



New Zealand Steel

Economic impact
assessment

Poutū-te-rangi 2021

www.berl.co.nz

Authors: Nick Robertson and Konrad Hurren

All work is done, and services rendered at the request of, and for the purposes of the client only. Neither BERL nor any of its employees accepts any responsibility on any grounds whatsoever, including negligence, to any other person.

While every effort is made by BERL to ensure that the information, opinions and forecasts provided to the client are accurate and reliable, BERL shall not be liable for any adverse consequences of the client's decisions made in reliance of any report provided by BERL, nor shall BERL be held to have given or implied any warranty as to whether any report provided by BERL will assist in the performance of the client's functions.

Making sense of the numbers

New Zealand Steel (NZ Steel) is New Zealand's sole producer of flat rolled and long steel products, making it a vital part of the supply chains for the building, construction, manufacturing and agricultural industries. In New Zealand, the steel manufacturing industry comprises two closely related producers – New Zealand Steel Limited and Pacific Steel, both subsidiaries of BlueScope Steel. Given the links between the two producers (Pacific Steel operations utilise steel products from the Glenbrook Steel Mill) they have been assessed together and are referred to as NZ Steel in this report.

This report is an economic impact assessment that focuses on three types of economic benefits generated by NZ Steel, expenditure, gross domestic product (GDP) and employment, measured in full time equivalent employees (FTEs). A summary of the results are as follows:

Auckland impact (per annum)



Expenditure

Direct \$960 million
Total \$1,162 million



GDP

Direct \$271 million
Total \$431 million



Employment

Direct 1,276 FTEs
Total 2,288 FTEs

New Zealand impact (including Auckland)



Expenditure

Direct \$961 million
Total \$1,621 million



GDP

Direct \$273 million
Total \$596 million



Employment

Direct 1,276 FTEs
Total 4,063 FTEs

Contents

	Auckland impact.....	i
	New Zealand impact (including Auckland)	i
1	Introduction.....	1
1.1	About NZ Steel.....	1
1.2	Scope of the assessment.....	4
1.3	Approach	4
1.4	Report Structure.....	4
2	New Zealand and global steel markets.....	5
2.1	New Zealand steel manufacturing.....	5
2.2	Global steel production	8
2.3	New Zealand steel consumption.....	9
2.4	Global steel forecasts	13
3	Economic impact of NZ Steel.....	14
3.1	Expenditure.....	14
3.2	Gross domestic product (GDP)	16
3.3	Employment.....	16
3.4	Summary	17
Appendix A	References	18
Appendix B	Multiplier analysis	19

Tables

Table 3.1 NZ Steel expenditure 2019/20	15
Table 3.2 NZ Steel expenditure impact 2019/20.....	16
Table 3.3 NZ Steel gross domestic product impact 2019/20.....	16
Table 3.4 NZ Steel employment impact 2019/20.....	17
Table 3.5 NZ Steel Auckland impact 2019/20.....	17
Table 3.6 NZ Steel New Zealand impact 2019/20.....	17

Figures

Figure 1.1 Location of NZ Steel facilities and Auckland Local Board Areas.....	3
Figure 2.1 New Zealand total production of crude steel 2010-2019.....	5
Figure 2.2 New Zealand iron smelting and steel manufacturing GDP 2010-2020.....	6
Figure 2.3 New Zealand iron smelting and steel manufacturing employment 2010-2020	7
Figure 2.4 Global production of crude steel 2010-2019	8
Figure 2.5 New Zealand apparent steel use (crude steel equivalent) 2010-2019	9
Figure 2.6 New Zealand apparent steel use per capita (crude steel equivalent) 2010-2019	10
Figure 2.7 New Zealand indirect steel exports and imports 2010-2019	11
Figure 2.8 New Zealand iron and steel imports 2010-2020	12

1 Introduction

New Zealand Steel (NZ Steel) is New Zealand's sole producer of flat rolled and long steel products, making it a vital part of the supply chains for the building, construction, manufacturing and agricultural industries. In New Zealand, the steel manufacturing industry comprises two closely related producers – New Zealand Steel Limited and Pacific Steel, both subsidiaries of BlueScope Steel (BlueScope). Given the links between the two producers (Pacific Steel operations utilise steel products from the Glenbrook Steel Mill) they have been assessed together and are referred to as NZ Steel in this report.

NZ Steel is in the process of applying for the renewal of resource consents, and making a submission to the Climate Change Commission. To inform these and future applications and submissions NZ Steel requires quality up to date information on the impact it has on the regional (Auckland) and national economies.

NZ Steel commissioned Business and Economics Research Limited (BERL) to analyse the economic and wellbeing impacts of NZ Steel's continued operations within the Auckland and New Zealand economies. This report, prepared for NZ Steel, provides an independent assessment of the economic benefits that have accrued within the Auckland region as well as the New Zealand economy, for the purposes of its resource consent application.

This report has been produced in March 2021 to provide the data and information regarding the economic impacts of NZ Steel relevant to the assessment of the resource consent applications under the Resource Management Act 1991.

1.1 About NZ Steel

NZ Steel was founded in 1965 to convert New Zealand's rich iron sands into steel products. The long-term vision was to establish a steel industry that would utilise the abundant local raw materials. In 1966, construction started on a steel mill at Glenbrook, 65 kilometres south west of Auckland city. Commercial operations began in 1968, with imported feed coil being used to produce steel for domestic and Pacific Island markets. NZ Steel pioneered the direct reduction process for reducing iron oxide (ironsand) into metallic iron. This culminated in the commissioning in 1970 of iron and steelmaking facilities to produce billets for domestic and export markets.

Major investment in the 1980s saw the commissioning of continuous slab-casting facilities and both hot and cold strip mills. By 1987, NZ Steel was operating as a fully integrated steel mill, producing flat steel products made solely from NZ Steel feed stock.

Fast forward to 2021 and the company is the only fully integrated steel producer of steel in New Zealand and supplies both the domestic and export markets. NZ Steel operate a fully integrated steel mill at Glenbrook, as well as the Waikato North Head mine at the mouth of the Waikato River and the Pacific Steel rolling mill in Ōtāhuhu.

NZ Steel has a production process unlike any other in the world. The use of iron sands to produce steel is unique to NZ Steel and is an example of how an industry can successfully adapt to take advantage of a natural resource.

NZ Steel, uses locally-sourced ironsand to manufacture about 650,000 tonnes of steel slab and billet a year at the Glenbrook Steel Mill in the south of the Auckland region. It produces a range of flat and long steel products for domestic and export use, and supplies all major markets including construction, manufacturing, infrastructure, packaging and agriculture.

The integrated steelmaking process starts with the Waikato North Head iron sands mine. The deposit contains more than 150 million tonnes of iron sand. The mine is operated under a long-term exclusive license with the New Zealand government and supplies approximately 1.2 million tonnes per annum of iron sands concentrate to the Glenbrook Steel Mill, sufficient to meet its annual production requirements.

The Glenbrook Steel Mill comprises ironmaking, steelmaking, a slab and billet caster, a hot and cold rolling mill, galvanising line and a paint line. Slabs are rolled into hot and cold rolled products, which are then sold or further processed into products like hollow sections, galvanised steel, ZINCALUME® and COLORSTEEL® roofing products. Steel billets are produced at Glenbrook and sent via rail to Pacific Steel rolling mill for domestic reinforcing and wire products.

Pacific Steel New Zealand, acquired by BlueScope in 2014, is a long product business (rolling mill and wire drawing facilities). Pacific Steel is New Zealand's only manufacturer of wire rod, reinforcing bar and wire products with a production rate of around 250,000 tonnes per year of manufactured steel.

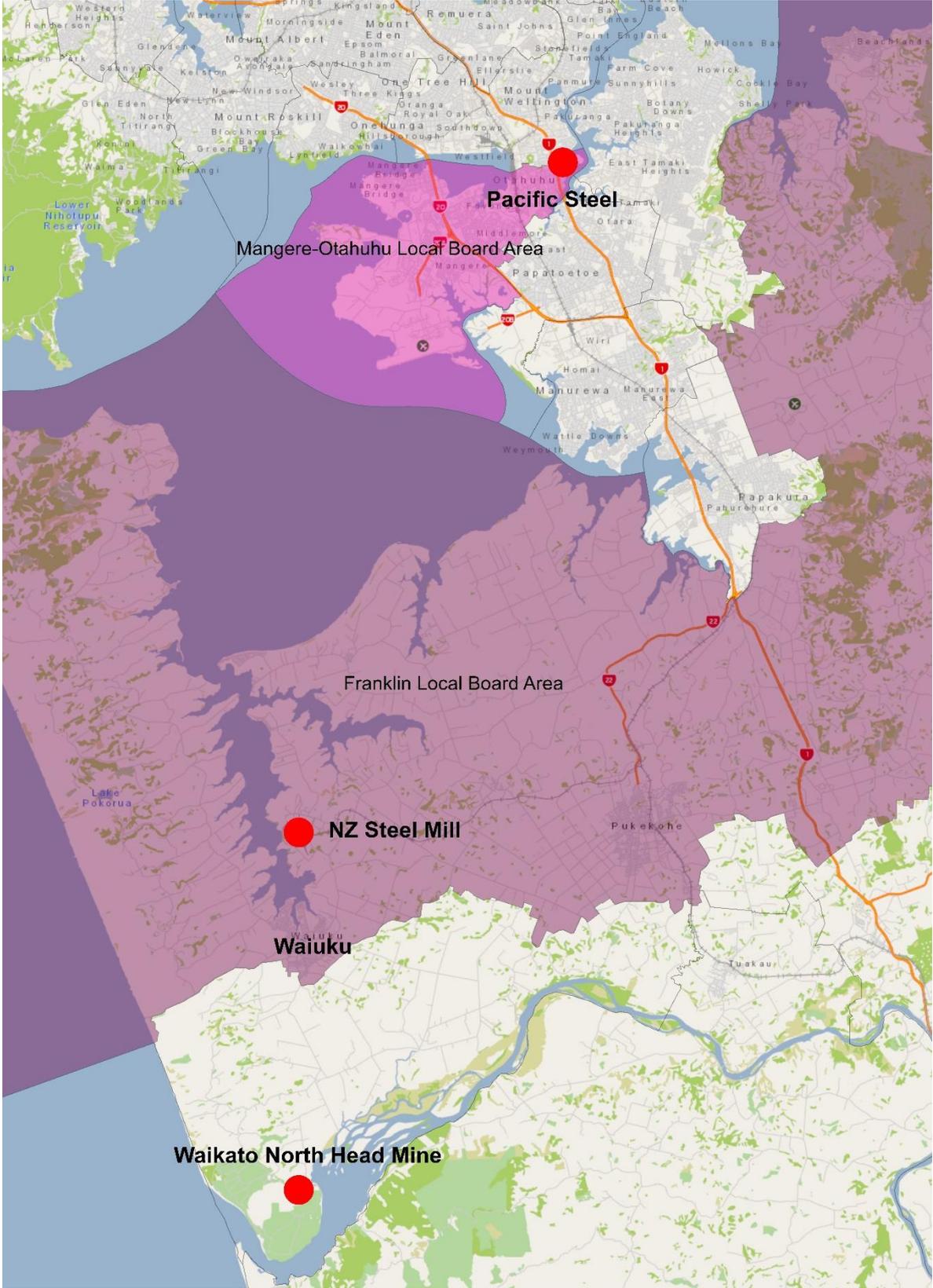
NZ Steel supply steel and steel products to all South Pacific countries. BlueScope operates its own businesses in Fiji (both roll forming and rebar), New Caledonia (roll forming) and Vanuatu (roll forming) and supports other Pacific islands through its agent Tropex. Products manufactured are extensively tested for the cyclonic conditions experienced in the South Pacific.

NZ Steel has been a fully owned subsidiary of International steel manufacturer BlueScope since it was acquired by a predecessor to BlueScope in 1989. BlueScope is one of the world's leading manufacturers of painted and coated steel products, and with its strong expertise in steel, BlueScope provide vital components for houses, buildings, structures, the automotive industry and more.

BlueScope is a flat steel producer and provider of innovative steel materials, products, systems and technologies. Headquartered in Australia, BlueScope has operations spread across North America, Australia, New Zealand, Pacific Islands and Asia.

The extensive global networks is seen as one of BlueScope's great strengths. BlueScope employ over 14,000 people globally and serve thousands of customers every day with 160 operations and sales offices across 18 countries. In the year to 30 June 2020 BlueScope sold 7,083 kilotons of steel products.

Figure 1.1 Location of NZ Steel facilities and Auckland Local Board Areas



Source: NZ Steel, Land Information New Zealand, Eagle Technology

1.2 Scope of the assessment

This report provides a full assessment of the range of economic contributions NZ Steel makes to the economies of Auckland and New Zealand. This report is an economic impact assessment that focuses on three types of economic benefits that are generated by NZ Steel, expenditure, employment and gross domestic product (GDP).

1.3 Approach

The overall project to assess the impact of NZ Steel is being delivered in two stages. The first stage was to quantify the core business of NZ Steel in terms of expenditure and employment. Operational and capital expenditure data was collected from NZ Steel. BERL used its economic impact assessment model to analyse the data. The model uses multipliers to estimate the direct, indirect and total impact NZ Steel has on expenditure, employment and gross domestic product (GDP).

Because of NZ Steel's location in South Auckland and North Waikato and the importance of NZ Steel to national industries, the impacts of NZ Steel on these three measures were assessed for the Auckland region as well as New Zealand as whole. More information on the multiplier approach to the economic impact assessment is included as Appendix B.

The second stage will be to determine how NZ Steel contributes to the social, cultural and environmental wellbeing. To determine these effects BERL will use NZ Steel's corporate documents and public reporting to assess NZ Steel's contribution to wellbeing. This will be supported by interviews with internal NZ Steel staff and local stakeholders including iwi, residents and representatives from local businesses and community groups. NZ Steel is connected to its local community and as a result community investment is focussed locally. Because of this, impacts on social, cultural and environmental wellbeing will be primarily focussed on the Franklin Local Board Area and South Auckland.

1.4 Report Structure

This report has two main sections:

- New Zealand and global steel markets
- Economic impact of NZ Steel.

2 New Zealand and global steel markets

This section sets out the New Zealand and global steel markets to position NZ Steel within a national and international context. This section focuses on New Zealand steel production and the contribution metal manufacturing makes to New Zealand’s GDP and employment. The section concludes New Zealand’s use of steel before focussing on forecasts for future global steel production.

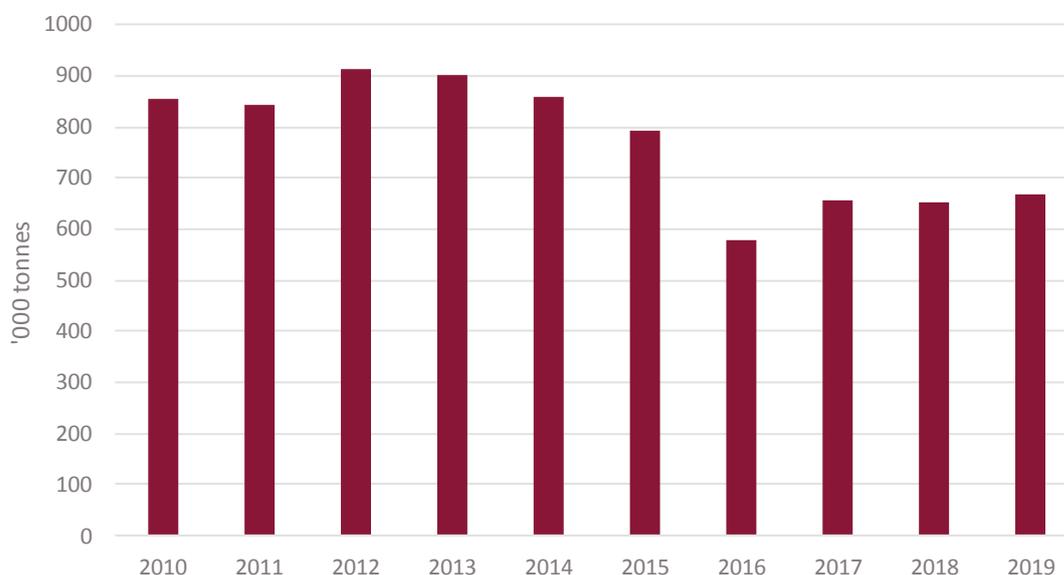
Data in this section is collected from two sources, Statistics New Zealand and the World Steel Association. Statistics New Zealand information is available for 2020. However, World Steel Association data is only available up to 2019.

2.1 New Zealand steel manufacturing

The total production of steel in New Zealand in 2019 was the equivalent of 667,000 tonnes of crude steel as shown in Figure 2.1. This is a decline from a high of 912,000 tonnes in 2012. The decline in consumption, which began in 2013, includes the closure of Pacific Steel’s primary steel making facilities.

In the following years, New Zealand’s domestic steel production declined to just 557,000 tonnes in 2016. Since 2016 the industry has recovered and production in 2019 was 19.7 percent greater than 2016.¹

Figure 2.1 New Zealand total production of crude steel 2010-2019



Source: World Steel Association

2.1.1 Iron smelting and steel manufacturing contribution to GDP

In 2020 the metal and metal products manufacturing industry contributed \$3.9 billion to New Zealand’s GDP. This was the greatest GDP contribution from the industry since 2008 and was 1.4

¹ World Steel Association (2020). *Steel Statistical Yearbook 2020 concise version*.

percent of New Zealand’s total GDP. In 2020 iron smelting and steel manufacturing accounted for \$165.6 million (4.2 percent) of the industry contribution to GDP.

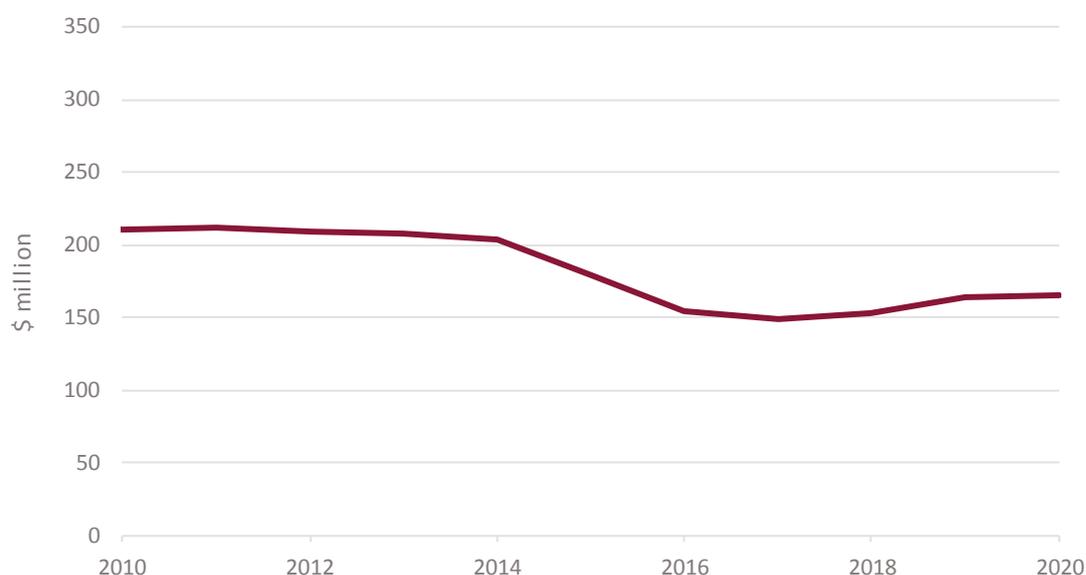
The contribution of iron smelting and steel manufacturing to national GDP has followed a similar trend as production with a steep decline in GDP in 2016 followed by a smaller decline in 2017. Following the 2017 dip, the contribution of iron smelting and steel manufacturing has recovered out to 2020. The contribution of iron smelting and steel manufacturing to GDP was \$211 million in 2011. However, this declined year on year reaching a low of \$154 million in 2017.

The reduction in steel production at this time was not unique to New Zealand. During the course of 2015 steel consumption decreased in some major steel-consuming economies before showing signs of recovery in the beginning of 2016.

In 2015 in many steel-producing countries steel market sentiment deteriorated, in line with falling or slowing growth in many economic activity indicators linked to steel demand, such as manufacturing activity and fixed investment.² Growth in world crude steel production decelerated significantly in this period and world steel production continued to decline sharply during the first months of 2016. The world steel price index, which had been trending downwards since 2011, bottomed out in December 2015.³

As shown in Figure 2.2, since the 2017 low, the GDP generated by iron smelting and steel manufacturing has recovered but remains 22 percent below the high of the last 10 years in 2011.

Figure 2.2 New Zealand iron smelting and steel manufacturing GDP 2010-2020



Source: Source: Statistics New Zealand, BERL Local Authority Database

As the total GDP of the iron smelting and steel manufacturing sector has declined, so too has its proportion of New Zealand’s total GDP. In 2010 the iron smelting and steel manufacturing sector contributed 0.1 percent of GDP. However, this fell to 0.06 percent in 2016 and has remained at or around this level.

² OECD (2016). *Recent market developments in the global steel industry*.

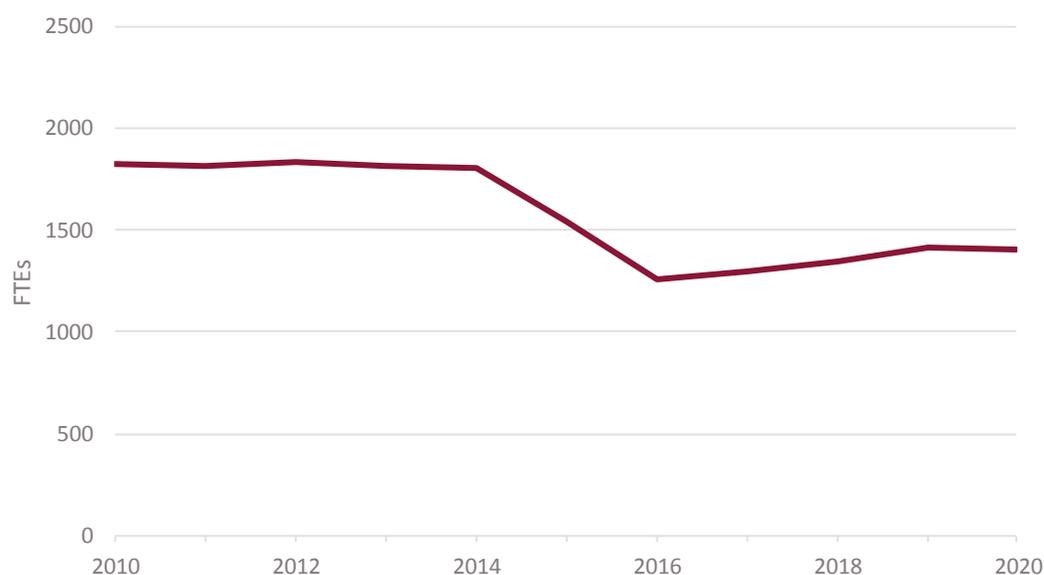
³ OECD (2016). *Steel market developments Q4 2016*.

2.1.2 Iron smelting and steel manufacturing employment

Employment in iron smelting and steel manufacturing has followed a similar path to that of industry production and GDP. Iron smelting and steel manufacturing employment in 2020 was 1,407 full time equivalent employees (FTEs). This is a 419 FTE decline since 2010.

Like total steel production and iron smelting and steel manufacturing GDP, iron smelting and steel manufacturing employment fell in 2016 and has only partially recovered since then. Figure 2.3 shows employment in iron smelting and steel manufacturing fell from 1,802 FTEs in 2014 to 1,255 in 2016. A 30 percent fall in employment.

Figure 2.3 New Zealand iron smelting and steel manufacturing employment 2010-2020



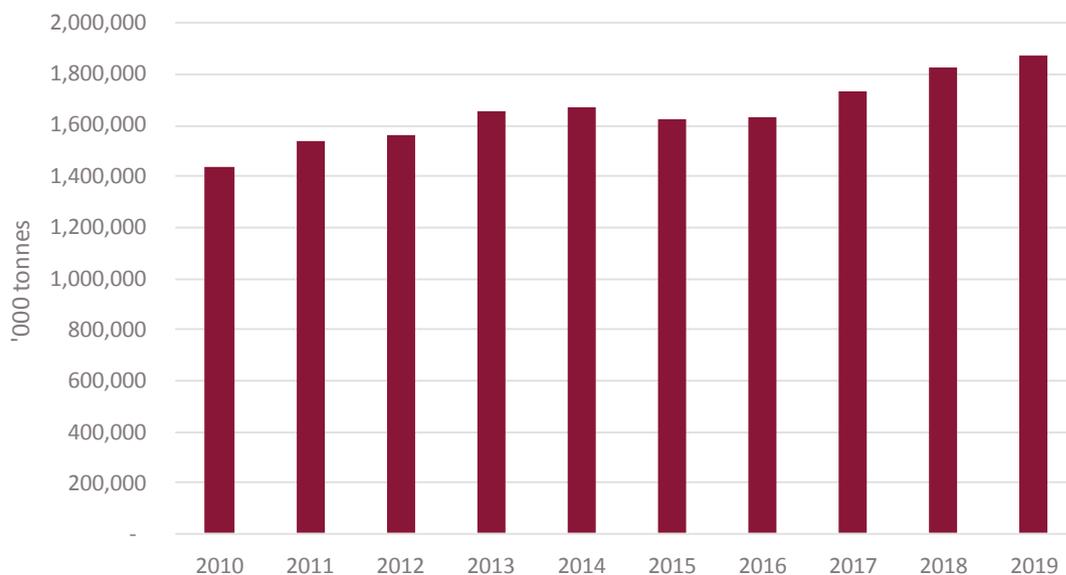
Source: Source: Statistics New Zealand, BERL Local Authority Database

The decline in iron smelting and steel manufacturing employment in the past decade has also seen the sector's employment as a proportion of national employment fall from 0.1 percent of all New Zealand FTEs in 2010 to 0.06 percent in 2020.

2.2 Global steel production

While New Zealand steel production has fallen, global steel production of crude steel increased over the past decade from 1.43 billion tonnes in 2010 to 1.88 billion tonnes in 2019 as shown in Figure 2.4.

Figure 2.4 Global production of crude steel 2010-2019

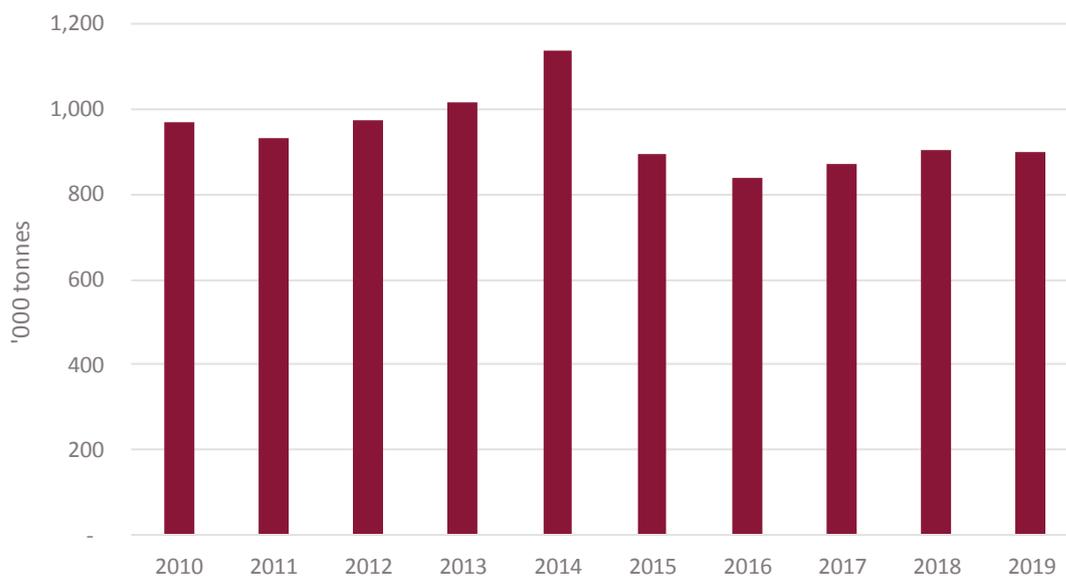


Source: World Steel Association

2.3 New Zealand steel consumption

New Zealand's consumption of steel, recorded as crude steel equivalent, has fallen 22.2 percent since 2010 as shown in Figure 2.5. This is compared to a 33.1 percent increase in global steel consumption over the same period. As with domestic production, New Zealand's total consumption of steel fell in 2015. Domestic consumption fell from 1.1 million tonnes in 2014 to 895,000 tonnes in 2015, and again to 837,000 tonnes in 2016. Domestic consumption has recovered slowly since 2016. Domestic consumption was 897,000 tonnes in 2019. An increase of 7.2 percent from 2016. The global consumption jumped 15.1 percent in the same period.

Figure 2.5 New Zealand apparent steel use (crude steel equivalent) 2010-2019



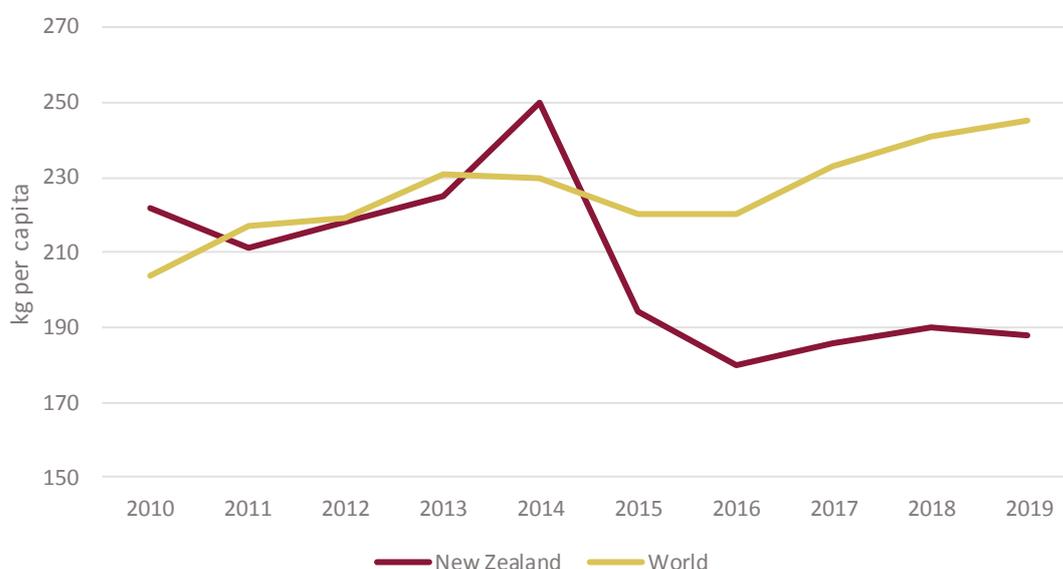
Source: World Steel Association

2.3.1 New Zealand steel consumption per capita

The decline in New Zealand's steel consumption is highlighted in the apparent steel use per capita of crude steel equivalent as shown in Figure 2.6. In 2010 New Zealand was consuming 222kg of crude steel equivalent per capita compared to a global average of 204kg per capita. New Zealand consumption per capita tracked alongside the global average until 2014 when New Zealand's consumption peaked at 250kg per capita, compared to the global average of 230kg.

In 2015 New Zealand crude steel consumption per capita fell to 194kg per person and fell again in 2016 to just 180kg per person. This has increased to 188kg per person in 2019. By comparison global consumption has increased to 245kg per person, just below New Zealand's 2014 peak.

Figure 2.6 New Zealand apparent steel use per capita (crude steel equivalent) 2010-2019



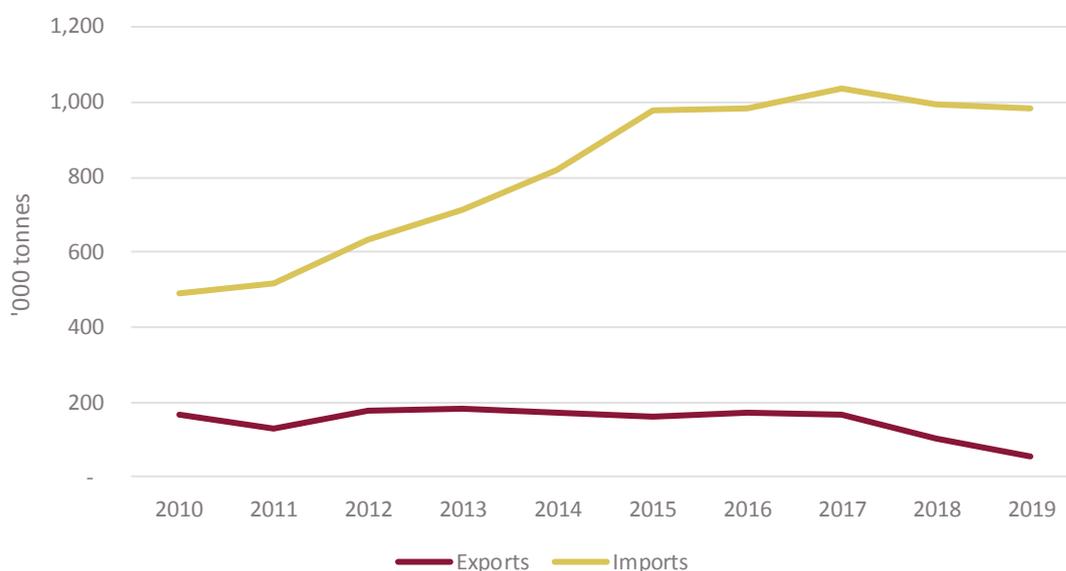
Source: World Steel Association

2.3.2 Volume of New Zealand steel imports and exports

New Zealand’s reliance on imported steel has increased since 2010, while exports remained reasonably steady over the decade before declining in 2018 and 2019 as shown in Figure 2.7. New Zealand imports of steel have increased significantly during the 2010s. Indirect imports of steel⁴ grew 101.4 percent from 2010 to 2019. The period of growth was between 2011 and 2016, when indirect imports increased from 489,000 tonnes in 2010 to 985,000 tonnes in 2016. Since 2016 indirect steel imports have remained reasonably constant peaking at 1.04 million tonnes in 2017 before falling back to 2016 levels in 2019.

New Zealand steel exports have predominantly been to Australia and the Pacific Islands. Between 2010 and 2017 indirect steel exports ranged between 131,000 and 182,000 tonnes. Then in 2018 exports fell by 65,000 tonnes (38.9 percent) to 102,000 tonnes. In 2019 indirect steel imports fell by a further 45 percent to 56,000 tonnes.

Figure 2.7 New Zealand indirect steel exports and imports 2010-2019



Source: World Steel Association

⁴ Indirect trade in steel covers exports and imports of goods which contain steel. For example, there are many different steel products in an average car that are included in indirect trade.

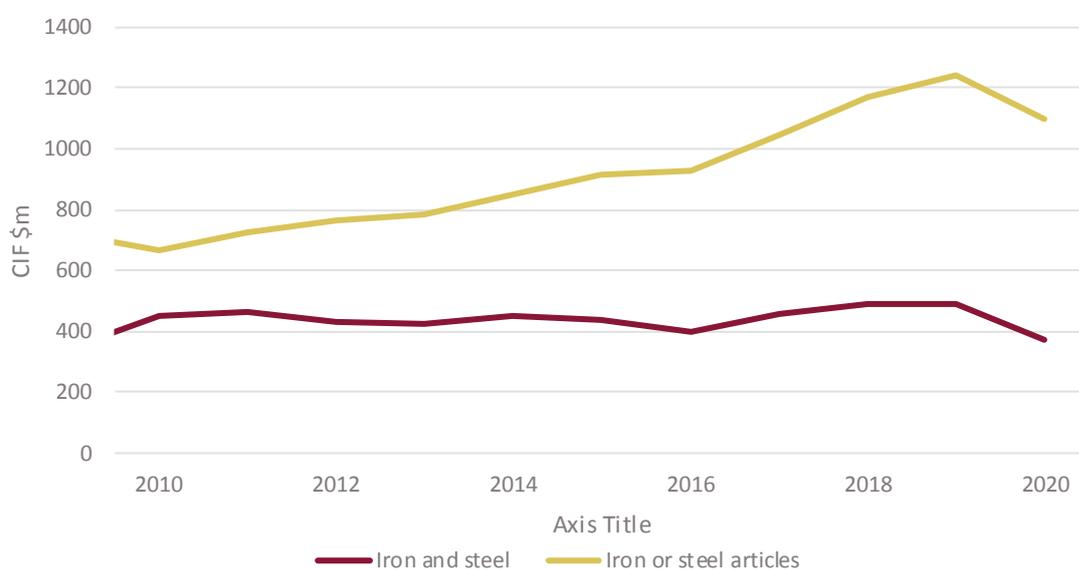
2.3.3 Value of New Zealand steel imports

The value of New Zealand’s iron and steel imports has increased over the past decade, however it declined in 2020. The combined value of iron and steel and iron and steel products was \$1.73 billion in 2019 and \$1.47 billion in 2020. Since 2010 the total value of iron and steel and iron and steel articles has increased 32 percent. In 2019, before the 2020 decline, imports had increased 55 percent from 2010.

Iron and steel remained reasonably consistent over the past decade. The value of New Zealand iron and steel imports was between \$387.5 million and \$487.5 million between 2010 and 2019. However, in 2020 imports of steel fell to \$372.9 million.

Imports of iron and steel articles increased every year to 2019. In 2010 New Zealand imports of iron and steel articles was \$668.4 million. By 2019 this had increased 85.5 percent to \$1.24 billion.

Figure 2.8 New Zealand iron and steel imports 2010-2020



Source: Statistics New Zealand, BERL Local Authority Database

The 2020 declines in iron and steel and iron and steel article imports is likely to be due to the impact of COVID-19 on global steel production and demand as a result of lockdowns in many countries, including New Zealand, slowing or even stopping steel production and activities that require steel. However, it will be a few years before we fully understand the extent of the COVID-19 impact on steel imports as the global economy recovers and production returns to capacity in many of the major steel producing countries. Whether the decrease seen in 2020 continues in the long term remains to be seen.

2.4 Global steel forecasts

Steel markets worsened in 2019 and steel production growth turned negative in all regions, with the exception of Asia and the Middle East. Weakening global economic activity, uncertain prospects for steel demand growth, and the new capacity investments in some regions risk to exacerbate supply-demand imbalances.

In 2020 COVID-19 resulted in demand and production shocks that impacted all economic sectors including steel. Steel production declined in all regions (in aggregate terms) during the first half of 2020. The demand and production shocks caused by the COVID-19 outbreak began to abate in the second half of 2020 as countries improved their response to the pandemic.⁵ However, the impact of COVID-19 risks resulting in long-lasting and significant impacts on the global steel sector.

The World Steel Association's Short Range Outlook released in October 2020 forecast that steel consumption growth turned negative in the first three months of 2020 due to the initial impact of COVID-19 on the global economy. Total global steel consumption is estimated to have decreased by 2.4 percent in this period compared to the same period one year earlier. Asia and Oceania steel consumption has gone against this trend and is estimated to have grown 2.1 percent in 2020 after 6.6 percent growth in 2019.

World Steel Association assessments of the impacts of COVID-19 on steel consumption suggest that the steel market could face a prolonged period of weaker demand. However, a strong initial recovery is expected. The World Steel Association forecast a 4.1 percent increase in steel demand in 2021, with global demand increasing to 1.8 billion tonnes. Given the strong resilience of Asia and Oceania steel demand in 2020 the increase for the region is forecast to lower than this at 2.5 percent in 2021.⁶

⁵ OECD (2020). *Steel market developments – Q4 2020*

⁶ World Steel Association (2020). *Press release – worldsteel Short Range Outlook October 2020*

3 Economic impact of NZ Steel

This section examines the economic impact of NZ Steel's operations on the Auckland region and New Zealand as a whole. The focus is on Auckland, as NZ Steel's production facilities, the Glenbrook Steel Mill site in the Franklin Local Board Area, and Pacific Steel in Ōtāhuhu, in the Māngere-Ōtāhuhu Local Board Area, are within the Auckland region. NZ Steel also has activities in the Waikato region at the North Head Mine in Otatau in the north of the Waikato District territorial authority area and the Waikato region.

Given the proximity of Waikato North Head Mine to the southern border of the Auckland region we have assumed that the majority of the employment benefits will accrue in Auckland. However, there is likely to be some spill over into the northern Waikato region from employees who travel into the Auckland region to work at NZ Steel facilities.

The operations of NZ Steel are defined as the operating and capital expenditure of NZ Steel for the 2019/20 financial year. As NZ Steel have not made a significant new investment in this period the capital investment made in 2019/20 has been combined with operational expenditure for the purposes of this assessment. These expenditures are regarded as a direct impact on the Auckland regional economy and the New Zealand economy.

Indirect and induced impacts are also considered using a multiplier approach. These impacts can be described as:

- Indirect impacts – NZ Steel purchases goods and services from various suppliers and contractors. These suppliers and contractors in turn make purchases from their suppliers, in order to supply goods and services to NZ Steel
- Induced impact – NZ Steel employs people directly as do their suppliers. These people earn income (mostly through wages and salary, but also from profits), and once they have paid their tax, this income can be used to purchase goods and services elsewhere in the economy.

These economic impacts are measured in terms of expenditure, gross domestic product (GDP) and employment, measured as full time equivalents (FTEs)⁷.

3.1 Expenditure

NZ Steel's total expenditure in the 2019/20 financial year was \$961 million. Staff wages was the largest individual cost. NZ Steel paid \$187 million of wages in 2019/20. Total expenditure in New Zealand on materials and labour was \$659 million with a further \$217 million of expenditure on imports and an operating surplus of \$86 million.

The total value of NZ Steel's domestic and international material inputs was \$472 million in 2019/20. Of this, 200 million (42 percent) was sourced from within the Auckland region.

As shown in Table 3.1 the largest industry where NZ Steel spent was electricity generation and on selling, where \$96 million was spent in 2019/20. Of this expenditure, 36 percent was within the Auckland region and the remainder spread across the rest of New Zealand.

NZ Steel's Glenbrook Steel Mill is the second largest single site consumer of electricity in New Zealand. NZ Steel uses approximately 1,060 gigawatt hours of electricity at its Glenbrook site, 43 gigawatt hours at the Waikato North Head Mine and 35 gigawatt hours at Pacific Steel in Ōtāhuhu.

⁷ Full time equivalent employees are employees that work a full working week. Two part time employees working half a week each count as a single FTE.

Electricity accounts for approximately 78 percent of energy requirements with the remainder met from natural gas.

NZ Steel also spent a significant (\$93 million) proportion on scientific, architectural and engineering services. 71 percent, of this expenditure, was within the Auckland region. NZ Steel employs a number of specialist contractors with a large number permanently based on site at Glenbrook. Scientific, architectural and engineering suppliers to NZ Steel with staff located onsite include BECA, Alinta Energy and Integrated Maintenance Group.

Another significant area of expenditure was on coal, which is used as part of the steel making process in NZ Steel's kilns. NZ Steel consumed \$144 million of coal in 2020, Of this \$82 million was domestically sourced with the remainder from overseas imports.

Labour costs were \$187 million in 2019/20 with the majority assumed to be wages paid to employees living within the Auckland region. Further information on employment is included in section 3.3.

Table 3.1 NZ Steel expenditure 2019/20

Expenditure area	\$m
Electricity generation and on-selling	96
Scientific, architectural and engineering services	93
Coal mining	82
Road transport	50
Non-residential building construction	32
Pharmaceutical, cleaning, and other chemical manufacturing	32
Basic material wholesaling	24
Gas supply	23
Basic chemical and basic polymer manufacturing	17
Metal ore and non-metallic mineral mining and quarrying	12
Banking and financing; financial asset investing	7
Advertising, market research and management services	5
Total domestic material inputs	472
Imports	217
Wages	187
Operating surplus	86
Total expenditure	961

Source: NZ Steel

When indirect and induced impacts are included, the total expenditure impact of NZ Steel on the New Zealand economy is \$1.62 billion. As shown in Table 3.2 this was an additional \$268 million of indirect expenditure and \$392 million of induced expenditure.

Although 99.9 percent of NZ Steel's expenditure is captured within the Auckland region a large proportion, if not all, of the production of these inputs occurs outside Auckland. As a result, the indirect and induced benefits are spread across New Zealand. Key examples are NZ Steel's energy inputs where electricity is generated outside the region and natural gas comes from Taranaki.

The Auckland region received \$1.16 billion of NZ Steel’s expenditure impact (71 percent). This was made up of \$960 of direct expenditure, \$125 million of indirect expenditure and \$77 million of induced expenditure.

Table 3.2 NZ Steel expenditure impact 2019/20

	Direct	Indirect	Induced	Total
Auckland (\$m)	960	125	77	1,162
New Zealand (\$m)	961	268	392	1,621

Source: NZ Steel, BERL calculations

3.2 Gross domestic product (GDP)

NZ Steel’s expenditure contributes to Auckland and New Zealand’s gross domestic product (GDP). In 2019/20 the GDP impact on New Zealand’s economy was \$596 million. This includes \$271 of direct impact, \$107 million indirect impact and \$216 million of induced impact.

The Auckland region accounts for 72 percent of the total GDP impact, \$432 million. The GDP impact is spread across \$271 million of direct impact, \$59 million of indirect impact and \$101 million of induced impact.

Table 3.3 NZ Steel gross domestic product impact 2019/20

	Direct	Indirect	Induced	Total
Auckland (\$m)	271	59	101	431
New Zealand (\$m)	273	107	216	596

Source: NZ Steel, BERL calculations

To put the direct contribution of NZ Steel to Auckland’s GDP into context the direct impact of NZ Steel in Auckland is comparable to commission-based wholesaling industry which had a direct GDP contribution of \$250 million in 2020 and the accommodation industry which directly contributed \$307 million to Auckland’s GDP.⁸

3.3 Employment

NZ Steel employs 1,276 full time equivalent employees (FTEs) across the Glenbrook, Ōtāhuhu and Waikato North Head Mine sites. The majority of NZ Steel’s employees live in the Auckland region with approximately five percent travelling north into the Auckland region from the Waikato region.

We have assumed that the employment impacts for these employees will be captured within the Auckland region. Because of the high level of connectivity and interactions between the northern part of the Waikato region and the southern part of the Auckland region there are likely to be flows both ways across the regional border.

The direct impact of NZ Steel’s employment is the 1,276 staff employed by NZ Steel. Within the Auckland region the total employment impact of NZ Steel is 2,988 FTEs who are supported by NZ Steel’s presence and operation within the region. As well as the direct employment, NZ Steel contributed 1,712 indirect and induced employees in the Auckland region.⁹

⁸ Business and Economics Research Limited (2021). *BERL local authority database*.

⁹ Due to the way data was captured and analysed induced and indirect employment have been combined for the purpose of this assessment.

As identified in sections 3.1 and 3.2, NZ Steel has a significant national impact. This continues through to employment. Nationally, the employment impacts of NZ Steel supports a total of 4,063 FTEs. The additional indirect and induced FTEs outside Auckland bring the national total of indirect and induced FTEs to 2,787.

Table 3.4 NZ Steel employment impact 2019/20

	Direct	Indirect	Induced	Total
Auckland (FTEs)	1,276		1,712	2,988
New Zealand (FTEs)	1,276		2,787	4,063

Source: NZ Steel, BERL calculations

The 1,276 FTEs employed by NZ Steel across its three sites is comparable to Auckland's total employment in heritage activities (1,311 FTEs), artistic activities (1,321 FTEs) and motion picture and sound recording activities (1,490 FTEs).¹⁰

3.4 Summary

Across the Auckland region NZ Steel has a total expenditure impact of \$1.16 billion, a GDP impact of \$431 million and an employment impact of 2,988 FTEs.

Table 3.5 NZ Steel Auckland impact 2019/20

	Direct	Indirect	Induced	Total
Expenditure (\$m)	960	125	77	1,162
GDP (\$m)	271	59	101	431
Employment (FTEs)	1,276		1,712	2,988

Source: NZ Steel, BERL calculations

The benefits of NZ Steel reach outside the Auckland region. The inputs into NZ Steel's production and continuing operation are drawn from across the country. The total expenditure impact on the New Zealand economy is \$1.62 billion. While the majority of the direct impact is captured in Auckland, 28 percent (\$459 million) of the total expenditure is outside Auckland. This includes 53 percent of indirect expenditure (\$142 million) and 80 percent of induced expenditure (\$315 million).

28 percent (\$165 million) of the GDP impact of NZ Steel occurs outside Auckland. This includes 45 percent of indirect GDP (\$48 million) and 53 percent of induced GDP impact (\$115 million)

NZ Steel's impact on employment is spread widely across New Zealand, with over a quarter (26 percent) of the employment impact (1,075 FTEs) outside Auckland.

Table 3.6 NZ Steel New Zealand impact 2019/20

	Direct	Indirect	Induced	Total
Expenditure (\$m)	961	268	392	1,621
GDP (\$m)	273	107	216	596
Employment (FTEs)	1,276		2,787	4,063

Source: NZ Steel, BERL calculations

¹⁰ Business and Economics Research Limited (2021). *BERL local authority database*.

Appendix A References

Business and Economics Research Limited (2021). *BERL local authority database*.

OECD (2016). *Recent market developments in the global steel industry*.

OECD (2016). *Steel market developments Q4 2016*.

OECD (2020). *Steel market developments Q4 2020*

World Steel Association (2020). *Press release – worldsteel Short Range Outlook October 2020*

World Steel Association (2020). *Steel statistical yearbook 2020 concise version*.

Appendix B Multiplier analysis

The analysis in this report uses multipliers derived from inter-industry input-output tables for New Zealand. Input-output tables have been derived and updated from the national input-output tables produced by Statistics New Zealand.

Multipliers allow us to identify the direct, indirect and induced effects in terms of expenditure, gross domestic product (GDP), and full-time equivalent (FTE) employment.

Measures of economic activity

The three measures used are:

Expenditure: The value of production, which is built up through the national accounts as a measure of gross sales or turnover. This is expressed in \$million at constant prices (i.e. removing the effect of inflation), and includes GST.

GDP: The increase in output generated along the production chain, which when aggregated, totals gross domestic product, or GDP. This is the sum of:

- Compensation of employees (i.e. salaries and wages)
- Income from self-employment
- Depreciation
- Profits
- Indirect taxes less subsidies.

Note that expenditure is made up of the above (value added) plus:

- Intermediate purchases of goods (other than stock in trade)
- Intermediate purchases of services.

Employment: The volume of employment is usually expressed as full-time equivalents (FTEs). These are estimated as the number of full-time employees and working proprietors and one-third of the number of part-time employees, converted to an annual basis.

FTEs provide a measure of total labour demand associated with expenditure - e.g. four full-time jobs running for three months or three part time jobs running for a year would be shown as a single FTE.