Living With Lower Oil in Canada's Economy

Benjamin Tal and Nick Exarhos

The dramatic collapse in crude has lines drawn between winners and losers. And though the nation's emergence as an energy powerhouse has the negatives coming into sharper focus, there will be spoils to be shared in Canada, a country which still is a relatively large energy consumer. Trends in the energy needs of the nation's industries, and its households, will paint the full picture of Canada's economic outlook in the wake of the rout in oil.

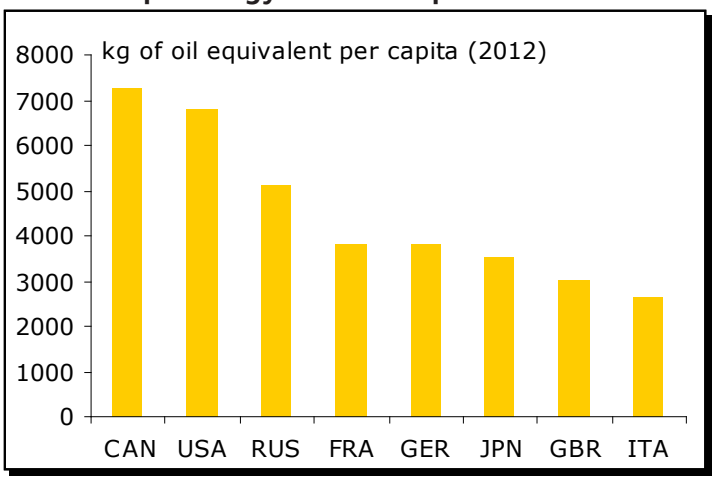
Canada a Big Consumer of Energy Too

Canada produces, and consumes, significant quantities of energy. It's cold here, distances between major urban centres are relatively large, and the country's vast resource sector requires substantial amounts of energy for its operation. Indeed, per capita energy consumption in Canada is twice that of most developed countries (Chart 1).

And this level of energy consumption could have been much higher if it were not for the meaningful decline in the country's overall energy intensity. Today the Canadian economy uses 25% less energy per unit of GDP than it did 20 years ago. But over the past decade that energy intensity has stabilized (Chart 2, left), in part as a result of some diverging underlying trends. While the rest of the economy—led by the manufacturing sector—continued to see a decline in intensity, the energy sector, which doubled its share in total energy consumption, fully offset that improvement (Chart 2, right).

Chart 1

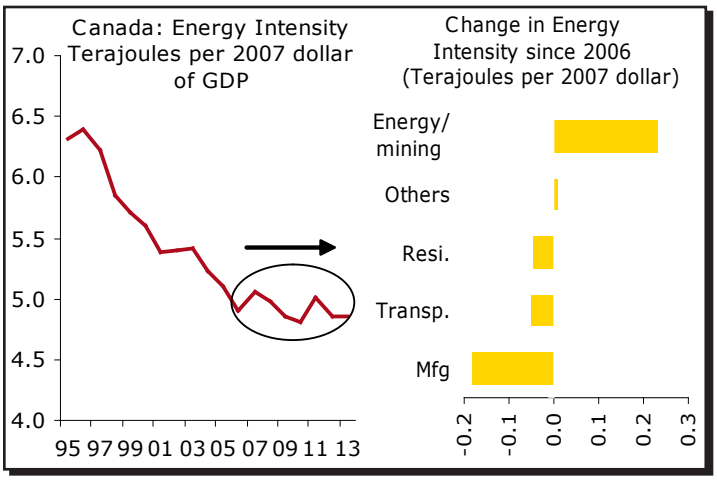
Canada Tops Energy Use Per Capita



Source: Statistics Canada, CIBC

Chart 2

Relative Stability in Energy Intensity in the Past Decade (L) Masks Diverging Trends (R)



Source: Statistics Canada, CIBC

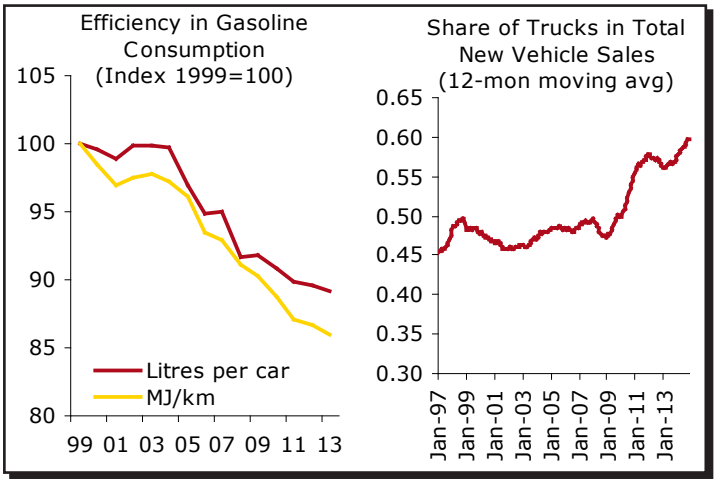
These developments shouldn't be that much of a surprise. The energy sector is much larger than it was 10 years ago and the manufacturing sector is much smaller. But focusing on energy intensity per unit of GDP by sector (and thus controlling for the size factor) reveals that intensity in the energy sector has still risen by 80% in the past decade.

Chewing Up Efficiency Gains in Transportation

The oil patch was always going to tell much of the energy story in Canada, but there are other players that need to be mentioned. The transportation sector is by far the largest in terms of energy usage, accounting for almost 35% of end-use energy consumption. Although that isn't anything to sneeze at, its share swells to 70% of oil consumption in the form of gasoline, diesel and jet fuel. That's the case even if the sector has seen steady and substantial improvements as fuel efficiency per kilometer has improved by no less than 15% over the past 15 years (Chart 3, left). However, that improvement was tempered by the continued increase in the share of light trucks in the Canadian auto fleet (Chart 3, right). During that period truck sales rose by an annual average of 4.8%—four times faster than smaller cars.

Chart 3

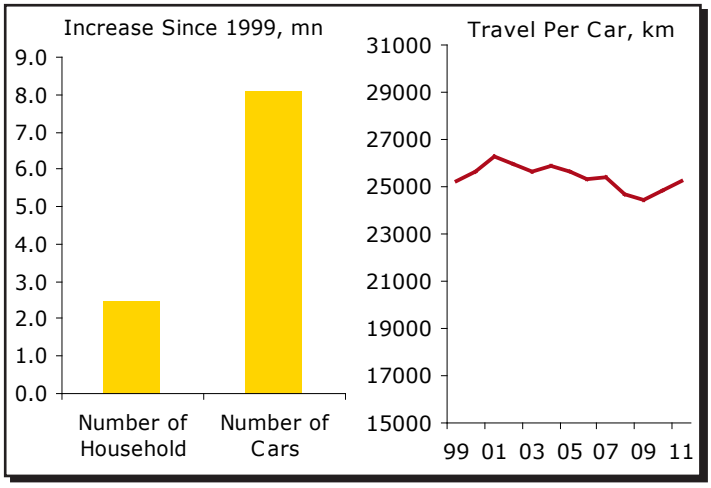
Vehicles: More Fuel Efficient (L), and Larger (R)



Source: Statistics Canada, CIBC

Chart 4

More Cars (L), Same Distance (R)



Source: Statistics Canada, CIBC

And those gains aren't just driven off of population growth. Over the past decade and a half, the number of cars in Canada has risen by more than eight million. That is four times the pace seen in household formation (Chart 4, left). So, with average annual travel per car hardly changed (Chart 4, right), the entire improvement in energy efficiency was consumed by a disproportionate rise in the number of larger cars. In a world of rising oil prices, that is a bad thing, but in the near term, that offset to efficiency gains means that Canadians will get a bigger break at the pump than they would have otherwise. Auto sales just closed out big years both in Canada and the US, and cheaper fuel prices are likely to keep the trend towards larger, though more efficiently consuming, vehicles intact.

Giving a Breath to Canadian Manufacturing

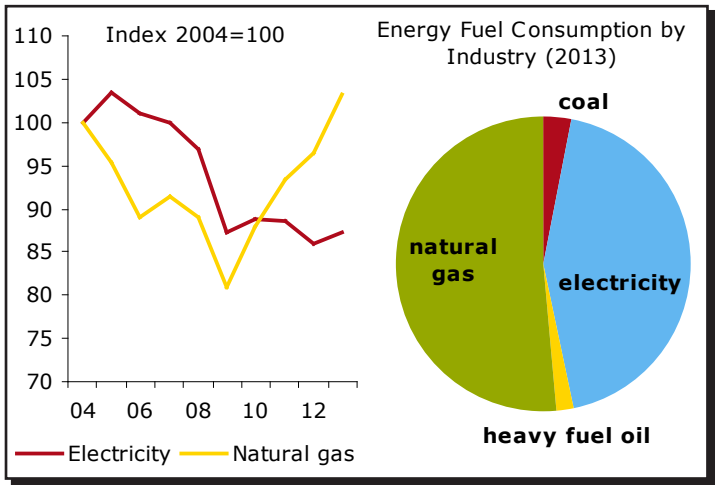
If a renaissance in North American car culture is underway, another apparent anachronism might be due for a comeback. Manufacturing, which is still larger than the energy sector, is highly energy intensive. That sector still consumes almost double the amount of energy used by the oil patch, raising the importance of recent developments. Other industries such as pulp and paper products, primary metals, wood products and metal smelting and refining are also major energy consumers, accounting for a notably larger share of aggregate output relative to the US.

There is one important caveat, however, before we can call the oil rout a victory for manufacturing. Canadian manufacturers don't generally use oil-based fuels as an input. They use electricity (due to the availability of cheap hydro-electric power), and more so natural gas (Chart 5). So the drop in oil prices will have very little direct impact on the cost of production.

But the shale revolution that is changing oil markets now, took root in the drilling of natural gas. That means that there too expanded sources of supply are putting a lower ceiling on where prices can go further out, even if we see a recovery to the $4/MMBtu level. So despite falling correlations between gas and oil—as the more landlocked natural gas market doesn't dance to the same global demand tune that swings the oil price—US natural gas production has still increased by 47% in the past decade. Electricity isn't going through that cycle, and in fact is experiencing some opposite forces with the rotation away from coal and nuclear to more costly green

Chart 5

Nat Gas More Important in Manufacturing



Source: Statistics Canada, CIBC

sources of energy. That should leave electricity prices more firmly supported compared to natural gas, an important distinction for manufacturing firms in central Canadian provinces such as Ontario and Québec.

Finding the Winners in the Factory Sector

Which sectors are likely to benefit from a relative cheapening in natural gas? Data from Table 1 points to a few sectors that are both energy and natural gas hungry. The facts suggest that the biggest winner will be chemical fertilizer producers. As both natural gas reliant and energy intensive, cheaper prices impact a critical production input.

Also near the top of the list are industries tied to forestry. Here, cheaper gas will add a lift that a lower C$ and a recovering US housing market were already slated to provide. Lumber prices haven't put in the best performances of late, but healthier export markets and cheaper input prices should spur the industry going forward, given what should still be cheap sources of financing for capital expenditure projects.

Oiling Up Inflation's Slide

How disinflationary are falling oil prices, at least for the what the Bank of Canada tracks as it charts its course for monetary policy? Since energy prices enter directly into the calculation of the CPI with a weight of around 8.5%, the obvious answer is that headline inflation will decelerate. In fact, we might get close to zero—or even negative—prints on the headline year-on-year rate toward the middle of the year. But what about the remaining 91.5% of the consumer basket? At first glance one can easily conclude that the impact of fluctuations in energy on core inflation is negligible by construction.

A sometimes noisy relationship between core inflation and oil is due to crude collapses being primarily driven by economic recessions. Many of the dramatic declines in oil prices were simply due to recessionary forces following significant oil shocks. That is not the situation today. In fact, the current situation most resembles episodes witnessed in 1986 and the late 1990s (Chart 6).

In the first of those episodes, a dramatic, and quick, collapse in the price of oil did not drag core inflation lower immediately. It was the fact that crude prices stayed depressed, and had knock-on effects that eventually led to lower core prices that influenced broader trends. The events in 1997-1998 were different. A slow, drawn-out decline in crude prices worked to sew disinflation in underlying prices in the economy.

So what's in store this time? Core CPI will likely see some downward pressure from weaker crude prices, since oil is now a larger part of the Canadian economy, and its decline will open up some additional labour market slack. But the lower energy intensity of today's non-energy sector, and the fact that we are starting from a lean unemployment rate and high capacity use, suggests that the downdraft to core CPI will be modest, and too little to prompt an outright rate cut by the central bank.

Table 1

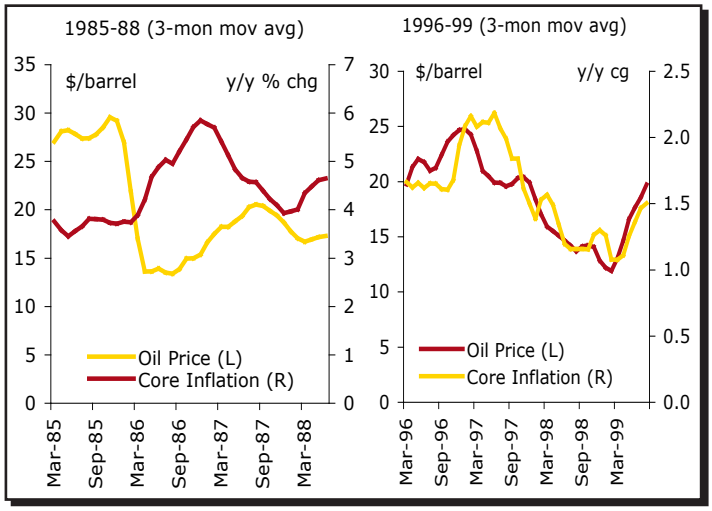
Nat Gas-Reliant Sectors

Industries' Energy Use	Nat Gas Share of Energy Use (2011)	x	(MJ/$2002 – GDP) Energy Intensity (2011)	=	**Natural Gas Intensity**
Chem Fertilizer (ex Potash)	0.91		70.2		**63.7**
Petrochemical	0.82		43.2		**35.6**
Iron and Steel	0.32		63.5		**20.5**
Pulp Mills	0.11		165.1		**18.2**
Resin and Syn Rubber	0.62		17.8		**11.0**
Paper Mills	0.18		49.0		**8.6**
Prim Prod of Alumina/Alumin	0.07		56.1		**4.2**
Cement	0.04		70.1		**2.5**
Textile Mills	0.48		4.3		**2.1**
Wood Products	0.13		10.4		**1.3**
Motor Vehicle	0.62		1.5		**0.9**
Printing & Rel Support Activ	0.41		1.9		**0.8**
Electr Equip & Components	0.47		1.6		**0.7**
Machinery	0.48		1.2		**0.6**
Clothing	0.45		1.1		**0.5**
Computer and Electr Prod	0.25		0.8		**0.2**

Source: Natural Resources Canada, CIBC

Chart 6

No Consistent Relationship Between Oil Prices and Core Inflation



Source: Statistics Canada, CIBC