



# Sectoral Profile

## Mining, Quarrying, and Oil and Gas Extraction

Ontario

2015-2017



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 recent 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 steep decline in oil prices and investment will have minimal employment impact in the overall mining, quarrying operations, and oil and gas extraction industry
- For 2016 and 2017, annual average employment growth in the mining sector is projected to be muted as commodity prices remain low

Ontario is a significant mineral producer in Canada, with a 24.6% share of Canadian mineral production in 2014<sup>1</sup>. In fact, it is the largest producer of gold, nickel, copper, platinum group metals, salt and structural materials in the nation.<sup>2</sup> The resulting economic contributions of Ontario's mining, quarrying, oil and gas extraction industry to the province's economy are significant. In 2014, the industry accounted for 1.4% of Ontario's total gross domestic product.<sup>3</sup> 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, and has a spillover effect on the province's financial sector.<sup>4</sup>

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 which are yet untapped. However, the development of such new projects face major barriers including concerns about the

<sup>1</sup> <http://www.nrcan.gc.ca/mining-materials/publications/17722>

<sup>2</sup> [http://www.oma.on.ca/en/ontariomining/facts\\_figures.asp](http://www.oma.on.ca/en/ontariomining/facts_figures.asp)

<sup>3</sup> [http://www.omafra.gov.on.ca/english/stats/economy/gdp\\_all.htm](http://www.omafra.gov.on.ca/english/stats/economy/gdp_all.htm)

<sup>4</sup> [http://www.oma.on.ca/en/ontariomining/resources/wwwtmxcom\\_en.pdf](http://www.oma.on.ca/en/ontariomining/resources/wwwtmxcom_en.pdf) Mining Presentation web.pdf

transportation and energy supply infrastructure available to support mining operations in isolated geographical areas, as well as uncertainty over disputed land claims.<sup>5</sup>

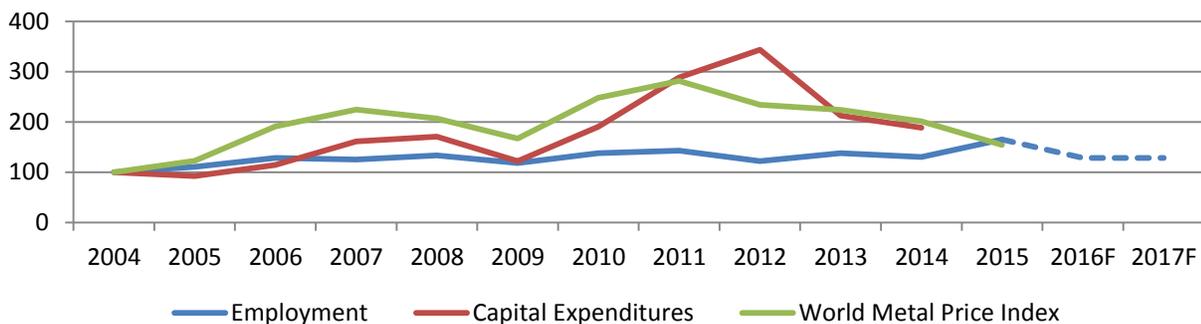
In addition to the high concentration of metallic mining in northern Ontario, non-metallic mineral mining and quarrying operations are located throughout the province. The value of production of non-metals has remained less volatile compared to the province's metal production for the past five years. The top minerals by production value in Ontario are stone, cement, and sand and gravel.<sup>6</sup> Despite the fact that Ontario's non-metallic production from quarries and pits was valued at \$3 billion in 2014, the figure lags well behind Ontario's metallic production value of \$8 billion.<sup>7</sup>

Within Ontario's mining, quarrying, and oil and gas extraction industry, the oil and gas extraction subsector is very small, and experienced a slow decline in production since 2000.<sup>8</sup> Despite the continual rise in the province's petroleum consumption, Ontario has seen a drop in the exploration activities of new wells as extraction is now heavily focused in Alberta and Saskatchewan.<sup>9</sup> Consequently, Ontario's oil production dropped 72% from 1990 to 2013, while Canadian oil production rose 108% in the same time frame.<sup>10</sup> Ontario's natural gas production followed a similar trend.<sup>11</sup>

### 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.<sup>12</sup> Employment levels in oil and gas extraction are low, with fewer than 1500 workers in Ontario; 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 - 2017**



\*Data are expressed as an index where year 2004 = 100

<sup>5</sup> <http://www.northernontariobusiness.com/Industry-News/mining/2014/02/Province-mum-on-Capreol-refinery.aspx>

<sup>6</sup> <http://sead.nrcan.gc.ca/prod-prod/ann-data-en.aspx?FileT=2015&Lang=en>

<sup>7</sup> ibid

<sup>8</sup> [http://www.ogsrlibrary.com/industry\\_statistics\\_ontario\\_petroleum](http://www.ogsrlibrary.com/industry_statistics_ontario_petroleum)

<sup>9</sup> <http://www.ontariopetroleuminstitute.com/wp-content/uploads/2014/02/Economic-Profile-Ontario-Oil-Gas-and-Salt-Resources-Industry.pdf>

<sup>10</sup> ibid

<sup>11</sup> ibid

<sup>12</sup> Although based on the Labour Force Survey data, employment looks to have grown significantly in 2015, employment based on the Survey of Employment, Payrolls and Hours shows minimal growth over the same timeframe. Industry trends would further support minimal employment growth over this year.

Sources: Statistics Canada, Employment – LFS, Capital Expenditures – Capital and Repair Expenditures Survey (Terminated); Metal price data obtained from the website of International Monetary Fund – site consulted on January 18, 2016.

The prices for gold, nickel, and copper are important to employment in Ontario as these metals account for a large portion of mineral production. Supply pressures from high global stock levels have kept nickel and copper prices subdued. In particular, the supply of nickel has reached a historical high in early 2015 due to the subdued demand from China, despite the restriction in the supply of nickel as a result of Indonesia's ban on nickel ore exports.<sup>13</sup> Both copper and gold prices have struggled as of late, and over the forecast period of 2015 to 2017 prices are expected to recover at a modest pace, though they remain below the high levels seen in 2011 and 2012, respectively.<sup>14</sup> Forecast uncertainty, however, persists in the metals market due to price volatility, political instability, unstable market demand, and changing monetary policies.

### **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.<sup>15</sup> 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. In 2013, many junior mining companies in northern Ontario carried out fewer exploration activities, as they were unable to attract financing due to economic uncertainty.<sup>16</sup> As a result, northeastern Ontario has seen a significant drop in exploration.<sup>17</sup> However, strategies are underway to improve exploration activities; as part of Ontario's renewed Mineral Development Strategy announced in late 2015, \$5 million will be committed to a Junior Exploration Assistance Program to encourage mineral exploration by junior companies. The strategy also outlines the province's plan to address the industry issues of competitiveness, environmental impact, and growth.<sup>18</sup> In addition to junior companies, intermediate mining companies are also affected by price fluctuations. Due to the jump in the price of gold in early 2015, gold miners Detour Gold Corp., Primero Mining Corp., and Richmond Mines Corp. were able to raise significant additional financing for projects and debts.<sup>19</sup> In light of the current landscape, some consolidation among junior and mid-tier firms has surfaced. Examples include the merger of Osisko Gold Royalties and Virginia Mines,<sup>20</sup> the merger of Timmins Gold Corp. and Newstrike Capital,<sup>21</sup> and the merger of Kirkland Lake Gold and St Andrew Goldfields.<sup>22</sup>

According to a 2014 survey of approximately 4,200 mining and exploration companies, Ontario received a moderate ranking in terms of investment attractiveness. The main factors cited as hindering investment attractiveness included uncertainty over land claims and over which areas of land may be deemed as

<sup>13</sup> Consensus Economics – December 14, 2015

<sup>14</sup> Consensus Economics – December 14, 2015

<sup>15</sup> [http://www.northernlife.ca/news/localNews/2013/11/051113\\_mine\\_symposium\\_Sudbury.aspx](http://www.northernlife.ca/news/localNews/2013/11/051113_mine_symposium_Sudbury.aspx)

<sup>16</sup> <http://www.cbc.ca/news/canada/sudbury/junior-miners-fret-over-lack-of-investment-1.1341074> &

<http://business.financialpost.com/2013/06/26/gold-prices-miners/>

<sup>17</sup> <http://www.republicofmining.com/2013/07/11/falling-metal-prices-stifle-ontario-mining-exploration-by-cbc-news-sudbury-july-10-2013/>

<sup>18</sup> <http://www.northernontariobusiness.com/Industry-News/mining/2015/12/Province%E2%80%99s-10-year-plan-to-put-Ontario-mining-on-top.aspx> & [http://www.mndm.gov.on.ca/sites/default/files/mndm\\_mds\\_english\\_2015.pdf](http://www.mndm.gov.on.ca/sites/default/files/mndm_mds_english_2015.pdf)

<sup>19</sup> <http://business.financialpost.com/2015/01/21/canadian-gold-miners-raising-nearly-800-million-as-financing-window-opens/>

<sup>20</sup> <http://www.canadianminingjournal.com/news/gold-osisko-virginia-plan-merger/1003355237/>

<sup>21</sup> <http://www.canadianminingjournal.com/news/merger-timmins-gold-newstrike-capital-to-combine/1003482315/>

<sup>22</sup> <http://www.canadianminingjournal.com/news/gold-kirkland-lake-to-buy-st-andrew-create-intermediate-producer/>

protected.<sup>23</sup> Globally, Ontario ranked 23<sup>rd</sup> out of 122 jurisdictions; however, within Canada, Ontario was ranked lower than Saskatchewan, Manitoba, Quebec, Newfoundland and Labrador, Yukon, Northwest Territories, New Brunswick and Alberta.<sup>24</sup> The result of this survey shows the declining attractiveness for investment in Ontario in the period from 2011/2012 to 2014 and echoes the drop in the amount of capital expenditures in mining. Whether this perceived investment attractiveness rises or falls in the coming years depend on factors such as transportation and energy infrastructure investments, and price and currency volatility.<sup>25</sup>

### 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 7421)
- Construction millwrights and industrial mechanics (NOC 7311)
- Mine labourers (NOC 8614)
- Heavy-duty equipment mechanics (NOC 7312)
- Mining engineers (NOC 2143)
- Geological and mineral technologists and technicians (NOC 2212)
- Truck drivers (NOC 7411)
- Industrial electricians (NOC 7242)
- Geologists, geochemists and geophysicists (NOC 2113)
- Underground mine service and support workers (NOC 8411)

Due to the ageing workforce in Ontario, a major challenge in the mining labour market is the need to replace retiring workers, and to transfer skills between the different generations of workers.<sup>26</sup> Since the majority of mining-related positions in Ontario are found in the northern economic regions, often in remote locations, it is 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.<sup>27</sup> The mining industry is also looking into other strategies to gain workers. For instance, due to the close proximity of the majority of Ontario's mines to Aboriginal communities, workforce participation from Aboriginal 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 Aboriginal peoples who are interested in upgrading skills required for specific jobs.

### Sector outlook

<sup>23</sup> <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/survey-of-mining-companies-2014.pdf>

<sup>24</sup> <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/survey-of-mining-companies-2014.pdf>

<sup>25</sup> <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/mining-survey-2013.pdf>

<sup>26</sup> <http://www.mininghrforecasts.ca/en/mining-labour-market/The-Aging-Mining-Workforce.asp>

<sup>27</sup> <http://www.northernontariobusiness.com/Industry-News/mining/2014/04/Northwest-business-may-benefit-from-mine-development-spinoffs.aspx>

For the period of 2016 and 2017, employment growth in Ontario's mining, quarry operations, and oil and gas extraction sector is expected to be muted should recent trends of falling prices and unstable market demand persist in the metals market. Further slowdowns in the commodity market could be ahead as China, the world's top consumer of nickel and copper, shifts away from reactionary stimulus spending as their main tool for economic growth.<sup>28</sup> Developments in the Ring of Fire region in the Northwest have been slow-moving, and employment linked to the project is not expected to have any significant industry impact in the forecast period.

### 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.<sup>29</sup> 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, the Northeast region will depend on the primary resource industries to drive regional economic growth.<sup>30</sup>

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. 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.<sup>31</sup> However, diamond miner and trader De Beers Canada relocated their Toronto headquarters to Calgary in the June of 2015 to gain efficiencies in light of low prices.<sup>32</sup> For the forecast period of 2016 to 2017, 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. Current projects include Goldcorp Inc.'s Musselwhite Mine at Opapimiskan Lake, 480km north of Thunder Bay,<sup>33</sup> as well as the company's Red Lake Gold Mines, located 230 km northwest of Dryden.<sup>34</sup> Thunder Bay 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 potential. The labour market outlook in the region hinges greatly on the ability to develop a fully operational mining community in the Ring

<sup>28</sup> <http://www.scmp.com/news/china/policies-politics/article/1897719/chinas-president-warns-economic-stimulus-not-answer> & <http://fortune.com/2016/01/04/chinas-xi-jinping-says-hes-over-same-old-stimulus/>

<sup>29</sup> 2011 National Household Survey

<sup>30</sup> <http://sudburychamber.ca/northeast-regional-economic-outlook/>

<sup>31</sup> <http://www.theglobeandmail.com/report-on-business/rob-magazine/top-1000/rankings-by-industry/article12870820/>

<sup>32</sup> <http://www.kenoradailyminerandnews.com/2015/10/16/de-beers-canada-to-move-headquarters-to-calgary-from-toronto>

<sup>33</sup> <http://www.goldcorp.com/English/Unrivalled-Assets/Mines-and-Projects/Canada-and-US/Operations/Musselwhite/Location-and-Geology/default.aspx>

<sup>34</sup> <http://www.goldcorp.com/English/Unrivalled-Assets/Mines-and-Projects/Canada-and-US/Operations/Red-Lake/Location-and-Geology/default.aspx>

of Fire located in the James Bay Lowlands region, north of Thunder Bay.<sup>35</sup> The Ring of Fire is home to significant untapped deposits of gold, nickel, chromite, and various other minerals,<sup>36</sup> worth approximately \$30 to \$50 billion,<sup>37</sup> with the potential to employ more than 1,500 people once fully developed.<sup>38</sup> As well, the investment in infrastructure to support area development would positively impact the economic conditions of other regions in northern Ontario and improve connectivity. The size and required development time of this project, however, hinders its ability to provide significant additional employment in mining and quarrying for over the 2016 to 2017 period. As well, the area is home to many 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, however, land use and regional socio-economic planning agreements must first be finalized.<sup>39</sup> Due to these uncertainties regarding future projects, employment in the Northwest is projected to only make modest gains for 2016 to 2017.

**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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<sup>35</sup> <http://www.occ.ca/advocacy/ring-of-fire/>

<sup>36</sup> Ontario Mining Association

<sup>37</sup> [http://www.thesudburystar.com/2014/07/16/liberals-hedge-on-ring-of-fire-promise:](http://www.thesudburystar.com/2014/07/16/liberals-hedge-on-ring-of-fire-promise)  
<http://metronews.ca/news/canada/1300422/feds-ontario-jointly-invest-in-ring-of-fire/>

<sup>38</sup> [http://www.planningourworkforce.ca/pdf/RIS\\_sudbury\\_011.pdf](http://www.planningourworkforce.ca/pdf/RIS_sudbury_011.pdf)

<sup>39</sup> <http://www.mndm.gov.on.ca/en/ring-fire-secretariat/first-nations-partnerships>