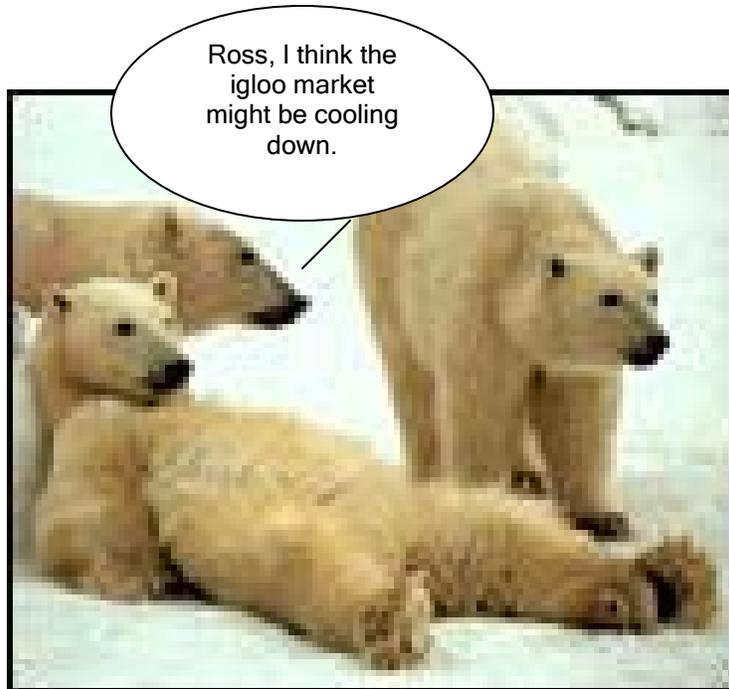


# Is South African Real Estate in a Price Bubble?

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## An Analysis of Domestic Real Estate Prices, Valuations and Risks



  
cannon asset managers

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## Pop Goes the Weasel

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Round and round the cobbler's bench  
The monkey chased the weasel,  
The monkey thought 'twas all in fun  
Pop! Goes the weasel.

A penny for a spool of thread  
A penny for a needle,  
That's the way the money goes,  
Pop! Goes the weasel.

A half a pound of tupenny rice,  
A half a pound of treacle.  
Mix it up and make it nice,  
Pop! Goes the weasel.

Up and down the London road,  
In and out of the Eagle,  
That's the way the money goes,  
Pop! Goes the weasel.

I've no time to plead and pine,  
I've no time to wheedle,  
Kiss me quick and then I'm gone  
Pop! Goes the weasel.

## Executive Summary

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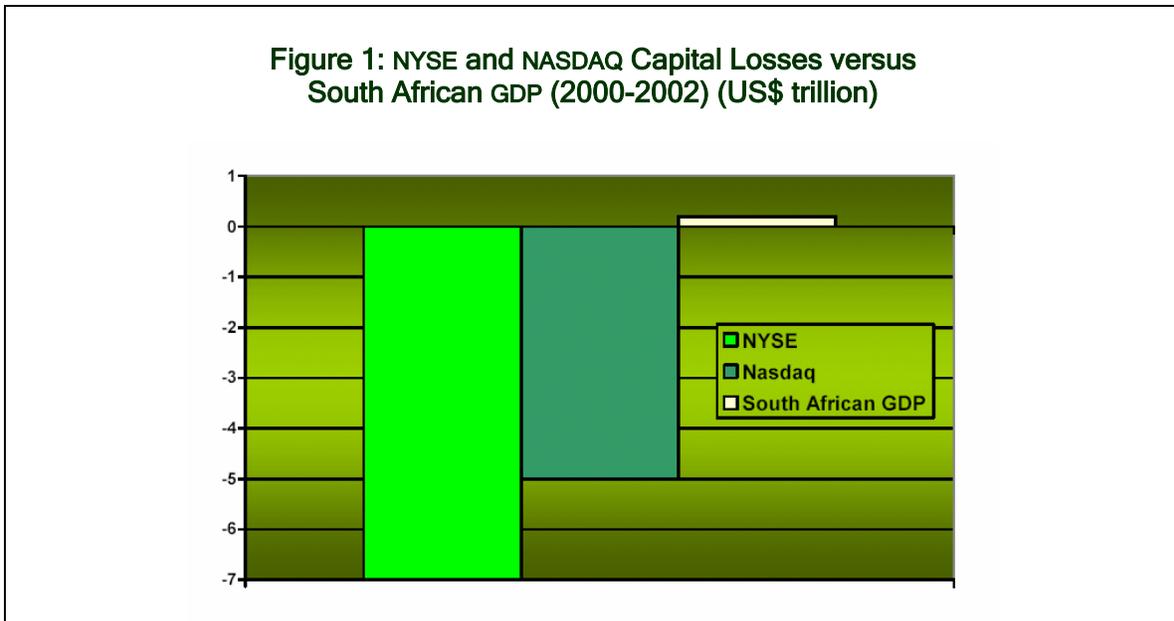
This report is offered as a service to the clients of Cannon Asset Managers (Pty) Ltd, the company's subsidiaries and its associates. The report provides insights into our views on valuations found in the domestic property market, with an emphasis placed on residential property.

The issue is of importance: residential property typically accounts for a significant portion of individuals' wealth. Moreover, anecdotal evidence suggests that buoyant property market conditions have promoted the recent (growing) bulge in investment activity in the residential property market. However, of somewhat greater concern is the mounting evidence of speculative activity that is taking place in this part of the property market. In this regard, some market commentators have gone so far as to identify the heightened activity as evidence of a property market bubble.

The case that a residential property price bubble exists is bolstered by evidence of over-inflated property prices elsewhere in the world, most notably in Britain and Australia. In other words, if domestic residential property prices are in a bubble, then owners of these assets would not be alone in their plight. Furthermore, whilst rising asset prices often are seen unambiguously as a good thing, over-inflated prices can have lethal economic consequences when they eventually deflate. And rest assured, all bubbles eventually deflate, and when they deflate it is never slowly or sanely. The Japanese land price bubble of the late 1980s is presented as a case in point. Further to this, the threat to investors' wealth is accentuated where the assets in question are financed by borrowing; property is such an asset class. Against this backdrop, this research note poses the question: 'Are South African property prices over-inflated? If so, are residential property prices in a bubble?'. Our answers are 'yes' to both questions.

## 1. Bubbles Mean Troubles

Economic history is filled with examples of asset price bubbles and the devastating effects of asset price deflation that comes with the collapse of bubbles. Our memories are still filled with the euphoric upswing on the NASDAQ balloon that turned into a white-knuckle ride from hell as the bubble caved in. In that case, the collapse of the technology-media-telecommunications (TMT) bubble resulted in a capitalization loss of US\$7 trillion on the New York Stock Exchange (NYSE) and US\$5 trillion on the NASDAQ over the three years 2000-2002. The combined loss of US\$12 trillion is equivalent to about 75 years of South Africa's gross domestic product (GDP) in 2004 prices (see Figure 1). However, whilst the immediate outcomes can be destructive, lingering effects - such as shattered investor sentiment, frayed consumer confidence, over-gearred balance sheets and over-capacity in under-productive resources - often have a far greater economic impact. The Japanese property bubble of the 1980s and 1990s provides evidence of this.



Source: World Bank

## 2. Twentieth Century Japan: Miracle or Mirage?

During the 1980s, the success achieved by the Japanese economy was considered miraculous in stature. After being devastated during the Second World War, the economy underwent a transformation during the post-war years. However, the transformation was not without complications. During the 1980s, and as a consequence of some of the economic successes of the post-war period, asset prices became inflated. The economic implications were dramatic. Thus, a brief review of the Japanese story provides some useful insights into the anatomy, features and dynamics of asset price bubbles. The case also illustrates the point that longer-term effects can outweigh the short-term damage caused by the implosion of asset price bubbles.

In 1951, Japan's gross national product (GNP) was \$14.2 billion - about half the size of the West German economy, one-third the size of Britain's economy and a mere

4.2 percent the size of the economy of the United States (US). By 1970, Japan had overtaken all of the European economies in size, and had an economy that represented over 20 percent of the US's GNP. Four years later, in 1975, the Japanese economy was double the size of Britain's economy; and by 1980 Japan's GNP had reached \$1 040 billion, roughly 40 percent the size of the US economy.

This extraordinary expansion in Japan's economy was driven by a host of factors, including:

- high levels of American military protection which spared the government from high defence spending;
- a Keynesian-styled boost to the economy, primed by the rebuilding of cities and reconstruction of industries that had been flattened during the Second World War;
- a cheap Yen which promoted the ability of the recovering Japanese economy to compete effectively in export markets as well as produce for the domestic market;
- the provision of low-interest loans by government to growth sectors (such as iron and steel);
- a highly skilled labour force that was able to promote the reconstruction effort; and
- investment in leading-edge processes and technologies.

**Table 1: GNP in US\$ (1951-1980)**

	Japan	US	West Germany	France	Britain
1951	14.2	328.4	28.5	35.1	41.4
1955	22.7	398	43	49.2	53.9
1960	39.1	503.8	70.7	60	71.9
1965	88.8	688.1	115.1	99.2	100.2
1970	203.1	992.7	184.6	145.5	124
1975	498.2	1549.2	418.2	339	234.5
1980	1040.1	2663.1	816.5	657.1	525.5

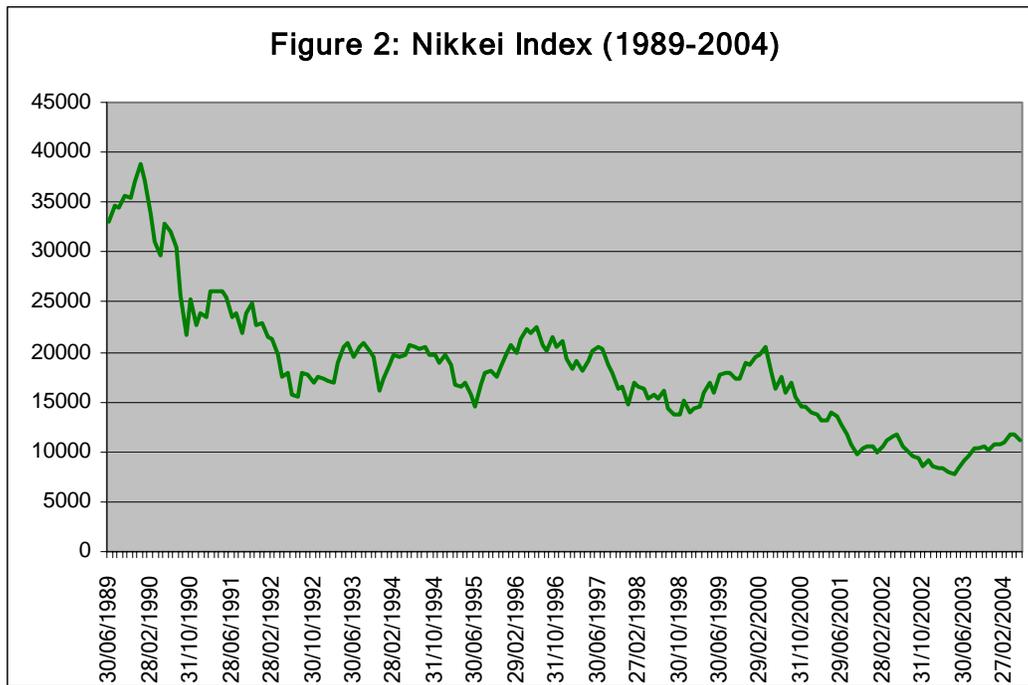
Source: Japan: An International Comparison (Keizai Koho Sentaa, 1983, 5).

In this flourishing setting, Japanese enterprises borrowed massively from banks, which drew their funds from the high levels of household savings. Low interest rates and high price inflation initially made the repayment of loans an easy task. Moreover, this cheap credit-high price inflation combination saw the country's surplus funds funneled into inflation-hedged assets, especially property and equities. This flow of funds resulted in prices in these asset markets being driven to ludicrous levels. In the three-year period 1987-1989, the value of Japanese property assets in the corporate sector rose by as much as the 1988 size of Japan's economy. And by 1991, landed property in Japan was equivalent to 20 percent of the world's wealth - this was more than double the value of the world's equities at that time.<sup>1</sup> Measured differently, at the peak, the value of the land in metropolitan Tokyo was supposedly greater than that of all the US. Stretched valuations were also evident in the stock market, where Japan's system of corporate cross-holding artificially restricted share supply, causing price-to-earnings valuations to

<sup>1</sup> Dehesh, A. and Pugh, C. (2000) *The Internationalization of Post-1980 Property Cycles and the Japanese 'Bubble' Economy: 1986-96*.

soar to unheard of levels.<sup>2</sup> In 1989 the Nikkei sold for more than 100 times trailing earnings.

The Nikkei reached its peak of 38 915 points on December 29, 1989. Over the ensuing 21 months it would lose 38.5 percent of its value (see Figure 2). By December 1994, five years later, the Nikkei had shed 50 percent of its peak value. Ten years on, in December 1999, the index was still fifty percent below its 1989 zenith. Today, the index stands at just 28 percent of its 1989 plateau.



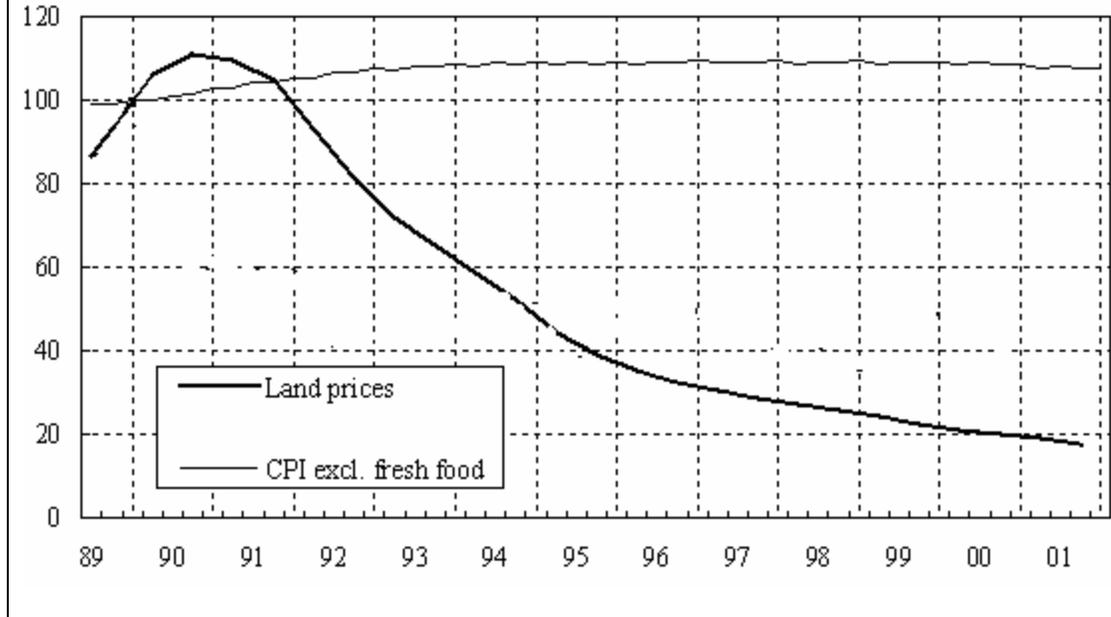
Source: Data from McGregor-BFA

Despite the Nikkei having started to fall, Japanese land prices, as measured by the Japanese Real Estate Institute, continued to rise, gaining a further 15 percent between December 1989 and September 1990.<sup>3</sup> From there, however, property prices went into a downward spiral. Some portions of the property market had lost as much as 60 percent of their value by the end of 1994. Ten years after the peak, property prices were in the doldrums, with prices at just one-fifth of their 1990 levels (see Figure 3).

<sup>2</sup> Asian Development Bank.

<sup>3</sup> Asian Development Bank.

**Figure 3: Japanese Property Price Index (1990 = 100) Relative to the Consumer Price Index (CPI) (1989-2001)**



Source: Data from McGregor-BFA

The roots of the collapse in asset prices lie in a range of factors that shook investor and consumer confidence and challenged the sustainability of credit market conditions. The key factors include, amongst others:

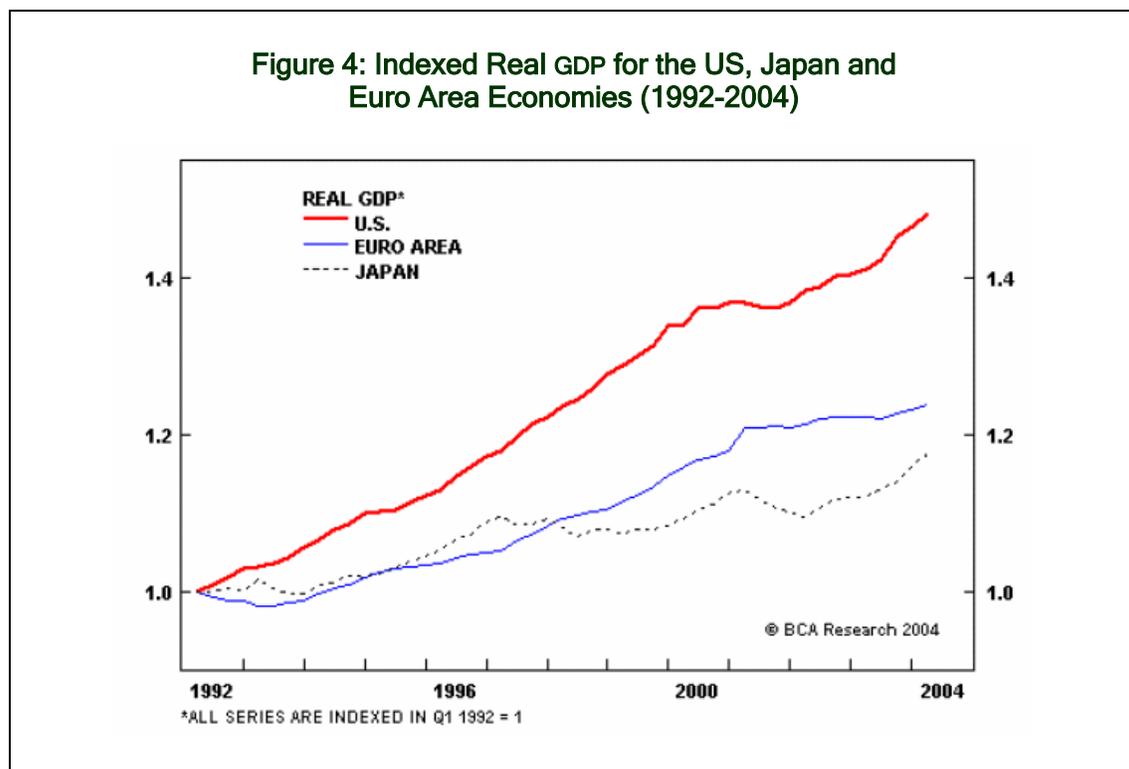
- the introduction of a consumption tax in early 1989 that threatened to slow the pace of Japanese economic expansion;
- question marks being placed over the lending practices and solvency of Japan's biggest banks; and
- a move by the Bank of Japan to tighter monetary conditions, with the discount rate increasing from 2.5 percent in May 1989 to 6.0 percent in August 1990, when Iraq invaded Kuwait.<sup>4</sup>

While the stories surrounding the factors that pricked the Japanese price bubble are of interest, the current analysis is interested more in the longer-run effects of the bubble. On that score, it is estimated that the bursting of the bubble led to a lost decade of growth that crippled the banking and insurance sectors and depressed the economy. Moreover, after the growth successes of the four decades after the Second World War, the economy stagnated, achieving little expansion in the decade of the 1990s. As a

<sup>4</sup> Below, we present the case that property prices in some markets are stretched; and this last point could set off alarm bells for some investors - global interest rates have started to rise, and rates in the US look set to move sharply higher in the next 24 months. Rates in South Africa also look set to rise in the near term, which will challenge domestic property values.

consequence, today, Japan's economy probably is 25 percent smaller than if a relatively modest 3 percent growth rate had been maintained since markets peaked in 1990. This potential output gap reflects the costs of failing to manage the bubble.

Figure 4 illustrates the notional effect of the lagging growth rate across time, with the US and European economies outpacing the Japanese economy by a wide margin over the past 15 years. Related to the above, one consequence of the investment excesses of the 1980s was a sharp decline in the rate of return on assets (ROA) in Japan relative to the Euro Area and the US economy. Specifically, over the period 1990-2004 the ROA on Japanese assets was about one-third that of the US and one-half that of Euro Area economies.<sup>5</sup>



Source: BCA Research (2004).

In short, the excesses of Japan's asset price bubble of the 1980s were felt in at least two ways. First, capital was lost as asset prices deflated. As noted, in the case of equities, 50 percent of value was lost in the five years after the bubble imploded. In the case of property prices, the figure is closer to 60 percent over the same five years. Second, and of greater consequence, is the impact of the reduced income or GDP growth rate. On this front, it is estimated that between 1990 and 2004 the lower rate of growth of Japan's economy resulted in an opportunity cost of US\$9.5 trillion in lost GDP - equal to about US\$75 000 per person over the period - that is equivalent to every person in Japan losing three years of income in 2003 prices.<sup>6</sup> Further, it is only now, a decade and a half

<sup>5</sup> BCA Research (2004).

<sup>6</sup> It is interesting to note that, in current prices, the loss in capital value in Japan's property bubble exceeds that of the TMT collapse on the NYSE and NASDAQ at the start of this decade.

after the bubble exploded that the economy is finally righting itself.<sup>7</sup> The costs of irrational exuberance are high.

### 3. But the Sun Sets in the West

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Of course Japan's problem with asset prices is not an isolated case. Rather the above case is another example of the recurrent phenomenon of price bubbles in asset markets. Some of the more prominent examples of price bubbles include:

- the Dutch tulip mania of the 1630s, which ruined many investors;
- the English stock market mania of the 1690s, that ended in a corporate failure rate of 70 percent;
- the collapse in the 1720s of the South Sea stock market bubble, which resulted in disaster for investors;
- the soaring emerging market debt bubble of the 1820s that was followed by widespread default;
- the bursting of the British railroad bubble in the 1840s, followed thirty years later by the collapse of the US railroad and telegraph bubble;
- the 1929 US equity market crash that was precipitated by the roaring '20s' car and radio revolution - the Dow Jones Industrial Average (DJIA) fell by 89 percent in the first few years after the collapse;
- the equity market 'tronics boom and bust of the late 1960s; and
- the dot.com bubble of the 1990s and early 2000s alluded to earlier.

From the Japanese case it is evident that the collapse of a bubble can have widespread negative impacts. Also, from the list of other examples provided, it is evident that bubbles can take many forms - spanning asset classes, countries and time. However, despite this diversity in anatomy, bubbles share some common features that often are readily observable.

In this regard, there are at least five factors that are common to financial bubbles:<sup>8</sup>

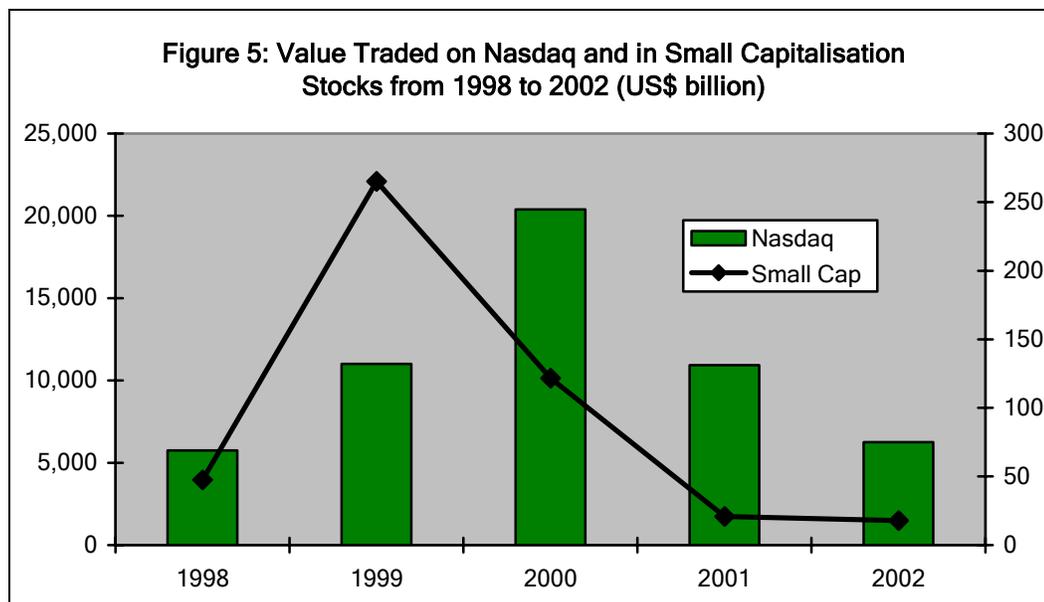
1. **Ample Liquidity:** High rates of growth in money supply are often caused or accompanied by low interest rates. In turn, this excess liquidity translates into cash flow into 'popular' asset classes, causing asset price inflation. By way of example, since the first interest rate cut in the US in 2001, the size of the home mortgage debt market increased by 25 percent from US\$5.0 trillion in 2001 to US\$6.8 trillion by the end of 2003.
2. **Increased Use of Leverage:** Financial bubbles are often accompanied by increased leverage of balance sheets, with debt climbing faster than income. The Japanese experience of the 1980s offers an example. There, the ratio of debt to GDP was double that of Germany, Britain and France at the start of the 1990s.

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<sup>7</sup> As a note to this point, it is interesting that Standard & Poor's Ratings Services recently raised its long-term ratings on eight large Japanese banks for the first time since it began rating them in the 1980s.

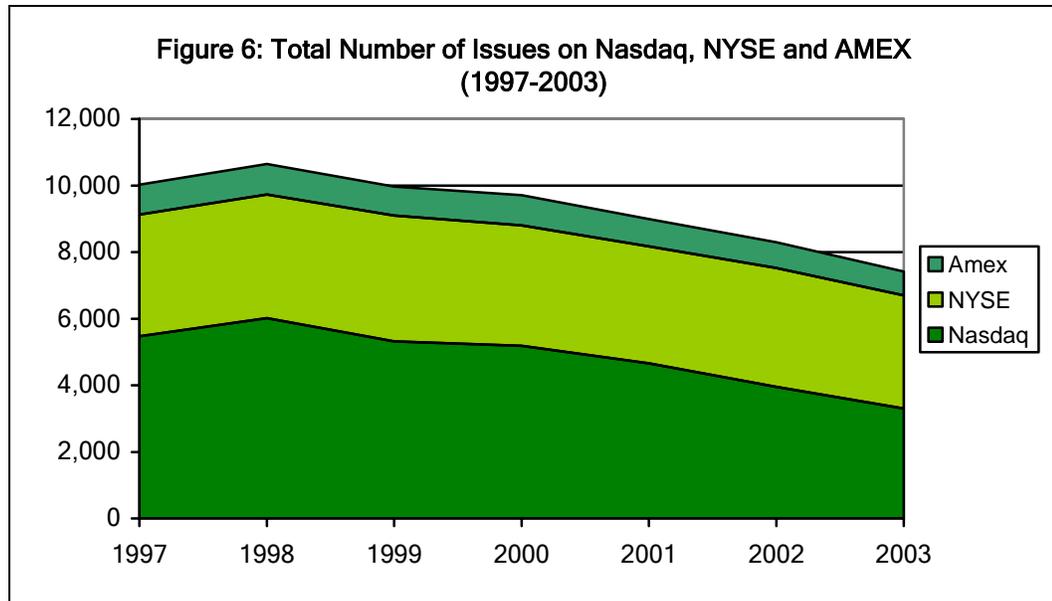
<sup>8</sup> Peter Bernstein (2004).

3. **Increased Turnover:** Financial bubbles are often characterised by increased activity in the market. Consider the chart below (Figure 5), which offers a summary of the values of share transactions on the NASDAQ market and in small capitalisation stocks in the years preceding and following the burst of the TMT bubble.



Source: NASDAQ

4. **Democratisation of the Market:** Asset bubbles are often characterised by a perceived need to ‘democratise’ the market. Technology-based discount brokerages and the day trader are examples from the TMT bubble. This democratisation of the market is often accompanied by an attitude amongst investors that the asset class offers a one-way bet. That is, investor psychology shapes the belief that prices will rise indefinitely. Moreover, this psychological bias underpins the belief that prices will remain firm even if economic conditions deteriorate. In short, the common perception amongst market participants is that investments cannot go wrong and, unlike other bubbles, this time things are different.
5. **New Supply:** Financial bubbles are characterised by new supply (such as new stock issues, an increase in initial public offerings or new homes). Figure 6 reveals the quick run up and rapid decline in the total number of issues on the NYSE, NASDAQ and American Exchange (AMEX) over the period 1997 to 2003.



Source: NASDAQ

From this list of features, it is apparent that asset market bubbles have two overarching features. First, economic conditions are conducive to asset price inflation - credit is 'easy' and liquidity is high; the propensity to borrow to invest is high; activity in the asset market in question rises; the market is 'democratised', making participation easier; and investment supply increases the size of the universe for investors. Second, alongside these 'economic' features are a host of psychological characteristics that spur the market - and so ignite asset price inflation. Common perception is that the asset class is dominated by 'investment opportunities' and not 'speculative opportunities'; that the asset class offers a one way bet; and that asset price inflation is justified because 'this time things are different'. To add flavour to the equation, the asset class often commands a disproportionate amount of media and public attention.

So, if we are looking for evidence of a financial bubble, the above list offers a relatively objective check list. However, before considering whether these conditions apply to the South African property market, it is useful to first consider valuation of South African property. The reason for this is obvious: unless South African property is overvalued, the 'bubble' question is superfluous. Moreover, in exploring the issue of valuation we can establish not only the qualitative response to the question of the existence of a bubble, but also a quantitative response. In other words, if property prices are stretched, how stretched are they?

#### 4. Valuing Homes

One of the most widely accepted and broadly applied valuation tools in the case of the property market is a model based on nominal GDP. The argument is that, on a macroeconomic scale, property prices are determined by just two factors: consumer price inflation and real growth in the economy (measured by real GDP). Nominal GDP captures the combined effect of real economic growth and price inflation as the variable is measured as economic output in current prices.

The application of the model is straightforward. If a country's nominal GDP increases by 50 percent over a period of, say, 10 years, allowing for modest deviations and meanderings, we expect the fair value of property prices to rise by an equivalent amount over the same period. Whilst appearing extremely simple in terms of application, the model carries a high degree of explanatory power.<sup>9</sup> This point is clearly illustrated in Figure 7, where the nominal GDP tool is applied to four large international property markets - Australia, Britain, the US and China.

From the data presented, the tool can be used to identify periods when property prices are over-valued, under-valued or fairly valued. Consider, for example, the case of the market in Britain during the late 1980s and early 1990s. We know, with the benefit of hindsight, that substantial overvaluation occurred in the British property market at that time - with negative equity becoming a significant feature of the market during the early and mid-1990s.<sup>10</sup> Importantly, the nominal GDP tool not only identifies that the asset class was overvalued - evidenced by the property price index exceeding the nominal GDP index - but that overvaluation was of the order of about 25 percent (see Figure 7). Indeed, after spiking in 1990, property prices in Britain declined up until 1994 before re-inflating to catch up with growth in nominal GDP.

Using the same approach to valuation, the property price bubble that emerged in China in the early 1990s is evidenced by the property price index climbing more sharply than nominal GDP over the period 1990 to 1994. However, whilst the extent of the overvaluation was not as sharp as the experience in Britain in the early 1990s, overvaluation is evident. The consequence was a more muted increase in property prices as growth in nominal GDP played catch up with China's property market during the mid 1990s. In similar fashion, the tools indicates overvaluation of Australian property in the late 1980s, followed by about six years of price stagnation whilst nominal GDP caught up with previously inflated property prices.

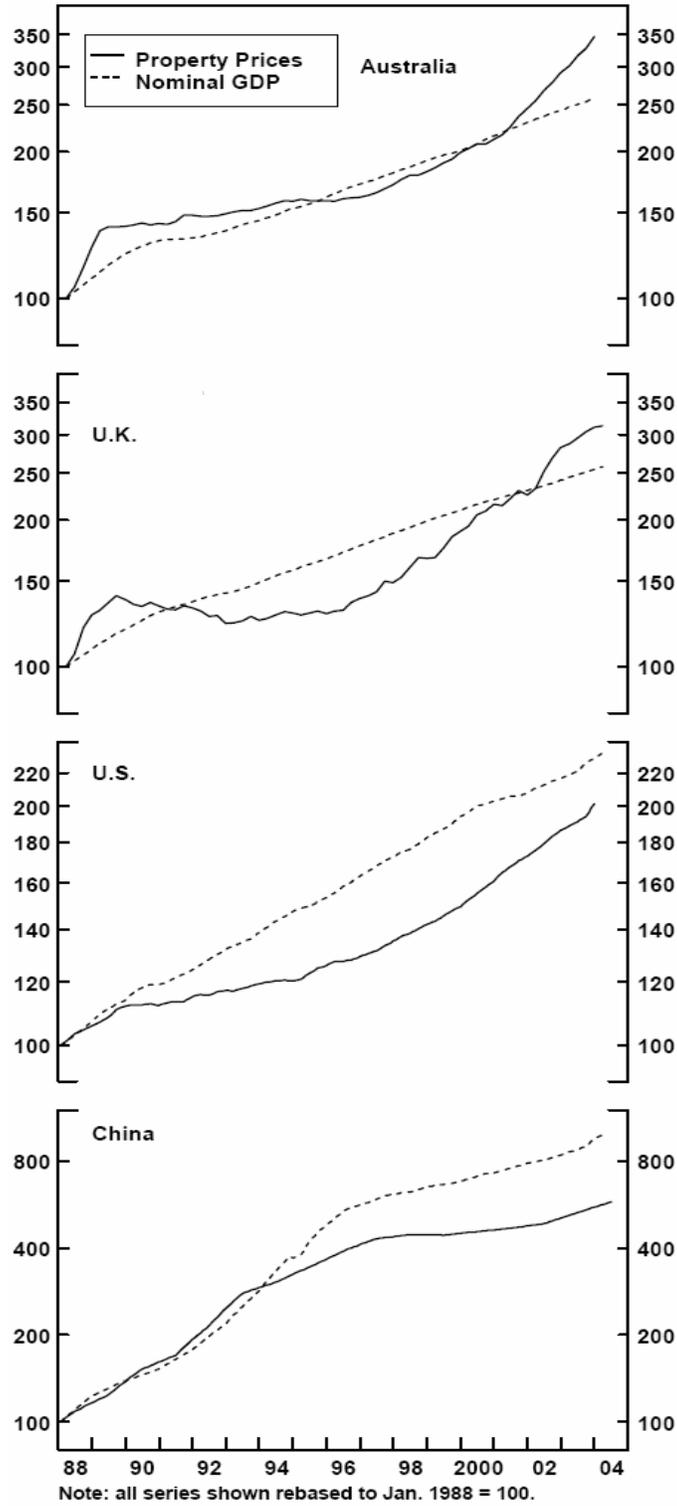
Similar analyses can be conducted for each of the countries over the sample period. In each instance, however, we find a change in nominal GDP has strong explanatory power with regard to property prices. From this tool, it is a simple step to offer comment on the current status of the four property markets considered. In the case of Australia and Britain, property prices appear to be substantially inflated. More specifically, using the nominal GDP model, property prices in Australia are about 35 percent above fair value, whilst British property prices are about 25 percent above fair value. In contrast, property prices in the US are 13 percent below fair value, whilst property prices are 25 percent below fair value in China. These valuation variances are summarised in Table 2.

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<sup>9</sup> The evidence is beyond the scope of this research note, but interested readers should consult the literature for a comprehensive review of this subject.

<sup>10</sup> Negative equity refers to the situation where an asset is bought with debt; however, a subsequent decline in the asset price causes the value of the debt to exceed the value of the asset.

Figure 7: Nominal GDP and Property Prices (1988-2004)



Source: Adapted from BCA Research

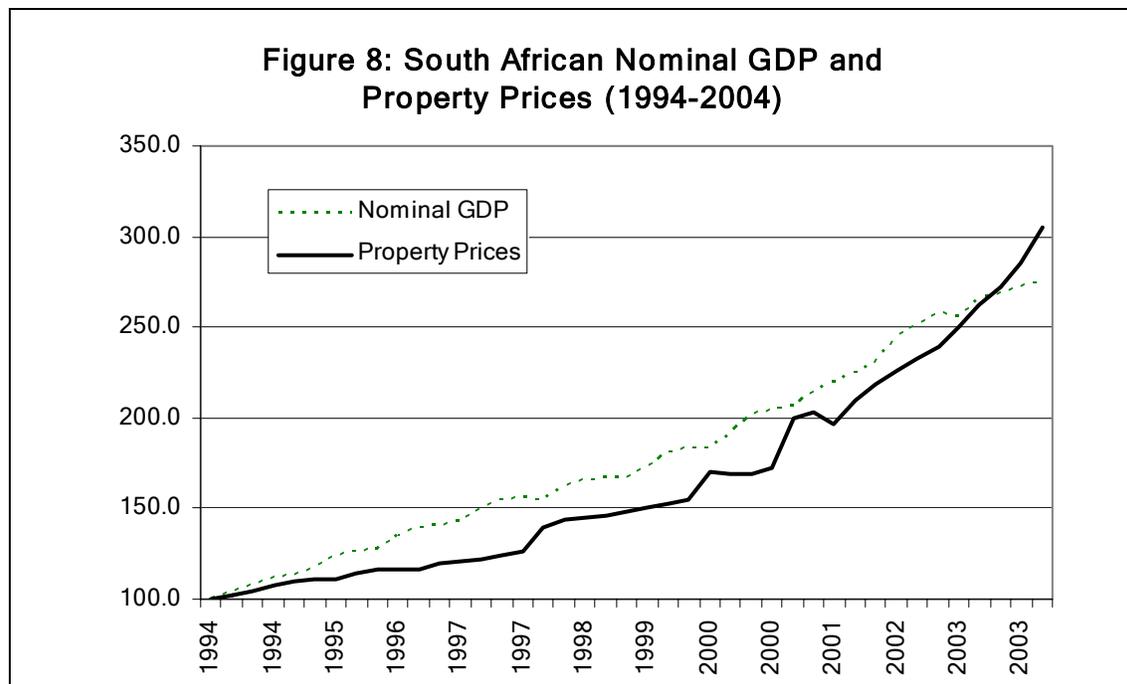
**Table 2: Property Prices Relative to Nominal GDP Model**

Market	Over-valuation (+)/Under-valuation (-)
Australia	+37.3
Britain	+23.5
China	-27.8
US	-13.0

Source: Adapted from BCA Research

Thus, despite the simplicity of the nominal GDP tool, the model has high explanatory power and is easily applied to different countries. For these reasons the tool is used to consider the case of the South African property market.

Unfortunately, the time series data available on the South African market is marginally shorter in duration than the cases presented above, spanning the period 1994 to present. However, whilst this reduces the length of the study, it in no way diminishes the strength of the findings. For the purpose of this analysis domestic property prices and nominal GDP are indexed to 100 in January 1994.<sup>11</sup> The trends in the two indices are then plotted over time to measure relative valuation. The results of this exercise are shown in Figure 8. As an aside, it should be noted that the property index used in this analysis is based only on residential property, although this is considered to be a reasonable proxy for the asset class.



Source: Adapted from ABSA Residential Property Market Survey and South African Reserve Bank

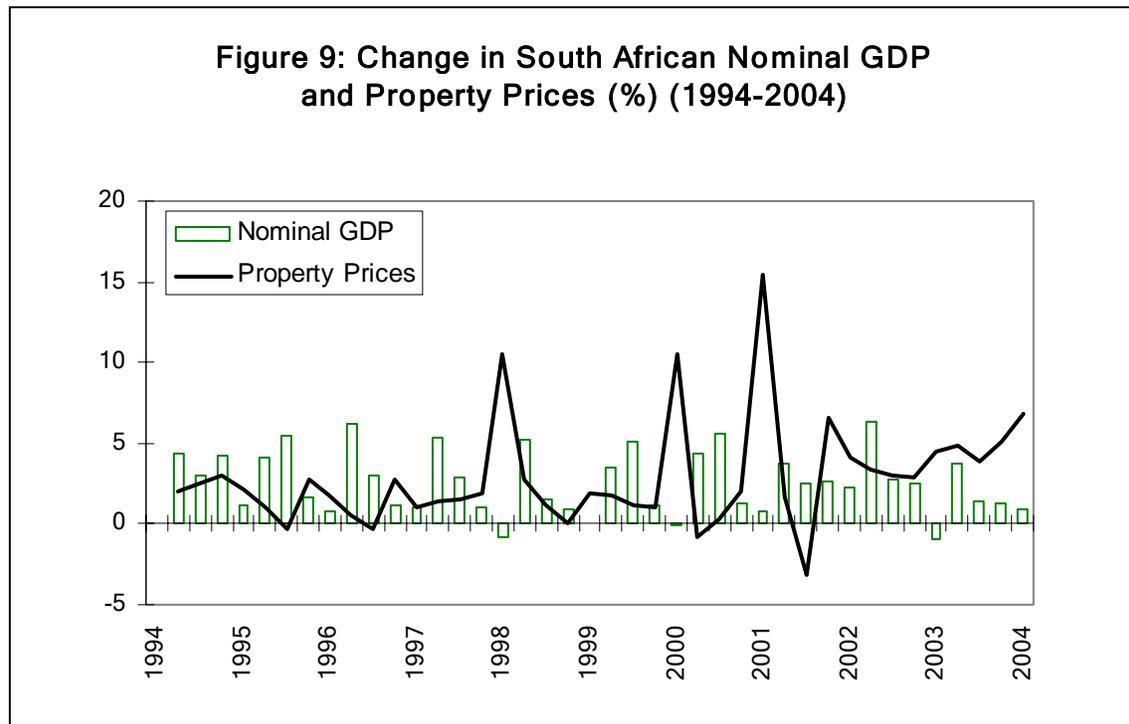
<sup>11</sup> Readers are cautioned that errors in data measurement reduce the accuracy of the model. Relating to this point, whilst recent analysis has drawn into question the accuracy of South Africa's GDP data, the use of indices mitigates against error in absolute values, thus protecting the integrity of the model.

From the above figure, it is evident that property prices lag nominal GDP for most of the sample period. Thus, the property index rises at a slower rate than nominal GDP from 1994 to the second quarter of 2003.

A better understanding of the cause of the difference between the indices is established by comparing the rate of change in property prices to the rate of change in nominal GDP. This is shown in Figure 9. From the figure, it is evident that:

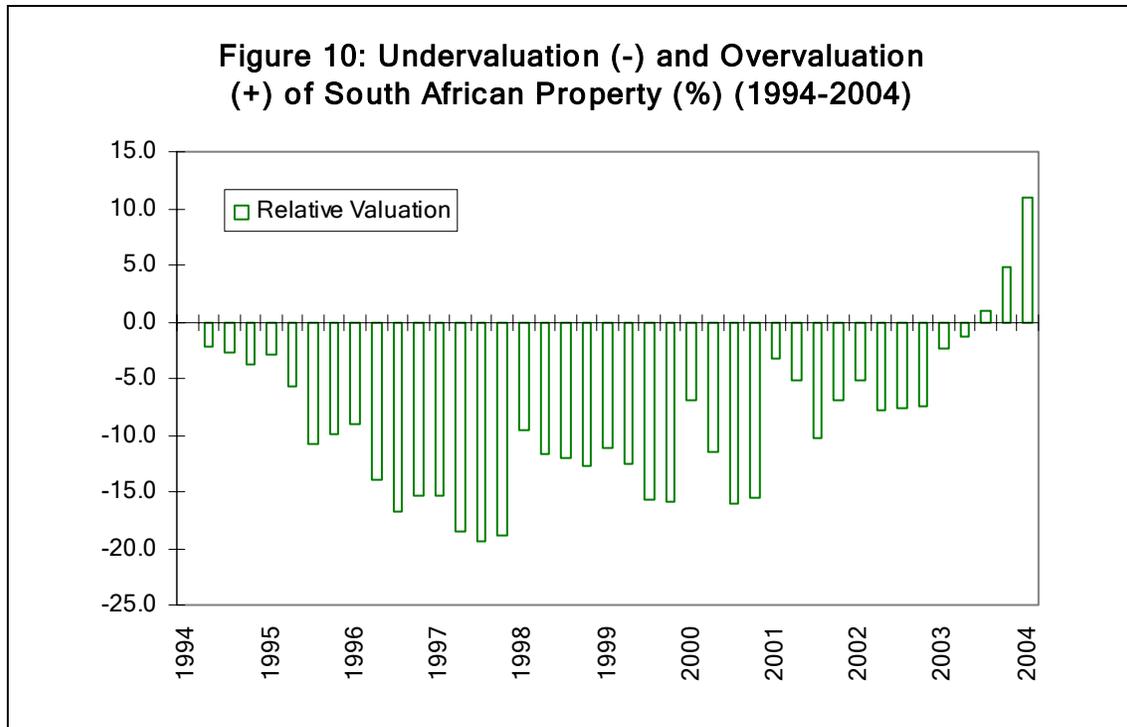
- over the period 1994 to the end of 1997 nominal GDP expanded more rapidly than property prices;
- between 1998 and 2000 the variables were interchangeable in terms of displaying the more rapid rate of expansion; but
- since late 2000 property prices have consistently outpaced the rate of expansion in nominal GDP.

This third period (late 2000 to present), then, is responsible for the property price index catching up and, more recently, overtaking the nominal GDP index.



Source: Adapted from ABSA Residential Property Market Survey and South African Reserve Bank

This last point brings us full circle, in that a property price index in excess of the nominal GDP index points to over-valuation of the asset class. Upon closer inspection, the extent of over-valuation - given by the difference between two indices - amounts to 11 percent at the end of the first quarter 2004 (see Figure 10).



Source: Adapted from ABSA Residential Property Market Survey and South African Reserve Bank

From the study, a number of points are evident:

- South African property, as measured by residential property prices, is over-valued. The analysis points to moderate over-valuation of the order of 11 percent.
- Despite the existence of 'moderate' over-valuation, a popular perception exists that property prices in South Africa are 'highly' over-valued. One reason for this is that the past five years have seen property prices come off a low basis caused by deep undervaluation of as much as 20 percent in the late 1990s. Thus, even modest over-valuation of property prices gives the impression of 'soaring prices' as prices have played catch up with nominal GDP. Since 1997, property prices have expanded at an average rate of 3.4 percent per quarter, which is 43 percent faster than the average quarterly rate of growth in nominal GDP of 2.3 percent.
- Whilst domestic property is over-valued, the extent of the inflation is moderate when compared to Australia and Britain, but material when compared to the US or China.
- Finally, it is interesting to note that over-valuation in the property market does not necessarily result in prices falling. Rather, prices tend to run flat whilst waiting for nominal GDP to catch up (as was the case in Australia and Britain in the early 1990s) (see Figure 7).

These finer details aside, the point remains that domestic property is over-valued. Given the mechanics of the nominal GDP model, the asset class cannot continue to outpace nominal GDP indefinitely. Thus, it follows that property will be an underperforming asset class during the period of reversion. Further, by definition, we are currently in a reversion period, as property is now 'expensive'. That said, just because property is expensive, it does not follow that prices can be expected to fall soon. This is particularly

true if the market has 'bubble' attributes. To make this point, between 1996 and 2001 the NASDAQ index rose from 1 000 points to 5 050 points - a fivefold increase in five years. However, as early as December 1996, Alan Greenspan, Chairman of the US Federal Reserve Board, called the market 'irrationally exuberant'. At that stage, the NASDAQ index was trading at just 1 290 points, with upside of about 300 percent still in its legs. With the benefit of hindsight, however, we know that Greenspan was right in his call, and that as the market moved higher, it was simply becoming increasingly over-valued. This highlights one of the dangers of bubble markets - it is impossible to know where the degree of over-valuation becomes sufficiently extreme that the market capitulates. Moreover, until such time as it does, naysayers are considered to be heretics. Calls of over-valuation are ignored as prices push ever higher, and the bubble conditions alluded to above provide a fertile ground for this malevolent cycle to flourish.

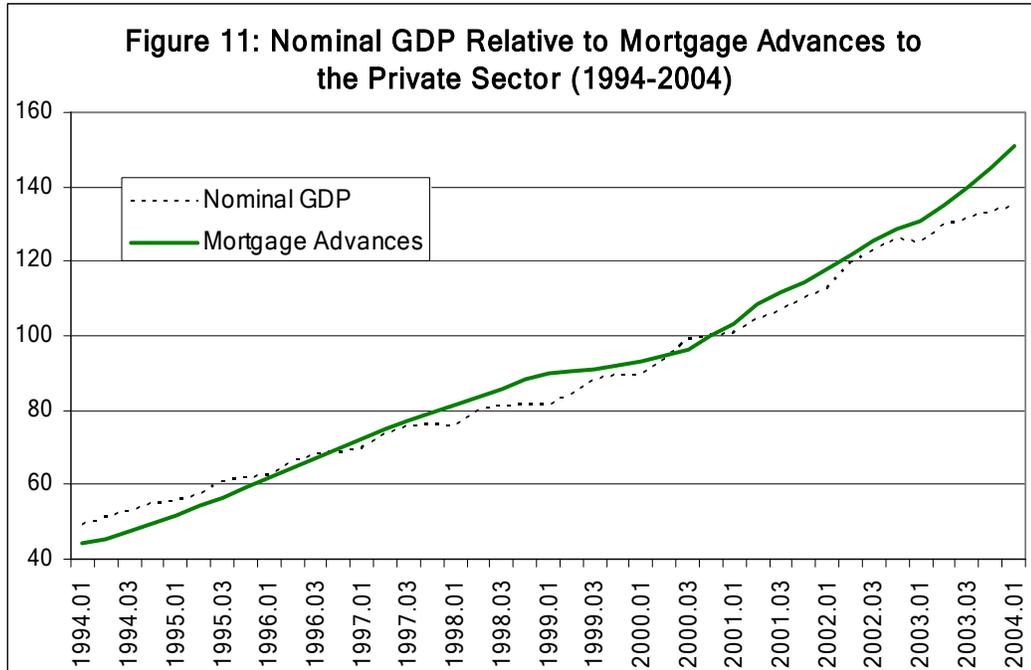
At this juncture, then, it is useful to return to the earlier issue of bubble market characteristics, and briefly consider whether these conditions apply to the South African property market.

## 5. The Five Deadly Sins

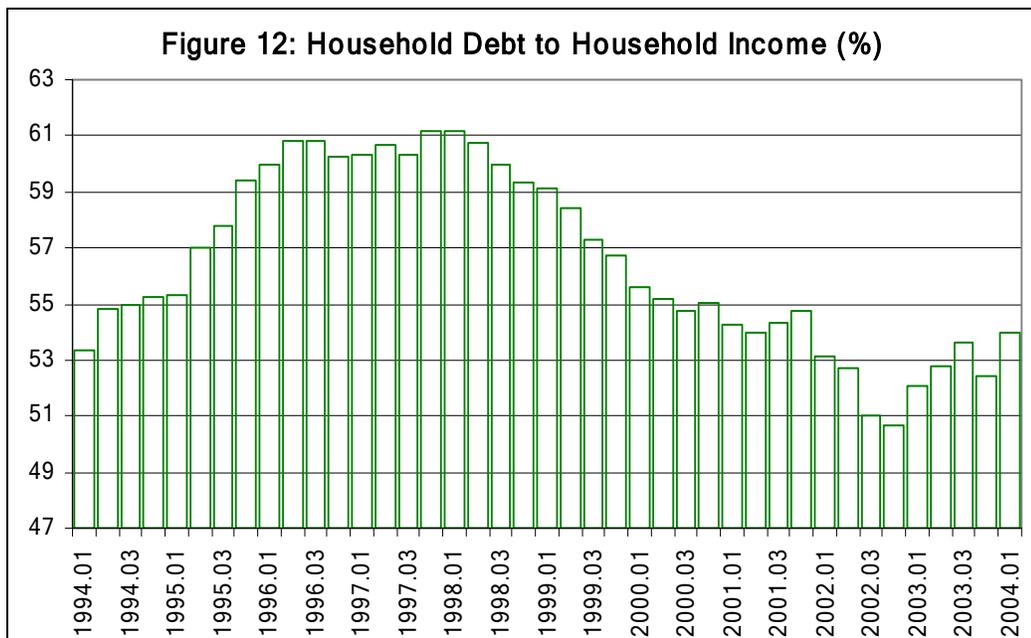
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Earlier, it was noted that there are at least five factors that are common to financial bubbles. These included ample liquidity; increased use of leverage; increased turnover; democratisation of the market; and new supply. Evidence of the presence of these factors in the South Africa property market is presented below.

1. **Ample Liquidity:** Over the past 30 years, mortgage advances extended by banks to the private sector have advanced at an average rate of 3.7 percent per quarter. This is roughly equivalent to the rate of expansion in nominal GDP over the period of 3.5 percent per quarter. However, recently, this close relationship has broken down. Since the South African Reserve Bank began cutting interest rates in mid 2003, mortgage advances to the private sector have grown at twice the pace of nominal GDP. Related to this, recent money supply data show that mortgage advances grew year-on-year by 17.3 percent in May 2004, the highest level in a decade. Thus, easier credit has translated into 'ample liquidity'. This is not surprising, given the mechanics of the nominal GDP model. Nevertheless, as a consequence of easier money, the past twelve months has seen the value of mortgages grow at a pace that is substantially faster than nominal GDP (see Figure 11). In brief, liquidity is ample.
2. **Increased Use of Leverage:** Financial bubbles are often accompanied by increased leverage of balance sheets, with debt climbing faster than income. Over the period of our analysis, household debt as a percentage of household income increased from 53.3 percent in the first quarter of 1994 to 61.2 percent in the first quarter of 1998. From there, the figure declined sharply to a trough at 50.7 percent in the fourth quarter of 2002. Since then, however, household debt as a percentage of household income has risen quickly to the current figure of 54.0 percent, with data recently released by the South African Reserve Bank hinting that this trend has continued into the second quarter of the year. In other words, a second bubble feature is evident: debt is rising faster than income.



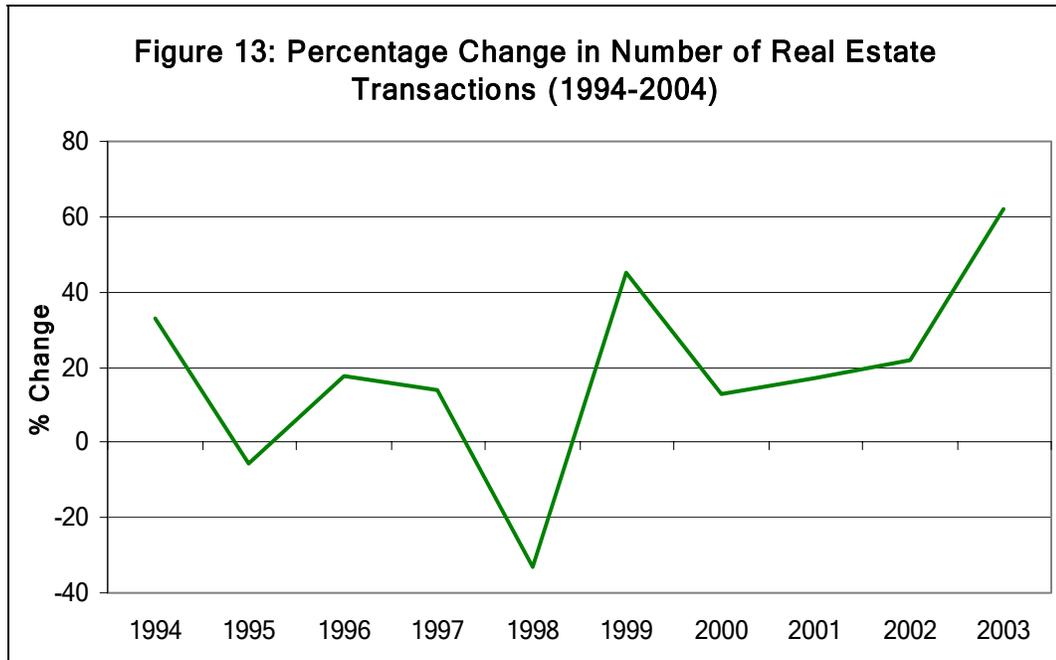
Source: South African Reserve Bank



Source: South African Reserve Bank

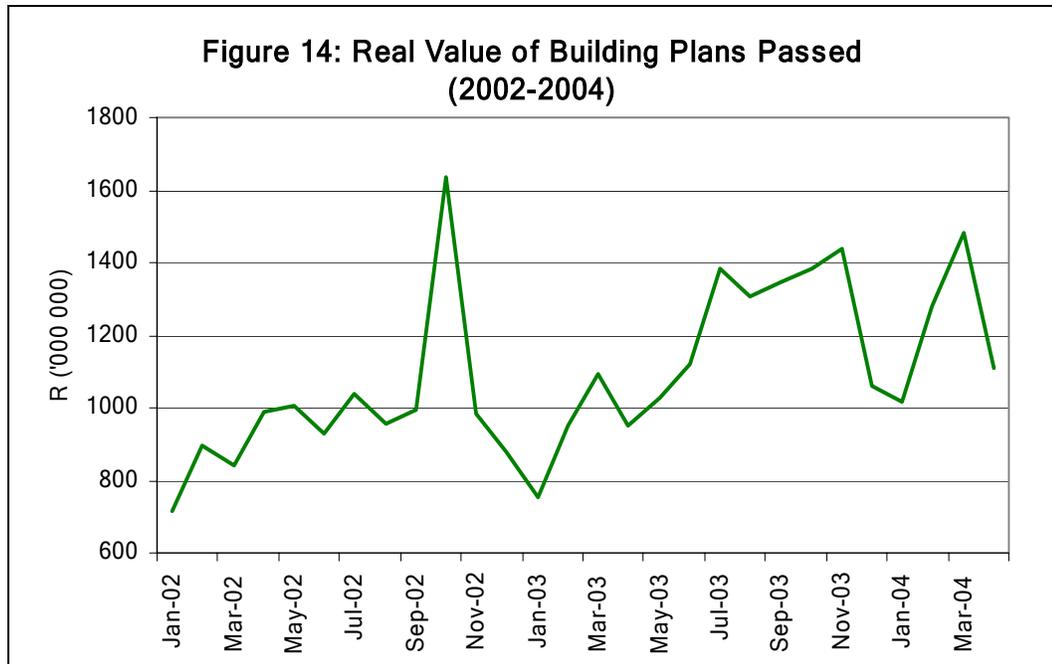
- Increased Turnover:** Often, asset price bubbles are accompanied by increased activity in the market. In this regard, the available evidence points to a recent sharp increase in activity in the South African property market. By way of example, over the period 1976 to present, real estate transfer duties have increase at an average rate of 18.7 percent per annum. Over the past four years, however, the rate of increase has been 28.0 percent per annum, and this is despite a series of reductions in transfer duty rates over the period. However,

better evidence of the growth in market activity is provided by the change in the number of real estate transactions measured over time. Over the period 1967 to 2003, the average increase in the number of transactions is 19.7 percent per annum, and the average rate of increase over the sample period (1994-2004) is 18.5 percent (see Figure 13). However, over the past four years, the number of transactions has increased at an annual average rate of 28.4 percent.



Source: South African Reserve Bank

4. **Democratisation of the Market:** As noted in Section 3 of this report, price bubbles are often characterised by a perceived need to ‘democratise’ the market. Whilst it is difficult to provide ‘hard’ evidence of this phenomenon, anecdotal evidence suggests that ‘democratisation’ is taking place in parts of the market. Consider, for example, the recent increase in so-called ‘buy-to-let’ seminars; the growth of on-line property sales facilities; and, most recently, the introduction of syndicated vehicles to provide entry into the market for those who are unable to afford access to the market on their own. Also, as noted, democratisation of the market is often accompanied by an attitude amongst investors that the asset class offers a one-way bet. That is, investor psychology shapes the belief that prices will rise indefinitely and that investments cannot go wrong because, unlike other bubbles, this time things are different. Again, it is difficult to offer ‘hard evidence’ that this attitude exists, but South Africans’ dinner table conversations suggests that such a mindset exists.
5. **New Supply:** Financial bubbles are characterised by new supply. In the case of property bubbles, new supply takes the form of new homes and buildings. Figure 14 shows the change in planned supply of residential buildings measured by changes in the real values of building plans passed between January 2002 and April 2004. The data suggest that the criterion of ‘new supply’ for the existence of a bubble is being satisfied, with the average annual value of building plans passed having increased by 23.5 percent over the period.

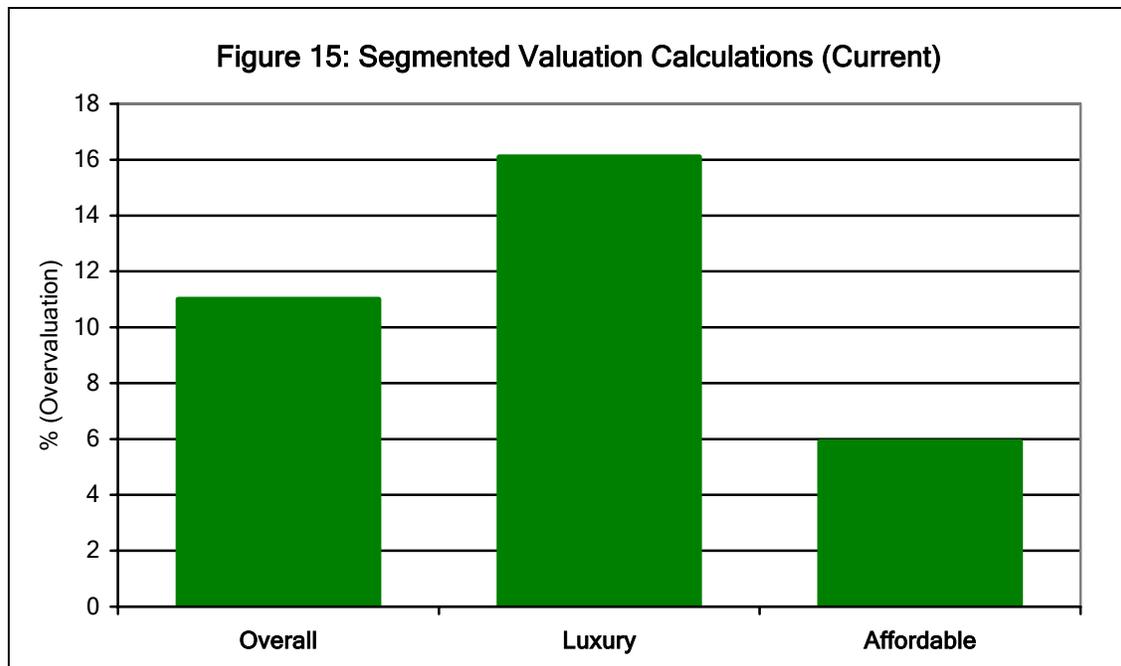


Source: Statistics South Africa

In summary, based on our nominal GDP model, the South African residential property market is argued to be over-valued. This suggests that, as an asset class, property is set to under-perform other asset classes as prices revert to the mean. However, over-valuation does not imply that prices are set to slow immediately. Prices may well push into more expensive territory if market fundamentals and the sentiment amongst market participants allow this to take place. In this regard, our checklist of 'bubble factors' suggests that each of the conditions required for the existence of a bubble are present in the local residential property market. This makes it difficult to call a top to the market - sentiment and economic conditions may allow prices to be driven higher. This makes investment in the property market a potentially treacherous activity - particularly where property is acquired through gearing. To put the point simply, the house that you just bought for R1.5 million is possibly only worth R1.35 million. If it is fully financed through debt, the balance sheet stands a good chance of looking ugly if - or rather when - property prices begin reverting. If they reverted immediately, your house is effectively a R150 000 deficit.

But this also is melodramatic, and it is appropriate to note a few caveats. First, not all property is acquired for investment purposes. In most instances, residential property is acquired for use by an individual or a family - and not for investment. In these instances, the investment argument presented above should be underplayed. Second, whilst the residential property market as an aggregate is over-valued, different parts of the market display different levels of over-valuation. For instance, using the nominal GDP model, it is calculated that the luxury housing market is 16.1 percent over-valued, whilst the affordable housing market is over-valued by 5.9 percent (see Figure 15).<sup>12</sup>

<sup>12</sup> Luxury housing is defined as houses with prices in excess of R1.6 million and covering more than 400 square meters. The affordable housing category is made up by houses of between 40 square meters and 79 square meters and valued at under R140 000.



Source: Adapted from ABSA Residential Property Market Survey and South African Reserve Bank

These comments aside, the upshot of the analysis is that residential property prices in South Africa are over-inflated, with some parts of the market displaying greater over-valuation than others. Thus, concern is raised over valuations in the asset class. ***This concern is heightened by the fact that the current market conditions satisfy each of the five features of bubble markets that are argued to exist.*** This raises the risk of price volatility as those who are not participating in the market are seduced to take part, and those that already are in the market participate further. Further, on the basis of the model presented, it follows that property assets will under-perform the economy as property prices revert. However, as noted earlier, when over-inflated, property prices tend to run sideways - rather than fall - to allow the economy and prices to reconnect. If this is the case, then, at current levels, property prices would need to run sideways for about 18 months to allow nominal GDP to catch up with the residential property market. While prices revert, investors need to be aware of the great risk of over-paying and/or over-investing in a market that exhibits bubble market conditions.

## 6. Conclusion

Economic history is populated with examples of asset price bubbles, with experience teaching us that the economic costs of these bubbles can be high. The potential negative impacts of extreme over-valuation are highlighted by the case of Japan's land price bubble of the 1980s. Despite these experiences, investors continue to ignore the lessons of the past, driving different asset classes into price bubbles. The fact that bubbles recur is evidenced by the current extremely high valuations of property in Australia and Britain.

Against this backdrop, this paper uses a simple but powerful property valuation model, based on nominal GDP, to explore the issue of property valuation in the South African market. Although the study is specific to the residential market, the findings are clear

cut: this part of the local property market is over-valued in the order of 11 percent. In other words, the analysis suggests that the property that you bought for R1.5 million earlier this year is possibly worth only R1.35 million; although you might be convinced that it is worth more - but then that is part of the bubble market mindset. On this last point, whilst over-valuation in and of itself is not cause for alarm - all markets overshoot and undershoot - concern is raised by the fact that evidence of bubble market conditions can be found in the domestic property market. In this study, five conditions are argued to be common to asset price bubbles; evidence that each of the five conditions exist in the South African residential property market is found.

The above result begs the question of when, and by how much, prices in the property market will stagnate or start to fall. However, in any set of market conditions, it is difficult to call turning points. In bubble markets calling turning points is even more complex. Yet, the laws of economics make it a relatively easier task to comment on the inevitability of the bubble deflating. To be sure, market history never repeats itself exactly, but it does tend to rhyme rather well. Timeless market forces like valuation, greed, and fear that drove the legendary great booms, bubbles, bursts, and busts of the past are just as potent and influential on the markets of today as they always have been. While the decades and markets change, the emotional human heart shared by all investors and speculators does not. Sooner or later, the bubble will burst.

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