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Mining: Dynamic and Dependable for Ontario's Future

by

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Executive Summary

The Ontario Mining Association (OMA) has published several reports over the past two decades on the contribution of the Ontario mining industry to the provincial economy. This report extends and expands upon these past studies to develop an overview of mining's impact that is as up-to-date and comprehensive as possible.

The report examines many different aspects of the Ontario mining industry, including its importance to the provincial economy now and in the future, and the industry's efforts to make this contribution in an increasingly safe and sustainable way. The analysis is based on a wide variety of published data, a survey of OMA members and input-output calculations conducted by the authors.

Highlights of the report include:

- Mining in Ontario is very diverse, covering a wide range of mineral commodities, including gold, nickel, copper, salt, diamonds, and a number of structural building materials. By 2011, with non-metal mining at new highs and metal mining output climbing strongly, the total value of mineral production hit \$10.7 billion. This represented almost 25% of all Canadian nonfuel mineral production in 2011 and accounted directly for more than 1.6% of total Ontario GDP.
- Direct employment in mining in 2011 was more than 16,000 – over 28% of the Canadian total. There were another 7,851 workers employed in support activities to mining, which have become increasingly important in the province. Total employment in the industry has increased over the last 10 years. This performance is in sharp contrast with industries downstream from the mining industry itself, where employment is well off the levels of a decade ago.
- Worker productivity in mining is exceptionally high: the value of output per worker at metal mines in 2011 was almost \$740,000. Output per worker in all mining in 2011 is a still impressive \$680,000, roughly six times the provincial industrial average. Remuneration is in line with this exceptional productivity: the average weekly wage paid in the mining industry in 2011 was almost 60% more than the Ontario average industrial wage, while wages paid in the mining support sector were almost 95% higher.
- In 2011, according to the OMA survey, over 83% of employment took place at the mine site, with about 2% of mining employees involved in R&D activities, 7% in exploration, and 8% employed at mining head offices. This employment was spread across the province. In 2011, roughly 36% of mining employment took place in Sudbury. Employment in Northeastern Ontario accounted for over 30%, and that in Northwestern Ontario for 19%. Employment in the southern part of the province, which is home to a number of non-metal mines, as well as mining head offices in Toronto, had a share of 15% in 2011.
- Based on the OMA survey, First Nations employment accounted for 9.7% of total mining jobs in 2011.
- Worker safety in the mining industry continues to improve. Statistics from Workplace Safety North show that lost time injury rates have come down to 0.4 per 200,000 hours for the first nine months of 2012. This compares with lost time injury rates for mining of 6 per 200,000 in 1981, 3 in 1991, 1.3 in 2001 and 0.6 in 2011.
- The mining industry spent almost \$1,800 per employee in 2011 on training and health and safety initiatives.
- According to the OMA survey, roughly 60% of mineral production, by value, was shipped outside the country in 2011. The US was the biggest customer, but China is becoming increasingly important.

- Since 2002, the overall international goods trade deficit for Ontario has more than quadrupled. In contrast, the trade surplus for Ontario mineral products has strengthened to more than \$12 billion, remaining positive over the entire period.
- While some components of taxes paid by mining companies in Ontario are difficult to measure due to confidentiality issues, the report estimates that mining companies in Ontario paid the federal government between \$314 and \$413 million in various revenues in 2011, while the provincial government received between \$482 million and \$564 million. These figures do not include income and payroll taxes paid by mining employees, which would conservatively amount to over a half-billion dollars. Local taxes, while much smaller in total, are an important part of the tax base of northern communities.
- The mining industry is making exceptional investments in the future: exploration and deposit appraisal spending in Ontario for 2011 was more than \$1 billion – almost eight times the amount spent in 2002. New mines are being built and existing ones refurbished. Over the last 10 years, it is estimated that capital expenditures have increased from just over \$1 billion in 2002 to over \$4 billion in 2011. With rising commodity prices, especially the price of gold, a significant amount of recent investment has gone to the refurbishment, or reopening, of older mines.
- Recent years have seen the emergence of major opportunities in the “Ring of Fire” region in the Far North. A variety of mineral deposits have been found, including chromite, which is a critical ingredient in stainless steel and otherwise unobtainable in North America. Development of the “Ring of Fire” will depend critically on how the private and public sectors can share the development of large-scale infrastructure to open the area for development.
- The mining industry in recent years has made major strides in reducing its energy inputs and, especially, in moving its electricity needs to off-peak periods. The relative cost of electric power in Ontario versus adjacent jurisdictions remains, however, a major factor in decisions to invest in the development and downstream processing of Ontario mineral resources.
- The OMA survey reports that \$62 million was spent in 2011 on environmental protection, compared to \$43 million in 2010. The investments by the mining industry to improve its environmental footprint, which builds upon its investment on health and safety training of its employees, are not reflected in measured output or productivity for the industry. The societal benefits of this spending, however, can not be overlooked.
- Results from the OMA survey show the source of many of the inputs to the mining sector. From the survey, well over 70% of the value of mining supplies and services were provided from within the province, 31% locally and over 43% from the rest of Ontario. Suppliers in the rest of Canada accounted for 15% and imports from outside the country accounted for the other 11%.
- The Input-Output model of Statistics Canada was used to probe deeper into the indirect impacts of mining on the Ontario economy. (This was the same technique used in the OMA’s 2007 study of the economic impacts of a ‘Representative Mine’ in Ontario.) The impacts are calculated based on a \$1 billion of output reflecting the type of production in the Ontario mining sector, as constituted by the membership of the Ontario Mining Association in 2011.
- We estimate that the direct and upstream aggregate impacts of \$1 billion of Ontario mining production add \$858 million to Ontario GDP and \$900 million to the GDP of Canada. In terms of employment, this is 4,418 jobs in Ontario and 4,775 in Canada.

- The Input-Output results show that there are significant impacts on a wide variety of sectors including Professional, Scientific & Technical Services, Finance, Insurance & Leasing and Administration & Support.
- The results also show an \$86 million impact on international imports, which would appear to offer potential opportunities to domestic suppliers.
- When the Statistics Canada model is also used to estimate the ‘induced’ effects of Mining (that is, the spending of wages and salaries by those both in mining and its supplier sectors back along the production chain), then the impact of \$1 billion of mining output on Ontario GDP grows to \$1.04 billion (and 6,360 jobs) for Ontario and \$1.12 billion (and 7,104 jobs) for Canada, with significant impacts on sectors like Retail Trade and Accommodation and Food Services. There are also noticeable GDP and employment impacts on Quebec and Alberta from mining activity in Ontario.
- A tally of the number of firms in the Canadian Association of Mining Equipment and Services for Export (CAMESE) shows mining supply and service entities are located throughout the province, with particular concentrations around Toronto-Mississauga and Sudbury-North Bay.
- The transport sector in the province depends vitally on Ontario’s mining industry. This includes moving employees and contractors to remote mine sites and, in particular, the movement of mineral production to markets.
- In 2011, 90% of all global mining equity financings were done on the Toronto Stock Exchange and the TSX Venture Exchange, with \$12.5 billion raised, making up nearly 40% of the world’s new mining equity capital.
- The trading of mining company shares is crucial to the success of both the main Toronto Stock Exchange and the Venture Exchange. In 2011, the volume of mining shares traded on the main TSX totaled 45.6 billion, accounting for 44% of the total shares traded by the exchange. The total value of mining shares traded in 2011 was almost \$440 billion, roughly 30% of the TSX total for the year. The importance of mining companies to the TSX Venture exchange is even more dramatic.
- Responses to the OMA survey indicate charitable donations by mining companies approached \$10 million in each of 2010 and 2011. Mining companies have supported local communities and provincial well-being in a broad range of ways, from providing and maintaining community athletic facilities, to preserving endangered fish species, to supporting local food banks.

The Ontario economy continues its slow recovery from the biggest world economic downturn since the Great Depression. Ontario’s manufacturing sector is struggling to regain lost ground, beset by a strong Canadian dollar and a weak recovery in the United States. Governments are initiating cutbacks at all levels. But, with the natural resource commodities that the world wants, and if it maintains an atmosphere conducive to investment, Ontario will continue to be pulled ahead by a strong mining industry.

Our thanks to staff and members of the Board of the Ontario Mining Association for valuable comments and suggestions. As well, we appreciate the efforts of OMA member companies to complete the industry survey. Peter McBride of the OMA, in particular, has been indispensable in providing access to a wide variety of information and in improving the report.

Introduction

For the past two decades, the Ontario Mining Association has published several reports on the contribution of the Ontario mining industry to the provincial economy. This report extends and expands upon these past studies to develop an overview of mining's impact that is as up-to-date and as comprehensive as possible.

As the world recovers from the biggest economic downturn since the Great Depression, the demand for natural resource commodities, especially from developing countries like China, is expected to strengthen further. Ontario's manufacturing sector continues to struggle, beset by a strong Canadian dollar and a tepid recovery in the United States. But with the natural resource commodities that the world wants – including gold, nickel, copper and platinum group metals – Ontario, if it maintains an atmosphere conducive to investment, will continue to be pulled ahead by a strong mining industry.

This report covers many different aspects of the Ontario mining industry, including its importance to the province now and in the future, as well as the industry's efforts to make this contribution in an increasingly safe and sustainable way.

We begin by looking at what types of commodities are produced and how the relative values of this production have changed over the last 10 years. We also show the current importance of this production relative to other provinces in Canada.

The report then details the nature of employment in the Ontario mining industry. We present the number of people employed, the level of compensation paid and the productivity of employees relative to a number of other Ontario industries. Using data collected from an Ontario Mining Association survey covering 2010 and 2011, we are able to look at employment and labour compensation by both job category and region of the province, as well as facts about the makeup of the mining industry workforce. Finally, worker training and the employee health and safety record of the industry are examined.

The next section presents an overview of changes in the prices of a number of the mining commodities produced in Ontario, the location of the mining industry's customers in the world and the impact that the trade in mineral commodities has on Ontario's international trade balance. We also examine the industry's contribution to the tax base of the province.

We then present a section on investing in the future of the mining industry – including a look at exploration, the Ring of Fire, R&D and patents, the renewal of older mines, and the importance of providing infrastructure in the future development of mining in Ontario. We also look at efforts to operate mines in an environmentally sustainable way, including data on evolving energy use patterns and electricity prices.

The last part of the report is devoted to the industry's beneficial impact on other sectors in the economy. We use the Ontario Mining Association industry survey to try to capture from where mining companies source their supplies. A major compendium of suppliers also helps capture the diverse locations throughout the province of companies supplying the mining industry. Using Input-Output analysis based on highly detailed Statistics Canada data, we examine the impact that mining production in Ontario has on output and employment in a wide range of industries both in the province and across the country. The importance of the mining industry to the province's transportation sector and the Toronto Stock Exchange are also examined. Finally, we look at the impact of efforts by Ontario mining companies to give back to broader community in the province.

Mineral Production

Mining in Ontario is very diverse, covering a wide range of mineral commodities, including gold, nickel, copper, salt, diamonds and a number of structural building materials (see Map 1 with accompanying directory). There are more than 35 active mining operations in Ontario. Output from metal mines continues to account for the majority of the value of production in the province. Over the last 10 years, (see Chart 1) the value of total mineral production in the province climbed to a peak of almost \$10.9 billion in 2007, before falling to its lowest level since 2003 in 2009, due to the effects of world economic weakness, exacerbated by a sustained labour dispute in Sudbury. By 2011, with non-metal mining at new highs and metal mining output climbing strongly, the total value of mineral production hit \$10.7 billion.

The contributions of the different types of mineral commodities to the total value of mineral production in the province have changed considerably over the last 10 years. With the impacts of the opening of new mines, expanding or closing of existing ones, commodity price swings, as well as labour disputes in certain years, the importance of individual commodities has changed dramatically (see table 1). While the shares of the value of production of both gold and nickel in 2011 at over 20% are roughly where they were in 2002, their contribution in the intervening years has swung wildly. In 2007, the value of nickel production accounted for 42% of all mineral production in Ontario. By 2009, however, this share had fallen to only 11% as the share of gold production soared to almost 30%. Over the 10 year period, the share of the value of copper production climbed almost 10 percentage points. Over the last 10 years, the share of value of metal mines production climbed from 62% in 2002 to more than 70% in 2011, with its greatest share coming in 2007 at more than 76%.

With the start of the province's first diamond mine in 2008, the value of diamond production has climbed to over 4% of total mineral production, closing in on the level of the value of salt production. Overall, the share of non-metal mines production has climbed over the last 10 years, sitting at over 11% in 2011. The value of the production of structural materials such as clay, cement, lime, stone, sand and gravel has been quite steady over the last 10 years. Therefore, as the value of the output of many metal minerals has swung up and down, the share of structural materials has moved in the opposite direction. Over the last 10 years, the share of all of the structural materials components have fallen, such that by 2011 the total share of the value of this production was down to just over 18% from over 30% in 2002.

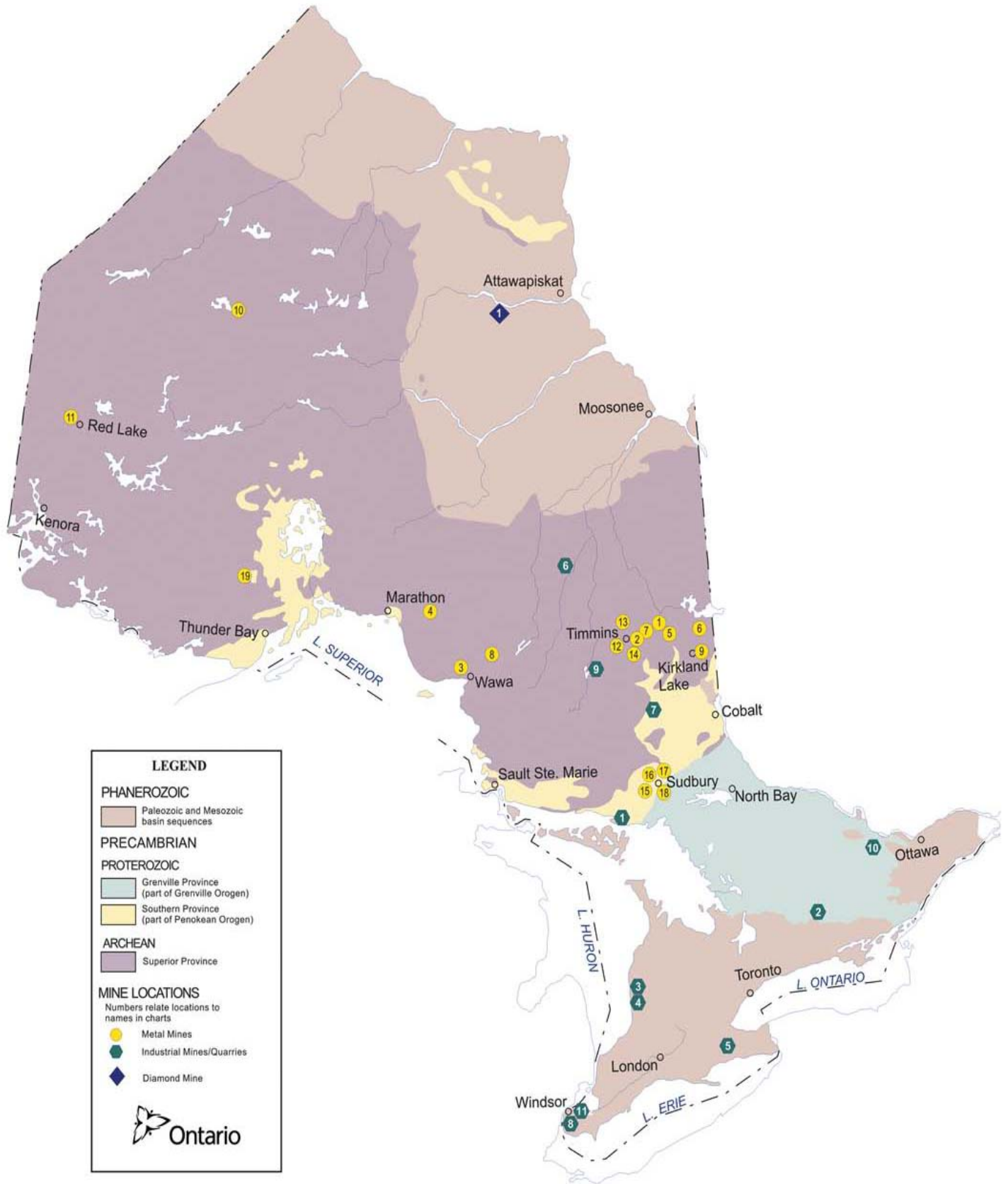
Table 2 shows the detailed output of the Ontario mining industry in 2011, highlighting the importance of Ontario production in the Canadian landscape. Ontario, at \$7.5 billion, is the largest producer of metal mineral commodities in the country in 2011, accounting for 30% of the country's production - well ahead of Quebec at 24% (see table 3). Ontario mining companies produced the most gold (52%), nickel (43%), copper (38%), platinum group metals (84%) and silver (28%) in the country, as well as the second most cobalt (36%).

Ontario is the biggest producer of salt in the country and second in the country (behind the Northwest Territories) in diamond production. Overall, Ontario non-metal mines produced \$1.2 billion of output in 2011 or almost 10% of national output, placing it behind only Saskatchewan (potash) and the Northwest Territories (diamonds) in its output ranking in the country.

Ontario is also the most important producer of structural materials in the country. The province mines the most stone (41%), lime & clay (53%), sand & gravel (31%), and produces the most cement (35%) of any province. At \$1.9 billion, the value of structural materials production in Ontario accounted for 37% of the Canadian total.

Ontario mined \$10.7 billion, or almost 25% of all Canadian non-fuel mineral production in 2011, accounting for more than 1.6% of the total value of GDP in Ontario.

Map 1: Ontario Mining Operations



Source: Ontario Mining and Exploration Directory 2012, Ontario Prospectors Association
 Mining: Dynamic and Dependable for Ontario's Future

Map 1 Directory: Location of Mining Operations in Ontario by Type of Mine

| Gold Mines | |
|------------------------|--------------------------------------|
| Name | Company |
| 1 Black Fox Mine | Brigus Gold Corp |
| 2 Dome Mine | Goldcorp Inc. - Porcupine Gold Mines |
| 3 Eagle River Mine | Wesdome Gold Mines Ltd. |
| 4 Hemlo Mine | Barrick Gold Corporation |
| 5 Hislop Mine | St Andrew Goldfields Ltd |
| 6 Holloway-Holt Mine | St Andrew Goldfields Ltd |
| 7 Hoyle Pond Mine | Goldcorp Inc. – Porcupine Gold Mines |
| 8 Island Gold Mine | Richmont Mines Inc. |
| 9 Macassa Mine | Kirkland Lake Gold Inc |
| 10 Musselwhite Mine | Goldcorp Inc. |
| 11 Red Lake Gold Mines | Goldcorp Inc. |
| 12 Timmins Mine | Lake Shore Gold Corp |

| Base Metal Mines | |
|---|----------------------------------|
| Name | Company |
| 13 Kidd Creek Mine | Xstrata plc |
| 14 McWatters Mine | Liberty Mines Inc. |
| 15 Shakespeare Mine | Ursa Major Minerals Incorporated |
| 16 Sudbury Operations: Levack Mine McCreedy West Mine Podolsky Mine | Quadra FNX Mining Ltd. |
| 17 Sudbury Operations: Copper Cliff North Creighton Garson McCreedy East/ Coleman Stobie | Vale S.A. |
| 18 Sudbury Operations: Nickel Rim South Mine Fraser Mine | Xstrata plc |

| Platinum Group Metal Mines | |
|----------------------------|-------------------------------|
| Name | Company |
| 19 Lac des Iles Mine | North American Palladium Ltd. |

| Diamond Mines | |
|-----------------------|---------------------|
| Name | Company |
| 1 Victor Diamond Mine | De Beers Canada Inc |

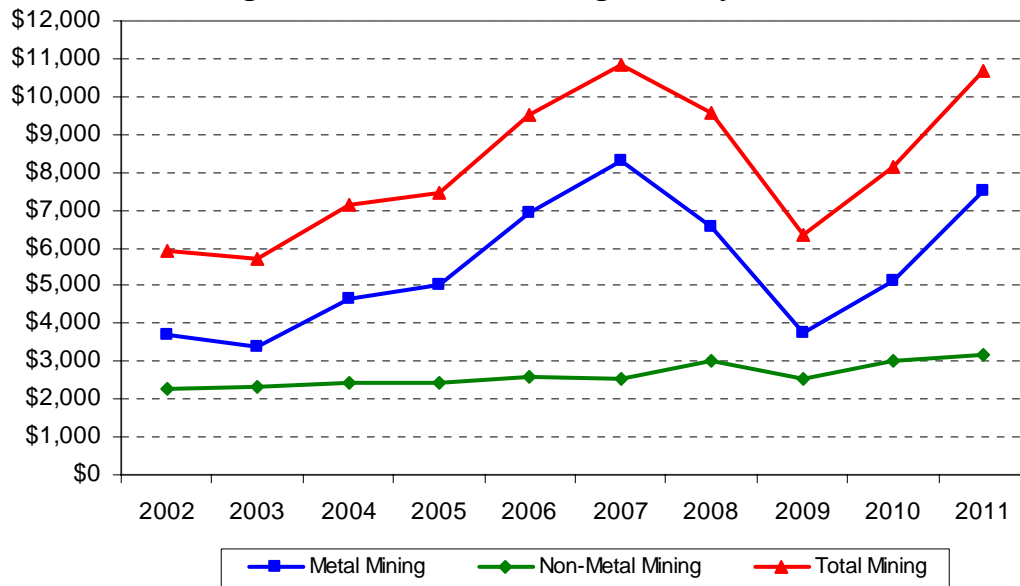
| Major Industrial Mineral Operations | |
|--|----------------------------------|
| Name | Company |
| 1 Badgley Island Quarry (silica) | Unimin Canada Ltd. |
| 2 Blue Mountain Operations (nepheline syenite) | Unimin Canada Ltd. |
| 3 Goderich Brine Field (salt) | Sifto Canada Inc. |
| 4 Goderich Mine (salt) | Sifto Canada Inc. |
| 5 Hagersville Mine (gypsum) | CGC Inc. |
| 6 Kapuskasing Phosphate Operations (phosphate) | Agrium Inc. |
| 7 North Williams Mine (barite) | Extender Minerals of Canada Ltd. |
| 8 Ojibway Mine (salt) | The Canadian Salt Company Ltd |
| 9 Penhorwood Mine (talc) | Imerys Talc |
| 10 Tatlock Quarry (calcium carbonate) | OMYA (Canada) Inc. |
| 11 Windsor Brine Field (salt) | The Canadian Salt Company Ltd. |

Note: Base Metal Mine 16, Quadra FNX Mining is now KGHM International

Note: Gold Mine 4, the Barrick Hemlo Mine incorporates the Williams Mine and the David Bell Mine

Note: Not on the map is AuRico's Young-Davidson mine, located approximately 50 kilometres west of Kirkland Lake, which began operations in 2012

Chart 1: Value of Output in the Metal Mining, Non-Metal Mining and Total Ontario Mining Industry, \$Million



Source: Natural Resources Canada

Table 1: Share of the Value of Mineral Production in Ontario, by Commodity, 2002-2011 (%)

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Mineral Production (\$Billion) | \$5.9 | \$5.7 | \$7.1 | \$7.4 | \$9.5 | \$10.9 | \$9.6 | \$6.3 | \$8.1 | \$10.7 |
| Metals | | | | | | | | | | |
| Copper | 7.9 | 7.0 | 9.1 | 11.3 | 15.0 | 12.8 | 14.5 | 10.8 | 14.7 | 17.7 |
| Gold | 20.9 | 21.9 | 17.3 | 16.7 | 13.3 | 12.3 | 15.6 | 29.8 | 27.3 | 22.9 |
| Nickel | 21.2 | 22.3 | 29.0 | 30.3 | 34.4 | 42.0 | 27.6 | 11.1 | 14.6 | 20.4 |
| Platinum Group Metals | na | na | na | 4.5 | 4.5 | 4.3 | 5.4 | 2.9 | 2.3 | 5.9 |
| Other Metals | 12.1 | 8.4 | 10.1 | 4.6 | 5.7 | 5.1 | 5.4 | 5.1 | 3.9 | 3.5 |
| Total Metals | 62.1 | 59.5 | 65.6 | 67.4 | 72.8 | 76.4 | 68.5 | 59.7 | 62.8 | 70.4 |
| Non-Metals | | | | | | | | | | |
| Salt | 4.4 | 4.5 | 3.6 | 3.5 | 2.8 | 2.4 | 3.4 | 5.4 | 5.1 | 4.7 |
| Diamonds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 3.7 | 4.3 | 4.3 |
| Other Non-Metals | 2.9 | 3.1 | 2.6 | 2.6 | 2.1 | 1.8 | 2.7 | 3.0 | 2.7 | 2.5 |
| Total Non-Metals | 7.3 | 7.6 | 6.2 | 6.0 | 4.9 | 4.2 | 9.2 | 12.1 | 12.1 | 11.4 |
| Structural Materials | | | | | | | | | | |
| Cement | 10.3 | 10.9 | 9.3 | 8.8 | 7.0 | 6.0 | 6.4 | 8.3 | 6.8 | 5.3 |
| Sand and gravel | 6.8 | 7.7 | 6.3 | 5.9 | 5.2 | 4.9 | 5.7 | 7.0 | 6.4 | 4.5 |
| Stone | 8.5 | 9.0 | 8.2 | 7.8 | 7.0 | 6.0 | 7.4 | 10.1 | 9.1 | 6.2 |
| Lime & Clay Products | 5.0 | 5.2 | 4.3 | 4.1 | 3.2 | 2.6 | 2.8 | 2.9 | 2.8 | 2.2 |
| Total Structural Materials | 30.6 | 32.9 | 28.2 | 26.5 | 22.3 | 19.4 | 22.2 | 28.2 | 25.1 | 18.2 |

Source: Natural Resources Canada and authors' estimates

Note: For 2002-2004, Platinum Group Metals are in Other Metals.

Table 2: Estimated 2011 Value of Minerals Produced in Ontario

| Metals | 2011 (\$millions) | % of Canadian Total | Ranking Among Canadian Provinces |
|-----------------------------------|------------------------------|--------------------------------|---|
| Gold | 2,446 | 51.6 | 1 |
| Nickel | 2,172 | 42.7 | 1 |
| Copper | 1,887 | 37.6 | 1 |
| Platinum Group Metals | 624 | 84.2 | 1 |
| Silver | 168 | 27.5 | 1 |
| Zinc | 161 | 12.4 | 4 |
| Cobalt | 43 | 35.5 | 2 |
| Other Metals | 4 | 0.1 | |
| Total Metals | 7,505 | 29.7 | 1 |
| Non-Metals | | | |
| Salt | 498 | 71.1 | 1 |
| Diamonds | 453 | 18.0 | 2 |
| Other Non-Metals | 266 | 2.8 | |
| Total Non-Metals | 1,217 | 9.5 | 3 |
| Structural Materials | | | |
| Stone | 665 | 40.6 | 1 |
| Cement | 562 | 35.3 | 1 |
| Sand and Gravel | 483 | 30.7 | 1 |
| Lime and Clay Products | 231 | 52.8 | 1 |
| Total Structural Materials | 1,941 | 37.0 | 1 |
| Total Non-Fuel Minerals | 10,663 | 24.6 | 1 |

Source: Natural Resources Canada

Table 3: Estimated 2011 Value of Metals Production by Province

| Province/Territory | 2011 (\$millions) | % of total |
|---------------------------|--------------------------|-------------------|
| Newfoundland & Labrador | 5,112 | 20.2 |
| New Brunswick | 818 | 3.2 |
| Quebec | 6,052 | 24.0 |
| Ontario | 7,505 | 29.7 |
| Manitoba | 1,646 | 6.5 |
| Saskatchewan | 1,157 | 4.6 |
| Alberta | 1 | 0.0 |
| British Columbia | 2,096 | 8.3 |
| Northwest Territories | 64 | 0.3 |
| Yukon Territory | 395 | 1.6 |
| Nunavut | 414 | 1.6 |
| Total | 25,260 | 100.0 |

Source: Natural Resources Canada

Mining Industry Employment and Wages

As the world economy slowly recovered from the recent “great recession”, employment in the mining sector began to rebound in 2011. The number of workers directly employed by Ontario’s mining industry, at over 19,400, climbed to a 15 year high in 2008 (see table 4). By 2010, employment in the industry had fallen by over 25%, as the impacts of the recession and labour issues continued to be felt, before recovering to more than 16,000 in 2011. Metal mining remains the most important mining sector in Ontario with over 63 percent of all mining employees involved in metal ore mining in the province in 2011, although this is a much lower share than seen in the 1990s. Support activities to mining (which includes contract drilling, exploration, and other mine services) have become increasingly important in the province over the last several years (see chart 2 and table 5). In 2011, almost 8,000 workers were employed in this sector, the highest level ever recorded for the province by Statistics Canada and more than double the number employed 10 years earlier. Other than the recent peak in 2008, overall, employment in 2011 in the Ontario mining industry directly, together with services to the mining industry, is at its highest level in 20 years.

Ontario accounts for a large share of Canada’s mining employment, particularly in metal ore mining (see table 4). Of the total number of people employed in metals mining in Canada in 2011, Ontario accounted for almost 38 percent, somewhat below the average share seen over the last 10 years. For all types of mineral production, Ontario accounts for over 28% of the country’s employment, somewhat higher than 2010 but still at a level below that seen in recent years.

The recovery in employment is not reducing the output per worker in the industry (see chart 3) which is stellar. The value of output per worker employed at metal mines in the province hit a peak of almost \$900,000 in 2007 before dropping in the downturn. This measure has recovered in 2011 to almost \$740,000. Output per worker in all mining in 2011 is a still impressive \$680,000, roughly six times the provincial industrial average.

Using data collected from Ontario Mining Association members, one can look at the numbers of different types of jobs in the mining industry, as well as in what parts of the province this employment takes place and the nature of the mining labour force.¹ In 2011, over 83% of employment took place at the mine site (see chart 4), with 71% of total mining employment devoted to mine-site production and engineering activities and a further 12% providing administration support at the mine. According to the survey results, just under two percent of mining employees were involved in scientific/R&D activities, more than seven percent were involved in exploration, and eight percent were employed at mining head offices.

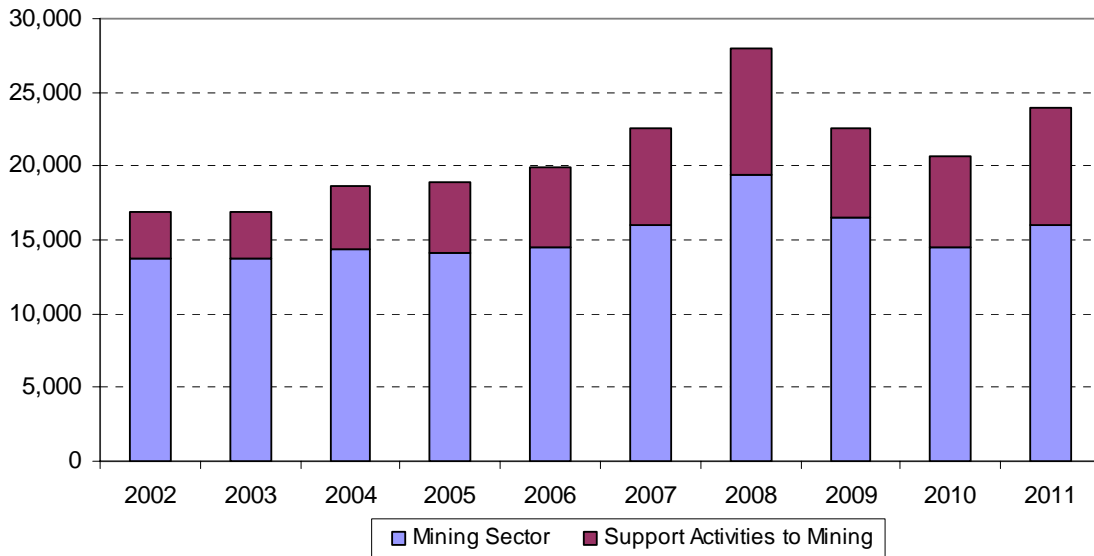
Table 4: Employment in the Ontario and Canadian Mining Industry

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mining | | | | | | | | | | |
| Canada | 47,893 | 47,391 | 45,986 | 46,689 | 48,830 | 52,877 | 58,506 | 52,429 | 52,532 | 56,669 |
| Ontario | 13,679 | 13,700 | 14,429 | 14,110 | 14,433 | 16,036 | 19,409 | 16,534 | 14,492 | 16,067 |
| Ontario Share | 28.6% | 28.9% | 31.4% | 30.2% | 29.6% | 30.3% | 33.2% | 31.5% | 27.6% | 28.4% |
| | | | | | | | | | | |
| Metal Mining | | | | | | | | | | |
| Canada | 22,585 | 21,810 | 21,374 | 21,196 | 22,007 | 23,850 | 28,074 | 24,286 | 23,311 | 26,917 |
| Ontario | 8,471 | 8,362 | 8,859 | 8,723 | 8,456 | 9,329 | 12,782 | 10,423 | 8,580 | 10,160 |
| Ontario Share | 37.5% | 38.3% | 41.4% | 41.2% | 38.4% | 39.1% | 45.5% | 42.9% | 36.8% | 37.8% |

Source: Statistics Canada

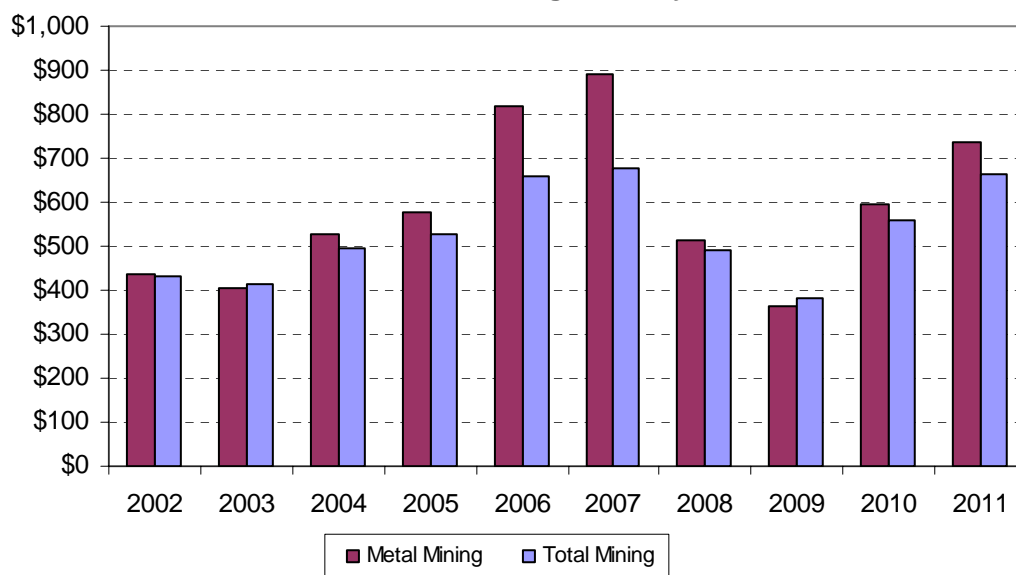
¹ The OMA membership includes metal and non-metal mines in the province, as well as most mine contractors. It, however, does not capture the aggregates or structural materials production in the province.

Chart 2: Employment in the Ontario Mining Industry



Source: Statistics Canada and authors' calculations

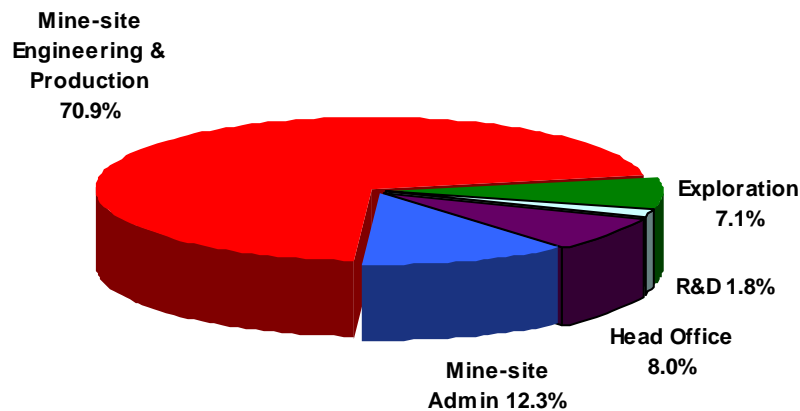
Chart 3: Output per Worker in the Metal Mining and Total Ontario Mining Industry, \$000



Source: Natural Resources Canada, Statistics Canada and authors' calculations

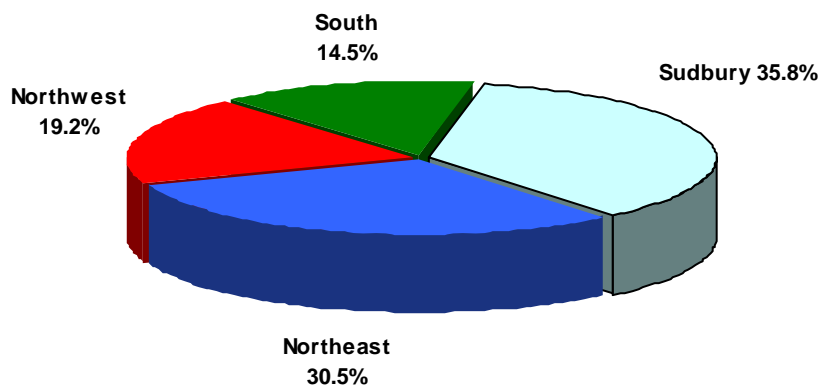
This employment was spread all over the province (see chart 5 and for the regional definitions the map in Appendix A). In 2011, results from the OMA survey indicate that roughly 36% of mining employment in the province took place in Sudbury, down from over 37% in 2010 and from the 50% share reported in a previous OMA survey for the average of years 2006 and 2007. Employment in Northeastern Ontario accounted for over 30% of the total in 2011, up from 28% in 2010 and 23% in 2006/2007. This reflects the opening of Ontario’s only diamond mine in 2008, as well as renewed interest in developing new, or reopening old, gold mines as the price of the commodity has climbed. The share of employment in Northwestern Ontario stood at 19.2% in 2011, down slightly from the 19.6% seen in 2010 but up from the 15% level of 2006/2007. Finally, the share of employment in the southern part of the province, which is home to salt, gypsum, talc, nepheline syenite and calcium carbonate mines, as well as mining head offices in Toronto, fell somewhat to 14.5% in 2011 from 15.3% in 2010, similar to the 14% seen in 2006/2007.

Chart 4: Mining Employment in Ontario, by Job Category, 2011



Source: OMA Industry Survey

Chart 5: Mining Employment in Ontario, by Region, 2011



Source: OMA Industry Survey

A number of interesting features of the nature of employment in the mining industry are available from the Ontario Mining Association survey. From the current and past OMA surveys a view of the age profile of those employed in the mining industry can be seen. For the years 2004, 2007, 2010 and 2011 it is interesting to note that the percentage share of employees over 55 years of age has remained fairly stable, ranging only from 14% in 2004 and 2010, to 17% in 2007 and 15% in 2011 (see chart 6). The shares of the other two age profiles have changed quite dramatically, however, over this period. Employees aged 35 and younger accounted for only 18% of employment in 2004 but reached 27% in 2011. Conversely, those aged 36-55 in 2004 accounted for 68% of employment, dropping to 58% in 2011.

Ensuring that aboriginals participate in the mining industry has become an increasing focus over the last number of years. As new mineral resources are discovered in increasingly northern and remote environments, agreements have been undertaken to make sure that, wherever possible, Aboriginal employment is encouraged. According to Natural Resource Canada and the Mining Association of Canada, based on Census figures, Aboriginal employment in Canada accounted for 7.5% of total Canadian mining employment in 2006, up from 5.1% in 2001 and 3.6% in 1996. Data from the new OMA survey suggest that Aboriginal employment accounted for 9.7% of mining employment in Ontario in 2011, up from 9.5% in 2010 (see chart 7). The increases reflect the impact of mines like the DeBeers Victor operation which opened in 2008 with a 40% Aboriginal employment share. With recent agreements signed with a number of mining companies, this figure is expected to increase in the future.

Two other interesting features of mining employment in the province are explored in Charts 8 and 9. Responses to the latest OMA survey suggest that the share of employment in the Ontario mining industry of females rose to 11.1% in 2011 from 10.5% in 2010 (chart 8). As seen in chart 9, it is apparent that mining operations in Ontario are becoming increasingly non-unionized. In 2011, 35.5% of employees in the Ontario mining industry were unionized, down from 37.6% in 2010.

The collection of this type of data in the OMA survey will provide important benchmarks for comparison in future years.

Chart 6: % Share of Ontario Mining Industry Employment, By Age Category, 2004, 2007, 2010, 2011

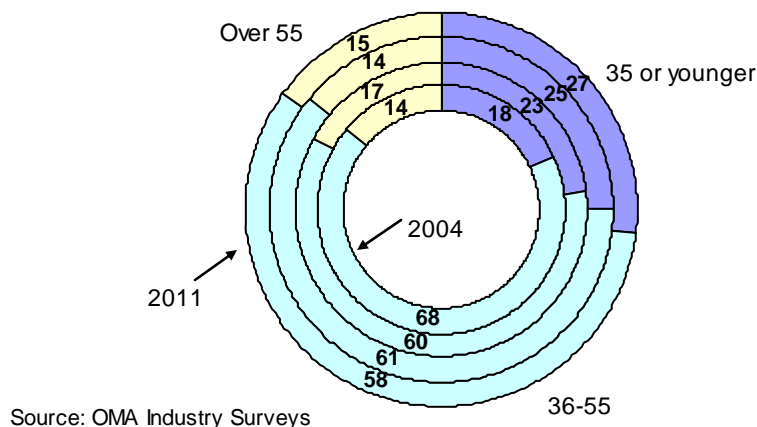
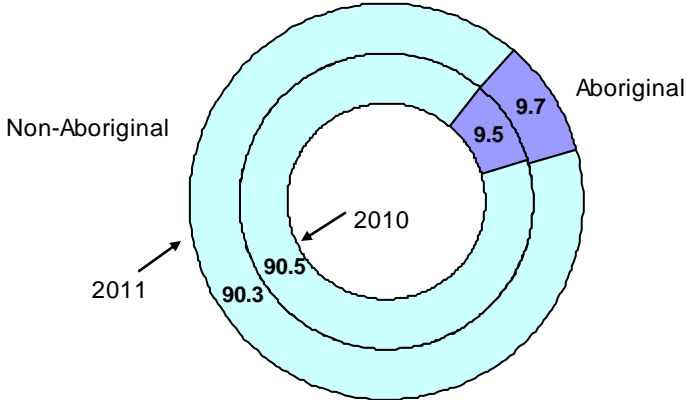
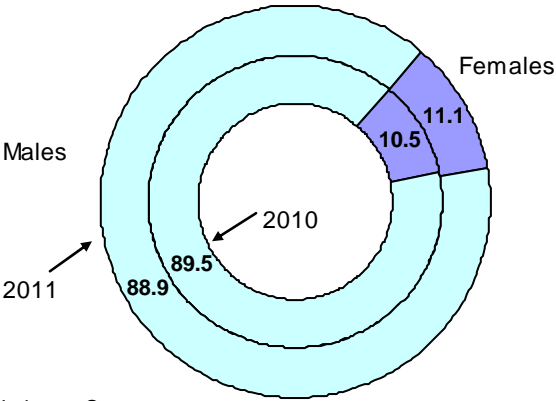


Chart 7: % Share of Ontario Mining Industry Aboriginal Employment, 2010 and 2011



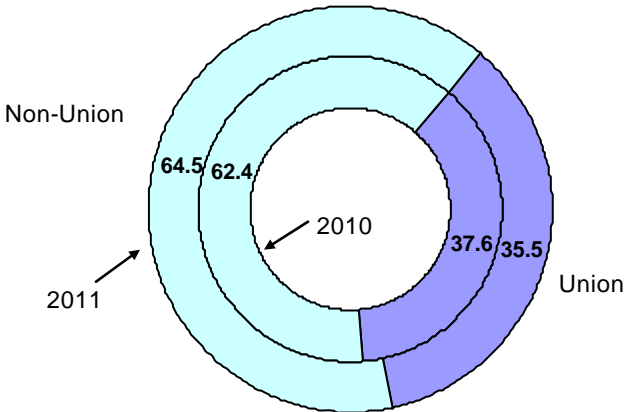
Source: OMA Industry Survey

Chart 8: % Share of Ontario Mining Industry Employment, By Gender, 2010 and 2011



Source: OMA Industry Survey

Chart 9: % Share of Ontario Mining Industry Employment, By Union Affiliation, 2010 and 2011



Source: OMA Industry Survey

Comparing Employment in the Ontario Mining Industry to Other Industries

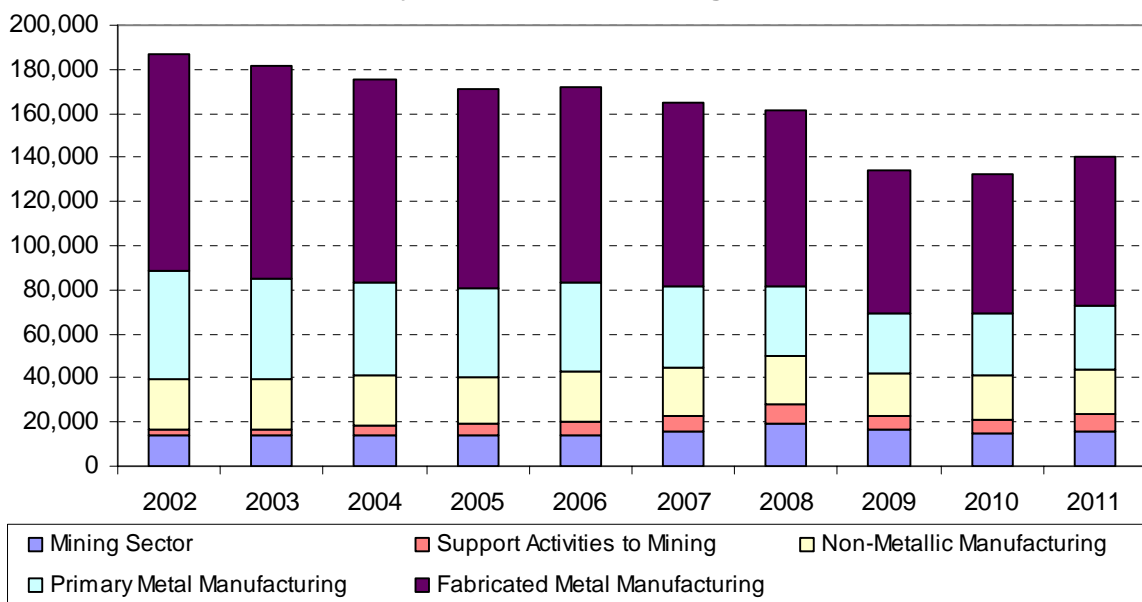
While employment in Ontario's mining and supporting industries has increased over the last 10 years, the same can not be said about the broader mineral based industries (see table 5 and chart 10). Employment in industries downstream from the mining industry itself, the industries that use the mined materials has dropped quite dramatically over the period. With the strength of the Canadian dollar impacting these industries' competitiveness, as well as the rise in a number of low cost manufacturing countries, Ontario primary metals and fabricated metal products industry employment has fallen by more than one-third over the last 10 years. Employment in non-metallic minerals manufacturing has fallen about 10%, compared to the 42% increase in mining and support activity employment.

Table 5: Employment in Ontario Mining-Related Industries

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Mining | 13,679 | 13,700 | 14,429 | 14,110 | 14,433 | 16,036 | 19,409 | 16,534 | 14,492 | 16,067 |
| Support Activities to Mining | 3,158 | 3,215 | 4,168 | 4,774 | 5,428 | 6,525 | 8,531 | 6,045 | 6,223 | 7,851 |
| Non-Metallic Minerals Manufacturing | 22,503 | 22,301 | 22,476 | 21,578 | 23,016 | 22,048 | 22,062 | 19,844 | 20,169 | 20,212 |
| Primary Metals Manufacturing | 49,128 | 45,984 | 42,540 | 40,539 | 40,176 | 36,928 | 31,995 | 27,220 | 28,007 | 28,612 |
| Fabricated Metal Products Manufacturing | 98,159 | 96,763 | 91,657 | 89,813 | 89,068 | 83,524 | 78,995 | 64,708 | 63,937 | 67,657 |
| Total | 186,627 | 181,963 | 175,270 | 170,814 | 172,121 | 165,061 | 160,992 | 134,351 | 132,828 | 140,399 |

Source: Statistics Canada and authors' calculations

Chart 10: Employment in Ontario Mining-Related Industries



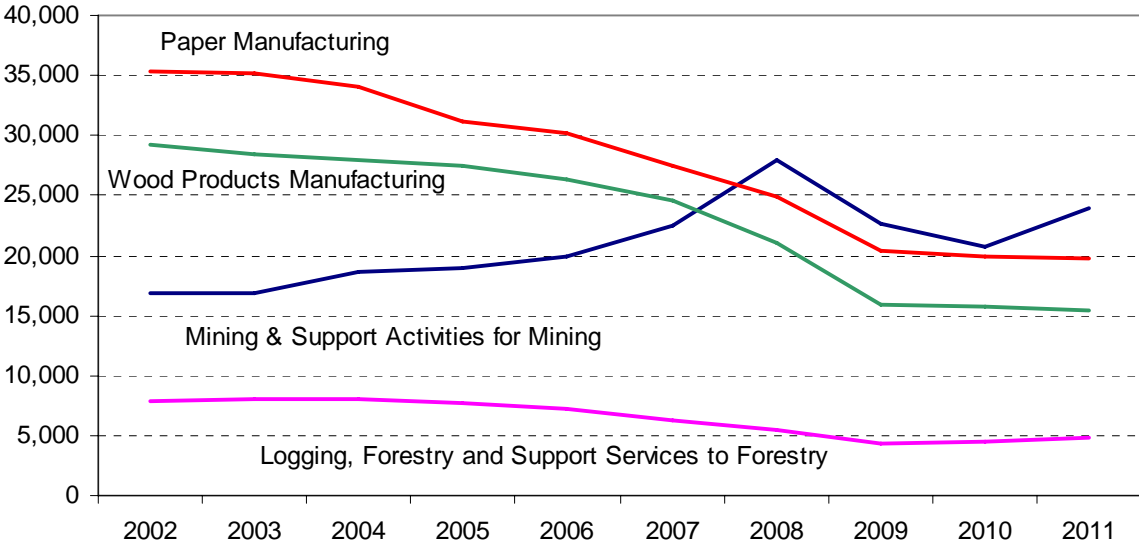
Source: Statistics Canada and authors' calculations

Employment in mining has also been solid when compared to other resource-based industries in Ontario (see chart 11). In 2002, employment in logging and forestry industries was roughly half that in mining and its support activities. The wood products manufacturing and paper manufacturing industries employed roughly 12,500 and 18,500 more workers, respectively, than the mining industry in 2002. By 2011, the situation had dramatically changed. It is now the case that employment in mining and its support activities is almost five times that in the logging and forestry sector. Employment in mining is greater than that in both wood products and paper manufacturing. As mining related employment recovers from the recent economic downturn, these other industries are at best treading water. The increases in employment in mining are important in offsetting the job losses as these sectors are particularly important to Northern Ontario.

The productivity of the workers in the Ontario mining sector is also impressive. Chart 12 shows real output per worker for a number of industries in Ontario relative to that in the mining sector in 2011. Workers in all industries in Ontario are roughly 62% as productive as those in the mining industry – with workers in goods producing industries 85% as productive and workers in service industries 58% as productive. Workers in the manufacturing sector in Ontario produce 82% as much real output as a mining industry worker. In other resource-based industries, forestry and logging workers are 89% as productive, while wood product manufacturing workers are 70% as productive.

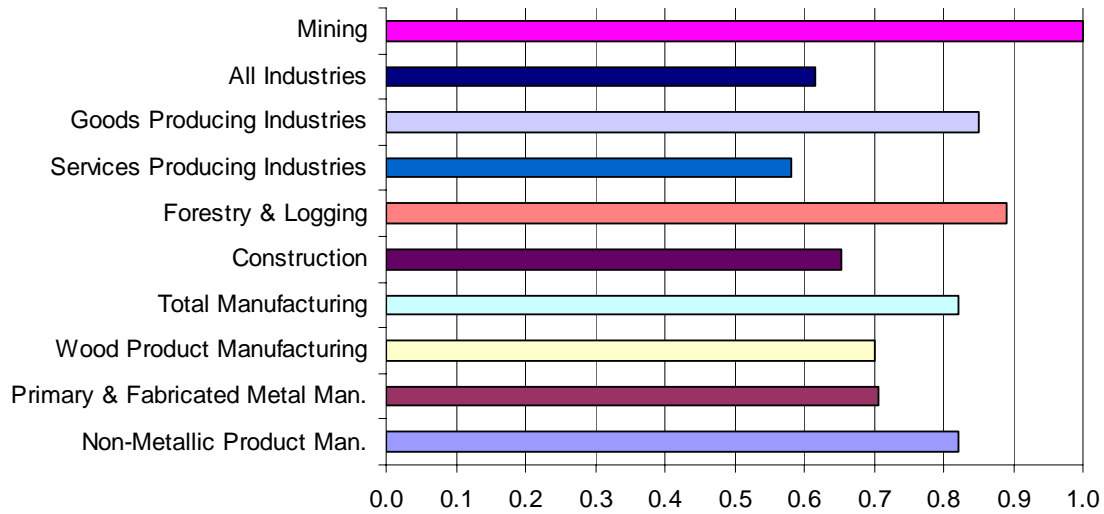
In other industries that rely on the mining industry, primary and fabricated metal manufacturing workers are 71% as productive in 2011 as workers employed in mining, while non-metallic manufacturing workers are 82% as productive. Clearly, workers in the mining sector are not only producing a high value product, but as employment has increased, are remaining very productive relative to other Ontario industries.

Chart 11: Employment in the Mining Industry Compared to Other Natural Resource Based Sectors in Ontario



Source: Statistics Canada and authors' calculations

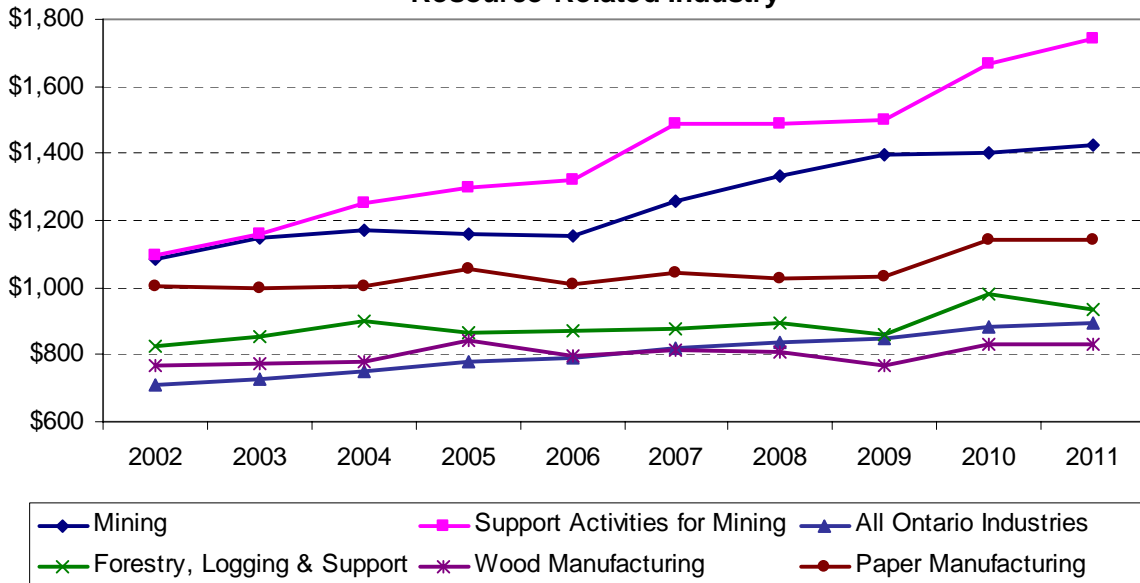
Chart 12: 2011 Ontario Real Value Added per Employee, by Industry, Relative to Mining



Source: Statistics Canada and authors' calculations

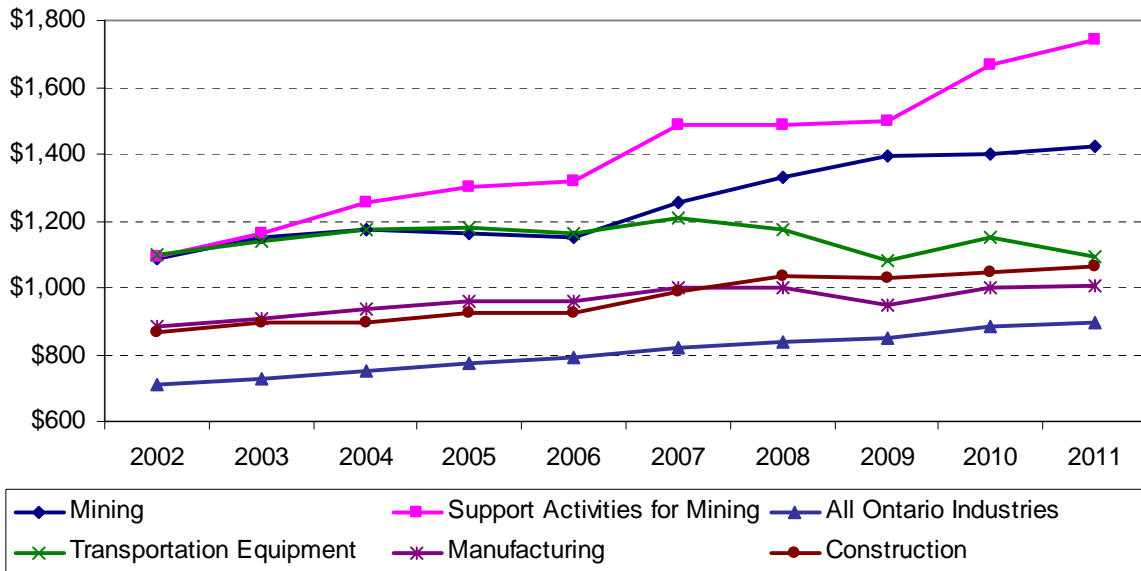
Not only is employment growing in the mining sector in Ontario but the jobs are very well paying (see Charts 13a, 13b and 13c). The average weekly wage paid in the mining industry was almost 60% more than the Ontario's average industrial wage, while wages paid in the mining support sector were almost 95% higher. Wages in the mining resource sector exceed those in other resource based industries in the province. As well, wages in the mining sector exceed those in a number of other industries that are considered vital to the Ontario economy, including manufacturing of transportation equipment and construction. The wages paid in the Ontario mining industry and its mining support sector also far outstrip those in industries that utilize mining output.

Chart 13a: Average Weekly Wages, by Ontario Resource-Related Industry



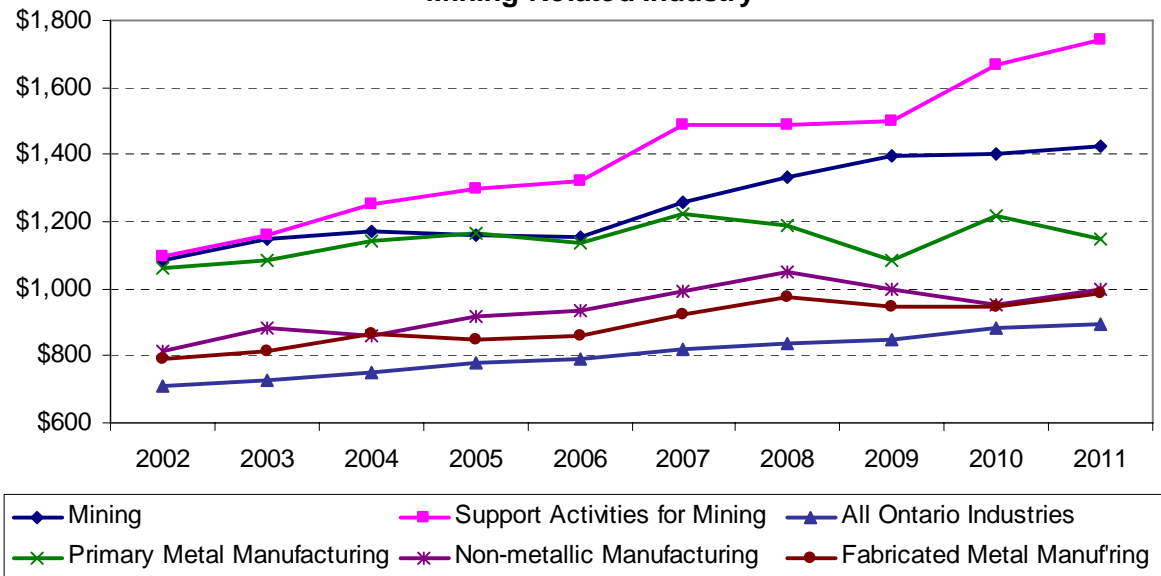
Source: Statistics Canada

Chart 13b: Average Weekly Wages, by Ontario Industry



Source: Statistics Canada

Chart 13c: Average Weekly Wages, by Ontario Mining-Related Industry



Source: Statistics Canada

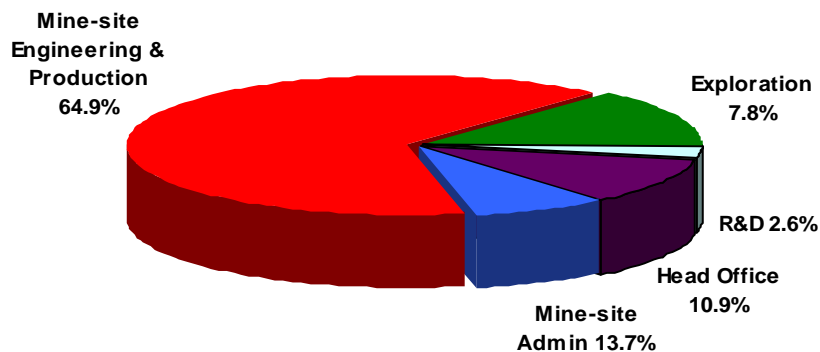
Distribution of Employment Compensation in the Ontario Mining Industry

From the OMA industry survey, how and where labour compensation is earned in the province can be examined. In 2011, almost 65% of total wages and salaries paid in the industry went to workers in mine-site engineering and production (see chart 14), up from 61.5% in 2010 (which was impacted by a nearly 12-month strike in Sudbury that lasted until the middle of that year). Mine-site administration workers accounted for almost 14% of wages and salaries paid in 2011, down from 16.2% in 2010. The share of head office wages and salaries is the next highest hitting almost 11% in 2011 (down from 12.7% in 2010), followed by wages and salaries in exploration, at 7.8% in 2011 (up from 7.1% in 2010) and finally employees involved in R&D accounting for under 3% of wages and salaries (roughly the same as 2010). The total wage bill for the industry in the province is estimated to be over \$1.7 billion in 2011, up sharply from \$1.4 billion in 2010.

The shares of wage income by region of the province can be seen in chart 15. Sudbury accounts for more than 37% of the industry's wage bill in 2011, greater than its 35.8% share of employment. This wage share is greater than that seen in 2010 (33.4%, which, as noted earlier was impacted by a major strike) but far below the share of 60% for 2006/2007 reported in an earlier OMA survey. The Northeast's share of wage compensation, at 28.6% is somewhat lower than its employment share in the province (30.5%) but higher than the wage share of 2010 (27.7%) even with the recovery in Sudbury, and dramatically higher than the wage share seen in 2006/2007 (16%). Workers in the Northwest part of the province accounted for 17.3% of wages and salaries in 2011, less than its 19.2% employment share, but higher than the 14% wage share seen in 2006/2007. Finally, the wage share of the southern part of the province in 2011, at 16.9%, is greater than its employment share (14.5%), but lower than its share both in 2010 (20.5%) and 2006/2007 (22%).

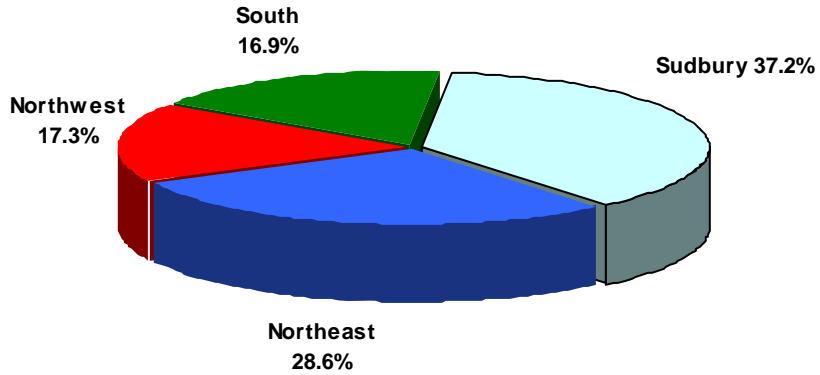
On top of wages and salaries paid to workers in the industry, companies also provide taxable benefits (which could include automobile benefits, meals, board and lodging, tool reimbursement or allowance among many others) and non-taxable benefits (which could include certain health plan premiums, remote worksite allowances, and private pension plan contributions). Charts 16a and 16b show the relative importance of these types of employee benefits by region of the province as reported by the OMA industry survey. Taxable benefits (Chart 16a) are seen to be a relatively small top-up to wages and salaries paid in all parts of the province. However, from chart 16b one can see the particular importance that non-taxable benefits have in Sudbury, which reflect the private pension plans currently in place in that part of the province.

**Chart 14: Mining Wages & Salaries Paid in Ontario,
by Job Category, 2011**



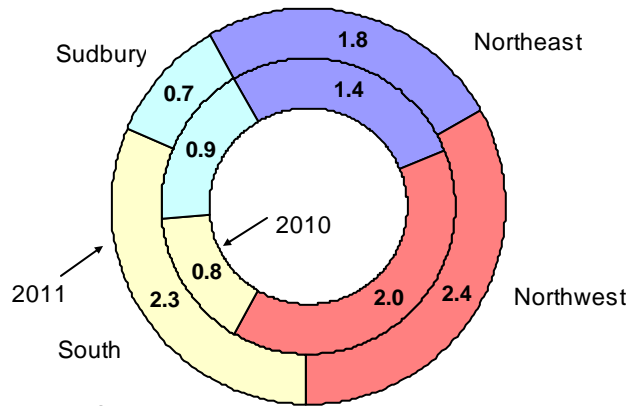
Source: OMA Industry Survey

Chart 15: Mining Wages & Salaries Paid in Ontario, by Region, 2011



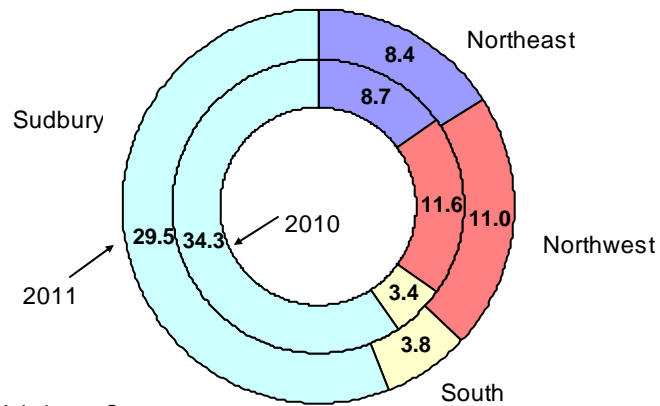
Source: OMA Industry Survey

Chart 16a: Taxable Benefits as a % Share of Mining Wages & Salaries Paid, By Ontario Region, 2010 and 2011



Source: OMA Industry Survey

Chart 16b: Non-Taxable Benefits as a % Share of Mining Wages & Salaries Paid, By Ontario Region, 2010 and 2011



Source: OMA Industry Survey

Mine Safety Moves Towards “Zero Harm”

Ontario’s mining industry is moving toward its goal of “zero harm in the workplace by 2015.” Over the past 30 years, the industry’s overall safety performance has improved dramatically and it continues to move in that positive direction.

According to statistics provided by Workplace Safety North, a provincial safety and accident prevention organization, the lost time injury rate for mining in the first nine months of 2012 was 0.4 per 200,000 hours (see chart 17). This has come down from rates of six per 200,000 hours in 1981, to three in 1991, to 1.3 in 2001 and to 0.6 in 2011. Similarly, total medical injury rates have come down to 5.4 per 200,000 hours for the first nine months of 2012 (see chart 18). The total medical injury rate for mining was 20 per 200,000 hours in the early 1980s, 17.7 in 1991, 9.5 in 2001 and six in 2011.

Evidence shows that Ontario is one of the safest mining jurisdictions in the world. A number of factors contribute to this improvement in safety performance. These include the development of health and safety committees where management and workers address safety issues and procedures to make the workplace safer and reduce risk.

Also, certified health and safety committee members audit, make recommendations, provide feedback to management and workers and ensure that legislated and company standards are maintained. Companies are building safety cultures. In addition, government chairs the tripartite Mining Legislative Rules Committee (MLRC) with management and labour. This group collaboratively sets standards, policies and procedures for safety and examines the impact of technological changes on risk management. A Common Core for industry-wide training programs have been developed which provides foundation orientation for safe mining workplaces across the province.

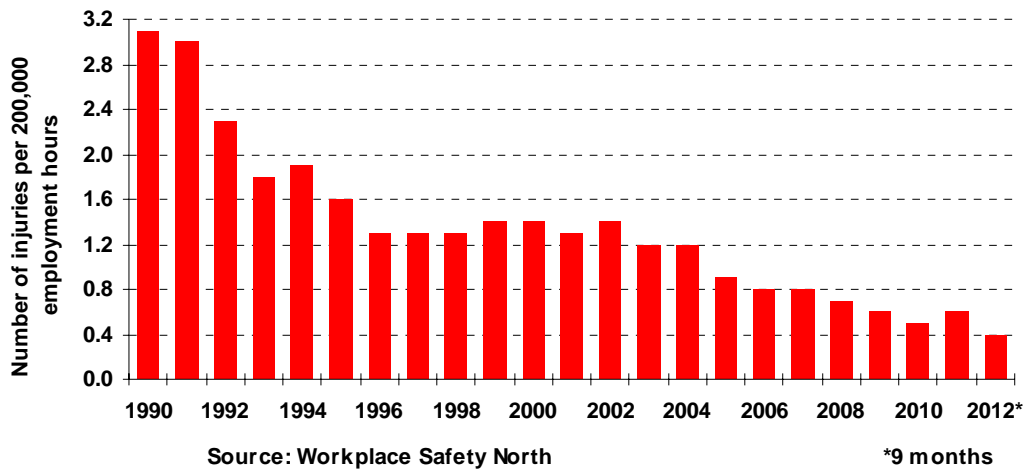
The Internal Responsibility System (IRS) has been the cornerstone of the Occupational Health and Safety Act in Ontario since 1978. It defines the responsibility for each person in the workplace and provides workers with three rights: the right to know, the right to refuse and the right to participate in the safe and orderly production of work. The system is now part of a formal audit process.

In 1997, 50 amendments to Ontario’s Regulations for Mines and Mining Plants were implemented. Key changes included new underground safety regulations, emergency braking systems on underground vehicles, improved inspection of equipment, a strengthening of the IRS and the streamlining of administrative procedures. These amendments were developed by the MLRC. The industry works closely with its accident prevention organization Workplace Safety North to improve training and enhance safety.

The OMA plays a number of roles in assisting mining companies with their safety programs. The OMA acts as a forum for the exchange of information and ideas related to improving safety performance and monitors safety statistics and trends. The OMA also interfaces with the Ministry of Labour, Workplace Safety North and the MLRC in the development of new safety policies, practices, rules and regulations.

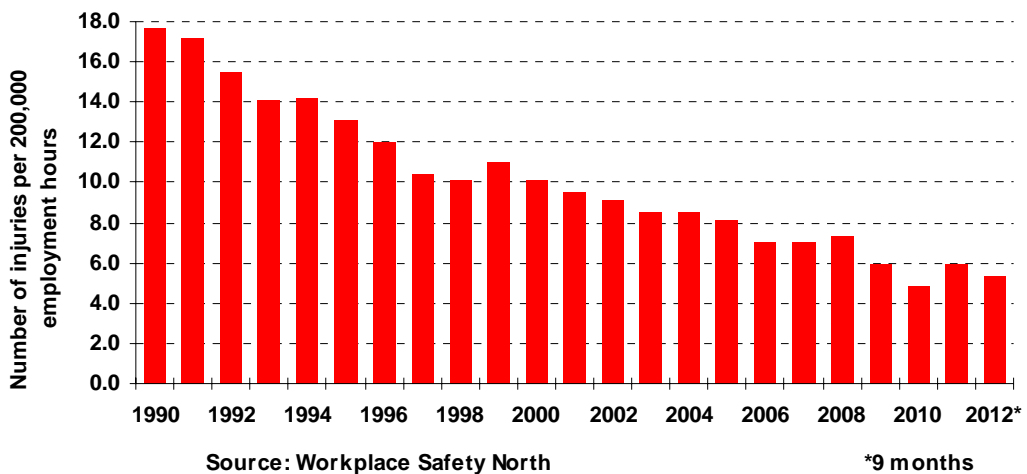
The OMA Occupational Health and Safety Commitment for members is a statement of the dedication and expectations of OMA members to achieve healthy work environments. The document is directed towards establishing workplace environments that promote zero harm and the physical and mental health of its employees. It embraces the OMA members’ use of an integrated approach to the management of health and safety with the economic, technical and social processes of their business.

Chart 17: Lost-Time Injury Frequency in the Ontario Mining Industry



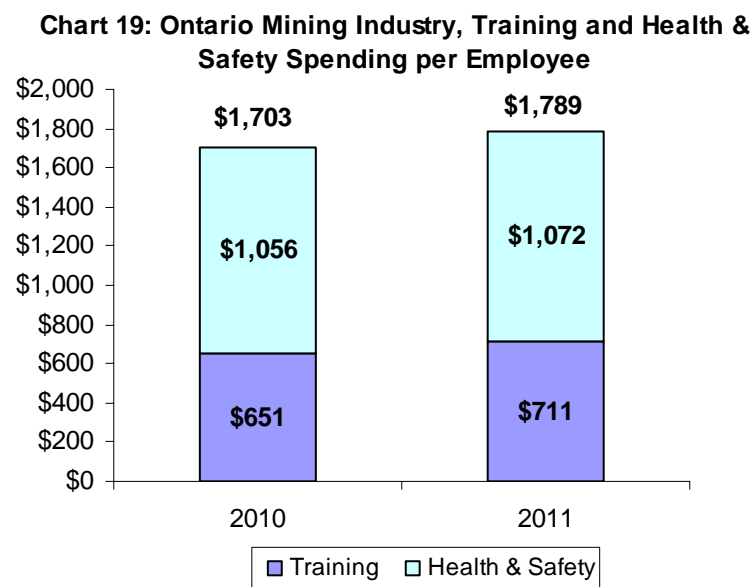
Note: A lost-time injury occurs when an employee is compensated for either a loss of wages following an accident, or for a permanent disability. The data covers gold, nickel, uranium, miscellaneous mining, mine contractors and contract diamond drill operators. Pits and quarries are not covered.

Chart 18: Total Medical Injury Frequency in the Ontario Mining Industry



To maintain high standards of safety, mining companies continue to emphasize training. As technology and equipment become more sophisticated, fewer people operate equipment and more people design, develop and maintain equipment. According to the results from the latest OMA industry survey, an average of \$711 per employee was spent on training in 2011, up from \$651 in 2010 (see chart 19). A further \$1,072 per employee was spent on health and safety initiatives in 2011, compared to \$1,056 in 2010. Together, the mining industry spent almost \$1,800 per employee in 2011 on training and health and safety initiatives. Remember that this is the average expenditure for all employees (production & engineering and administrative staff at mine-site, R&D workers, exploration employees and head office personnel), so this spending would be much higher in areas that warrant it.

The recent establishment of the Ontario Prevention Council, in which mining has a strong presence, will contribute to future improvements in mining safety in Ontario.



Overall, the evidence is clear. Employment in the Ontario mining industry is growing and these employees are safe, highly skilled, highly paid and highly productive.

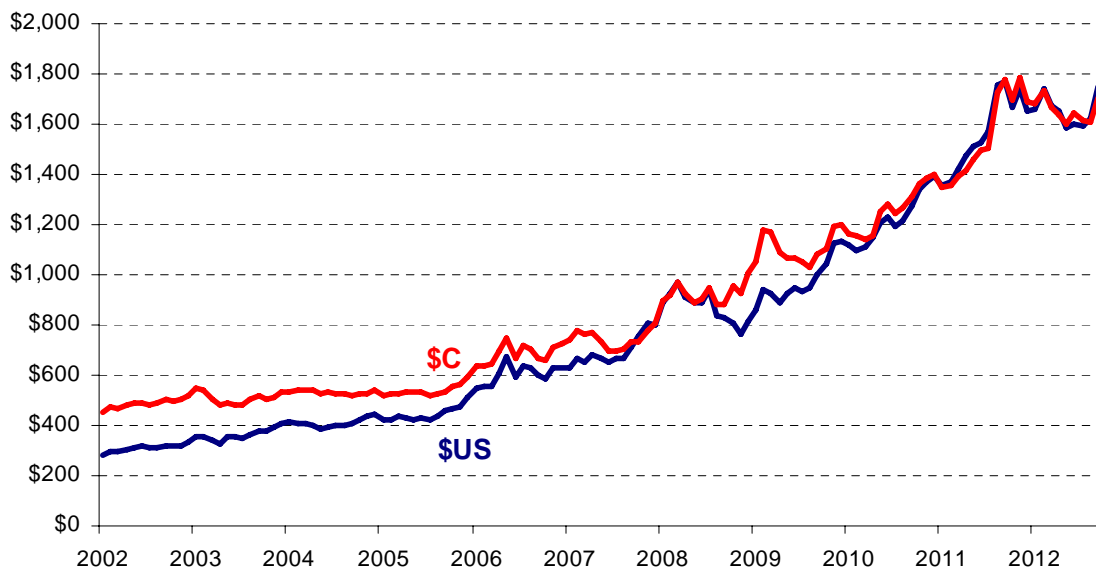
Commodity Prices

Clearly, a crucial factor in the value of mineral production and the interest in exploring for new sources of possible mineral production in the province is the value that is placed upon this production. International markets dictate prices for mineral commodities. Gold and silver prices have strengthened considerably over the last 10 years, while base metal and platinum group metal prices have fluctuated dramatically. Because commodities are priced in U.S. dollars, monetary exchange rates have historically had a significant impact on the Canadian dollar revenues generated by Ontario mining companies, which was particularly noticeable during the 2008-09 economic downturn when the exchange rate plummeted. Recently, however, with the Canadian dollar *vis-a-vis* its U.S. counterpart roughly at par, the impact is less obvious.

Since the beginning of 2006, the prices of gold and silver in \$C have increased by a factor of roughly three. Through the first nine months of 2012, the \$C price of gold averaged more than \$1,650 per ounce, over \$100 an ounce more than the 2011 average and \$400 an ounce greater than the 2010 annual average. Nickel and zinc prices, meanwhile, soared throughout 2006 and early 2007 before slumping over the next two years, then recovering somewhat in the subsequent period. After averaging \$10.25 a pound in 2010, the \$C price of nickel in the first nine months of 2012 has averaged just over \$8 a pound, the same as that seen in 2004 and 2005.

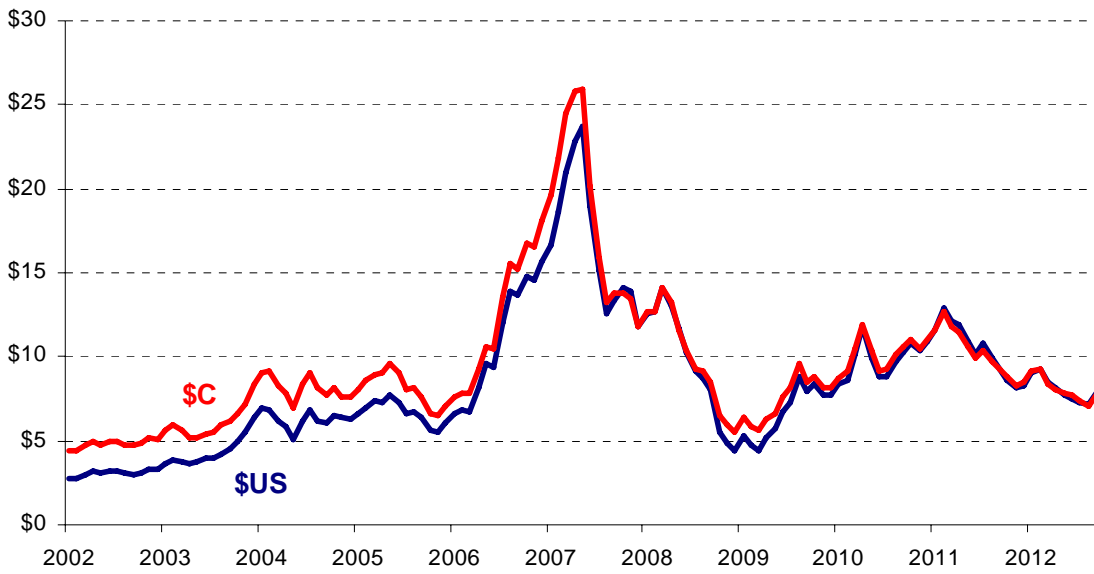
The price of copper has increased dramatically over the last 10 years, but there have been a number of peaks and valleys along the way. After a period of relative price stability in 2002 and most of 2003, the value of copper quadrupled by the beginning of 2006 to \$C4 per pound. The price bounced between \$C3 and \$C4 per pound over the next two years before falling to \$C1.75 by the end of 2008 as the world economic crisis took hold. Since then, the price for copper peaked at roughly \$C4.50 per pound in early 2011, averaging \$C3.95 for calendar year 2011 and \$3.62 through the first nine months of 2012.

Chart 20a: London PM Gold Price per Ounce



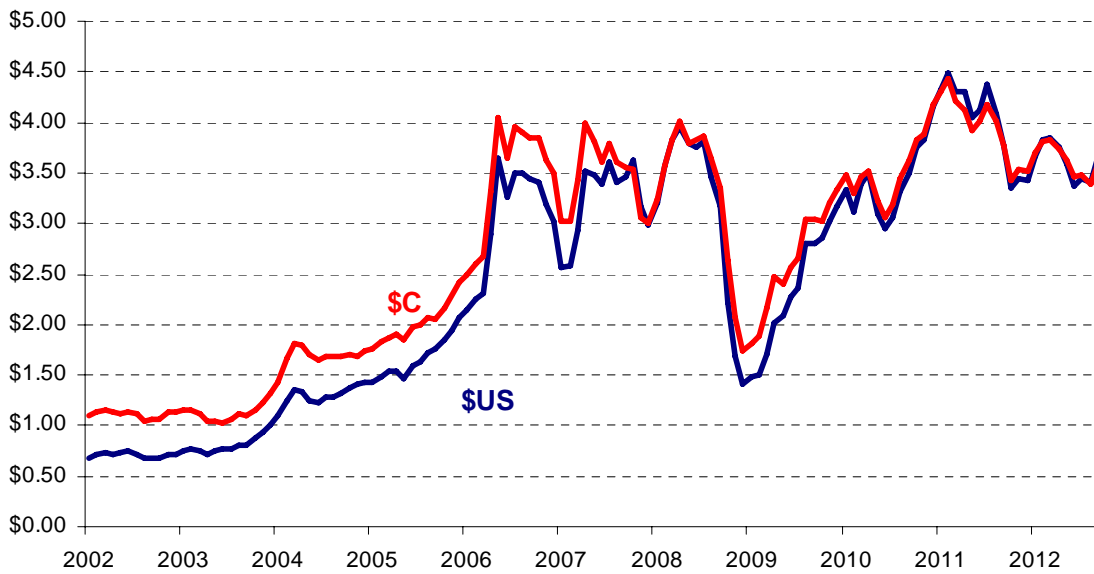
Source: Kitco

Chart 20b: London Metal Exchange Nickel Price per Pound



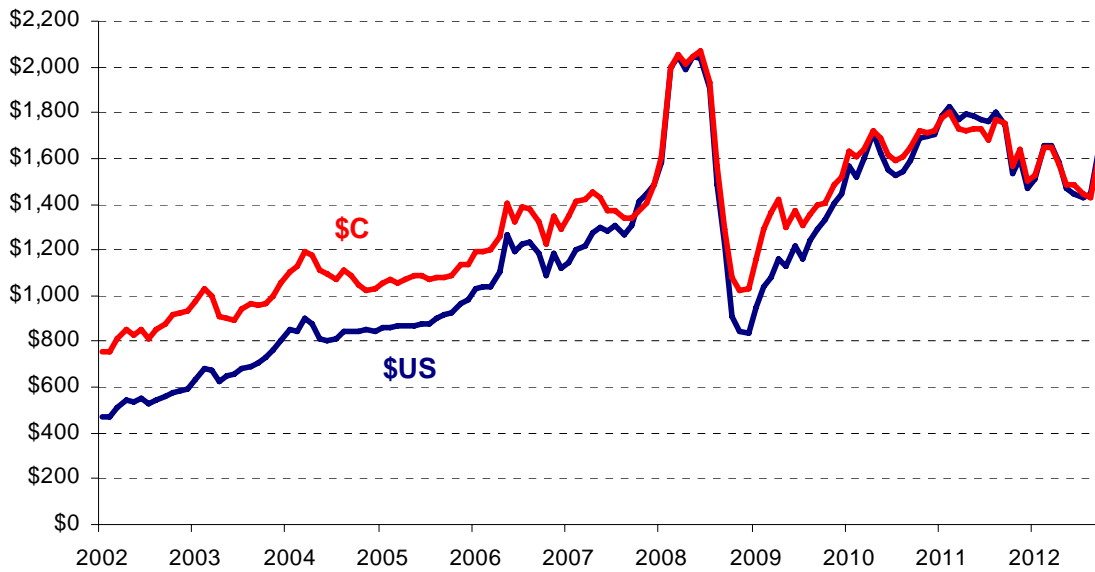
Source: London Metal Exchange

Chart 20c: London Metal Exchange Copper Price per Pound



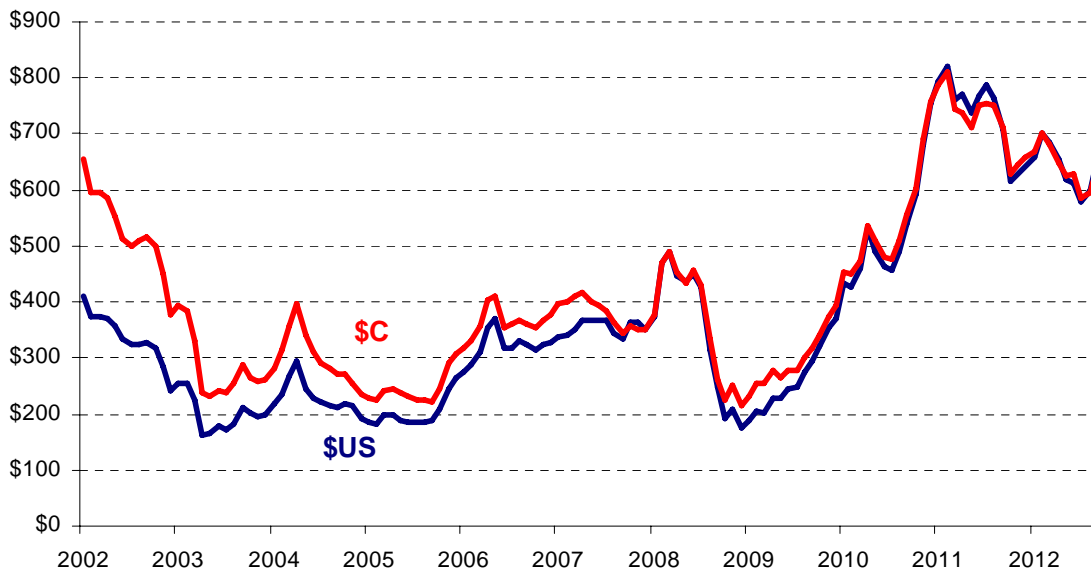
Source: London Metal Exchange

Chart 20d: London PM Platinum Price per Ounce



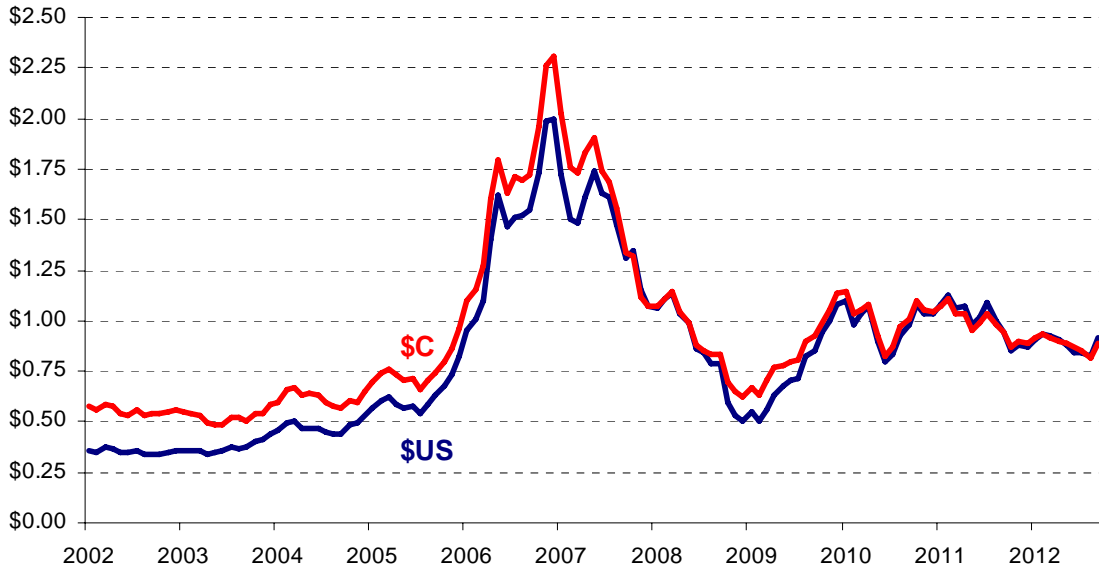
Source: Kitco

Chart 20e: London PM Palladium Price per Ounce



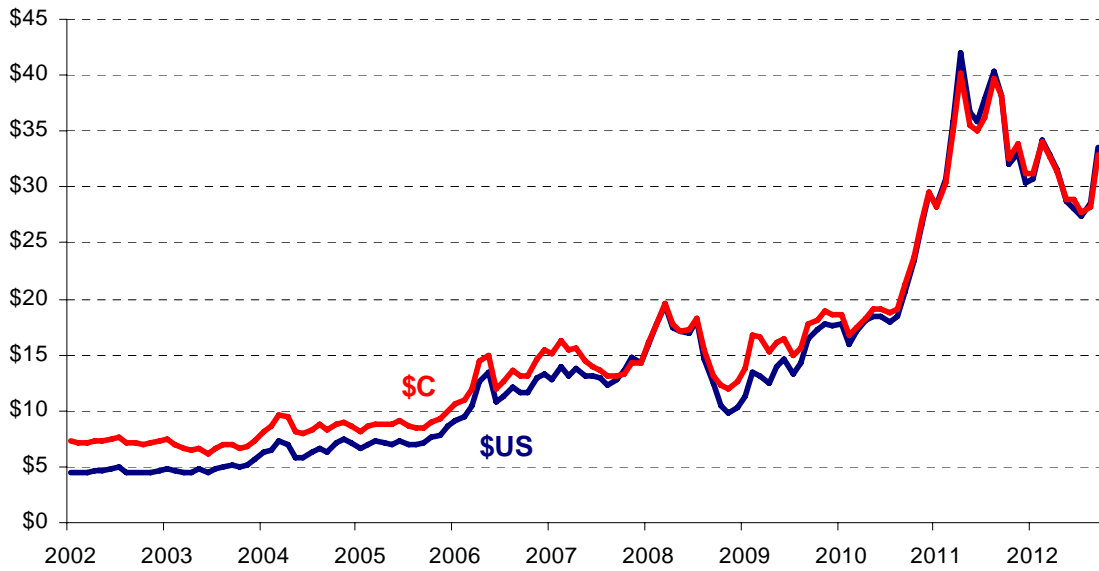
Source: Kitco

Chart 20f: London Metal Exchange Zinc Price per Pound



Source: London Metal Exchange

Chart 20g: London Silver Price per Ounce



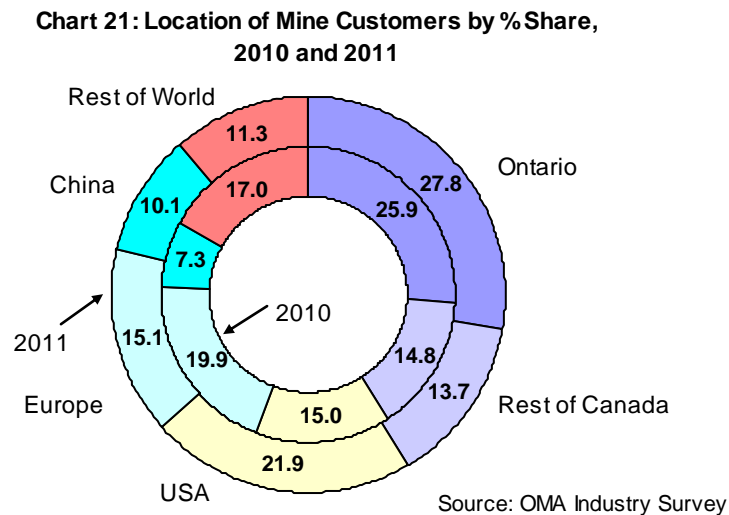
Source: Kitco

Location of Customers

Determining the location of mining company customers can be somewhat tricky because some companies do further refining of their production before they ship it to their ultimate customer, while others do not. The degree of this further local refining can be quite different depending on the type of mineral produced. According to company responses to the latest Ontario Mining Association survey, roughly 60% of OMA company mineral production, by value, was shipped outside Canada in both 2010 and 2011 (see chart 21), which is down from the 80% share reported in the 2007 OMA industry survey. It is certainly the case that the major strike in Sudbury, covering the first half of 2010, will have had an impact on the relative shares in that year, and consequently the change in shares in 2011 relative to 2010.

In 2011, exports to the US accounted for almost 22% of customer sales, up from 15% in 2010, but much lower than the 38% reported for 2006/2007. The share of sales to Europe, at just over 15% in 2011, was down from the 20% share seen in 2010 and the 26% share reported for 2006/2007. Sales to China climbed in 2011 to over 10% of the total, up from 7.3% in 2010 and only 3% in 2006/2007. Finally, international sales to the rest of the world accounted for over 11% of the total, down from 17% in 2010 and 13% in 2006/2007. As growth in the developed world is expected to be relatively tepid in the next few years, one would reasonably anticipate the share of sales to China and the rest of the world to grow.

Of the roughly 40% of sales that were not exported from the country, according to the results from the OMA survey, roughly two-thirds of these remained in Ontario in 2011.



As a large proportion of Ontario mineral production is exported abroad, it is important to understand what contribution mineral trade makes to the trade balance for the province and indeed the country.

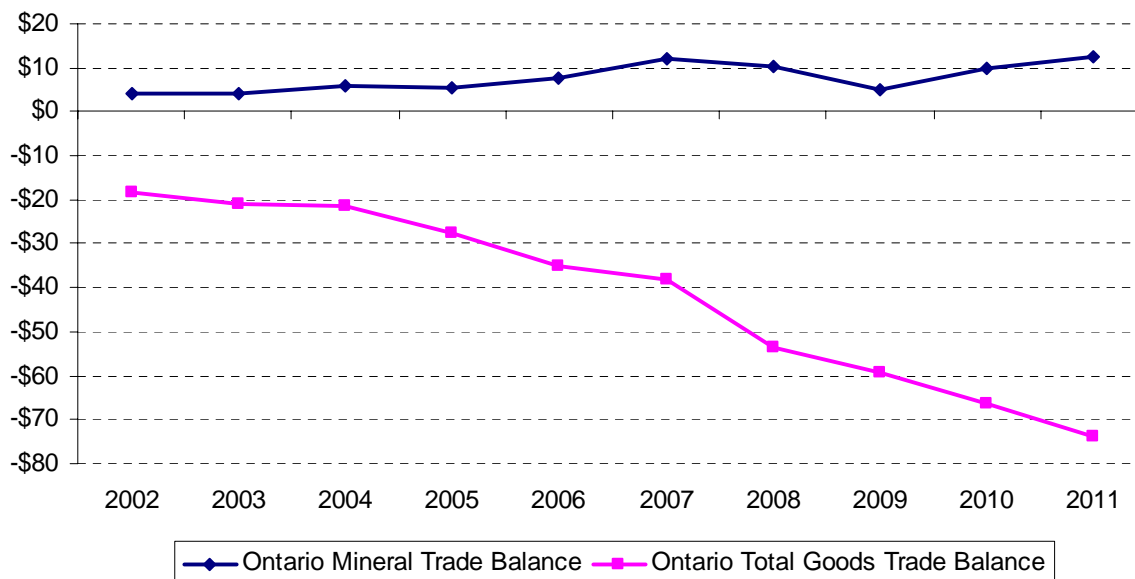
International Trade in Minerals

Measuring international trade at the provincial level is somewhat tricky, as it can be sometimes difficult to determine the true source and destination of traded goods within the country. As well, it has become clear by analyzing the data that there are some industry definitional difficulties within the trade data, as well as significant re-exporting of reported imports that is sometimes problematic to measure.² We therefore concentrate on the commodities traded, rather than data defined by industry in the Trade Statistics Online database. Further, we think it is the trade balance that is the best measure on which to focus.

As Ontario's international trade balance has deteriorated over the last 10 years due to a combination of a strengthening currency and the weakness of its major trading partner, trade in mineral products has become increasingly important (see chart 22 and table 6). Since 2002, as the overall international goods trade *deficit* for the province more than quadrupled, the trade *surplus* for Ontario mineral products has strengthened to more than \$12 billion, remaining positive over the entire period. As well, as can be seen by comparing the Ontario numbers (table 6) to the Canadian ones (table 7), Ontario international mineral trade has accounted for over half of the surplus in the country's mineral trade over this period.

The Ontario international trade balances for both nickel and gold (with the measurement concerns noted) have remained strongly positive over the last 10 years. The opening of the diamond mine in the province in 2008 has also boosted the province's trade bottom line. It does appear that the closing of the Kidd Metallurgical site may have had an impact on the trade balance of copper for the province, as one might suspect.

Chart 22: Ontario International Trade Balances (\$Billion)



Source: Trade Statistics Online, Industry Canada, Statistics Canada

² Two examples of these difficulties are (1) the trade in “gold in unwrought form” which in the trade data is counted as Ontario production but turns out to be gold bars that have been imported for further processing. This becomes obvious when one looks at the level of gold exports, which has far exceeded the actual value of Ontario gold production for many years; and (2) the trade data show no international exports for the salt industry in Ontario which we know can not be true given transportation and industry data.

Table 6: Ontario International Trade, \$ Millions

| | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|------------------------------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Nickel | Total Exports | 1,713 | 1,670 | 3,073 | 3,032 | 4,014 | 7,518 | 5,218 | 2,245 | 3,330 | 4,807 |
| | Total Imports | 85 | 82 | 101 | 99 | 87 | 183 | 145 | 46 | 134 | 152 |
| | Trade Balance | 1,627 | 1,588 | 2,973 | 2,933 | 3,927 | 7,336 | 5,073 | 2,200 | 3,196 | 4,654 |
| Copper | Total Exports | 495 | 452 | 643 | 749 | 818 | 1,505 | 1,279 | 586 | 802 | 802 |
| | Total Imports | 163 | 156 | 203 | 235 | 411 | 500 | 554 | 462 | 614 | 847 |
| | Trade Balance | 333 | 296 | 440 | 515 | 406 | 1,005 | 725 | 124 | 188 | -45 |
| Zinc | Total Exports | 179 | 119 | 174 | 187 | 444 | 500 | 285 | 225 | 172 | 66 |
| | Total Imports | 10 | 11 | 15 | 15 | 50 | 82 | 44 | 9 | 15 | 15 |
| | Trade Balance | 169 | 108 | 159 | 172 | 394 | 418 | 241 | 215 | 157 | 51 |
| Gold (including scrap) | Total Exports | 2,683 | 2,606 | 3,127 | 4,032 | 5,384 | 5,885 | 8,208 | 8,372 | 13,750 | 16,831 |
| | Total Imports | 859 | 779 | 1,162 | 2,332 | 2,851 | 3,079 | 4,527 | 6,019 | 8,024 | 11,088 |
| | Trade Balance | 1,824 | 1,827 | 1,965 | 1,700 | 2,533 | 2,806 | 3,681 | 2,352 | 5,726 | 5,743 |
| Silver | Total Exports | 154 | 118 | 173 | 175 | 309 | 459 | 459 | 389 | 822 | 2,108 |
| | Total Imports | 40 | 7 | 45 | 46 | 65 | 84 | 283 | 400 | 750 | 968 |
| | Trade Balance | 114 | 112 | 129 | 129 | 244 | 375 | 176 | -11 | 72 | 1,140 |
| Platinum Group Metals | Total Exports | 36 | 26 | 29 | 49 | 77 | 65 | 79 | 49 | 169 | 103 |
| | Total Imports | 244 | 215 | 220 | 200 | 257 | 285 | 371 | 193 | 259 | 272 |
| | Trade Balance | -208 | -189 | -190 | -151 | -180 | -220 | -292 | -144 | -89 | -169 |
| Diamonds, Unsorted | Total Exports | 1 | 0 | 0 | 0 | 0 | 0 | 272 | 240 | 336 | 414 |
| | Total Imports | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Trade Balance | -14 | 0 | 0 | 0 | 0 | 0 | 272 | 240 | 336 | 414 |
| Other Diamonds | Total Exports | 27 | 41 | 63 | 84 | 106 | 126 | 170 | 145 | 146 | 172 |
| | Total Imports | 284 | 261 | 317 | 366 | 502 | 452 | 487 | 282 | 363 | 330 |
| | Trade Balance | -257 | -220 | -254 | -282 | -396 | -325 | -317 | -137 | -217 | -158 |
| Other Precious Metals & Stones | Total Exports | 327 | 296 | 393 | 456 | 497 | 655 | 705 | 335 | 310 | 722 |
| | Total Imports | 179 | 117 | 80 | 85 | 108 | 111 | 284 | 218 | 162 | 229 |
| | Trade Balance | 148 | 180 | 313 | 371 | 389 | 544 | 421 | 117 | 148 | 493 |
| Salt | Total Exports | 85 | 112 | 63 | 55 | 57 | 49 | 68 | 91 | 66 | 84 |
| | Total Imports | 25 | 28 | 35 | 32 | 34 | 33 | 39 | 50 | 37 | 48 |
| | Trade Balance | 60 | 84 | 28 | 23 | 22 | 17 | 29 | 41 | 30 | 36 |
| Cement | Total Exports | 282 | 257 | 260 | 243 | 232 | 253 | 222 | 191 | 191 | 173 |
| | Total Imports | 32 | 29 | 28 | 23 | 21 | 28 | 30 | 30 | 36 | 47 |
| | Trade Balance | 250 | 228 | 232 | 220 | 211 | 225 | 192 | 161 | 155 | 126 |
| Other Non-Metallic Materials | Total Exports | 224 | 212 | 214 | 211 | 235 | 205 | 223 | 168 | 210 | 201 |
| | Total Imports | 275 | 244 | 241 | 244 | 234 | 216 | 207 | 179 | 183 | 179 |
| | Trade Balance | -51 | -32 | -26 | -32 | 1 | -11 | 17 | -11 | 28 | 21 |
| Total Ontario Trade in Minerals | Total Exports | 6,206 | 5,910 | 8,213 | 9,275 | 12,174 | 17,221 | 17,189 | 13,036 | 20,305 | 26,483 |
| | Total Imports | 2,211 | 1,930 | 2,445 | 3,677 | 4,621 | 5,052 | 6,971 | 7,888 | 10,576 | 14,176 |
| | Trade Balance | 3,995 | 3,980 | 5,768 | 5,598 | 7,552 | 12,168 | 10,218 | 5,148 | 9,730 | 12,307 |
| Total Ontario Trade | Total Exports | 206,496 | 189,113 | 199,007 | 200,821 | 198,768 | 202,477 | 188,706 | 147,766 | 168,585 | 181,214 |
| | Total Imports | 224,753 | 210,192 | 220,620 | 228,606 | 233,844 | 240,636 | 242,260 | 207,145 | 235,147 | 254,984 |
| | Trade Balance | -18,257 | -21,079 | -21,613 | -27,785 | -35,076 | -38,159 | -53,554 | -59,379 | -66,562 | -73,770 |

Source: Trade Data Online, Industry Canada and Statistics Canada

Table 7: Canada International Trade, \$ Millions

| | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|--|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Nickel | Total Exports | 2,336 | 2,482 | 4,316 | 4,210 | 6,018 | 10,972 | 7,409 | 3,398 | 5,013 | 6,731 |
| | Total Imports | 226 | 305 | 528 | 467 | 326 | 669 | 272 | 335 | 662 | 622 |
| | Trade Balance | 2,110 | 2,177 | 3,787 | 3,743 | 5,692 | 10,302 | 7,137 | 3,063 | 4,352 | 6,109 |
| Copper | Total Exports | 1,575 | 1,541 | 2,051 | 2,852 | 4,588 | 5,239 | 5,313 | 3,381 | 4,286 | 5,419 |
| | Total Imports | 599 | 657 | 1,197 | 1,519 | 2,215 | 1,656 | 1,704 | 1,148 | 1,227 | 1,076 |
| | Trade Balance | 976 | 884 | 854 | 1,333 | 2,372 | 3,583 | 3,610 | 2,233 | 3,059 | 4,343 |
| Zinc | Total Exports | 1,199 | 973 | 1,119 | 1,103 | 2,147 | 2,580 | 1,771 | 1,358 | 1,593 | 1,580 |
| | Total Imports | 170 | 249 | 272 | 265 | 720 | 901 | 408 | 259 | 341 | 405 |
| | Trade Balance | 1,029 | 724 | 847 | 838 | 1,427 | 1,679 | 1,363 | 1,099 | 1,252 | 1,175 |
| Gold (including scrap) | Total Exports | 2,689 | 2,673 | 3,414 | 4,133 | 5,432 | 5,938 | 8,247 | 8,469 | 14,006 | 17,044 |
| | Total Imports | 936 | 982 | 1,829 | 2,730 | 3,721 | 4,312 | 5,970 | 6,744 | 9,230 | 11,871 |
| | Trade Balance | 1,753 | 1,691 | 1,584 | 1,402 | 1,711 | 1,626 | 2,277 | 1,725 | 4,776 | 5,172 |
| Silver | Total Exports | 435 | 351 | 423 | 434 | 660 | 680 | 726 | 745 | 1,771 | 3,480 |
| | Total Imports | 53 | 28 | 165 | 104 | 172 | 200 | 370 | 680 | 1,400 | 2,858 |
| | Trade Balance | 382 | 324 | 258 | 329 | 488 | 480 | 356 | 65 | 370 | 622 |
| Platinum Group Metals | Total Exports | 70 | 54 | 77 | 87 | 196 | 125 | 183 | 110 | 310 | 249 |
| | Total Imports | 262 | 238 | 244 | 225 | 285 | 312 | 402 | 223 | 310 | 302 |
| | Trade Balance | -192 | -183 | -167 | -138 | -90 | -186 | -219 | -113 | 0 | -53 |
| Diamonds, Unsorted | Total Exports | 861 | 1,396 | 1,567 | 1,263 | 1,032 | 1,215 | 1,879 | 1,248 | 1,910 | 1,928 |
| | Total Imports | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Trade Balance | 839 | 1,396 | 1,567 | 1,263 | 1,032 | 1,215 | 1,879 | 1,248 | 1,910 | 1,928 |
| Other Diamonds | Total Exports | 76 | 254 | 522 | 590 | 762 | 808 | 924 | 686 | 771 | 809 |
| | Total Imports | 345 | 330 | 400 | 463 | 602 | 559 | 654 | 417 | 532 | 510 |
| | Trade Balance | -268 | -76 | 122 | 128 | 160 | 248 | 270 | 269 | 239 | 299 |
| Other Precious Metals & Stones | Total Exports | 349 | 396 | 430 | 528 | 577 | 845 | 876 | 454 | 410 | 916 |
| | Total Imports | 308 | 240 | 230 | 204 | 299 | 433 | 646 | 589 | 514 | 914 |
| | Trade Balance | 41 | 156 | 200 | 324 | 277 | 412 | 230 | -135 | -104 | 2 |
| Salt | Total Exports | 97 | 126 | 84 | 80 | 86 | 89 | 122 | 157 | 129 | 157 |
| | Total Imports | 51 | 43 | 51 | 50 | 57 | 62 | 74 | 88 | 60 | 87 |
| | Trade Balance | 46 | 83 | 33 | 29 | 29 | 26 | 49 | 70 | 69 | 70 |
| Cement | Total Exports | 485 | 462 | 432 | 400 | 376 | 420 | 372 | 313 | 284 | 267 |
| | Total Imports | 79 | 78 | 75 | 76 | 68 | 94 | 104 | 105 | 137 | 156 |
| | Trade Balance | 405 | 384 | 357 | 324 | 309 | 326 | 269 | 209 | 147 | 111 |
| Other Non-Metallic Materials | Total Exports | 793 | 788 | 892 | 1,078 | 1,002 | 1,068 | 2,609 | 794 | 960 | 1,141 |
| | Total Imports | 627 | 611 | 619 | 599 | 577 | 566 | 583 | 456 | 489 | 524 |
| | Trade Balance | 166 | 177 | 273 | 480 | 425 | 503 | 2,025 | 338 | 471 | 616 |
| Total Canada Trade in Minerals (as in Ontario) | Total Exports | 10,964 | 11,496 | 15,326 | 16,758 | 22,873 | 29,978 | 30,432 | 21,113 | 31,444 | 39,720 |
| | Total Imports | 3,678 | 3,759 | 5,610 | 6,702 | 9,041 | 9,764 | 11,188 | 11,043 | 14,902 | 19,326 |
| | Trade Balance | 7,286 | 7,737 | 9,716 | 10,056 | 13,832 | 20,214 | 19,244 | 10,070 | 16,541 | 20,395 |
| Total Canada Trade | Total Exports | 396,382 | 381,172 | 412,290 | 436,351 | 440,365 | 450,321 | 483,488 | 359,754 | 399,300 | 447,501 |
| | Total Imports | 348,957 | 336,141 | 355,886 | 380,858 | 397,044 | 407,301 | 433,999 | 365,359 | 403,750 | 445,992 |
| | Trade Balance | 47,425 | 45,031 | 56,404 | 55,493 | 43,321 | 43,020 | 49,489 | -5,605 | -4,450 | 1,509 |

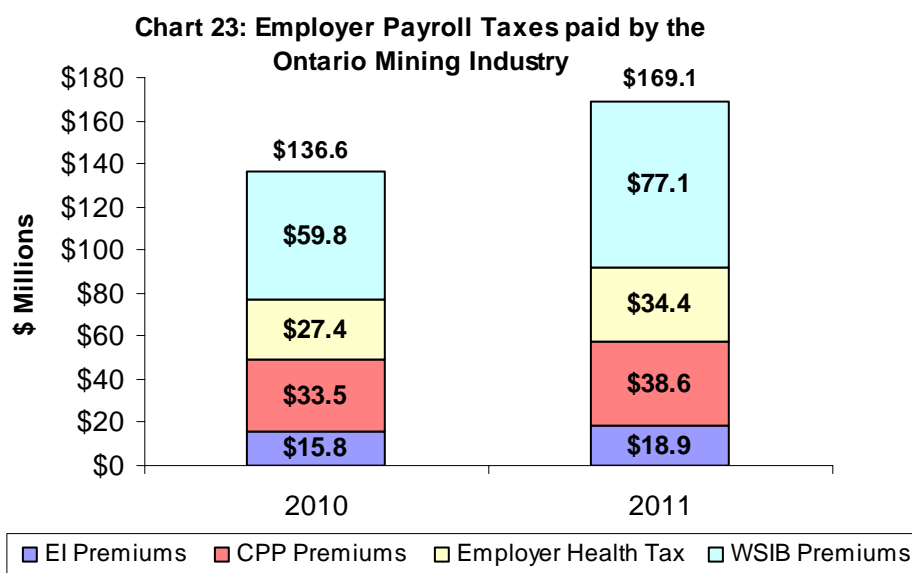
Source: Trade Data Online, Industry Canada and Statistics Canada

Taxes Paid by the Mining Industry

The industry does not only make a considerable contribution to the provincial international trade balance, it also pays a substantial amount in taxes to all levels of government. Data on all of the different taxes paid by companies in the mining industry in the province is difficult to come by, but we can get a good handle on a number of them. From Chart 23, based on responses to the OMA survey, employers in the Ontario mining industry paid \$170 million in payroll taxes in 2011, up from nearly \$140 million in 2010. The provincial government was the recipient of the bulk of these taxes, with revenues from the Employer Health Tax and WSIB premiums totaling over \$111 million in 2011, up from \$87 million in 2010.

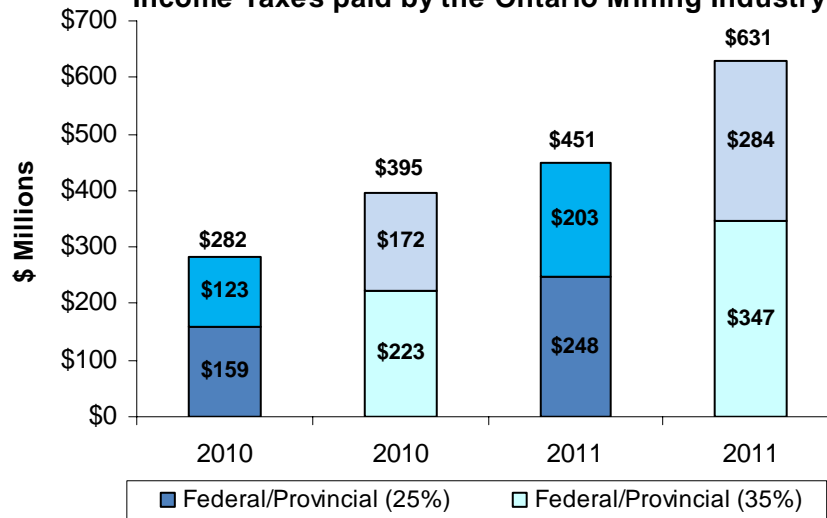
Corporate income tax data by industry at the provincial level are difficult to estimate, but using information from the ENTRANS Policy Research Group report, “Revenues to Governments from the Canadian Mineral Sector 2002-2011” prepared for the Mining Association of Canada, we can estimate a range of the tax take by level of government. In 2011 in Canada, ENTRANS estimates that the Mining industry paid \$992 million in federal corporate income tax and \$811 in total provincial corporate income tax. If we assume that Ontario accounted for 25% of this value in 2011, the federal income tax paid in the province would amount to almost \$250 million, while the provincial tax take is estimated to be \$203 million. If the share were 35%, the federal corporate tax take in the province is almost \$350 million, with the province taking in another \$284 million (see chart 24).

Adding the payroll taxes paid to the estimates for corporate taxes, together with estimates for the Ontario mining tax as well as other charges including permits and net HST payments, we get estimates for total payments from Ontario mining companies to the federal and provincial governments. In 2011, depending on the assumption for the Ontario share of Canadian mining firms’ corporate income tax, the amount paid in taxes (including CPP) to the federal government ranged from \$314 million to \$413 million, a big increase from the estimated \$215 million to \$278 million paid in 2010. Taxes collected by the Ontario provincial government were an estimated \$482 million to \$564 million in 2011, more than 70% higher than the estimated amounts in 2010 (\$280 million to \$329 million). Even using the lower estimate for corporate tax take, the mining industry paid an estimated \$800 million to these two levels of government in 2011. Remember that this does not include the income taxes or payroll taxes paid by industry employees on their wages and salaries, which given an estimated industry payroll in excess of \$1.7 billion, would conservatively amount to more than half a billion dollars.



Source: OMA Industry Survey

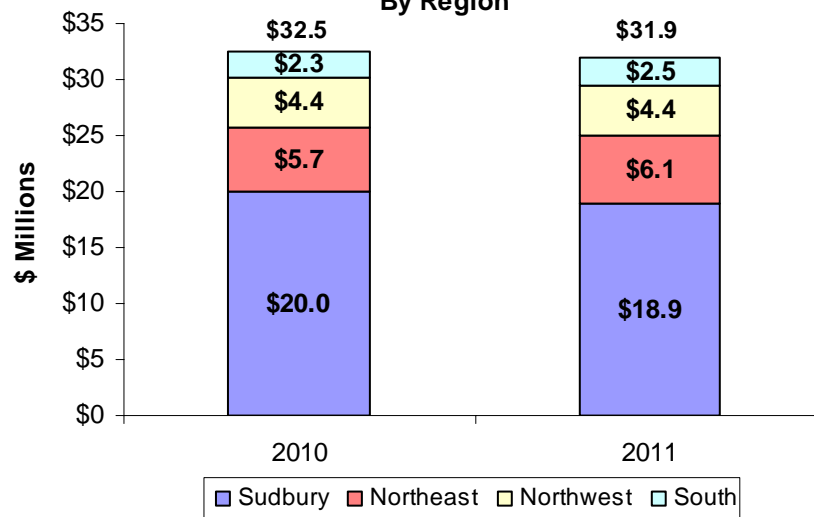
Chart 24: Estimates of Federal and Provincial Corporate Income Taxes paid by the Ontario Mining Industry



Source: Calculated as 25% and 35% of Canadian Mining Industry Corporate Taxes as reported by ENTRANS

Local taxes by mining companies are particularly important to the northern regions of the province. According to responses to the OMA industry survey,³ almost \$19 million in local property taxes were paid in the Sudbury region in 2011, down somewhat from the \$20 million paid in 2010. Clearly, this is a significant part of the local tax base in this region. Local taxes in the Northeast part of the province totaled over \$6 million in 2011, up from \$5.7 million the previous year. In the Northwest, property taxes totaled \$4.4 million in 2011, while in the south the number stood at \$2.5 million. Overall, roughly \$32 million were paid in property taxes across the province, providing important support for local services.

Chart 25: Property Taxes paid by the Ontario Mining Industry, By Region



Source: OMA Industry Survey

³ These numbers are lower than the actual taxes paid due to confidentiality concerns related to the OMA member survey. As well, property taxes in the south of the province are impacted by the fact that the property tax paid by company corporate offices typically is included in the rent they pay and therefore not reported.

Investing in the Future

On top of the usual type of investment in research and development, the mining industry has its own unique kind of research – mineral exploration. Exploration and deposit appraisal spending in Ontario for 2011 hit more than \$1 billion (see table 8 and chart 26), almost 20% higher than in 2010 (\$853 million), three times as great as the amount spent in the province in 2006 (\$347 million), and almost eight times the amount spent in 2002 (\$139 million). This is also the most ever spent in one year on mineral exploration in any Canadian jurisdiction. Ontario maintained its decade-long lead of all Canadian provinces and territories in exploration and deposit appraisal expenditures in 2011, with 26% of Canadian spending in the province, down from 31% in 2010. According to the Metals Economics Group, Canada in 2011 accounted for roughly 18% of total global exploration spending, the most for any country.

At \$833 million in 2011, exploration for precious metals continues to be the main commodity focus of exploration spending, with gold the most sought-after commodity in the province (and indeed Canada and globally). Spending on exploration for base metals (\$112 million) is targeted mostly in the Sudbury area, but other base metal projects are underway in the Ring of Fire area where exploration for chromite is estimated to have totaled \$30 million in 2011. Of the remaining \$47 million in exploration spending, platinum group metals, diamonds, lithium and rare earth elements are among the commodities that are being sought. Junior companies play a prominent role in exploration in Ontario, accounting for 46 percent of expenditures in 2011. There are currently more than 330 companies from across the country and the world actively exploring the province (see table 9).

General exploration accounted for \$845 million, or 83%, of exploration expenditures in 2011, with the remaining \$177 million devoted to on-mine-site spending. Over the previous five years the shares have averaged roughly 75% general exploration and 25% on-mine-site spending. As well, according to the Ministry of Northern Development and Mines, mining claim activity in Ontario remains well above historic levels, with the number of active mining claim units in good standing in Ontario at 326,000 in 2011 up 5% from the 312,000 in 2010. The value of assessment work in the province climbed 24% to \$185 million in 2011 from \$149 million in 2010. There are currently more than 600 active mineral exploration projects going on in Ontario.

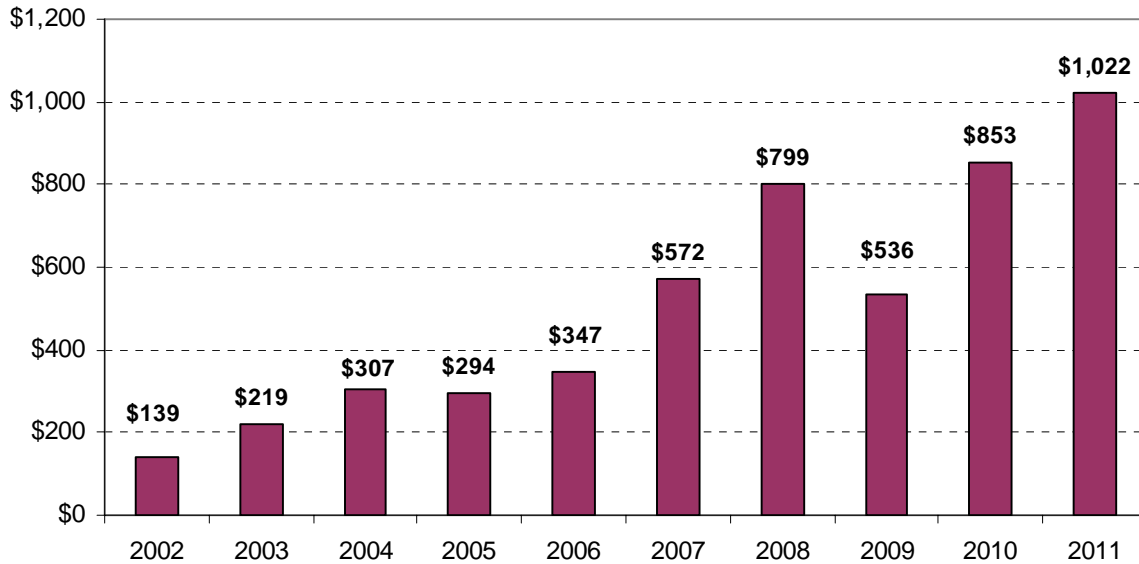
Table 8: 2011 Exploration and Deposit Appraisal Expenditures

| Province/Territory | 2011 (\$millions) | % of total |
|---------------------------|--------------------------|-------------------|
| Newfoundland & Labrador | 172.1 | 4.4 |
| Nova Scotia | 12.7 | 0.3 |
| New Brunswick | 25.2 | 0.6 |
| Quebec | 709.5 | 18.1 |
| Ontario | 1,021.9 | 26.0 |
| Manitoba | 110.5 | 2.8 |
| Saskatchewan | 349.7 | 8.9 |
| Alberta | 44.1 | 1.1 |
| British Columbia | 567.7 | 14.5 |
| Northwest Territories | 105.4 | 2.7 |
| Yukon Territory | 306.6 | 7.8 |
| Nunavut | 502.3 | 12.8 |
| TOTAL | 3,927.8 | 100.0 |

Source: Natural Resources Canada

Expenditures include on-mine-site and off-mine-site activities; field work, overhead costs, engineering, economic and pre- or production feasibility studies, environment and land access costs. Exploration and deposit appraisal activities include only the search for and appraisal of deposits and do not include work for extensions of known reserves.

Chart 26: Ontario Mineral Exploration Spending (\$ Millions)



Source: Natural Resources Canada

Table 9: Number of Exploration Companies Active in Ontario - By Location of Head Office

| | |
|-------------------------------|------------|
| Yukon | 1 |
| BC | 97 |
| Alberta | 8 |
| Saskatchewan | 2 |
| Manitoba | 7 |
| Ontario | 180 |
| of which Greater Toronto Area | 124 |
| Quebec | 19 |
| New Brunswick | 1 |
| Nova Scotia | 2 |
| Newfoundland & Labrador | 2 |
| USA | 5 |
| United Kingdom | 4 |
| Australia | 2 |
| South Africa | 1 |
| Total | 331 |

Source: Ontario Mining and Exploration Directory 2012,
Ontario Prospectors Association

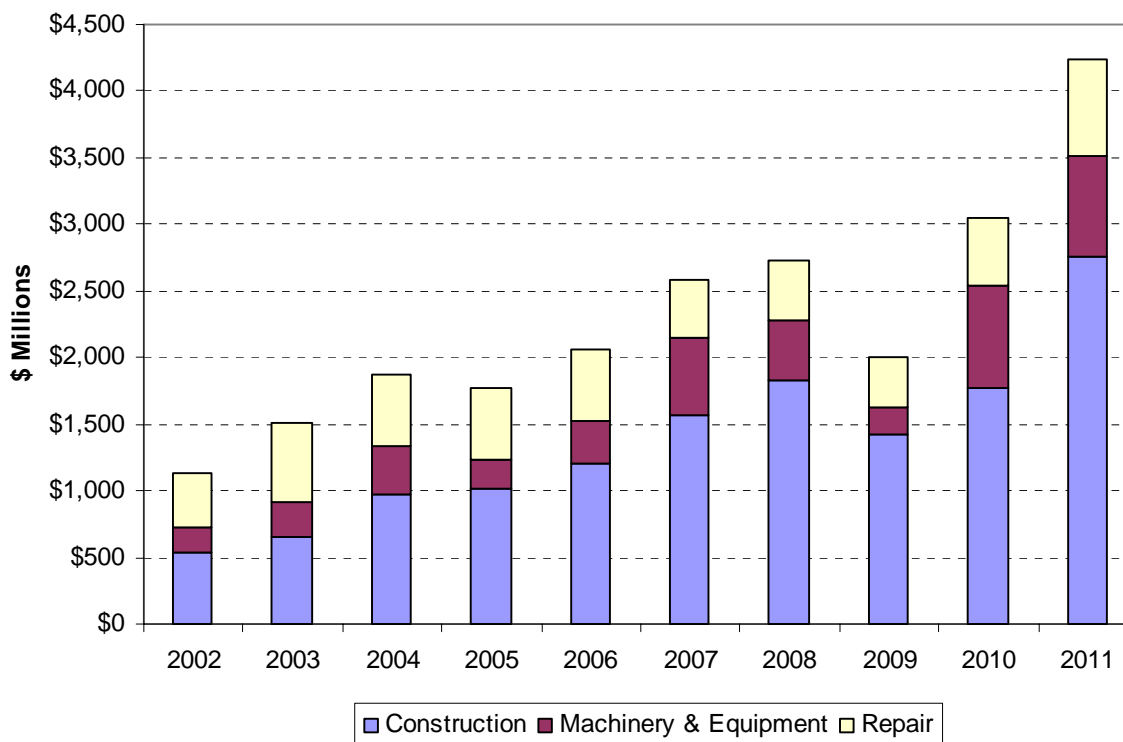
Turning Exploration into Development

Capital investment in Ontario's mining industry soared in 2011, as new mines were being built and existing ones refurbished. Statistics Canada's investment intentions survey indicates that 2012 is even stronger. Over the last 10 years, it is estimated that capital expenditures have increased almost fourfold, from just over \$1 billion in 2002 to well over \$4 billion in 2011 (see chart 27 and table 10). Current projects under development can be seen on map 2.

In 2011, according to current estimates, almost two-thirds of mining investment (\$2.8 billion) was spent on construction, while the rest was split between machinery & equipment (\$761 million) and repairs (\$720 million).

Over the last decade, the industry has invested, in total, close to \$23 billion, with almost \$14 billion of that spent on constructing new mines or expanding existing ones, \$4 billion on machinery and equipment to make them more productive and \$5 billion to update and repair existing structures.

Chart 27: Capital Expenditures in the Ontario Mining Industry



Source: Statistics Canada and authors' calculations

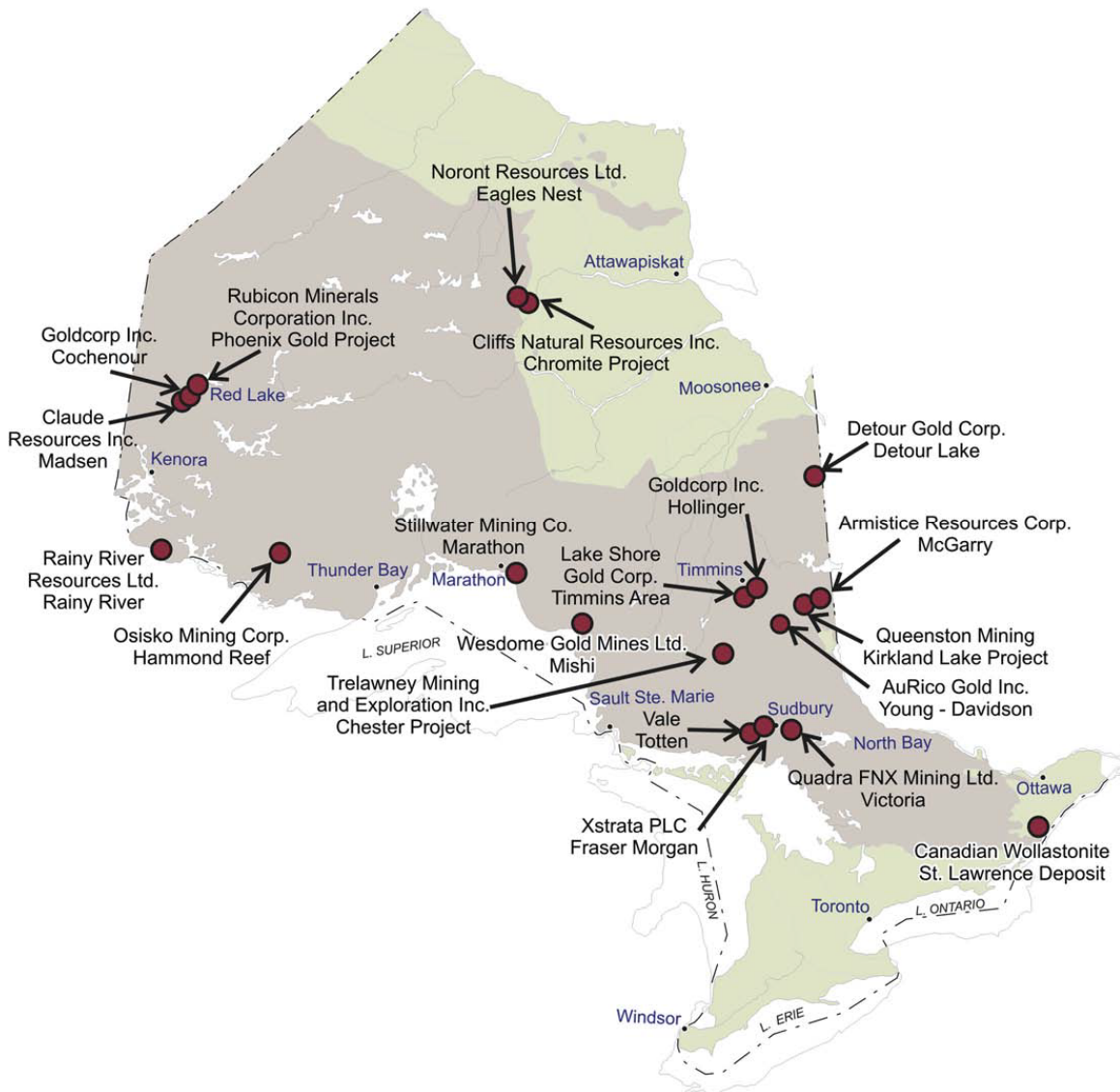
Table 10: Capital Expenditures in the Ontario Mining Industry, By Type, \$Millions

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Construction | 544.2 | 652.2 | 976.8 | 1,013.5 | 1,200.2 | 1,560.9 | 1,828.0 | 1,416.0 | 1,765.6 | 2,754.7 |
| M&E | 178.7 | 262.4 | 356.0 | 217.5 | 323.4 | 584.3 | 448.4 | 211.8 | 768.2 | 760.9 |
| Repair | 410.4 | 594.3 | 546.8 | 542.4 | 534.7 | 443.1 | 451.3 | 376.9 | 509.2 | 720.1 |
| Total | 1,133.3 | 1,508.9 | 1,879.6 | 1,773.4 | 2,058.3 | 2,588.3 | 2,727.7 | 2,004.7 | 3,043.0 | 4,235.7 |

Source: Statistics Canada and authors' calculations

Map 2:

Ontario Mine Development Projects



Source: Ontario Mining and Exploration Directory 2012, Ontario Prospectors Association

Note: Quadra FNX Mining Ltd. is now KGHM International

Note: AuRico Gold's Young-Davidson mine in commercial production as of September 1, 2012

Note: Trelawney Mining and Exploration Inc. now part of IAMGOLD

New Mines from Old Sites

Technological advances and changing economics and markets can turn old mineral properties into new mines. This has certainly been the case in Ontario in the last few years. As the price of gold has climbed, a number of mines across the northern part of the province have been “reborn”.

Northgate Minerals, now owned by AuRico Gold, invested an estimated \$339 (U.S.) million to construct the Young-Davidson Gold Mine which began production in mid-2012. Young-Davidson is located near Matachewan in northeastern Ontario and is about 50 kilometres west of Kirkland Lake. The site covers the operations of two historic gold mines, which produced about one million ounces of the precious metal from the mid-1930s to mid-1950s. Northgate purchased the Young-Davidson property in 2005. The company has established a strong working relationship with the local Matachewan First Nation signing an impact and benefit agreement in 2009.

Kirkland Lake Gold from its South Mine Complex is building on the legacy of the ground mined by five of the seven former gold operations that made Kirkland Lake famous and produced more than 24 million ounces of gold. This is the first time properties in the Kirkland Lake area have been consolidated with a single owner. The new gold miner controls the five westernmost mine sites in the Kirkland Lake mile of gold. From west to east, the mines are Macassa, Kirkland Minerals, Tech-Hughes, Lake Shore and Wright-Hargreaves. The distance from Macassa to Wright-Hargreaves is about seven kilometres. The Sylvanite Mine, which operated from 1927 to 1961 and the Toburn Mine, which operated from 1913 to 1953, lay to the east of Kirkland Lake Gold’s consolidated property. The company restored gold production in Kirkland Lake in 2005 at the former Macassa property. New exploration projects led to the discovery of additional high grade gold mineralization to the south of the main strike zone. Kirkland Lake Gold acquired the Macassa Mine and mill and four former gold producing properties in 2001.

Claude Resources is making progress toward having its Madsen advanced exploration project contribute once again to the total of more than 26 million ounces of gold which have been produced in the Red Lake district. The Madsen Mine, which is located about 10 kilometres west of Red Lake, operated from 1938 to 1976 and produced more than 2.4 million ounces of gold during that period. Since taking over the Madsen property in 2008, Claude Resources has been refurbishing the hoist, shaft and headframe, preparing the mine and mill for future production and carrying out further exploration drilling to expand resources. Claude Resources has 13 employees at the Madsen site, all of whom are local, and about 15 contractors. Currently, two exploration drills are working from underground stations and one exploration drill is working from the surface. The second phase of this exploration program is to be completed by the end of 2012.

Also, Rubicon Minerals Corporation is developing a new mine at an old site at its Phoenix Gold Project, also near Red Lake. Rubicon acquired control of the property in 2002 and has a bullion production target of the first quarter of 2014. Rubicon inherited infrastructure from what was known as the old McFinley Mine site. Claims were first staked on this property in 1922 and initial underground exploration took place in 1956. From 1982 to 1989, further exploration was carried out, a shaft was built, three underground levels were developed in the mine, a 150-ton-per-day mill and tailings compound were built and bulk sampling was done on a satellite target, which lies approximately 500 metres away from the eventual discovery. The headframe has been extended by 50 feet in height, the shaft deepened to 430 metres, a production scale hoist has been installed, grid power connected on site and new drifts established. Capital expenditures on the property as outlined in the Preliminary Economic Assessment (PEA) are estimated at \$214 million. Current plans see the shaft extended to a depth of 610 metres and the delivery of milling equipment is expected in July of 2013. Exploration activity is expanding the mineral resources on site. Rubicon has an exploration agreement with the Lac Seul First Nation and is consulting with the Wabauskang First Nation and the Metis Nation of Ontario.

Miner for the Future – Building on a Major Investment

When quantifying the impact of the mining industry, figures that are used, as seen earlier in this report, are, for obvious reasons, those typically currently employed in the industry, usually mine site production and engineering workers and the spending on supplies and services for an operating mine. But as is seen in the December 2007 study, “Ontario Mining: A Partner in Prosperity Building - The Economic Impacts of a ‘Representative Mine’ in Ontario”, prepared for the Ontario Mining Association by Peter Dungan and Steve Murphy the impacts of the construction of a new mine can be considerable. The following is a real world example of the impacts of such a new mine development.

Detour Gold is involved in one of the most significant projects in the province, turning a former mine site into one of the largest gold mines in Canada. The mine is located 185 kilometres by road northeast of Cochrane, Ontario via Highway 652, about 10 kilometres west of the Quebec border. Detour Gold is investing roughly \$1.5 billion on the project, and with mill commissioning activities for the first production line underway, it is expected that the first ore will be fed through the mill circuit before year-end, with a first gold pour seen in January 2013. The Detour Lake open pit mine is expected to produce an average of 657,000 ounces of gold annually over a period of 21.5 years. From a historical perspective, the Detour Lake deposit was discovered in 1974 by Amoco Petroleum. The mine started production in 1983 with a small open pit from 1983 to 1987 and from underground until closing in 1999. Placer Dome produced 1.8 million ounces of gold over that period at the mine.

Construction of the mining facilities started in November 2010, with more than 1,500 construction and other contract workers, as well close to 300 Detour Gold employees involved in this phase of the operation by mid-2012. In July, 2012, the major milestone of connecting the 230 kW electrical power transmission line to the Ontario power grid was accomplished. With this power supplied to the site, the full commissioning of the grinding mills moved forward so that the January 2013 operation date is indeed on target. From the acquisition of the property in 2006, it will have taken just six years for the new mine to become a reality. The company has signed agreements with local Aboriginal communities including the Wahgoshig First Nation, Taykwa Tagamou Nation, Moose Cree First Nation and the Métis Nation of Ontario.

Once operational, the mine is expected to employ from 400 to 500 people with new modern camp facilities with 400 en-suite rooms. The Detour Lake mine is designed as a year-round open pit operation. The mine facilities have been designed to minimize the footprint using state-of-the-art technology to protect the environment and animal species of the area. Detour Gold has committed to develop and operate Detour Lake to the highest environmental standards and bring long-lasting benefits to the communities in the region and to its partnerships with the local Aboriginal communities. To this end, employee hiring for the site to date has been primarily from Northern Ontario, with a focus on the Cochrane area. As well, roughly a quarter of front line employees hired to date are from First Nations communities in the general vicinity of the mine.

It is interesting to note that existing infrastructure appears to have played a role in the company being interested in the old mine site that has turned into such a key investment for the province. The close proximity to the property of an existing provincial highway made access to the property feasible. The company may not have taken a closer look at the old Detour Lake property if this basic but critical transportation corridor were not already in place. Also, while the company incurred considerable expense to build a power line to tie into the existing grid, if the tie-in to the power grid were not possible, would the project itself have been attractive?

These are interesting factors that will be top of mind in the development of the Ring of Fire: to what extent does the access to basic infrastructure, in itself, spur further development and investment?

The Ring Of Fire – Opportunities and Challenges

According to the Ontario Ministry of Northern Development and Mines, the Ring of Fire, located about 540 kilometres northeast of Thunder Bay and covering about 5,000 square kilometres (see Map 3), represents “one of the most significant mineral deposits discovered in Ontario in over a century with multi-generational mineral production opportunities”. Exploration companies to date have uncovered chromite, nickel, gold, iron and platinum group elements in the area. It is expected that the area could potentially yield North America’s first large-scale chromite mining operation. Chromite is a key ingredient in the production of stainless steel.

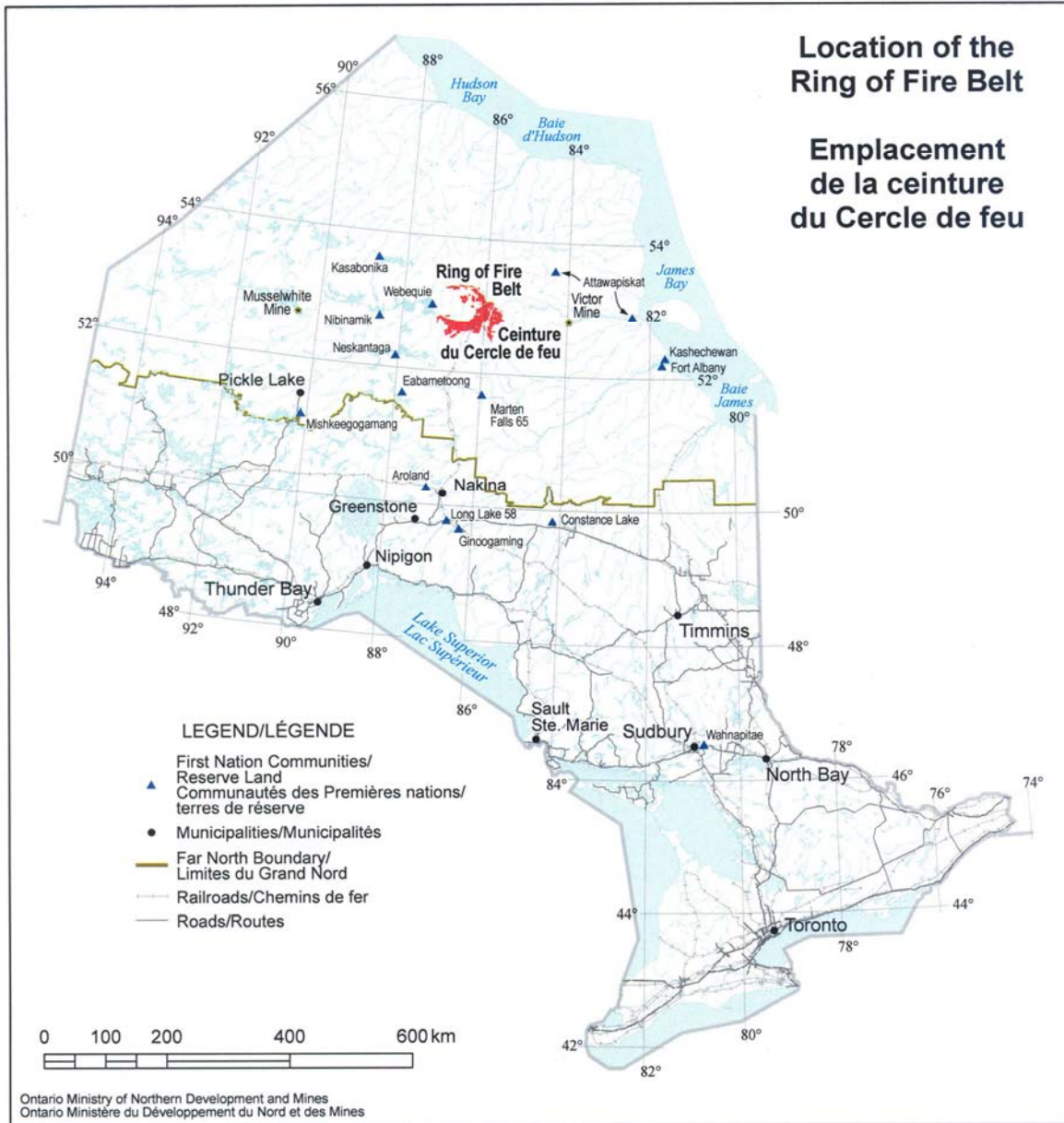
Recognizing the unique opportunity the region affords, as well as the challenges that such a remote location presents (roughly 300 kilometres from the nearest road or rail line) and the number of companies involved in the area, the provincial government has named a Ring of Fire Secretariat to help move the various mining and related infrastructure projects forward. As coordinator, the Secretariat’s role is to work with other provincial ministries, the federal government, local communities including First Nations, the mining industry and other stakeholders to facilitate the development of the Ring of Fire’s massive potential.

There are a number of very important policy issues related to the Ring of Fire region’s resources that will not only impact the area’s development but also define how the province is viewed as a location for future investment. Not only will environmental and Aboriginal agreements be front and centre, but decisions will need to be made in the coming years as to what provision of basic infrastructure is provided by governments, in conjunction with the mining companies, to facilitate the development of the resources in a way that is sustainable and provides maximum benefits to all involved parties. These decisions include by what means the area will be supplied and production transported. As well, given the size of the expected developments in the region and their energy requirements, questions arise as to how and in what fashion the area can be connected to the province’s power grid. Negotiations will determine who should pay what as the infrastructure improvements will not only enable the companies involved to develop their mine-sites, but also benefit Aboriginal communities in the region.

At present, there are two major projects moving to development stage. Cliffs Natural Resources has announced it is committing \$3.3 billion to develop its Black Thor chromite project encompassing the mine, a road to ship the ore for processing and a smelter to be built in the Sudbury area. The company estimates a total of 1,200 direct jobs will be created. At its Eagle’s Nest project, Noront Resources intends to develop nickel as well as copper and platinum reserves in a distinctive fashion. To minimize the environmental impact, it is proposing an underground mine, mill and tailings storage facility. On the surface, the only visible signs of the Eagle’s Nest project will be a year-round airstrip, a base camp, and a number of support and storage buildings, all of which will occupy less than 50 hectares. It will have one of the smallest environmental footprints of any underground mine in the world. Noront plans to recycle its entire volume of tailings underground removing the need for a surface tailings impoundment area and establishing a model mine for the future. Noront estimates their project will entail a capital investment of roughly \$609 million, generating 700 construction jobs and 300 ongoing jobs.

The estimates for the types and extent of the commodities that exist in the Ring of Fire mean these projects will be just two of many, if all sectors cooperate to make it happen.

Map 3:



Can the Industry Build on these Investments?

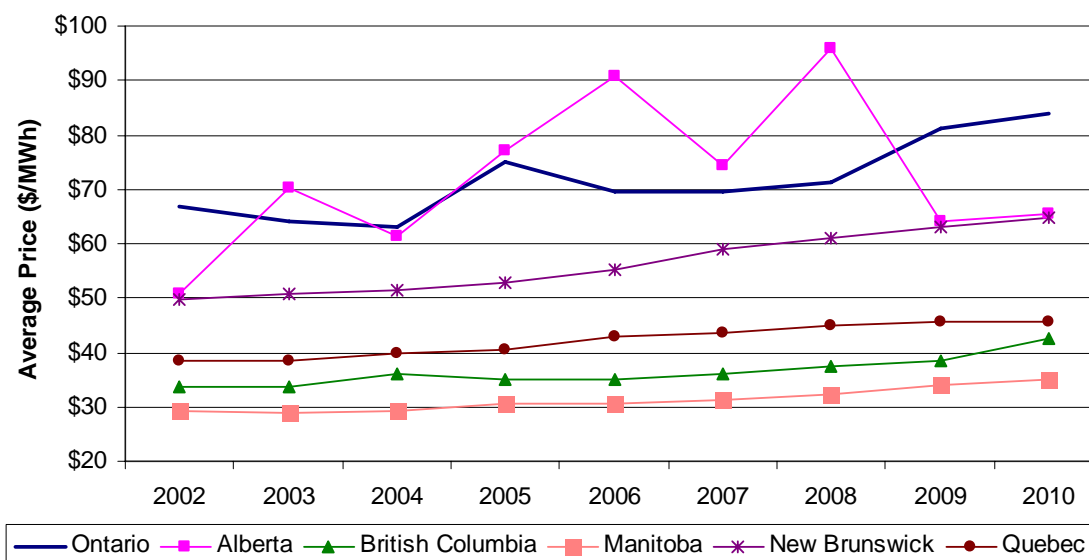
Given the recent record on exploration and the resulting number of projects under development, the future of the industry does indeed look very bright. However, to build upon this impressive record of investment, it is important that the cost structure for major inputs is competitive so that economic activity that depends on the mining of these minerals can flourish. This is true for the mining activity itself but also, in particular, given the significant competition not only internationally, but also across Canadian provinces, for the siting of smelters to process this production.

One significant cost disadvantage for the province's mining and mineral processing industries has been the price of industrial electricity rates. Using rates compiled by the Association of Major Power Consumers of Ontario (AMPCO) through 2010 (comparable rates for 2011 are not yet available), it is clear that the price of electricity paid by Ontario's mining companies has been much higher than that in nearby provinces (see chart 28). The average price per megawatt hour in Ontario in 2010 for industrial users was more than 80% higher than that in Quebec and over two times the price in Manitoba.

Recent changes to the Global Adjustment (GA) component in the price of delivered electricity, as well as the introduction of the Northern Industrial Electricity Rate (NIER) program, have reduced rates somewhat and assisted mineral producers in their efforts to manage energy expenditures. The NIER program recognizes the structural differences associated with remote operations. Given its design, however, many mining companies are ineligible, or have reached the program cap, and therefore its impact on decisions regarding future expansions may be muted. As well, the current NIER program is set to expire on March 31, 2013. The GA changes do provide a basis for a longer term price solution but some mining companies are also currently ineligible for these price adjustments. As a result of the economic downturn, Ontario has experienced intermittent periods of surplus power generation. The provincial government has proposed an Industrial Electricity Incentive program whereby eligible companies could qualify for a reduced electricity rate in exchange for creating new jobs and bringing new investment to the province. The program is scheduled to be in place in January 2013, although final rules are still in development.

The challenges of making decisions on siting future expansions or new smelters in Ontario remain, given the availability of cheaper energy supplies right outside the provincial border. Moving forward, a long-term clear, comprehensive and competitive provincial industrial electricity pricing plan will provide the impetus for sustained future investment in the entire mineral industry production process.

Chart 28: Industrial Electricity Rates in Canada, 2002-2010



Source: Association of Major Power Consumers in Ontario (AMPCO)

Mining Innovation and Patents

The Institute for Competitiveness and Prosperity at the University of Toronto believes that U.S. patents are a good indicator of innovative capacity of an industry. Patents are sought first and foremost in the U.S. where the standards for patentability are more stringent. U.S. patent data compiled by the Institute show that the overall number of patents gained by firms related to the Ontario mineral industry increased in 2010 relative to recent years (see table 11).

Ontario mining companies obtained 13 U.S. patents in 2010, with firms primarily involved in metal mining getting the bulk of the patents. Companies providing services incidental to mining in Ontario have averaged roughly two U.S. patents a year for the last five years. Primary metal manufacturers obtained over 16 U.S. patents in 2010, up sharply from the numbers seen in the previous four years. Non-metallic mineral product manufacturers also obtained a higher number of U.S. patents in 2010 than in recent years. Ontario firms in scientific and technical services, which include land geophysical surveying, assaying laboratories and geological consulting services have averaged somewhat under two U.S. patents per year over the last five years.

Table 11: Number of Patents in Ontario Mineral Related Industries – U.S. Patent and Trademark Office

| Ontario Industry | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|--------------|--------------|--------------|--------------|--------------|
| Metal Mines | 16.04 | 6.62 | 7.49 | 12.40 | 9.70 |
| Non-Metal Mines | 3.86 | 2.25 | 2.50 | 2.96 | 2.64 |
| Quarries | 0.81 | 0.24 | 0.62 | 0.78 | 0.49 |
| Contract Drilling (excluding Oil & Gas) | 0.54 | 0.68 | 0.44 | 0.69 | 0.59 |
| Other Services Incidental to Mining | 1.02 | 1.26 | 0.83 | 1.26 | 1.11 |
| Primary Metals Manufacturing | 10.21 | 4.39 | 8.35 | 9.35 | 16.42 |
| Non-Metallic Mineral Products Manufacturing | 3.00 | 3.77 | 2.70 | 3.10 | 4.45 |
| Metal Services Centres – Wholesalers | 0.34 | 0.26 | 0.26 | 0.29 | 0.37 |
| Scientific and Technical Services related to Mining | 1.51 | 1.92 | 1.23 | 1.93 | 1.66 |
| Total Number of U.S. Patents | 37.33 | 21.39 | 24.42 | 32.77 | 37.44 |

Source: Institute for Competitiveness and Prosperity, University of Toronto

Note: Fractional patents are the result of concurring the data from the U.S to Canadian industry definitions.

A critical part of the symbiotic nature of the industry and education is the incidence of universities and colleges that serve both as a source of future workers in the mineral industry but also as a hotbed of research and development. In Ontario for the 2009-2010 fiscal year, total investment in R&D on natural sciences (excluding health sciences) and engineering in universities and colleges totaled over \$1.6 billion, roughly the same as the previous year (see table 12).

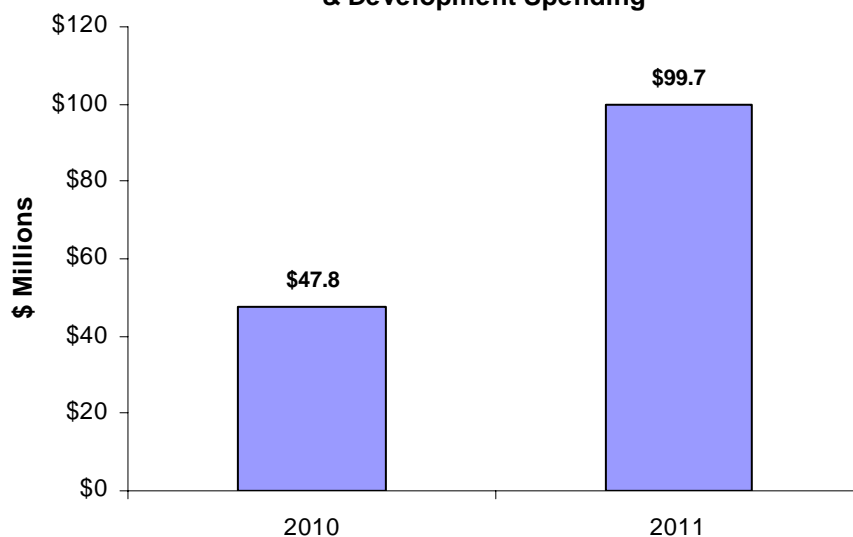
Given the high-tech nature of mining, mineral companies themselves, of course, undertake R&D to strive to improve efficiency and safety in their operations. According to the results from the OMA survey (see chart 29), mining companies in Ontario spent almost \$100 million on R&D in 2011, more than double that seen in 2010.

Table 12: Estimated Investment in R&D in the Higher Education Sector – on Natural Sciences (excluding Health Sciences) and Engineering, by Province, 2003-2004 to 2009-2010 (millions of dollars)

| Province | 2003-2004 | 2004-2005 | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Newf. & Lab | 48.9 | 49.6 | 62.1 | 56.2 | 60.9 | 60.2 | 64.7 |
| PEI | 14.9 | 13.7 | 15.3 | 17.5 | 21.2 | 20.7 | 23.6 |
| Nova Scotia | 93.9 | 99.4 | 113.9 | 119.5 | 125.9 | 128.5 | 127.4 |
| New Brunswick | 69.0 | 64.5 | 73.5 | 77.5 | 84.3 | 86.0 | 90.6 |
| Quebec | 1,014.2 | 1,060.3 | 1,095.2 | 1,075.2 | 1,088.4 | 1,113.1 | 1,100.7 |
| Ontario | 1,269.4 | 1,446.8 | 1,478.8 | 1,552.7 | 1,585.3 | 1,647.6 | 1,637.0 |
| Manitoba | 101.5 | 109.2 | 121.5 | 120.4 | 129.8 | 125.5 | 130.5 |
| Saskatchewan | 131.5 | 133.8 | 112.5 | 113.2 | 125.4 | 166.7 | 167.6 |
| Alberta | 353.6 | 378.1 | 398.8 | 382.0 | 427.8 | 479.4 | 510.4 |
| BC | 360.8 | 339.6 | 388.1 | 421.0 | 462.5 | 509.2 | 517.3 |
| Canada | 3,457.7 | 3,695.1 | 3,859.7 | 3,933.3 | 4,111.5 | 4,337.0 | 4,369.8 |

Source: Statistics Canada Catalogue #88-001 and authors' calculations

Chart 29: Ontario Mining Industry Research & Development Spending



Source: OMA Industry Survey

Environmental Sustainability

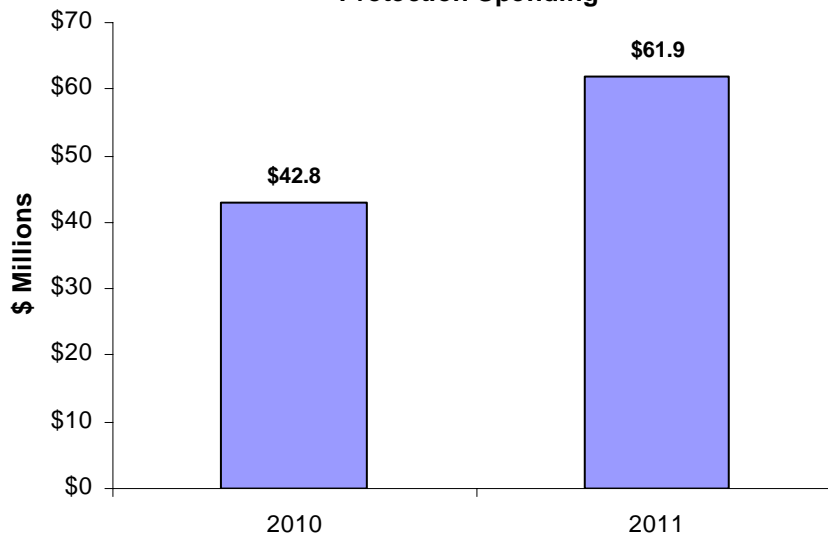
As the Ontario Mining Association itself notes, mining is not a benign activity. It is impossible to remove minerals from the earth and process them without impacting in varying degrees the air, land, water, as well as plant and animal life. However, the goal and commitment of modern mining companies is to minimize the temporary disruption of the environment during exploration and production and to maximize the restoration of ecosystems at the end of the mine life.

The Ontario mining industry is a world leader in environmental protection. The industry devotes millions of dollars annually to environmental protection, environmental improvement and pollution prevention. According to the latest OMA industry survey, the industry spent almost \$62 million in 2011 on environmental protection spending, up from \$43 million in 2010 (see chart 30).

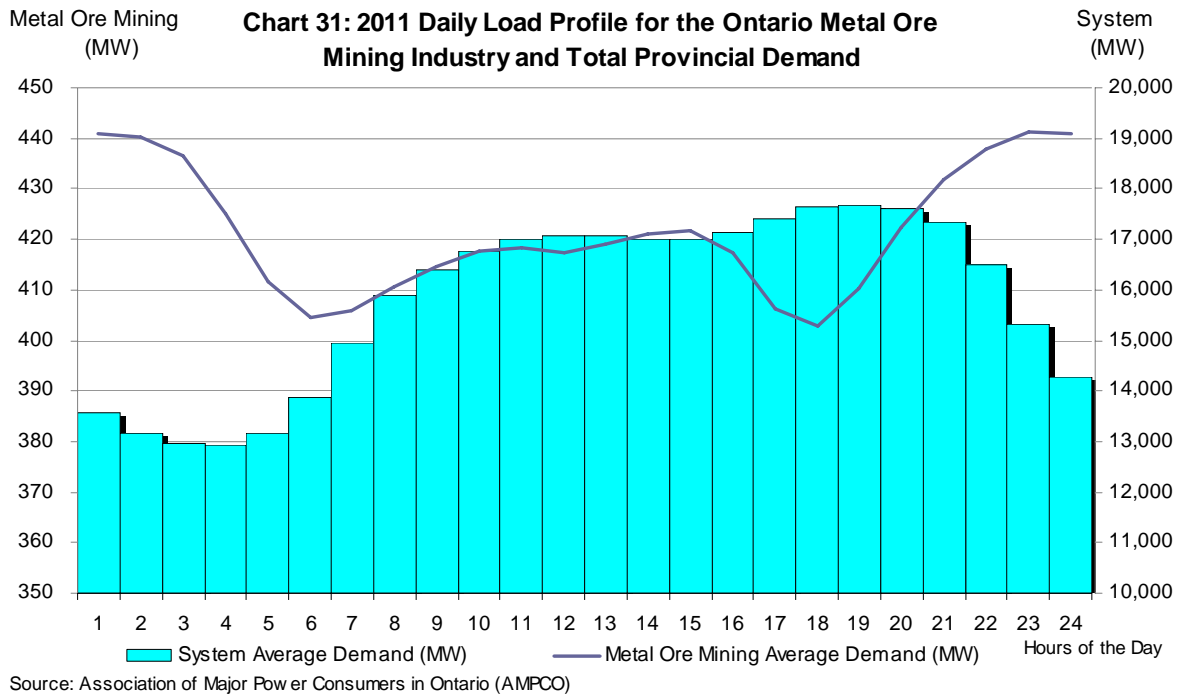
In June, 2012 OMA member company Vale broke ground on its \$2-billion “Clean AER Project”, one of the largest single environmental investments in Ontario’s history. The clean AER (‘Atmospheric Emissions Reduction’) Project will see sulphur dioxide emissions at Vale’s smelter in Sudbury reduced by an estimated 70% from current levels, as well as dust and metals emissions reduced by an estimated 35 to 40%. In addition to the environmental benefits, the Clean AER Project will result in significant economic benefits to the community. Vale estimates that the project will require about 8-million person-hours of additional labour, with 1,300 additional workers needed on-site during the peak construction period.

But there are other ways that the industry has made a contribution, not only to the environmental sustainability of the industry itself, but to the province as a whole. One important example is the daily pattern of electricity use by the metal ore mining industry in the province (see chart 31). Production schedules have been designed so that the maximum demand by the industry is at the time of day when the overall system demand is at its lowest, and the lowest demand by the industry is a time when the overall system demand is at its highest. Responding to the government’s need to reduce peak power demand in Ontario, the mining industry was able to move 150 megawatts of electricity consumption away from each of the five coincident peak (5CP) periods last year. That is enough power to meet the average peak needs for the City of Greater Sudbury.

Chart 30: Ontario Mining Industry Environmental Protection Spending



Source: OMA Industry Survey



The investments by the mining industry to improve its environmental footprint, which builds upon its investment on health and safety training of its employees, are not reflected in measured output or productivity for the industry. The societal benefits of this spending, however, can not be overlooked.

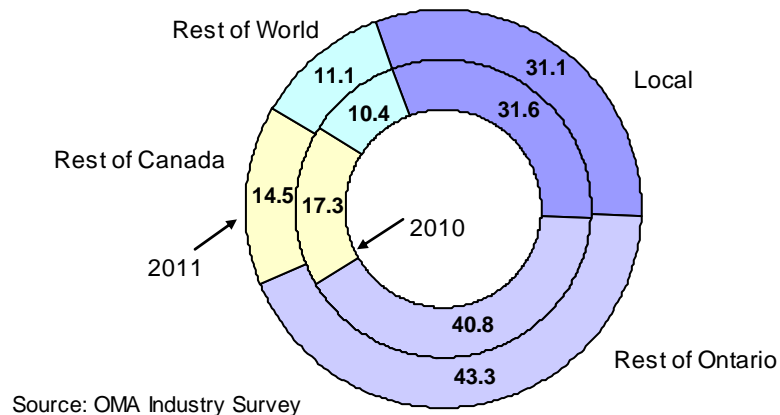
Mining's Beneficial Impact on Other Sectors

Earlier in this report we noted on where the mining industry's customers are located. What is also important for the province is where the industry's suppliers are located. The greater the share of provincially sourced mining supply and services, the greater the positive impact on the province as a whole. As well, for many, it is also important to try to measure the impact on a sub-provincial basis to see what a mine does for a community.

These types of impacts can be difficult to measure using only one method, so we have used a number of different ways to try to capture the impacts of the Ontario mining industry on other sectors in the province.

First, to try to get a flavour of from where mining supplies are sourced, we look at information from the latest Ontario Mining Association survey. According to the survey results (see Chart 32), in 2011, well over 70% of the value of mining supplies and services were provided from within the province – 31% locally (within 100 kilometres of the mine-site) and over 43% from the rest of Ontario (up from under 41% in 2010). Suppliers in the rest of Canada accounted for close to 15% (down from over 17% in 2010) and imports from outside the country accounted for the other 11%.

Chart 32: Location of Mine Suppliers by % Share, 2010 and 2011



While the results of the survey are indeed informative, by providing information on the split across suppliers both inside and outside the province and country, it is not clear that it is capturing the true extent of the supply chain. For instance, a machine, or part, that is bought locally may indeed be produced outside the province or the country.

To try to capture the far-ranging impacts of the purchases by mining companies we turn to another method.

In order to estimate and analyze these upstream linkages, we have used survey data and information from the various mining supply industry associations. But the impacts are broad and may not always be fully captured by these techniques, so to shed further light on these important linkages we have also employed an additional method, termed ‘input-output’ analysis, based on most up-to-date version of the Input-Output (I-O) data system and models maintained by Statistics Canada. This technique comprised part of the tool kit used in the Peter Dungan and Steve Murphy 2007 study for the OMA of the economic impact of a ‘representative’ mine in Ontario “Ontario Mining: A Partner in Prosperity Building – The Economic Impacts of a ‘Representative Mine’ in Ontario” and earlier in the 1997 Peter Dungan book, *Rock Solid: The Impact of the Mining and Primary Metals Industries on the Canadian Economy*.

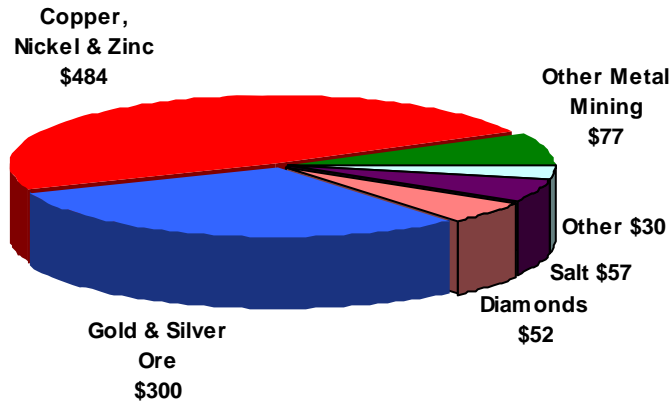
An extremely important and widespread route by which mining in Ontario adds to the provincial economy is through upstream or backward linkages. Upstream or backward linkages are all the various input requirements for mining production, and the inputs required to produce these inputs, and so on back up the production chain. At each stage, economic activity is generated, persons are employed and taxes are paid that are all directly related to mining operations, even if they seem to be considerably removed from the mine (and mining-type activity) itself. For example, operating a mine requires fuel and power of various sorts, which must be produced and transported to the mine. Mining operation requires continual upkeep and repair that needs various manufactured goods to be produced and transported. A major industry such as mining requires a host of business, scientific and professional services – many of which will be provided by business enterprises well away from the mine site.

While the results from the I-O system are in many ways more comprehensive and complete than survey results, there is a drawback. Only province wide results are possible; we cannot examine upstream linkages in various regions of the province. As a partial offset, however, the I-O system automatically yields upstream linkages for other provinces and the nation as a whole when calculating Ontario linkages.

Because of how Statistics Canada defines industries and economic activity in the I-O system, we limit our analysis to looking at the impacts of the production activities of Ontario mining only – not mineral exploration, mine opening or development, or the processing of mineral products. While we recognize that this does not capture some of the important “downstream” impacts of the mining industry, it is the most sensible I-O run to try to capture the impacts of the Ontario mining industry on its wide range of suppliers.

The impacts are calculated based on a \$1 billion of output reflecting the type of production in the Ontario mining sector as constituted by the membership of the Ontario Mining Association in 2011. Using this level of output makes the results easily ‘scalable’ – if one wants to look at the impact of \$5 billion of production, then the results from this study can be multiplied by five. From Chart 33, one can see that just over 48% of the production is from copper, nickel, and zinc mining, with another 30% from gold and silver ore production, and a further 8% from other metallic minerals. The production of salt accounts for almost 6% of production, with diamonds at just over 5% and other non-metallic minerals at 3%.

Chart 33: Share of \$1 Billion of OMA Mineral Production in Ontario, 2011 (\$Million)



Source: Natural Resources Canada

We look first at the aggregate impacts of this mineral production on the Ontario and Canadian economies. As shown in Table 13, the direct and upstream aggregate impacts of \$1 billion of Ontario mining output add \$858 million to Ontario Gross Domestic Product (GDP) – and \$900 million to the GDP of Canada. Some of the production “leaks” out through international imports in the upstream linkages - \$86 million from Ontario and \$97 million from Canada as a whole. A further \$59 million is imported to Ontario from the rest of Canada, offset by just over \$4 million of exports from Ontario to other provinces.

Table 13: Aggregate Direct and Upstream Impacts on GDP and Components of \$1 Billion of OMA Mineral Production in Ontario (\$ Million)

| | Ontario | Canada |
|-------------------------|----------------|---------------|
| Mineral Production | \$1,000 | \$1,000 |
| International Imports | -\$86 | -\$97 |
| Interprovincial Imports | -\$59 | -\$68 |
| Interprovincial Exports | \$4 | \$68 |
| Changes in Inventories | -\$1 | -\$3 |
| GDP at Market Prices | \$858 | \$900 |

Upstream Impacts from the Input-Output Analysis – Industry Results

We move from the aggregate impacts to look at what types of industries within the province, and around the country, are suppliers to the Ontario mining industry. Table 14 presents upstream industry results for Ontario, Quebec and Alberta (the two largest provinces affected outside Ontario) and Canada as a whole. Of the \$858 million of GDP generated in Ontario, and \$900 million for Canada as a whole, almost \$700 million is generated directly by the Ontario mining industry itself.

The remaining impact - the indirect, backward linkage effect of \$1 billion of OMA mineral production in Ontario - is approximately \$209 million, with roughly 80% (\$167 million) impacting Ontario and 20% (\$42 million) in the rest of Canada. (More detailed industry results are presented in Appendix B.)

The supplier industry with the largest single impact is ‘Finance, Insurance, Real Estate and Renting and Leasing’ with an increase of \$36 million in Ontario. This is largely made up of services like banking, insurance, real estate, automotive and other equipment leasing, and Management of Companies and Enterprises. Professional, Scientific and Technical Services is the next largest contributor, at \$26 million.

The next largest groups, at about \$16 million impact each in Ontario, are Utilities (largely Electric Power), Manufacturing (of which the largest sub-component is ‘Mining and Oil and Gas Field Machinery Manufacturing’) and Wholesale Trade. The indirect impacts on Mining and Services Incidental to Mining hit \$13 million.

Table 14: Impacts on GDP by Industry of \$1 Billion of OMA Mineral Production in Ontario (\$ Million)

| | Ontario | Quebec | Alberta | Canada |
|--|--------------|-------------|-------------|--------------|
| Total | \$858 | \$13 | \$15 | \$900 |
| Mining – Direct | \$691 | | | \$691 |
| Total Indirect | \$167 | \$13 | \$15 | \$209 |
| Mining – Indirect | \$13 | \$1 | <\$1 | \$15 |
| Finance, Insurance & Leasing | \$36 | \$2 | \$1 | \$40 |
| Professional, Scientific & Tech Services | \$26 | \$1 | \$1 | \$29 |
| Manufacturing | \$16 | \$3 | \$1 | \$23 |
| Utilities | \$16 | \$1 | <\$1 | \$17 |
| Wholesale Trade | \$15 | \$1 | \$1 | \$18 |
| Transportation & Warehousing | \$8 | \$1 | \$1 | \$11 |
| Admin & Support, Waste & Remediation | \$8 | \$1 | <\$1 | \$10 |
| Construction | \$8 | <\$1 | <\$1 | \$8 |
| Oil & Gas | <\$1 | <\$1 | \$9 | \$13 |
| Other Industries (including Government) | \$22 | \$2 | \$1 | \$27 |

Upstream Impacts from the Input-Output Analysis – Employment Results

This mineral production, of course, also has important impacts on employment in the province and the country. The I-O analysis indicates that \$1 billion of OMA mining output in Ontario generates 4,418 jobs directly and in upstream production in the province, and 4,775 in Canada as a whole.

Table 15 presents aggregated upstream employment results for Ontario, the two largest provinces affected outside Ontario, and Canada as a whole. What is clear from the table is that the mining sector has important linkages to all sectors of the Ontario, and indeed Canadian economy, with important contributions from the service sector.

The direct employment impact in Ontario of \$1 billion of this mining output is 2,421 jobs with another 2,000 created indirectly. For the country as a whole more than 2,350 jobs result upstream from this level of mining output in Ontario. The largest single impact is for the Professional, Scientific and Technical Services sector with 367 jobs in Ontario and 409 for Canada. The next biggest supplier sector is the ‘Finance, Insurance, Real Estate and Renting and Leasing’ where for every \$1 billion in OMA mineral production in Ontario, almost 300 jobs in Ontario and another 33 in the rest of Canada are created. (Employment impacts for more industries are reported in Appendix B.)

There are also important employment impacts in both Ontario, and the country as a whole, in ‘Administrative Support, Waste Management and Remediation Services’ (215 jobs in Ontario, 36 in the rest of Canada), Wholesale Trade, Manufacturing (of which the largest sub-component is ‘Mining and Oil and Gas Field Machinery Manufacturing’), Services Incidental to Mining, Construction, Transportation and Warehousing and Utilities (largely Electric Power).

Table 15: Direct and Indirect Impacts on Employment by Industry of \$1 Billion of OMA Mineral Production in Ontario

| | Ontario | Quebec | Alberta | Canada |
|--|--------------|------------|-----------|--------------|
| Total | 4,418 | 176 | 68 | 4,775 |
| Mining – Direct | 2,421 | | | 2,421 |
| Total Indirect | 1,997 | 176 | 68 | 2,354 |
| Mining – Indirect | 139 | 11 | <1 | 152 |
| Professional, Scientific & Tech Services | 367 | 22 | 8 | 409 |
| Finance, Insurance & Leasing | 299 | 16 | 7 | 332 |
| Admin & Support, Waste & Remediation | 215 | 22 | 6 | 251 |
| Wholesale Trade | 165 | 19 | 5 | 200 |
| Manufacturing | 158 | 35 | 8 | 220 |
| Construction | 119 | 1 | 1 | 123 |
| Transportation & Warehousing | 101 | 15 | 7 | 141 |
| Utilities | 58 | 3 | <1 | 62 |
| Oil & Gas | 1 | <1 | 9 | 11 |
| Other Industries (including Government) | 376 | 33 | 18 | 453 |

Upstream Impacts from the Input-Output Analysis – Foreign Leakages

As indicated earlier, some of the suppliers to the mining industry are, not surprisingly, from outside the country. Details on international “leakages” that occur from mining production in Ontario are shown in Table 16. The table shows that to produce \$1 billion in Ontario mining output, \$15 million in machinery & equipment is imported from abroad. Chemicals and Chemical Products imports amount to \$12 million, while Business and Computer Services come to \$7 million. There are smaller but still important leakages from mineral fuels, electrical products, as well as a host of other products. (A more detailed table is provided in Appendix B.)

Some of these leakages offer potential opportunities to domestic suppliers in supplanting imports with more locally-responsive inputs.

Table 16: Impacts on International Imports into Ontario of \$1 Billion of OMA Mineral Production in Ontario (\$ Million)

| | Imports |
|---|----------------|
| Total | \$86 |
| Machinery & Equipment | \$15 |
| Chemicals & Chemical Products | \$12 |
| Business & Computer Services | \$7 |
| Mineral Fuels | \$7 |
| Electrical, Electronic & Communication Products | \$5 |
| Motor Vehicle & Transportation Equipment | \$5 |
| Other Finance, Insurance & Leasing | \$5 |
| Primary Metal Products | \$4 |
| Leather, Rubber & Plastic Products | \$3 |
| Transport & Storage | \$3 |
| Accommodation Services & Meals | \$3 |
| Petroleum & Coal Products | \$2 |
| Services Incidental to Mining | \$2 |
| Other | \$13 |

Including Induced Impacts from Ontario Mining using Input-Output Analysis

Statistics Canada, in its Input-Output analysis, also calculates the ‘induced’ effects of the Ontario Mining industry. The induced effects capture the impact of the spending of the wages and salaries of those employed not only in the mining industry itself but by the suppliers up the production chain.

Table 17 shows the total impact on the Ontario and Canadian economies, as calculated by Statistics Canada of \$1 billion of mineral production in Ontario. Total demand for goods and services increases by almost \$1.3 billion in both Ontario and Canada. Some of this Ontario demand is supplied by international imports (\$141 million) and some by production in the rest of Canada (\$86 million) yielding an overall increase in Ontario GDP of \$1.04 billion, an increase of \$182.6 million over the impact of including just the direct and indirect effects. Total employment in the province increases by 6,360 jobs, 1,942 of which result from the spending of the wages and salaries paid directly to employees in the mining industry and those up the supply chain.

Table 17: Aggregate Direct, Upstream and Induced Impacts on GDP (\$ Million) and Employment of \$1 Billion of OMA Mineral Production in Ontario

| | Ontario | Canada |
|-------------------------|----------------|---------------|
| Total Impact on Demand | \$1,263 | \$1,284 |
| International Imports | -\$141 | -\$162 |
| Interprovincial Imports | -\$86 | -\$103 |
| Interprovincial Exports | \$8 | \$103 |
| Changes in Inventories | -\$3 | -\$4 |
| GDP at Market Prices | \$1,040 | \$1,118 |
| Employment | 6,360 | 7,104 |

Tables 18 and 19 show the effects of the induced impacts on particular industries in terms of both employment and output. It is interesting to note that most of the impacts are in the service sector, much of which would be expected to be ‘local’ employment near where the mines are located. Also, because wages and salaries in the mining sector are high relative to the rest of the economy, the employment impacts from the induced spending are high. In Ontario, a further \$22 million in output and 453 jobs are generated in the retail trade industry through the induced impacts of a \$1 billion of mineral production. Finance, insurance and leasing increases by \$76 million and 193 jobs in the province – on top of the \$36 million and 299 jobs generated from the upstream impacts. (More detailed tables for both output and employment as well as a table on imports are reported in Appendix B.)

Table 18: Total Impacts on Employment by Industry of \$1 Billion of OMA Mineral Production in Ontario

| | Ontario | Quebec | Alberta | Canada |
|--|--------------|------------|------------|--------------|
| Total | 6,360 | 354 | 135 | 7,104 |
| Total Direct | 2,421 | | | 2,421 |
| Total Indirect | 1,997 | 176 | 68 | 2,354 |
| Total Induced | 1,942 | 178 | 67 | 2,329 |
| Retail Trade | 453 | 27 | 11 | 517 |
| Accommodation and Food Services | 210 | 17 | 7 | 253 |
| Finance, Insurance & Leasing | 193 | 16 | 6 | 228 |
| Other Services (excluding Public Admin) | 170 | 11 | 5 | 192 |
| Non-Profit Institutions serving Households | 151 | 6 | 2 | 164 |
| Health Care and Social Assistance | 99 | 4 | 1 | 107 |
| Admin & Support, Waste & Remediation | 88 | 14 | 4 | 113 |
| Professional, Scientific & Tech Services | 82 | 10 | 3 | 102 |
| Wholesale Trade | 78 | 12 | 3 | 101 |
| Manufacturing | 71 | 24 | 5 | 112 |
| Government Sector | 69 | 4 | 2 | 78 |
| Transportation & Warehousing | 65 | 10 | 5 | 90 |
| Arts, Entertainment & Recreation | 54 | 6 | 2 | 66 |
| Information & Cultural Industries | 54 | 7 | 2 | 68 |
| Construction | 52 | 2 | 1 | 56 |
| Other Industries | 53 | 8 | 8 | 82 |

Table 19: Total Impacts on GDP by Industry of \$1 Billion of OMA Mineral Production in Ontario (\$ Million)

| | Ontario | Quebec | Alberta | Canada |
|--|----------------|-------------|-------------|----------------|
| Total | \$1,040 | \$27 | \$24 | \$1,118 |
| Mining – Direct | \$691 | | | \$691 |
| Total Indirect | \$167 | \$13 | \$15 | \$209 |
| Total Induced | \$183 | \$13 | \$9 | \$218 |
| Finance, Insurance & Leasing | \$76 | \$3 | \$2 | \$83 |
| Retail Trade | \$22 | \$1 | \$1 | \$24 |
| Manufacturing | \$8 | \$2 | \$1 | \$13 |
| Wholesale Trade | \$8 | \$1 | <\$1 | \$10 |
| Information and Cultural Industries | \$8 | \$1 | <\$1 | \$10 |
| Non-Profit Institutions serving Households | \$8 | <\$1 | <\$1 | \$8 |
| Professional, Scientific & Tech Services | \$6 | \$1 | <\$1 | \$8 |
| Accommodation and Food Services | \$6 | <\$1 | <\$1 | \$7 |
| Health Care and Social Assistance | \$6 | <\$1 | <\$1 | \$6 |
| Government Sector | \$6 | <\$1 | <\$1 | \$7 |
| Transportation & Warehousing | \$5 | \$1 | \$1 | \$8 |
| Utilities | \$5 | \$1 | <\$1 | \$6 |
| Other Industries | \$19 | \$1 | \$3 | \$28 |

One sector of the economy that depends vitally on mineral production in the province is the transport sector. This includes moving employees and contractors to remote mine sites and, in particular, the movement of mineral production to markets.

According to data available from Statistics Canada (see table 20), minerals and mineral products (including cement) accounted for the majority of tonnage shipped from Great Lakes ports in Ontario in 2011. The bulk of shipping volumes within Ontario involve minerals and mineral products. Of the cargo destined for international ports from Great Lakes Ontario ports, over half (measured by weight) were minerals, with a further 18% involving cement and metallic waste and scrap. Salt accounted for roughly 59% of the minerals shipped internationally, with stone, sand, gravel and crushed stone accounting for another 34%.

Table 20: Destination of Shipping, Cargo tonnage loaded, Great Lakes Region, tonnes, 2011

| Commodity | Within Ontario | Rest of Canada | International | Total |
|---|------------------|------------------|-------------------|-------------------|
| Minerals | 4,946,100 | 1,116,700 | 7,270,500 | 13,333,300 |
| Primary and fabricated metal products | 5,500 | 0 | 293,800 | 299,300 |
| Agriculture and food products | 1,067,900 | 5,272,700 | 1,862,600 | 8,203,200 |
| Coal | 402,400 | 0 | 408,900 | 811,300 |
| Fuels and basic chemicals | 1,260,600 | 1,252,300 | 1,354,600 | 3,867,500 |
| Machinery & transportation equipment | 0 | 1,800 | 1,200 | 3,000 |
| Other products (including cement) | 929,100 | 301,100 | 2,403,200 | 3,633,400 |
| Total tonnage of all commodities | 8,611,600 | 7,944,600 | 13,594,800 | 30,151,000 |

Source: Statistics Canada Catalogue 54-205

Mineral and mineral product shipments also comprise an important share of rail transport both within the province, to the rest of Canada and to the U.S and Mexico. According to the latest available data from Statistics Canada (see table 21), in 2010 mineral related products accounted for over one-third of total identifiable shipments by weight.

Table 21: Rail transportation, Commodity Movements from Ontario, by Destination, tonnes, 2010

| Commodity | Within Ontario | To Rest of Canada | To U.S. and Mexico | All Destinations |
|---|------------------|-------------------|--------------------|-------------------|
| Metallic ores and concentrates | 596,495 | 115,168 | 20 | 711,683 |
| Non-metallic minerals | 6,794 | 1,104,542 | 571,349 | 1,682,685 |
| Non-metallic mineral products | 944 | 203,127 | 394,565 | 598,636 |
| Primary or semi-finished metal products | 437,093 | 953,211 | 1,463,678 | 2,853,982 |
| Articles of base metal | 8,330 | 278,634 | 139,969 | 426,933 |
| Sulphuric Acid | 108,561 | 153,718 | 681,260 | 943,539 |
| Metallic waste and scrap | 29,327 | 104,339 | 751,848 | 885,514 |
| Non-metallic waste and scrap | 193 | 21,247 | 46,391 | 67,831 |
| Total Mineral Related Products | 1,187,737 | 2,933,986 | 4,049,080 | 8,170,803 |
| Motor Vehicles and Parts | 2,348 | 389,289 | 1,956,610 | 2,348,247 |
| Agricultural and Food Products | 311,608 | 2,928,227 | 705,726 | 3,945,561 |
| Refined Petroleum and Coal Products | 651,887 | 776,460 | 1,233,932 | 2,662,279 |
| Chemicals, Plastic and Rubber Products | 200,643 | 538,360 | 1,272,472 | 2,011,475 |
| Wood and Paper Products | 302,415 | 642,228 | 1,574,219 | 2,518,862 |
| Mixed loads and unidentified freight | 41 | 4,986,548 | 175,334 | 5,161,923 |
| All Other Commodities | 10,901 | 539,338 | 47,238 | 597,477 |
| Total tonnage of all rail commodities | 2,667,580 | 13,734,436 | 11,014,611 | 27,416,627 |
| Tonnage of rail commodities excluding mixed loads and unidentified freight | 2,667,539 | 8,747,888 | 10,839,277 | 22,254,704 |

Source: Statistics Canada Catalogue 52-216

Trying to Get Some Regional Perspective on the Numbers

The Input-Output analysis clearly shows the breadth of the impact of the mineral industry in Ontario. It has also indicated possible areas for further growth where domestic Ontario industries can replace the supply of imports into the industry. This in turn may well lead to further export possibilities.

As mentioned above however, the results are only for the province as a whole and do not measure any regional concentration in the numbers. Clearly the direct activity will take place at the mines located throughout the province. But where are the upstream firms located in the province?

A number of cities and regions, including North Bay and Sudbury (through the Sudbury Area Mining Supply and Service Association (SAMSSA)), and the northern region of Ontario (prepared by Doyletech for the Ontario North Economic Development Corporation) have undertaken studies to show the importance of mining service and supply companies to their area of the province. While these types of studies, if done properly, are an important source of information on the scope and contribution of the mining supply and services sector, if only a select number of cities or areas are undertaking the research then the view of the sector may be skewed. The solution to this of course, is to do a uniform, comprehensive survey of the entire province, instead of having each locale provide estimates for their own area.

It is our understanding that the Canadian Association of Mining Equipment and Services for Export (CAMESE) is currently undertaking such a survey with the results expected in 2013. On a smaller scale, we have made an attempt to put some further perspective on the regional nature and scope of the mining service and supply sector. Using membership data for CAMESE, we have compiled a tally of the number of Ontario firms in CAMESE by city.⁴ We chose CAMESE as a source for the computation because it is an association, by its nature, that covers the entire province, and is geared toward growing the mineral service and supply sector through competing on the world stage. It is important, in our view, to see where the firms that want to compete internationally are located. The results, obviously, do not represent the entire supply sector but they do present a view on where supply firms are located (not just around where the mines are) in the province and the type of services they are providing.

As table 22 shows, mining supply and service related entities are located throughout the province, with particular clusters in the Toronto-Mississauga hub and around Sudbury-North Bay. One may not think of Mississauga as a key player in the mineral industry. A significant amount of research and development, as well as engineering services and machinery & equipment production takes place there. The city is located near major Ontario universities, and has access via the nearby major airport to provincial, national and international mine sites. Indeed the results from this analysis indicate that there is a significant amount of activity in the mining supply and services sector taking place in the southern part of the province. While the relative size of this sector to the overall economy is far greater in the northern part of the province than in the south, the absolute level of activity is clearly significant throughout the province. The numbers also show that the number of Ontario CAMESE members grew by more than 7% in the latest year, another indication of the growing strength of the mining industry in the province. We have included in Appendix C examples of the types of supplies and services appendices provided in each location.

⁴ The location is the main contact provided by the CAMESE Compendium. It is indeed the case that a number of these companies have offices throughout the province, particularly in the North.

Table 22: Location in Ontario of CAMESE Member Firms, By City and Region

| City | Number of Companies | | City | Number of Companies | |
|--------------------|---------------------|-----------|------------------|---------------------|------------|
| | 2011/2012 | 2012/2013 | | 2011/2012 | 2012/2013 |
| Mississauga | 29 | 30 | Elliot Lake | 1 | 1 |
| Toronto | 28 | 30 | Elora | 1 | 1 |
| Greater Sudbury | 24 | 26 | Georgetown | 1 | 1 |
| Ottawa | 8 | 9 | Goodwood | 1 | 1 |
| Burlington | 7 | 7 | Guelph | 1 | 1 |
| Markham | 7 | 7 | Halton Hills | 1 | 1 |
| North Bay | 6 | 7 | Hawkestone | 1 | 1 |
| Oakville | 4 | 5 | Hensall | 1 | 1 |
| Concord | 4 | 4 | Kingston | 1 | 1 |
| Brampton | 3 | 4 | Kirkland Lake | 1 | 1 |
| Barrie | 3 | 3 | Larder Lake | 1 | 1 |
| Milton | 3 | 3 | Lindsay | 1 | 1 |
| Sault Ste. Marie | 3 | 3 | Lucknow | 1 | 1 |
| Cambridge | 2 | 3 | Orangeville | 1 | 1 |
| Collingwood | 2 | 2 | Orillia | 1 | 1 |
| Greater Hamilton | 2 | 2 | Parry Sound | 1 | 1 |
| Kitchener-Waterloo | 2 | 2 | Peterborough | 1 | 1 |
| New Liskeard | 2 | 2 | Rockwood | 1 | 1 |
| Richmond Hill | 2 | 2 | St. Catharines | 1 | 1 |
| Timmins | 2 | 2 | St. George/Brant | 1 | 1 |
| Whitby | 2 | 2 | St. Thomas | 1 | 1 |
| London | 1 | 2 | Thunder Bay | 1 | 1 |
| Oshawa | 1 | 2 | Tilbury | 0 | 1 |
| Alliston | 1 | 1 | Trenton | 1 | 1 |
| Cobourg | 1 | 1 | Vaughan | 1 | 1 |
| Coldwater | 1 | 1 | Woodbridge | 1 | 1 |
| Earlton | 1 | 1 | | | |
| | | | Total | 176 | 189 |

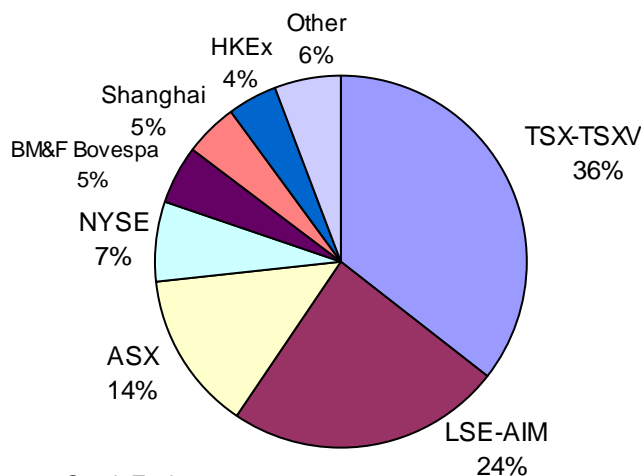
| Region | Number of Companies | |
|-----------------|---------------------|------------|
| | 2011/2012 | 2012/2013 |
| South | 134 | 144 |
| Northeast | 17 | 18 |
| Greater Sudbury | 24 | 26 |
| Northwest | 1 | 1 |
| Total | 176 | 189 |

The Toronto Stock Exchange is a World Leader in Mining Listings and Financing

The mining industry is critically important to the Toronto Stock Exchange (TSX) and the TSX Venture Exchange (TSXV). These two exchanges are home to 58% of the world's public mining companies and provide the best access to capital in the world for junior exploration companies. At the end of 2011, the TSX housed more than 370 mining companies, while the TSXV listed another 1,274, with the capitalization of all these companies combined valued at \$426.8 billion. For the year 2011 alone, there were 49 new mine listings on the TSX and 152 on the TSXV.

In 2011, 90% of all global mining equity financings were done on the TSX and TSXV, with \$12.5 billion raised, making up nearly 40% of the world's new mining equity capital. Indeed, over the five years between 2007 and 2011, the TSX-TSXV accounted for 36% of the \$220 billion in global equity financings, far outpacing its closest competitor, the London Stock Exchange-Alternative Investment Market (see chart 34). This is an important source of financing for mining firms providing them with the capital to invest in R&D, as well as finance exploration and develop mines.

Chart 34: Share of Value of Global Mine Equity Financings, 2007-2011

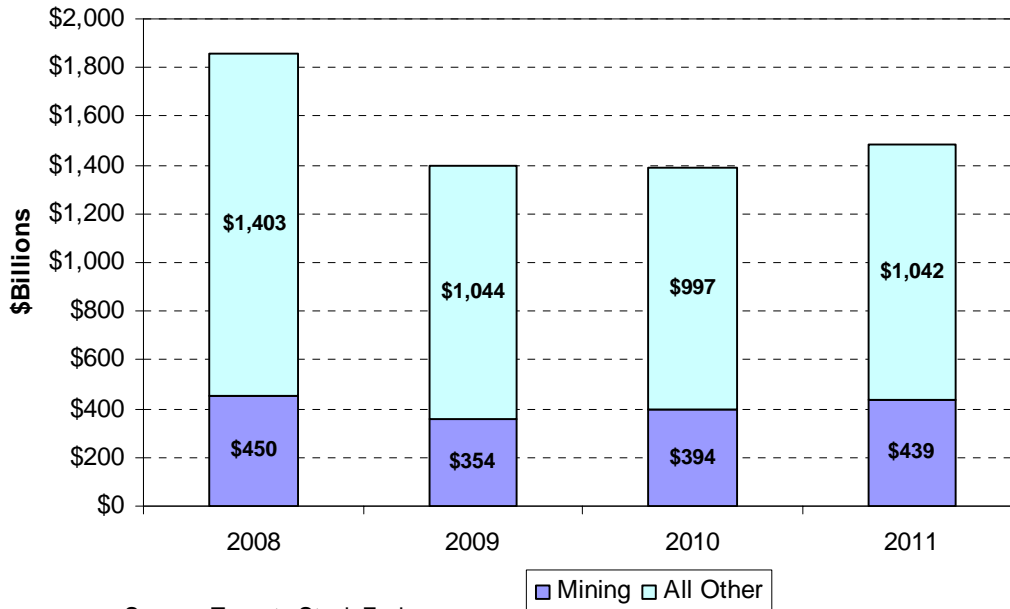


Source: Toronto Stock Exchange

The trading of mining company shares is crucial to the success of both the main Toronto Stock Exchange and the Venture Exchange (see charts 35 to 38). In 2011, the volume of mining shares traded on the main TSX totaled 45.6 billion, accounting for 44% of the total shares traded by the exchange, up from 37.3% in 2008. The total value of mining shares traded in 2011 was almost \$440 billion, roughly 30% of the TSX total for the year, up sharply from 24% in 2008. At the end of December 2011, the market capitalization of mining firms on the TSX was almost \$400 billion, accounting for 20% of the total market capitalization of firms on the exchange (see table 23a).

The importance of mining companies to the TSX Venture exchange is even more dramatic. The 40.6 billion mining shares traded for a value of \$25.8 billion in 2011, accounting for 63% of the total volume traded and 61% of the value. At the end of December 2011, the market capitalization of mining firms on the TSXV was almost over \$28 billion, accounting for almost 60% of the total market capitalization of firms on the venture exchange (see table 23b).

**Chart 35: Value of Shares Traded on the TSX,
Mining and Other**



**Chart 36: Volume of Shares Traded on the TSX,
Mining and Other**

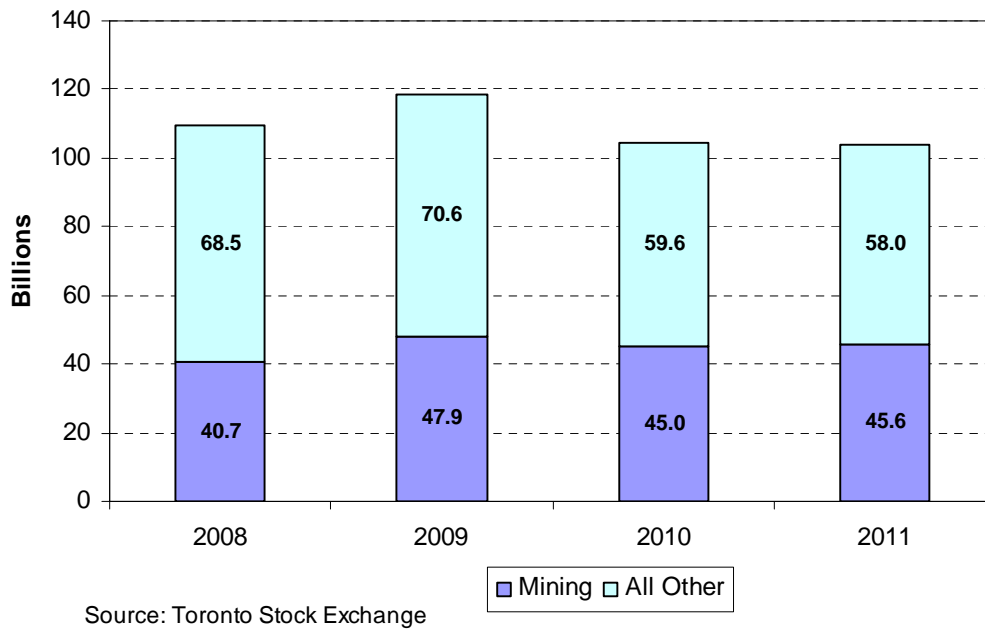


Chart 37: Value of Shares Traded on the TSX Venture, Mining and Other

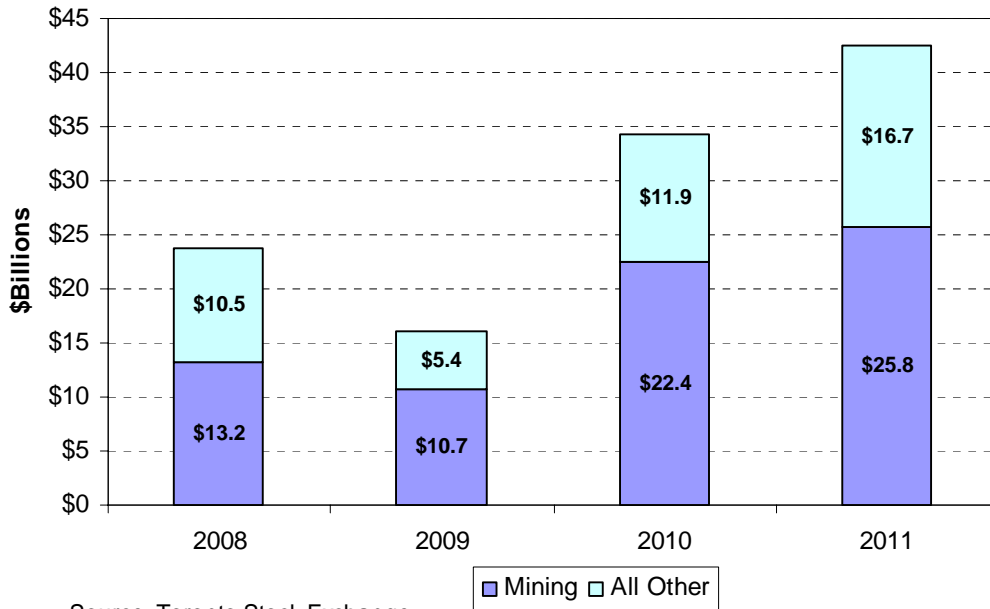


Chart 38: Volume of Shares Traded on the TSX Venture, Mining and Other

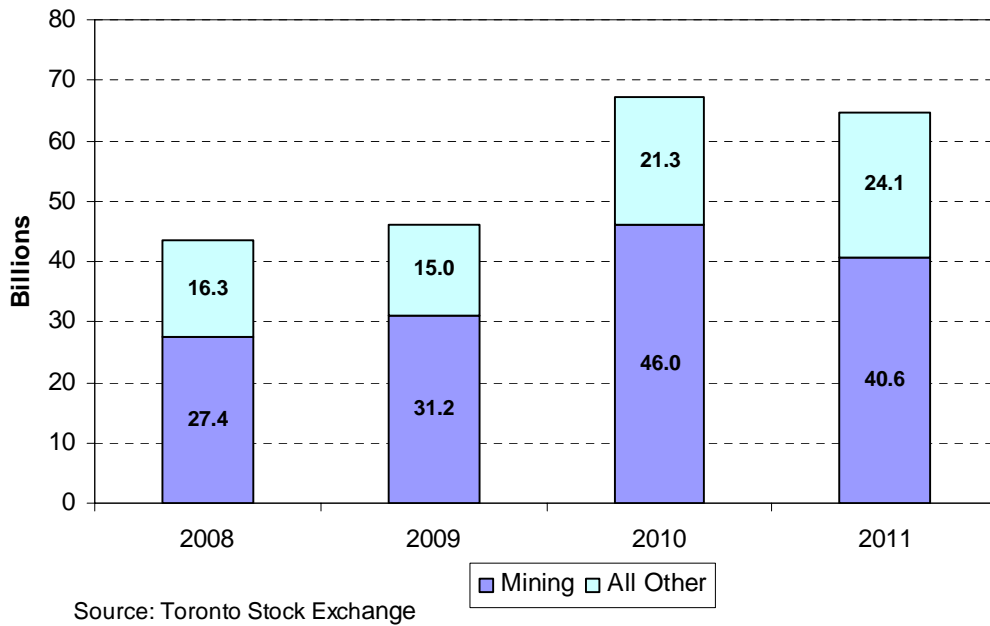


Table 23a
Value and Average Size (\$Millions) on the TSX, by Sector, December 31, 2011

| Sector | Number of Firms | Market Capitalization | Average Size | % of Value | % of Firms |
|--------------------------|------------------------|------------------------------|---------------------|-------------------|-------------------|
| Clean Technology | 49 | \$15,513.9 | \$316.6 | 0.8 | 3.1 |
| Communication & Media | 33 | \$128,084.0 | \$3,881.3 | 6.4 | 2.1 |
| Diversified Industries | 260 | \$313,131.6 | \$1,204.4 | 15.6 | 16.4 |
| Exchange Traded Products | 242 | \$52,205.0 | \$215.7 | 2.6 | 15.2 |
| Financial Services | 80 | \$455,061.4 | \$5,688.3 | 22.7 | 5.0 |
| Forest Products | 20 | \$13,631.4 | \$681.6 | 0.7 | 1.3 |
| Life Sciences | 51 | \$20,592.2 | \$403.8 | 1.0 | 3.2 |
| Mining | 371 | \$398,449.4 | \$1,074.0 | 19.9 | 23.4 |
| Oil & Gas | 125 | \$367,296.9 | \$2,938.4 | 18.3 | 7.9 |
| Real Estate | 46 | \$60,656.8 | \$1,318.6 | 3.0 | 2.9 |
| Structured Products | 223 | \$28,249.4 | \$126.7 | 1.4 | 14.0 |
| Technology | 64 | \$32,798.1 | \$512.5 | 1.6 | 4.0 |
| Utilities & Pipelines | 24 | \$116,435.2 | \$4,851.5 | 5.8 | 1.5 |
| Total | 1,588 | \$2,002,105.4 | \$1,260.8 | 100.0 | 100.0 |

Table 23b
Value and Average Size (\$Millions) on the TSX Venture, by Sector, December 31, 2011

| Sector | Number of Firms | Market Capitalization | Average Size | % of Value | % of Firms |
|------------------------|------------------------|------------------------------|---------------------|-------------------|-------------------|
| Clean Technology | 82 | \$1,288.9 | \$15.7 | 2.6 | 3.7 |
| Communication & Media | 11 | \$668.2 | \$60.7 | 1.4 | 0.5 |
| Capital Pool Company | 152 | \$83.8 | \$0.6 | 0.2 | 6.8 |
| Diversified Industries | 165 | \$1,908.9 | \$11.6 | 3.9 | 7.4 |
| Financial Services | 46 | \$1,711.7 | \$37.2 | 3.5 | 2.1 |
| Forest Products | 5 | \$187.3 | \$37.5 | 0.4 | 0.2 |
| Life Sciences | 68 | \$845.2 | \$12.4 | 1.7 | 3.1 |
| Mining | 1274 | \$28,344.8 | \$22.2 | 58.3 | 57.2 |
| Oil & Gas | 276 | \$11,297.1 | \$40.9 | 23.2 | 12.4 |
| Real Estate | 33 | \$954.3 | \$28.9 | 2.0 | 1.5 |
| Technology | 112 | \$1,333.5 | \$11.9 | 2.7 | 5.0 |
| Utilities & Pipelines | 3 | \$21.4 | \$7.1 | 0.0 | 0.1 |
| Total | 2,227 | \$48,645.2 | \$21.8 | 100.0 | 100.0 |

As noted earlier, the TSX estimates that 58% of the world's mining companies are listed on the Toronto Stock Exchange, with most of these on the Venture exchange.

At the end of 2011, of the 256 firms with mineral related activity listed on the TSX exchange, 111 had their head office based in Ontario, with 114 in B.C. and 14 in Quebec. The average market capitalization of firms with head offices in Ontario was \$1.15 billion, compared to \$1.22 billion for B.C. based firms and \$530 million for firms based in Quebec. With the recent emergence in the importance of potash, Saskatchewan headquartered firms, while few, had the highest average capitalization. Forty of the 131 TSX listed firms with foreign head offices were located in the U.S., with another 33 in Australia. Foreign based firms had an average market capitalization of \$561 million at the end of 2011, with a number of very small firms offset by one larger Swedish one.

More than 800 of the 1,274 active firms at the end of 2011 on the TSX Venture exchange had their head offices in British Columbia. Ontario based firms tallied 212, while Quebec and Alberta followed with 87 and 76 firms respectively. Only 49 of the firms listed on the TSX Venture exchange had foreign head offices but their average market capitalization was more than \$24 million, slightly higher than Ontario headquartered firms.

TSX and TSX Venture Exchange listed companies finance projects around the world. With this financing comes the enhanced possibility that Canadian expertise and equipment will be used in these projects.

Table 24: Location of Head Office and Market Capitalization (\$ Millions) of Mineral Firms Listed on the TSX and TSX Venture Exchange, December 2011

| | TSX | | | TSX Venture Exchange | | |
|------------------|-----------------|------------------------------------|------------------------|----------------------|------------------------------------|------------------------|
| | Number of Firms | Market Capitalization (\$ Million) | Average Size (\$ Mill) | Number of Firms | Market Capitalization (\$ Million) | Average Size (\$ Mill) |
| Canada: | 256 | \$333,902.6 | \$1,304.3 | 1,225 | \$27,158.8 | \$22.2 |
| B.C | 114 | \$139,473.0 | \$1,223.4 | 817 | \$17,592.3 | \$21.5 |
| Alberta | 5 | \$12,025.8 | \$2,405.2 | 76 | \$1,847.7 | \$24.3 |
| Saskatchewan | 4 | \$43,752.5 | \$10,938.1 | 9 | \$302.4 | \$33.6 |
| Manitoba | 1 | \$591.0 | \$591.0 | 6 | \$100.9 | \$16.8 |
| Ontario | 111 | \$127,685.0 | \$1,150.3 | 212 | \$4,934.0 | \$23.3 |
| Quebec | 14 | \$7,422.8 | \$530.2 | 87 | \$2,150.8 | \$24.7 |
| New Brunswick | 0 | \$0.0 | \$0.0 | 1 | \$13.1 | \$13.1 |
| Nova Scotia | 6 | \$2,640.6 | \$440.1 | 12 | \$188.5 | \$15.7 |
| Newf. & Labrador | 1 | \$311.9 | \$311.9 | 4 | \$27.1 | \$6.8 |
| Yukon | 0 | \$0.0 | \$0.0 | 1 | \$2.1 | \$2.1 |
| Foreign: | 115 | \$64,546.9 | \$561.3 | 49 | \$1,186.0 | \$24.2 |
| U.S. | 40 | \$26,917.6 | \$672.9 | 26 | \$440.4 | \$16.9 |
| Australia | 33 | \$15,632.9 | \$473.7 | 5 | \$124.6 | \$24.9 |
| United Kingdom | 11 | \$8,458.0 | \$768.9 | 6 | \$391.3 | \$65.2 |
| Sweden | 2 | \$4,574.8 | \$2,287.4 | 0 | \$0.0 | \$0.0 |
| South Africa | 9 | \$3,598.0 | \$399.8 | 0 | \$0.0 | \$0.0 |
| China | 4 | \$2,269.6 | \$567.4 | 5 | \$149.7 | \$29.9 |
| Other | 16 | \$3,096.0 | \$193.5 | 7 | \$80.1 | \$11.4 |
| TOTAL | 371 | \$398,449.4 | \$1,074.0 | 1,274 | \$28,344.8 | \$24.2 |

Mining's Impact on the Broader Community

Ontario miners take corporate social responsibility seriously. Mining companies in the province strive to be responsible partners in improving the community in which they operate. Responses to the OMA survey indicate that company charitable donations have approached \$10 million in each of 2010 and 2011. Certainly not exhaustive, the following are just a few examples of community support provided through mining companies:

Goldcorp supports a wide range of health related, educational and cultural activities in Red Lake. It also operates the local recreation centre, which includes a curling rink, indoor swimming pool, gymnasium, bowling alley, baseball diamonds and facility rooms. As well, in November 2012 the Goldcorp Mining Innovation Suite opened at the University of Toronto, providing students studying mineral and civil engineering 100 workstations for use in their engineering design projects.

Xstrata Copper Canada, Kidd Operations (Xstrata) through its financial and in-kind support of the Mattagami Sturgeon Restoration Project is giving new life to a fish species designated as of "special concern" by the province. Indications are that Xstrata, in partnership with the Ministry of Natural Resources, Ontario Power Generation, Timmins Fur Council and Club Navigateur, is experiencing success in re-establishing the lake sturgeon population in a section of the Mattagami River watershed. With the support of a \$2 million contribution from Xstrata Nickel, Cambrian College in Sudbury has opened the doors of its new energy research facility. The Xstrata Nickel Sustainable Energy Centre is home to cutting-edge applied research and education programs for sustainable energy.

Vale, after a successful pilot project, will soon be producing fish near its underground greenhouse at the Creighton Mine in Sudbury. When they resurface, the subterranean grown fish will be released for restocking Sudbury area lakes and rivers. The Vale Concert Series in Sudbury, with free admission to all concerts, showcased a variety of Canadian musical talent, and welcomed donations to the Sudbury Food Bank. In 2011, Vale made a \$500,000 donation to the Sudbury Food Bank capital campaign. Vale has also donated more than \$500,000 to support enhancing Aboriginal awareness of career opportunities in the mining industry and \$150,000 to support Sudbury's Human League's Positive Leisure Activities for Youth Program over the next three years. The Human League's PLAY program removes financial barriers to extracurricular activities for children by covering registration and equipment costs.

BESTECH has donated \$3,500 to support a CPR training program for students in Sudbury. The contribution from BESTECH will cover the cost of training mannequins, teacher training, materials and a defibrillator in one local high school.

Barrick Gold and the Family of the late Greg Wilkins, former company president, have donated \$5.5 million to advance global health. Toronto General and Western Hospital Foundation will be using this gift to combat brain diseases and improve medical training for surgeons and nurses in developing countries around the world. Also, Barrick Gold's gift of \$150,000 to Lakehead University in Thunder Bay and the Northern Ontario School of Medicine (NOSM) will enhance health care services in Northwestern Ontario.

Since 2003, De Beers Canada has initiated its Books in Homes program, distributing books to students in communities near our mine sites. About 2,000 children take part each year in northern Ontario along the James Bay Coast. In the past two years, almost \$150,000 was spent on the program. In 2009, approximately 100 persons were displaced in the Attawapiskat First Nation. De Beers mobilized teams, project managers and other resources to redesign, install and furnish mobile construction dorms into temporary accommodations for those displaced residents.

Through its operations, its suppliers and its other endeavors, the mining industry has a significant impact across many communities in the province, both near to and far beyond its mine-sites.

Appendix A. Map Used to Define Regions in Ontario Mining Association Survey



Appendix B: Detailed Input-Output Results

Table B1a. Direct and Indirect Impacts on GDP of \$1 Billion in OMA Mineral Production in Ontario

Table B1b. Direct and Indirect Impacts on Employment of \$1 Billion in OMA Mineral Production in Ontario

Table B1c. Direct and Indirect Impacts on International Imports of \$1 Billion in OMA Mineral Production in Ontario

Table B2a. Direct, Indirect & Induced Impacts on GDP of \$1 Billion in OMA Mineral Production in Ontario

Table B2b. Direct, Indirect & Induced Impacts on Employment of \$1 Billion in OMA Mineral Production in Ontario

Table B2c. Direct, Indirect & Induced Impacts on International Imports of \$1 Billion in OMA Mineral Production in Ontario

Table B1a. Direct and Indirect Impacts on GDP of \$1 Billion in OMA Mineral Production in Ontario (Thousands of Dollars)

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|------------------------------|-----------|-------------|------------------|---------------|----------------|--------------|--------------|---------------|---------------------|-------------|----------------|
| Crop and Animal Production | 1 | 1 | 2 | 2 | 58 | 157 | 44 | 44 | 32 | 5 | 0 | 346 |
| Forestry and Logging | 2 | 0 | 2 | 6 | 39 | 55 | 1 | 0 | 4 | 28 | 0 | 136 |
| Fishing, Hunting and Trapping | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Support Activities for Agriculture and Forestry | 0 | 0 | 1 | 1 | 7 | 25 | 4 | 5 | 9 | 9 | 0 | 61 |
| Oil and Gas Extraction | 887 | 0 | 36 | 1 | 0 | 82 | 249 | 1,664 | 8,479 | 637 | 329 | 12,365 |
| Support Activities for Oil and Gas Extraction | 12 | 0 | 0 | 0 | 0 | 2 | 1 | 59 | 347 | 19 | 12 | 452 |
| Mining | 158 | 0 | 57 | 18 | 165 | 691,008 | 19 | 251 | 198 | 164 | 0 | 692,036 |
| Support Activities for Mining | 2 | 0 | 1 | 2 | 846 | 12,946 | 0 | 9 | 8 | 5 | 0 | 13,818 |
| Electric Power Generation, Transmission and Distribution | 8 | 0 | 16 | 8 | 1,015 | 14,904 | 145 | 39 | 108 | 59 | 1 | 16,304 |
| Natural Gas Distribution, Water, Sewage and Other Systems | 0 | 0 | 1 | 1 | 26 | 641 | 1 | 1 | 27 | 17 | 0 | 716 |
| Construction | 1 | 0 | 5 | 5 | 79 | 7,815 | 33 | 24 | 86 | 47 | 2 | 8,096 |
| Food Manufacturing | 2 | 1 | 5 | 6 | 83 | 522 | 19 | 10 | 25 | 18 | 0 | 691 |
| Beverage and Tobacco Product Manufacturing | 1 | 0 | 1 | 4 | 29 | 214 | 2 | 0 | 4 | 6 | 0 | 262 |
| Textile and Textile Product Mills | 0 | 0 | 1 | 0 | 14 | 72 | 1 | 1 | 2 | 1 | 0 | 93 |
| Clothing Manufacturing | 0 | 0 | 0 | 0 | 12 | 28 | 2 | 0 | 0 | 1 | 0 | 44 |
| Leather and Allied Product Manufacturing | 1 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| Wood Product Manufacturing | 0 | 0 | 3 | 4 | 63 | 146 | 4 | 1 | 15 | 27 | 0 | 265 |
| Paper Manufacturing | 2 | 1 | 22 | 20 | 204 | 701 | 9 | 1 | 7 | 15 | 0 | 982 |
| Printing and Related Support Activities | 0 | 0 | 3 | 1 | 130 | 849 | 28 | 2 | 28 | 15 | 0 | 1,056 |
| Petroleum and Coal Products Manufacturing | 1 | 0 | 47 | 11 | 97 | 597 | 0 | 158 | 142 | 32 | 0 | 1,085 |
| Chemical Manufacturing | 1 | 0 | 1 | 2 | 636 | 1,570 | 103 | 55 | 121 | 23 | 0 | 2,513 |
| Plastics and Rubber Products Manufacturing | 2 | 0 | 19 | 4 | 225 | 1,115 | 21 | 3 | 57 | 21 | 0 | 1,466 |
| Non-Metallic Mineral Product Manufacturing | 0 | 0 | 0 | 4 | 137 | 1,282 | 4 | 1 | 20 | 12 | 0 | 1,460 |
| Primary Metal Manufacturing | 0 | 0 | 0 | 1 | 367 | 993 | 24 | 12 | 21 | 1,042 | 0 | 2,460 |
| Fabricated Metal Products Manufacturing | 1 | 0 | 3 | 14 | 544 | 2,012 | 18 | 15 | 162 | 54 | 0 | 2,824 |
| Machinery Manufacturing | 0 | 0 | 5 | 7 | 299 | 4,522 | 48 | 117 | 515 | 141 | 0 | 5,655 |
| Computer and Electronic Product Manufacturing | 0 | 0 | 2 | 1 | 35 | 236 | 0 | 1 | 7 | 4 | 0 | 286 |
| Electrical Equipment, Appliance and Component Manufacturing | 0 | 0 | 0 | 1 | 69 | 242 | 16 | 4 | 7 | 8 | 0 | 347 |
| Transportation Equipment Manufacturing | 0 | 1 | 4 | 0 | 74 | 675 | 11 | 1 | 5 | 7 | 0 | 779 |
| Furniture and Related Product Manufacturing | 0 | 0 | 0 | 0 | 6 | 79 | 1 | 0 | 1 | 1 | 0 | 89 |
| Miscellaneous Manufacturing | 0 | 0 | 1 | 4 | 29 | 246 | 26 | 3 | 8 | 16 | 0 | 333 |
| Wholesale Trade | 14 | 8 | 69 | 19 | 1,485 | 14,574 | 229 | 187 | 509 | 517 | 3 | 17,614 |
| Retail Trade | 6 | 2 | 13 | 12 | 236 | 3,943 | 41 | 22 | 169 | 94 | 4 | 4,541 |
| Truck Transportation | 7 | 2 | 22 | 46 | 383 | 2,143 | 109 | 36 | 226 | 117 | 9 | 3,102 |
| Transit and Ground Passenger Transportation | 4 | 0 | 6 | 2 | 57 | 394 | 8 | 3 | 25 | 25 | 0 | 525 |
| Pipeline Transportation | 0 | 0 | 0 | 0 | 19 | 420 | 94 | 200 | 250 | 38 | 21 | 1,042 |
| Other Transportation | 34 | 2 | 46 | 31 | 456 | 2,933 | 169 | 94 | 312 | 464 | 17 | 4,557 |
| Postal Service and Couriers and Messengers | 2 | 0 | 4 | 3 | 75 | 1,406 | 16 | 4 | 31 | 24 | 1 | 1,567 |
| Warehousing and Storage | 1 | 1 | 3 | 4 | 47 | 339 | 15 | 8 | 31 | 41 | 1 | 491 |
| Motion Picture and Sound Recording Industries | 0 | 0 | 2 | 0 | 36 | 262 | 1 | 1 | 2 | 14 | 0 | 318 |
| Publishing, Broadcasting, Telecom, and Oth Information Servs | 22 | 4 | 46 | 26 | 558 | 6,143 | 89 | 42 | 298 | 252 | 6 | 7,485 |
| Finance, Insurance, Real Estate and Rental and Leasing | 35 | 11 | 109 | 65 | 1,580 | 35,835 | 197 | 113 | 954 | 639 | 14 | 39,553 |
| Professional, Scientific and Technical Services | 28 | 4 | 85 | 43 | 1,362 | 25,822 | 71 | 50 | 646 | 484 | 5 | 28,599 |
| Administrative and Support Services | 13 | 2 | 25 | 28 | 899 | 8,003 | 61 | 21 | 325 | 193 | 2 | 9,572 |
| Waste Management and Remediation Services | 0 | 0 | 2 | 1 | 38 | 272 | 5 | 2 | 19 | 9 | 0 | 349 |
| Educational Services | 0 | 0 | 1 | 0 | 11 | 148 | 1 | 1 | 5 | 3 | 0 | 171 |
| Health Care and Social Assistance | 0 | 0 | 2 | 1 | 37 | 829 | 2 | 1 | 7 | 6 | 0 | 885 |
| Arts, Entertainment and Recreation | 1 | 1 | 2 | 2 | 78 | 572 | 4 | 2 | 12 | 14 | 0 | 687 |
| Accommodation and Food Services | 19 | 8 | 37 | 20 | 205 | 2,047 | 44 | 21 | 146 | 112 | 3 | 2,662 |
| Repair and Maintenance | 3 | 1 | 7 | 3 | 147 | 1,695 | 12 | 13 | 500 | 40 | 0 | 2,420 |
| Grant-Making, Civic, and Professional and Similar Orgs | 1 | 1 | 4 | 3 | 88 | 741 | 4 | 1 | 11 | 12 | 0 | 867 |
| Personal and Laundry Services and Private Households | 0 | 0 | 1 | 1 | 35 | 411 | 4 | 2 | 9 | 8 | 0 | 471 |
| Non-Profit Institutions Serving Households (Excl Education) | 0 | 0 | 0 | 0 | 3 | 78 | 1 | 0 | 1 | 1 | 0 | 85 |
| Non-Profit Education Institutions | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hospitals and Residential Care Facilities | 2 | 0 | 4 | 3 | 31 | 335 | 2 | 1 | 7 | 5 | 0 | 391 |
| Universities and Government Education Services | 1 | 0 | 4 | 1 | 29 | 337 | 3 | 3 | 12 | 9 | 0 | 400 |
| Other Municipal Government Services | 1 | 0 | 2 | 2 | 56 | 1,576 | 9 | 7 | 35 | 25 | 1 | 1,714 |
| Other Provincial and Territorial Government Services | 1 | 0 | 2 | 1 | 61 | 841 | 4 | 4 | 8 | 8 | 1 | 931 |
| Other Federal Government Services | 2 | 0 | 7 | 3 | 91 | 1,853 | 7 | 3 | 12 | 13 | 2 | 1,992 |
| Total | 1,284 | 56 | 745 | 448 | 13,394 | 857,697 | 2,037 | 3,322 | 15,010 | 5,598 | 435 | 900,026 |

Table B1b. Direct and Indirect Impacts on Employment of \$1 Billion in OMA Mineral Production in Ontario

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|---------------------------|----------|-------------|---------------|------------|--------------|-----------|--------------|-----------|------------------|-------------|--------------|
| Crop and Animal Production | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 6 |
| Forestry and Logging | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Fishing, Hunting and Trapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Support Activities for Agriculture and Forestry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Oil and Gas Extraction | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 0 | 0 | 8 |
| Support Activities for Oil and Gas Extraction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 4 |
| Mining | 0 | 0 | 0 | 0 | 1 | 2,421 | 0 | 1 | 0 | 0 | 0 | 2,423 |
| Support Activities for Mining | 0 | 0 | 0 | 0 | 10 | 139 | 0 | 0 | 0 | 0 | 0 | 149 |
| Electric Power Generation, Transmission and Distribution | 0 | 0 | 0 | 0 | 2 | 55 | 1 | 0 | 0 | 0 | 0 | 59 |
| Natural Gas Distribution, Water, Sewage and Other Systems | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Construction | 0 | 0 | 0 | 0 | 1 | 119 | 0 | 0 | 1 | 1 | 0 | 123 |
| Food Manufacturing | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 6 |
| Beverage and Tobacco Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Textile and Textile Product Mills | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Clothing Manufacturing | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Leather and Allied Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wood Product Manufacturing | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 4 |
| Paper Manufacturing | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 10 |
| Printing and Related Support Activities | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 13 |
| Petroleum and Coal Products Manufacturing | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 9 |
| Chemical Manufacturing | 0 | 0 | 0 | 0 | 6 | 13 | 1 | 0 | 0 | 0 | 0 | 21 |
| Plastics and Rubber Products Manufacturing | 0 | 0 | 1 | 0 | 3 | 13 | 0 | 0 | 1 | 0 | 0 | 18 |
| Non-Metallic Mineral Product Manufacturing | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 12 |
| Primary Metal Manufacturing | 0 | 0 | 0 | 0 | 4 | 7 | 0 | 0 | 0 | 7 | 0 | 18 |
| Fabricated Metal Products Manufacturing | 0 | 0 | 0 | 0 | 9 | 29 | 0 | 0 | 2 | 1 | 0 | 41 |
| Machinery Manufacturing | 0 | 0 | 0 | 0 | 3 | 35 | 0 | 1 | 3 | 1 | 0 | 44 |
| Computer and Electronic Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Electrical Equipment, Appliance and Component Manufacturing | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Transportation Equipment Manufacturing | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 8 |
| Furniture and Related Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Miscellaneous Manufacturing | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Wholesale Trade | 0 | 0 | 1 | 0 | 19 | 165 | 2 | 1 | 5 | 7 | 0 | 200 |
| Retail Trade | 0 | 0 | 0 | 0 | 6 | 93 | 1 | 1 | 3 | 2 | 0 | 108 |
| Truck Transportation | 0 | 0 | 0 | 1 | 7 | 33 | 2 | 1 | 2 | 2 | 0 | 48 |
| Transit and Ground Passenger Transportation | 0 | 0 | 0 | 0 | 1 | 13 | 0 | 0 | 1 | 1 | 0 | 16 |
| Pipeline Transportation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Other Transportation | 0 | 0 | 1 | 0 | 5 | 24 | 2 | 1 | 3 | 4 | 0 | 40 |
| Postal Service and Couriers and Messengers | 0 | 0 | 0 | 0 | 2 | 25 | 0 | 0 | 1 | 1 | 0 | 28 |
| Warehousing and Storage | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 1 | 1 | 0 | 8 |
| Motion Picture and Sound Recording Industries | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Publishing, Broadcasting, Telecom, and Oth Information Servs | 0 | 0 | 0 | 0 | 5 | 47 | 1 | 0 | 2 | 2 | 0 | 59 |
| Finance, Insurance, Real Estate and Rental and Leasing | 0 | 0 | 1 | 1 | 16 | 299 | 2 | 1 | 7 | 5 | 0 | 332 |
| Professional, Scientific and Technical Services | 0 | 0 | 2 | 1 | 22 | 367 | 1 | 1 | 8 | 8 | 0 | 409 |
| Administrative and Support Services | 0 | 0 | 1 | 1 | 22 | 213 | 2 | 1 | 6 | 5 | 0 | 249 |
| Waste Management and Remediation Services | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Educational Services | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| Health Care and Social Assistance | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 12 |
| Arts, Entertainment and Recreation | 0 | 0 | 0 | 0 | 2 | 18 | 0 | 0 | 0 | 0 | 0 | 22 |
| Accommodation and Food Services | 1 | 0 | 1 | 1 | 7 | 77 | 2 | 1 | 3 | 3 | 0 | 95 |
| Repair and Maintenance | 0 | 0 | 0 | 0 | 3 | 39 | 0 | 0 | 7 | 1 | 0 | 51 |
| Grant-Making, Civic, and Professional and Similar Orgs | 0 | 0 | 0 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 14 |
| Personal and Laundry Services and Private Households | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 12 |
| Non-Profit Institutions Serving Households (Excl Education) | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Non-Profit Education Institutions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hospitals and Residential Care Facilities | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| Universities and Government Education Services | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| Other Municipal Government Services | 0 | 0 | 0 | 0 | 1 | 19 | 0 | 0 | 0 | 0 | 0 | 20 |
| Other Provincial and Territorial Government Services | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 11 |
| Other Federal Government Services | 0 | 0 | 0 | 0 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 19 |
| Total | 4 | 1 | 10 | 7 | 176 | 4,418 | 21 | 13 | 68 | 56 | 1 | 4,775 |

Table B1c. Direct and Indirect Impacts on International Imports of \$1 Billion in OMA Mineral Production in Ontario (Thousands of Dollars)

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|------------------------------|----------|-------------|---------------|--------------|---------------|------------|--------------|--------------|---------------------|-------------|---------------|
| Grains | 0 | 0 | 0 | 0 | 2 | 54 | 4 | 0 | 0 | 1 | 0 | 62 |
| Other agricultural products | 0 | 0 | 0 | 1 | 3 | 84 | 1 | 0 | 2 | 3 | 0 | 94 |
| Forestry products | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 11 |
| Fish, seafood and trapping products | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| Metal ores & concentrates | 0 | 0 | 0 | 1 | 148 | 189 | 0 | 0 | 2 | 43 | 0 | 383 |
| Mineral fuels | 29 | 0 | 317 | 129 | 4,514 | 7,246 | 1 | 0 | 73 | 0 | 0 | 12,311 |
| Non-metallic minerals | 0 | 0 | 3 | 3 | 22 | 1,060 | 0 | 0 | 3 | 4 | 0 | 1,095 |
| Services incidental to mining | 0 | 0 | 0 | 0 | 0 | 1,516 | 0 | 0 | 2 | 0 | 0 | 1,519 |
| Meat, fish, and dairy products | 0 | 0 | 1 | 1 | 6 | 168 | 2 | 2 | 1 | 5 | 0 | 185 |
| Fruit, veg. and other food products, feeds | 1 | 0 | 2 | 1 | 20 | 149 | 4 | 2 | 8 | 7 | 0 | 193 |
| Soft drinks and alcoholic beverages | 1 | 0 | 1 | 0 | 10 | 196 | 2 | 1 | 4 | 3 | 0 | 218 |
| Tobacco and tobacco products | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Leather, rubber, and plastic products | 2 | 0 | 3 | 3 | 79 | 3,401 | 15 | 11 | 37 | 27 | 0 | 3,577 |
| Textile products | 0 | 0 | 5 | 0 | 31 | 638 | 3 | 1 | 6 | 5 | 0 | 689 |
| Hosiery, clothing and accessories | 0 | 0 | 0 | 0 | 5 | 203 | 1 | 1 | 5 | 2 | 0 | 218 |
| Lumber and wood products | 0 | 0 | 0 | 0 | 8 | 102 | 1 | 0 | 2 | 2 | 0 | 116 |
| Furniture and fixtures | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 8 |
| Wood pulp, paper and paper products | 1 | 0 | 2 | 7 | 101 | 1,403 | 13 | 5 | 24 | 17 | 0 | 1,572 |
| Printing and publishing | 1 | 0 | 2 | 1 | 15 | 570 | 5 | 4 | 22 | 9 | 0 | 629 |
| Primary metal products | 2 | 0 | 3 | 8 | 452 | 3,803 | 38 | 62 | 213 | 580 | 0 | 5,161 |
| Other metal products | 2 | 0 | 8 | 2 | 73 | 1,622 | 7 | 11 | 54 | 24 | 2 | 1,805 |
| Machinery and equipment | 9 | 0 | 8 | 7 | 222 | 15,184 | 16 | 52 | 236 | 56 | 2 | 15,793 |
| Motor veh., other transport equipment and parts | 4 | 1 | 5 | 3 | 104 | 5,345 | 16 | 9 | 49 | 36 | 1 | 5,573 |
| Electrical, electronic and communications products | 6 | 0 | 10 | 5 | 178 | 4,509 | 9 | 23 | 80 | 40 | 1 | 4,862 |
| Non-metallic mineral products | 0 | 0 | 1 | 1 | 23 | 589 | 2 | 2 | 7 | 5 | 0 | 629 |
| Petroleum and coal products | 9 | 0 | 3 | 5 | 200 | 2,465 | 27 | 12 | 82 | 158 | 7 | 2,969 |
| Chemicals, pharmaceuticals & chemical products | 5 | 1 | 27 | 10 | 677 | 11,507 | 41 | 39 | 121 | 57 | 0 | 12,485 |
| Other manufactured products | 1 | 0 | 4 | 2 | 58 | 1,481 | 13 | 5 | 20 | 16 | 0 | 1,600 |
| Transportation and storage | 2 | 1 | 7 | 5 | 106 | 3,313 | 14 | 6 | 47 | 39 | 1 | 3,542 |
| Communications services | 1 | 0 | 2 | 1 | 28 | 571 | 4 | 2 | 10 | 8 | 0 | 626 |
| Other utilities | 0 | 0 | 0 | 0 | 4 | 914 | 3 | 3 | 7 | 14 | 0 | 945 |
| Wholesaling margins | 0 | 0 | 0 | 0 | 6 | 224 | 0 | 0 | 2 | 2 | 0 | 235 |
| Other finance, insurance, and real estate services | 4 | 1 | 9 | 4 | 186 | 5,233 | 25 | 26 | 63 | 40 | 1 | 5,591 |
| Business and computer services | 4 | 0 | 9 | 5 | 167 | 7,469 | 21 | 36 | 112 | 42 | 2 | 7,868 |
| Private education services | 0 | 0 | 0 | 0 | 2 | 19 | 0 | 0 | 1 | 0 | 0 | 22 |
| Health and social services | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 20 |
| Accommodation services and meals | 1 | 0 | 2 | 1 | 51 | 3,113 | 7 | 4 | 19 | 20 | 0 | 3,219 |
| Other services | 1 | 0 | 3 | 2 | 46 | 1,609 | 6 | 5 | 25 | 17 | 1 | 1,713 |
| Non-competing imports | 0 | 0 | 12 | 0 | 13 | 62 | 0 | 0 | 1 | 2 | 0 | 90 |
| Sales of other government services | 0 | 0 | 0 | 0 | 1 | 56 | 0 | 0 | 0 | 0 | 0 | 57 |
| Import Duties | 0 | 0 | 0 | 0 | -10 | -264 | -1 | -1 | -5 | -2 | 0 | -284 |
| TOTAL | 87 | 7 | 449 | 210 | 7,556 | 85,840 | 300 | 325 | 1,335 | 1,283 | 19 | 97,411 |

Table B2a. Direct, Indirect and Induced Impacts on GDP of \$1 Billion in OMA Mineral Production in Ontario (Thousands of Dollars)

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|------------------------------|------------|--------------|------------------|---------------|------------------|--------------|--------------|---------------|---------------------|-------------|------------------|
| Crop and Animal Production | 6 | 16 | 16 | 23 | 472 | 975 | 169 | 218 | 215 | 58 | 0 | 2,168 |
| Forestry and Logging | 5 | 0 | 4 | 9 | 69 | 164 | 2 | 0 | 7 | 48 | 0 | 309 |
| Fishing, Hunting and Trapping | 8 | 5 | 13 | 1 | 5 | 6 | 1 | 0 | 0 | 4 | 0 | 42 |
| Support Activities for Agriculture and Forestry | 1 | 1 | 2 | 2 | 23 | 75 | 9 | 8 | 20 | 17 | 1 | 159 |
| Oil and Gas Extraction | 1,299 | 0 | 55 | 2 | 0 | 128 | 372 | 2,526 | 11,744 | 1,079 | 487 | 17,691 |
| Support Activities for Oil and Gas Extraction | 18 | 0 | 1 | 0 | 0 | 2 | 1 | 79 | 476 | 29 | 18 | 626 |
| Mining | 170 | 0 | 59 | 21 | 180 | 691,155 | 21 | 301 | 237 | 194 | 0 | 692,336 |
| Support Activities for Mining | 2 | 0 | 1 | 2 | 847 | 12,956 | 0 | 9 | 10 | 5 | 0 | 14,459 |
| Electric Power Generation, Transmission and Distribution | 23 | 2 | 34 | 25 | 1,606 | 19,282 | 208 | 69 | 218 | 135 | 4 | 21,607 |
| Natural Gas Distribution, Water, Sewage and Other Systems | 0 | 0 | 2 | 2 | 51 | 1,544 | 7 | 3 | 71 | 36 | 0 | 1,717 |
| Construction | 4 | 2 | 16 | 12 | 227 | 11,617 | 59 | 42 | 169 | 106 | 3 | 12,256 |
| Food Manufacturing | 22 | 19 | 58 | 70 | 899 | 3,811 | 154 | 82 | 276 | 168 | 0 | 5,560 |
| Beverage and Tobacco Product Manufacturing | 6 | 1 | 15 | 40 | 358 | 1,366 | 27 | 1 | 53 | 83 | 0 | 1,951 |
| Textile and Textile Product Mills | 0 | 0 | 4 | 1 | 48 | 117 | 1 | 3 | 4 | 5 | 0 | 184 |
| Clothing Manufacturing | 1 | 0 | 1 | 0 | 87 | 125 | 6 | 0 | 2 | 6 | 0 | 229 |
| Leather and Allied Product Manufacturing | 5 | 0 | 1 | 0 | 12 | 9 | 0 | 0 | 1 | 0 | 0 | 29 |
| Wood Product Manufacturing | 1 | 0 | 4 | 7 | 99 | 205 | 7 | 2 | 25 | 47 | 0 | 396 |
| Paper Manufacturing | 4 | 2 | 33 | 38 | 386 | 1,008 | 17 | 2 | 15 | 40 | 0 | 1,545 |
| Printing and Related Support Activities | 1 | 0 | 5 | 1 | 255 | 1,538 | 55 | 4 | 52 | 33 | 0 | 1,944 |
| Petroleum and Coal Products Manufacturing | 4 | 0 | 62 | 21 | 133 | 877 | 0 | 215 | 184 | 52 | 0 | 1,548 |
| Chemical Manufacturing | 1 | 1 | 2 | 2 | 750 | 1,908 | 112 | 68 | 167 | 39 | 0 | 3,051 |
| Plastics and Rubber Products Manufacturing | 2 | 0 | 24 | 8 | 323 | 1,405 | 28 | 5 | 81 | 34 | 0 | 1,909 |
| Non-Metallic Mineral Product Manufacturing | 0 | 0 | 0 | 7 | 171 | 1,447 | 5 | 1 | 29 | 17 | 0 | 1,678 |
| Primary Metal Manufacturing | 0 | 0 | 0 | 2 | 413 | 1,105 | 26 | 14 | 24 | 1,048 | 0 | 2,633 |
| Fabricated Metal Products Manufacturing | 1 | 1 | 4 | 17 | 612 | 2,331 | 35 | 20 | 197 | 71 | 0 | 3,289 |
| Machinery Manufacturing | 0 | 0 | 6 | 8 | 325 | 4,717 | 52 | 120 | 537 | 147 | 0 | 5,914 |
| Computer and Electronic Product Manufacturing | 1 | 0 | 3 | 1 | 58 | 346 | 1 | 1 | 11 | 8 | 0 | 430 |
| Electrical Equipment, Appliance and Component Manufacturing | 0 | 0 | 1 | 1 | 118 | 361 | 19 | 5 | 9 | 12 | 0 | 526 |
| Transportation Equipment Manufacturing | 1 | 3 | 8 | 1 | 179 | 1,046 | 20 | 4 | 11 | 27 | 0 | 1,299 |
| Furniture and Related Product Manufacturing | 0 | 0 | 1 | 0 | 33 | 260 | 5 | 0 | 22 | 5 | 0 | 327 |
| Miscellaneous Manufacturing | 0 | 0 | 2 | 8 | 120 | 517 | 34 | 4 | 19 | 34 | 0 | 738 |
| Wholesale Trade | 26 | 14 | 126 | 38 | 2,529 | 22,395 | 394 | 308 | 868 | 846 | 6 | 27,550 |
| Retail Trade | 38 | 11 | 82 | 61 | 1,313 | 25,631 | 299 | 116 | 751 | 645 | 33 | 28,980 |
| Truck Transportation | 11 | 4 | 36 | 72 | 579 | 2,972 | 167 | 58 | 365 | 184 | 14 | 4,460 |
| Transit and Ground Passenger Transportation | 7 | 1 | 10 | 3 | 194 | 2,159 | 17 | 6 | 59 | 65 | 1 | 2,522 |
| Pipeline Transportation | 0 | 0 | 0 | 0 | 28 | 751 | 152 | 322 | 365 | 61 | 31 | 1,711 |
| Other Transportation | 54 | 3 | 73 | 49 | 708 | 4,080 | 251 | 120 | 472 | 687 | 26 | 6,523 |
| Postal Service and Couriers and Messengers | 4 | 1 | 8 | 7 | 158 | 2,610 | 34 | 9 | 63 | 54 | 1 | 2,948 |
| Warehousing and Storage | 2 | 1 | 6 | 7 | 85 | 564 | 26 | 13 | 55 | 75 | 1 | 836 |
| Motion Picture and Sound Recording Industries | 0 | 0 | 4 | 1 | 85 | 816 | 3 | 2 | 9 | 32 | 0 | 952 |
| Publishing, Broadcasting, Telecom, and Oth Information Servs | 51 | 10 | 109 | 60 | 1,355 | 13,868 | 201 | 92 | 675 | 571 | 13 | 17,005 |
| Finance, Insurance, Real Estate and Rental and Leasing | 110 | 37 | 334 | 203 | 4,546 | 111,381 | 676 | 367 | 2,692 | 2,259 | 42 | 122,646 |
| Professional, Scientific and Technical Services | 41 | 9 | 122 | 67 | 1,984 | 32,300 | 124 | 81 | 943 | 761 | 7 | 36,440 |
| Administrative and Support Services | 21 | 4 | 44 | 51 | 1,473 | 11,649 | 108 | 38 | 535 | 348 | 3 | 14,274 |
| Waste Management and Remediation Services | 1 | 1 | 5 | 2 | 68 | 892 | 11 | 4 | 43 | 22 | 0 | 1,049 |
| Educational Services | 1 | 0 | 2 | 2 | 36 | 633 | 4 | 2 | 20 | 19 | 0 | 721 |
| Health Care and Social Assistance | 4 | 2 | 15 | 9 | 265 | 6,601 | 24 | 13 | 83 | 82 | 1 | 7,099 |
| Arts, Entertainment and Recreation | 4 | 4 | 17 | 11 | 314 | 2,870 | 28 | 14 | 67 | 85 | 1 | 3,414 |
| Accommodation and Food Services | 47 | 18 | 95 | 54 | 657 | 7,858 | 120 | 70 | 412 | 353 | 9 | 9,693 |
| Repair and Maintenance | 6 | 2 | 14 | 9 | 318 | 3,444 | 33 | 26 | 680 | 107 | 1 | 4,641 |
| Grant-Making, Civic, and Professional and Similar Orgs | 2 | 1 | 7 | 5 | 138 | 1,113 | 7 | 3 | 21 | 25 | 0 | 1,322 |
| Personal and Laundry Services and Private Households | 4 | 1 | 10 | 8 | 181 | 4,142 | 26 | 13 | 77 | 68 | 1 | 4,530 |
| Non-Profit Institutions Serving Households (Excl Education) | 5 | 2 | 14 | 9 | 221 | 7,320 | 43 | 25 | 95 | 102 | 5 | 7,840 |
| Non-Profit Education Institutions | 0 | 0 | 0 | 0 | 33 | 755 | 4 | 1 | 10 | 12 | 0 | 817 |
| Hospitals and Residential Care Facilities | 4 | 1 | 10 | 7 | 87 | 1,336 | 10 | 6 | 26 | 20 | 1 | 1,508 |
| Universities and Government Education Services | 4 | 2 | 20 | 11 | 106 | 2,941 | 18 | 11 | 65 | 63 | 1 | 3,241 |
| Other Municipal Government Services | 2 | 1 | 6 | 6 | 129 | 3,421 | 24 | 14 | 92 | 71 | 1 | 3,767 |
| Other Provincial and Territorial Government Services | 2 | 1 | 5 | 3 | 106 | 1,028 | 8 | 9 | 20 | 22 | 2 | 1,208 |
| Other Federal Government Services | 4 | 1 | 11 | 6 | 151 | 2,407 | 13 | 5 | 24 | 27 | 3 | 2,653 |
| Total | 2,041 | 187 | 1,626 | 1,093 | 26,707 | 1,040,341 | 4,276 | 5,552 | 24,472 | 11,258 | 720 | 1,118,274 |

Table B2b. Direct, Indirect and Induced Impacts on Employment of \$1 Billion in OMA Mineral Production in Ontario

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|------------------------------|----------|-------------|------------------|------------|--------------|-----------|--------------|------------|---------------------|-------------|--------------|
| Crop and Animal Production | 0 | 0 | 0 | 0 | 7 | 22 | 2 | 3 | 4 | 2 | 0 | 41 |
| Forestry and Logging | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Fishing, Hunting and Trapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Support Activities for Agriculture and Forestry | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| Oil and Gas Extraction | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | 0 | 0 | 11 |
| Support Activities for Oil and Gas Extraction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 5 |
| Mining | 0 | 0 | 0 | 0 | 1 | 2,421 | 0 | 1 | 1 | 0 | 0 | 2,425 |
| Support Activities for Mining | 0 | 0 | 0 | 0 | 10 | 139 | 0 | 0 | 0 | 0 | 0 | 149 |
| Electric Power Generation, Transmission and Distribution | 0 | 0 | 0 | 0 | 4 | 70 | 1 | 0 | 0 | 0 | 0 | 76 |
| Natural Gas Distribution, Water, Sewage and Other Systems | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| Construction | 0 | 0 | 0 | 0 | 3 | 171 | 1 | 0 | 2 | 2 | 0 | 179 |
| Food Manufacturing | 0 | 0 | 1 | 1 | 9 | 31 | 1 | 1 | 3 | 2 | 0 | 50 |
| Beverage and Tobacco Product Manufacturing | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 0 | 8 |
| Textile and Textile Product Mills | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Clothing Manufacturing | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Leather and Allied Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Wood Product Manufacturing | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Paper Manufacturing | 0 | 0 | 0 | 0 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 15 |
| Printing and Related Support Activities | 0 | 0 | 0 | 0 | 4 | 17 | 1 | 0 | 1 | 1 | 0 | 23 |
| Petroleum and Coal Products Manufacturing | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 12 |
| Chemical Manufacturing | 0 | 0 | 0 | 0 | 7 | 16 | 1 | 0 | 1 | 0 | 0 | 25 |
| Plastics and Rubber Products Manufacturing | 0 | 0 | 1 | 0 | 4 | 16 | 1 | 0 | 1 | 0 | 0 | 23 |
| Non-Metallic Mineral Product Manufacturing | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 14 |
| Primary Metal Manufacturing | 0 | 0 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 7 | 0 | 19 |
| Fabricated Metal Products Manufacturing | 0 | 0 | 0 | 0 | 10 | 33 | 0 | 0 | 2 | 1 | 0 | 47 |
| Machinery Manufacturing | 0 | 0 | 0 | 0 | 3 | 36 | 0 | 1 | 3 | 1 | 0 | 46 |
| Computer and Electronic Product Manufacturing | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 |
| Electrical Equipment, Appliance and Component Manufacturing | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 6 |
| Transportation Equipment Manufacturing | 0 | 0 | 0 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 13 |
| Furniture and Related Product Manufacturing | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Miscellaneous Manufacturing | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 1 | 0 | 9 |
| Wholesale Trade | 0 | 0 | 2 | 0 | 31 | 244 | 3 | 2 | 8 | 11 | 0 | 302 |
| Retail Trade | 1 | 0 | 2 | 2 | 33 | 546 | 7 | 3 | 15 | 15 | 1 | 625 |
| Truck Transportation | 0 | 0 | 1 | 1 | 10 | 45 | 3 | 1 | 4 | 3 | 0 | 67 |
| Transit and Ground Passenger Transportation | 0 | 0 | 0 | 0 | 3 | 35 | 0 | 0 | 1 | 1 | 0 | 42 |
| Pipeline Transportation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Other Transportation | 1 | 0 | 1 | 1 | 7 | 33 | 3 | 1 | 4 | 6 | 0 | 57 |
| Postal Service and Couriers and Messengers | 0 | 0 | 0 | 0 | 3 | 43 | 1 | 0 | 1 | 1 | 0 | 50 |
| Warehousing and Storage | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 1 | 1 | 0 | 14 |
| Motion Picture and Sound Recording Industries | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 14 |
| Publishing, Broadcasting, Telecom, and Oth Information Servs | 1 | 0 | 1 | 0 | 12 | 93 | 1 | 1 | 4 | 4 | 0 | 117 |
| Finance, Insurance, Real Estate and Rental and Leasing | 1 | 0 | 2 | 1 | 32 | 493 | 4 | 2 | 13 | 11 | 0 | 559 |
| Professional, Scientific and Technical Services | 1 | 0 | 2 | 1 | 31 | 449 | 2 | 1 | 11 | 12 | 0 | 510 |
| Administrative and Support Services | 0 | 0 | 1 | 2 | 35 | 297 | 3 | 1 | 9 | 9 | 0 | 357 |
| Waste Management and Remediation Services | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 7 |
| Educational Services | 0 | 0 | 0 | 0 | 1 | 19 | 0 | 0 | 1 | 1 | 0 | 21 |
| Health Care and Social Assistance | 0 | 0 | 0 | 0 | 5 | 110 | 0 | 0 | 1 | 2 | 0 | 119 |
| Arts, Entertainment and Recreation | 0 | 0 | 1 | 0 | 8 | 72 | 1 | 0 | 2 | 2 | 0 | 87 |
| Accommodation and Food Services | 2 | 1 | 4 | 2 | 24 | 287 | 5 | 3 | 11 | 12 | 0 | 348 |
| Repair and Maintenance | 0 | 0 | 0 | 0 | 7 | 74 | 1 | 0 | 9 | 2 | 0 | 95 |
| Grant-Making, Civic, and Professional and Similar Orgs | 0 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 0 | 1 | 0 | 20 |
| Personal and Laundry Services and Private Households | 0 | 0 | 0 | 0 | 8 | 140 | 1 | 0 | 2 | 2 | 0 | 154 |
| Non-Profit Institutions Serving Households (Excl Education) | 0 | 0 | 0 | 0 | 5 | 141 | 1 | 1 | 2 | 2 | 0 | 154 |
| Non-Profit Education Institutions | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 12 |
| Hospitals and Residential Care Facilities | 0 | 0 | 0 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 20 |
| Universities and Government Education Services | 0 | 0 | 0 | 0 | 1 | 35 | 0 | 0 | 1 | 1 | 0 | 39 |
| Other Municipal Government Services | 0 | 0 | 0 | 0 | 1 | 38 | 0 | 0 | 1 | 1 | 0 | 42 |
| Other Provincial and Territorial Government Services | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 14 |
| Other Federal Government Services | 0 | 0 | 0 | 0 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 25 |
| Total | 9 | 3 | 23 | 16 | 354 | 6,360 | 50 | 28 | 135 | 123 | 2 | 7,104 |

Table B2c. Direct, Indirect and Induced Impacts on International Imports of \$1 Billion in OMA Mineral Production in Ontario (Thousands of Dollars)

| | Newfoundland and Labrador | PEI | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Territories | Canada |
|--|------------------------------|-----------|-------------|---------------|---------------|----------------|------------|--------------|--------------|---------------------|-------------|----------------|
| Grains | 0 | 0 | 0 | 0 | 7 | 114 | 5 | 0 | 2 | 4 | 0 | 133 |
| Other agricultural products | 0 | 0 | 0 | 5 | 45 | 1,481 | 8 | 2 | 19 | 37 | 0 | 1,598 |
| Forestry products | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 1 | 1 | 0 | 21 |
| Fish, seafood and trapping products | 2 | 0 | 0 | 2 | 5 | 126 | 0 | 0 | 1 | 6 | 0 | 142 |
| Metal ores & concentrates | 0 | 0 | 0 | 1 | 168 | 261 | 2 | 0 | 3 | 46 | 0 | 482 |
| Mineral fuels | 76 | 0 | 421 | 236 | 6,081 | 10,864 | 1 | 1 | 125 | 1 | 0 | 17,807 |
| Non-metallic minerals | 0 | 0 | 4 | 6 | 27 | 1,119 | 0 | 0 | 6 | 6 | 0 | 1,168 |
| Services incidental to mining | 0 | 0 | 0 | 0 | 0 | 1,517 | 0 | 0 | 2 | 0 | 0 | 1,520 |
| Meat, fish, and dairy products | 1 | 0 | 7 | 4 | 60 | 1,808 | 9 | 10 | 11 | 36 | 0 | 1,946 |
| Fruit, veg. and other food products, feeds | 5 | 2 | 18 | 11 | 225 | 2,467 | 39 | 19 | 98 | 83 | 1 | 2,968 |
| Soft drinks and alcoholic beverages | 2 | 1 | 4 | 3 | 81 | 1,350 | 10 | 5 | 31 | 23 | 0 | 1,510 |
| Tobacco and tobacco products | 0 | 0 | 0 | 1 | 22 | 423 | 1 | 1 | 1 | 2 | 0 | 451 |
| Leather, rubber, and plastic products | 6 | 1 | 8 | 8 | 204 | 5,121 | 38 | 24 | 89 | 70 | 0 | 5,568 |
| Textile products | 2 | 0 | 8 | 2 | 128 | 1,420 | 8 | 5 | 25 | 24 | 0 | 1,622 |
| Hosiery, clothing and accessories | 3 | 1 | 6 | 4 | 110 | 2,926 | 14 | 9 | 70 | 37 | 1 | 3,181 |
| Lumber and wood products | 0 | 0 | 1 | 0 | 14 | 181 | 2 | 1 | 4 | 5 | 0 | 208 |
| Furniture and fixtures | 0 | 0 | 1 | 1 | 30 | 1,027 | 5 | 3 | 17 | 13 | 0 | 1,096 |
| Wood pulp, paper and paper products | 2 | 1 | 5 | 15 | 213 | 2,610 | 32 | 14 | 56 | 55 | 0 | 3,004 |
| Printing and publishing | 2 | 0 | 5 | 3 | 36 | 1,215 | 15 | 8 | 46 | 27 | 0 | 1,356 |
| Primary metal products | 3 | 0 | 3 | 10 | 522 | 4,157 | 44 | 70 | 241 | 601 | 0 | 5,652 |
| Other metal products | 4 | 1 | 14 | 5 | 128 | 2,243 | 17 | 18 | 84 | 46 | 3 | 2,564 |
| Machinery and equipment | 14 | 1 | 15 | 13 | 307 | 16,241 | 30 | 79 | 315 | 94 | 3 | 17,111 |
| Motor veh., other transport equipment and parts | 16 | 4 | 27 | 19 | 575 | 13,938 | 67 | 45 | 283 | 162 | 4 | 15,140 |
| Electrical, electronic and communications products | 14 | 2 | 27 | 17 | 403 | 8,400 | 34 | 47 | 195 | 114 | 3 | 9,256 |
| Non-metallic mineral products | 1 | 0 | 2 | 2 | 51 | 986 | 4 | 4 | 18 | 14 | 0 | 1,083 |
| Petroleum and coal products | 13 | 1 | 7 | 11 | 283 | 4,804 | 53 | 24 | 149 | 257 | 11 | 5,613 |
| Chemicals, pharmaceuticals & chemical products | 11 | 3 | 43 | 28 | 1,038 | 15,910 | 79 | 82 | 230 | 124 | 1 | 17,549 |
| Other manufactured products | 5 | 1 | 12 | 8 | 221 | 5,036 | 36 | 18 | 101 | 73 | 1 | 5,514 |
| Transportation and storage | 4 | 2 | 12 | 8 | 193 | 5,013 | 28 | 11 | 86 | 82 | 1 | 5,442 |
| Communications services | 1 | 1 | 4 | 4 | 66 | 1,124 | 9 | 5 | 25 | 20 | 1 | 1,259 |
| Other utilities | 0 | 0 | 0 | 0 | 8 | 1,109 | 6 | 6 | 14 | 30 | 0 | 1,172 |
| Wholesaling margins | 1 | 0 | 0 | 0 | 14 | 338 | 1 | 0 | 3 | 4 | 0 | 361 |
| Other finance, insurance, and real estate services | 8 | 2 | 20 | 10 | 410 | 9,268 | 57 | 48 | 132 | 108 | 2 | 10,065 |
| Business and computer services | 8 | 1 | 17 | 11 | 318 | 8,948 | 42 | 60 | 186 | 84 | 3 | 9,677 |
| Private education services | 0 | 0 | 1 | 1 | 13 | 341 | 2 | 1 | 4 | 3 | 0 | 367 |
| Health and social services | 0 | 0 | 0 | 0 | 2 | 108 | 0 | 0 | 0 | 0 | 0 | 111 |
| Accommodation services and meals | 2 | 1 | 5 | 4 | 123 | 4,930 | 19 | 9 | 45 | 56 | 1 | 5,194 |
| Other services | 3 | 1 | 6 | 4 | 109 | 2,895 | 15 | 10 | 55 | 44 | 1 | 3,142 |
| Non-competing imports | 0 | 0 | 15 | 1 | 70 | 513 | 2 | 1 | 7 | 18 | 0 | 626 |
| Sales of other government services | 0 | 0 | 0 | 0 | 1 | 65 | 0 | 0 | 0 | 0 | 0 | 66 |
| Import Duties | -1 | 0 | -2 | -2 | -47 | -1,050 | -5 | -4 | -23 | -14 | 0 | -1,149 |
| TOTAL | 209 | 27 | 718 | 456 | 12,272 | 141,354 | 730 | 635 | 2,759 | 2,394 | 40 | 161,595 |

Appendix C: Ontario Location of CAMESE Members – By Industry Sub-Sector

Table C1. Industry Sub-Sector Category of CAMESE Member Firms in Ontario,
By City, By Region, 2012-2013

**Table C1:
Industry Sub-Sector Category of CAMESE Member Firms in Ontario,
By City, By Region, 2012-2013**

| City | Industry Sub-Sector | Region |
|-------------|--|---------------|
| Alliston | Camera Systems, Mobile | South |
| Barrie | Doors Drilling Equipment and Supplies Hoisting Equipment and Accessories | South |
| Brampton | Electric Power Equipment Environmental Equipment and Services Geophysical Instrumentation Surface Mobile Equipment and Components Mine Maintenance, Repair & Operation – Tools, Supplies | South |
| Burlington | Drilling Equipment and Supplies Environmental Equipment and Services Equipment Maintenance and Repair Management Consulting Services Mineral Processing Equipment and Supplies Mining Instrumentation | South |
| Cambridge | Automation and Communications Bulk Material Handling Equipment, Systems and Engineering Services Surface Mobile Equipment and Components | South |
| Coldwater | Buildings, Portable Camp Management Services and Supplies | South |
| Collingwood | Bulk Material Handling Equipment, Systems and Engineering Services Government Relations/International Development Underground Vehicles, Equipment and Components | South |
| Concord | Ground Control Equipment and Supplies Mineral Processing Equipment and Supplies Packaging Services Underground Vehicles, Equipment and Components | South |
| Earlton | Bulk Material Handling Equipment, Systems and Engineering Services | Northeast |
| Elliot Lake | Asset Liquidation Consultants | Northeast |

| City | Industry Sub-Sector | Region |
|--------------------|--|---------------|
| Elora | Mineral Processing Equipment and Supplies | South |
| Georgetown | Mining Instrumentation | South |
| Goodwood | Automation and Communications Radio Frequency Identification Underground Vehicles, Equipment and Components | South |
| Guelph | Mine Site Construction | South |
| Halton Hills | Mineral Processing Equipment and Supplies | South |
| Greater Hamilton | Analytical Laboratories and Supplies Ventilation Equipment and Components | South |
| Hawkestone | Surface Mobile Equipment and Components | South |
| Hensall | Electric Power Equipment | South |
| Kingston | Blasting Equipment and Services | South |
| Kirkland Lake | Mineral Processing Equipment and Supplies Smelting and Refining Equipment and Services | Northeast |
| Kitchener-Waterloo | Equipment Maintenance and Repair Surface Mobile Equipment and Components | South |
| Larder Lake | Consulting Geologists and Engineers | Northeast |
| Lindsay | Bulk Material Handling Equipment, Systems and Engineering Services | South |
| London | Analytical Laboratories and Supplies Mine Maintenance, Repair & Operation – Tools, Supplies | South |
| Lucknow | Buildings, Portable | South |
| Markham | Associations Buildings, Portable Geophysical Instrumentation Geophysical Surveys and Consulting Government Relations/International Development Information and Marketing Services Management Consulting Services Safety and Health Trade Consultants | South |

| City | Industry Sub-Sector | Region |
|--------------|---|---------------|
| Milton | Electric Power Equipment Environmental Equipment and Services Process Chemicals and Minerals | South |
| Mississauga | Automation and Communications Buildings, Portable Bulk Material Handling Equipment, Systems and Engineering Services Doors Drilling Equipment and Supplies Electric Power Equipment Engineering Contractors Geophysical Instrumentation Geophysical Surveys and Consulting Ground Control Equipment and Supplies Hydraulic Components and Accessories Mineral Processing Equipment and Supplies Mineral Processing - Pumps, Pipes and Valves Mining Engineering and Contracting Packaging Services Surface Mobile Equipment and Components Trade Consultants Translation and Interpretation Services Transportation and Logistics Service Providers Underground Vehicles, Equipment and Components | South |
| New Liskeard | Drilling Equipment and Supplies Underground Vehicles, Equipment and Components | Northeast |
| North Bay | Associations Drilling Equipment and Supplies Lubricants Mineral Processing Equipment and Supplies Underground Vehicles, Equipment and Components | Northeast |
| Oakville | Automation and Communications Blasting Equipment and Services Equipment Maintenance and Repair Smelting and Refining Equipment and Services | South |
| Orangeville | Environmental Equipment and Services Water Treatment Equipment and Services | South |
| Orillia | Mineral Processing Equipment and Supplies | South |
| Oshawa | Mineral Processing Equipment and Supplies Mineral Processing Services Mining Instrumentation | South |

| City | Industry Sub-Sector | Region |
|------------------|--|---------------|
| Ottawa | Associations Analytical Laboratories and Supplies Blasting Equipment and Services Corporate Social Responsibility Finance Consultants and Services Geophysical Surveys and Consulting Software Water Treatment Equipment and Services | South |
| Parry Sound | Bulk Material Handling Equipment, Systems and Engineering Services | South |
| Peterborough | Mineral Processing Equipment and Supplies | South |
| Richmond Hill | Geophysical Surveys and Consulting Mining Engineering and Contracting | South |
| Rockwood | Ground Control Equipment and Supplies | South |
| Sault Ste. Marie | Environmental Equipment and Services Equipment Maintenance and Repair Hydraulic Components and Accessories Mineral Processing Equipment and Supplies Trade Consultants | Northeast |
| St. Catharines | Mineral Processing Equipment and Supplies | South |
| St. George/Brant | Bulk Material Handling Equipment, Systems and Engineering Services Environmental Equipment and Services Surface Mobile Equipment and Components Underground Vehicles, Equipment and Components | South |
| St. Thomas | Underground Vehicles, Equipment and Components | South |
| Greater Sudbury | Associations Automation and Communications Consulting Geologists and Engineers Drilling Equipment and Supplies Engineering Contractors Ground Control Equipment and Supplies Hoisting Equipment and Accessories Information and Marketing Services Management Consulting Services Mineral Processing Equipment and Supplies Mineral Processing - Pumps, Pipes and Valves Radio Frequency Identification Smelting & Refining Equipment and Services | Sudbury |

| City | Industry Sub-Sector | Region |
|------------------|---|---------------|
| Sudbury (cont'd) | Surface Mobile Equipment and Components Underground Vehicles, Equipment and Components Ventilation Equipment and Components | Sudbury |
| Thunder Bay | Water Treatment Equipment and Services | Northwest |
| Tilbury | Hydraulic Components and Accessories | South |
| Timmins | Underground Vehicles, Equipment and Components | Northeast |
| Toronto | Associations Automation and Communications Bulk Material Handling Equipment, Systems and Engineering Services Consulting Geologists and Engineers Corporate Social Responsibility Diesel Engines and Accessories Electric Power Equipment Engineering Contractors Environmental Equipment and Services Equipment Maintenance and Repair Finance Consultants and Services Geophysical Instrumentation Geophysical Surveys and Consulting Hoisting Equipment and Accessories Information and Marketing Services Insurance Consultants and Services Legal Consultants and Services Management Consulting Services Mineral Processing Equipment and Supplies Mineral Processing Services Mine Site Construction Safety and Health Software Translation and Interpretation Services Transportation and Logistics Service Providers | South |
| Trenton | Consulting Geologists and Engineers | South |
| Vaughan | Mining Instrumentation | South |
| Whitby | Bulk Material Handling Equipment, Systems and Engineering Services Mineral Processing Equipment and Supplies | South |
| Woodbridge | Finance Consultants and Services | South |