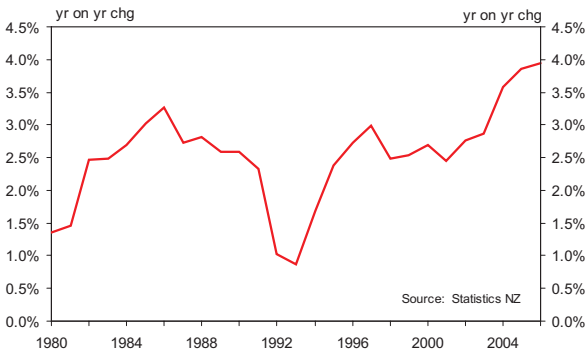


A capital idea

New Zealand has been experiencing strong investment growth in recent years *(refer Figure 2)*. The productive capital stock increased by close on 4% p.a. in the two years to March 2006. This compares to a 2.5% p.a. average rate of increase over the previous decade.

Strong growth in the capital stock has led to a marked increase in 'capital deepening'. That is, there has been a step-up in the amount of capital per unit of labour

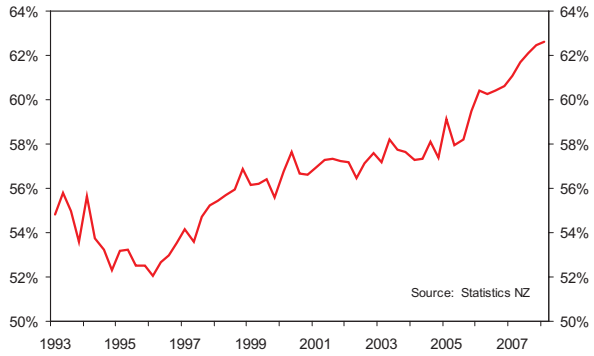
Figure 2: Inflation adjusted additions to fixed capital



(refer Figure 3). One of the present conundrums in the economy is that there has not (yet?) been a productivity payoff from the additional investment. This is all the more surprising as the physical increase in capital has favoured transport and plant and machinery equipment.

Nonetheless, additions to the capital stock are currently at an elevated level and growth is unlikely to trend higher.

Figure 3: Capital to labour ratio



It's how you use it

At the national level, productivity is the single most important determinant of sustained improvements in the standard of living. Productivity growth raises living standards because more real income improves people's ability to purchase goods and services (whether they are necessities or luxuries), enjoy leisure, improve housing and education and contribute to social and environmental programs. Importantly, productivity also underpins a nation's quality of life. Productivity improvements and wealth creation can facilitate increased spending on social programs, health care, higher education, a cleaner environment and so on. From a practical perspective, productivity encapsulates the process of either 'doing things better' or 'doing better things'.

Productivity tends to be pro-cyclical. When the economy slows (as it has in the past couple of years) productivity tends to drop due to hoarding. When the economy is in the early stages of an expansion, existing resources are used more intensively and productivity lifts. To abstract from the cycle, we look at trends in productivity. And the message is not good. Compared to the 1992 – 2000 period, average labour productivity[2] in the past 5 years has decreased by 1.7 percentage points and multifactor productivity by 1.8 percentage points *(refer Figure 4)*.

[1] See our Bulletin *The Will to Work*, 31 January 2007.

[2] This measure is referred to as partial labour productivity (calculated by dividing GDP by the number of hours worked). It is partial because it glosses over the role played by other factors in output growth.

Figure 4: Trend productivity growth

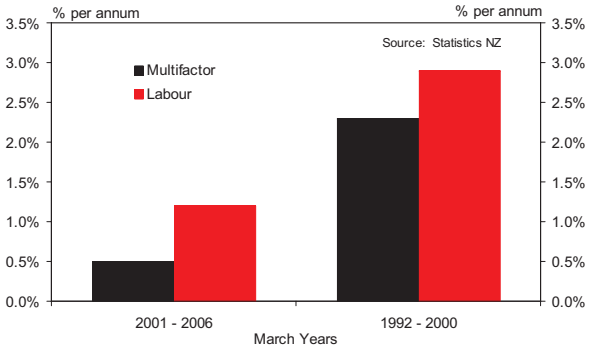
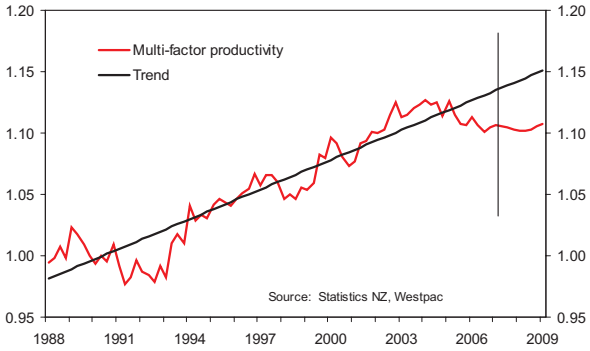


Figure 5: Multifactor productivity and historic trend



Why the decline in trend productivity? Potential contributors could include:

- growth being dominated by the generally lower measured productivity service sectors (as the export sectors struggle under an uncompetitive exchange rate);
- with low unemployment, the marginal employee tends to drag down average productivity (the 'scraping the bottom of the barrel' argument);
- high labour market churn in a tight labour market;
- property being favoured at the expense of other investment;
- higher taxes (and it's marginal tax rates that matter most);
- rapidly increasing size of government crowding out private sector activity; and
- a trend toward re-regulation.

The disconcerting aspect is that there appears little in current policy settings to arrest the decline in productivity. The one hope is that there will be an eventual productivity payoff from the large amount of investment undertaken in the past few years.

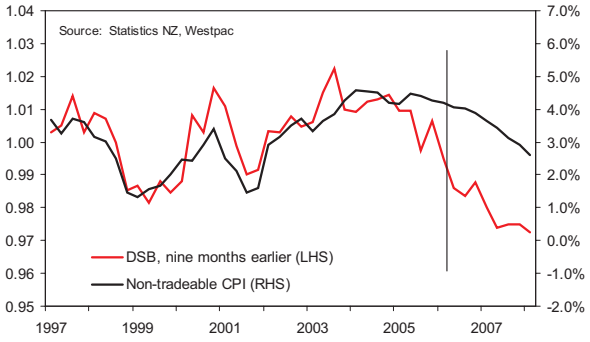
RBNZ as collateral damage

The fall in the potential growth rate makes the RBNZ's job all the tougher. Any reduction in the supply side potential of the economy means that the RBNZ cannot accommodate as much demand growth without it proving inflationary. Figure 5 highlights the extent to which multifactor productivity has fallen below its trend rate.

Westpac's Demand and Supply Balance measure[3] is constructed in the spirit of the growth accounting framework. It can be used to show that if multifactor productivity growth had been maintained at its historical trend, core inflation would be around 2 percentage points lower *(see Figure 6)*. The clear implication is that NZ's deteriorating productivity performance is coming at the short-term cost of higher interest rates.

[3] The DSB looks at the ratio of demand and 'normal' supply. We use real GDP as the measure of demand. Normal supply is calculated from an estimate of trend productivity, and capital and labour input. See our Bulletin *A Matter of Balance,* 26 July 2005.

Figure 6: Inflation pressure if productivity growth had been maintained



What can be done

To raise New Zealand's potential growth, focus needs to be on improving the quality of investment and offsetting current impediments to labour force participation. However, with New Zealand's pool of available labour now largely exhausted, the onus for growth will fall most heavily on gains in productivity.

National productivity growth stems from a complex interaction of factors. But, it is ultimately government policy, institutional and cultural factors that will determine success in improving productivity. For the Government, this means their focus should be on policies that will enhance market efficiency and innovation, promote the accumulation of knowledge and increase the diffusion of new technologies.

Economic reform remains an essential ingredient for long-term growth. For New Zealand, this means further reform of the tax system, government spending and regulation is required. After all, productivity growth is crucial for an economy to achieve sustained growth in its living standards. By implication, productivity improvements are what enables people to enhance their quality of life. Surely that should be the prime objective of any society.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250

Appendix 3

9 February 2007

Taxing times (and mortgages)

- **NZ's Finance Minister has floated the idea of a variable mortgage levy as a means to dampen inflation pressures emanating from the housing sector.**
- **Practical difficulties and lack of broad based political support will make it a no-go.**

NZ's Finance Minister mentioned the possibility of a variable levy on residential mortgages in a radio interview this morning. This was one of many "Supplementary Stabilisation Instruments" canvassed in a joint report issued by the RBNZ and the Treasury on 6 April 2006. The mortgage levy was investigated in the report, but was not endorsed by the RBNZ, the Treasury, or the authors of the report. The report effectively wrote off all the alternatives canvassed, concluding: "there are no simple, or readily implemented, options that would provide large payoffs in the near-term, without significant complications and costs."

We attach a very low probability to a mortgage levy being introduced. The Finance Minister says that such a levy would need careful consideration and broad political support. Both are huge hurdles, neither of which the levy will be able to overcome.

Why it is a no-go

- Unintended consequences: Much small-business lending is secured over residential mortgages. So the levy would hit not only the mortgage market but small business funding costs.
- The proposal is for the levy to be applied to all existing fixed rate mortgages. This would be hugely unpopular as it would rightly be perceived as a retrospective tax. People enter fixed rate mortgages for certainty of payments, something that would be taken away from them at a stroke.
- Financial providers could lessen the effectiveness of the levy by extending the term of a fixed rate mortgage or shifting a customer to interest only terms while the levy is in place. Is the Government going to go down the route of regulating individual mortgages to overcome this inevitable outcome?
- There would be disintermediation away from the domestic finance sector. NZ Dollar mortgages could be issued from Australia, Fiji, the Caymans etc. Third country tax treaties would have to be changed to try to ameliorate this disintermediation effect, which could be difficult. The enforcement costs would be very high.
- The levy would be labelled as yet another tax, and would be regressive (with the most impact on low income borrowers).
- Constitutional issues: you either have an unelected body (the RBNZ) levying a tax which is unprecedented, or the Minister of Finance administers the levy and hence has a hand in monetary policy and threatens the perceived independence of the RBNZ.

Some asides

- NZ's monetary policy lever is not broken. Higher debt levels mean that a 30bp rise in the effective mortgage rate is equivalent to a 50bp increase 5 years ago (in terms of impact on debt servicing costs). The 'problem' is that monetary policy takes longer to have its impact. The 'solution' is either more patience or more aggression in the application of monetary policy. Globalisation/deregulation of markets has meant that long-term interest rates are being set globally and less by domestic monetary policy considerations (which has meant tighter spreads and flatter/inverted curves). This phenomena is by no means unique to NZ yet we do not hear of other countries complaining that monetary policy is ineffective.
- The levy is being floated as a way of slowing construction growth. This is exactly the wrong target. To reduce price pressure in the housing

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

www.wib.westpac.co.nz

market, housing supply would more usefully be increased than decreased.
- The levy would be a very partial response. It would do nothing to increase savings in financial assets (it would actually diminish them). Too low financial savings is surely the flip-side of 'excessive' investment in housing.
- What is the litmus test for when the levy should be introduced/raised/what level to be set at? Is it only when there is an identifiable bubble? How does one identify a bubble? After all, relative price shifts occur in an economy to ensure a reallocation of resources to where demand is strongest. It is always dangerous from a policy perspective to try to target one price in isolation.

Best areas of focus

The best way to assist the central bank in its ongoing fight against inflation is to raise the growth potential of the economy. Thus, Government should be most concerned with addressing supply-side, rather than demand-side, issues. The key focus, as always, is raising productivity.

Two key areas for ensuring increased productivity are education (basics such as literacy and numeracy, meaningful qualifications that provide a reliable signal to employers, targeted training, and a tertiary education system that focuses on quality rather than quantity) and health. After all, a healthy and educated workforce is paramount. However, other areas the Government could usefully target (and to an extent, generally are) to raise productive potential are:

- Changes to the RMA to reduce obstacles to investment in critical infrastructure areas, particularly electricity generation and supply.
- Reduced compliance costs.
- More generous depreciation rates to encourage investment (particularly R&D).
- A closer look at the interaction of the tax and benefit systems to encourage greater labour force participation.
- Reducing company tax rates to encourage increased investment.
- Targeting of skilled migrants, but ensuring that qualifications (e.g., plumbers, electricians, doctors, engineers) are recognised from a broader range of countries. This is necessary to break down the 'closed shop' industry associations. At the least, credits for foreign qualifications should be recognised, rather than having to start from square one to be able to practice.
- ensuring increased competition in key sectors, particularly utilities and communication.
- Ongoing pursuit of free-trade agreements.
- Increasing the disclosure requirements of finance companies, as this is where the riskiest credit creation is occurring.
- A co-ordinated savings focus. Current policies such as the Kiwisaver scheme and abolition of grey list countries are more likely to feed the domestic property market with little or no increase in savings in financial assets.

There is much that the Government can do to assist the Reserve Bank. But the focus should be on the medium term and doing what is right for the economy structurally. Unintended consequences can lurk when policy is short-sighted or interventionist.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250
Dominick Stephens, Economist, Ph: (64-4) 381 1414

Appendix 4

16 March 2007

Bubble, Schmubble

House prices have been pushed up by tax rates and interest rates

- **Current house prices are justified by the fundamentals.**
- **Increasing the top tax rate to 39c pushed up house values by 17%.**
- **Lower long-term interest rates increased the value of property by 20%.**

House prices have doubled in five years, but they are not materially overvalued. Rather, house prices have risen for good reason. This bulletin explains the role of two key drivers in the recent house price boom – higher tax rates and lower interest rates. The increase in the top tax rate increased the attractiveness of property for investors, pushing up prices by about 17%. The fall in long-term interest rates made it cheaper to take out a mortgage, meaning people could bid more for property to the tune of 20%. Together, tax rates and interest rates explain more than a third of the house price increase this decade.

Our analysis uses a method of valuing property according to its "investment value", or what the property could be worth to an investor. This is similar to the valuation method commonly used for shares or other assets. Essentially, the value an investor attaches to a property depends on[1]:

- The rent received
- Expenses incurred
- Mortgage interest paid
- Tax rebates received from losses
- The expected capital gain

We estimate that the investor value of property was $168,000 in 1999, based on the interest rates, tax rates, and rents that prevailed at the time. The actual median selling price was $160,000, so property was slightly undervalued. As of December 2006, the investor value of property was $326,000, versus the median sale price of $322,000. Property is now more-or-less fairly valued.

The investment value of property has implications for all prospective home buyers, not just investors. If the investment value of property is higher than actual selling prices, investors will tend to enter the market en masse, quickly bidding up the price. Equally, if actual selling prices are above the investment value of property, then investors will tend to exit the market. With fewer willing buyers, there would be downward pressure on house prices.

How tax rates affect property values

Every investor knows that there are huge tax benefits to owning a rental property. Here is how it works. Most landlords make a loss on their rental properties, since the rent does not cover the mortgage interest and expenses. This loss can be offset against other income, effectively

Table: The investor value of housing under various scenarios

	Annual Rent	Interest Rate	Expected Capital Gain	Tax Rate	Investor Value of Property
1999 conditions	10,261	9%	5.3%	33%	**$168,000**
Current conditions	10,600	8%	6%	39%	**$326,000**
Scenario 1: Lower tax rate	**11,550**	8%	6%	**33%**	**$278,000**
Scenario 2: Lower interest rate	10,600	**7.5%**	6%	39%	**$381,000**
Scenario 3: Higher interest rate	10,600	**8.5%**	6%	39%	**$285,000**

In each scenario, an investor with a 95% mortgage will make the same 6.2% p.a. expected return on equity.

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

www.wib.westpac.co.nz

reducing the landlord's taxable income. The landlord receives a tax rebate on rental losses *at their marginal tax rat*e. If the marginal tax rate goes up, the tax rebate goes up. For example, consider a highly leveraged landlord with a large mortgage, who makes a tax-deductible loss of $30,000 on a rental property. If the landlord's marginal tax rate were 33%, the tax rebate from this loss would be $9,900. But if the top marginal rate of income tax rose to 39%, suddenly the tax rebate would rise to $11,700. The higher rate of tax means the rental property is worth an extra $1,800 in tax rebates *every year* to a high-income investor.

A high-income person would be willing to pay a lot to secure a tax break of $1,800 per year, especially given that they can borrow most of the money required and probably see property as a good investment anyway. No wonder kiwis have been investing in property! And no wonder would-be first home buyers have struggled. If a first home buyer wishes to purchase a property, they must first outbid a high-income investor who is chasing a tax break.

Our calculations suggest that the change in the top tax rate pushed the value of property up by 17%, and at the same time held rents down by about 8%.[2] It took a long time for property prices to rise, but today we would say that the increased tax breaks are fully priced into property valuations.

Of course, tax rates can change. If the top tax rate was reduced to 33%, the investor value would fall to $272,000 for the average house. (Assuming an 8% increase in rents to partially compensate landlords for the reduced tax break). Actual selling prices would not necessarily fall immediately, but investors would certainly lose their enthusiasm, creating a downturn in some parts of the property market.[3]

How interest rates affect property values

With lower long-term interest rates now than in the 1990s, it is cheaper to borrow money for purchasing property. From an investor perspective, lower interest rates spell lower costs and greater profits. Since mortgage interest is often an investor's main expense, small movements in long-run interest rates can have big effects. Between 1999 and 2007, 5-year mortgage rates fell from 9% to 8%. We estimate that this increased the investor value of property by almost 20%.

Future changes to long-run interest rates could have an equally large effect on the value of property – a 1 percentage point increase in the long-run interest rate, if it were viewed as permanent, could push the value of property down by 20%. Now, before you panic about Dr Bollard's recent OCR hikes, we are talking about long-run interest rates here. Transitory changes to shorter-term interest rates don't have much effect on property prices – investors tend to focus on the long term.

Have higher taxes made monetary policy less effective?

Interest rate changes have less impact on property investors when tax rates are higher. That is because property investors can use tax rebates to claim back a portion of any increase in mortgage interest. When the tax rate went up, the tax rebate went up. So a one percentage point increase in the interest rate now pushes up a high-income investor's *after-tax* costs by just 0.61%. The other 0.39% is claimed back as a tax rebate.

Meanwhile, owner-occupiers feel the full impact of interest rate increases, because owner-occupiers' mortgage interest is not tax deductible. Equally, the *decreases* in mortgage rates between the 1990s and now have actually benefited owner-occupiers more than investors.

The great unknown: long-run capital gains

Capital gains are the last piece in the puzzle behind the investor value of housing. To justify current house prices, investors must realise a long-run capital gain of 6% per annum. That seems reasonable to us. The historical average increase in house prices is inflation plus 3.3% per annum. Inflation expectations are currently around 2.7%. Current house prices are not based on unrealistic expectations of capital gain.

Of course, expected long-run capital gains can also be influenced by market sentiment. Buoyant expectations of future capital gains have helped to push up house prices in recent years, and a downturn in market sentiment could push house prices down. That is why property investment is such a risky investment – you can be certain of the year-to-year costs, but you can never be sure of the future capital gain!

Does the theory work in practice?

We recognise that not all property investors are on the top tax rate, although many are. We also recognise that not all landlords have large mortgages. Finally, most properties are bought by owner-occupiers, not investors. But none of this invalidates our work. Auctions and house tenders are won by the highest bidder, not the average bidder. If a sophisticated property investor values a property highly because of the associated tax breaks, he or she will submit a high tender or bid highly at auction. The investor may not win the auction, but whoever does win must place an even higher bid. So the price of property is certainly influenced by what an investor would be willing to pay.

Figure 1 plots the investor value of property versus actual house prices. Actual house prices tend to move much more slowly and steadily than the investor value, so the two are not always exactly equal. But over the long term, prices do tend to reflect the investor value.

Figure 1: The investor value of houses versus median selling prices

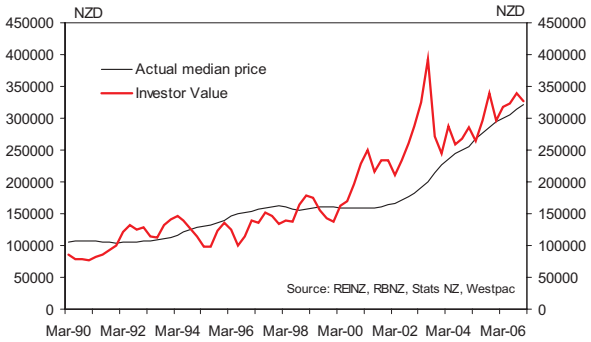
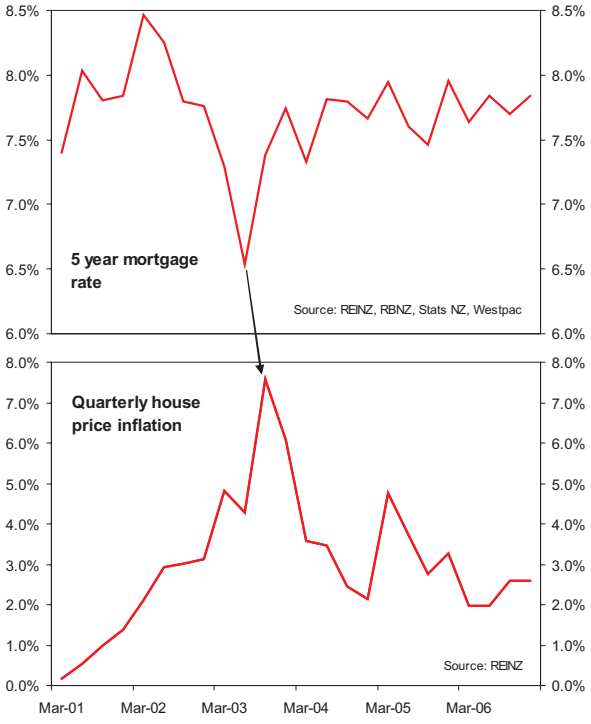


Figure 2: Low mortgage rates fuelled house price boom in 2003



The peak of the current house price boom in 2003 was a very interesting episode – Figure 2 gives a closer look at what happened. In mid-2003, 5-year mortgage rates fell by almost a 1½%. The Reserve Bank Governor was cutting interest rates and appeared much more dovish than his predecessor. In addition, world financial markets were experiencing jitters about deflation. The unusually sharp fall in long-term interest rates inflated the investor value of housing to astronomical levels. Not surprisingly, house prices rocketed, with house prices rising by 7% in the very next quarter. By the end of 2003 the Reserve Bank had changed its perspective and was shifting back to a hiking bias. Mortgage rates rose, the investor value of housing fell, and house price inflation slowed.

Lessons

The pessimists during the current house price boom were wrong. The rise in house prices was an adjustment to a new set of fundamentals, not a bubble. Any investor who managed to lock in his/her mortgage at 6.5% in 2003 would have made "a killing" even if capital gains had been limited to 5% per annum. The fact that house price inflation actually rose to 24% was just an added bonus! It is no wonder properties were being snapped up by investors, and no wonder hapless would-be home buyers watched in dismay as prices rose well beyond their reach.

Nowadays the adjustment period is over. House prices appear to be roughly in line with the fundamentals. But there are still big risks for investors. If the fundamentals change, the investor value of housing will change. To us, the main risks are a fall in the top tax rate, or an increase in long-term interest rates. Either could reduce the investor value of housing. And a reduction in the investor value of housing could lead to a downturn in the housing market as a whole.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250
Dominick Stephens, Economist, Ph: (64-4) 381 1414

[1] The valuation method is similar to the "user cost of housing" outlined in the OECD Economic's Department's Working Paper No. 475 (Girouard N, M Kennedy, P van den Norrd and C Andre, "Recent House Price Developments: The Role of Fundamentals.") However, the OECD paper did not fully allow for the tax treatment of rental property in New Zealand. A landlord should be willing to buy a property as long as:

$$\text{Rent}(1-t) + \text{Price}^{*}\pi^{e} \quad \text{Price}(i+f)(1-t),$$

where t is the marginal tax rate, π^{e} is the long run expected rate of capital gain on property, i is the mortgage interest rate, and f is other costs. Solving for the maximum price an investor would be willing to pay gives:

$$\text{Price} = \text{Rent}(1-t) / ((i+f)(1-t) - \pi^{e})$$

For more details on the data, please refer to our bulletin ***"Rent Apart"***, 6 March 2006.

[2] Rents are currently low because of the increased tax break landlords are enjoying. An 8% increase would return rents to their 1990s level as a proportion of the average wage. See Westpac Bulletin entitled ***"Rent Apart"***, dated 6 March 2007, for details.

[3] The lower end of the market would be the most affected – rentals and first homes. The top end of the real estate market may actually benefit from a reduction in the top tax rate.

Appendix 5

8 May 2007

House values: shifting foundations

- **High interest rates expected to slow housing market.**
- **Previous work suggested that houses were fairly valued in 2006.**
- **Since then a sharp rise in mortgage rates has reduced the investor value of property.**

Summary

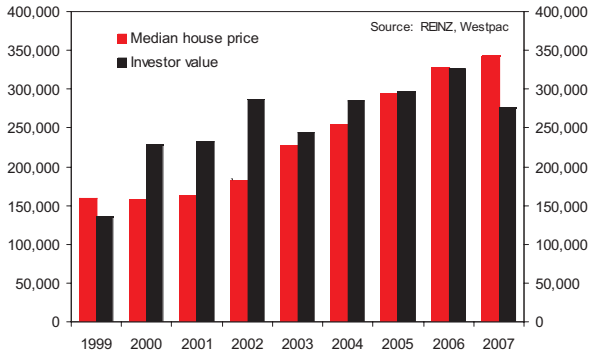
A couple of months ago we published research that valued property according to investment fundamentals. We showed that rents, interest rates, tax rates, and expected capital gains (inflation) all play important roles in the investor value of housing. The house price boom of this decade was mainly due to:

- A fall in mortgage rates that made it cheaper to borrow money.
- The increase in the top tax rate to 39 cents in the dollar, which increased the incentive to chase capital gains over income and made housing more valuable as a tax shelter.
- An increase in the average inflation rate, which pushed up the average long-run capital gain that an investor could reasonably expect to receive tax-free.[1]

The research suggested that the house price increases of this decade were not a bubble. Rather, property was seriously undervalued in 2001 – 2004, so investors were quite rational to crowd into the market. House prices were bid up, but it wasn't until 2005 that houses were selling for their true value. As at the end of 2006, the investor value of housing was $327,000. The median selling price was $328,000, so we concluded that the houses were fairly valued at the time.

But that was then and this is now. There have been huge changes in the past couple of months. Mortgage rates have experienced an extremely sharp increase, following rate-hikes from the Reserve Bank and interest rate increases on wholesale markets. 5-year mortgage rates are at their highest since before the housing boom began. The minimum carded mortgage rate on offer at the major banks is 8.6% fixed for five years, compared to 7.9% as recently as February. These interest rate increases have reduced the value of property as an investment asset.

Figure 1: Investor value and actual selling prices



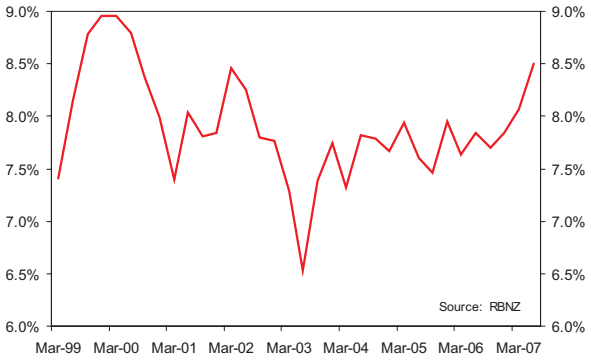
Our current valuation on the median house is $278,000. That assumes a 5-year mortgage rate of 8.5%, a 2% increase in rents over the six months to June, and a long-run average capital gain of 6% per annum. Compare that valuation to the latest REINZ data, which shows that the median house was selling for $343,500 in March. Property is now overvalued from an investor perspective. That means buying an investment property at today's prices, while paying today's mortgage rates, is unlikely to yield a good return.

[1] The effects of inflation/capital gains were only briefly touched on in our previous article. We explain the importance of inflation for property investors below.

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

www.wib.westpac.co.nz

Figure 2: 5-year mortgage rates



Effect on the wider housing market

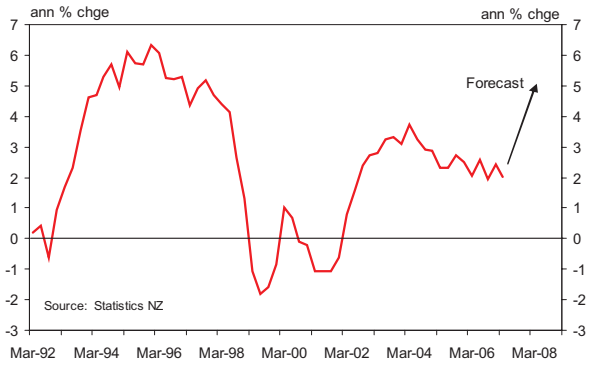
Houses are now selling for much more than they are worth to property investors. That will effectively remove one element of demand for property, especially at the lower end of the market that encompasses investment properties and first homes. In addition, high prices and high mortgage rates will be tilting ordinary people's rent-or-buy decisions in favour of renting and away from buying. On all fronts the housing market looks set to cool.

It could take some time before actual selling prices begin to reflect the lower investor value. House prices typically have momentum, meaning periods of rising prices don't suddenly stop dead in their tracks. Economic conditions are strong, with low unemployment and the Working For Families package increasing many people's take-home pay. That means plenty of people are keen to buy property.

Our overall predictions are:

- There will be a notable absence of investors from the market, and house sales will slow.
- Rents could rise more quickly. Annual rental increases could be between 4% and 6%, compared to an average of 2.7% over the past five years. However, even the top of that range would not be nearly enough to cover the cost of higher mortgage payments for landlords.[2] A 6% increase on average yearly rental income is $645, whereas the hike in mortgage rates will cost a fully leveraged landlord $2400 per annum (on the median property).
- House price inflation will slow, perhaps in the second half of the year. If interest rates remain at their current levels for a long time, or go higher, houses could fetch less than they are selling for now, especially at the lower end of the market.
- We don't expect serious fallout such as widespread mortgagee sales so long as employment conditions remain strong.

Figure 3: Rental inflation



Interest rates find their mojo

The Reserve Bank raised interest rates by 2.25 percentage points over 2004 and 2005, yet house prices marched steadily upwards. Some readers may question why we expect the latest 0.50 percentage points of OCR increases to have such a strong impact on the housing market when the previous OCR hikes were impotent. There are two key reasons:

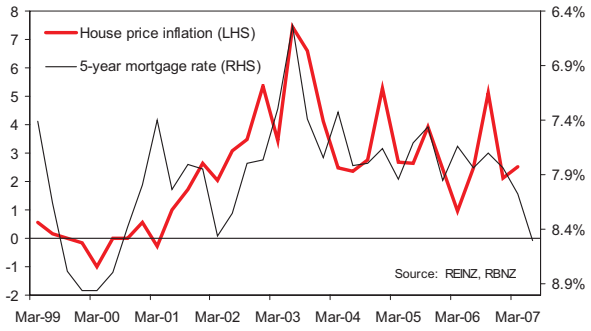
1. In 2004 houses were selling for less than their underlying value. Interest rate hikes reduced some, but not all, of the disparity by reducing the investor value of housing. But until prices reached "equilibrium" in 2005, there was little the RBNZ could do to prevent house prices adjusting higher. By contrast, this time we are starting from a point where property is already fully valued.
2. It is long-term interest rates that matter for mortgages, not the OCR. During 2004 and 2005, long-term mortgage rates moved very little, whereas they have jumped by more than 0.70 percentage points in the past month alone.

[2] When the market is misaligned, house prices tend to adjust much faster than rents. Since 1990 annual rental inflation has ranged from -1.8% to +6.3%, whereas annual house price inflation has varied much more widely, from -4.1% to +24.7%. It is unlikely that rents will rise by enough to compensate landlords for higher mortgage rates.

Table: Investor value of property

	Annual Rent	Interest Rate	Expected Long-Run Capital Gain (3.3% plus expected inflation)	Top Tax Rate	Underlying Value of Property	Actual Selling Price
Dec 2006	10,640	7.8%	6.0%	39%	**$327,000**	**$328,000**
Jun 2007	10,855	8.5%	6.0%	**39%**	**$278,000**	**$343,500**

Figure 4: Quarterly house price inflation and 5-year mortgage rates from previous quarter (inverted)



Long-term outlook

On current fundamentals, the numbers don't appear to stack up for new investors. First home buyers will also be struggling to justify higher mortgage rates. But fundamentals can change, so the next question is when will conditions improve for buyers? By all accounts, it could be long time before the fundamentals move in investors' favour. Mortgage rates may well go up again before they go down. If tax rates move anywhere it will be downwards, making property less valuable as a tax shelter. And the long-run rate of capital gain is unlikely to move any higher. It is only over the longer term that a slow and steady increase in rents, combined with a return to lower interest rates, will eventually lift investor values.

Inflation matters

The importance of inflation for investors was not described in any detail in our previous article, because we wanted to emphasise the importance of interest rates and tax rates. But given the number of questions we have fielded on inflation / capital gains, we thought that now would be a good time to explain.

Investors typically make a tax-deductible loss on their properties each year, in exchange for a tax-free capital gain. When inflation is higher, the rate of capital gain on property is higher. Economists normally point out that the effects of inflation come out in the wash, because nominal interest rates, wages, etc rise alongside prices. But the crucial thing for property investors is that higher capital gains associated with inflation are tax-free. If nominal interest rates rise because of inflation, that's tax-deductible. Higher inflation amplifies the tax advantages of owning investment property.

In New Zealand, the low-point for inflation was the late-1990s. Since then the average expected rate of inflation has risen from 1.7% in 1999 to 2.7% in 2006. Thus the long-run average rate of capital gain that investors can reasonably expect, tax-free, has risen by one percentage point since the late 1990's.[3] The price of housing has been driven up to reflect this.

Implications of our findings

The early part of the house price boom was not a bubble. Rather it was a rational adjustment that reflected the new fundamentals of lower mortgage rates, higher tax, higher inflation, and more economic stability. Riding the tide of adjustment turned out to be an excellent choice for property owners. But times have changed and the easy gains are taken.

For property investors, the future definitely looks leaner. Only those investors who are taking maximum advantage of the tax regime will make good returns. Retirees and lower-income investors who are on lower tax rates may find that their property is worth more to somebody else as a tax shelter. Consequently, we expect ownership of investment property to become increasingly concentrated amongst those on the top tax rate.

As for aspiring first-home buyers, the outlook is mixed. High house prices and high mortgage rates will make it difficult to buy, and the outlook for diminished capital gains will make ownership a less attractive financial proposition. But first-home buyers will be facing considerably less competition at tenders and auctions from investors.

For tenants, rents are expected to rise. But renting will still be much cheaper than paying a mortgage – owner-occupiers must pay a full mortgage, whereas renters only contribute towards a *tax-deductible* mortgage. High mortgage rates will make renting more attractive and buying more daunting. The trend towards renting for longer is likely to continue.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250
Dominick Stephens, Economist, Ph: (64-4) 381 1414

[3] We estimate the fair-value expected capital gain rose from 5% in the 1990s to 6% today, based on house prices increasing at 3.3% plus inflation over the very long run. The fair-value rate of capital gain is a long-run average concept, not a forecast of where you think prices will go next year.

Household debt: Why it has soared

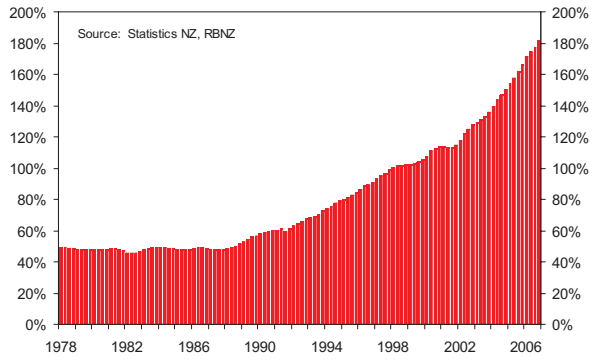
- **Since 1991, household debt has risen from 60% to 180% of disposable income.**
- **Nearly all the increase in the housing debt to household income ratio can be 'explained' by two factors: lower inflation and lower interest rates.**
- **Easier lending criteria could account for most of the balance.**
- **Unless interest rates, wage growth, or lending criteria take a step lower, the rapid build-up in debt has nearly run its course.**
- **Vulnerability of the household sector has increased, but by nowhere near as much as the debt-to-income ratio implies.**

Household debt has risen at a dizzying pace over the past 16 years. Household debt has increased from 60% of average household disposable income in 1991, to 180% currently. This looks like an alarming increase. But are these numbers really that scary? In this[1] and upcoming bulletins we will endeavour to identify why debt has risen so dramatically, discuss potential future trends, and gauge whether high debt is becoming a constraint.

Trends in household debt

Throughout the late 1970s and the bulk of the 1980s, household debt was fairly stable at around 50% of disposable income *(see Figure 1)*. Since 1991, household debt has increased by a compound rate of 11.7% p.a. Over the same period, household disposable income has only increased by an average of 3.8% p.a. This discrepancy in growth rates has resulted in a trebling of household debt relative to income. At 180%, NZ's household debt to income ratio is at the top end of the range compared to other developed economies.

Figure 1: NZ household debt / disposable income



The vast majority (92%) of household debt is housing related.[2] In the following, when we discuss developments in debt, we have chosen to focus on housing (mortgage) debt.

Stock and flow

Trends in the household debt to income ratio can be quite misleading as we are comparing a stock measure (debt) to a flow variable (income). Most household borrowing has been for housing, and house prices have increased strongly. Thus, on a balance sheet basis, the debt build-up looks nowhere near as extreme. The gearing ratio (i.e., the value of housing debt compared to the value of housing assets; both stock measures) has increased, but not nearly to the same extent *(see Figure 2)*. The gearing ratio has deteriorated from 17% to 25% between 1991 and today. This indicates that the household sector has increased their risk over the period.

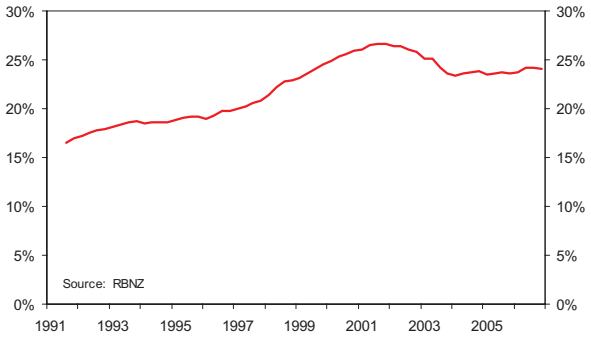
[1] For the insights of this bulletin, we borrow heavily from two RBA papers: Household Debt: What the Data Show, March 2003 and Do Australian Households Borrow Too Much?, April 2003.

[2] A portion of this debt could be better classified as business debt as many small businesses in NZ use the family home as collateral for business borrowing.

Economic Research New Zealand +64 4 470 8250 bodonovan@westpac.co.nz Sydney +61 2 9284 8372 London +44 20 7621 7620

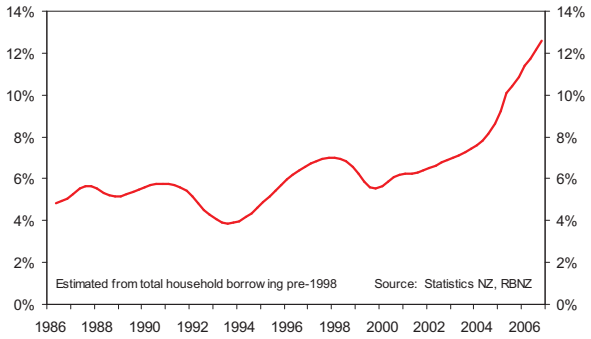
www.wib.westpac.co.nz

Figure 2: Gearing ratio
Housing debt, as % of housing assets



A key ratio from the household perspective is the debt-servicing ratio *(see Figure 3)*. This measures mortgage payments (interest plus required payment of principal) as a proportion of disposable income. This ratio has increased from 5 – 6% of disposable income throughout the late 1980s and 1990s, to 13% currently. Despite a reduction in average interest rates from the start to the end of the period, ballooning debt levels have dominated.

Figure 3: Debt-servicing ratio
Housing interest paid, as % of household disposable income



The problem with both the gearing and interest cover measures is that they are an average across the whole household sector. They say nothing about the distribution of debt across households.[3]

What's behind the rising debt?

The main factors which led to the rise in the household debt to income ratio are lower interest rates (meaning that households can take on a bigger quantum of debt while leaving debt servicing constant as a proportion of income) and lower inflation (and hence wage inflation, which means that debt is not eroded as quickly as a proportion of income).

Other factors which have led to an increase in the debt ratio include:

- Financial deregulation (e.g., resulting in easier lending criteria, reduced margins, consolidation of total household debt onto the mortgage, redraw facilities on mortgages etc).
- A small increase in the proportion of rental properties, with rental properties tending to be financed at a higher gearing ratio due to tax deductibility of interest payments.
- An increase in risk appetite (due to lower variability in output[4], employment, inflation, and interest rates in the economy).

We have endeavoured to quantify how much of the increase in the aggregate household debt to income ratio is due to lower interest rates and lower inflation/wage growth. To isolate the impact of these two factors we assume households can (and initially do) borrow up to a level where interest and principal payments constitute 30% of disposable income.[5] To account for loans of different ages, we calculated average debt ratios over a 25 year period.

Lower interest rates allow a higher maximum amount to be leant, whereas lower wage growth results in slower decline in the debt ratio for a given household. Table 1 displays the results.

The table is standardised so that the top left cell (representing conditions in the second half of the 1980s, interest rates at 17% and income growth of 11%) is set to 1. Each combination of lower interest rates and/or income is a multiple thereof. The figure in bold represents today's conditions. Thus, the combined impact of lower interest rates and wage growth is to increase the aggregate ratio of housing debt to income 2.4 fold.

It takes a long time (e.g., 25 years) for the full effect to flow through. However, the bulk of the increase in the debt to income ratio comes through more quickly because in the early life of a loan, debt servicing is mostly interest rather than principal repayment. The average life of a New Zealand mortgage is around 7 – 8 years (implying regular opportunity for individual households to alter debt), so we judge that most of the stimulus to household debt levels from lower inflation and interest rates has already flowed through.

[3] According to the 2003/2004 Household Economic Survey, 32% of households rented, 31% had a mortgage and 37% owned their homes freehold. The gearing ratio of those with debt (assuming all rental properties are debt funded and the same average house value applies across all ownership groups) is currently 41%. We estimate that average debt-servicing of households with mortgage debt is 20% of disposable income. But it is the distribution of that debt that is all important. Both the gearing and debt servicing ratios of those with debt are similar to those in Australia.

[4] Average variance of NZ quarterly output growth has dropped dramatically, from 1.0% in the late 1980's/1990's to 0.38% in the 2000's.

[5] Other assumptions include all mortgages being 25 year table, unchanged demographics / life cycle (the most debt intensive cohorts are where the household head is aged 30 – 45), and a constant proportion of households with debt.

Table 1: Implied aggregate debt to income ratios (relative to late 1980s level)

Interest	Nominal Income Growth (%)					
Rates (%)	11	9	7	5	4	3
17	1.00	1.12	1.27	1.46	1.58	1.71
15	1.10	1.24	1.40	1.61	1.73	1.87
13	1.23	1.37	1.55	1.78	1.91	2.07
11	1.38	1.54	1.73	1.98	2.13	2.30
9	1.57	1.74	1.96	2.23	2.39	2.58
8	1.68	1.86	2.09	**2.38**	2.55	2.74
7	1.80	2.00	2.24	2.54	2.72	2.92
5	2.10	2.32	2.59	2.93	3.13	3.36

In addition, we have proxied the impact of easier lending criteria by increasing the allowable initial servicing on a loan from 30 to 35% of income. Then the combined impact of lower interest rates, lower wage growth, and easier lending criteria is a 2.8 fold increase in the housing debt to income ratio. The debt ratio began the 1990's at around 60%. A 2.8 fold increase would take it to 170% compared to the current actual read of 180%.

Table 2: Implied aggregate debt to income ratios (relative to late 1980s level) assuming maximum debt servicing has been lifted to 35% of income.

Interest	Nominal Income Growth (%)					
Rates (%)	11	9	7	5	4	3
17	1.00	1.12	1.27	1.46	1.58	1.71
8	1.96	2.17	2.44	**2.77**	2.97	3.13

Nearly all the increase in the housing debt to household income ratio can be 'explained' by two factors: lower inflation and lower interest rates. Less restrictive lending criteria could easily explain the balance. Unless interest rates, or wage growth, or lending criteria take another step lower, this analysis suggests that the rapid build-up in debt that has occurred over the past 16 years may have nearly run its course.

A clear implication of our analysis is that the rapid increase in debt (and by extension the housing boom) should not be feared. Most of it has occurred as a consequence of good macroeconomic policy. Lower and less volatile inflation, interest rates and output have been the root cause of the transition to higher debt levels.

Brendan O'Donovan, Chief Economist, Ph: (64-4) 470 8250
Doug Steel, Economist, Ph: (64-4) 470 8251