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New Zealand as a Niche Player in World Markets

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Abstract

This short paper was originally designed as a backgrounder for small and medium sized firms who are searching for new ventures in export markets. The paper surveys the export performance of New Zealand over the period 1989 to 2018 using United Nations 2 and 4-digit Harmonised System data in an attempt to provide some clues on where one might look further and deeper for production and trade opportunities.

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JEL Classifications

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1. Introduction

A business advisor approached me recently and asked if I would produce a background note for his clients on the current state of New Zealand's export markets. His clients managed small and medium sized companies, and some were already involved with the export trade. This short paper is the result of that request. It is derived from an earlier paper.¹

One way to view smaller New Zealand (NZ) product exporters is as 'niche players' in global markets. A niche player is an economy with little, if any, market power in the markets it participates, but with options stemming from the range of opportunities across market and products. Products can be adapted and altered, and alternative markets are available globally.

Twenty years ago, New Zealand completed a liberalisation programme to permit its export and import competing industries to compete in world markets on a more-or-less 'level playing field', in trade policy intervention terms. NZ did this reasonably well by the time the trade liberalisation programme stopped around 2000. We are now seeing the full range of products (and some services) competing globally. Product lines in each of the 2-digit Harmonised System (HS) categories are performing well in international markets as illustrated in Table 1. The categories are not equal in their contributions to overall export earnings, but each grouping has products lines that have 'Star' qualities, that is, they are currently growing rapidly in world market share terms and have good future prospects.

This paper is designed to illuminate the diverse nature of New Zealand exports because it is difficult to forecast which products are going to 'take off' in the future. Who would have predicted what was to happen to NZ when the *S.S. Dunedin* sailed from Port Chalmers in New Zealand in 1882, headed for the Smithfield market in London with a (very) few sheep and cattle carcasses? A few North Otago farmers were just taking a punt. Like minded entrepreneurs continue the practice.

2. Background

Fifty years ago, the export sector had a radically different place in national policy discussions. The exchange rate was 'more or less' fixed and there were a host of interventions from high tariffs and tight import quotas to discriminatory export subsidies, guiding domestic resource allocation in the economy. Government, industry and firm planning in the tradable sector was very prominent in national discussions. For example, total export receipts were a headline feature in reporting on the Government's annual budget along with tax rates on beer and income. Not so today, where the export performance of the economy focuses on particular firms doing interesting things on the world market; sometimes successfully and sometimes not so successfully.

¹ Ralph G. Lattimore (2019) 'The Composition of New Zealand Exports 1989-2018' University of Waikato *Working Papers in Economics* 10/19, September.

Table 1: Trade Growth, New Zealand versus World Growth 1989-2018
4-Digit Product Lines

Product Group	HS	Stars		Underachievers		Traditional		Snails	
		Fast World Growth		Fast World Growth		Slow World Growth		Slow World Growth	
		Faster NZ Growth		Slower NZ Growth		Faster NZ Growth		Slower NZ Growth	
		No.	Percent Exports	No.	Percent Exports	No.	Percent Exports	No.	Percent Exports
Animal products	01-05	8	3.1	13	12.6	4	0	17	21.8
Vegetables	06-15	27	0.2	39	6.8	28	0.1	15	0.3
Food	16-24	20	9	20	1.7	5	0.6	9	0.7
Minerals	25-27	12	1	11	1	16	0	5	0
Chemicals	28-38	34	0.4	63	1.5	43	0.3	31	1.4
Plastics	39-40	9	0.3	24	0.7	8	0	5	0
Hides & Leather	41-43	1	0	4	1.3	1	0	9	0.7
Forestry	44-49	6	0.2	14	0.7	14	8.8	35	2
Textiles/Clothing	50-63	10	0.1	20	0.1	49	0.4	60	1.3
Footwear	64-67	2	0	6	0	4	0	5	0.1
Stone & Glass	68-71	7	1.1	24	0.2	12	0	19	0
Metal	72-83	27	0.9	41	0.5	21	1.9	50	0.6
Machinery & Electrical	84-85	12	0.9	43	2.5	21	0.9	60	1.3
Transport Equipment	86-89	7	0.3	14	0.7	8	0.2	4	0.1
Miscellaneous	90-97	8	0.2	37	5.1	29	0.1	24	0.1
Total Exports			18		36.5		14		31.5
Total 4-digit Products		190		373		263		348	

Note: Export values do not add due to rounding.

Source: See text.

The export sector of the economy is important for two reasons. First, it supplies the foreign exchange to fund imports. In New Zealand this outcome is very important because the country is not well endowed with many natural resources and, being small, NZ has neither the size economies required to produce many products competitively nor the ability to attract the cheapest financial capital and the top managers. In short, NZ just needs to be 'smarter' and selective.

Secondly, the export sector has many of the most economically efficient firms in the country. This is necessary as they need to compete with other NZ exporters for a place on the 'export list' given the volatility of the real exchange rate and the availability of local resources. They also need to compete with exporters in the rest of the world at the same time. These challenges take considerable effort, especially for a new entrant.

The largest New Zealand exporters have a slightly different set of challenges, but they share the problem of attracting and retaining domestic resources for their production base at home. Export marketing is easier for them than it is for new exporters because they have 150 years of experience behind them. However, the large exporters face major issues revolving around foreign trade barriers, governmental and commercial. This complicates their export marketing strategies.

New Zealand's place as a niche exporter also stems from the fact that the economy has very little market power in overseas markets. If firms face market access issues, they reorient their production and marketing plans to circumvent them. Large NZ exporters do not have much market power either. They do have larger shares of world trade for some products but that is not usually associated with market power *inside* foreign domestic markets. Accordingly, they spend some resources (in combination with the New Zealand government) trying to free up market access but even these efforts need to be conducted in partnership with other larger countries to be effective (through global and regional trade alliances).

An index of comparative advantage can be used to describe changes in international competitiveness. The index of Revealed Comparative Advantage (RCA) is the ratio of New Zealand's export share in the product to the world's export market share in that product. This index captures the two effects just referred to. NZ's export share in a product shows the ability of NZ firms to attract domestic resources (technology, land, labour and capital) towards their production lines. The denominator in the RCA ratio (world market share) shows the outcome of the same competition for productive resources in the rest of the world. An increase (decrease) in the New Zealand RCA for a product therefore reflects an increase (decrease) in NZ's competitiveness globally. The absolute size of the RCA is also interesting to economists. If the RCA index is greater than 1.0, New Zealand is said to have a comparative advantage in the product.

The data used here is the 4-digit Harmonised System trade data in US dollars available from the United Nations trade database.

3. An Overview of New Zealand's Relative Export Growth

The growth in New Zealand exports of each 4-digit product is compared with world export growth in the same product over 30 years from 1989 to 2018. The results are shown in Table 1 and classified into four groups: namely, Stars, Underachievers, Traditional and Snails. The names of these groups reflect some aspects of the competition dynamics faced by NZ exporters.

In the 'Star' and 'Underachiever' groups, world exports are rising more rapidly. Global consumers are keen to buy and supply chain elements in the wholesale and retail sectors will be looking for new suppliers and increased purchases from existing suppliers. The potential for further growth in these markets is higher. The opposite is true of the 'Traditional' and 'Snail' market categories. Having said that, world market growth is only one dimension of the marketing challenge for a 'niche' exporter like NZ. For example, 'Stars' are products where world export growth has been faster than average over the period and NZ export growth has exceeded world export growth in the product.

In Table 1, we see that the number of New Zealand export product lines (4-digit categories) are split almost 50:50 between markets where world market growth has been relatively high over the last 30 years (Stars and Underachievers) and slower growing world markets (Traditional and Snails). Eighteen percent of exports are in the 'Star' category and half of this total is contributed by Food exports. Food products are a diverse range involving adding value to primary products; many of these primary products (but not all) are produced in NZ. They include bakery and cereal products, chocolate, wine and bottled water. By contrast, Animal products only contribute three percent of the 'Star' category.

In the Underachievers grouping, Animal and Vegetable products contribute the largest shares followed by Miscellaneous products at five percent. This is a very positive result to the extent that world market growth is important and New Zealand's participation is high. At least we are in these fast-growing markets even if, for example, NZ's small economic size limits its ability to increase exports as fast as the rest of the world presently. The Miscellaneous category requires some explanation because some of the products included are confidential. This confidential group is called the 'UN Special Code'. It contains products produced by monopoly exporters who request this code under Statistics New Zealand's firm confidentiality protocol. These products are thought to be mainly coal and steel.

The Traditional products grouping is dominated by Forestry products at 8.8 percent of total exports and they account for more than half the exports in this category. However, almost all the 15 export categories are represented in the Traditional category as they are in the other three groupings (Stars, Underachievers and Snails). The Traditional products are the smallest group in terms of the proportion of the total 2018 exports they cover.

The Snail grouping is dominated by Animal products at 21.8 percent of New Zealand merchandise exports in 2018. The contributions of all the other 14 groups in the Snail category tend to be small relative to the three other categories. Snails contribute 31.5 percent of total exports, second only to the Underachievers group.

4. New Zealand’s Fastest Growing Export Products

A second way to view the changing composition of NZ exports is to examine the rate of export growth of the 4-digit product lines. New Zealand’s fastest growing export industries can be viewed in two ways. First, the export products that are growing fastest in terms of *export earnings* and secondly, export products can be selected on the basis of the fastest growing in *percentage terms*. The two lists reflect different characteristics. The two approaches are used below with roughly 1200 products in the Harmonised System (HS) 4-digit gross export data.

4a. New Zealand’s Fastest Growing Dollar Export Products

The first approach is to examine the product composition of the ‘Top 100’ fastest growing export groups by *export revenue* out of approximately 1200 HS groups. Table 2 shows the result of this exercise with the 100 products grouped by type of product. The ‘Top 100’ groups by export revenue tend to include the largest export industries and they contribute 86.3 percent of total export revenue. Within that total, the largest contributors are Animal, Forestry, Food and Vegetable products.

**Table 2: Top 100 New Zealand Growth Exports
1989-2018**

	Number of Products	Exports \$US Million	Percent of Total Exports
Animal	18	16,237	40.8
Vegetable	8	2,578	6.5
Food	18	4,395	11.0
Minerals	3	696	1.8
Chemicals	8	1,249	3.1
Plastics	3	232	0.6
Hides & Leather	1	114	0.5
Forestry	13	4,427	11.1
Textiles & Clothing	1	75	0.2
Footwear	0	0	
Stone & Glass	0	0	
Metal	5	097	2.8
Machinery & Electrical	17	1,183	3.0
Transport Equipment	2	137	0.3
Miscellaneous	4	1,825	4.6
Total			86.3

The fastest growing Animal products are milk powder (HS402), chilled sheepmeat (204), butter (405) and cheese (406). The fastest growing Vegetables are Other Fruit (810, including Kiwifruit), seeds and fruit (1209) and apples (808). The Food category includes wine (2204), malt extract (including infant milk formula, 1901) and other food preparations (2106). These three groups (Animal, Vegetable and Food) contain all of the fastest growing ‘billion dollars’ export lines. The large dairy, meat and wine companies are prominent in the groups, but small and medium sized companies are also important in the Food sector.

The Minerals group includes petroleum oil (2709) and petroleum gas (2711). The largest item in the Chemicals group is the dairy product casein (3501) followed by human and animal blood (3002) and albumins (3502). The Plastics group has three product lines in the ‘top 100’, the largest of which is tableware and kitchenware (3924). The only product line in the Hides and Skins group is bovine leather (4104). The largest three product lines in the Forestry grouping are logs (4403), which contributed \$2.5 billion in 2018, followed by sawn timber (4407) which contributed \$650 million: in third place was chemical pulp (4703). The only Textile and Clothing item in the ‘Top 100’ dollar list are carpets (5703) which earned \$75 million in 2018.

The Footwear and Stone and Glass groupings are not represented in this list. The two largest items in the Metals group are unwrought aluminium (7601) and ferrous waste (7204). The exports of waste and used items will turn out to be quite notable in 2018 and this iron and steel waste is but the first that will be encountered in these lists. New Zealand has a viable recycling and waste disposal industry in the trade sector, even if there have been recent disruptions to the export supply chain of plastics and insufficient domestic processing capacity at present.

The Machinery and Electrical group is notable for the number and proportion of product lines earning between \$40 and \$140 million in 2018. The largest product lines here include radio and TV transmission apparatus (8525), transformers (8504), other agricultural equipment (8436) and harvesting and sorting machinery (8433). Their export earnings are in the \$90 to \$140 million-dollar range. The latter category probably includes a Tokoroa factory that manufactures tree harvesting equipment including tree felling heads for excavators (commonly called ‘Waratah’ heads). The factory was established by Timberjack, a Finnish company that was one of the world’s largest forestry equipment manufacturers. It was purchased by John Deere and Company in 2000 and currently produces these cutting heads for a number of brands including John Deere. It is a good example of a manufacturer producing for multiple brands. There are only two product lines in the Transport Equipment grouping. The largest is yachts and pleasure craft (8903).

The Miscellaneous grouping has four product lines in this ‘Top 100’ list including the UN special code items (9999) which earned \$1.3 billion in 2018 and mechano-therapy equipment (9019) which earned \$340 million. This later grouping probably includes products manufactured by Fisher and Peykel Healthcare which has been prominent over the whole timeframe from 1989.

4b. New Zealand’s Fastest Growing Percentage Export Products

The ‘Top 100’ fastest growing export products in percentage terms are summarised in Table 3. These percentage growth products contributed 15 percent of exports in 2018. Food products play the most important role contributing \$3.4 billion in export earnings in 2018 amounting to over half the total \$5.8 billion for this group. Food is followed by Animal products, Minerals, Machinery and Electrical products and Forestry Products.

Table 3: Top 100 Fastest Growing Percentage New Zealand Exports 1989-2018

	Number of Products	2018 Exports US \$'000
Animal	8	1,226,446
Vegetable	14	22,501
Food	14	3,415,626
Minerals	5	359,630
Chemicals	24	23,662
Plastics & Rubber	0	-
Hides & Leather	1	828
Forestry	2	109,912
Textiles & Clothing	6	16,033
Footwear	0	-
Stone & Glass	2	23,379
Metal	5	44,197
Machinery & Electrical	6	239,307
Transport Equipment	3	9,789
Miscellaneous	9	93,596
Sub-Total		5,798,905
Percent of Total Exports		15 percent

The percentage grouping in Table 3 gives more weight to product lines that were not major exports in 1989 but have grown rapidly to 2018. In the Animal group, fresh milk (401) and whey products (404) are the top dairy products. Honey (409) also makes the list. The resurgence of manuka honey is an important element in the growth of the latter, building on a long history of playing ‘second fiddle’ to clover honey. It has also been aided by the rising ‘Foodie’ attitudes in recent consumer preferences and bee disease issues overseas. Poultry

products appear in this list in the form of live poultry exports (105), poultry meat (207), eggs (408) and bird skins (505).

In the Vegetable category, starches (1108) and swedes (1214) are the largest contributors to export earnings in 2018. Wine (2204), bottled water (2202), sauces (2103) and meat and fish extracts (1603) are the largest Food export lines in 2018.

Petroleum gas (2711) is the largest export product in the Minerals grouping. The Chemical group has 24 product lines in the 'Top 100' *percentage* growth list though their total export contribution is small. The largest product lines in the 'Top 100' percentage Chemicals are peptones (3504), carboxylic acids (2918) and insecticides (3808). The contribution of these three chemicals are considerably greater than the rest.

Chamois leather is the only representative in the Hides and Skins group and is a new entrant to the export list. Semi-chemical wood pulp (4705) is by far the large export product in the Forestry group. As we will see later, the product was exported in very small quantities up to the mid-2000's but has had very rapid growth since then.

In the Textiles and Clothing group, women's overcoats (6202) and worn clothing (6309) are the largest export products in 2018 but they are still less than \$10 million in export earnings. Footwear has no products in the 'top 100' percent growth group. Stone and Glass have two products in the list, the most important of which are stone articles (6815). In the Metals group, ferro-alloys (7202) are the largest product line.

Agricultural equipment (8436) also appears in this list in the Machinery and Electrical category. It was the largest export line in the group in 2018. Other major export lines in this group are electro-magnets (8505) and diodes (8541). Parachutes and gliders (8804) are the most important product in the Transport Equipment group and in the Miscellaneous group, instruments (9027) and light fittings (9405) are prominent.

4c. New Zealand's New Entrants

There are 65 product lines that were not exported in 1989 and were exported in 2018. Table 4 groups them into the fifteen 2-digit HS codes. Some of these products will be re-exports where NZ acts as a distributor – especially for the Pacific Islands. One feature of this group is that there are no representatives of the Animal grouping. A second feature is that average export revenue for these products is very low. Vegetable products have the highest average but that is because one product line, other animal fats and oils (1506), dominates. The Vegetable group also includes rye (1002) and sorghum (1007) which may be crops being grown on an experimental basis. The Food grouping includes four cocoa products, the largest of which is processed cocoa.

Fluorides (2826) and heterocyclic compounds (2932) stand out in the Chemicals group as does chemical wood pulp (4702) in the Forestry group. Two products are prominent in the Textiles and Clothing group, textile for technical uses (5911) and wigs and false beards etc. (6704). Waste stone (7001) is prominent in the Stone and Glass group and in the Metal group, copper articles (7419) and tin waste (8002) are the largest products. In Transport equipment, tractor chassis with engines (8706) are the largest product line.

Overall, then, the ‘new entrants’ group does not provide significant export earnings.

**Table 4: New Zealand New Entrants to Global Market
2018**

	Products Number	Average Export Value US \$'000
Animal	0	-
Vegetable	9	1,497
Food	5	117
Minerals	7	8
Chemicals	12	370
Plastics & Rubber	1	2
Hides & Leather	0	-
Forestry	3	84
Textiles & Clothing	11	279
Footwear	0	-
Stone & Glass	2	705
Metal	8	2,392
Machinery & Electrical	1	36
Transport Equipment	3	169
Miscellaneous	3	6

4d. Time Lines for Selected New Zealand Exports

A fourth way to examine the changing competitiveness of exports is to track changes overtime. This section traces the changing annual competitiveness for a few selected 4-digit products over the period 1989 to 2018. Twenty-five products are considered. The time lines of the RCA’s for each product are given in Table 5.

Table 5: Selected Product Competiveness Trends 1989 – 2018

RCA's	HS code	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Chilled Beef	201	2.6	2.4	2.8	2.3	2.3	2.3	2.6	2.9	3.2	3.6	3.7	3.9	4.7	4	5.2
Chilled Sheepmeat	204	62.4	59.5	63.8	53.9	50.5	49.5	52.9	66.4	51.4	53.7	53.6	57.2	62.1	64.1	61.1
Milk, Fresh	401	1.4	1.7	1.3	1.5	2.1	2.4	2	3.4	4.7	5.3	4.6	5	5.1	6.4	5
Milk Concentrates	402	27.4	34.8	44	30.9	36.3	37.4	30.7	45.6	51.9	55.1	54.9	62.4	78.7	75.9	81.8
Whey	404	6.6	8.2	4.5	3.2	3.4	4.6	3.8	5.9	6.7	5.3	7.1	8.9	9.7	6	7.6
Honey	409	3.7	3.5	5	4.4	3.8	5.1	5.4	5.6	4.5	4.2	5.4	5.8	8	5.7	7.5
Vegetables, dried	712	1.5	1.4	1.3	1	0.8	1.1	1.6	1.5	1.4	1.9	2.2	2.6	2.7	3.3	3.3
Soups	2104	1	1.3	1.3	2	2.4	2.4	2.7	2.3	1.6	1.9	5.3	5.1	7.8	7.7	7.8
Food Preparations	2106	1.3	1.1	1	0.9	0.8	0.9	1.4	1.2	1.7	1.4	1.9	3.3	3.4	3.5	4.8
Wine	2204	0.8	1.1	1.4	2.3	2.6	0.9	1	1.3	1.8	2	2.3	3.3	3.3	3.9	4.1
Blood, human & animal	3002	2.7	2	1.6	1.4	0.9	0.8	0.8	0.9	0.8	1.1	1.2	1.1	1	1.1	1
Beauty Products	3304	1.7	2	2.1	2.6	1.9	1.4	1	0.8	0.7	0.5	0.6	0.5	0.6	0.7	0.8
Plastic goods nes	3923	0.7	0.8	0.9	1	1.2	1.2	0.9	1	1.1	0.9	0.9	1	0.8	1	1.1
Vulcanised Rubber cloth.	4016	0.5	0.4	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.7
Chamois Leather	4108	0	0	0.1	0.5	0.3	0	0	0	0.1	0.8	3.3	1.8	3.1	2.7	0.1
Plywood	4408	0.3	0.3	0.4	0.5	0.6	0.9	1.2	0.8	0.6	0.5	0.7	1.2	1.6	4	6.8
Wood Pulp, semi-chemical	4705	0	0	0	0	0	0	0	0.6	0	0.1	0	0	0	0	0
Male Suits etc	6103	0.38	0.59	0.57	0.38	0.27	0.26	0.33	0.25	0.13	0.13	0.23	0.2	0.17	0.1	0.1
Female Suits etc	6104	0.04	0.08	0.09	0.17	0.16	0.2	0.13	0.15	0.18	0.2	0.24	0.24	0.38	0.28	0.16
Agricultural Equip.	8436	0.5	0.5	0.3	0.4	0.5	0.7	0.7	0.7	0.8	1.1	1.4	2.4	1.2	2.1	4
Parachutes	8804	0.1	0.3	0.6	0.4	0.1	0	0.4	0.1	0.1	0.3	0.2	0.3	0.5	0.8	1.1
Yachts	8903	5.3	1.8	2.2	2.5	2.7	3.6	3.7	1.7	3.2	2	2.7	6.7	5	4.3	8.1
Mechano-therapy appl.	9019	5.8	4.4	3.8	4.8	4.4	2.2	0.4	1.1	4.1	2.5	1.9	1.6	1.6	2.7	0.8
Instruments, physical ex.	9027	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.3
Science Collections	9705	0.8	2	2.1	0.7	1	0.8	0.7	2.7	1.8	2.9	2.8	3.8	3.1	6.6	6.7

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RCA's	HS code	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chilled Beef	201	5.5	5.1	5.6	5.1	4.8	4.2	5.3	4.5	5	4.7	4.6	5.3	5.2	4.7	4.2
Chilled Sheepmeat	204	61.7	77.1	58.6	42.7	49.4	42.7	35.5	34.1	26.1	23.6	27.3	27.4	25.9	32.6	75
Milk, Fresh	401	5.7	5.5	5.7	5.8	7.2	7.1	8.6	8.9	8.9	9.1	9.5	13.9	17.9	23.7	21.8
Milk Concentrates	402	75.5	78.7	100	101	97.8	109	121	120	136	137	128	117	118	122	104
Whey	404	30.8	62.1	61.4	50.7	72.6	63.5	55.5	53.6	56.5	42.4	45.1	54.4	54.8	42.5	35.1
Honey	409	9.8	16.7	17.2	22.9	20	23.1	23	24.4	28.7	32.2	32.4	40.9	43.2	51	51.1
Vegetables, dried	712	2.5	3	3.1	2.4	3.1	3	2.1	1.6	2.4	2	1.6	1.7	1.5	1.5	4.5
Soups	2104	8.6	10.9	11.3	9.7	10.2	9.5	11.3	10.9	10.1	9.1	8.5	7.7	7.9	7.3	6.7
Food Preparations	2106	5.3	8.2	9.4	8.6	6.1	5.9	5.5	5.7	6.6	5.5	5.9	8	8.5	8.6	6.6
Wine	2204	5.4	7.5	9.3	10.2	11	12.2	13.4	12.9	14.3	14	14.4	15.8	16	15.1	13.3
Blood, human & animal	3002	0.7	0.9	0.8	0.6	0.5	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.3
Beauty Products	3304	0.9	0.8	0.8	0.7	0.5	0.5	0.6	0.5	0.6	0.5	0.6	1	1	0.8	0.7
Plastic goods nes	3923	1.3	1.3	1.2	1.2	1.2	1.4	1.5	1.4	1.3	1.2	1	0.8	0.8	0.7	0.7
Vulcanised Rubber cloth	4016	0.7	0.8	0.7	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4
Chamois Leather	4108	3.1	5.7	6.6	7	7.1	2.8	2.2	1.2	1.5	2	2	1.6	2.2	0.8	2
Plywood	4408	8.1	8.8	5	4.6	4.7	5.4	8.3	8.3	8	6.6	6	5.9	5.3	4.8	5.2
Wood Pulp, semi-chemical	4705	0	0.2	67.9	66.8	102	45.7	80	40.1	51.8	55.3	71.5	45.2	55.6	45.3	52.5
Male Suits etc	6103	0.1	0.13	0.11	0.07	0.07	0.06	0.06	0.06	0.04	0.04	0.06	0.04	0.06	0.06	0.14
Female Suits etc	6104	0.17	0.19	0.17	0.15	0.19	0.15	0.16	0.14	0.11	0.18	0.21	0.13	0.12	0.06	0.39
Agricultural Equip.	8436	7.4	5.2	6.2	4.7	3.6	2.4	4.6	4.8	4.9	5.1	4.7	5.1	4.4	4.7	5
Parachutes	8804	1	0.6	0.2	0.3	0.4	0.5	0.5	0.6	1.2	1.2	1.4	0.9	0.9	0.7	5.2
Yachts	8903	5.5	6	4.9	5.2	5.8	4.8	8.3	6	6.1	4.2	5.8	3.7	4.3	4.1	2.3
Mechano-therapy appl.	9019	1.2	2.3	3	5.9	10.7	12.7	13	13.3	17.7	16.6	13.8	13.4	13.1	12	13.6
Instruments, physical ex.	9027	0.5	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.3
Science Collections	9705	5.8	6.7	11	2	6.9	4.9	4.9	3.2	4.2	10.4	11.8	6.3	4.4	6.8	5.3

New Zealand had a comparative advantage ($RCA > 1.0$) in all the Animal products in Table 5 over the whole 30-year period. The competitiveness of chilled beef had a break point around 2001; the index increased from the 2-3 range to the 4-5 range and maintained that till the present day. Chilled sheep meat has a much higher degree of competitiveness than beef because NZ's global trade share is higher than for beef. Sheep numbers fell over the period 1989-2018 in NZ, relative to cattle numbers, but NZ maintained its competitiveness in chilled sheep meat in the 50-70 RCA range until 2006. Thereafter it fell to a range from 20 to 50 until 2018 when it abruptly rose to 75.

Fresh milk was not a major dairy export in 1989 (by dairy product standards) although NZ had a slight comparative advantage in the product. In 1993, its degree of competitiveness began to rise from an RCA of around 1 to 9.5 in 2014. It then rose very quickly to 21.8 in 2018. NZ had a high and stable comparative advantage in milk concentrates (powders) in 1989 but in 1996 its competitiveness began to rise, and this continued until 2006 when it achieved an RCA of 100. NZ's competitiveness in whey products (404) appears to have had an abrupt rise in 2004. As a result, whey has changed from a minor to a major dairy export product and this strength has continued for the last 15 years.

Honey (409) has been one of New Zealand's recent boom export industries. Like wine, honey has a long history to build on in NZ. The industry relied mainly on exports of clover honey over the first part of the 1989-2018 period. Since then, manuka honey has become very popular and currently adds to the competitive strength of the industry. Problems overseas with bee diseases recently also plays a part in pushing up NZ's RCA. The RCA for honey has a break point around 2003 when it began rising from its earlier plateau (RCA's 3-6) to a new plateau from 2015 of 40-51. This RCA is extremely high for a 'new' product.

The Food products track four product lines, dried vegetables (712), soups (2104), food preparations (2106) and wine (2204). They have all moved up competitively over the period but at different rates. Dried vegetables have maintained their comparative advantage but with some volatility around 1999 and 2011. Soups followed an upward track to 2012 and declined a little thereafter. In 2018 soups still had a solid RCA value of 6.7. The pattern of competitiveness changes for food preparations is very similar to that for soups but with less volatility. Currently, it has the same degree of comparative advantage as soups.

Wine has had a monotonic rise in its competitiveness since 1989 (when, incidentally, it did not have a comparative advantage - with an RCA of 0.8). Wine has an interesting history. It was first planted by two missionaries from 1820 and over the next 150 years developed marginally as an import substitute in a world market dominated by France, Spain and Italy closely followed by the New World - US, Argentina, South Africa and Chile (to name a few). In the 1970's, wine grape growing took off in the Marlborough, Central Otago, Hawkes Bay and Canterbury provinces. International competitiveness rose above 1.0 and climbed steadily

to a value of 5.4 in 2004. Thereafter it rose more sharply to 13.3 in 2018 backed by injections of new capital from global wine companies. Interestingly, these developments took place in a domestic wine market dominated by Australian imports which probably aided improvements in New Zealand wine by creating a target standard, given Australia's longer experience in wine export markets.

The Chemical group is represented by blood (3002) and beauty products (3304). Both products have experienced a secular decline in their degree of competitiveness over the period. Both retained a comparative advantage until the mid-1990's and beauty products may have achieved this on the back of continuing tariff protection. Following these decreases in their competitiveness, both have stabilized their positions. Beauty products even regained comparative advantage in 2015-16.

Two Plastics and Rubber products are included in Table 5: plastic goods (3923) and vulcanised rubber clothing (4016). Plastic goods n.e.s. have emerged from the trade liberalization policy phase with increasing competitiveness. Indeed, its RCA was 1.0 by 1992. It maintained that position until 2015 when its competitiveness fell off slightly. Vulcanised rubber clothing has had a very stable level of competitiveness and its RCA in 2018 is almost exactly the same as it was in 1989. One other factor that influences products like beauty products (with an RCA just less than 1.0) is the real exchange rate which has been overvalued over the last few years making it more difficult to profit from export sales.

The Hides and Leather group is represented by chamois leather (4108) in Table 5. The competitiveness of chamois leather began in 1991 and after a slow start peaked in 2005/7 with an RCA of 7.1. It still has a comparative advantage in 2018 at 2.0.

The Forestry group is represented by plywood (4408) and semi-chemical wood pulp (4705). Plywood manufacture on the West Coast of the South Island reached comparative advantage status (1.2) in 1995 and had a big rise in competitiveness in 2003 (6.8). This level has been maintained ever since. Semi-chemical wood pulp began slowly in the 1980s and 1990's, finally making a big export breakthrough in 2006 with an RCA of 68. The Forestry companies had a plentiful supply of raw material that could be diverted. Its competitiveness has been maintained at very high levels right through to 2018 (53).

Like Plastics and Rubber, male suits (6103) and female suits (6104) illustrate the changing fortunes of the Textiles and Clothing group in the wake of world market developments and trade policy liberalisation at home. Male suits gradually lost competitiveness after 1989 reaching a low point in 2002 (0.1). This product line has hovered around this low level ever since, under strong competition from Italy and others in higher priced garments and Hong Kong and other Asian countries at the lower priced end. Female suits gained a little competitiveness after trade liberalization in part because fashion designing and some manufacture became more popular in New Zealand at the high end of the market. Its degree of

competitiveness peaked in 2001 at an RCA of 0.38 but subsequently declined until 2018 when it again reached 0.39.

Agricultural equipment (8436) gained in competitiveness throughout the 1990's reaching the comparative advantage level in 1998 (1.1). It has maintained that status ever since, finishing the period with an RCA of 5.

Transportation equipment is represented in Table 5 by parachutes and gliders (8804) and yachts and pleasure craft (8903). Parachute and glider exports gradually increased competitiveness from a very low base (0.1) over the early part of the period reaching comparative advantage in 2003. Its level of competitiveness has been volatile. It ended 2018 with an RCA of 5.2. Yachts had an RCA of 5.3 in 1989 and its competitiveness has been volatile throughout the period. It peaked in 2003 (8.1) and 2010 (8.3) and ended the period on 2.3. America's Cup events, long production periods and preferences for New Zealand superyacht construction will have influenced the trend and volatility of NZ's RCA's in yachts.

The Miscellaneous group is represented by mechano-therapy appliances (9019), instruments for physical or chemical analysis (9027) and science collections (9705). Mechano-therapy appliances had a comparative advantage of 5.8 in 1989 but competitiveness was reduced through to 1995 (0.4) and recovered to a high level in 2008 (10.7). It has retained its high comparative advantage level through to 2018 where it sat at 13.6. Instruments for physical and chemical analysis has never achieved comparative advantage status over the period. It peaked at 0.5 in 2004 and 2013 and ended the period on 0.3. Science collection exports have been somewhat volatile throughout the period starting at an RCA of 0.8 in 1989. They reached a higher plateau in 2002 at 6.6 rising to 11 in 2006 and ending in 2018 on 5.3.

5. Conclusions

This paper is a background document designed for people to explore export opportunities in depth. They might reflect on trends in New Zealand's recent export product performance. Of course, further analysis will be required in case studies of firms and markets.

New Zealand's traditional product lines have changed in composition as market demand has changed with technology, fashions, health concerns, convenience for consumers, trade costs and competition from suppliers in the rest of the world. Export industries like wine and honey have grown out of very small beginnings in response to foreign demand and the ability to adapt local resources for their enterprises. Some industries that were formally heavily protected by NZ import restrictions have managed to reorganize themselves to deal with the highly competitive markets overseas successfully, and some have been less successful in the face of new challenges like off-shoring opportunities.