Real Estate Cycles and the Profit Shell Game: Unravelling the Impacts of Rapid Price Increases

January 2009
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REAL ESTATE CYCLES AND THE PROFIT SHELL GAME: UNRAVELLING THE IMPACTS OF RAPID PRICE INCREASES

January 2009

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1 Pedro Bravo, an MBA student at the Haskayne School of Business (University of Calgary), gathered the bulk of the statistical data for this research. This was made possible through the generosity of a grant from the Real Property Association of Canada (REALpac).
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1. INTRODUCTION

Industrial growth in Alberta, and more specifically oil and gas expansion driven by corporation investments centred in Calgary, is arguably the driving economic force for Canada in the 21st Century (to date). The boom returned to Calgary in 2006, and gained strength through to the first half of 2008, so it was plausible to expect rising housing prices as a consequence. However, it may be surprising for many to learn that house price increases did not followed a steady climb over the past few years. Indeed, in the fall of 2005, a remarkable and rare shift occurred in residential real estate prices in Calgary. From October of 2005 to June of 2006, median house prices skyrocketed over 54%. In eight short months, according to the Calgary Real Estate Board, the median price for a condominium unit, which includes townhouses, apartments, and other multi-family housing units, jumped from $169,500 to $259,900 (see Chart 1). Clearly an unprecedented and remarkable shift, particularly when considering that it occurred in one of the largest cities in one of the most advanced industrial countries in the world. Interestingly, while prices continued to rise after June 2006, the median price for multi-family housing units has come down from $259,900 to $251,800 in November 2008, representing a 3% reduction over the past 2.5 years. But, there is plenty of data to analyze between these two points in time, based largely on an understanding of what caused the first rapid price shock, and reverberations over a 30 month period.

This paper seeks to understand better the causes and implications of the rapid price increase that started in the fall of 2005, and concluded with an abrupt flattening of the curve in June of 2006. Why did prices shoot up so fast? Were there specific indicators that could have foreshadowed this rapid increase? Who benefitted and who paid the cost of this quick shift in value? Is it possible or even likely that future rapid price increases will occur? What can be done to foresee and prepare for future shifts?
A rare and unusual phenomenon such as the 2005/2006 real estate price shock can be analyzed from a number of perspectives. For instance, what was the role, or should have been the role of monetary policy advisors and decision-makers? Even though the primary objective of the Bank of Canada is to control inflation, and to use interest rates as a main lever to control inflation, how accurate is the central bank at measuring and addressing rapid price increases? At an address to the Calgary Chamber of Commerce on March 8, 2007, Bank of Canada Governor David Dodge indicated that, “Canada was on-track in battling inflation by having a National inflation rate of 1.2 percent, notwithstanding the 3.9% experienced in Alberta.” How is it possible to shoehorn a 54% increase in housing, which accounts for up to 30% of most household incomes, into a 3.9% measure of inflation? Surely such mathematical gymnastics are worthy of further study, but I will avoid the temptation in this paper.

Where were public policy decision-makers in general during this period? Notwithstanding that this surreal price shock may have been a highly localized price adjustment, how can a province in the G8 nation of Canada have ‘3rd world’ levels of inflation in shelter, one of the fundamental needs of survival? Is it acceptable that policy-makers can hide their head in the sand during a total upheaval of affordability? These questions will need to wait for another day as the focus of this paper is more descriptive than proscriptive or prescriptive in nature, and any recommendations will relate to business strategies rather than public policy.

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Of primary interest to this researcher is what were the factors that led to the rapid price increase and how could a business prepare itself to benefit from such a shock, and avoid the inevitable subsequent fall\(^3\), while not forgoing other opportunities? Effective business strategies, by their nature, infuse organizations with disciplines that result in trade-offs between short-term and long-term benefits and costs, opportunistic and sustainable activities, and profit versus growth. Can the business firm position itself to benefit better from such shocks, while not encumbering, and possibly enhancing its competitive advantage at other periods in the real estate cycle?

To address these questions, this paper has been organized as follows. First, I attempt to unravel what caused such a rapid price increase over such a short period of time. This entails a closer inspection of various economic factors, and consideration of non-economic factors of the day.

The apartment development industry is then analyzed in more detail, specifically providing an understanding of the industry forces that relate to the ability (or lack thereof) of industry players to respond to changing market conditions. This descriptive outline provides an added degree of richness to the understanding of challenges and opportunities available to the apartment developer.

Combining the model of rapid price increase and industry analysis provides the opportunity to highlight positioning opportunities and constraints for specific apartment developers – how can a firm differentiate itself in a manner that allows the firm to benefit from future shocks, while supporting competitive advantage during more normal periods of operation. The paper will end with summary comments, and some specific recommendations for apartment developers.

\(^3\) The City of Calgary and the Province of Alberta have long-standing public policies and economic initiatives aimed at averting the boom bust cycles that have plagued the provincial and local economies, driven primarily by erratic shift in oil and gas commodity prices.
2. UNRAVELLING THE PRICE SHOCK OF 2005-2006

From October 2005 to June 2006, condominium median prices in Calgary increased by 54.3%. In search of objective measures that could help understand why this occurred, we included a combination of traditional economic factors (supply, demand, and input costs) along with measures aimed at understanding unusual events or environmental factors that could influence market drive or impetus to buy (sense of urgency).

Chart 3 provides a comprehensive, albeit overwhelming illustration of the economic variables. Each of these variables is discussed below, followed by a commentary on the relationships among these variables, together with a descriptive incorporation of the sense of urgency factors. The chart covers the period from January 1, 2005 to December 31, 2006, which provides for both a run-up period to the rapid price increases (i.e. January 2005 to October 2005), as well as a stabilizing period from July 2006 to the end of 2006. Each variable has been coded, by the use of period markers, to reflect a categorization as follows:

ν Square – Housing prices (output or dependent variable, measured as (1) Median condominium price and (2) National Housing Price Index (NHPI))

λ. Circle – Supply or housing inventory (resale and new housing inventory)

♥ Diamond – Demand (housing resale index, employment growth, weekly earnings growth)

σ Input Cost Factor (Consumer Price Index (CPI), 5 year mortgage rates, and construction index)
All of the measures in Chart 3, with the exception of resale housing supply and sales, have been standardized to reflect a base factor (i.e. =1.0) as at January 1, 2005. This adjustment allows for a wide composite of variables to be considered in one chart, which is highly illustrative. As there are strong cyclical influences on resale housing inventory and sales, standardizing to January 1, 2005 was determined to not accurately reflect the impact of resale product during the study period. Instead, these measures have been compared with the prior years inventory or sales for each specific month. Unless indicated otherwise, housing measures incorporate all forms of housing. The overview of the entire housing
industry is important to set a context for the more detailed review of the apartment condominium marketplace.

2.1. Description of Variables

Included in Chart 3 are two measures of the output or dependent variable – rapid price increases. NHPI is the New Housing Price Index, measured by Statistics Canada, and indexed specifically for the Calgary Metropolitan Region. The NHPI measure reported in Chart 3 is indexed to January 2005 (=1). NHPI measures the relative price of new housing product. Although this measure is not specific to apartment condominiums, it provides a reasonable proxy for new condo sales values. The second output measure; ‘Condo Median’ is the median price for condominiums as reported by the Calgary Real Estate Board, which generally reflects resale of existing condominiums. The Condo Median Price measure, which includes all condominiums (not only apartments), has also been indexed to January 2005 (=1).

There is a strong consistency among the output measures, NHPI and Condo median, both indicating a sharp rise starting in the fall of 2005. As the NHPI measure represents a more consistent product offering (i.e. all new homes), for the continuation of this analysis I will focus on the NHPI measure to reflect the dependent variable of rapid price increase.

The supply measures in Chart 3 are represented by circle points and include the resale housing and new housing inventory. New housing inventory measure is taken from Statistics Canada’s measure of newly completed, unabsorbed dwelling units for the census metropolitan area of Calgary4. Resale inventory is as reported by the Calgary Real Estate Board in their monthly statistics publications. Both measures are comprehensive, including single family, row house, townhouse, and apartment units. Each measure is indexed in relation to the January 2005 inventory levels.

Demand variables are indicated by diamond markers, and include average weekly earnings, employment, new housing starts and housing resales. Average weekly earnings and employment measures are both provided by Statistics Canada, and indexed to in relation to January 2005. Both of these variables drive housing starts by providing income to support the costs of home ownership. As well, they act as important psychological drivers by providing confidence to homebuyers.

4 Table 027-0038 - Canada Mortgage and Housing Corporation, absorptions and unabsorbed inventory, newly completed dwellings, by type of dwelling unit in census metropolitan areas, monthly (units).
New housing sales are not specifically tracked, however housing starts (as reported by Statistics Canada) provide a commonly used proxy for new housing demand. Due to wide monthly variations, this measure is compared annually to cumulative housing starts for each calendar year. Resale housing figures are tracked monthly by the Calgary Real Estate Board, and the measure used in Chart 3 represents comparison with previous year values for each month. Generally resale figures are less variable on a month-to-month basis than new housing starts, due to factors that influence labour starts, such as weather conditions, vacation periods, etc.

Various input costs have also been included in Chart 3, such as the consumer price index (CPI) for Calgary (as reported by Statistics Canada), the 5-year mortgage rates, and the construction cost index (specific to apartment construction, as measured by Statistics Canada).

With eleven variables, including measures of price escalation (2), housing supply (2), housing demand (4), and input costs (3), Chart 3 is quite complex and difficult to analyze. There are, however, a few conclusions that can be drawn from Chart 3:

1. During 2005, while prices did not significantly increase until near the end of the year, other indicators led and may have significantly influenced pricing,
2. Between October 2005 and February 2006 there was a significant gap between resale housing sales and inventory, which corresponds to the significant shift in the slope of the price indices,
3. New housing inventories indicated a steady decline in stock throughout the two year period,
4. Employment growth was minimal and lagged other measures,
5. Construction cost increases lagged, but mimicked housing price indices,

In general, there are two distinct periods of change, which closely reflect the calendar years; 2005 is the lead in year, and 2006 represents a shift in housing starts, higher prices, rising construction costs, and rising resale inventories. Let us first take a more detailed look at the early indicators that impacted pricing in 2005.

2.2. The Perfect Storm

To better understand the significant influences on rapid price increases, the variables from Chart 3 have been split and focused on based on the period of significant influence. Chart 4 is entitled Stage I Factors as it focuses on economic variables that created the market drive (in the first half of 2005) that eventually led to rapid price increases. Chart 6 is a longer-term perspective (to the end of 2006) entitled Stage II...
Factors. This split reflects the view that housing supply, demand, and pricing shifts highlighted in Chart 6 occurred as a result of certain economic influences, which are highlighted in Chart 4.

Chart 4 focuses on three economic variables (average weekly earnings, 5-year mortgage rates, and construction index), and how those variables relate to the home pricing index. Average weekly earnings realized a gain of 5% in the first few months of 2005, reflecting positive economic movement within the Calgary marketplace, driven largely by the oil and gas industry, and more specifically the start of what became over $200 billion in announced heavy oil projects in northern Alberta. Virtually all of the heavy oil projects announced required significant employment growth in northern Alberta, with a corresponding demand for specialized and professional staff in Calgary. The tightness of labour markets indicate that even with rising wages through the first half of 2005 (see Chart 5), unemployment rates continued to drop to very low levels.
A further impact of tight labour markets, which is more difficult to graph, but nevertheless measurable, is net migration. The City of Calgary measures net migration on a year-over-year basis, reporting a staggering 507% increase for the year ending April 2005 (from 2,253 to 13,677), and a further near doubling in 2006 (to 25,557 people). As a result, the net migration numbers for the year ending April 2006 were more than ten times what was reported for the year ending April 2004. This was believed to be largely driven by rising wages, secure outlook for jobs, and housing affordability.

The Royal Bank of Canada produces a quarterly housing affordability index. This index is determined by applying housing costs (which includes mortgage payments, property taxes, and utilities) as a proportion of median pre-tax income. Mortgage costs are based on 25% down payment, and a 25-year mortgage loan at then current 5-year fixed rates. It is generally accepted that housing is affordable when the monthly costs represent less than 30% of monthly income. RBC has been calculating the housing affordability since 1985, and for most of that period, including from 1992 on, the housing affordability index for standard condos in Calgary have been at or below 20%. The index was below 20% coming into 2005, making the prospect of a home purchase for non-homebuyers and new comers to Calgary very attractive.

5 Unemployment rate as reported by Statistics Canada
Housing affordability is significantly influenced by mortgage rates. Even though rates were stable for most of the last decade, in early 2005 there were media reports and hints by the Bank of Canada that rates could be trending up in order to address inflation concerns. As noted in Chart 4, the 5-year mortgage rates rose, then dropped, and then rose again through the first half of 2005. Shifting mortgage rates have a significant influence on buyer demand as mortgage payments represent the largest single component of housing costs. A trend down will usually calm housing markets, whereas a trend up creates a sense of urgency and a need to lock in a home purchase and mortgage rate in advance of further increases. By mid-2005, mortgage rate volatility combined with a low affordability index to make for a very attractive home buying opportunity, particularly for new migrants to Calgary.

Also, in early 2005, it is important to note that construction costs were rising faster than house prices. This was a reflection of the new demand for construction activity in northern Alberta, and some material constraints. For instance, newspaper reports in 2005 indicated that there was rationing of cement to construction projects, including housing projects, due to a combination of increased demands (largely for heavy oil projects in northern Alberta), and plant improvements. As will be discussed in Chart 6, this resulted in delays in delivery of new homes, and tighter inventories in the housing market.

The combination of higher wages, higher net migration, lower affordability indices, higher trending mortgage rates, and higher construction costs all led to the dual result of prospective purchasers aggressively increasing their demand for housing, and developers and builders feeling a need to raise prices (to cover rising costs and to respond to increased demand).
To effectively analyze Chart 6, it is useful to consider new housing independently, which provides some insight into resale activity. First, considering housing starts, for the most part 2005 tracked closely with 2004 starts. Indeed, the total number of starts for 2005 (13,667) was 2% below the total number of starts for 2004 (14,008). However, of significant concern is the available new housing inventory, which steadily dropped from 955 in January 2005 to 776 in September 2005. It is here that we see a significant mis-read of the market forces as lower than prior year housing construction combined with higher market demand (as noted from the description of the Chart 4 factors) to create a critically tight supply-demand situation in the fall of 2005. This situation was further complicated with seasonal weather conditions as new subdivision construction cannot proceed in winter conditions, significantly limited the ability of the homebuilding industry to respond to what happened in the next few months.

At this point it is useful to bring in the resale housing market situation (see Chart 6). Sales of pre-owned homes were in the order of 15% to 25% higher than the previous year sales for much of 2005. It would seem that the resale housing stock was filling a void created by lower housing starts. The result was a reduction in resale housing inventories through the fall of 2005 and early winter of 2006. This was the period where multiple bids were being received and homes were routinely being sold for higher than list.
In January of 2006, the homebuilding industry responded quickly to bring on more housing stock (evidenced by the spike in housing starts in January 2006), however due to limited land availability and worker shortages, house prices continued to rise. And while 2006 was a record year for housing starts (17,046), new home inventories continued to drop to only 523 units by the end of 2006. The industry simply could not keep up.

It is interesting to note that in 2006 resale housing kept its pace (ending the year slightly up from 2005), and resale housing inventories rose significantly through the year, however many of these homes were now priced very aggressively with many vendors wanting to ‘cash-out’ on a high. At this point, opportunistic behaviour was beginning to drive a second wave of price increases.

Rapidly eroding housing affordability in 2006 created intense market demand for more affordable forms of housing, such as apartment units. Unfortunately, in comparison to other forms of housing, apartment units require significant time to plan and construct, often requiring more complex land assemblies, longer approval periods, pre-sale requirements that require long marketing periods, and more significant financing and construction needs than other forms of housing. In fact, the response to the 2006 surge in market demand for more affordable housing options resulted in a surge of apartment condominium apartment starts in early 2008, as depicted in Chart 7.
Using the observations from Charts 4 through 7, a few summary points highlight the ‘perfect storm’ that occurred from the fall of 2005 through to the late spring of 2006:

1. Housing demand was pushed by (1) higher net migration, wages, and employment opportunities; and (2) concerns over rising mortgage rates, construction costs, and house prices; and
2. Housing supply was constrained by (1) the mis-read of market shifts in early 2005; (2) the inability to respond in late 2005 due to seasonal weather constraints, and (3) the inability to respond to the drive for more affordable housing options (i.e. apartment units) due to longer lead times for apartment building land assembly, entitlements, marketing, financing, and sales.

The next section brings forth observations of how this situation led to a shell game wherein anticipated developer profits have grown and shrunk over a short period of time.

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6 Multi-family housing starts are published monthly by CMHC. The figures used in Chart 7 were taken from monthly CMHC Housing Now Reports published during the observed period.
3. THE PROFIT SHELL GAME

Chart 8 provides an overview perspective on the apartment condominium market from 2004 to 2008. Although not identifiable on Chart 8 (due to scale), as a consequence of developers not being able to provide new supply in response to the price surge in 2005/2006, completed and unabsorbed apartment units dropped to zero in May of 2006, and barely started to recover in 2008, hovering around the 40 to 50 mark through most of the year (approximately 1% of annual condominium apartment starts). Hence, with no inventory, minimal opportunities to bring on more inventory (due to approvals and planning lead times), and pressure to meet sales demands, condominium apartment prices surged again in 2007.

Another interesting observation from Chart 8 is that, notwithstanding the low inventory – high demand environment, condominium apartment starts actually went down in 2007 compared to 2006. This was due to the delays in land assembly, planning, approvals, and design of new projects. To address the pent-up demand, in March of 2008 there was a surge of apartment unit starts. However, by the 3rd quarter of 2008, there is a clear divergence occurring between the trend line for units under construction and median price, which is likely to result in a significant over-supply of condominium apartments over 2009 and 2010.

Chart 9 is a comprehensive diagram that illustrates two distinct phenomena that resulted from the ‘perfect storm’ of tight supply markets, favourable demand factors (increasing net migration, increasing
wages, lowering unemployment, and lower interest rates), and the inability to respond quickly (due to land purchase, approval, and development constraints). First, by focusing on the Median Condo Price\(^7\) it can be seen that in addition to the price increase between October of 2005 and June of 2006 (shaded in blue on Chart 9), there was another significant price increase, or ‘echo bump’ that began at the end of 2006, and ran through to late spring of 2007 (shaded in red on Chart 9). New entrants, including developers and individual unit purchasers looking to benefit from the rapid price increases, primarily drove the echo bump.

![Chart 9: The Profit Shell Game](chart)

The second important observation from Chart 9 is what is referred to as a ‘profit shell game’ wherein anticipated developer profits followed a roller-coaster ride of projected increases and decreases over a two-year period for approvals, with up to two years more for construction. To illustrate a typical developer response and impact, four points have been identified where profit projections can be made based on rapidly changing revenues and costs.

\(^{7}\) The Median Condo Price is measured by the Calgary Real Estate Board based on the completed sales for each month.
At point A (Chart 9), multi-family developers respond to the rapid price increases by purchasing and assembling land positions for development of new condominium projects (many of which were apartment sites in Calgary’s belt-line district\(^8\)). At this point, completed unit sales values have risen significantly more than either land costs or construction costs, resulting in a projected excess profit reflected in the yellow shaded area.

There is generally a one-year process to obtain the necessary zoning approvals for the new project. The zoning approval time can vary significantly, depending on locational issues such as community impact, traffic, building mass relationship to surrounding homes, etc. By and large, these items are addressed in planning policy documents that encourage intensification in specific areas of a municipality. With respect to Calgary, city planners and politicians encouraged intensification of the belt-line district as a long-term plan to reduce transportation demands into the central business district. In this example, over the one-year period from March 2006 to 2007, both condominium unit sales prices and construction costs continue to rise, and the yellow area increases in size, encouraging both active developers and new entrants to participate in the market frenzy.

Another year is generally required to complete architectural drawings, obtain a development permit (which often involves intense community and city planning negotiations), and finally obtaining financing and building permit release. In our example, this brings us to point C, which is March 2008, where there was a surge in condominium unit starts (see Chart 7) of approximately 700% from the average monthly starts. The yellow area in Chart 9 has decreased in size from point B to C, but is still quite sizeable.

Standard project financing arrangements for condominium apartment projects, and for that matter all real estate development projects through the study period, relied heavily on developers obtaining a pre-specified level of pre-sales of individual condominium units. The early 2007 echo bump was driven primarily by opportunistic behaviour of individuals, who purchased ‘options’ to buy into single condominium unit purchases for as little as $5,000. While the option holders allowed developers to meet the pre-sales test necessary for financing of new projects, by not being backstopped by further immigration and/or household growth through demographic shifts, the option holders provided only a false indication of market growth. Pre-sales for the March 2008 starts surge would have been secured 3-6 months prior to construction start, i.e. the fall of 2007. This sales activity created a last gasp of

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\(^8\) Calgary’s belt-line district is bounded by the Elbow River (east), 14th Street SW (west), the CPR rail line (north) and 17th Avenue South (south).
opportunistic buyer behaviour reflected in the October-December 2007 increase in median condominium prices. Ironically, although there was continued low unemployment and many reports of labour shortages in Calgary and Alberta through 2007 and 2008, rising costs for housing were making it more difficult for people to migrate to Calgary to fill vacant positions. The false market driven echo bump had created an over-priced, unsustainable market. The opportunistic option holders actually limited their opportunity by over-heating the marketplace.

Finally, we consider point D, in the fall of 2008. The yellow area is shrinking at an alarming rate as completed unit prices drop and costs continue to rise, driven by an excessively high volume (over 7,000\(^\text{9}\)) of condominium apartment units being under construction. As developers rush to complete their units, the upward pressure on costs continues, however as projects are completed, more inventory is available and completed condominium unit prices continue to drop. The yellow profit is caught in a shell game, and appears to be disappearing at rapidly during a period when developers are in a mid-construction phase, committed to completion, and facing a recession. Arguably, the global recession of fall 2008 was unpredictable, but the shrinking profit margins were entirely foreseeable by recognizing what drove the echo bump of price increases (the area shaded in red on Chart 9). The last reflection point in condominium unit price (March 2008) could be reflective of a shift in buyer behaviour from greed to fear.

\(^{9}\) The October 2008 Housing Now Report from CMHC indicated 7,271 condominium apartment units under construction.
4. THE TWO-YEAR RESPONSE – NOT GOOD ENOUGH

This section undertakes a two level analysis of the rapid price increase environment. The first level is considering the industry as the unit of analysis. In that respect, the question that arises from the previous section is why did the industry not respond quicker to a rapid rise in opportunity, and how could industry members be better positioned to take advantage of future similar opportunities?

Following the industry level analysis, the level of a strategic move, and more specifically options theory is used to understand the actions and impacts of moves taken by developers and purchasers.

4.1. Industry Analysis

The ‘Five Forces’ framework developed by Harvard professor Michael Porter (1979) provides a useful and effective tool for analyzing the apartment development industry further. Porter’s framework considers the industry as the unit of analysis, assessing bargaining power among industry players, suppliers, and buyers. Applying this analytical tool we find that the surge in market demand created a bargaining power advantage for the industry over buyers, as buyers have an increased desire for a specific need that the industry could supply. However, due to constraints reflected in the relationship to suppliers, the low immediate threat of new entrants, apartment developers are unable to respond to the opportunity in a timely fashion, creating a lag effect. This results in heavy focus on substitutes, including rental accommodations and resale housing purchases. Finally, rivalry among competitors is a significant force that explains the behavioural nature of the industry, including the drive to imitate the business models of competitors. This imitation can be explained as a mimetic drive for legitimacy from an institutional perspective. The result is that the industry members respond the same and create a mob-response to the opportunity/challenge presented to them.

In considering the patterns of condominium starts, as noted in Chart 7, there is evidence that developers followed a similar path of action after the rapid price increase from late 2005 to early 2006. Indications are that in the spring of 2006, when the rapid price increase was in full swing, developers initiated the process by purchasing new land parcels, designing, obtaining approvals, pre-selling, financing, and finally starting new projects. As highlighted in Chart 9, this full process takes approximately two years, and the result is a surge in condominium apartment starts in March of 2008. Unfortunately, the market demand that supported the price surge had already been addressed, and many (most) of the pre-sales were to speculators hoping to take advantage of a future price surge. This specific strategy will be addressed in more detail in the next section on options.
To more fully understand the relevance of the market demand influence on the longer-term housing market it is important to consider the proportion of new households to existing. Over the past five years (2004 to 2008), the average number of annual total housing starts (single-family and multi-family) is approximately 14,000, which is approximately 3% of the over 430,000 housing units in Calgary. Even though the net-migration wave in 2005/2006 of 25,557 is almost double the 13,631 10-year average, the increase of 12,000 additional in-migrants represents approximately 5,000 additional housing units, which is just over 1% of the total housing units in Calgary. The inability of the industry to be able to respond in a timely manner to such a marginal shift in demand is evidence of extremely tight supplies and a competitive environment with very little excess capacity.

Hence, the fundamental problem, from an industry perspective, is the inability to respond to rapid shifts in market demand due to supplier constraints, including inability to source land and obtain zoning and development approvals quickly. This is partially a consequence of the administrative heritage of the industry, which is rooted in the real estate boom and bust of the early 1980’s. Prior to 1981, the housing industry followed a ‘spec-build’ model, wherein housing units were first built, and then sold at or near final detailing. This allowed builders to have full control of scheduling and costs, and facilitated a production-based approach to their business. Further, during the high inflationary times of the late 1970’s and early 1980’s there was an inherent challenge in knowing the final cost of a home before it was completed. Spec building allowed the builder to compile the full costs prior to pricing the final product, which resulted in consistent margins and returns. This model was effective and efficient, until the market demand changed with the recession of 1982, resulting in a significant over-supply of housing units with virtually no buyers. Unfortunately, many housing developers and builders did not survive the financial strain of carrying unwanted inventories.

Eventually, demand trickled back, and a new industry emerged. However, new companies, led by managers who lived through the devastation of surplus inventories, rebuilt their industry following a ‘pre-sale’ rather than spec-build model. In the pre-sale model, housing units are first sold and non-refundable deposits (typically 5% of the purchase price) received prior to starting construction of a house, which is up-side-down from the spec build model where housing units are first built and then listed for sale. The benefit of a pre-sale model is that the only housing units built are those already sold, eliminating, or at least reducing the risk of the developer being stuck with unwanted housing inventories. On the other hand, the pre-sale model results in very tight, virtually non-existent inventories to adapt to any significant changes in housing demand, as was seen in late 2005.
The newly evolved industry of pre-sale developers represents the core understanding of competitive rivalry within the industry. In essence, the cost of holding inventory was driven out of the industry due to a competitive environment that benchmarked pre-sales as the dominant model. The model so permeated the industry that developers did not even hold undeveloped land inventory, nor did they obtain planning entitlements in advance of the just-in-time need to satisfy a pre-sale program. Hence, when the tight market supply could not accommodate a surge in demand in the fall of 2005, builders had no ‘slack’ in the pipeline (i.e. no vacant land for development, no entitled projects to launch) to respond. Their only option was to move up to suppliers of land and entitlements. Even for projects that were underway or that had started in early 2006, there was an intense urgency to complete construction as soon as possible, which created labour and material shortages, resulting in escalating construction costs, and hence more pressure to complete construction as fast as possible (in order to avoid cost increases).

An analysis of the industry clearly highlights the cost of competitive rivalry and supplier relationships that combine to virtually eliminate the industry’s capacity to respond to even marginal shifts in market demand.

4.2. Real Options Analysis

Real estate investments can be analyzed from a perspective of providing real options to parties. In our situation, as the pre-sale model is dominant in the industry, both the strategic moves of individual unit purchasers and developers can be analyzed from a real options perspective.

The purchaser typically enters into the option by providing a deposit, often 5% of the listed purchase price for the apartment unit. The developer reserves two options in this contractual arrangement – (1) to complete the development of the housing units (in aggregate) if financing and pre-sale conditions are met, and (2) to increase purchase price to address specific cost increases. The second option sets off a new round of options as the purchaser will have a new option to stay or abandon the transaction when price increases are presented. Typically, there is an option price for the purchaser to stay in the transaction (say, 5% of the price increase, although it may be more). If not exercised, the developer has the right to keep the original deposit, and re-sell the unit to a new purchaser. However, if the housing unit construction is underway, project financing is conditional on pre-sales, and hence it is very difficult for the developer to risk losing the option support of individual purchasers. Hence, the developer becomes a hostage to the option process once active construction begins.
Indeed, the developer option was challenging to manage as construction cost increases came rapidly and continuously during the period of study. As a hostage to purchaser options, developers were reluctant to push the envelop on price increases, and in many cases reduced their margins to keep the purchasers in the game (often feeling that it would be made up in the next project).

In the Calgary situation, pre-sales have been the mode of development for the past 25 plus years. Further, due to the significant time period (in the order of 18 months) between pre-sale and construction completion, a sub-market of apartment speculators have been actively engaged in providing pre-sales during this period. When the speculators engaged in pre-sale of 2004 apartment projects flipped their units in 2005/2006 for exceptional profits\(^\text{10}\), the word was out and many Calgarians wanted to take advantage of the option method of extra-ordinary profiteering. The result was a ‘false’ market demand that drove developers to develop as much as they could, which cumulated in the March 2008 spike in apartment starts.

The real options analysis illustrates that for purchasers who placed their deposits in advance of the rapid-price increase, but were able to sell their completed units following the rapid-price increases, their benefit of entering the option far out-paced other investment opportunities (as much as a 1,333% return on a $7,500 option price). In contrast, developers were held hostage and often reduced their returns to ensure that purchasers would stay engaged, which was necessary for financing covenants and project viability.

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\(^{10}\) If an apartment unit is pre-sold in 2004 for $150,000, 5% ($7,500) is deposited. If that same unit is ‘flipped’ following closing in 2006 at a price of $250,000, the speculator recognizes a $100,000 profit on a $7,500 investment (a return of 1,333%).
5. STRATEGIES FOR THE FUTURE

The data and analysis contained in this paper indicate the following:

1. This paper describes the apartment condominium development industry in Calgary as having the following characteristics:
   a. Dominated by a ‘pre-sale’ model which reduces sales risks, but creates real option opportunities for small investors,
   b. Exceptional returns for individual unit purchasers during period of rapid price increases,
   c. Extremely limited industry capacity to respond to changes in market demand,
   d. Supplier limitations, including slow approval processes, which further limit the industry’s ability to respond to changes in market demand.

2. Exogenous changes in net-migration and working wages, combined with industry characteristics (noted in point 1) resulted in rapid-price housing increases of 54% from October 2005 to June 2006.

3. Excessive returns for purchasers (option holders) created a ‘false’ market that has driven apartment developers to provide a delayed over-supply of new apartment housing product.

What a mess. Currently (December 2008), market demand has waned significantly and active projects are being halted in response to (1) higher than anticipated costs, (2) tight credit markets, and (3) indications that purchasers are unwilling to complete their purchase transactions. Unfortunately, all active developers in the Calgary apartment industry are private companies and so it is not possible to assess financial returns. However, discussions with industry representatives indicate that very few apartment projects from 2006 to 2008 have made a profit, and at least one major developer has voluntarily halted its major projects and ceased business (Resiance). The City of Calgary planning department now reports that 6 projects are inactive, and it is expected that the situation will worsen.

To respond effectively, developers need to find ways to maintain excess capacity, and either reduce their dependence on pre-sales that effectively represent option holders (and potential hostage holders), or establish mechanisms to distinguish between real and false market demand. Research from the strategy literature indicates the apartment developers should consider the following strategic directions in order to be positioned to exploit future similar circumstances, while minimizing the costs and risks associated with ongoing development:
1. Actively pursue ‘strategic options’ (Raynor, 2007) that allow the firm to position itself for future opportunities, without risking the core business. For example, purchasing and holding land with lower density housing for re-development (intensification), and over time obtaining the necessary entitlements to facilitate re-development at a chosen opportune time. It is common for large suburban developers to hold land for 10 plus years before commencing development. Generally, these lands are zoned well in advance of development to allow capacity to address market shifts.

2. Revisit financing strategies that rely solely on pre-sales models. Ideally, a real estate development project will have a mix of pre-sales and post-completion sales (i.e. after all the costs and market prices are known). However, high ratio financing models require significant pre-sales. From 2005 to early 2008, it was common for developers to obtain 100% of hard cost financing from financial institutions, with the trade-off of an 80% plus requirement for pre-sales. Unfortunately, this model relies on price inflation to keep purchasers (many of who are option holders) committed, and steady cost control to secure developer profits. An alternative would be higher participation in equity or mezzanine financings that would not require the same level of pre-sales, along with longer-term payout expectations.

3. More effective processes are required to identify whether options to individual unit purchasers represent real (i.e. a intentional resident of the unit) or false (i.e. an investor interested in re-selling the unit) market demand. Possibly industry associations could aid in establishing reporting and statistical systems that provide industry –wide knowledge of the option risk developers face.

4. In order to minimize competitive rivalry caused by a ‘herd’ approach, individual developers are encouraged to seek ways to differentiate their offerings – seek niche opportunities that provide unique and difficult to imitate or substitute offerings.

The impact of the 2005/2006 rapid price increases is very much still in-play, and the final chapter will not be written for a year or more as many of the projects started in March 2008 will take 18 months to complete, it is expected that the full impact will be known in the fall of 2009. Between now and then, one can only speculate on how many projects will be halted, how many will be completed, and what the occupancy and re-sales activity levels will be. I will be watching with great interest.
Exploring Issues of Importance to Canadian Commercial Real Estate Industry