TD Bank Financial Group

TD Economics

Topic Paper

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CANADA'S OIL SANDS – A WORLD-CLASS RESOURCE

With concerns about the adequacy of global supplies of crude oil and refined products pushing prices for West Texas Intermediate (WTI) to record highs in recent months, Canada's vast oil reserves situated in the Alberta oil sands have been capturing growing worldwide attention. Indeed, current estimates of established reserves in the oil sands rank second to only Saudi Arabia in terms of size. And, given the industry's recent track record of impressive innovation, the ultimate potential of the region could be considerably larger. Meanwhile, major oil and gas players have not been wasting any time forging ahead with major multi-year plans to develop the oil sands resource, with the list of projects on the rise.

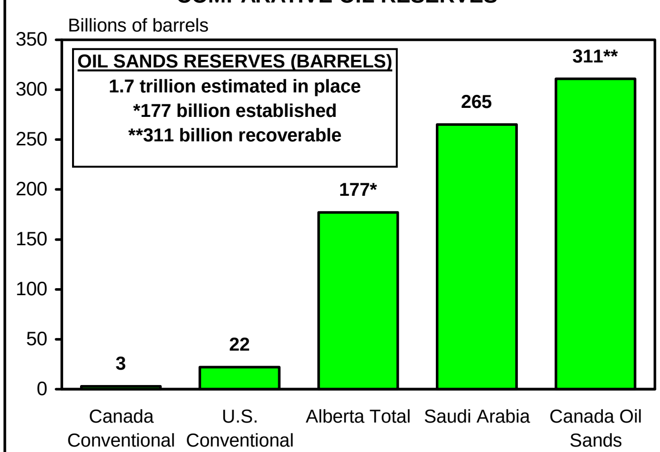
The economic impacts of oil sands development – and notably those generated by some $80 billion of recent and future investment – are just beginning to be felt in Canada. And, while the province of Alberta is undeniably in the best position to benefit, Canadians in general stand to reap some of the rewards, either directly or indirectly.

Canada's oilpatch flexing its muscles

Spurred by buoyant conditions in world markets over the past 3-4 years, Canada's overall oil and gas sector – led by powerhouse Alberta, along with the provinces of Saskatchewan, Newfoundland & Labrador, British Columbia, and Nova Scotia – has been flexing its muscles in recent years. Production has been rising, drilling activity has been operating at full throttle, and the value of exports of crude oil and natural gas to the hungry U.S. market has surged. In fact, of Canada's whopping $26 billion trade surplus recorded so far this year, net exports of energy products comprised about three quarters.

Not surprisingly, the strength in activity has translated into fattened bottom lines. Since mid-2002, operating profits in the oil and gas sector have virtually doubled. And, with companies handing over a share to public treasuries in the form of royalties and corporate taxes, governments have basked in revenues, particularly in Alberta and at the federal level. Buoyed by roughly $10 billion in resource royalties, the Alberta government announced that it would pay off its outstanding net debt. And, if the $12 billion in assets saved up in its Heritage Fund are included in the count, the province is in a net asset position.

COMPARATIVE OIL RESERVES



Source: Alberta Energy & Utilities Board, Athabasca Regional Issues Working Group

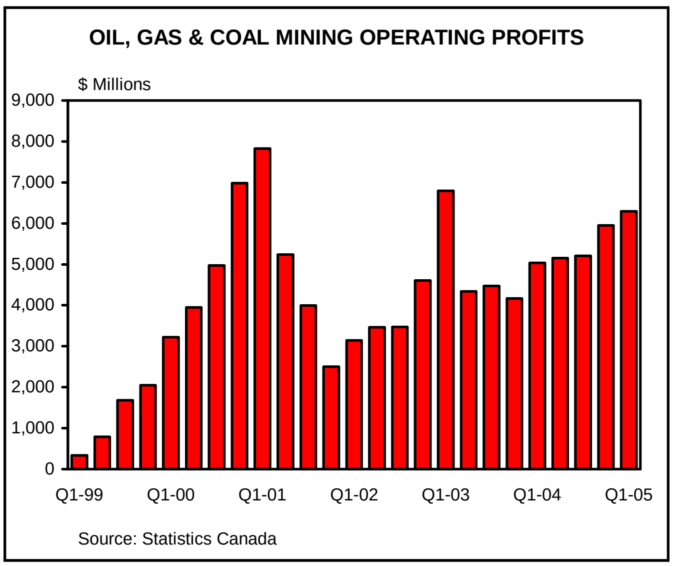
Although the major oil and gas producers have been enjoying much of the spotlight, the tide has lifted other boats. While areas such as the pipeline industry likely first come to mind as direct beneficiaries, the spillover effects run much deeper. For example, it is estimated that some 50,000 Canadians are employed in companies that supply the oilpatch with equipment, technologies and services. Further, there are roughly 2,500 manufacturing firms tied to the oil and gas sector alone. Together, total direct and indirect employment in oil and gas has been tagged at more than 366,000 workers across the country.

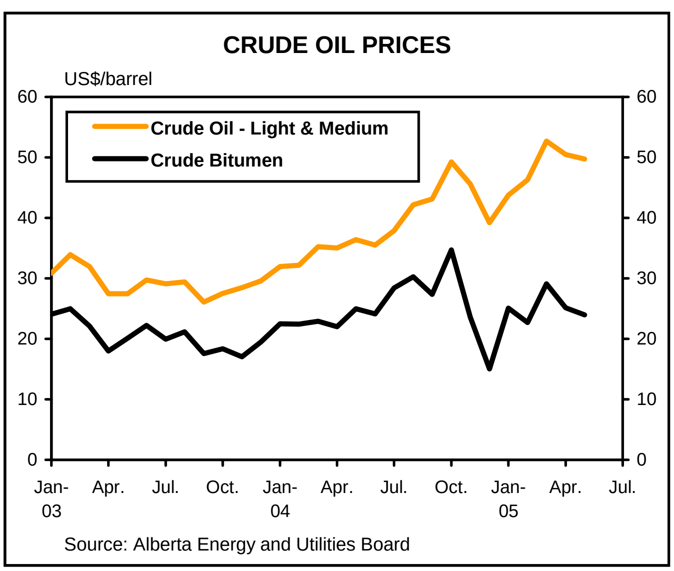
But recent excitement more tied to future potential of the oil sands

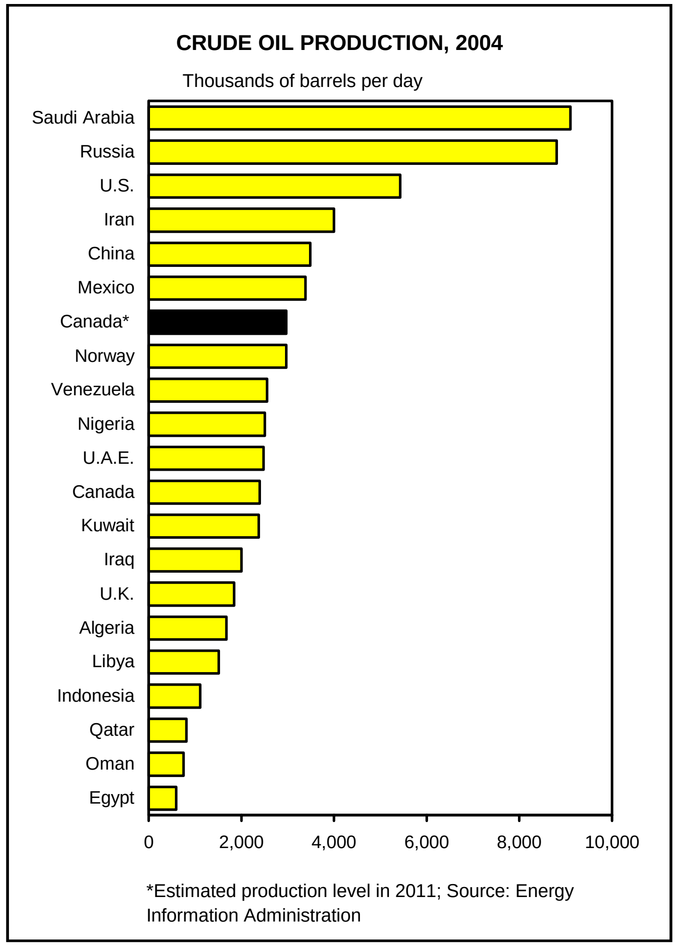
Within Canada's oil and gas industry, activities related to oil sands production and development have been the leading pocket of growth. The oil sands are located in three regions of northern Alberta – namely Athabasca, Cold Lake, and Peace River – with the city of Fort McMurray at the heart. Oil sands deposits are distinct from those of conventional sources, with the latter being the traditional mainstay of the country's oil industry. For one, unlike conventional oil – which can be tapped relatively easily – the oil sands have been more difficult to exploit. Notably, they comprise a mixture of sand, clay, water and the crude resource, bitumen, which is a black, asphalt-like hydrocarbon as thick as molasses. As a result, oil sands bitumen cannot be pumped without being heated or diluted, and is hence more expensive to mine, requires significant upgrading, and sells at a considerable discount to lighter/sweeter grades such as WTI (see chart).

Even then, not all oil sands resources can be developed in the same way and/or at the same cost. Easier-to-reach deposits can be extracted using a mining approach, which exposes the oil sands by stripping the overburden, then removing the sands using truck and shovel mining methods. Deposits that are deeper require an in-situ approach, where the bitumen is often removed by adding heat, thus making the bitumen more fluid and allowing it to be pumped to the surface. This second method is significantly more energy-intensive than the mining approach, and is carried out at a higher price tag.

As technology has emerged in recent years – particularly in developing oil sands using in-situ processes – production in the region has taken off. At the same time, trends in both conventional production and reserve counts have shifted into reverse. Accordingly, the share of oil sands in total Canadian crude production jumped from 20





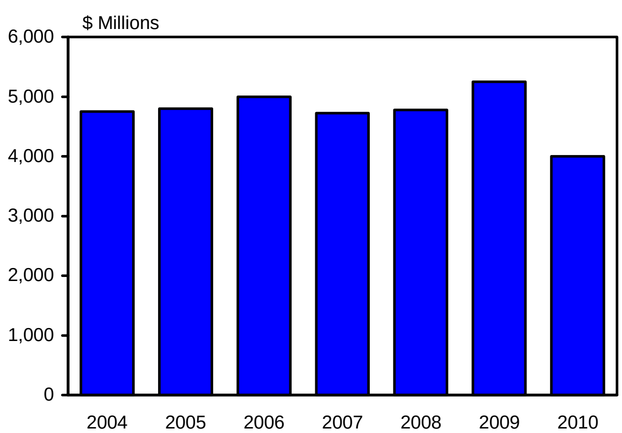


per cent in 1990 to 40 per cent in 2004. And, this proportion is expected to leap to two-thirds by 2011, especially in view of some $80 billion in either completed or announced projects slated for the next five years. To put this in perspective, if production remained frozen at current levels internationally, the 3 million barrels a day of projected crude oil output by 2011 would vault Canada from 11th place in terms of production to a tie for 7th spot with Norway.

Yet, trends in production alone don't capture the full potential of the oil sands. It has been estimated that there are over 1.7 trillion barrels of bitumen in place in Canada's oil sands basin, and that some 300 billion barrels of this resource will ultimately be recovered. Among these totals, the Alberta government has estimated that a significant portion – about 174 billion barrels – is economically recoverable using *existing* technology. That places Canada right up at the top end of the global heap, just behind Saudi Arabia.

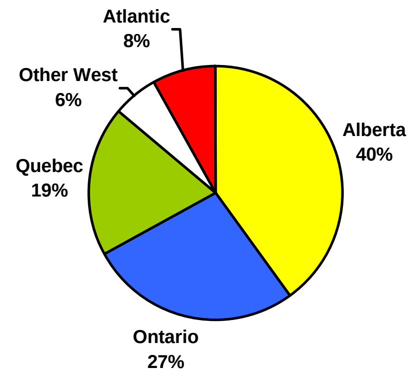
At the same time, the long-term outlook for the oil sands is not clear of potential potholes. Most importantly, the industry is facing upward cost pressures. Similar to crude oil, the price of natural gas – which is a major input in the in-situ production process – has also hovering at historically high levels. Moreover, land, steel, environmental clean-up costs, and technology are other areas of pressure. Last but certainly not least, tight markets for skilled trades and construction workers are leading to rising labour costs. On the bright side, governments have been using a share of their resource windfalls to take action to address some of these issues, including allocating monies for training and research and development. As well, there has been increased speculation recently that the federal and some provincial governments could also dedicate some of the status-quo surpluses to further reducing the tax burden on businesses.

OIL SANDS CAPITAL EXPENDITURES*



*Projection as at 2003; Source: Alberta Energy and Utilities Board, Athabasca Regional Issues Working Group

OIL SANDS INCOME EFFECT



Source: Athabasca Regional Issues Working Group, N.O.S.T.F. Report (1995)

But, while upward movement of input prices will likely pose an ongoing challenge to oil sands producers – particularly those that are developing higher-cost projects – the industry is expected to enjoy continued solid market conditions over the medium term. Although we expect crude oil prices to pull back from their current unsustainably-high levels, the downside will be limited by continued rapid demand growth from developing economies, such as China and India. Moreover, the recent passage of the energy bill south of the border reinforces the need for the United States to secure additional supplies, of which the oil sands have been identified as a key opportunity. That should keep the price of WTI well supported in the US$40-50 range over the medium term, which is roughly double the 10-year average.

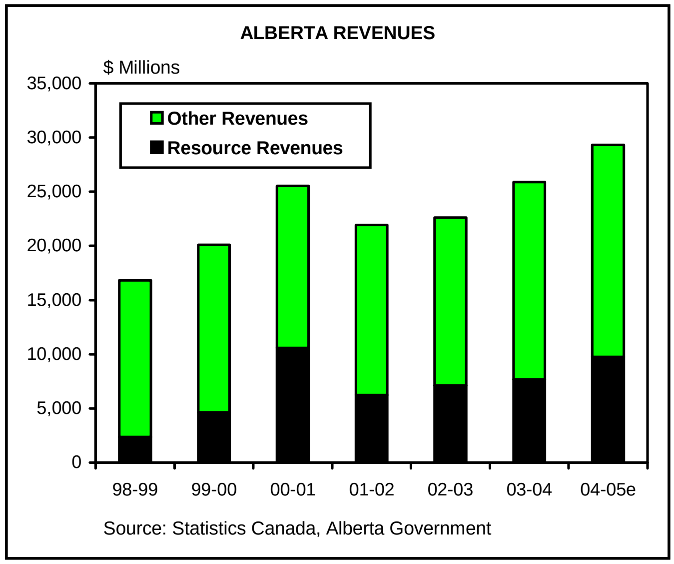
Oil sands delivering large economic and fiscal benefits

The prospects for the oil sands will continue to spread enormous economic benefits in Alberta and other parts of the country. According to projections made by the Regional Issues Working Group, whose members comprise many of the oil sands key players:

- Annual oil sands capital expenditures are slated to average about $5 billion per year through 2009.
- Combined with annual operating expenditures, annual outlays will reach about $10 billion per year, representing about 1 per cent of Canadian GDP.
- Employment in the oil sands, including both construc-

tion and operations functions, has risen from 30,000 in 1996 to around 140,000 in 2005.

- While projects are located in Alberta, about 60 per cent of the total economic benefits are estimated to flow to other parts of Canada. For instance, oil sands development will create sizeable demand for manufacturing goods, such as steel, which are largely produced in Ontario and Quebec.
- Direct payments to the Alberta government – royalties, corporate taxes and personal taxes – are expected to grow to over $3 billion per year over the next half decade. Keep in mind that this figure was estimated by the industry using a long-term price of US$20 per barrel for WTI. To the extent that prices remain at or above US$40 per barrel, the revenue impact could be double that, or even higher.
- Using the same US$20 per barrel assumption, direct federal corporate and personal income taxes was estimated to double to about $3 billion per year.



Oil activity to account for a rising share of GDP

These are indeed big numbers, and not only fly in the face of those predictions made in the 1990s that called for a steady long-term decline in the importance of Canada's oil and gas sector. At the same time, it is a long shot to suggest that Canada is on the verge of becoming the next Norway – a nation where direct oil and gas activity accounts for a massive 17 per cent of GDP. While this share is in line with that currently recorded in the Alberta alone, the overall Canadian economy will continue to be considerably more diversified, with the direct output-to-GDP ratio in the nation's oil and gas sector remaining well below 10 per cent (it currently stands at 3 per cent). Still, as mentioned, based on ultimately-recoverable reserves, one could make a case that the long-term potential of the oil industry is among the brightest in the world.

International investors taking notice

The excitement generated by oil sands prospects has pervaded the global investment community in recent months, as evidenced by the massive inflows of capital into Canadian markets. After gaining 39 per cent in 2004, the energy component of the TSX has surged by a further 58 per cent so far this year, driving up its share of total index to a sizeable 25 per cent. And, there have been a number of higher profile deals in the oilpatch, as foreign firms jump for a piece of the action. For example, U.S.-based Kinder Morgan announced a $3.1 billion acquisition of the pipeline firm Terasen Inc, giving it the opportunity to ship growing volumes of crude flowing from the oil sands. And, French oil major Total SA announced it would purchase Deer Creek Energy Ltd, a major oil sands energy player, for $1.4 billion.

Above all, the Canadian dollar has been strengthening rapidly in recent weeks, as investors in growing numbers are referring to the loonie as the "petrocurrency" – a label that was first coined during the oil shocks of the 1970s and 1980s. In the very short run, to the extent oil prices continue to move further away from any level that can be supported by fundamentals, the Canadian dollar could test its 14-year highs of more than 85 U.S. cents. However, consistent with our view that further upside is limited and that prices will pull back to the US$50 per barrel mark over the next year, the loonie is likely to remain in its recent range of 80-85 U.S. cents. Looking out further into the horizon, there is no doubt that the positive impact of crude oil activity on the nation's GDP, current account and government fiscal balances will continue to provide a solid underpinning to the nation's foreign exchange and equity markets.

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