

In the current economy, it is difficult to find items with a shorter shelf life than an economic forecast. A good example is the assumption for much of 2008 that the major Texas metropolitan areas would be brighter spots in an otherwise dismal scenario, but Houston in particular, with a then-robust energy-dependent economy, would outperform the national economy. However, in the last few months of 2008 oil prices reacted to weakened demand by posting unprecedented drops. As we move through 2009, the question arises: Will Houston (and other markets with a strong local energy presence) find the local energy economy a curse and not a blessing?

Considering energy price scenarios and their impact on local markets, the focus of this review is on Houston, TX and Calgary, Alberta. These two cities are the energy capitals of the U.S. and Canada, respectively, and they stand alone among major North American cities for the percentage of their economies that are energy-dependent. No other markets combine both high energy concentrations and absolute size to such a degree.

## Houston market description:

Houston is the fourth largest MSA in the U.S., with an estimated population of 5.79 million and total jobs of approximately 2.6 million.<sup>1</sup> The Texas Work Force Commission reports total employment in Houston through December 2008 of 2,628,100 jobs, an increase of 22,500 jobs over the prior year. While the job growth was positive, the percentage increase of .9% over the prior year highlighted the slowing economy, as in the two prior years Houston's job growth rate was approximately 5%.

A subset of the total employment numbers is a figure called base employment, which is the portion of a region's economy producing goods or services for export outside the region. It is in the base employment numbers, rather than total jobs, where one begins to recognize the energy presence in Houston, as energy-dependent jobs make up 50.4% of total base employment. To give some sense of the scale of the Houston energy sector, in July 2008, the Houston MSA had 29% of the nation's jobs in crude petroleum and natural gas extraction and 13.2% of the jobs in support activities.<sup>2</sup> While the thought of over 50% of the base employment jobs in an area the size of Houston being attributed to a single industry is startling (a ratio which has been fairly consistent for a decade now), it is actually an improvement from the 1980's and 1990's. In 1991, energy-dependent jobs were 64% of the primary job base, beginning a steady decrease until 2003, when the ratio "bottomed" at 47%, before moving back upwards slightly through 2008.<sup>3</sup>

Not surprisingly, this movement correlates with energy markets, as nominal domestic prices per barrel of crude were at or near \$20 for most of the same time period, with increases beginning in 2003 which reached the \$140 range by the summer of 2008.<sup>4</sup> During the period of low oil prices, Houston's energy-dependent job creation generally trailed total base employment growth (see chart following). As oil prices increased during the 2001-2008 time period, energy dependent employment growth accelerated rapidly, peaking at a 7% increase in 2006.<sup>5</sup> This, along with increases in base employment growth contributed to an increase in office jobs, with almost 90,000 office jobs created and a corresponding 14.4 million square feet of office absorption during that time period.<sup>6</sup>

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<sup>1</sup> TWR Office Outlook—Houston; Winter 2009," Torto Wheaton Research, p. 1

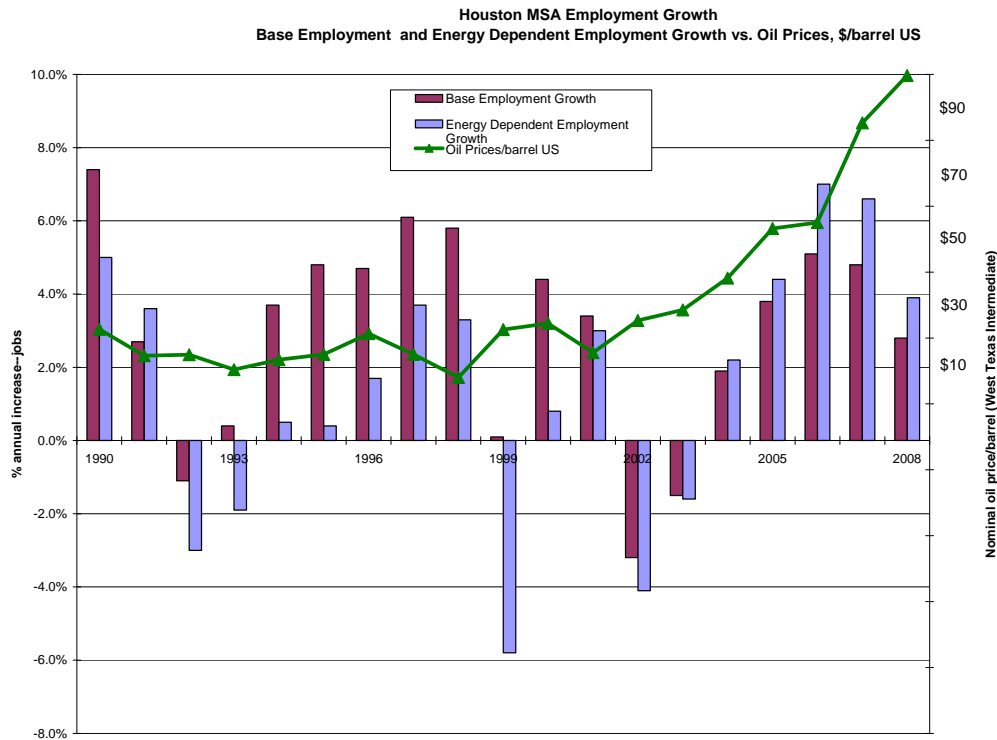
<sup>2</sup> "Energy Headquarters" ("Energy Industry Overview"), Greater Houston Partnership, <http://www.houston.org/economic-development/houston-facts/index.html>

<sup>3</sup> DATABook Houston, December 2008, Institute for Regional Forecasting, Center for Public Policy, University of Houston, pp. 2 and 5.

<sup>4</sup> Ibid, p. 46

<sup>5</sup> Ibid., p. 5

<sup>6</sup> "TWR Office Outlook—Houston; Winter 2009," Torto Wheaton Research, p. 3



Source: DATABook Houston January 2009, Center for Public Policy, Institute for Regional Forecasting, University of Houston, Houston, TX, pp. 2, 8 & 47

Any energy job creation during the 1990’s, to the extent there was any, was at least partially due to energy company consolidation during that period with many regional offices in smaller cities moved to Houston. There are now few major energy companies without a Houston presence but this is true at every level of the industry. Major and mid-major companies are headquartered there; service companies compete for space with exploration and production companies. Natural gas marketing and natural gas transmission companies are major players in the city. With the largest energy companies seeking to diversify their product line away from fossil fuels, it is an important center for renewable energy research.

Energy companies in Houston fall into two broad segments—upstream (oil and gas exploration, oilfield equipment manufacturing, pipeline transportation) and downstream (refining and chemicals manufacturing). Upstream energy represents approximately one-third of Houston’s economic base, down from 54% in 1986, and downstream energy is a little less than half of the upstream presence, with approximately 15.5% of the total economic pie.<sup>7</sup> Geographically, the downstream presence is most visible on the city’s east side, where refineries and other chemical plants are numerous.

While energy is clearly the dominant industry in Houston, there are other vibrant parts of the Houston economy. As a corporate headquarters city, Houston ranks second only to New York in the U.S. with 25 of the 2008 Fortune 500 companies headquartered there. More than half of the world’s 100 largest non-U.S.-based corporations have operations in Houston. The Port of Houston is the 14<sup>th</sup> largest port in the world, and it is first in the U.S. in terms of volumes of foreign waterborne tonnage and second in total tonnage.<sup>8</sup>

<sup>7</sup> “Economic Base Diversification,” Greater Houston Partnership, <http://www.houston.org/economic-development/houston-facts/index.html>

<sup>8</sup> GHP, Ibid

The medical industry is also an important facet of the Houston economy, especially the Texas Medical Center (TMC), which has the largest concentration of medical personnel in the world.<sup>9</sup> The TMC sits on 1,000 acres less than three miles south of the Houston central business district. It is composed of 46 institutions --23 private not-for-profit health institutions and 23 government agencies. In 2007 the TMC had 73,600 employees, 5.5 million patient visits, over 10,000 international patients, and 33,000 students. More than \$1 billion in research was conducted by its members.<sup>10</sup> The TMC is currently in the middle of the greatest expansion in its history, with projects recently completed, under construction or planned through 2014 totaling over \$7 billion. This will increase the Medical Center to 39.6 million square feet, or approximately the size of Houston's Central Business District, with a corresponding increase of over 30,000 employees by 2014.<sup>11</sup>

Although Houston still had positive job creation in 2008, the decline in the growth rate pointed to a slowing economy. Other indicators were an unemployment rate of 6.5% in January, up from 4.6% a year earlier and the highest level since 2004, and initial claims for unemployment benefits, which rose 18% in December over November and were up over 100% over December 2007.<sup>12</sup>

## Houston Real Estate Markets:

Houston's history of job growth has translated into an active (and often volatile) commercial real estate markets. The city has one of the largest office markets in the U.S., and the number and quality of new jobs created have also driven significant retail and multi-family construction. Although not a distribution center on the scale of Dallas or Chicago, the presence of the Port of Houston and the amount of energy industry service activity, plus the sheer mass of the Houston economy, has given it a sizable industrial component as well. The four major property types, reviewed below in more detail, provide the bulk of the commercial real estate investment in Houston.

At year-end 2008, Delta Associates, a real estate market research, valuation and consulting firm which follows the Houston market, reported 236 million square feet of office space in the Houston metro area. The reported vacancy rate, including sublet space, was 11.7%, up from 10.9% the prior year. Torto Wheaton, a real estate research firm owned by CB Richard Ellis and another firm providing market data for Houston (among others), reports approximately 6.5 million square feet of space under construction to be delivered in 2009 and beyond, with approximately 35% pre-leased. If absorption stays flat and no additional pre-leasing occurs, the vacancy rate would exceed 13% as the new construction comes on stream. However, Torto Wheaton expects absorption to instead turn negative (approximately 1.7 million square feet), predicting a vacancy rate topping around 18% by 2011.<sup>13</sup> Unlike the energy boom of the 1980's, however, the supply pipeline is relatively modest and on a going-forward basis it has been effectively halted by the credit crunch, thus reducing the negative impact on the market by minimizing the supply overhang which will have to be worked off when the market starts to recover.

Delta Associates figures for industrial space show 441 million square feet in Houston. At year-end 2008, overall vacancy was 5.7%. Space under construction will add another 7.2 million square feet to the market in 2009. Holliday Fenoglio Fowler predicts the industrial market will feel the effect of cutbacks in the energy sector,

<sup>9</sup> [www.texmedctr.tmc.edu/root/en/GetToKnow/FactsandFigures/Facts+and+Figures.htm](http://www.texmedctr.tmc.edu/root/en/GetToKnow/FactsandFigures/Facts+and+Figures.htm)

<sup>10</sup> Ibid

<sup>11</sup> "Texas Medical Center Expansion Projects," Greater Houston Partnership, <http://www.houston.org/economic-development/houston-facts/index.html>

<sup>12</sup> L.M. Sixel, "December Surprise: Houston Job Growth Rose," *Houston Chronicle*, January 23, 2009 and "Houston Unemployment Rate Surges to 6.5%," *Houston Chronicle*, March 5, 2009

<sup>13</sup> "TWR Office Outlook—Houston; Winter 2009," Torto Wheaton Research, p. 3

reduced shipping levels in the trade industry and decreasing demand for space as companies cut costs in a time of decreasing profits.<sup>14</sup> As a result, it is expected leasing of space under construction will be slower than normal, absorption is likely to be negative, and vacancy rates for industrial space in Houston should rise in 2009. Like the office market, new construction will be sharply limited by credit restraints and the difficulty in leasing new space.

Retail space totals approximately 180 million square feet, or 31.8 square feet of retail space per capita. This ratio places Houston second in the nation, behind only Phoenix, and compares with a national average of 20 square feet per capita. At the end of the third quarter 2008, the retail vacancy rate was 15.3%, the highest such rate since the third quarter of 2003. Approximately five million square feet of space was added in 2008, but development in 2009 is projected to not exceed 1.5 to 2 million square feet.<sup>15</sup> Even though space under construction is approximately two-thirds pre-leased, vacancy rates are still expected to increase as store closings mount.

With an estimated 542,000 units, Houston's apartment market is the fourth largest in the U.S. and had a vacancy rate of approximately 7.5% at year-end 2008. There are approximately 9,000 units under construction and scheduled to be completed in 2009. This would bring supply to approximately 551,000 units by year-end 2009, according to M/PF.<sup>16</sup> M/PF also projects approximately 7,000 units to be absorbed in 2009, with a vacancy near 9% by year-end. However, flat absorption for the overall market would move vacancy to 10% or slightly higher. The company also forecast average rents to increase slightly in 2009, but that forecast was made before year-end 2008 and the economic news since then for Houston has been worse than anticipated, resulting in already-softening rents. Since it now appears Houston will likely lose jobs in 2009, a re-forecast would almost certainly show negative absorption and thus a higher vacancy factor than originally forecast. A mitigating factor in expected softness in the market is tightened credit requirements for home buyers, which make it more difficult for first-time buyers to get in new homes. There is evidence to indicate this helped absorption in 2008 and it may soften the expected impact of new supply and potential job losses.

### Energy Price Impact on Houston:

The consensus prediction in mid-2008 was Houston would miss much of the downturn effects because of a strong energy market; the realization in early 2009 is the combination of low energy prices and a deep global recession is already having a major impact on the area. With the question of whether or not Houston would dodge the downturn answered in the negative, and with some clarity developing around the short-term effects of the current economic events, the next forecasting challenges are the depth and timing of a bottom, the length of the stay in a trough and the timing and strength of a recovery.

At least short-term, the depth is becoming clearer, as the increasingly negative tone of local forecasts highlights. The University of Houston's Institute for Public Policy is one of the most prominent economic forecasters for the Houston market, and the periodic economic overviews by its head, Dr. Barton Smith, are closely watched. In mid-2008, the institute was projecting Houston might gain 25,000-30,000 jobs in 2009. By early October, it had revised numbers downward to a projection of 9,000 jobs lost. At the end of October, as the extent of the financial meltdown and its impact on real estate development in particular became more evident, the institute predicted the loss of construction jobs would push jobs lost to around 19,000. Dr. Smith's last estimate was in the range

<sup>14</sup> "OnPoint Houston," Fourth Quarter Report 2008, Holliday Fenoglio Fowler L.P., p. 4

<sup>15</sup> All statistics in this paragraph from "Transwestern Outlook, Houston Metro Area, Year-End 2008," a publication of Transwestern and Delta Associates, p. 15

<sup>16</sup> "M/PF-TWR Multi-Housing Outlook Houston, Winter 2009," M/PF YieldStar, Inc. and Torto Wheaton Research

of 25,000 lost jobs for 2009 and more recent conversations with other observers suggest it would be no surprise if the number is increased. For instance, a conversation in early February with Skip Kasdorf, an economist with the Greater Houston Partnership, yielded an estimate of a 2009 loss of 45,000 to 50,000 jobs. A prominent local real estate executive gave a range of 30,000 to 50,000 jobs lost.

Many of the casualties in 2009 will be in construction, retail and finance. While the energy industry will be affected, it appears different segments of the industry will (and already are) reacting differently. The CEO of one of the major energy companies in Houston says his company will continue to hire in 2009 and perhaps beyond, depending on what happens with energy prices. He noted that not just his company but other “majors” are graying companies, with a sizable portion of their employment base approaching retirement. He said his company is actively seeking to hire young, highly-educated employees and has strong recruiting programs at the universities which produce such talent.

His statement is reinforced by a recent Houston Chronicle article quoting other industry sources with similar plans.<sup>17</sup> The article notes the contractions in the energy industry which began in the 1980’s and continued until 2000 cost the industry half a million jobs. Enrollment fell at universities producing the engineering, geology and other technical degrees the industry now seeks. As a result, the majority of the work force in the industry is over 40 years old, with nearly one-third over 50. The drop in supply of skilled workers has led to the current squeeze, and as a result companies are reluctant to stop their hiring programs. As companies reacted somewhat cautiously to increasing hiring as oil prices began to move upward in the early part of this decade, some are now hesitant to reduce staff based on current price levels, or at least not until they are convinced prices will not move off the bottom for some time. It appears for the “majors,” employment decisions are somewhat inelastic when compared to the price of oil, with a clear attempt to make staff level decisions based on long-range needs.

The “majors” will also react differently than other companies because of different cost structures and cash positions. A cash-rich company such as ExxonMobil, for instance, is not restricted by credit market issues. Companies such as this will continue to develop assets in 2009. ExxonMobil’s CEO said in a March 5, 2009 press release that over the next five years the company would spend \$25 to \$30 billion per year “to develop new oil and gas projects, increase our production of higher value refined products and grow our chemical business,” which compares to their 2008 expenditures of approximately \$26 billion.<sup>18</sup> Shell announced at the end of January that capital expenditures for 2009 would be virtually unchanged from 2008 (\$31 billion in 2009 versus \$32 billion in 2008), with no job cuts planned.<sup>19</sup> Industry sources also note that companies such as ExxonMobil and Shell have lower proved reserves replacement costs per barrel than companies without similar economies of scale, and this cost difference provides a further operating advantage.

For servicing or drilling companies, or for smaller companies for whom access to debt is vital, the situation is much different. For instance, Schlumberger, the world’s leading oilfield services provider, has already announced 5,000 cuts worldwide.<sup>20</sup> The impact on drillers and others working in the production end of the business is highlighted by Baker Hughes’s drilling rig count, which is one of the industry barometers. It showed active domestic drilling rigs peaking at 2,031 in use in September 2008, dropping by 36% to 1,300 units as of February 20, an average

<sup>17</sup> Kristen Hays, “Energy Industry Is Intent on Hanging On To Its Talent,” Houston Chronicle, Feb. 2, 2009

<sup>18</sup> ExxonMobil press release dated March 5, 2009

<sup>19</sup> Kristen Hays, “Shell Reports Profit Drop But Announces No Job Cuts,” Houston Chronicle, January 29, 2009

<sup>20</sup> Brett Clanton, “Schlumberger Will Cut More Jobs After Profits Decline,” Houston Chronicle, Jan. 23, 2009

decrease of 46 rigs per week in 2009.<sup>21</sup> Approximately 80% of those rigs are drilling for natural gas and the balance for oil. Until energy prices recover (particularly natural gas), drilling companies, companies that manufacture or service drilling rigs, and other related companies can be expected to reduce staff. While many of these cuts will be in non-office employment and not all will be in Houston, management and support jobs lost in Houston will affect all segments of the real estate market.

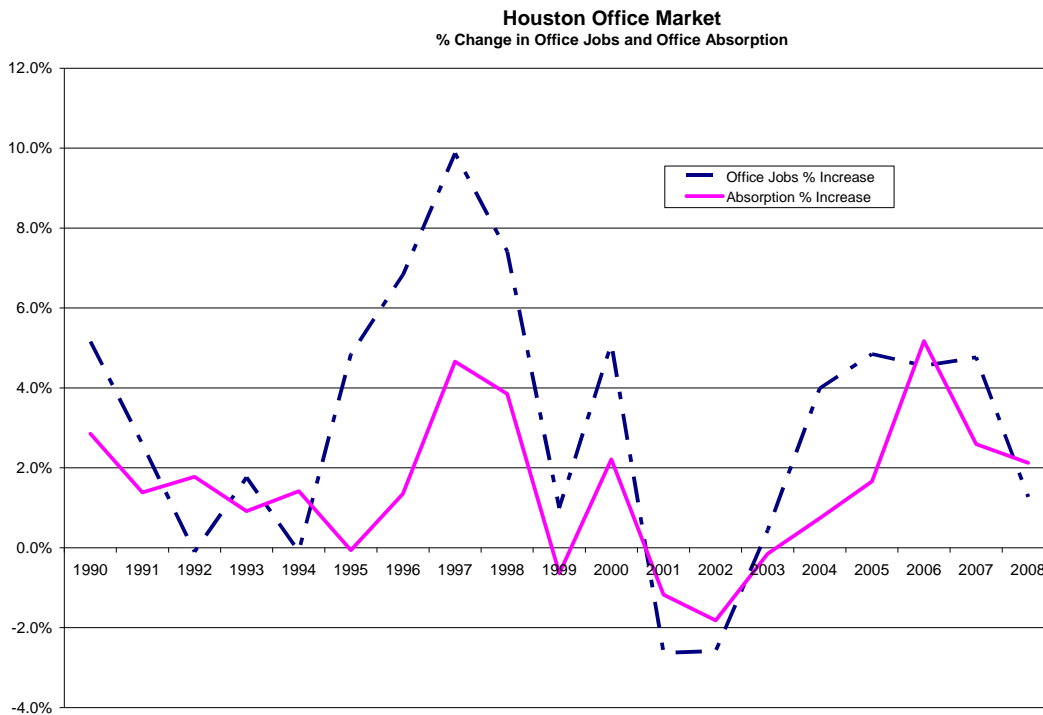
Recent history gives some indication of the impact of such job losses on the Houston markets, focusing narrowly on the office market as an example. In 2001 and 2002, with the combination of problems in the tech industry, Enron-precipitated issues in the energy trading industry and the collapse of Arthur Andersen, Houston lost office jobs. The graph on the following page measures the percentage change in office jobs in Houston versus percentage change in office space occupied (office absorption stated as a percentage rather than as square footage). The reduction of approximately 22,000 office jobs resulted in a 4.2 million square foot decline in occupied office space during the two-year period, which was an even greater loss in office space occupancy than during the oil crash of the 1980's.<sup>22</sup>

Although it is difficult to compare numbers from different sources, Bureau of Labor Statistics data for the same time frame show the 22,000 total jobs lost in Houston in the decline of 2001-2002 approximately equal to the office jobs lost, as shown in the Torto Wheaton statistics. This suggests that as Houston was losing office jobs, it was gaining jobs slightly in other areas. It also highlights both the importance of the office jobs statistic in projecting the impact of the current downturn on the Houston office market and an area of concern in the previously referenced Torto Wheaton office market projections. Torto Wheaton predicted 18% vacancy in the office market by 2011 from a combination of unleased new supply coming on stream and a projected 1.7 million square feet of negative absorption. However, that prediction was prior to some of the more pessimistic job loss estimates. If 22,000 lost office jobs resulted in 4.2 million square feet of negative absorption in 2001-02, and current expectations are 2009 job losses may reach 50,000, then only 40% of the total jobs lost would have to be office jobs to equal the 22,000 office jobs lost in 2001-02, which would imply Torto Wheaton's expectations for negative absorption may be understated. While we can't know now how many office jobs will be lost, it is easy to see that the impact on the office market could be even greater than is currently forecast. With the office market as an example, it is apparent that rather than saving Houston from recessionary effects, the energy industry will be a contributor to whatever negative impact the area will feel.

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<sup>21</sup> Spreadsheet titled "U. S. Rig Report 2/20/09," Baker Hughes web site  
<[http://files.shareholder.com/downloads/BHI/558156520x0x274123/DB7BA36D-4E8F-44EC-B5FC-AD3CF6EF758F/US\\_Rig\\_Report\\_022009.xls](http://files.shareholder.com/downloads/BHI/558156520x0x274123/DB7BA36D-4E8F-44EC-B5FC-AD3CF6EF758F/US_Rig_Report_022009.xls)>

<sup>22</sup> "TWR Houston Office Outlook, Winter 2009," Torto Wheaton Research, p. 3.



Source: Torto Wheaton Research Houston Office Outlook 2009, p. 3

While the future health of the energy industry is an important factor in Houston’s recovery, it isn’t the only one. The Greater Houston Partnership (GHP) notes, “For many years, three exogenous factors have guided the course of Houston’s economy: the health of the national economy, the value of the dollar against foreign currencies and energy prices.”<sup>23</sup> Houston’s economy has grown with rising energy prices despite slowing growth in U.S. GDP and a strengthening dollar (as in 2000), but when all three factors work against it, which happened in 2001, job growth turned negative and the real estate markets softened. With all three factors working in its favor, Houston had strong growth from 2002 until mid-2008. Now, with all three factors in unfavorable territory, the city is moving toward negative growth.

The GHP list simply assumes a fourth item: the availability of credit. Larry Heard of Transwestern, a national office management, leasing and development company headquartered in Houston, noted his conversations with energy industry contacts suggest the freeze in capital markets has had, in many respects, as big an impact on some energy companies as the decrease in commodity prices.<sup>24</sup> As noted earlier, the “majors” can continue exploration and production activities from cash on hand. For most other companies, those activities are financed, which is now very difficult to obtain. This additional variable makes a recovery more difficult to predict, although the nature of this recession and the supply-demand situation in world energy markets have interesting implications for when the rebound happens.

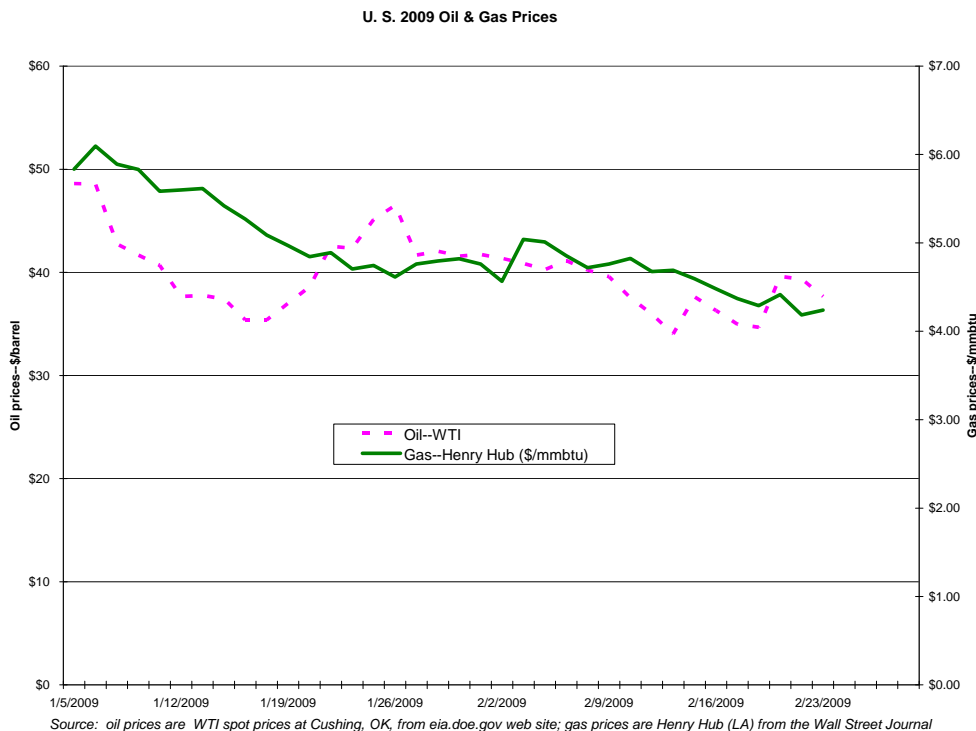
These implications are addressed in a report prepared by Adam Legge, an economist with Calgary Economic Development, which points to the nature of an energy price recovery and what it will mean to the economies of

<sup>23</sup> “External Economic Drivers,” Greater Houston Partnership, 1/30/2009, <<http://www.houston.org/pdf/research/15LW001.pdf>>

<sup>24</sup> Larry Heard, President and CEO, Transwestern, personal interview, February 2, 2009

not just cities such as Houston and Calgary, but macroeconomic impact as well. Legge says, “The current economic climate, and ultimately oil pricing, is creating a dangerous future scenario for oil prices. At the current price, there is little investment in new supply....With limited supply growth occurring in the world, a dangerous condition is being set for when global economies turn around and global oil demand grows at a more robust pace. Conditions may exist in the next few years where global demand growth outstrips supply capacity, pushing oil prices up significantly. Therefore, once the global economy turns around, it is likely that we could see oil prices move sharply upwards, creating favorable conditions for [the] energy sector, but also creating significant inflation and challenges to rebounding economies.... With the speed and magnitude of the drop in oil prices and the impact that has had on supply capacity, we risk an economic whipsaw effect whose end point and equilibrium is unknown.”<sup>25</sup>

Legge’s analysis suggests continued volatility in energy markets and a potentially quick return to energy price levels which would generate strong expansion by energy companies. The timing of this turn will be important to Houston’s recovery, of course, since history has shown strength in energy prices alone can at least stabilize the Houston economy or perhaps generate growth. Industry sources indicate that stabilized oil prices at or above \$75 per barrel would generate vigorous exploration, likely leading to solid job growth among energy companies. From \$40 to \$60 per barrel, some drilling activity will be maintained, but difficult production areas will go unexplored. The Department of Energy’s Energy Information Administration (EIA) February 2009 outlook projects oil (using West Texas Intermediate [WTI] as a benchmark) to be below \$50 through the first quarter of 2010, reaching \$60 by the late 2010.<sup>26</sup>



<sup>25</sup> “State of the Economy: Calgary Semi-Annual Economic Review, December 2008,” Calgary Economic Development, p. 5, <[http://www.calgaryeconomicdevelopment.com/files/QReports/State\\_of\\_the\\_Economy\\_Dec\\_2008\\_FINAL.pdf](http://www.calgaryeconomicdevelopment.com/files/QReports/State_of_the_Economy_Dec_2008_FINAL.pdf)>

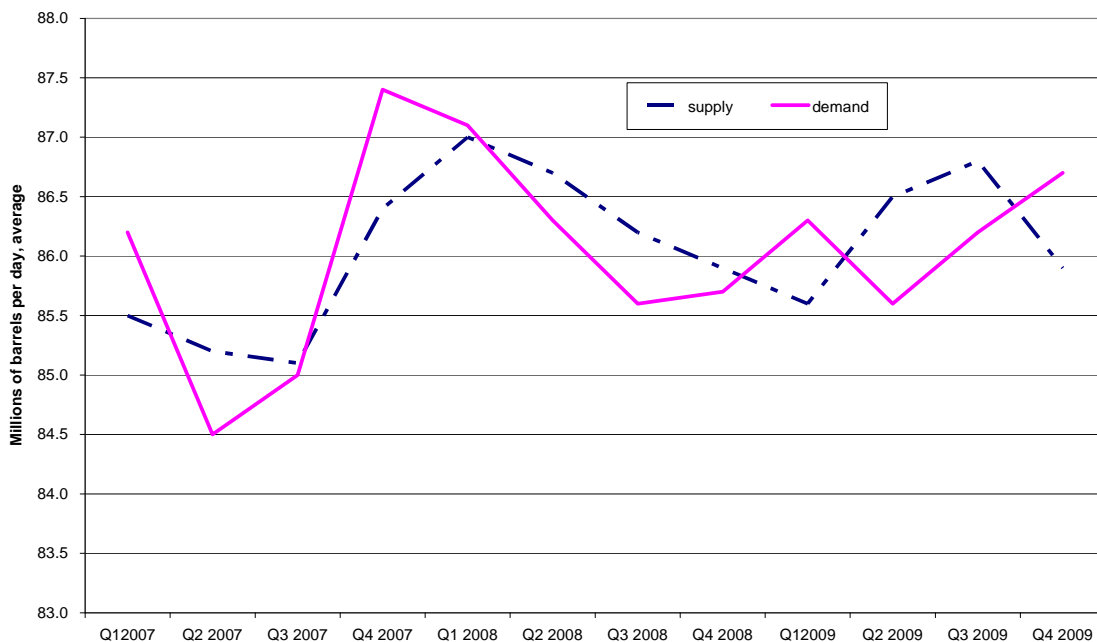
<sup>26</sup> “Short Term Energy Outlook,” Energy Information Administration, February 10, 2009 release, tables 2, 3a and 9a. <<http://www.eia.doe.gov/emeu/steo/pub/feb09.pdf>>

The forecast for average wellhead prices for natural gas (in dollars per thousand cubic feet) shows prices moving in a range between \$4 and \$5.38 through 2010. Because costs of drilling vary so much from gas field to gas field, and because companies' costs of production also vary, it is difficult to draw a price line for gas above which drilling is always profitable, but a stable price above \$6 reportedly generates moderate exploration, with drilling activity likely to be vigorous when prices are in a range of \$8 to \$10.

If the EIA forecasts are accurate, oil exploration and production activity should pick up in 2010 but natural gas activity would remain anemic until at least 2011. Since most U.S.-based drilling rigs are natural gas rigs, this means at least some segments of Houston's energy industry will remain torpid through 2010. Oil prices should be at a level to minimize job losses, but certainly will not generate the sort of growth the real estate industry needs to see vacancies drop.

The assumption behind the price forecasts is a bottom to the current recession by year-end 2009 and recovery in 2010, which would mean energy demand begins to increase again. The downside risk to the forecast, and thus to a recovery for Houston real estate markets, is a deeper recession than predicted and a longer period before demand recovers.

**World Energy Supply and Demand**  
2007 and 2008, 2009 Forecast



Source: Mike Rothman, International Strategy and Investment, "Integrated Oil Update, Feb. 17, 2009," p. 3

Another risk to the forecast could be U. S. energy policy. Recent announcements from the Obama administration indicate a plan to seek changes to accounting policies and existing tax provisions which have benefited oil and gas companies' exploration activities, and also proposed significant new taxes on producers. The changes, if implemented as proposed, would probably have a positive impact on price because of the effects it would have on new domestic supply, but would have a significant negative effect on energy company profitability and

domestic activity. Opposition to the plan reaches across party lines in energy states, but at this point it is impossible to predict the final version of the proposed changes and thus the impact on the energy industry, and, ultimately, Houston. Legislative action which crimps long-term domestic exploration and production activity, however, would also clearly restrict future growth for Houston real estate markets.

Finally, any energy price forecast has to be qualified by noting it assumes no significant geopolitical events which dramatically affect supply or demand, or other unexpected economic factors. The growth of demand in China and India, among others, has reduced global inventory to a point where there is little cushion in the system, and thus interruptions in the past which would have had marginal effect on prices can now cause considerable, and painful, price movements. This reduced margin is to a great degree responsible for increased volatility in energy prices, and this will not improve in the near future. Another emerging factor having an impact on oil prices in 2009 are fears of inflation generated by the scope of economic stimulus actions. These concerns have driven some buyers into commodities, including oil, as an inflationary hedge. This buying action has increased oil prices at a time when demand figures would suggest prices should be weakening, not strengthening, and adds another layer of unpredictability to an already volatile market.

It is apparent 2009 will be a challenging year in Houston, as elsewhere. However, even if the projections of the start of a recovery in the national economy in 2010 are correct, it appears energy prices are unlikely to be in a position to lead a recovery for Houston then, and instead it should be a year which simply sees the energy industry holding its own. In that scenario, vacancies would probably continue to increase for all major real estate property types as the last of new product currently under construction comes on line.

If the recession goes deeper and lasts longer than projected, then instead of the early scenarios of Houston being cushioned from the effects, it may find them temporarily more painful than other metro areas. A downturn which reduces energy demand more than expected, thus keeping prices of oil and gas at levels well below those required to sustain new exploration and production for a sustained period of time, would eventually force cutbacks at every level in the industry, as seen in the 1980's. The three Houston growth factors highlighted by the Greater Houston Partnership would all still be negative for Houston in this situation, as it would hurt the energy industry, affect the national economy and probably keep the dollar at a level which limited import-export activity. Any possible changes in oil and gas tax and accounting structures would further exacerbate issues.

Barring legislative changes which permanently change the face of the domestic energy industry, then beyond 2010, Houston should be well positioned. Since Houston's past suggests it can have moderate growth if the energy industry is prospering but the national economy isn't, Houston would likely outperform other major metropolitan areas in the U.S. in the early stages of a recovery. As Legge suggests, a return to higher energy prices (sufficient to generate strong exploration) at some point is inevitable. In that instance, Houston should see growth in a similar fashion to other such energy events in the past. If the national economy is recovering as well, then the outlook for Houston would be very good.

In conclusion, Houston will almost certainly lose jobs in 2009 and perhaps into 2010, with predictable implications for the various commercial real estate property types in Houston. Vacancies are likely to climb into the mid-teens for office product in 2009, rents will soften and concessions such as free rent and higher tenant finish allowances will become more prevalent. These trends are likely to continue into 2010 and office vacancy rates may approach the levels seen in the mid-1990's and in 2003-2004, when they approached 20%. However, new supply coming into the market now is limited and conditions in the credit market are preventing additional construction. Beyond 2010, it is likely energy prices will both be high enough and stable enough to give energy companies the incentive

and the confidence to expand operations, which will generate new job creation in Houston. The office market should begin to see positive absorption then but the strength of the recovery and the length of time it will take to see the market back to vacancy and rent levels seen in 2007 and 2008 are difficult to forecast because of the problems in forecasting the timing and vigor of a recovery of the broader national economy.

Multifamily properties will react in a somewhat similar fashion, although two variables which do not affect the office market cloud forecasts for apartment demand through 2010. First is credit availability for single-family housing; if underwriting standards remain higher, then tenants who may have vacated apartments to buy houses will be renters instead, which will have a positive impact on multifamily occupancy. The offset is job losses or concerns about job losses, which drive more apartment occupants into living with roommates or remaining at home, thus reducing the supply of potential apartment tenants. Beyond 2010 a strengthening job market should eliminate this as an issue, but it is assumed credit standards will remain at more traditional levels. Thus as energy companies begin to add jobs, a return to single-digit vacancy levels in the apartment market could be relatively quick.

The industrial market begins the downturn in stronger position than other property types and should weather it easier, but its recovery is tied not just to energy markets but also to the broader economy and to trade flows, so the strength and timing of its recovery is difficult to predict. The retail market will probably plateau at a higher vacancy level than in past downturns because of the current large per capita supply of Houston retail, so location and design characteristics which drive retail success will be doubly important in a marketing environment likely to be less forgiving of property flaws.

## Calgary Overview

Located in southwestern Alberta province, Calgary is a city with a current population of approximately 1.25 million, projected to continue to grow at greater than 2% per year over the next few years. At year-end 2007, its total labor force was 735,000, up a total of 33.8% over the period 1998-2007.<sup>27</sup> Its growth rate was over 30% greater than the next closest Canadian city. Its unemployment rate is 3.7%, up from 2.9% at year-end 2007, versus the national unemployment rate of 6.3%.<sup>28</sup>

Calgary is to the Canadian energy industry what Houston is to the U. S. energy industry. It is the headquarters for 1,800 energy industry companies and is also a center for financing, designing and constructing electric power plants.<sup>29</sup> The Canadian national energy regulator, the National Energy Board, is located there. According to Calgary Economic Development (CED), the development agency for the city, no other industry in the country is as highly concentrated in an area as the energy industry is in Calgary.<sup>30</sup> Legge says the “true” energy companies (exploration and production companies) represent 18% of the Calgary economy’s GDP, but that doesn’t begin to measure energy industry impact. He noted the industry had outsourced many of their professional services some years ago, and the companies who do administrative services (e.g. legal, accounting, design and engineering) are not included in the 18% figure. Another observer notes “the oil and gas sector is anecdotally said to drive

<sup>27</sup> “Relocate and Expand: Labour Force/Employment,” CED, <<http://www.calgaryeconomicdevelopment.com/relocateAndExpand/RECalgaryEconomy/labourforce.cfm>>

<sup>28</sup> “Market View: Calgary Retail, Fourth Quarter 2008,” CB Richard Ellis <<http://www.cbre.ca/EN/Research/>>, p. 3

<sup>29</sup> “Calgary: A Global Energy Leader,” Calgary Economic Development, sector profile-energy <[http://www.calgaryeconomicdevelopment.com/files/Sector%20profiles/CED\\_Profile\\_Energy.pdf](http://www.calgaryeconomicdevelopment.com/files/Sector%20profiles/CED_Profile_Energy.pdf)>

<sup>30</sup> Ibid

approximately 80% to 90% of the business activity conducted by Calgary firms that are not defined as 'energy' companies per se."<sup>31</sup> If this estimate is correct, then Calgary is even more energy-dependent than Houston is.

Calgary is an energy capital because of proven reserves in the province of Alberta. An undated profile on the Calgary Economic Development web site provides some sense of the scale of the recoverable oil, gas and coal in the province. Alberta has 60% of Canada's coal reserves. One area, the Western Canadian Sedimentary Basin, has reserves of five billion barrels of conventional oil and 60 trillion cubic feet of natural gas. Its oil sands deposits contain one-third of the world's known oil reserves, with an estimated 1.6 trillion barrels of oil in place, second behind Saudi Arabia. However, only 175 billion barrels are estimated to be recoverable with current technology.<sup>32</sup> Of this, 20% are recoverable through open-pit mining and the other 80% through *in situ* operations involving a relatively new recovery method called steam-assisted gravity drainage (SAGD). These reserves give Alberta approximately 75% of all Canadian oil and gas production.<sup>33</sup>

Similarly, the province has estimated reserves of almost 600 trillion cubic feet of natural gas, but only 84 trillion feet are recoverable via conventional technology, with the rest located in coal seams whose recovery will be dependent on the development of new methods. CED states that in 2003 the province supplied 11% of all U.S. crude oil imports (5% of U.S. demand) and two-thirds of U.S. natural gas imports (12% of demand).

## Calgary Real Estate Markets:

The office market totals 56.2 million square feet, with an overall vacancy factor, including sublease space, of 6% at year-end, up from 1.8% a year prior.<sup>34</sup> The office market is concentrated in downtown Calgary, with almost 2/3 of the office supply in the city considered to be downtown office. Approximately 2.9 million square feet of space was completed in 2008, with 20% still vacant. Another 7.5 million square feet is still under construction, with 66% of that pre-leased.<sup>35</sup> The completion of the space currently under construction would push supply to approximately 63.7 million square feet, and if none of the currently unleased space under construction is leased before it reaches the market, then the vacancy factor would move over 9%. Since the market saw some negative absorption in the fourth quarter 2008, a trend likely to continue into 2009, the office market may see vacancies in the double digits in 2009 and into 2010. While a significant change from its virtually completely leased status at year-end 2007, this would still be a relatively strong performance versus most U.S. markets.

<sup>31</sup> "Calgary Office Market Forecast Study: 2006-2025," urbanMetrics inc., May 23, 2006, p. 15,

<[http://www.calgaryeconomicdevelopment.com/files/CED%20reports/Calgary\\_Office\\_Market\\_Forecast\\_Study.pdf](http://www.calgaryeconomicdevelopment.com/files/CED%20reports/Calgary_Office_Market_Forecast_Study.pdf)>

<sup>32</sup> "Calgary: A Global Energy Leader," CED, pp. 2-6

<sup>33</sup> Greg Stringham, Canadian Association of Petroleum Producers, personal interview, March 5, 2009

<sup>34</sup> "Calgary Office Market Report (Year End 2008)," Avison Young,

<[http://www.avisonyoung.com/library/pdf/Calgary/Research/Calgary\\_Office\\_Market\\_Report\\_Year\\_End\\_2008.pdf](http://www.avisonyoung.com/library/pdf/Calgary/Research/Calgary_Office_Market_Report_Year_End_2008.pdf)>

<sup>35</sup> Avison Young, *ibid.*

# The Energy Industry: Boost or Bane?

April 2009



## CALGARY OFFICE MARKET COMPARISON

Metro	Total Mkt	CBD	Suburb	% Vac.		Metro	SF Per Capita				
Area	(million SF)	% CBD	% Suburb	CBD	Suburb	Population	CBD	Suburb	Total		
<b>Calgary</b>	<b>56.2</b>	<b>36.1</b>	<b>20.1</b>	<b>64%</b>	<b>36%</b>	<b>4.0%</b>	<b>9.4%</b>	<b>1,250,000</b>	<b>28.9</b>	<b>16.1</b>	<b>45.0</b>
<b>Houston</b>	<b>235.8</b>	<b>43.1</b>	<b>192.7</b>	<b>18%</b>	<b>82%</b>	<b>9.8%</b>	<b>12.1%</b>	<b>5,790,000</b>	<b>7.4</b>	<b>33.3</b>	<b>40.7</b>
Denver	135.7	30.3	105.4	22%	78%	11.6%	12.6%	2,409,000	12.6	43.8	56.3
Los Angeles	337.3	64.1	273.2	19%	81%	9.3%	8.2%	9,879,000	6.5	27.7	34.1
Dallas	232.2	36.5	195.7	16%	84%	20.7%	16.8%	4,016,000	9.1	48.7	57.8
Chicago	365.8	151.7	214.1	41%	59%	10.0%	13.3%	7,953,000	19.1	26.9	46.0
Toronto	141.9	60.1	81.8	42%	58%	4.3%	8.6%	5,556,000	10.8	14.7	25.5
Vancouver	39.8	21.8	18.0	55%	45%	3.1%	9.7%	2,374,000	9.2	7.6	16.8

One aspect of the Calgary office market that differentiates it from U.S. markets is an active business condominium sector. In 2008 office condo sales transactions totaled C\$73.9 million, which is easily the highest sales year on record.<sup>36</sup> The units selling are typically smaller spaces, with prices per square foot near \$500 in the downtown area and as low as \$250 per foot in some suburban markets. The pace of building has slowed, however, with one new project completed in 2008 and one other under construction.<sup>37</sup>

The Calgary retail market contains 30.6 million square feet, or 24.5 square feet per capita. This compares to the U.S. average of 20 square feet and the Houston average of over 31 square feet. At year-end 2008 another 817,000 square feet were under construction, according to information from CB Richard Ellis (CBRE).<sup>38</sup> Retail sales grew at an annual rate of over 4% in 2008 and the market remains relatively healthy, with CBRE predicting the vacancy factor of 1.8% at year-end to only reach 2.5% by mid-year 2009.

Calgary's industrial market also shows very low vacancy rates compared to its U.S. counterparts. It is a major distribution hub for the western part of Canada, with a total supply of 112 million square feet. Although direct vacancy and availability are increasing, at year-end 2008 total availability was still under 5%, with direct vacancy at 3.1%.<sup>39</sup> CBRE reported another 1.8 million square feet of space was under construction at year-end 2008, which would increase existing supply by 1.6%. Much of the construction, however, was owner/user space, with little of it unleased, or speculative, space. The new construction, then, should have limited impact on the market direct vacancy rate.

<sup>36</sup> "Calgary Business Condominium Report (Year End 2008)," Avison Young  
[http://www.avisonyoung.com/library/pdf/Calgary/Research/Business\\_Condo\\_Report\\_-\\_Year\\_End\\_2008\\_PRINT.pdf](http://www.avisonyoung.com/library/pdf/Calgary/Research/Business_Condo_Report_-_Year_End_2008_PRINT.pdf)

<sup>37</sup> Avison Young, *ibid.*

<sup>38</sup> CBRE Retail, p. 1.

<sup>39</sup> "Market View: Industrial, Fourth Quarter 2008," CB Richard Ellis < <http://www.cbre.ca/EN/Research/>>, p. 1

It is the multifamily rental market where the Calgary market differs markedly from U.S. markets. The Canada Mortgage and Housing Corporation (CMHC), in a report released in late 2008, reported a total of 36,858 private rental units in Calgary, plus another 4,000 row (townhouse) units.<sup>40</sup> This is approximately one unit per every 30 residents, versus the Houston ratio of approximately one rental unit for every 10 residents. The vacancy rate at year-end 2008 of 2.1% is also anomalous when compared to U.S. markets. The rental universe is expanded by a supply of rental condominiums, with approximately 6,000 rental condos out of a total condo supply of 30,000 units, and by approximately 48,000 rental units in single-family homes, duplexes, etc. The vacancy rate for the rental condominiums is 3.5% but no vacancy rate is reported for private homes for rent.<sup>41</sup> The multifamily inventory has actually shrunk in recent years as projects have been converted to condominium units and relatively low rental rates have kept new supply minimal. Most new multifamily construction in Calgary has been condominium units, but the economic downturn has slowed sales. A list of 24 condominium projects under construction or recently completed, a total of 4,181 units, showed them 83% sold, leaving 1,235 units unsold in a soft market, and thus potentially being available as rental units.

## Energy Price Impact on Calgary:

While much of the discussion of the direction of energy prices and their effect on Houston is applicable to Calgary, there are some differences. First, to an outsider Calgary's energy sector seems less diverse than Houston's. Houston has a much stronger international presence than Calgary does, and while Calgary is clearly the Canadian energy capital, Houston is in many respects not just the U.S. but the world energy center. David McColl, Senior Economist for the Canadian Energy Research Institute, describes most of the Calgary energy industry as "local people making local decisions" which isn't the case in Houston.<sup>42</sup> In addition to the difference in international influence, gas trading companies, gas pipeline transmission companies and the companies involved in downstream energy activities appear to have a much greater impact in Houston than in Calgary. On the other hand, Calgary has governmental agencies Houston doesn't have (e.g. the National Energy Board is located in Calgary with no U.S. equivalent present in Houston), and the businesses associated with electric power plant design, construction and financing seem to be more prominent in Calgary than in Houston.

Another difference appears to be Calgary's focus on a fairly narrow geographic area. Production from Alberta's oil sands deposits is the source of most of the activity in Calgary (reference the earlier comment about "local people making local decisions"). Houston, by contrast, features companies involved in domestic production all over the U.S., in offshore sites in the Gulf of Mexico and in foreign exploration and production. This diversity would appear to be an advantage for Houston.

Cost gives Houston another advantage, because by and large production is more expensive from the Canadian oil sands than it is for more conventional plays. McColl said for drilling to be profitable in Alberta, oil needs to be at a minimum of US\$65 for the West Texas Intermediate (WTI) benchmark and gas probably needs to be over US\$7, using the NYMEX benchmark. In a written report in February, he noted a growth and expansion period for the Canadian oil sands needed a price over US\$70 for oil, but currently-operating projects could be withstand prices under US\$50 for a short period of time.<sup>43</sup>

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<sup>40</sup> Canada Mortgage and Housing Corporation, "Rental Market Report: Calgary CMA, Fall 2008," p. 5

<sup>41</sup> CMHC, p. 28

<sup>42</sup> From a conversation with McColl on March 2, 2009. The quote in the following paragraph is from the same conversation.

<sup>43</sup> McColl, "The Eye of the Beholder: Oil Sands Calamity or Golden Opportunity?" February 2009, Canadian Energy Research Institute, p. 4

While the Canadian industry wouldn't be affected by potential U.S. tax and accounting regulatory changes, it is not immune to impact from political issues. The most attention-grabbing challenge the industry faces is the issue of greenhouse gas emissions in the production from the oil sands operations. Unlike typical drilling operations, production from the sands is more closely akin to open-pit mining, and the raw product of the mining is processed through plants located near the mines. The process releases carbon dioxide into the air, and has generated pressure both internally and from the U.S. to reduce emissions, either through better technology or by reducing extraction by the open pit method. President Obama visited Canadian Prime Minister Stephen Harper on Feb. 19, and part of the discussion revolved around the President's comments that both the oil sands and U.S. coal production generate greenhouse gas emissions which need to be significantly reduced.

It is unclear what impact this issue will have on oil sands production, and on the Calgary economy, but it is a potential risk factor. The oil sands issue will be an important one to resolve, as production there is a major component of not just the Alberta economy, but the Canadian economy as a whole, and the large reserves give the U.S. a close and stable source of energy. Given the proximity to the U.S. market and all the ramifications which make production from the sands important to both the U.S. and Canada, it is likely there will be increased research not only to find a clean way to extract current recoverable reserves, but to reach reserves currently not recoverable. An increase in resources for current research in both those areas would probably flow into Calgary, or at least some portion of it would, so the controversy in the end might prove to be a net positive for the city.

A mark in Calgary's favor is it moved into the recession in much better shape in several areas than its U.S. counterparts and so has greater margin for error. In the real estate markets, for instance, its office market ended 2008 with a 6% vacancy factor versus 11.7% for Houston; the retail market was at 1.8%, compared to over 15% for Houston; and the multi-family vacancy factor was 2.1% in contrast to Houston's 7.5%.<sup>[footnote]</sup> Only the industrial markets were close, with Calgary under 5% availability rate (including sublease space) and Houston reporting 5.7%.<sup>[footnote]</sup> The only one of Calgary's property types under the pressure of new supply would be the office market, with the other property types reporting virtually no new construction.

Calgary's single-family market also is apparently healthier than U.S. markets, although Houston is performing much better than markets on either coast. The condominium market is soft, but it's small enough and the rental market is tight enough there appears to be a viable rental option for condo developers and owners. Canadian banks appear to be sound, with little of the difficulties of their U.S. counterparts. This bodes well for the availability of credit and for the health of the overall economy. Nationally, subprime issues are not a factor, nor are corporate or consumer debt levels and the country has been running surpluses in both its federal budget and its trade balance.

The downside for Calgary lies in its energy industry concentration and the percent of the industry's concentration in what amounts to a single production area. Additionally, the area is one where production is relatively expensive, is under pressure for environmental reasons and while it has huge reserves, tapping the bulk of them is dependent upon development of technologies not yet in place.

Because of the high cost of energy extraction in the Alberta fields, and therefore the higher price needed to justify new production, it is likely Calgary's recovery from the downturn will be slower than Houston's—it will simply take longer for oil and gas prices to get to a profitable level for Alberta production than for most U.S. fields. The health of the real estate markets in Calgary as the cycle begins helps cushion the fall. The strength of Canada's banking and single-family industry, the lack of other contributing problems and the Canadian budget surplus entering the recession mean the base economy should have more resiliency than the U.S. economy and the

Canadian government more flexibility than the U.S. government. These factors should help temper recessionary effects in Calgary. Nonetheless, it appears evident that at least 2009 and 2010 will be difficult years for Calgary, and recovery from there will be slow. In McColl's report, he notes there is a lead time of approximately two years from the start of construction for oil sands projects to start production. Assuming currently-suspended projects don't start until WTI reaches a level of US\$65 or \$70, then it may be late 2010 or into 2011 before such work is revived. In that instance, production would not begin until 2013, and he says it may be as late as 2015 before major growth is seen.<sup>44</sup>

From a commercial real estate investment standpoint, the greatest impact should be felt in the office market, as that is the product type with the biggest supply concern. The multifamily market is relatively small, rents appear to be reasonable, occupancy levels are strong right now (vacancy could triple from where it is now and still be less than 7%) and new supply is virtually non-existent, so the rental market should be in decent shape. Retail is much less overbuilt than most U.S. markets and while it is certain to be impacted, it should not face the magnitude of issues that markets such as Houston will encounter. Industrial properties have to feel an impact as well, but again, low current vacancy levels and little new construction should minimize the damage. Long-term, though, Calgary should recover nicely as energy prices inevitably rise. The Alberta deposits are simply too large a supply of reliable energy for the extraction and environmental issues not to be resolved, and the area will almost certainly remain a significant supplier to U.S. and Canadian markets.

## Conclusion

Both Houston and Calgary are major energy centers, with Houston arguably the world energy capital and Calgary clearly the Canadian energy capital. As a result, global energy supply-demand fundamentals have a major impact on their economies and their real estate markets, for good or ill. The past few years have clearly been in the "good" category for both cities; equally clearly, they are currently entering a period when the two markets will be "ill", as they suffer from the effects of the global recession on their energy and non-energy economic sectors. A return to high energy prices will happen, though, with the exact timing the only question. For existing or potential investors in these markets, one's position determines one's perspective (and conclusion): for an existing real estate owner or lender, the interim period between high energy prices could be a painful time. For potential investors, it may well be another period with some interesting opportunities before an energy-driven recovery in Houston and Calgary.

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<sup>44</sup> McColl, p. 6