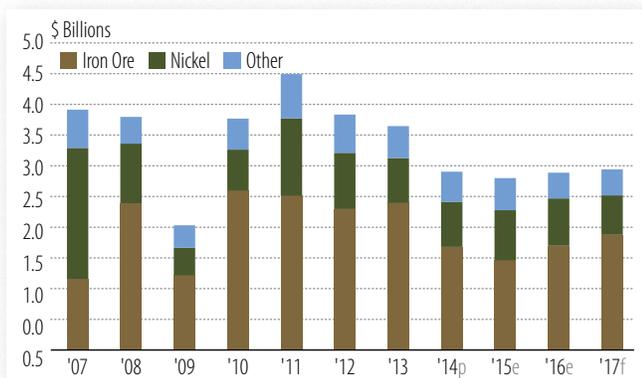




# Mining

The value of provincial mineral shipments totalled \$2.9 billion in 2016, representing an increase of 3.2% from 2015 (see chart). This increase was due to higher iron ore shipment value, which offset lower nickel shipment value. Total mining related employment (including employment associated with activities at Vale’s Long Harbour nickel processing facility) averaged approximately 6,600 in 2016.

## Value of Mineral Shipments



p: preliminary; e: estimate; f: forecast  
 Source: Department of Natural Resources; Natural Resources Canada

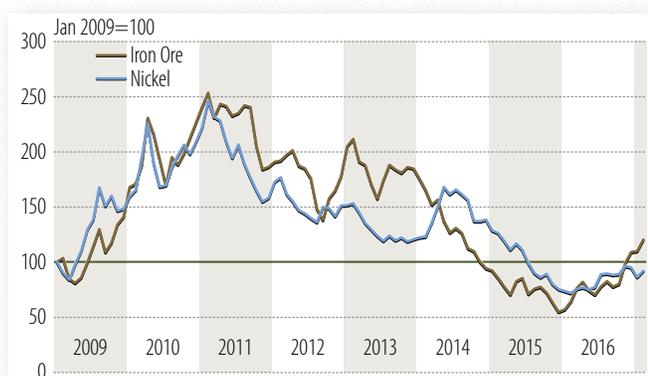
## Market Conditions

Market conditions in 2016 remained challenging for the Newfoundland and Labrador mining industry, reflecting supply/demand imbalances in global commodity markets. However, strong price growth in the latter half of the year provided some relief for the industry.

Since 2013, slowing demand growth for iron ore in China, coupled with continued production increases by a number of key iron ore producers caused iron ore prices to decline substantially (see chart). At the beginning of 2016, prices were at a low of US\$40/tonne. However, a rally which has continued into 2017 has since pushed prices to around US\$90/tonne. Overall, in 2016, iron ore prices averaged US\$58/tonne, up 5.1% from 2015.

Nickel prices also rose over the course of 2016, but the average price for the year (US\$4.36/lb) remained below the 2015 average price. As of early March, nickel prices were around US\$5/lb.

## Mineral Price Indices



Note: Price indices based on U.S. dollar prices  
Source: Bloomberg

### Iron Ore Company of Canada

The Iron Ore Company of Canada (IOC), located near Labrador City, is the province's oldest operating mine. The mine currently employs approximately 1,750 people and plays a key role in the economy of Western Labrador.

From 2011 to 2014, IOC undertook a \$2 billion concentrate expansion program, which increased its rated capacity to 23 million tonnes. However, the operation fell short of its target production of 21 million tonnes in 2016. Lower than planned production stemmed primarily from depletion of ore from the pit and equipment problems which resulted in a 15-day disruption in November. Total concentrate production in 2016 was 19.2 million tonnes, from which 9.8 million tonnes of pellets and 8.4 million tonnes of concentrate were produced.

On February 23, 2017, IOC announced that it would proceed with the Wabush 3 project. The project will consist of an open pit containing 744 million tonnes of iron ore; an overburden storage area; a waste rock disposal pile; haulage roads; a pole line; a groundwater extraction system; and a mine water collection, treatment and disposal system. Construction is expected to start in the second quarter of 2017 and first ore from Wabush 3 is expected in the second half of 2018. The new open pit mine will allow flexibility in providing iron ore feed to the existing concentrator plant to achieve and maintain

production of iron concentrate at the mill's rated capacity. It will also provide a new source of iron ore to extend the life of the operation. The total cost of the project is estimated at \$79 million.

Increasing production to the rated capacity is a major focus for the company. Most of IOC's costs are fixed and increasing production allows the company to reduce its production costs on a per tonne basis.

### Tata Steel Minerals Canada

Tata Steel Minerals Canada's (TSMC) Direct Shipping Ore (DSO) project, which straddles the Québec-Labrador border, is a joint-venture owned by Tata Steel, Ressources Québec and New Millennium Iron Corp. TSMC has deposits in both Labrador and Québec. The first load of iron ore from the project was shipped in September 2013. All shipments during 2016 were sourced from the Newfoundland and Labrador portion of the project.

Weak iron ore markets over the last several years negatively impacted TSMC's operations. As such, the company has determined that it is not economically feasible to operate during the winter months and announced in January 2016 that it was temporarily halting winter operations. Operations resumed in June and again halted for the winter in October 2016. The project generated employment of approximately 150 person years in the province in 2016.

### Vale

The value of nickel shipped by Vale Newfoundland and Labrador (VNL) decreased by 5.4% in 2016 as a result of lower production volume. Employment for all aspects of the Voisey's Bay project, including mining operations and Long Harbour operation and development, averaged about 3,400 persons in 2016. Approximately 450 people were employed at the Voisey's Bay mine site and operational employment (including contractors) at Long Harbour was about 800. Construction activity associated with

Long Harbour remained the biggest contributor to project employment in 2016.

First nickel production at VNL’s Long Harbour nickel processing facility was achieved in July 2014 using imported nickel matte. Voisey’s Bay concentrate was introduced in May 2015, and as of January 2016, the plant has been operating on 100% Voisey’s Bay high grade concentrate. Construction was completed late 2016 that allows the plant to process all grades of nickel concentrate from Voisey’s Bay, including both high and middling grades. VNL estimates a two year ramp-up schedule to reach full plant capacity.

In July 2015, Vale sanctioned the development of the Reid Brook and Eastern Deeps underground mine at Voisey’s Bay. Site preparation has begun and construction is expected to begin this year. Once completed, the underground mine is expected to produce about 40,000 tonnes of nickel concentrate that will be processed into finished nickel at the Long Harbour processing plant. Access to the underground ore is expected to extend the life of the mine beyond 2030 and operational employment is expected to increase from its current level of 450 to approximately 850 when development is complete.

### Other Mines

Rambler Metals and Mining Canada Ltd. (RMM) extracts and processes ore from its copper-gold Ming Mine on the Baie Verte Peninsula. RMM commenced commercial production in November 2012. The company shipped 4,174 tonnes of copper and 6,132 ounces of gold in 2016.

RMM is transitioning from its Ming Mine to a lower grade ore from the Lower Footwall Zone (LFZ) located 100 metres below the Ming Mine. This transition will enable the project to reach a full production capacity of 1,250 metric tonnes of ore per day and increase the mine life to 21 years. First production from the LFZ was achieved in 2016

and the company expects to reach full production levels by the end 2017. The mine currently employs around 180 people.

Anaconda Mining Inc. began gold production in 2008 at its Point Rouse Project near Baie Verte. The project shipped approximately 14,800 ounces of gold in 2016 and Anaconda has registered the expansion of the West Pit of its newly developed Stog’er Tight deposit for environmental assessment. The company continues to work on exploring and delineating other deposits in the area to extend the life of the project. The operation currently employs around 100 people.

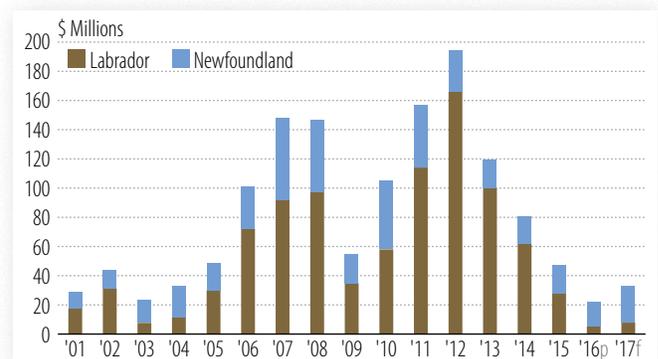
The province’s stone, sand and gravel producers shipped approximately 10.4 million metric tonnes valued at \$45.3 million and generated around 550 person years of employment in 2016.

### Exploration and Development

Mineral exploration and development activity remained depressed in 2016 due to weak markets and a difficult investment climate. Exploration expenditures fell to \$22 million from \$47 million in 2015 (see chart).

Exploration activities continued throughout many regions of Newfoundland and Labrador, albeit at a reduced rate compared to previous years. Companies such as RMM and Anaconda undertook exploration at or near their current operations in

### Mineral Exploration Expenditures



p: preliminary; f: forecast  
Source: Department of Natural Resources

an attempt to identify new resources and extend the lives of the mines. In addition, many junior companies explored for a wide range of minerals including gold, base metals, nickel, potash and salt.

Alderon Iron Ore Corp. indefinitely deferred the development of its Kami iron ore project in 2014 due to declining iron ore prices and difficulties in securing financing. However, the company recently announced that it is planning to reboot the project. The company has not yet released a project schedule, as it is still in the process of conducting detailed engineering and securing the necessary financing.

Canada Fluorspar Inc. (CFI) is developing an open pit fluorspar mine located in St. Lawrence. In early 2016, CFI began preliminary site preparation at the proposed mine site. CFI anticipates that mining operations will start by the end of 2017 and the project is expected to create upwards of 200 full-time jobs per year.

## 2017 OUTLOOK

- The value of mineral shipments is expected to rise as production increases at IOC and Tata more than offset lower nickel production at Voisey's Bay.
    - Iron ore prices have continued to rise thus far in 2017 and as of early March were around US\$90/tonne.
    - Nickel prices have fluctuated in the first two months of 2017, declining in January before rising in February. As of early March, nickel prices were around US\$5/lb.
  - Ramp-up of Vale's nickel processing plant at Long Harbour will continue as the company moves toward nameplate capacity (2019).
  - Construction on the underground mine at Voisey's Bay will continue throughout 2017. Access to the underground ore is expected to extend the life of the mine beyond 2030.
  - Development of IOC's Wabush 3 open pit mine is expected to begin in 2017. First ore from the deposit is expected in 2018.
  - Production at CFI's fluorspar mine is expected to begin this year.
  - Exploration expenditures are expected to increase to about \$33 million.
-