



ECONOMIC COMMENTARY

Alberta's Engineering Sector

January 29, 2018

Highlights:

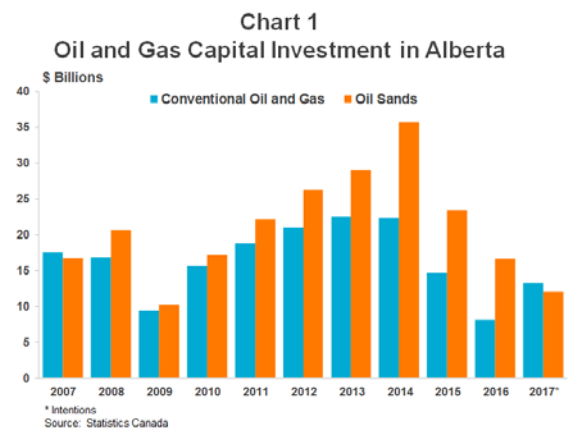
Alberta's engineering sector is the largest in the country. However, its success is closely tied to Alberta's oil and gas sector and that sector's 2015/2016 downturn has also led to falling revenues in the engineering sector.

Overview of the Engineering Sector

Alberta has the largest engineering sector in the country. In 2015, Alberta's engineering firms accounted for 32.9% of Canadian engineering revenues, ahead of Ontario's 27.5% share. In Alberta, most of these services are directly or indirectly tied to the oil and gas sector. The importance of the engineering sector to Alberta's energy sector can be illustrated by examining Alberta's Input - Output tables. In 2014, Alberta's oil and gas sector purchased an estimated \$3.1 billion of engineering services from domestic and international companies in the engineering sector. Moreover, Alberta's oil and gas engineering construction sector, which derives its revenues from oil and gas projects, purchased an additional \$7.0 billion of engineering services.

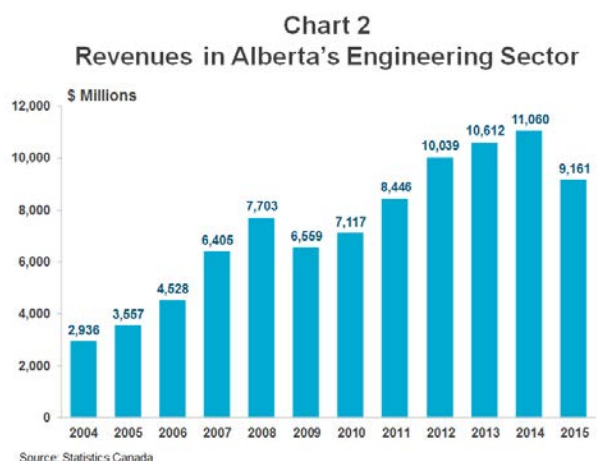
Capital Investment in the Oil and Gas Sector

Capital investment in Alberta's oil and gas sector, the main driver of Alberta's engineering sector, had been very strong until 2014, rising from \$34 billion in 2007 to \$58 billion in 2014 (Chart 1). However, because of falling oil and gas prices oil and gas investment has fallen sharply as well since then to \$25 billion by 2016 and possibly also in 2017. Prior to 2008 most of the investment was taking place in the conventional oil and gas sector, but oil sands investment has outstripped conventional oil and gas investment in recent years.



Output and Revenue Growth of Alberta's Engineering Sector

During the 10-year period ending in 2014, Alberta's engineering sector was one of the fastest growing sectors in the province with revenues rising from less than \$3 billion in 2004 to about \$11 billion in 2014 (Chart 2). However, declining investment in the oil and gas sector caused revenues to fall 17% in 2015 to \$9.2 billion. Although the revenue estimate for 2016 has not been released as yet the large declines in oil and gas investment will no doubt translate into another large decline in engineering revenues in 2016.



Gross Domestic Product (GDP) or output growth is harder to measure for this sector as the engineering sector is combined with architectural services and geophysical surveying and mapping services. However, on a revenue basis engineering services account for between 85% and 90% of total revenues in the architectural, engineering and related services sector and therefore GDP trends for this combined sector can be expected to approximate trends for the engineering services sector. Between 2009 and 2014 GDP in the architectural, engineering and related services sector rose 44%, compared with a 31% increase in GDP for the Alberta economy as a whole. GDP in this combined sector fell sharply during Alberta's 2015/2016 recession with GDP in the architectural, engineering and related services sector declining by 16% in 2015 and by a further 14% in 2016.

GDP at basic prices (or by industry) measures an industry's unduplicated contribution to the overall economy by deducting the value of intermediate inputs that come from other industries from the value of its output (basically revenues or shipments). GDP is presented here in chained 2007 dollars. Percentage changes for GDP by industry are calculated using volume measures, that is, adjusted for price variations.

Exports and Imports of Engineering Services

Export and import estimates are only available for the combined architectural, engineering and related services sector. However, the engineering sector accounts for the bulk of these exports and imports. In 2014, Alberta firms in the architectural, engineering and related services sector supplied \$13.6 billion of their services to customers in Alberta, in other provinces and to international customers. Approximately 75% of the combined sector's output is used by customers within the province, mainly in the engineering construction, oil sands and conventional oil and gas sectors. A further \$2.1 billion or 15% is sold to customers in other provinces with about one-half of that going to customers in Saskatchewan. International customers purchased \$1.2 billion of architectural, engineering and related services from Alberta in 2014 with almost all of that going to US customers.

Although most of the demand for engineering services is met by Alberta companies, imports from other provinces and other countries likely account for about one-quarter of the total Alberta demand of \$14.1 billion of these services.

Summary

Alberta has a large engineering sector which has accounted for close to 2% of Alberta's GDP. However, this sector's fortunes are closely tied to capital investment in the oil and gas sector and the recent weakening in investment has also led to declining revenues in the engineering sector.