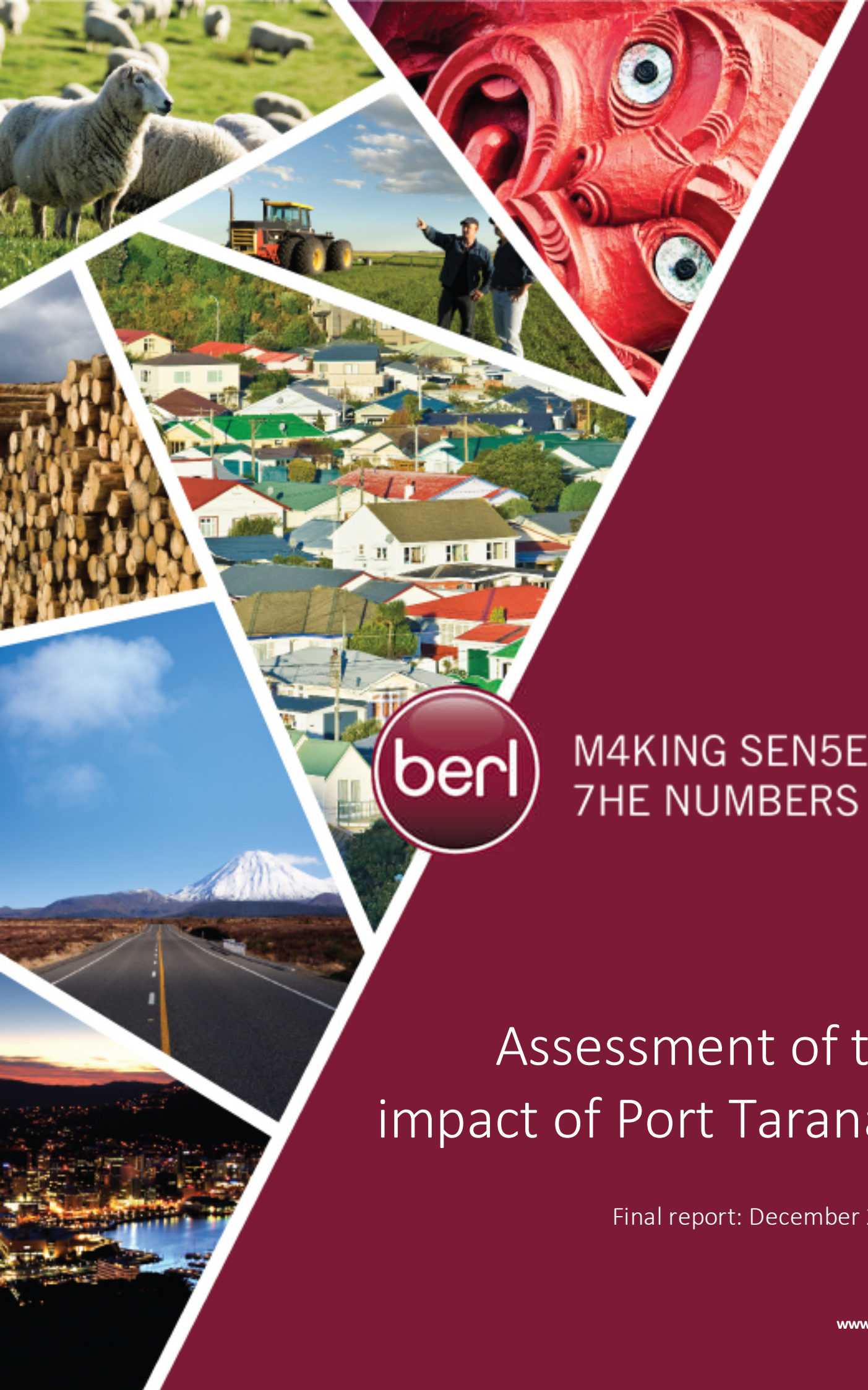

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# Assessment of the impact of Port Taranaki

Final report: December 2017

www.berl.co.nz

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# Making sense of the numbers

*Allowing for flow-on effects, the Port's operations are estimated to generate $28 million in Value Added (GDP) the current year. They also generate 319 full-time equivalent jobs (FTEs).*

*The Port's important enabling role can be seen from the estimates that its users and service providers are likely to generate $353 million in Value Added (GDP) the current year, and 929 FTEs.*

This report presents the findings of an economic impact assessment of Port Taranaki in 2017, encompassing:

- the impacts of the Port as a business in its own right;
- the impacts of the businesses that use the Port and provide services to it; and,
- the impacts of the Port on the wider regional economy.

The current assessment is the third in a series, the previous assessments having been undertaken in 2007 and 2012. This enables the changing impact of the Port over time to be observed.

The mix of cargoes passing through the Port has changed markedly since 2012. Oil and gas exploration and development activities have decreased, and this has affected the Port. There is no longer any container traffic through the Port. On the other hand, the volume of logs exported has increased, as has the volume of animal feedstuffs.

Allowing for flow-on effects, the Port's operations are estimated to generate $28 million in Value Added (GDP) the current year. They also generate 319 full-time equivalent jobs (FTEs).

The Port's important enabling role can be seen from the estimates that its users and service providers are likely to generate $353 million in Value Added (GDP) the current year, and 929 FTEs.

The Port also plays an important role in other ways. It facilitate the imports and exports of the Region's industries, the dividends it pays help to keep the Regional rates burden in check, and it sponsors and supports sporting and other social activities in the community.

Allowing for flow-on effects, the Value Added from the Port's own operations remained broadly stable between 2007 and 2017, but the operations' impact on Employment has increased.

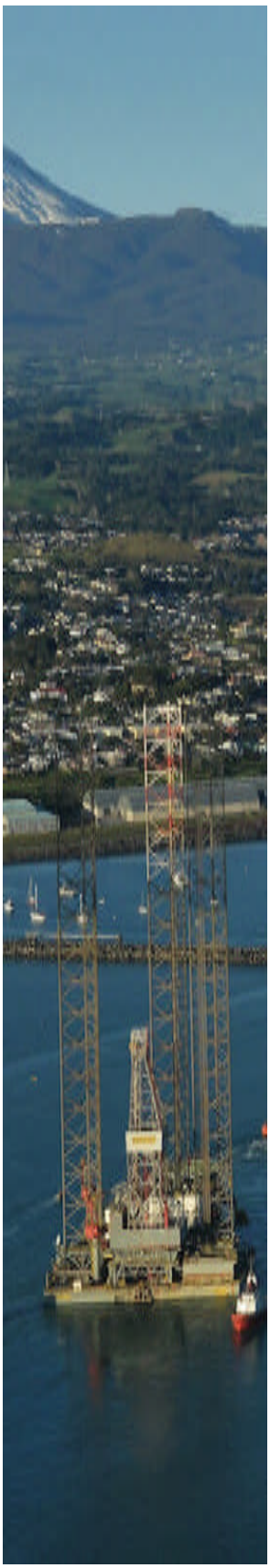
The Value Added from the activities of Port users and service providers has increased, but their impact on Employment has decreased.

The economic impact of both the Port's operations and the activities of Port users and service providers were greater in 2012 than in either 2007 or 2017. This somewhat complex finding reflects a combination of: the oil price being substantially higher in 2012 than in 2007, or today; the changing mix of cargoes through the Port; and, the changing composition of the activities of the Port users and service providers.

Despite its ups and downs, however, the Port remains a key part of the Taranaki economy, and it is likely to remain so.

# Contents

# 1 Introduction



BERL has been tasked by the Taranaki Regional Council with providing an estimate of the contribution of Port Taranaki to the economy of the Taranaki Region. This report is the third iteration of such an exercise, with the first occurring in 2007 and the second in 2012.

Port Taranaki is a major export port in New Zealand, and it supports industries such as oil and gas; petrochemicals; logging and agriculture. In this report, we start by examining the economic impact of the Port as a business entity in its own right. We then consider the economic impact of the businesses that use or provide services to the Port. We then look at the value of the port in relation to its role as an enabler for the regional economy, and as a corporate citizen.

At the end of the report we show how the economic impact of the Port has changed since 2007.

## Methodology

The approach we use is a conventional Economic Impact Assessment (EIA). This is consistent with the approach we have followed in previous assessments for Port Taranaki. Briefly, we obtain an estimate of Output of Port Taranaki from the financial statements, and then use Input-Output tables to determine what the economic impact of this Output is on the wider region. The Input-Output tables are used to capture the flow-on (I.e. multiplier) effects generated by the Port's operations.

The Output estimates are also used to estimate the impact of the Port on Value Added (or GDP) and Employment (measured in Full-time Equivalents (FTEs)).

More information on the EIA approach is provided in Appendix A.

# 2 Port Taranaki as a strategic regional asset

Ports in general comprise an essential part of the infrastructure and, hence, the production process. They make possible the distribution of goods to where businesses and consumers need them. Thus, they add immense value in the production process. This distribution role is well understood through the lens of New Zealand as an export-oriented country, but it must be remembered that what is imported is just as important.

Exported goods are likely to be final goods from the perspective of New Zealand businesses; and, so, they represent earnings. Imported goods are more likely to be goods that are not yet final goods and are often comprised of raw materials.

For Port Taranaki specifically, the main exports are oil products and logs, which can be viewed from the perspective of their New Zealand producers as final products. The main imports are animal food and fertilizer. Further detail on the flows of cargos through the Port is provided in Section 3.

*For Port Taranaki the main exports are oil products and logs*

*The main imports are animal food and fertilizer*

Identifying these types of goods specifically sheds light on the strategic value of ports in general, and on Port Taranaki in particular. The export of oil products and logs represents income to the companies in those industries, while the import of foodstuffs and fertilizer represent key inputs used in another of New Zealand's key industries: Agriculture.

The Ministry of Transport's 'Connecting New Zealand' report provides assurance that the decision around the role and number of ports in New Zealand will continue to be made by port owners operating in a commercial environment.[1]

We also note that, as of November 2017, Tourism New Zealand continues to forecast growing numbers of passengers on ever larger ships coming in to New Zealand's ports. Port Taranaki is well situated to take advantage of the cruise ship industry, with its spectacular views of Mount Taranaki. This fits with central government's Tourism Strategy, produced by Ministry of Business Innovation and Employment. Port Taranaki started regularly welcoming cruise ships in 2013, and it is aiming to secure more booking in the 2018-2019 cruise season.

An important part of preparing Port Taranaki for cruise ships has been Port Taranaki's investment in Shoretension™ units. These units help to safely moor cruise ships in the rough weather from the Tasman Sea.

This cruise ship market targeting aligns well with Venture Taranaki's strategies. Venture Taranaki's 2016 Annual Report highlights the need to focus on tourism as a growth driver in the Taranaki region, while maintaining support for the primary industries.

As noted in our previous EIA reports, Port Taranaki is located centrally in relation to the wider New Plymouth settlement and can support urban design and place-shaping initiatives.

[1] Ministry of Transport (2011). Connecting New Zealand. A summary of the Government's Policy Direction for Transport.

# 3 The volume and value of cargo through Port Taranaki

In this section, we describe recent publicly available import and export statistics for New Zealand seaports and Port Taranaki in particular. We begin by summarising the data on commodity exports and imports through Port Taranaki, followed by data on seaports across New Zealand.

Because we are, in part, interested in highlighting Port Taranaki's place in the country's seaport system, we have used data from Statistics New Zealand. Data from this source might be slightly different from the cargo data shown in Port Taranaki's Annual Report. The commodity classifications are also those used by Statistics New Zealand and these, too, might differ from those shown in Port Taranaki's Annual Report.

## 3.1 Types of goods passing through Port Taranaki

Below, we provide summary data of the main exports and imports through Port Taranaki for the year ended June 2017.

In Table 3.1 we provide data on the value of exports through Port Taranaki. Partly for reasons of confidentiality, much of the data is aggregated by Statistics New Zealand into an "Other" category. We note that methanol will be the primary component of this "Other" category. Port Taranaki is used by New Zealand's Methanol producer Methanex to export methanol mostly to Asia. However, the identified commodity that accounts for the largest share of value is the Mineral fuels and mineral oils category – in Taranaki this is oil and gas

*Mineral fuels and mineral oils accounts for the largest share of exports, by value*

Table 3.1 Main exports, by value (fob), through Port Taranaki, year ended June 2017

| Commodity | $m | % of total |
|---|---|---|
| Other | 747.16 | 51% |
| Mineral fuels, mineral oils | 625.52 | 43% |
| Wood and articles of wood; wood charcoal | 78.43 | 5% |
| Animal or vegetable fats | 9.99 | 1% |
| Iron and steel | 7.78 | 1% |
| **Total** | **1,468.94** | **100%** |

*Source: StatsNZ*

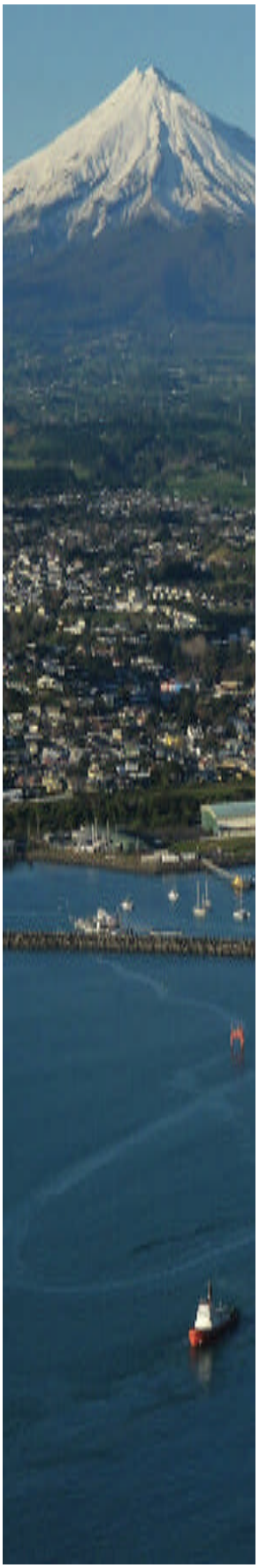


**Table 3.2** summarises the flow of imports through Port Taranaki. The largest commodity imports are mainly related to the important livestock farming sector in the Taranaki region.

Table 3.2 Main imports (cif) through Port Taranaki, year ended June 2017

| Commodity | $m | % of total |
|---|---|---|
| Food industries, residues and wastes | 84.62 | 51% |
| Fertilizers | 38.71 | 23% |
| Cereals | 22.00 | 13% |
| Other | 9.57 | 6% |
| **Total** | **164.82** | **100%** |

*Source: StatsNZ*

## 3.2 Port Taranaki's place in New Zealand's exports system

In **Table 3.3** we present data summarising the imports and exports (in terms of volume as well as value) for all the ports in New Zealand. We have ranked the ports based on the volume (i.e. tonnage) of goods exported.

When viewed this way, The Port of Tauranga is the largest port while Port Taranaki is the second largest. However, Port Taranaki is ranked seventh (out of thirteen) in terms of export values. The Port is also ranked relatively lowly, in terms of the volume and value of imports.

Port Taranaki accounts for 9.1% of exports by volume through all New Zealand seaports combined, and 3.3% of exports by value. In terms of imports, Port Taranaki accounts for 2.7% of all imports by volume and 0.4% by value.

This data highlights Port Taranaki's role in the New Zealand seaport system. It is mainly an export port serving the oil and timber industry primarily (with the perfect geographical location to do so). This can be compared to the Ports of Auckland, which are primarily import-oriented to serve the manufacturing industries locally and consumers nationally.

*Port Taranaki is New Zealand's second ranked seaport, based on volumes exported*

Table 3.3 Volume and value (exports fob) and Imports (cif) for New Zealand seaports

| Port | Exports Tonnes (million) | Exports $m | Imports Tonnes (million) | Imports $m |
|---|---|---|---|---|
| Tauranga | 14.3 | 18,732.5 | 4.6 | 7,842.5 |
| **Port Taranaki** | **3.6** | **1,468.9** | **0.6** | **164.8** |
| Whangarei | 3.5 | 629.0 | 5.7 | 3,107.5 |
| Napier | 3.2 | 3,957.8 | 0.7 | 1,198.1 |
| Lyttelton | 3.2 | 4,783.0 | 2.4 | 4,154.3 |
| Gisborne | 2.5 | 391.1 | - | - |
| Auckland | 2.1 | 6,242.4 | 4.8 | 21,655.0 |
| Port Chalmers | 1.8 | 3,424.6 | 0.3 | 381.8 |
| Wellington | 1.3 | 757.6 | 1.1 | 1,620.5 |
| Bluff | 1.4 | 1,349.3 | 1.4 | 551.8 |
| Nelson | 1.3 | 1,071.4 | 0.1 | 268.5 |
| Timaru | 0.9 | 1,638.9 | 0.9 | 326.9 |
| Picton | 0.7 | 94.0 | - | - |
| **All seaports** | **39.7** | **44,540.7** | **22.5** | **41,271.7** |

*Source: StatsNZ*

## 3.3 Port Taranaki commodities movements through time

Here we provide time series data of the total value and volume of imports and exports through Port Taranaki from 1989 to 2017 (June years).

**Figure 3.1** shows the movement of cargo imported through Port Taranaki over the time period. It shows a clear upward trend over the longer-term, although there are significant year-by-year variations. The underlying data show that the volume of imports fell by 19% in the year ending June 2017, but decreases and increases of this magnitude are not at all uncommon.

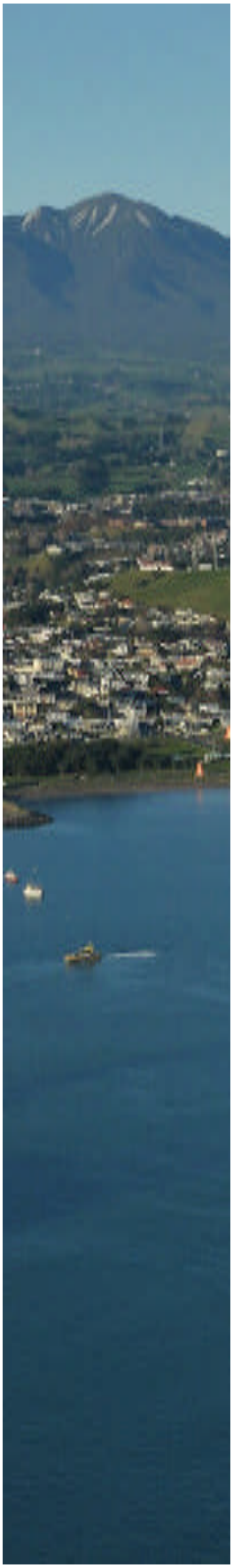
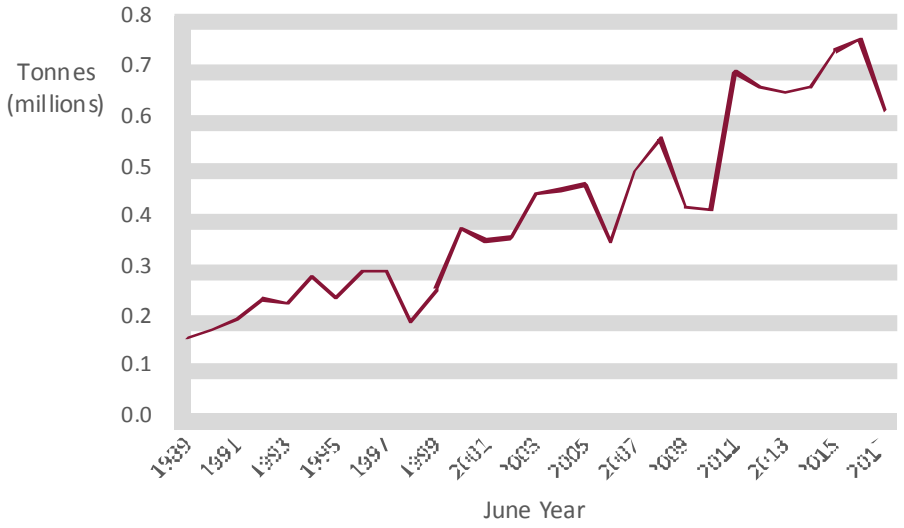


Figure 3.1 Change in volume of cargo imported through Port Taranaki




*Source: StatsNZ*

**Figure 3.2** shows the total volume of exported good through Port Taranaki over the period 1989 to 2017. This data shows a crash in export volumes between 2003 and 2006, followed by a significant recovery in 2009. Since then, there appears to have been a slight upward trend.

The substantial dip from 2002 in export volumes from Port Taranaki is attributable to a substantial drop in production of methanol which we can attribute to a drop in the production of the Maui gas field... The recovery in export volumes continues to be led by logs.

Figure 3.2 Change in volume of cargo exported through Port Taranaki


*Source: StatsNZ*

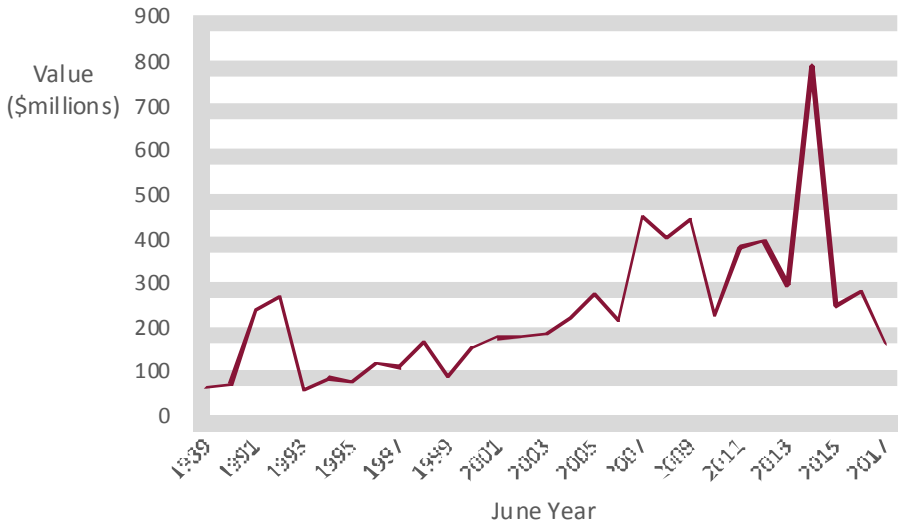
Figure 3.3 and Figure 3.4 summarise time series data of the value of cargo imported and exported through Port Taranaki.

The long-term trend in the value of imported cargo is difficult to discern because of the very large spike in 2014. The value of cargo exported has also changed erratically. It was on an upward trend until 2008, followed by a sharp increase in 2009 and what appears to be a downward trend thereafter.

Overall in the past few years, the Port has seen reduced exports of oil and gas and a cessation of container traffic. These factors help to explain the reduction in the Port's economic impact, which we will show in the following sections of this report.

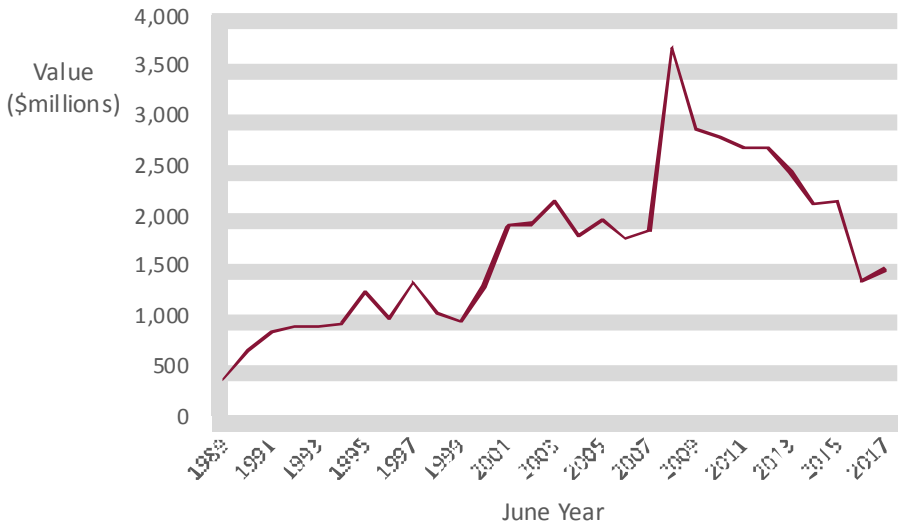
*Port Taranaki has seen reduced exports of oil and gas and a cessation of container traffic.*

Figure 3.3 Change in value of cargo imported through Port Taranaki




*Source: StatsNZ*

Figure 3.4 Change in value of cargo exported through Port Taranaki




*Source: StatsNZ*

## 3.4 Volume and value of imports and exports combined

In this section we summarise data on all cargo exported and imported through seaports in New Zealand in 2017, and through Port Taranaki over time.

Table 3.4 shows that Port Taranaki was the fifth ranked seaport in New Zealand in terms of the volume of total trade, but it also implies that it was ranked 10th in terms of the value of total trade.

*Port Taranaki is the fifth ranked seaport in New Zealand in terms of the volume of total trade, but it is ranked 10th in terms of the value of total trade.*

Table 3.4 Total trade (exports plus imports) through New Zealand Seaports, year ended June 2017

| Port | Tonnes (million) | $m |
|---|---|---|
| Tauranga | 18.9 | 26,575.1 |
| Whangarei | 9.2 | 3,736.5 |
| Auckland | 6.9 | 27,897.4 |
| Lyttelton | 5.6 | 8,937.3 |
| **Port Taranaki** | **4.2** | **1,633.8** |
| Napier | 3.9 | 5,155.9 |
| Bluff | 2.7 | 1,901.1 |
| Gisborne | 2.5 | 391.1 |
| Wellington | 2.4 | 2,378.1 |
| Port Chalmers | 2.1 | 3,806.4 |
| Timaru | 1.7 | 1,965.8 |
| Nelson | 1.4 | 1,339.9 |
| Picton | 0.7 | 94.0 |
| **All seaports** | **62.2** | **85,812.3** |

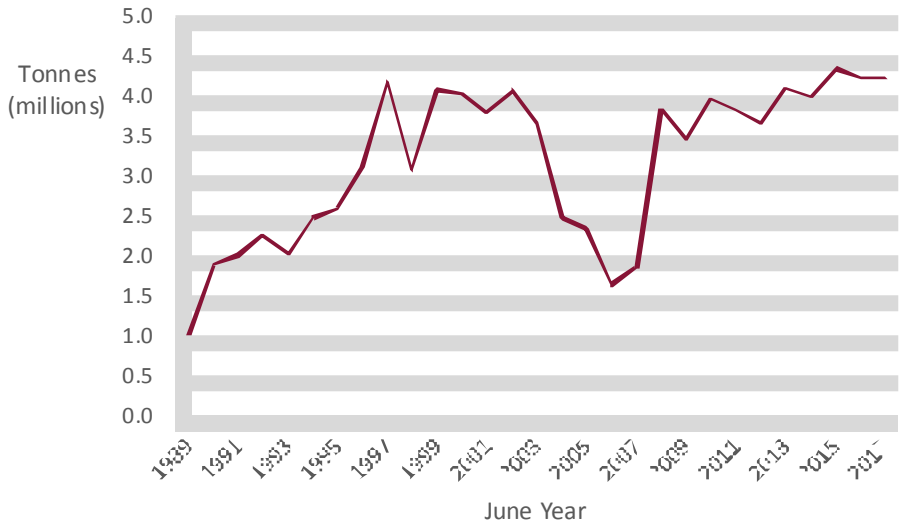
*Source: StatsNZ*

**Figure 3.5** combines the data used earlier for **Figure 3.1** and **Figure 3.2**. This indicates that, despite the sharp reduction between 2003 and 2007, the total volume of cargo through Port Taranaki is on a long-term upward trend.

Meanwhile, **Figure 3.6** shows that the total value of imports and exports through the Port was increasing until 2009, but that there has been no recovery since. Again, this probably reflects the combined effect of reduced exports of oil and gas and a cessation of container traffic.

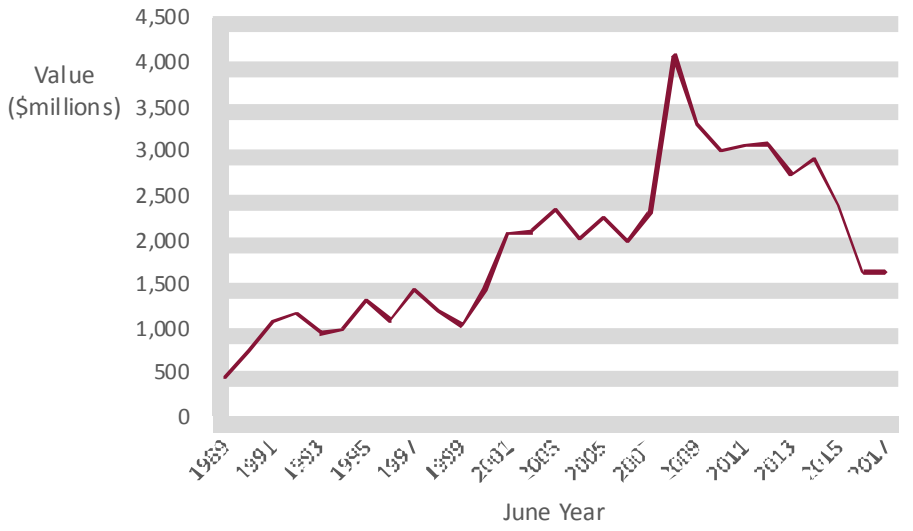
*There has been no recovery in the total value of imports and exports through the Port since the decline that started after 2009.*

Figure 3.5 Change in the volume of cargo imported and exported through Port Taranaki




*Source: StatsNZ*

Figure 3.6 Change in the value of cargo imported and exported through Port Taranaki




*Source: StatsNZ*

# 4 Economic impact of Port Taranaki's operations and related activities

We obtained data from the financial statements in Port Taranaki's 2017 Annual Report and used it to estimate the economic impact of the operations of the Port itself. We then used survey data we collected to estimate the economic impact of the Port-related activities; that is to say, the economic impact of the businesses that use the Port and provide services to it.

## 4.1 Impact of Port operations

Table 4.1 summarises key components Port Taranaki's operational expenditure, which we used to estimate its Output and Value Added. In 2016/17, dividends to council were just over two and a half times as great as in the 2010/11 year, while capital expenditure has increased by roughly 7% on our previous analysis. Payments to suppliers and employees is roughly the same as the previous analysis.

*The Port's Output of $38 million created direct Value Added in the local economy of $18.3 million, and Employment of 113 FTEs*

No table of figures entries found.

Table 4.1 Port expenditure, 2016/17

| | $ |
|---|---|
| Payments to Suppliers and Employees | 29,009,863 |
| Capital Expenditure | 4,066,263 |
| Dividends to Council | 4,924,700 |
| Sponsorship | 232,419 |
| **Total** | **38,000,826** |

*Source: Port Taranaki*

The expenditure shown in Table 4.1 added to the information in the Annual Report about its staffing, allowed us to estimate the Port's Value Added (GDP).

Table 4.2 shows that the Port's Output of $38.0 million was associated with Value Added of $18.3 million and Employment of 113 FTEs. However, these were only the direct economic impacts of the Port's operations, i.e. before allowing for the flow-on effects.

Adding the flow-on effects increases the total effect of the Port substantially. In fact, the table implies that the total impacts of the Port's operations are 51% greater in the case of Output, 53% greater in the case of Value Added, and 182% greater in the case of Employment effects. The Employment impacts are so large partly because Port-related Employment is relatively highly paid, which leads to relatively high levels of spending on consumer services and, hence, further Employment.

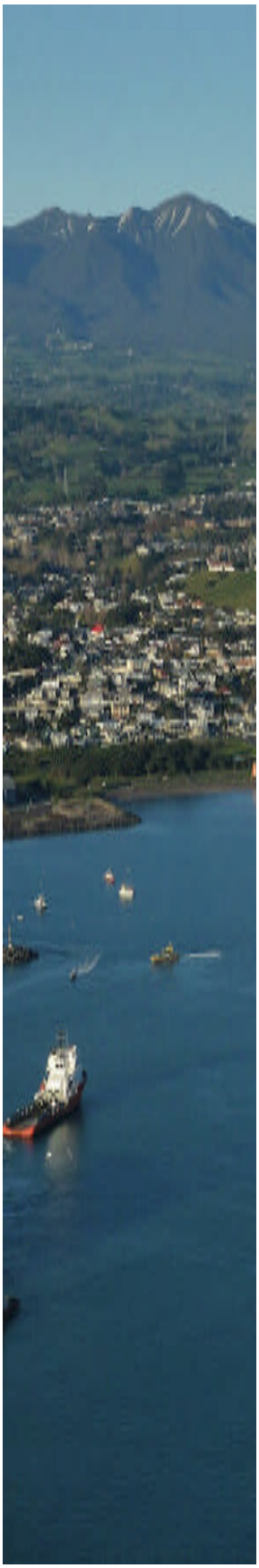


Table 4.2 Impact of Port operations

| | Direct | Total |
|---|---|---|
| Output, $m | 38.0 | 57.5 |
| Value Added (GDP), $m | 18.3 | 28.0 |
| Employment (FTEs) | 113 | 319 |

*Source: BERL*

## 4.2 Impact of Port-related activities

Similar to our previous economic impact assessments, we surveyed the companies that use, or provide services to, Port Taranaki. We asked them to identify how many employees they had in the Taranaki Region and how much of their activity was related to Port Taranaki. The survey results were aggregated to arrive at estimates of the economic impact of Port-related activities.

Table 3 summarises our estimates, again distinguishing between the direct and total (i.e. including the flow-on effects) impacts. The table shows that the total impacts are considerably larger than the direct impacts but, more importantly, it indicates that the economic impacts of the Port-related activities are much larger than the economic impacts of the Port's operations themselves. This is to be expected, given that the function of any port is to provide a service to, and to provide a base for, the operations of other businesses.

Table 4.3 Impact of Port-related activities

| | Direct | Total |
|---|---|---|
| Output, $m | 504.4 | 742.1 |
| Value Added (GDP), $m | 235.3 | 353.4 |
| Employment (FTEs) | 497 | 929 |

*Source: BERL*

## 4.3 Impact of Port operations and Port-related activities combined

Finally, to provide a rounded picture of the importance of the Port and what it facilitates, we combine our estimates of the impacts of Port Taranaki's operations with our estimates of the economic impact of the Port-related activities. The results of doing this are presented in **Table 4.**

The table shows that, allowing for flow-on effects, the Port itself and the activities associated with it account for Output of almost $800 million, Value Added of a little less than $400 million, and full-time equivalent Employment of almost 1,250.

To put these figures into context, BERL's local authority database indicates that the Value Added (GDP) of Taranaki Regions economy in the year ending March 2016 was $8,743 million and Employment in the region was 51,911 FTEs.

*The Port itself and the activities associated with it account for Output of almost $800 million, Value Added of a little less than $400 million, and full-time equivalent Employment of almost 1,250*

**Table 4.4 Impact of Port operations and Port-related activities combined**

| | Direct | Total |
|---|---|---|
| Output, $m | 542.4 | 799.6 |
| Value Added (GDP), $m | 253.7 | 381.3 |
| Employment (FTEs) | 610 | 1249 |

*Source: BERL*

In section 6 we summarise the results of previous economic impact assessments of Port Taranaki. We have followed a consistent methodology each time, so these results are directly comparable.

# 5 The Port's wider economic and community contribution

## 5.1 Port Taranaki's role in the wider economy

In previous reports we have estimated the contribution of the oil and gas industry to the Taranaki region economy. For this report we have undertaken an analysis of all the industries in the Taranaki region that are related to the main cargoes imported and exported through the Port.

In section 3, we identified the main cargoes that passed through Port Taranaki in the year ended June 2017. Oil and related products continue to be the largest single export, while animal foodstuffs were the largest single import. Combined with publicly available data, we applied judgement to arrive at a more detailed list of industries that are in concordance with the composition of the main exports and imports through Port Taranaki. We then used our own local authority database to show the overall size and recent performance of the industries on the list.

*The industries in Taranaki that are likely to export through Port Taranaki employed around 1,390 FTEs in 2016, and produced $2,480 million in GDP*

In **Table 5.1** and **Table 5.2**, we provide an economic profile of the main industries in Taranaki Region that we believe may use, or have links, with Port Taranaki. Following these two tables, we provide a summary of our data on all industries in the Taranaki Region in Table 5.3. In conjunction with one another, the tables provide an overview of the importance and performance of the industries in the Taranaki region which are likely to be indirectly affected by The Port.

**Table 5.1** shows that the industries that are likely to export through Port Taranaki employed around 1,390 FTEs in 2016, are accounted for by 300 Business Units and produced $2,480 million in GDP. The GDP growth of these industries over the past ten years has been 3.2% per annum. This is well above the 1.9% per annum GDP growth of the Taranaki regional economy as a whole, as shown in **Table 5.3**.

Table 5.1 Economic profile Taranaki Region's exporting industries

| | 2006 | 2014 | 2015 | 2016 | Change 2015 - 2016 Number | % | change 2006 - 2016 %pa |
|---|---|---|---|---|---|---|---|
| Employment (FTEs) | 1,450 | 1,313 | 1,374 | 1,390 | 15.2 | 1.1 | -0.4 |
| GDP ($mn) | 1,812.8 | 2,373.4 | 2,262.6 | 2,480.0 | 217.4 | 9.6 | 3.2 |
| Business units | 273 | 291 | 300 | 300 | - | - | 0.9 |

*source: BERL regional database, Statistics NZ*

By contrast, **Table 5.2** indicates that the industries in the region that are likely to import through Port Taranaki have actually declined in terms of each of the performance indicators used. However, as we showed in section3 of this report, the volume and value of imports through Port Taranaki are low, compared to the volume and value of exports.

Table 5.2 Economic profile Taranaki Region's importing industries

| | 2006 | 2014 | 2015 | 2016 | Change 2015 - 2016 Number | % | Change 2006 - 2016 %pa |
|---|---|---|---|---|---|---|---|
| Employment (FTEs) | 6,584 | 6,313 | 6,268 | 6,047 | -221.22 | -3.53 | -0.8 |
| GDP ($mn) | 740.0 | 687.6 | 759.9 | 734.8 | -25.14 | -3.31 | -0.1 |
| Business units | 4,263 | 3,573 | 3,618 | 3,627 | 9.00 | 0.25 | -1.6 |

*source: BERL regional database, Statistics NZ*

Table 5.3 Economic profile of all Taranaki Region's industries

| | 2006 | 2014 | 2015 | 2016 | Change 2015 - 2016 Number | % | Change 2006 - 2016 %pa |
|---|---|---|---|---|---|---|---|
| Employment (FTEs) | 48,026 | 51,884 | 52,205 | 51,911 | -294.2 | -0.6 | 0.8 |
| GDP ($mn) | 6,543.9 | 7,625.9 | 7,696.2 | 7,897.8 | 201.6 | 2.6 | 1.9 |
| Business units | 14,049 | 15,084 | 15,321 | 15,240 | -81.0 | -0.5 | 0.8 |

*source: BERL regional database, Statistics NZ*

## 5.2 The Port's contribution to Regional Council finances

It is also important to note the dividend Port Taranaki pays to its owner: Taranaki Regional Council. In 2016/17 that dividend was almost $5 million, which is equivalent to approximately 20% of the total revenue of the Council, and equal to approximately 52% of revenue from rates.

The Council has many services it is required, by legislation, to provide, and these services come at significant financial cost. Inevitably, there is a tension between Council providing services, while balancing the burden of rates increases.

*Earning a significant dividend from a strategic investment like Port Taranaki allows the Regional Council to provide legislated services to a high standard without putting undue pressure on rate-payers.*

Earning a significant dividend from a strategic investment like Port Taranaki allows the Regional Council to provide legislated services to a high standard without putting undue pressure on rate-payers.

## 5.3 Port Taranaki's role in the community

In addition to being a vital part of the Taranaki economy, and direct and indirectly providing for many hundreds of livelihoods, Port Taranaki continues to act as a socially responsible corporate citizen.

For example, Port Taranaki continues to sponsor the Port Taranaki Bulls Rugby team. This sponsorship allows the Bulls to travel across New Zealand to compete in Rugby tournaments.

In addition to this sponsorship, Port Taranaki's single shareholder the Taranaki Regional Council works in partnership with the New Plymouth District Council to maintain the Yarrow stadium. This stadium is a large drawcard for the Region and enables it to play host to major rugby fixtures, as well as a range of festivals and other events.

Port Taranaki has played host to the International Triathlon Union's Triathlon World Cup six times and continues to host the Weet Bix TRYathlon which is designed for children to get them interested in sport.

These sporting sponsorships and event hosting highlight the role Port Taranaki plays in the social landscape of Taranaki, not just as an employer and crucial infrastructure, but also as a responsible corporate citizen.

# 6 The Port's changing economic impact over time

In this final section, we show how the economic impact of Port Taranaki has changed over time. To do so, we summarise the findings from our previous EIAs, making adjustments to express the Output and Value Added measures in terms of 2016/17 prices.

## 6.1 Impact of Port operations

Table indicates that the total (i.e. direct plus flow-on) Output of Port Taranaki decreased a little between 2007 and 2017. However, because the composition of the Output has changed, the Port's contribution to Value Added has remained virtually unchanged and its Employment impact has actually increased.

Table 6.1 Change in total impact of Port operations over time

| | 2007 | 2012 | 2017 |
|---|---|---|---|
| Output ($m, 2016/17 prices) | 60.8 | 59.8 | 57.5 |
| Value Added (GDP) ($m, 2016/17 prices) | 27.7 | 29.1 | 28.0 |
| Employment (FTEs) | 228 | 319 | 319 |

*Source: BERL*

## 6.2 Impact of Port-related activities

Table provides a summary of the results of our analyses of the impact of Port-related activities. It indicates that there was an increase in the contribution of these activities to Output and Value Added between 2007 and 2017, but a decrease in their contribution to Employment. Curiously, however, the table also indicates that, on all three measures, the economic contribution of the activities was greater in 2012 than in either 2007 or 2017.

The reasons for the changes are not obvious, but they might reflect the changing make-up of the companies that use the port. In recent periods we note that Port Taranaki is seeing less cargo ships and more storage. These different activities generate different amounts of Output and Value Added.

We have previously mentioned Port Taranaki's potential role in Tourism Strategy, as part of "Tourism 2025" in attracting cruise ships to berth and allow passengers to go ashore to visit New Plymouth. This would be an addition to the port related activity and would likely see the economic impact increase in the future.

Table 6.2 Change in impact of Port-related activities over time

| | 2007 | 2012 | 2017 |
|---|---|---|---|
| Output ($m, 2016/17 prices) | 688.4 | 1,084.6 | 742.1 |
| Value Added (GDP) ($m, 2016/17 prices) | 331.9 | 529.9 | 353.4 |
| Employment (FTEs) | 1,257 | 1,272 | 929 |

*Source: BERL*

## 6.3 Impact of Port operations and Port-related activities combined

*Labour productivity in the Port itself and in its related activities has increased.*

Finally, we combine the Port operations and Port-related impact measures to provide a fuller picture of the Port's changing economic contribution.

Table again indicates that the Port contributed more to Output and Value Added in 2017 than it did in 2007, but less to Employment. This implies that labour productivity in the Port itself and in its related activities has increased.

Table 6.3 Change in impact of Port operations and Port-related activities combined over time

| | 2007 | 2012 | 2017 |
|---|---|---|---|
| Output ($m, 2016/17 prices) | 749.2 | 1,144.4 | 799.6 |
| Value Added (GDP) ($m, 2016/17 prices) | 359.6 | 559.0 | 381.3 |
| Employment (FTEs) | 1,485 | 1,591 | 1,249 |

*Source: BERL*

# Appendix A About Economic Impact Assessments

EIAs estimate the increase in economic activity directly or indirectly (through economic multipliers) attributable to an investment project, a business or an industry. They examine the effect of an event or activity on the economy in a specified area. The effects can be measured in terms of different indicators but, most commonly, they are measured in terms of:

i) Output (also referred to as expenditure);

ii) Value Added (also referred to as GDP); and

iii) Employment.

Each type of effect can be broken down into direct, indirect and induced components.

**Direct effects** are the results of the money initially spent on the activity in the specified area. This includes money spent to pay for salaries, supplies, raw materials, and operating expenses. The direct effects from the initial spending create additional activity in the local economy.

**Indirect effects** are the results of business-to-business transactions indirectly caused by the direct effects. Businesses initially benefiting from the direct effects will subsequently increase spending at other local businesses. The indirect effect is sometimes referred to as the supply-chain effect.

**Induced effects** are the results of increased personal income caused by the direct and indirect effects. Businesses experiencing increased revenue from the direct and indirect effects will subsequently increase their payments of wages and salaries (e.g. by taking on more employees, paying overtime, or increasing wage rates and salaries). Households (i.e. the recipients of the increased wage and salary payments) will, in turn, increase their spending at local businesses.

Together, the indirect and induced effects are often referred to as the flow-on effects (also called multiplier effects).

Taken together, the indirect and induced effects can often be as large as, or even larger, than the direct effects. But generally speaking, the larger the specified area, the larger the indirect and induced effects will be. This is because they are less likely to "leak" out of the specified area when it is large.

The effects are estimated using an input-Output model. An input-Output model simulates the workings of any given economy. The model takes the form of a matrix where the rows and columns represent the inputs to (i.e. purchases by) and Outputs from (i.e. sales by) different industries and sectors (where sectors include households, owners of capital, and government). The number of industries and sectors in the model can vary according to the amount and richness of data available for the economy in question.

In effect, the model shows how one industry or sector affects all other sectors. Accordingly, it can show how a change in the level of activity in one industry (in this case, Port Taranaki) will cause changes in the level of activity of other industries and sectors. In the case of an activity such as a port, it can easily be imagined that the operation of the port will cause the transport, transport services, fuel and power, and other industries to increase their Outputs. The project will also cause the household sector to increase its Outputs in the form of labour.