

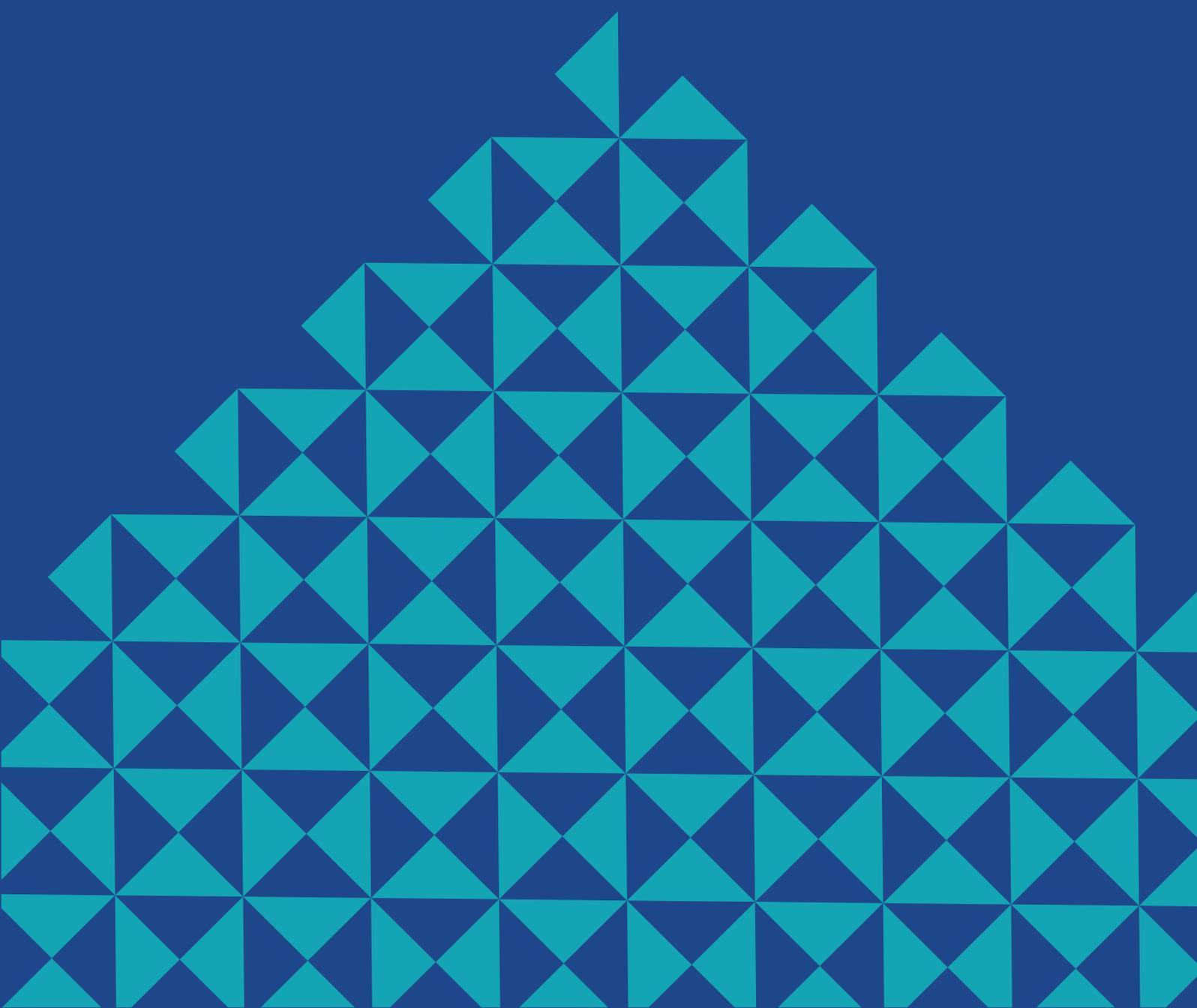


NEW ZEALAND
FOREIGN AFFAIRS & TRADE

DECEMBER 2018

MFAT Working Paper: Estimating employment in New Zealand producing goods and services for export

– Peter Bailey and Dean Ford¹



Abstract

This paper uses the 2013 Input Output Tables and Household Labour Force Survey data to estimate New Zealand's export employment. In the June quarter of 2018, 628,000 New Zealand workers, approximately one in four, derived their livelihoods from producing goods and services for export. The highest share of export employment is in rural regions – 33% of people employed in Southland were producing goods and services for export. The share of New Zealanders in export employment has declined over the past ten years.

¹ Economics Division, New Zealand Ministry of Foreign Affairs and Trade; email contact: peter.bailey@mfat.govt.nz and dean.ford@mfat.govt.nz.

1

Introduction

The Ministry of Foreign Affairs and Trade acts in the world to make New Zealanders safer and more prosperous. This requires understanding how trade affects New Zealanders including the impact of trade on employment.

In August 2018 the New Zealand Government launched its Trade for All Agenda. This Agenda seeks to ensure all New Zealanders share the benefits of trade, regardless of their gender, ethnicity, whether they work for a large firm or a small or medium enterprise, or where they live. To be successful in this endeavour, it will be crucial to understand the impact of trade on our regions, including the relationship between exports and employment.

This paper uses the 2013 Input Output Tables (IOTs), and Household Labour Force Survey (HLFS) data to build on Bailey and Ford (2018), to estimate the number of people employed both nationally and in the regions producing exports, directly and indirectly.

In the June quarter of 2018, 628,000 New Zealand workers, approximately one in four, derived their livelihoods from producing goods and services for export.² This group includes workers producing goods and services that are exported directly, plus other workers who producing goods and services that are (ultimately) exported through other firms.

The regions with the highest export employment are unsurprisingly the regions with highest population. Over 200,000 people are employed producing exports in Auckland. However, the highest share of export employment is in rural regions. A third of the workers employed in Southland produce exports.

The number of New Zealanders in export employment has increased from 534,000 in the June quarter of 2003 to 628,000 in the June quarter of 2018. This equates to an annual average gain of 2.9 percent, less than the 3.6 percent expansion in aggregate employment. In 2003, 28

percent of New Zealanders were employed producing exports. In the latest data, the export employment share had declined to 24 percent. The export employment share has fallen both within and outside the main urban centres.

Export employment is a subset of tradable sector employment. The tradable sector is that part of the New Zealand economy that is directly influenced by international conditions. Bailey and Ford (2018) estimate that the tradable sector produces 60 percent of GDP, and employs 50 percent of New Zealand's workforce.

² This estimate is based on HLFS data, rather than the Linked Employer-Employee Data (LEED). The HLFS is the official measure of employment in New Zealand. The LEED is much broader in many respects but excludes the self-employed.

2

Methodology

Using the 2013 IOTs, this note uses industry level HLFS employment data to estimate the number of people producing goods and services for export. IOTs identify the export intensity of each industry, while the HLFS provides information on industry employment, allowing the creation of a quarterly time series of export employment.

IOTs show the production and consumption of various goods and services for each industry. These industry interdependencies show how various industries contribute to the production of a product. The IOTs, for example, can be used to show the degree to which dairy production relies on inputs of electricity, transport, agricultural support, and financial intermediation services.

IOTs also show the extent to which various products are sent offshore. For example (and unsurprisingly), the tables affirm that the majority of New Zealand's dairy produce is exported rather than consumed domestically.

Scrutinising the extent to which each product is exported, and how each industry relies on other industries to produce those products, allows the calculation of the export intensity of each industry. That is, not just how much an industry exports itself, but also how much its output is used by other industries for exporting.

Some industries, despite exporting very little directly, have notable ultimate export intensity. For example, Electricity, Gas, Water and Waste Services, through its supply to exporting industries like Agriculture, Forestry and Fishing and Manufacturing, ultimately exports 23.3 percent of its value add.

EXPORT EMPLOYMENT ESTIMATES

These export intensities can then be applied to the industry employment figures from the quarterly HLFS to produce an estimate of export employment. For example, the export intensity figure for Wholesale Trade of 30.4 percent is multiplied by the 109,000 people it employs to get industry export employment of 33,258 persons.

Table 1 shows export employment by industry in the June quarter 2018, along with aggregate employment for each industry. Large export employment industries include Manufacturing, Agriculture, Professional Services, and Retail and Accommodation.

TABLE 1: EXPORT EMPLOYMENT (JUNE QUARTER 2018)

	Export intensity (%) (March 2013)	Industry employment (000s)	Export employment (000s)
Agriculture, Forestry and Fishing	76.2	153	117
Mining	60.5	5	3
Manufacturing	56.8	257	146
Electricity, Gas, Water and Waste Services	23.3	22	5
Construction	5.8	242	14
Wholesale Trade	30.4	109	33
Retail Trade and Accommodation	17.2	382	66
Transport, Postal and Warehousing	42.8	110	47
Information Media and Telecommunications	24.1	47	11
Financial and Insurance Services	20.0	76	15
Rental, Hiring and Real Estate Services	17.2	52	9
Professional, Scientific, Technical, Administrative and Support Services	26.7	340	91
Public Administration and Safety	5.6	150	6
Education and Training	13.1	235	31
Health Care and Social Assistance	1.7	276	5
Arts, Recreation and Other Services	19.5	147	29
Not Specified		20	
TOTAL		2624	628

Source: Statistics New Zealand, MFAT calculations.

2 Methodology

REGIONAL EXPORT EMPLOYMENT ESTIMATES

Regional employment estimates are calculated by multiplying the industry export intensities in Table 1 by regional employment in that industry. This provides estimates of export employment by industry and region. We summed each region's industry export employment estimates for regional employment estimates.

The estimated export employment shares are therefore highest in those regions with the highest shares of employment in Agriculture, Forestry and Fishing, and to a lesser extent Mining, Manufacturing, and Transport Postal and Warehousing.

TABLE 2: REGIONAL EXPORT EMPLOYMENT ESTIMATES

Region	Export employ (%)	Export employ (000)
Southland	33%	18
Gisborne / Hawke's Bay	31%	34
Taranaki	29%	18
Manawatu-Wanganui	29%	34
Nelson/Tasman/Malborough/West Coast	28%	27
Northland	27%	23
Bay of Plenty	26%	41
Waikato	26%	67
Canterbury	24%	81
Otago	24%	32
Auckland	22%	202
Wellington	20%	57
TOTAL NEW ZEALAND	24%	635*

* Region approach produces slightly different aggregate estimate than sector approach
Source: Statistics New Zealand, MFAT calculations

Southland is the region with the highest share of employment producing exports. Twenty percent of Southland workers are employed in Agriculture Forestry and Fisheries (the highest export intensity industry). This compares with about 2 percent employment in Agriculture, Forestry and Fisheries in Wellington, and 1 percent in Auckland.

ROBUSTNESS AND ASSUMPTIONS

A key assumption underlying this calculation is that an industry's export share of its output is equal to the export share of its employment. It is possible that this assumption overstates export employment. Exporters tend to be more productive than non-exporters suggesting export share of output is greater than export share of employment.

The best way to combat this overstatement risk is to drill down into the industry classifications as much as possible. While we cannot isolate exporters from non-exporters within each industry, we can isolate export intensity across industries. The more comprehensive, but less contemporaneous Linked Employer Employee Database suggests this overstatement is quite small. The export employment share is estimated at 23.9 percent in the March quarter 2018, compared to 24.1 percent using the HLFS.

Supporting the IOT methodology, economists in the United States have taken a similar approach in estimating jobs supported by exports. The United States International Trade Administration uses input-output analysis to estimate the relationship between exports and jobs (see Tschetter (2008) and Rasmussen (2016)). The Swedish National Board of Trade using a similar approach estimates that nearly 30 percent of jobs in Sweden are supported by exporting (See Swedish National Board of Trade (2015)).

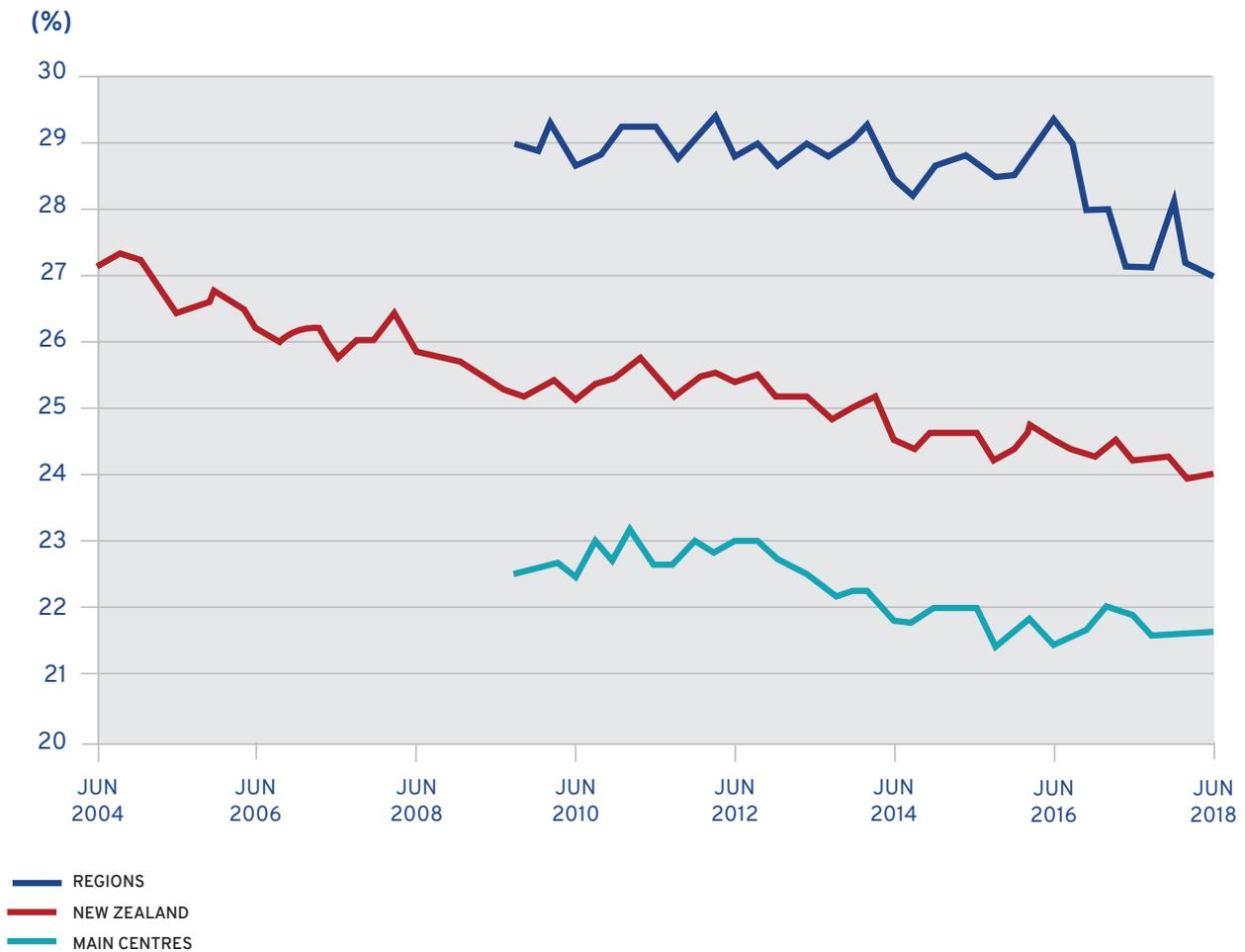
CHANGING EXPORT EMPLOYMENT

The above estimates affirm that exporting employs a large number of New Zealanders. This is encouraging. Overseas markets provide the opportunity for New Zealand businesses to grow to a scale not possible in the domestic market. Scale and exposure to international ideas and competition helps make exporting businesses and the people that work for them more productive, enabling higher profits and better wages.

However, these estimates also show that the export employment share has been edging lower. Aggregate New Zealand employment in exports has declined from 28 percent in 2003 to 24 percent in 2018. The export employment share has fallen both within and outside the main urban centres.

2 Methodology

FIGURE 1: EXPORT EMPLOYMENT SHARES



Source: Statistics New Zealand, MFAT calculations.

A host of factors are likely to be behind the downtrend in the export employment share. In an arithmetical sense, there has been relatively rapid growth in low export sectors over the past decade: construction, real estate and rental services, retail trade, and health care. Conversely, agriculture, forestry and fishing have today employment levels broadly similar to that seen back in June 2003, and manufacturing employment actually declined since then. Why the higher wages on offer in exporting sectors have not attracted more staff is unclear.

3

Summary & conclusions

Using the 2013 Input Output Tables and the Household Labour Force Survey this paper estimates the number of New Zealanders employed producing goods and services for export. Our approach captures workers producing goods and services that are directly exported, and workers supplying goods and services as domestic inputs to these exports.

Using this approach we estimate that 628,000 New Zealand workers, approximately one in four, derived their livelihoods from producing goods and services for export. In some rural areas this increases to almost one in three.

Export employment has declined relative to total employment, from 28 percent in 2003 to 24 percent today. This downward trend is apparent both in the main centres and in the regions. It is unclear why labour has shifted away from exporting, particularly given the higher wages on offer.

4

References

Bailey and Ford (2018), 'Estimating New Zealand's tradable and non-tradable sectors using Input-Output Tables, Ministry of Foreign Affairs and Trade Economic Bulletin, September 2018.

Rasmussen C (2016) 'Jobs Supported by Exports 2015: An Update', US Department of Commerce, International Trade Administration.

Swedish National Board of Trade (2015) 'Trade is essential for Jobs – a Value Chain Perspective for Sweden'.

Tschetter J (2008) 'Exports Support American Jobs', International Trade Research Report no. 1., United States Department of Commerce, International Trade Administration.

MFAT

MINISTRY OF FOREIGN AFFAIRS AND TRADE

New Zealand Government