Sectoral Profile

Mining, Quarrying, and Oil and Gas Extraction

Ontario

2017-2019

Sectoral Profiles provide an overview of recent labour market developments and outlooks for some of the key industries in various regions of the country.

SUPRESSED COMMODITY PRICES POSE CHALLENGES IN ONTARIO'S MINING SECTOR

- Despite a strong post-recession recovery in the metals markets, prices for metals have dropped significantly since their peak in early 2011 due to lower global demand
- Economic uncertainty has reduced investment in mining exploration activities, particularly among junior mining companies
- Oil and gas extraction is a small subsector in Ontario and thus the decline in oil prices and investment will have minimal employment impact in the overall mining, quarrying operations, and oil and gas extraction industry
- For 2017 to 2019, annual average employment growth in the mining sector is projected to be muted as commodity prices remain low

Ontario is a large mineral producer in Canada, with a 26.0% share of Canadian mineral production in 2016.[12] In fact, it is the largest producer of gold, nickel, copper, platinum group metals, salt and structural materials in the nation.[3] The resulting economic contributions of Ontario's mining, quarrying, oil and gas extraction industry to the province's economy are significant. In 2016, the industry accounted for 1.2% of Ontario's total gross domestic product.[4] Also, the large presence of mining companies listed on the Toronto Stock Exchange (TSX) and TSX Venture Exchange provides a platform for mining companies from across the globe to finance equity capital from within Ontario,[5] and has a spillover effect on the province's financial sector.

In addition to current mining operations underway in Ontario, further potential for the province's mining and quarrying sector exists in the wealth of mineral-rich land and resources in Ontario's northwest. However, the development of such new projects face barriers including concerns about the transportation and energy supply infrastructure available to support mining operations in isolated geographical areas, as well as uncertainty over land use with Indigenous communities.[67]

In addition to the high concentration of metallic mining in northern Ontario, non-metallic mineral mining and quarrying operations are located throughout the province. The value of production of non-metals has remained less volatile compared to the province's metal production for the past five years. The top non-metal minerals by production value in Ontario are stone, cement, and sand and gravel.[8] Despite the fact that Ontario's non-metallic production from quarries and pits was valued at more than $3 billion in 2016, the figure

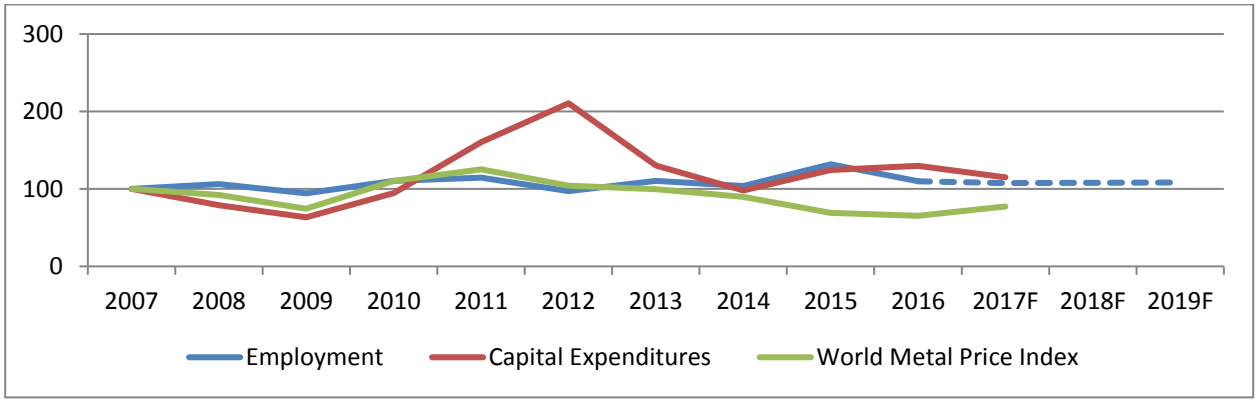
lags well behind Ontario's metallic production value of nearly $8 billion.[9] The top metal minerals by production value in Ontario are gold, copper, and nickel.[10]

Within Ontario's mining, quarrying, and oil and gas extraction industry, the oil and gas extraction subsector is very small, and experienced a decline in production since the early 2000s.[11] Despite the continual rise in the province's petroleum consumption, Ontario had seen a drop in the exploration activities of new wells as extraction significantly shifted to Alberta and Saskatchewan.[12] Consequently, Ontario's oil production dropped 72% from 1990 to 2013, while Canadian oil production rose 108% in the same time frame.[13] Ontario's natural gas production followed a similar trend.[14]

Employment trends in mining, quarrying, and oil and gas extraction

As seen in Figure 1, movements in employment in the mining, quarry operations, oil and gas extraction industry generally respond to movements in metal prices. As both world metal prices and Ontario mining and quarrying capital expenditures have fallen since 2011, employment has stagnated.[15] Employment levels in oil and gas extraction are low, with fewer than 1500 workers in Ontario;[16] as a result, the decline in oil prices has a relatively small impact on employment in the broader mining, quarrying, and oil and gas extraction industry.

Figure 1: Change in Metal Prices, Capital Expenditures and Employment in the Mining, Quarrying, and Oil and Gas Extraction Industry, 2004 - 2018



*Data are expressed as an index where year 2007 = 100
Sources: Statistics Canada, Employment – LFS, Capital Expenditures –Capital and Repair Expenditures Survey; Metal price data obtained from the website of International Monetary Fund – site consulted on September 27, 2017.

The prices for copper, nickel, and gold are important to employment in Ontario as these metals account for a large portion of mineral production. According to a Consensus Economics survey, movements in the prices for nickel and copper are most dependent on the demand/business cycle and supply/production constraints.[17] Supply levels are difficult to predict as it partly depends on changes in government policy, and in combination with an unstable world economy they increase the uncertainty for price growth forecasts for nickel and copper. For example, the price of copper recently rebounded to a two-year high, partially due to an increase in demand from China and expansion in Europe.[18] However, the rebound in copper prices may be short lived as supply disruptions in Indonesia have been resolved. Similarly, the price of nickel has remained subdued in recent years due to high stock levels, although this may be partially improved during the forecast period by an increase in demand from China's construction sector.[19] Although gold has seen a rally in price recently thanks to increased safe haven demand,[20] gold forecast uncertainty persists in the metals market due to price volatility, political instability, unstable market demand, and changing monetary policies.[21]

Mining sector experiences a reduction in exploration activities

Junior mining companies are especially sensitive to changes in the price of metals as their funding is mostly dependent on external investments as opposed to large mining companies who are able to generate funding from returns on their projects.[22] Because they are often unable to generate revenue for mineral exploration, these junior mining companies usually secure capital required for exploration via equity financing by investors. However, investor interest relies heavily on forces driving market conditions, including world commodity prices. Since 2013, many junior mining companies in northern Ontario carried out fewer exploration activities, as they were unable to attract financing due to economic uncertainty.[23] As a result, northeastern Ontario has seen a significant drop in exploration.[24] However, strategies are underway to improve exploration activities; as part of Ontario's renewed Mineral Development Strategy, $5 million was committed to a Junior Exploration Assistance Program to encourage mineral exploration by junior companies.[25] The strategy also outlines the province's plan to address the industry issues of competitiveness, environmental impact, regulation, and growth. [2627]

Employment composition and challenges affecting labour supply

Employment in the mining industry consists of both high- and low-skilled workers, and the workforce is predominately male. According to the 2011 National Household Survey, 80.0% of employees in the provincial mining industry are in high-skilled occupations, 9.3% are in intermediate occupations, and 10.7% are labourers. Underground production and development miners (NOC 8231) make up the largest portion of high- skilled workers. This occupational group includes jobs such as drillers, blasters, and mining machine operators, and usually requires a combination of education and experience plus licensing, or certification. Other significant occupations in the mining sector include:

- Heavy equipment operators (except crane) (NOC 7521)
- Supervisors, mining and quarrying (NOC 8221)
- Construction millwrights and industrial mechanics (NOC 7311)
- Managers in natural resources production and fishing (NOC 0811)
- Geoscientists and oceanographers (NOC 2113)
- Geological and mineral technologists and technicians (NOC 2212)
- Transport Truck Drivers (NOC 7511)
- Mining engineers (NOC 2143)
- Heavy-duty equipment mechanics (NOC 7312)
- Mine labourers (NOC 8614)

Due to the ageing workforce in Ontario, a major challenge in the mining labour market is the need to replace retiring workers, and the transfer of skills between the different generations of workers.[28] Since the majority of mining-related positions in Ontario are found in the northern economic regions, often in remote locations, it can be a challenge to recruit workers in this industry. Some labour supply issues may be alleviated if the mining industry can attract workers from other sectors in the area. For example, in the past a number of workers from the forestry industry have been retrained for mining-related occupations. The mining industry is also looking into other strategies to gain workers. For instance, due to the proximity of the majority of Ontario's mines to Indigenous communities, workforce participation from Indigenous peoples could potentially fill a large part of the labour gap. This would require employer and government investment in skills and training. The Aboriginal Skills and Employment Training Strategy is an example of funding offered by the federal government to assist Indigenous peoples who are interested in upgrading skills required for specific jobs.

Sector outlook

For the period of 2017 to 2019, employment growth in Ontario's mining, quarry operations, and oil and gas extraction sector is expected to be muted should recent trends of lower prices and unstable market demand persist in the metals market. NAFTA renegotiations also add uncertainty. Although infrastructure developments in the Ring of Fire region in the Northwest are planned, road construction will not begin until 2019, so industry employment linked to the project is not expected to have an impact during the forecast period.[29]

Sub-provincial highlights

The **Northeast** economic region employs the greatest number of workers in the mining, quarrying, and oil and gas extraction industry in Ontario. The region accounts for almost 50% of Ontario's mining employment.[30] The labour force is concentrated in population centres such as Sudbury and Timmins. The diversification of the Northeast region's mineral production lowers the risk of price shocks to any particular commodity in the area. In addition, many large, established firms such as Goldcorp Inc., Vale Canada Ltd. and Sudbury Integrated Nickel Operations operate in this region. The majority of mining businesses are located in the Greater Sudbury census division, where a number of polymetallic mines exist, producing nickel, copper, gold, phosphate, zinc, and talc. The Cochrane census division, with gold as its primary resource, also has a significant presence in the Northeast with regards to mining employment. In the near term, sluggish primary industry growth is expected to be one of the main contributors to Northeast region's slow overall economic growth.

The **Toronto** economic region employs the second largest number of workers in mining, quarrying, and oil and gas extraction. It accounts for over 15% of Ontario's employment in the industry.[31] Although there are no active mines in the region, a number of businesses in mining, quarrying, and oil and gas extraction are located in Toronto, York, and Peel. These businesses mainly focus on providing support to mining operations, and employ workers in management, human resources, financial auditing and accounting, engineering, and geology. They include headquarters of mining giants such as Barrick Gold Corporation, Vale Canada Limited and Sherritt International, as well as growth companies such as Lundin Mining Corporation and Hudbay Minerals.[32] For the forecast period of 2017 to 2019, Toronto is not projected to gain additional positions in this industry as a result of relatively slower growth in overall mining activities.

The **Northwest** economic region accounts for a smaller share of Ontario's mining employment compared to the Northeast and Toronto, at just over 10%. Gold production dominates the mining sector in this region. Upcoming projects include a new gold mine in the Rainy River-area operated by New Gold, which after delays hopes to open in late 2017[33] and aims to staff 600.[34] Avalon Advanced Minerals has development plans for a Kenora-area lithium mine, with a final feasibility study concluding in 2017.[35] The Thunder Bay-area is currently serving as the transportation and economic hub of the region, offering export routes to the United States.

The Northwest could be the key to the future of mining in Ontario due to its economic potential. The labour market outlook in the region hinges greatly on the development of a fully operational mining community located in the James Bay Lowlands region, 400km north of Thunder Bay,[36] called "the Ring of Fire" after its discovery in 2007. The Ring of Fire is home to significant untapped deposits of nickel, chromite, and various other minerals,[37] with deposits estimated at a value of $60 billion[38] and with the potential to employ more than 1,500 people once fully developed.[39]

In August 2017, a major development for the Ring of Fire was announced with the Ontario provincial government moving ahead with construction plans for an all-season access road to the proposed mining sites.[40] The road is planned to begin construction in 2019.[41] However, the magnitude of this project, in terms of size

and time frame, may hinder the region's ability to provide significant additional employment in mining and quarrying until 2019 at the earliest. As well, the area surrounding the proposed project is home to many small and remote First Nations communities, which presents both an opportunity and a challenge for the development of the Ring of Fire. These communities could potentially benefit from the economic opportunities in the area and fly-in communities would greatly benefit from access to a road. Throughout the lifespan of the Ring of Fire, the question of land use, environmental monitoring and cooperative socio-economic planning agreements with local First Nations are essential to the future of any projects.[42] Currently, the access road is being somewhat contested by neighbouring First Nations communities and some leaders are calling the road "premature" until jurisdictional issues are resolved.[43]

Note: *In preparing this document, the authors have taken care to provide clients with labour market information that is timely and accurate at the time of publication. Since labour market conditions are dynamic, some of the information presented here may have changed since this document was published. Users are encouraged to also refer to other sources for additional information on the local economy and labour market. Information contained in this document does not necessarily reflect official policies of Employment and Social Development Canada.*

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