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## **The Real Housing Market Story** **Essential insights for investors and would-be home owners**

### Chapter Two

#### **House and section price behaviour after the speculative boom**

In the first chapter of this booklet that is being delivered in instalments I looked at the importance of real or inflation-adjusted house prices and shed light on the question of whether it is time in the market or market timing that matters most for housing investors (see <http://www.sra.co.nz/pdf/RealHousingChapterOne.pdf>).

In this, the second chapter of the booklet I show how house and section prices behave after a speculative boom of the sort New Zealand experienced between 2002 and 2007. I use a combination of real world examples and some basic demand-supply analysis to show the difference between how house and section prices have behaved after the speculative bubble versus how they should behave based on textbook demand-supply analysis. The analysis focuses mainly on section prices, but the discussion is directly relevant to house prices because a house is just a section with a dwelling attached.

The analysis shows how to identify markets where prices are out of whack with the underlying demand-supply balance, which occurs especially when vendors effectively withhold supply. However, ultimately the demand-supply balance will come home to roost for real or inflation-adjusted property prices, as occurred after the mega-boom in prices in the early-1970s that was discussed in Chapter One.

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Why am I writing this booklet? Despite housing being the single largest component of household wealth there is a lack of quality analysis of housing market prospects both nationally and at the district and suburb levels. Producing **The Real Housing Market Story** booklet is our first step in filling this void. Subsequent steps will include offering investors and would-be home buyers the option to purchase one-off copies of our **Housing Prospects** reports that will soon incorporate an enhanced assessment of housing as an investment option and a more detailed assessment of the merits of buying versus renting (for info on the current **Housing Prospects** reports see <http://sra.co.nz/housing.html>), offering reports on selected cities, districts and towns, and undertaking a series of educational seminars.



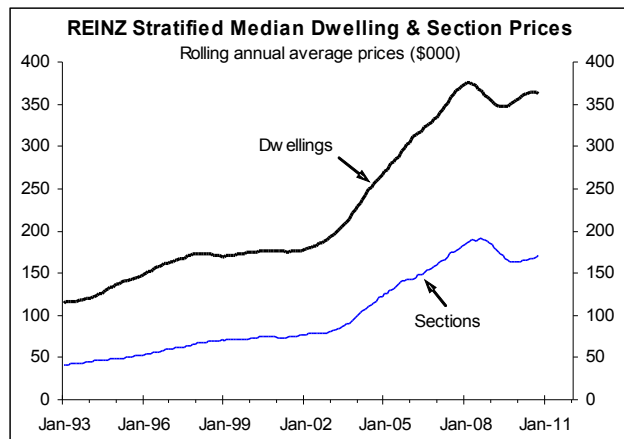
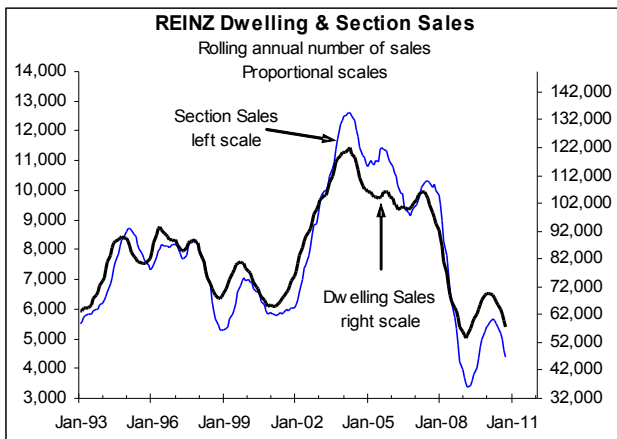
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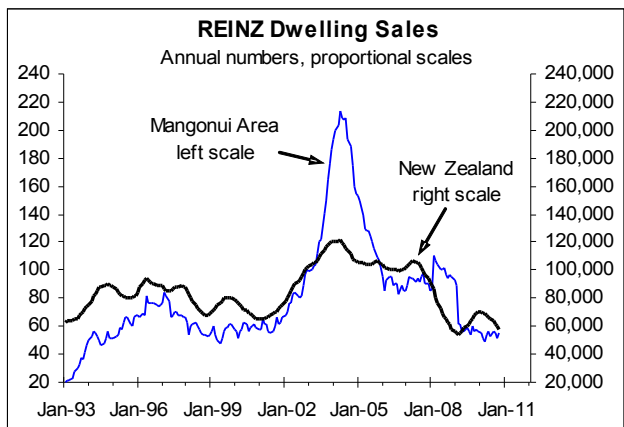
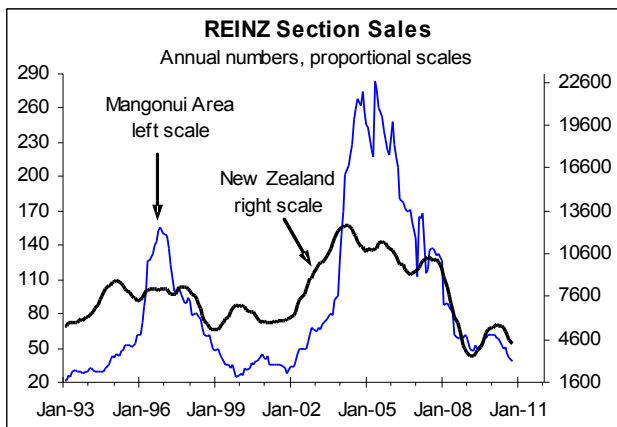
### The legacy of the speculative boom in house and section prices

This decade NZ has experienced a boom in house and section prices of the sort that only occurs once or twice in a lifetime, the last time being in the 1970s as discussed in Chapter One. The left chart shows that at the national level the number of dwelling sales reported by REINZ increased from an annual average of 78,140 between 1993 and 2001 to a peak annual rate of 120,549 during 2004 (a 54% increase), while the number of section sales reported by REINZ increased from an annual average of 5,905 between 1993 and 2001 to a peak annual rate of 12,496 during 2004 (an increase of 116%). In response to this mega-boom in demand for dwellings and sections the prices of dwellings and sections surged as shown in the right chart. From the start of the boom in 2002 to the respective peaks in 2008, the annual average median dwelling price reported by REINZ increased 95% and the annual average median section price increased 137% (based on the REINZ monthly stratified median prices).

The boom has now long gone and in the year to October 2010 the number of dwelling sales reported by REINZ had fallen to just under 57,781 (i.e. 26% below the average number between 1993 and 2001 and 52% below the peak number), while the number of section sales reported by REINZ has fallen to 4,363 (i.e. 26% below the average between 1993 and 2001 and 65% below the peak number). Since the peak levels in 2008, dwelling and section prices have fallen, but in the context of the collapse in demand and the large numbers of dwellings and sections available for sale, the falls in section and dwelling prices are modest. By contrast, the NZ share market, based on the NZX 50 index, fell 41% from the peak in 2007 to the trough in 2009. From the perspective of affordability, in the year to October 2010 the national median dwelling price was still 89% above the level in 2002 and the national median section price was still 112% higher, while over the same period the average employees' gross income increased 56%.



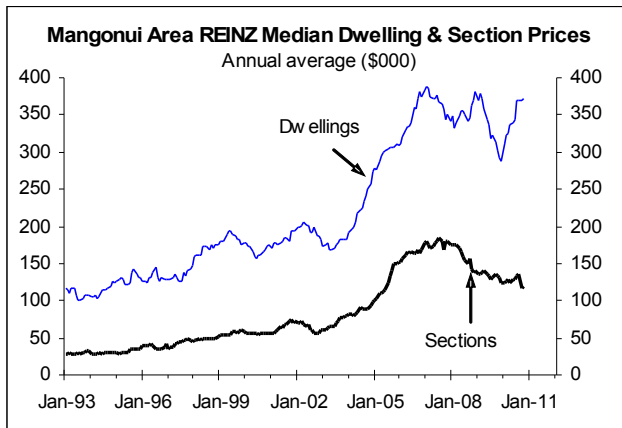
However, what happened in some parts of the country during the boom, especially some of the coastal and resort markets, but also some provincial urban markets, made the national boom look tame. For example, in the greater Mangonui area the peak annual number of section sales during the boom was 392% higher than the average annual number between 1993 and 2001 (left chart), while the peak annual number of dwelling sales was 261% above the annual average number between 1993 and 2001 (right chart).



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In the Mangonui area, which includes Mangonui, Cable Bay, Coopers Beach, Hi Hi, Karikari, Rangiputa, Taipa, Taupo Bay, Tokerau Beach and Whatuwhiwhi, the annual numbers of section and dwelling sales have fallen back to around the levels experienced before the boom (charts above). Possibly reflecting the fall in demand the annual average median section price reported by REINZ for the Mangonui area has fallen from a peak of \$183,771 in the year to July 2007 to \$118,455 in the year to October 2010, but this is still 85% above the annual average of \$64,012 in 2002 (i.e. relative to the 56% increase in incomes since 2002, section prices in the Mangonui area are still expensive). But I question whether section prices have actually fallen as much as suggested by the REINZ data. It is possible that what has happened is that more sections in the lower price brackets are selling now than was the case at the peak of the boom, so the reported fall in the median section price could in part just reflect a change in the composition of sales. My



suspicion is supported to some extent by the REINZ dwelling price data for the Mangonui area that shows that in the year to October 2010 the median dwelling price was close to the peak annual average level in 2006/07 (blue line).

The numbers of dwelling and section sales have collapsed, as discussed on page 8 the demand-supply balance is particularly adverse in the Mangonui area (as it is to a lesser extent in a number of coastal and resort markets), and yet dwelling prices seem to be defying gravity while section prices are still overdone compared to incomes even if they have fallen as much as suggested by the REINZ data.

In the national house and section markets, and especially in the likes of the Mangonui area housing market, some sort of disconnect has occurred between demand and prices. Given the collapse in demand, why have property prices not followed the lead of share prices and tumbled back to the sorts of levels that are justified by fundamentals like incomes? Falling interest rates are part of the story, but the main answer lies in the somewhat unique behaviour of property owners. This behaviour means property prices behave much like share prices during booms, but during the inevitable busts or recessions that follow property prices behave very differently. Understanding the nature of this difference, what it means for housing from an investment-value perspective and where it will ultimately end should be of critical importance to all people and firms involved in the house and section markets, including those involved in residential building.

### The economics of section and house price behaviour

Economics is in part the study of what drives demand for and supply of goods and services and how demand and supply interact to determine prices. Not all markets behave the same, but understanding what

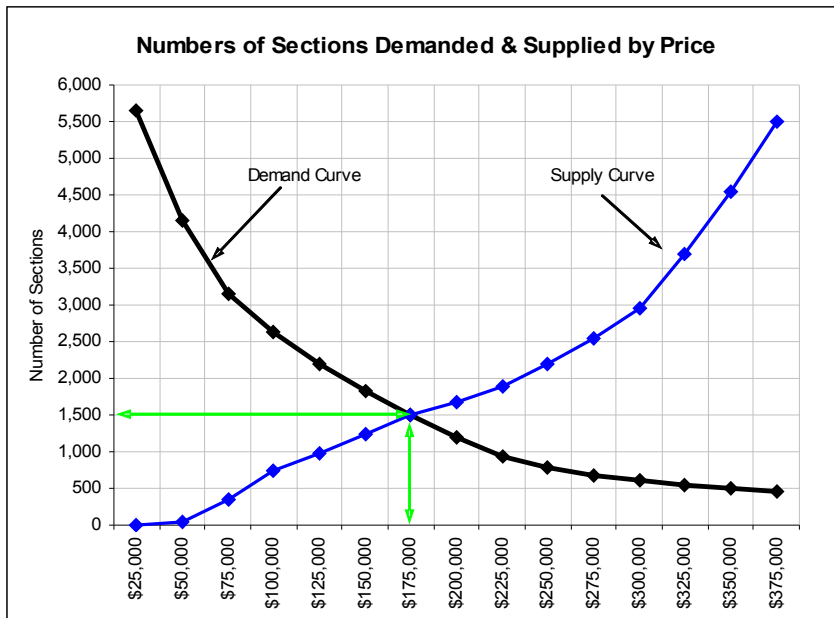
Demand & Supply by Price		
Price	Number of Sections	
	Demanded	Supplied
\$25,000	5,650	10
\$50,000	4,150	50
\$75,000	3,150	350
\$100,000	2,625	750
\$125,000	2,200	980
\$150,000	1,825	1,250
\$175,000	1,500	1,500
\$200,000	1,200	1,675
\$225,000	925	1,900
\$250,000	780	2,200
\$275,000	680	2,550
\$300,000	600	2,950
\$325,000	550	3,700
\$350,000	500	4,550
\$375,000	450	5,500

drives demand and supply and how they interact to determine price is relevant to all markets, including the house and section markets. An example is the best way of showing how the interaction between demand and supply determines the average market price in a user-friendly way.

Let's, for example, consider a section market in a major urban centre. If section prices were very low a large number of individuals, spec builders and investments would buy them, while if prices were very high few people could afford to buy them. The "Demanded" column in the table shows how the number of sections demanded would fall as the price goes up. For example, if sections were priced at \$75,000 each 3,150 would be demanded, while if they were priced at \$200,000 each 1,200 would be demanded, etc. It is straight forward that the price goes up the



number demanded falls. If the price is extremely low virtually none are supplied, but as the price goes up developers and owners of sections-for-sale are willing to supply more, as shown in the “Supplied” column. We never know exactly what people would demand and supply at different price levels, but the table offers a vaguely realistic example of how demand and supply would change in response to changes in price.



In the perfect market of textbook economics our hypothetical section market would find an equilibrium at which the average market price reflected the intersection between demand and supply (i.e. the price at which demand and supplied were equal and the market cleared). This behaviour is best considered in the context of a fresh fruit and vegetable wholesale market. Suppliers show up each day at the market with their produce, the supply of which will be impacted by growing conditions etc, while buyers from fruit & vege shops and restaurants will show up with their shopping lists. The bidding occurs and the average price

achieved for lettuces, for example, will depend on the levels of demand and supply on the day. In the real world section and housing markets don't work quite like this. But they are still subject to the rules of demand and supply taught in economics, it is just that instead of them finding equilibrium or market clearing prices quickly, they iterate or meander towards the result.

The data from the table are displayed in the chart above. The black line links the demand observations in the table to form a continuous demand curve of textbook economics. The blue line links the supply observations in the table to form a supply curve. Where the curves intersect, which is at a price of around \$175,000 per section and around 1,500 sections being sold per annum, is the equilibrium or market clearing outcome.

In reality there are different segments in a section market (e.g. different price brackets, different size brackets and different locations), which means not all sections are the same or should sell for the same price. But for simplicity it is easier to show the unique nature of price behaviour in the section market – which is equally relevant to the existing house market – if we temporarily suspend reality and assume that all the sections in question are homogeneous or uniform.

The slopes of the demand and supply curves reflect the “price elasticity” of demand and supply, respectively (see [http://en.wikipedia.org/wiki/Price\\_elasticity\\_of\\_demand](http://en.wikipedia.org/wiki/Price_elasticity_of_demand) for a discussion of the price elasticity of demand and [http://en.wikipedia.org/wiki/Price\\_elasticity\\_of\\_supply](http://en.wikipedia.org/wiki/Price_elasticity_of_supply) for the price elasticity of supply). These relate to how much demand and supply change in response to any given change in price. Some goods, cigarettes being the typical example, have a low price elasticity of demand, meaning that changes in price have a smaller impact on the level of demand than is the case for goods and services in general. By contrast, goods and services that have close substitutes have a high price elasticity of demand (i.e. changes in price will have a large impact on the level of demand). But I digress.

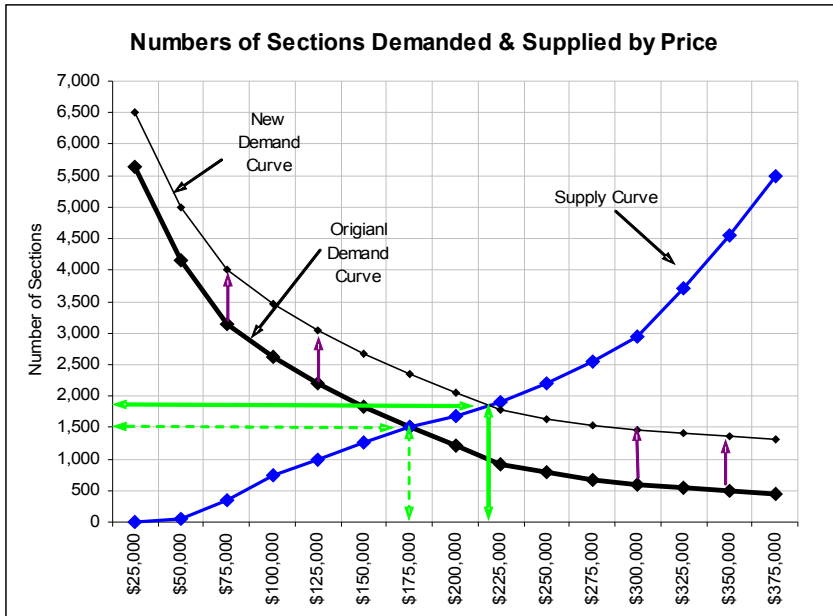
The critical issue for the moment is that if our hypothetical section market works “efficiently” and buyers and sellers behave “rationally” the outcome will be around 1,500 sections selling per annum at an average price of around \$175,000. This equilibrium or market clearing outcome is highlighted by the green arrows on the chart above. While this outcome would not be achieved instantaneous, this is where the market would gravitate towards in stable market conditions.

The insight about the somewhat unique behaviour of the section market (and by association the housing market) is revealed once we look at what happens in response to changes in demand and supply, especially in a boom-bust situation.

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In a normal upturn driven by interest rate cuts and/or higher population growth the number of sections demanded at each price point will increase. This is shown in the chart below by the New Demand Curve being above the Original Demand Curve. For example, whereas originally 1,200 sections were demanded per annum when the price was \$200,000, now 2,050 are demanded. The purple arrows indicate the increase in demand for sections compared to the earlier situation at various price points. The increase in demand means a new equilibrium or market clearing outcome will eventuate, which is identified by the

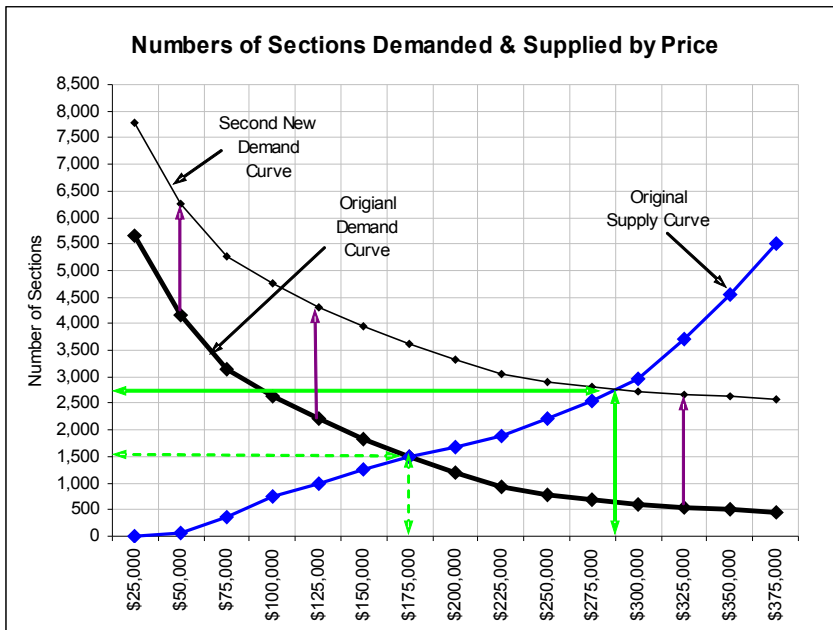


intersection of the solid, green, arrowed lines in the chart (the dashed, green, arrowed lines show the old equilibrium).

In the new equilibrium around 1,850 sections will be sold per annum (a 23% increase, which is the sort of thing that happens during normal upturns), while the new equilibrium price will be around \$220,000 (a 26% increase from the old equilibrium price, which is again vaguely realistic for section and existing house prices during an upturn).

What happened between 2002 and 2007 was much more than a normal cyclical upturn in demand. It was more like a speculative bubble in demand for

houses and sections, especially in some of the coastal and resort markets we have in the past supplied detailed research reports on (see <http://sra.co.nz/free.html> for these reports).



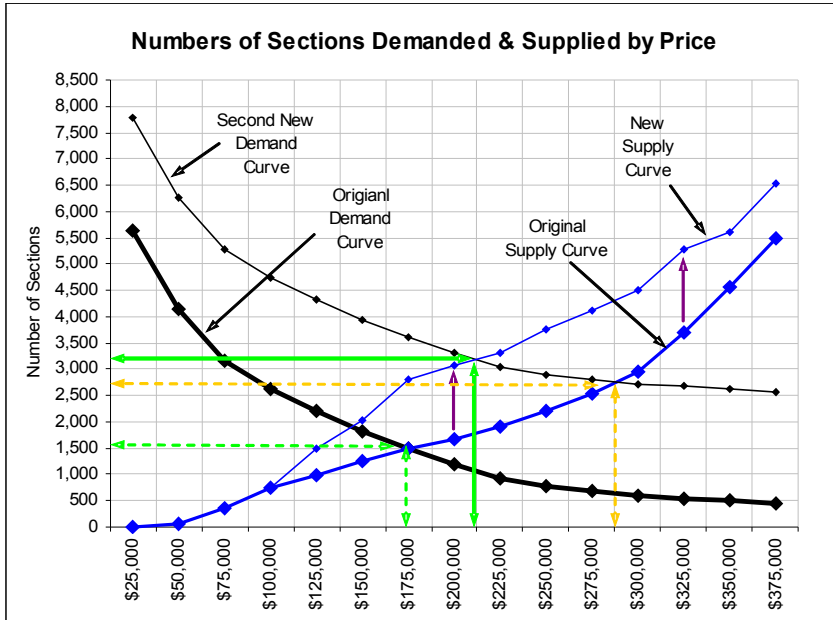
This chart shows a mega-boom in demand. For example, originally 1,200 sections were demanded when sections were priced at \$200,000, in the normal cyclical upturn in the chart above this increased to 2,050, but in the mega-boom scenario we are now looking at an increase to 3,320. In the new equilibrium the market clearing section price is around \$287,500 (i.e. a 64% increase from the first example) and around 2,750 sections sell per annum (an 83% increase). The slopes of the demand and supply curves are not quite realistic because the increase in the price should have probably been more than the increase in the number of sales, but this is

still an acceptable example for showing the general principle.

The next developments especially in some of the coastal and resort markets were that new developers entered the market, meaning the supply increased, while some of the investors that bought sections earlier started to offer them for sale, further increasing supply. In reality the mega-boom in demand and the increase in supply went almost hand-in-hand in the coastal and resort markets, but it is easier to present and comprehend if we walk through the process one step at a time.

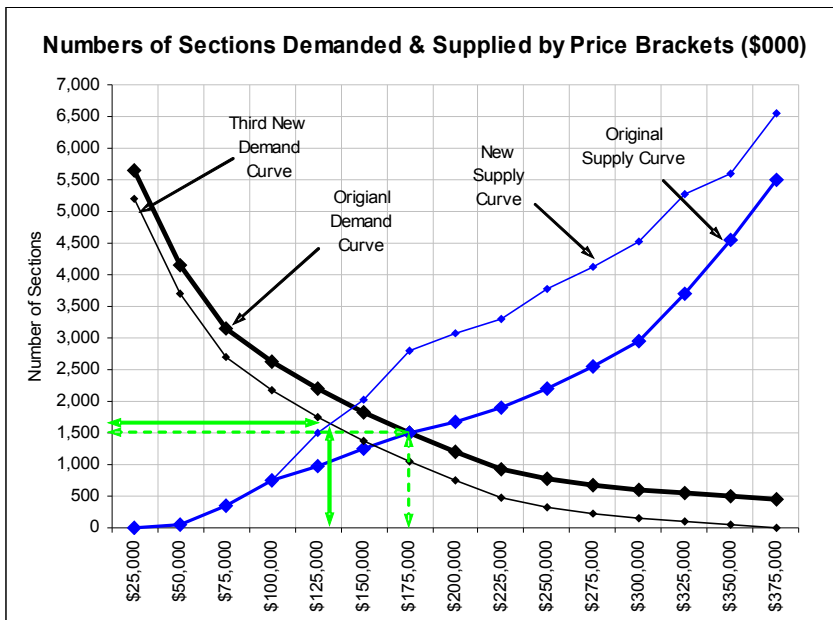


The increase in supply associated with new developers entering the market and investors trying to sell at a profit didn't happen at all price points (e.g. there was no increase in the supply of low priced sections). It varied from market to market, but in general the new developers offered sections to the market in the middle to upper-middle price brackets, while investors initially tried to sell sections at prices higher than they had originally paid. The new supply curve in the chart shows the selected increase in the number of



sections offered for sale at the various price points. The new equilibrium should be with an average section price of around \$212,500 and around 3,250 sections selling per annum, shown by the intersection of the solid, green, arrowed lines. The dashed, green, arrowed lines show the original equilibrium, while the dashed, orange, arrowed lines show the equilibrium after the mega-boom in demand but before the supply response. However, this point was never reached because in general developers and investors were not willing to accept the implied drop in the market clearing section price from \$287,500 to \$212,500.

Instead developers and investors choose not to sell rather than accept significantly lower prices, or at least some of them did. In our travels around the country over the last few years we have seen lots of examples of this and not just in coastal and resort markets (i.e. lots of sections listed for sale with real estate agents, for sale by developers direct to builders and/or to the public and listed as private sales on [www.trademe.co.nz](http://www.trademe.co.nz), but vendors being sticky over prices so few were selling). This has been especially the case after demand collapsed between 2006 and 2008 depending on the market.



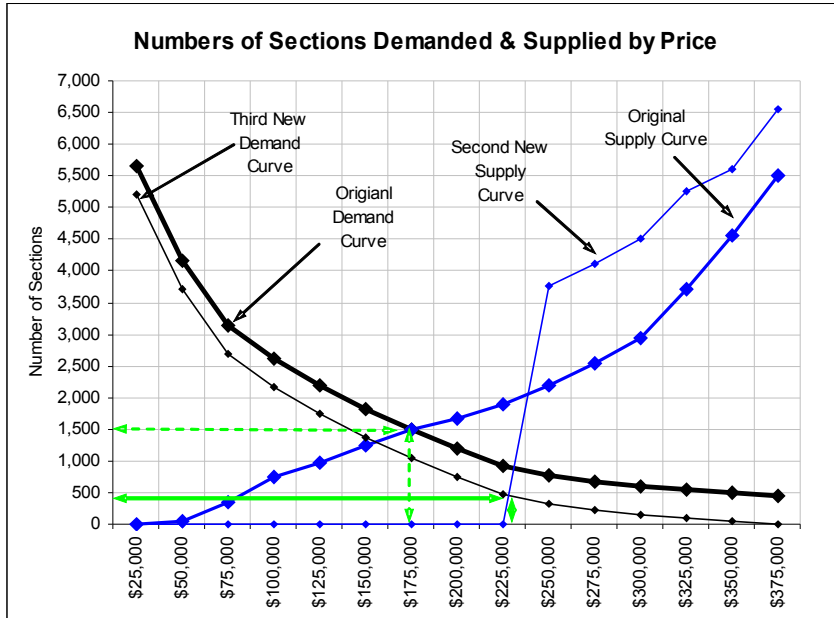
This chart shows what would have happened in the world of textbook economics following the collapse in demand to below the originally level. The higher level of supply shown by the New Supply Curve still existed, but the level of demand fell below the original level, as shown by the Third New Demand Curve. The equilibrium should be a market clearing price of around \$132,000, below the original market clearing price, while around 1,700 sections should be sold per annum, which is above the original number.

If we lived in the world of textbook economics – or prices in the house and section markets behaved the same as share prices (see <http://sra.co.nz/pdf/Shares.pdf> for the April 2009 Raving on the share market) – this is the sort of outcome that would have occurred in many parts of the country over the last couple of years. This highlights how differently the section and housing markets operate from textbook markets, although, as discussed on pages 7-8, demand and supply will ultimately have their day in court.

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When demand collapsed, the majority of developers and investors opt not to sell rather than sell at the greatly reduced prices needed to bring demand and supply back into balance. The sections were still technically available but in general the owners were not willing to sell them at the prices required to clear the market. In these situations the market is “illiquid” and market clearing prices are not achieved.



This chart tries to show the impact of developers and investors not being willing to sell below a certain price. It is a bit abstract, but conveys the critical point. The left hand end of the supply curve dropping to zero below the lowest price that developers and investors are willing to sell, but once the price gets a bit above the lowest level being accepted by developers and investors then the effective or real supply rebounds to what it was in the previous situation. The result is a “market clearing” price of around \$230,000 but only around 400 section sales per annum. This is vaguely what we can observe in places like the

Mangonui area, but it also gets to the heart of why section and dwelling prices have not collapsed national despite the levels of demand having fallen to below the levels that existed prior to the speculative boom in prices, and well below in the case of the number of section sales (see the charts on page 2).

This is in general terms what has happened in a number of section markets around the country, especially in some of the coastal and provincial markets that are swimming in supply. The result is that achieved prices do not fall anywhere near as much as one might expect given the adverse demand-supply balance, but this is possible because the market is no longer operating normally (i.e. it is no longer “clearing”, but is instead in a state of “illiquidity” or a degree thereof). This behaviour was most evident in the office market after the 1987 share market crash, with the gap between vendors’ and buyers’ views so large that no office buildings sold in downtown Auckland for around two years after the crash. But when the market became liquid and started clearing again, there were major price falls.

It is part of the human condition to be loss adverse (i.e. not be willing to accept losses if there is the option to hang in there, even if at the end of the day this behaviour just delays the inevitable). The question is how long the current owners of sections will hang in there, which also has major implications for dwelling prices. My suspicion is that they will do so for quite a bit longer, although cracks are emerging in some markets (e.g. a recent case I was told about where a developer sold around 15 tail-end sections in a coastal subdivision for around \$45,000 each when they had originally been selling for around \$200,000).

### Trying to defy the laws of economics

What is happening in these sorts of markets is that the vendors are trying to control the prices. In some cases, more so in major urban markets, developers are encouraged not to sell cheaply by the knowledge that there will be few new subdivisions developed for some time because of a combination of high development levies being imposed by councils, problems around funding new infrastructure, long and arduous times to get consents, much reduced access to finance since the financial crisis and the collapse of many finance companies, and more expensive finance. In some cases developers would go bankrupt if they sold at the prices required to achieve a good number of sales and/or their financiers are not willing to see the sections sold at the prices required to sell them. This behaviour is possible because sections, unlike lettuce, are durable, so vendors have the option to withhold them now and sell them at a later date.

Similar sorts of behaviour has occurred on the supply-side of the existing house market, with would-be vendors still having their dwellings listed for sale but their lack of willingness to accept lower prices meaning the properties are effectively off the market. This is why we normally only see large falls in actual house



prices of the sort that occur in textbook economic analysis when there are greatly elevated numbers of mortgage sales, as has been the case in the US, but even in the US prices have not fallen enough to clear the market.

But a law of economics is that market players can control prices or volumes, but not both. This gets to the heart of why communist-style economies ultimately fail (i.e. because the dictators try to control both prices and volumes), but that is a completely different story. In the current context what matters is that by effectively withholding supply in an attempt to stop prices falling as much as should occur based on the deterioration in the underlying demand-supply balance, prices do not fall dramatically, which at face value suggests the vendors achieved their objective. But the consequence is that only a small to moderate number of vendors are able to experience the achieved prices because the number of sales tumbles.

This creates something of a Catch-22 situation in which the unsuccessful vendors are encouraged to hang out for their prices because the few sections or houses that do sell achieve vaguely respectable prices. From the demand side this is possible because there will normally be a small group of buyers willing and able to pay the elevated prices, but most would-be buyers steer clear.

In the long-term the situation comes back to the real or inflation-adjusted prices discussed in Chapter One. If the would-be vendors wait 10 years, during which time prices in general will increase around 30% and incomes by something more than this, they will achieve something in the ballpark of their current asking prices. But the dollars they get in 10 years time will buy 30% less goods and services than they would buy today because of the increase in general prices, so they will end up just delaying the inevitable (i.e. death by a 1,000 cuts rather than by decapitation).

### **Assessing whether a market is out of whack**

The discussion above reveals that the markets that investors and financiers should be most wary of are those that are not clearing. These are the markets where prices will be most out of whack with the underlying demand-supply balance, mainly because vendors for whatever reason can withhold supply and still survive. But they are also the markets most at risk of experiencing large falls in real or inflation-adjusted prices over the next 5-10 years (and possibly for longer in some of the really whacky markets).

In some of the coastal markets we have observed investors still trying to sell sections 3-5 years after they first put them on the market because they have not been willing to bite the bullet on price. The Far North and the Coromandel are two of the better examples of this sort of behaviour.

To put this in perspective, as at 11 November 2010 there were 443 ads for sections for sale in the Mangonui area on [www.realestate.co.nz](http://www.realestate.co.nz) versus 38 sections reported to have sold by REINZ in this area in the year to October 2010 (i.e. the number of ads was 11.7x the annual number of sales). By contrast, the multiple was 3.8x for the national market (i.e. 16,601 section ads as at 11 November 2010 versus 4,363 section sales for the year to October 2010), while the multiple for the Thames-Coromandel District was 6.9x. Yes, prices have come down in these sorts of markets and in some cases more than nationally, but nothing close to enough for the markets to “clear” in terms of the prices being of an equilibrium nature that reflect the underlying demand-supply balances.

In terms of the dwelling market, the multiple nationally on 12 November 2010 was 0.9x (i.e. 49,781 ads on [www.realestate.co.nz](http://www.realestate.co.nz) for dwellings versus 57,781 dwelling sales in the year to October 2010), in the Thames-Coromandel District the multiple was 2.3x and in the Mangonui area it was 5.2x. In all cases there will be an element of double counting of properties because of multi-listings, which means the number of ads will overstate the number of properties for sale, although in our experience in the section market there are often more sections for sales than ads because some ads cover more than one section while some sections that are for sale with real estate agents are not advertised on the website. Most importantly, these biases should be similar across the country, meaning comparing the multiples in the Mangonui area with those in Thames-Coromandel and nationally should provide a ballpark indication of which markets are swimming in supply versus those with only moderate supply.

We are currently starting down the path of researching the markets that we see as being most of out whack and will be making sharply-priced, pay-to-view reports available on these markets progressively over the next year.