



# TD Economics

## Special Report

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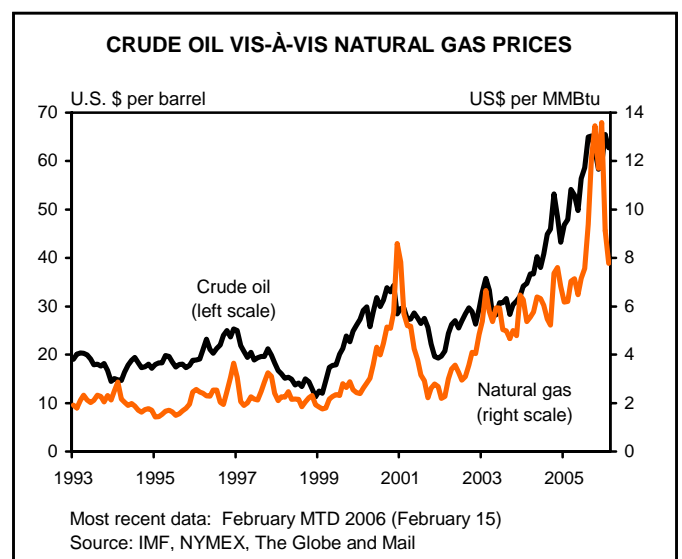
### WHY IS IT ALWAYS OIL? THE UNTOLD STORY OF NATURAL GAS

Although prices for crude oil and natural gas tend to track each other closely over the longer haul, significant divergences in price trends can exist between the two commodities over the shorter run. Case in point was January 2006, when a 10-per-cent jump in crude oil prices coincided with a hefty 33-per-cent pull back in natural gas prices. What is even more interesting than movements themselves was the fact that the media continued to focus almost exclusively on developments in the crude market. Certainly, as we discuss below, the arguments behind this traditional fixation on crude are compelling. At the same time, however, the underlying facts suggest that the media coverage may be somewhat out of tune with the marketplace, since natural gas has become every bit as important – if not more important – than crude oil within the Canadian economy.

#### Why the focus on crude oil?

For the most part, the greater attention placed on crude oil relative to natural gas is not hard to see. For one, with gasoline a significant share of households' budgets and with crude oil accounting for roughly half of the cost at the pump, developments in the crude market have a major impact on consumers' wallets. Furthermore, gas stations are seen on almost every corner, making pump prices the most visible price to consumers, whereas natural gas prices are observed less frequently. But, the attractiveness of crude oil from a media perspective goes well beyond local appeal. Crude oil developments are also a major international story, especially when stacked up against natural gas. Consider the following:

- Crude oil is a truly global commodity, with its price set based on supply and demand in the global market. Hence, whatever happens to the price of crude tends to reverberate around the world. In contrast, while there



has been an increasing trend to ship natural gas around the world in its liquefied state, it is a fuel that continues to be largely transported via pipeline and, hence, is still viewed as a regional market. For example, when Russia stopped deliveries of natural gas to Ukraine early this year, there was hardly any impact on natural gas prices in North America.

- About 40 per cent of world crude oil production and about three-fifths of the world proven reserves of crude oil are attributable to OPEC, which contain countries that are vulnerable to political instability. In contrast, both reserves and production of natural gas are more widely dispersed around the world. Hence, there is bigger risk of global supply disruptions in crude oil than in natural gas.
- Supply worries are especially prominent in the United States, since this economic powerhouse imports about 60 per cent of its crude oil needs, a significant share of

which comes from OPEC countries. And, any debilitating impact on the United States economy would have worldwide implications because of its sheer size. On the flip side, only 16 per cent of natural gas consumed in the U.S. is shipped from abroad. Moreover, the primary exporter of natural gas to the United States is Canada, which is a reliable source.

Beyond its greater visibility and global reach, there is an additional reason that all eyes are generally focused on crude oil. Since prices of the two commodities tend to track each other closely, developments in crude oil are often sufficient to explain those in natural gas. This tight historical relationship is shown in the accompanying chart. In statistical terms, the “correlation coefficient” between the two commodities was found to be roughly +0.9, indicating that a change in crude oil prices will result in the same directional change in natural gas prices nine times out of ten.

At the same time, the correlation between oil and gas prices is not perfect, which implies that there are periods when the two prices can part ways. In January, for example, concerns about militant activities in oil-producing Nigeria and Iran’s resumption of its nuclear program sent crude oil prices up sharply. Meanwhile, warmer-than-normal winter weather in North America cut natural gas prices

by one-third. (For more details on these developments, please see the latest edition of TD Economics’ monthly Commodity Price Report at [www.td.com/economics](http://www.td.com/economics).) The dearer price of crude made headlines, while the plunge in natural gas prices was largely unnoticed.

### The untold story of natural gas

The issue at hand – and what may come as a surprise to many – is that for many economic and market forces in Canada, natural gas prices are just as important, and probably even more important, than crude oil. To highlight this point, we have assembled a table comparing a number of indicators.

- According to the Canadian Association of Petroleum Producers, the value of Canadian producers’ sales from natural gas has been surpassing that from crude oil on a trend basis since 2000. In fact, on a BTU-equivalent production basis, natural gas has been turning out more than crude since the late 1980s.
- Likewise, natural gas is a larger export earner than crude oil. Furthermore, given the fact that Canada imports more crude oil than natural gas, the latter commodity’s net contribution to the country’s merchandise trade surplus is much larger. Indeed, there were years in the mid-1970s and early 1980s when Canada was a net importer of crude, while natural gas shipments from abroad re-

| CANADA’S CRUDE OIL AND NATURAL GAS RESOURCE IN 2004*: A COMPARISON                      |           |             |
|---|-----------|-------------|
|   | Crude Oil | Natural Gas |
| Value of production   |           |             |
| Producers’ sales (C\$bn)  | 37.39     | 39.89       |
| In heat content (trillion Btu’s)  | 5,099     | 6,040       |
| Exports (C\$bn)   | 25.51     | 27.38       |
| Net exports (C\$bn)   | 9.06      | 24.80       |
| Net export volume as per cent of domestic production                                    | 28.7      | 53.7        |
| Concentration by province (% of Canada’s prod.)   |           |             |
| Largest producer (Alberta)  | 66.4      | 77.0        |
| Second largest producer: Sask.(crude), B.C. (natgas)                                    | 17.6      | 15.5        |
| Contribution to provincial royalties FY 2004-05 (C\$bn)                                 |           |             |
| Alberta (incl. oil sands)   | 1.99      | 6.44        |
| Saskatchewan**  | 0.91      | 0.21        |
| British Columbia  | -         | 1.44        |
| Weight in CPI % (for heating shelter)   | 0.47      | 1.05        |
| Weight of gasoline in CPI (excluding refining & marketing margins & taxes)              | 2.20      | -           |
| * Except otherwise indicated.   |           |             |
| ** Includes taxes and sale of petroleum leases  |           |             |
| Source: Statistics Canada, CAPP, Governments of Alberta, Saskatchewan, British Columbia |           |             |

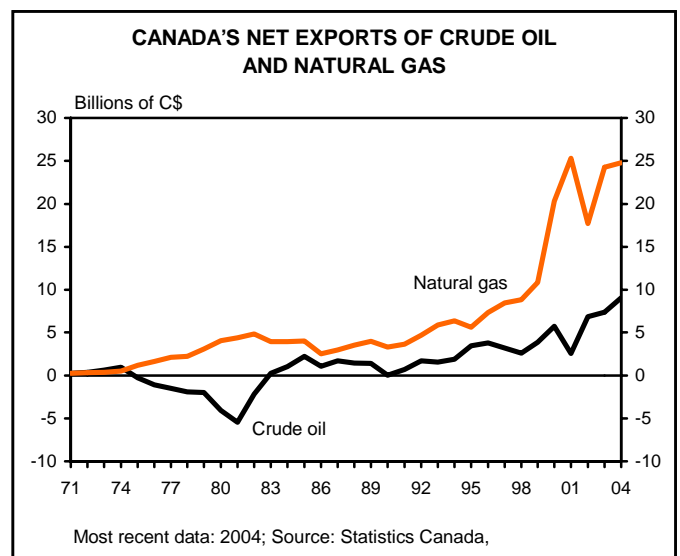
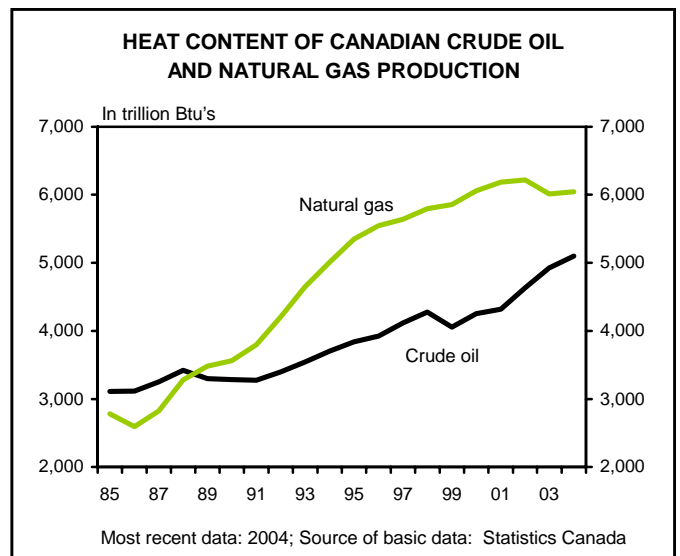
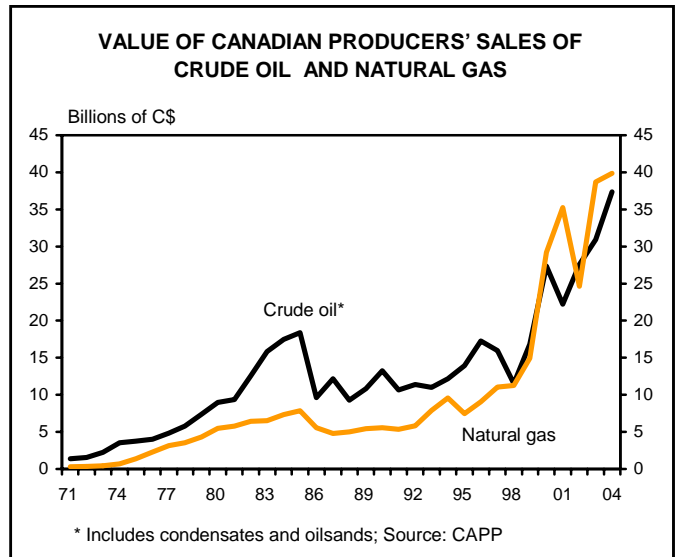
main small and were nil until the late 1990s.

- While Canada exports more than half of its domestic production of natural gas, the corresponding percentage for crude is below 30 per cent. Even if it is taken into account that some crude is refined within the country and then exported as a petroleum product, crude's export share would remain under 40 per cent.
- The bigger kick from natural gas also shows up in terms of benefits to government coffers. Alberta – which produces two thirds of Canada's crude oil and just over three-quarters of natural gas – earned an estimated \$6.44 billion in royalties from natural gas in fiscal 2004-05 while the corresponding take from crude oil was about \$2 billion. Also adding on combined provincial royalties in B.C. and Saskatchewan would raise the balance in favour of natural gas even more.
- The only area where crude oil becomes more important than natural gas is in its relative importance in the average household consumption basket, as measured by the Consumer Price Index (CPI). Keep in mind however, that crude oil is not included in the CPI per se. Rather, what is included are the crude-based refined products of home heating oil and gasoline. In the case of gasoline, crude only accounts for roughly half the cost, with marketing/refining margins and government taxes comprising the remainder. We have reflected this fact in the relative gasoline weighing in the table. Together, crude oil accounts for a slightly higher share of the CPI basket than natural gas, as its weighting in gasoline is offset to some extent by a lower weighting in home heating costs.

**Business sector more reliant on natural gas**

This last point reinforces our earlier point of why crude gets all the attention. Crude factors more greatly in consumer budgets, and is hence more visible. But, as has been already noted, natural gas is more important to Canadian businesses and governments. And, this is not simply because it's a bigger export and royalty generator. In terms of direct consumption, residential uses account for less than 30 per cent of natural gas consumption in this country, while about 42 per cent of the commodity is consumed by industries and the remaining by public administration (22 per cent) or for transportation purposes (7 per cent).

Within the industry category, the largest industrial users of natural gas are the chemical and petrochemical and the forest product industries. In the case of the petrochemi-

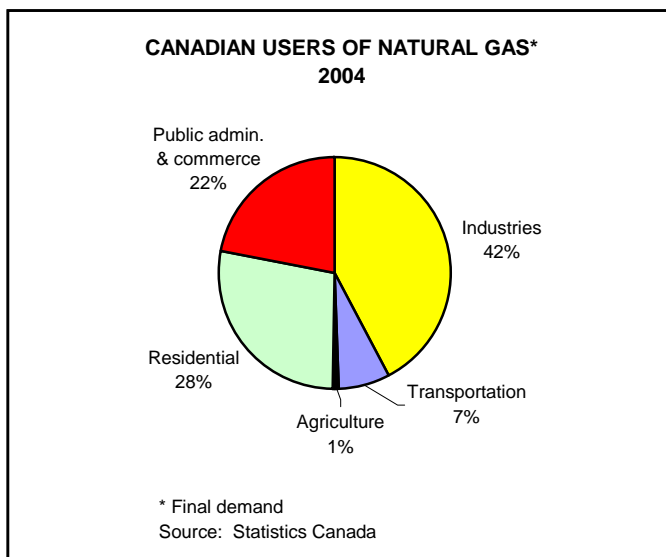
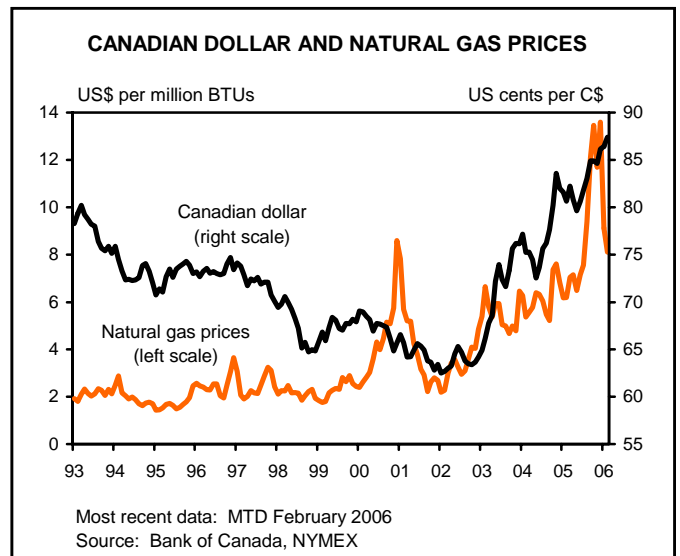
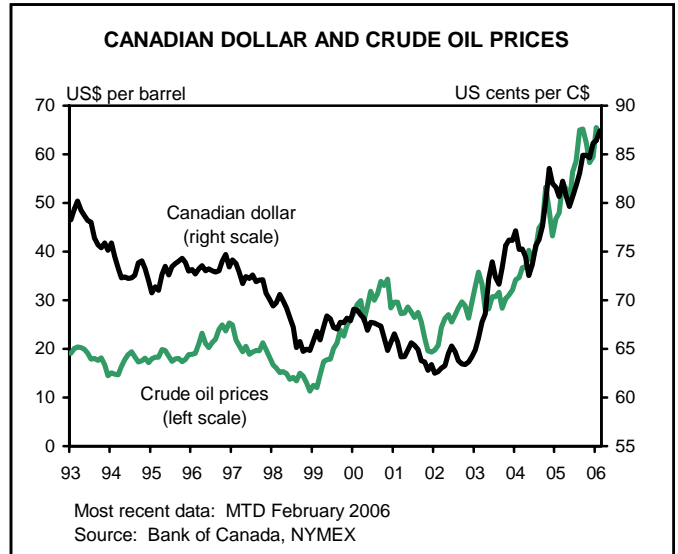


cal industry, the natural gas is used not only as a source of energy but also as a feedstock (to make ethylene, the building block in the manufacture of chemicals, e.g. plastics). The fertilizer industry also uses natural gas as a feedstock (to make nitrogen-based fertilizers).

The shares in the pie chart consider only the natural gas that is available to final users. Excluded are those that have been used in the intermediate stage – for example, the use of natural gas by electric utilities to make electricity, or those that have been used by the producers themselves. Those numbers are not insignificant. Electric utilities consume about 7 per cent of the available supply of natural gas in Canada while natural gas producers themselves consume more than 20 percent of their own production.

**FX investors paying attention to both**

Currency markets appear to be somewhat more in tune with the importance of natural gas to Canada’s economy, but not to the full extent borne out by the data. Historically, there has been a loose relationship between energy prices and the value of the loonie against the U.S. dollar. In recent years, this relationship has turned positive and significant. This is in part owing to the increasing reputation of the Canadian dollar as a petrocurrency. Based on our analysis, the dollar seems to move more closely with crude oil than natural gas prices which is counterfactual given the greater importance of natural gas in net exports.



**Bottom Line**

Crude oil will remain a vital commodity both on the Canadian and world stage and deserves considerable focus. However, let’s give natural gas the attention that it deserves.

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