NEW ZEALAND'S INTERNATIONAL TRADE PERFORMANCE

PRE AND POST DEREGULATION: 1970-1985 AND 1985-1993

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Preface

This study provides an overview of the New Zealand trade situation over the past 25 years. It complements other studies of trade patterns that have been carried out at Lincoln and considers the specific changes that have occurred in the deregulated environment since 1984. The analysis clearly demonstrates the complexity of the trends in trade patterns, and the need for careful analyses of this type to identify the changes that have occurred during this important time in New Zealand's economic history.

A C Zwart
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Acknowledgements

1. Introduction

New Zealand has embraced a range of structural adjustment policies over the last 20 years. Many of the specific policy changes enacted were designed to improve the competitiveness of New Zealand industry and improve the economy's trade performance. The exchange rate regime and import protection policies were gradually liberalised throughout the 1970s in response to the United Kingdom's (UK's) entry into the European Union (EU) and the two oil shocks, 1974 and 1979. The greatest transformation in industry and trade policy recently, occurred after 1984 when a series of radical changes was gradually made to production and export subsidies and import protection. Production and export subsidies were completely removed over a period of three to four years, the removal of import licensing was accelerated and licensing was completely abolished in 1990. Tariff reductions were also accelerated and many product markets were deregulated, Rayner and Lattimore (1991). The implicit tax on exports resulting from this trade policy mix was reduced from 11 percent in 1981/82 to the current level of four percent, Duncan, Lattimore and Bollard (1992).

The question raised here is whether these post 1984 policy reforms have had a measurable effect on New Zealand's trade performance. That is to say, has New Zealand's trade performance after 1984 been better than in the years prior to 1984.

Brownie and Dalziel (1993) have clearly shown that New Zealand's trade performance was poor over the period 1970-84. They attribute much of this low performance to the result of trade losses incurred after UK entry to the EU. This period is examined again using a somewhat different data base and these results are compared to the subsequent period, (1985-93).

2. Background

From 1938 until around 1981, New Zealand adopted a strong import substitution policy. One part of this regime was import licensing which, in essence, prohibited imports of all import competing goods or close substitutes for them. Non-competing goods were allowed to be imported but faced high (by OECD standards) tariffs and restrictive licensing arrangements. For example, computer hardware was a non-competing import subject to a 40 percent tariff up until the mid 1980s. Non-competing imports often included capital goods with new technology embodied in them. The exportable sector was increasingly "compensated" for the implicit export tax associated with the import substitution programme through special tax concessions, input subsidies, concessional credit (especially to marketing boards), government research and development programmes and deficiency payments (supplementary minimum prices) on key agricultural exports.

The nominal rate of protection of the import-competing sector is thought to have always exceeded that of the export sector, and usually by a wide margin. Accordingly, there was a persistent positive export tax in place over this period.

The standard theory would predict that this policy mix would cause a misallocation of resources, with too many resources in the import-competing sector and too few in the export sector. The export sector would be limited to those industries with the strongest comparative advantage. The competitiveness of the export sector would be lower through its reduced

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ability to fund research and development unless these were subsidised. Competitiveness in all industries would be reduced by the limitations on access to new technology embodied in capital equipment. Competitiveness in the import competing industries would also be reduced by limitations of New Zealand's domestic market size which, in isolation from the world market, would scarcely offer scale economies to many industries.

From 1978, the rate of "tariff compensation" was significantly increased in efforts to force growth in the largest export sectors, sheepmeat, beef, wool and dairy products. In 1981, a programme of tendering import licenses was introduced to test the tariff equivalent of the programme. The quantity tendered was gradually increased until the tender premium fell to low levels. At that point, licenses were removed from that class of goods. Australia only licenses were tendered first because they had the lowest premia. After 1984 global license tendering was accelerated with the last license removed in 1990. Export subsidisation was removed more quickly between 1985 and 1987. The question then is, what happens as these policy restrictions are gradually removed?

One of the stylised facts about the New Zealand economy is that the strongest comparative advantages lie with industries based upon key natural resource based industries - pastoral land, other land and water resources being used to generate cheap hydro-electric power. If this perception is correct, then the reductions in import substitution bias resulting from the structural adjustment policies ought to favour these industries with the highest comparative advantage. Relative output of these industries ought to expand and depending upon domestic demand conditions, relative exports ought to also expand. The local income (and price) elasticities of demand for products of the natural resource based industries are hypothesised to be low compared to highly manufactured products, so that output expansion ought to be reflected in export expansion.

Data may not yet be available to allow measurement of the full impact of deregulation on the production of many exportable products. This is because natural resource based products have long gestation lags associated with output expansion. For example, wood products in New Zealand are mainly derived from exotic radiata pine forests with a 25 year rotation length; beef and dairy cattle expansion also takes many years to reach full expansion adjustment, probably of the order of 5-10 years.

A shift-share analysis carried out by Brownie and Dalziel (1993) suggested that New Zealand's poor trade performance from 1970 to 1984 was due to:

> "New Zealand's 1970 exports...[being] over concentrated on commodities and countries that grew more slowly in international trade than the world average".

Their study showed, with the exception of the EU, (and particularly the UK) that New Zealand's exports to most countries and in all SITC groups, were larger than would have been expected by New Zealand's initial market share, and growth rates of international trade. Furthermore the authors argued that New Zealand's poor trade performance over the period could be more than explained by its declining market share in the UK, and by slow growth in international trade in meat and dairy products. As a result they concluded that:

> "...the performance of New Zealand's exporters over the period under review is revealed as much more credible than is recognised by analyses relying on aggregate trading figures alone".

The authors noted that a shift-share analysis that was able to compare the years of "Muldoonism" and "Rogernomics" would be a valuable exercise, but were unable to take part in such an exercise due to a lack of data availability. The authors are referring to the periods when Sir Robert Muldoon, as Minister of Finance and Prime Minister, used a broad command economy policy stance from 1975 to 1984 versus the subsequent 'more market' approach of the Finance Ministers who followed him, Sir Roger Douglas (1984-88) , Hon David Caygill (1988-90) and the Hon Ruth Richardson (1990-93).

This study is designed to initiate tests of these hypotheses by undertaking a trade analysis over both these periods utilising United Nations trade statistics, cross-classified by market and by commodity, to compare New Zealand's export performance from 1970 to 1985 (the period of "Muldoonism") and 1985 to 1993 (the period of "Rogernomics"). It is hoped that such a study will go some way towards evaluating whether or not the broad policy changes to industry and other policy (including some deregulation, desubsidisation and privatisation) have improved the competitiveness of New Zealand's exporters.

By analysing the figures on each commodity sent to each export destination we can see which products improved in terms of overall exports, which countries New Zealand exporters, as a whole, did well in, and we can also see where specific commodities were doing well. By doing well we mean, doing better than the international trade trend for the particular commodity, given New Zealand's initial market shares.[1]

3. The Methodology

Analysis will be carried out using the shift share technique, which has been used extensively as a tool for examining the international trade performance of a country over a specified time period. Since the technique is described in various papers this section will give only a brief explanation of its use in international trade.[2]

The technique compares a country's exports as at two periods in time. It compares this performance by market and by commodity with the performance of all other exporters. Finally, the technique compares New Zealand's market share in each commodity and in each market with total export growth to that market. Unlike many analytical techniques, shift-share analysis is not well suited to measuring causality, ie, to providing answers. Rather, it is useful in raising questions or hypotheses to be tested in further research.

4. The Data

The shift-share analyses undertaken in this study required data of country imports by commodity group, and also New Zealand exports by market and by commodity group. Such disaggregated data were obtained from the *United Nations Statistical Division Commodity*

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[1] The Brownie and Dalziel (1993) shift-share analysis was carried out in two parts: firstly on New Zealand exports by commodity groups, and secondly, by total New Zealand exports to each destination country. As a result it was unable to identify precisely areas of concern or success since their data set did not allow for analysis of New Zealand's exports of commodity groups to particular countries.

[2] For a detailed explanation of the technique in the context of international trade see Brownie and Dalziel (1993).

Trade Statistics Data-Base (COMTRADE) in November 1994. The original data were converted into real terms using the price index series in Annex 3.

The analysis is carried out using selected one, two and four digit SITC commodity groups data from 0 to 8. They include New Zealand's major export categories. These groups are defined in Annex 1. SITC group 9 "Goods not classified by kind", was left out of the analysis since the group is insignificant for most countries. This duplicates the study of Brownie and Dalziel (1993).

The objective for country selection was to include New Zealand's top 100 export markets based on the value of exports in 1993. For some countries, country imports data disaggregated by commodity were unavailable for the study. They had to be excluded from the study on methodological grounds even though they were important trading partners or competitors for New Zealand. The excluded countries included China, Bahrain, Saudi Arabia, Poland, the former USSR, and South Africa. A number of other countries had to be excluded because data were unavailable from Comtrade for years close to the 1970 start date and/or the 1993 closing data. Some flexibility was allowed here and 1971-73 and 1991-92 data was admitted as proxies for 1970 and 1993, respectively. Outside these ranges, countries were excluded. After these exclusions, 65 countries were finally used in the analysis. The countries included in the analysis are given in Annex 2. Comprehensive coverage of the OECD, Asian and Latin American countries was possible but the significant gaps in country coverage occur for China, the former USSR, Eastern Europe and Africa.

Where trade was registered in the database as zero, this number was replaced by 0.001 in order to compute the percentages involved in the analysis.

5.   Results

Summarised results of the analysis following the methodology of Leamer and Stern (1970) are presented in Annex 4, Tables A4.1 and A4.2. [3]

In 1970, over 85 percent of New Zealand exports were concentrated in primary products (SITC 0,1 and 2) including meat, wool, dairy products and wood products. Nearly half the exports went to the EU, with 80 percent of that flow destined for the UK. Increasingly, New Zealand developed a more diverse set of trading partners and these have become more diversified over the period 1970-93. At the beginning of the period the UK was the largest export market especially for agricultural exports with Japan, the US and Australia the other large export markets. These markets with the UK included in the EU are sometimes referred to as the "big four". Over the period, New Zealand exports to the Other Asia region increased significantly and a group of these countries including South Korea, Malaysia, Hong Kong, Taiwan and Singapore now form a second grouping of very important markets for New Zealand, just behind the "Big Four".

Some significant market and product diversification in New Zealand exports had begun in the mid 1960s as a result of the first free-trade agreement with Australia, the so-called NAFTA agreement (New Zealand and Australia Free Trade Agreement). Prior to the 1960s,

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[3] Full tables of results are available on disk and can be ordered from the AERU, P.O. Box 84, Lincoln, University, Canterbury, New Zealand. A small charge will be made to cover costs of postage and handling.

manufactured exports were of very little importance. By 1970, it was also clear that the UK would join the EU and that New Zealand would not receive the same level of preferential treatment that it formerly enjoyed. Accordingly, agricultural market diversification efforts were underway because these tended to be concentrated in the UK market. The beginning data point for this analysis is tempered by these factors.

Some world market growth characteristics are presented in Table 1. In the first period, world market growth was fastest in Asia (excl. Japan), Japan, the US and the Middle East. Three of these regions were important markets for New Zealand. Trade in wood pulp and paper grew quickly which favoured New Zealand given the rapidly expanding mature exotic tree stock. New Zealand was developing expanded fuel (3) and chemical (5) production capacity as a result of the "Think Big" government investment strategy, but New Zealand was not considered to be highly competitive in the other fast growing commodity areas, machinery and equipment (7) and miscellaneous manufactured products (8). On the other hand, commodity trade growth was slowest for three major New Zealand products, beef (111), sheepmeats (112) and dairy products (02). Two of New Zealand major markets grew relatively slowly, Australia and the EU.

Table 1
World Trade Growth Characteristics

| | Period | |
	1970-85	1985-93
Market Growth		
Fastest	Middle East, Asia, US, Japan	Latin America, Asia, EU, US
Slowest	Africa, EU, PIN, Australia	Africa, PIN, Middle East, Canada
Commodity Growth		
Fastest	25 (Pulp and Paper), 3 (Mineral Fuels), 5 (Minerals), 7 (Machines, Transport Equipment), 8 (Misc. Manufactures),	02 (Dairy products), 1 (Bev. and Tobacco), 8 (misc. Manufactures), 68 (Aluminium), 7 (Machines, Transport Equipment)
Slowest	02 (Dairy Products), 0111(Beef), 0112 (Sheepmeat), 68 (Aluminium), 26 (Textile Fibres),	0112 (Sheepmeat), 21 (Hides and Skins), 26 (Basic Manufactures), 25 (Pulp and Paper), 3 (Mineral Fuels) 4 (Animal, Vegetable Oil, Fats),

A summary of how New Zealand exports responded to these market trends in the first period is given in Table 2. New Zealand suffered a real decline in trade over the period 1970-85 in Belgium (4%), Ireland (25%), UK (59%), Finland (48%), Sweden (23%), Canada (23%), Barbados (28%), Trinidad (45%), Cyprus (56%) and South Africa (19%), Annex Table A4.1. These extreme results reflect the expansion of the EU in the case of UK and Ireland. New

Zealand exports of dairy products (butter and cheese) were restricted by quotas, under a special arrangement, Protocol 18, from the date of UK entry in 1973. Tariffs were introduced for New Zealand sheepmeat exports to the UK and in 1980, these products too were restricted by quota. It is interesting to note however, that New Zealand gained market share in Denmark, which also acceded to the EU in 1973/74 and in other EU member States, Italy, Portugal and especially in Spain after the economy was opened up following Franco. Part of the gains in Italy were due to the development of new lightweight lamb products in New Zealand (beta lamb).

Table 2
Changes in New Zealand's Trade Competitiveness

	Period	
	1970-85	1985-93
Markets		
New Zealand Gained	Australia(S), Japan(F), Asia(F), ME(F), PIN(S), Africa(S)	Australia, M.E.(S)
New Zealand Lost	EU(S), Canada, US(F), LA, OECD	EU(F), Canada(S), US(F), Japan, Asia(F), LA(F), Africa(S), PIN(S), OECD
Commodities		
New Zealand Gained	05 (Fruit and Veg.), 1 (Beverages and Tobacco), 3 (Mineral Fuels).	1 (Beverages and Tobacco), 24 (Wood), 3 (Mineral Fuels), 4 (Animal, Vegetable Oil, Fats)
New Zealand Lost	0111 (Beef), 0112 (Sheepmeat), 02 (Dairy Products), 21 (Hides and Skins), 24 (Wood), 25 (Pulp and Paper), 26 (Basic Manufactures), 4 (Animal, Vegetable Oil, Fats), 5 (Minerals), 68 (Aluminium), 7 (Machines, Transport Equipment), 8 (Misc. Manufactures).	0111 (Beef), 0112 (Sheepmeat), 02 (Dairy Products), 05 (Fruit and Veg.), 21 (Hides and Skins), 25 (Pulp and Paper), 26 (Basic Manufactures), 5 (Minerals), 68 (Aluminium), 7 (Machines, Transport Equipment), 8 (Misc. Manufactures).

Note: F denotes fast growing and S slow growing markets

Canada introduced major agricultural import substitution policies during the seventies which particularly affected the special Canada-New Zealand trade arrangements. Supply management programmes were introduced for dairy products which targeted domestic self-sufficiency in milkfat and excluded New Zealand's traditional trade in butter. Later in the period, Canada introduced a US style countercyclical beef import law which periodically restricted New Zealand exports of ground beef to Canada as well as the US.

Political instability and associated poor economic growth may explain the decline in trade in a number of the other countries on the negative list. Generally, the decade of the seventies were noted for increasing non-tariff barriers in agricultural products affecting New Zealand. During this decade, for example, the Common Agricultural policy of the EU increased beef price supports to such an extent that the EU was transformed from the world's largest importer of beef to the largest exporter, using export restitution. More generally, agricultural intervention rose to such an extent during the 1970s that the OECD was persuaded to seriously study the global effects of agricultural subsidies in the industrialised countries. This multi-lateral mandate study instigated by the New Zealand Prime Minister, Sir Robert Muldoon, was instrumental in raising the profile of agriculture to such an extent that it received priority status in the Uruguay GATT round which began in 1986.

New Zealand gained market share in the important fast growing markets of Japan and Asia. New Zealand's share increased in the slower growing Australian import market, a trend which had begun under the 1966 NAFTA agreement and further stimulated by Australian tariff reductions from the late 1960s onwards. Overall, New Zealand lost market share in the OECD. New Zealand gained market share in the Middle East which grew quickly following the oil price hikes. Unfortunately, the data set didn't include sufficient data for analysing exports to Iran and Iraq, where sheepmeat sales grew rapidly over this period and continued in spite of political upheaval in the region.

The commodity analysis paints a gloomy picture. New Zealand lost market share in beef, sheepmeats and dairy products which were slower growing markets. This is a double edged effect. Market shares also dropped for other major products wool (26), aluminium (68) and pulp and paper (25). New Zealand gained world market share in fruits and vegetables (05) as a result of the expansion in kiwifruit, apples and other crops.

The overall trade picture for the period 1970-85 is illustrated with the summary statistics in Table 3. Over the period, New Zealand exports grew by US$934 million. They would have grown by US$3156 million had New Zealand's exports grown at the same rate as world trade overall. New Zealand's particular commodity composition cost New Zealand US$2075 million because it was concentrated in slower growing products. New Zealand's market distribution was better than average and New Zealand gained US$182 million as a result. This is somewhat surprising given losses in the UK but this was counterbalanced to some extent by gains in fast growing Asian markets and the large gains in Australia. It does mean that New Zealand actually did quite well in other markets. New Zealand lost competitiveness overall by US$329 million, this being the weighted average loss in trade shares, by market and by commodity.

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Table 3

Table 3
Comparative Shift-Share Trade Analysis, New Zealand

	1970-85	1985-93
Change New Zealand Exports, (Real $USmillions)	934	1647
Due to Change in:		
1) World Trade	3156	2901
2) Commodity Composition	-2075	-1108
3) Market Distribution	182	34
4) Increased Competitiveness	-329	-180

By 1985, New Zealand's export mix had changed dramatically. The EU now represented only 22 percent of exports. Japan had surpassed the US as New Zealand's third most important trading partner and Asia (excl. Japan) now took 11 percent of New Zealand's exports, up from 4 percent in 1970. Commodity groups 0 and 2 now represented only 69 percent of merchandise exports down from 88 percent in 1970. Miscellaneous manufactures (8) had risen to four percent of exports from less than one percent in 1970. It was earlier hypothesised that New Zealand ought not have a comparative advantage in these highly manufactured products. Increased exports to Australia proved viable in part because New Zealand had free access to the Australian market which was still relatively highly protected by OECD standards.

New Zealand however, also increased exports of manufactured goods to other countries in competition with some of the world's most competitive exporters of manufactures. Often these products were short production run goods like specialised machinery and transport equipment. But the non-traditional manufactured exports also included specialised clothing goods and some high tech goods including computer software and CB radios. The import substitution policy of the previous decades had not stifled innovation completely. New Zealanders have always been highly travelled people internationally and in this and other ways were tapped into global innovations and ideas. Nevertheless, the total quantity of such exports was very small.

In the second period there were significant changes in world trade trends, (Table 1). Asia and US imports continued to grow relatively rapidly but now the EU and Latin America joined this group. The Middle East slowed considerably and the Pacific Island Nations continued to grow slowly; both were now important New Zealand markets. Trade in dairy products (02) and aluminium (68) became fast growing imports but wool (26) and sheepmeats (112) remained slow.

New Zealand continued to gain market share in Australia aided by the 1983 ANZCERTA (Australia - New Zealand Closer Economic Relations Agreement). She also continued to gain market share in the now slower growing Middle East market. But New Zealand lost market share in fast growing Japan, Asia, US, EU and Latin America. On the commodity side, New Zealand gained share only in wood products (24) amongst the traditional exports and lost market share in all the rest. However, the overall picture illustrated in Table 3 is somewhat more optimistic. Over this shorter second period, New Zealand exports grew more rapidly by $1647 million and closer to the growth she would have achieved if world import growth had been matched ($2901 million). In

other words, the ratio of New Zealand exports to scaled World growth was higher in period 2 than in period 1. New Zealand continued to lose due to commodity composition ($1108 million) and this implies about the same rate of loss per year given that the second period is roughly half as long as the first.

6.   Conclusion

New Zealand trade grew more slowly than world trade over the whole period but the proportionate gap closed after 1985. The fastest growth after 1985 occurred in wood and wood products largely as a result of the rate of tree planting 25 years before. This gain cannot be attributed to the policy changes. Highly developed manufactures and other non-traditional exports (like Group 1) also grew very rapidly after 1985 for a number of reasons. A strong base in non-traditional exports had been built prior to 1985 and the policy restructuring programme had temporarily suppressed domestic demand increasing the incentive to export these products (at constant output) especially to Australia.

The trends in pastoral product exports prior to 1985 were halted though market shares did not return to 1970 levels. In part this may have been due to relative prices improving following their slump in the earlier period. There was a large reduction in sheep numbers in the second period which was offset to some extent by growing beef and dairy cattle numbers and by continuing expansion of fruit and vegetable production. The removal of SMP's changed relative agricultural prices in these directions at least partly creating the incentives to rebundle the agricultural product mix.

It is probably too soon, however, to draw stronger conclusions from this data set alone on full changes in the export product and market mix because sufficient time has not elapsed to reveal fully, changes in the production base and the rate of technological change. That exploration requires more extensive data and analysis.

References

Brownie, S. and P. Dalziel (1993) "Shift-Share Analysis of New Zealand Exports 1970-84" Economic Papers 27(2), pp.233-250.

Leamer, E. and J. Stern (1970) "Constant-Market-Share Analysis of Export Growth", Chapter 7 in Quantitative International Economics, Allyn and Baron Inc., Boston.

Lloyd, P.J. (1994) "New Zealand 1984-94: An International Perspective", Paper presented to the Winter Conference of the New Zealand Association of Economists, Palmerston North.

Rayner, A.C. and R.G. Lattimore (1991) "New Zealand", in Vol. 6 of Foreign Trade Liberalisation, Papageorgiou A., M. Michaely and M. Choksi eds., Basil Blackwell, Oxford.

Duncan, I., R.G. Lattimore and A. Bollard (1992) "Dismantling the Barriers: Tariff Policy in New Zealand, Wellington: New Zealand Institute of Economic Research.

ANNEX 1: Commodity Classification

SITC

0   Food and Live Animals

         0111   Beef
         0112   Sheepmeat
         02   Dairy Products
         05   Fruit and Vegetables
         Other 0

1   Beverages and Tobacco

2   Crude Materials excluding Fuels

         21 Hides and Skins
         24 Wood
         25 Pulp and paper
         26 Textile Fibres (including wool)

3   Mineral Fuels

4   Animal, Vegetable Oil, Fats

5   Chemicals

6   Basic Manufactures

         68 Aluminium

7   Machines, Transport Equipment

8   Miscellaneous Manufactured Goods

ANNEX 2: Country Composition of World Regions

EC

Belgium-Luxembourg
Denmark
France
Germany
Greece
Ireland
Italy
Netherlands
Portugal
Spain
United Kingdom

Middle East

Egypt
Cyprus
Malta
Qatar
Syria
Tunisia
Jordan
Libya
Kuwait

Latin America

Argentina
Brazil
Chile
Colombia
Barbados
Guadeloupe
Martinique
Panama
Reunion
Trinidad/Tabago
Jamaica
Mexico
Peru
El Salvador
Venezuela

EFTA

Austria
Finland
Norway
Sweden
Switzerland

Pacific Island Nations

Brunei
Tonga
Fiji
Papua New Guinea

Other Asia

Hong Kong
Nepal
India
Bangladesh
Mauritius
Indonesia
Korea
Malaysia
Pakistan
Phillipines
Singapore
Sri Lanka
Thailand

Other OECD

Canada
US
Australia
Japan
Turkey

Africa

Algeria
S.Africa
Morocco

Annex 3: Unit Value Import Price Index

For Total World Imports, Base = 100 in 1985.

Year	Price index
1970	31.0
1971	32.8
1972	35.3
1973	43.4
1974	61.1
1975	66.8
1976	67.5
1977	73.7
1978	80.6
1979	96.1
1980	117.0
1981	115.4
1982	109.8
1983	104.5
1984	101.8
1985	100.0
1986	103.7
1987	113.6
1988	118.8
1989	120.2
1990	130.8
1991	133.7
1992	139.5
1993	136.3

Sources: 1970-1991, Special Table F of United Nations (1991,p.s99)
1992-1993, Index of prices of manufactured unit values for industrialised countries of the OECD as reported by the World Bank "World Development Report", 1994, Washington DC, John Hopkins University Press.

Annex 4: Shift-Share Analysis Results

The tables provided here only give results for total trade with each country and world trade in each SITC group. Detailed results, giving trade in each product to each country is available on disk.[4]

Description of columns presented for each country:

1. New Zealand exports in base year of period.

2. New Zealand exports in end year of period.

3. Imports from all the world in the base year of the period.

4. Imports from all the world in the end year of the period.

5. Percentage change in New Zealand's exports to the country.

6. Percentage change in the country's imports from all the world $= r_j$.

7. Real $US change in New Zealand's exports to the country.

8. Change in New Zealand's exports to the country, if they had grown at the same rate as imports from all the world $= r_j \times V_j$.

9. Change in New Zealand's exports if they had grown at the rate of total world trade $= r \times V_j$.

10. Change in New Zealand's exports of the given SITC commodity group to the country, if they had grown at the same rate as the country's imports of that group from all the world $= r_{ij} \times V_{ij}$.

11. The difference between the change in New Zealand's exports and what they would have been if the grew at the same rate as the country's imports from all the world = Actual Change $- r_{ij} \times V_{ij}$.

Notes:

• r denotes a rate of change.

• V denotes a value.

• Negative values are denoted by brackets.

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[4] Disk contains data in comma delimited text format and Lotus 123 spreadsheet format.

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- The i subscript refers to SITC group i.

- The j subscript refers to country j.

- Where i is missing the figure denotes the sum over all SITC codes, ie, total export growth.

- Where j is missing the figure denotes the sum over all countries, ie, world figures.
  eg. r_{ij} refers to the rate of growth in exports of good i to country j.
         r_j refers to the rate of growth in exports of all goods to country j.

- All figures are given in thousands of real $US, except for column 11 which is is $million.

- Column 9 uses r, this figure can be found in the bottom row of the table, ie, Total World Trade row.

- Columns 8 and 9 are only calculated for each country's total imports, hence are only presented in the bottom row of each country's calculations.

- The final column (residual, expressed in millions) is the difference between New Zealand's actual growth (column 7) and rij.Vij (column 10). Accordingly, the last column measures the extent to which New Zealand did better (+ve) or worse (-ve) that other exporters of that commodity to that market.

Example:

In 1985, New Zealand exported $US 72,806 million of products to Belgium, a decrease of 4 percent on the 1970 value of $US 75,816. Given the 1970 starting point for New Zealand, it lost approx $5 million over and above what New Zealand would have gained had export growth been 27 percent. 27 percent being the growth rate of Belgium's imports of SITC 0 from all the world.

	NZ Exports 1970 Vij	NZ Exports 1985 Vij*	World Imports 1970	World Imports 1985	NZ % Change	Country % Change rj	Actual Change	rj*Vij	r*Vij	rij*Vij	Residual
OECD Countries											
EC											
Belgium-Lu	75,816	72,806	32,814,035	44,229,215	-4%	35%	(3,010)	26,375	67,276	1,876	(5)
Denmark	8,697	10,440	12,423,581	14,548,330	20%	17%	1,743	1,487	7,717	229,084	(227)
France, Mo	95,442	102,158	53,627,852	82,372,442	7%	54%	6,716	51,157	84,691	(2,259)	9
Greece	33,297	36,410	5,645,929	7,041,349	9%	25%	3,113	8,229	29,546	448,726	(446)
Ireland	8,835	6,635	3,871,258	8,366,721	-25%	116%	(2,200)	10,260	7,840	1,189,951	(1,192)
Italy	80,355	132,764	40,995,255	63,806,319	65%	56%	52,409	44,712	71,303	923,251	(871)
Netherland	50,242	63,474	37,438,897	49,667,728	26%	33%	13,232	16,411	44,583	11,712	2
Portugal	6,616	8,808	3,809,655	4,470,434	33%	17%	2,192	1,148	5,871	1,092,836	(1,091)
Spain	9,635	29,753	12,252,252	18,643,129	209%	52%	20,118	5,026	8,550	1,630,569	(1,610)
United King	1,336,710	541,918	69,224,910	107,866,349	-59%	56%	(794,792)	746,153	1,186,139	(362,815)	(432)
Tot. EU	1,705,645	1,005,166	272,103,623	401,012,016	-41%	47%	(700,479)	808,045	1,513,517	212,415	(913)
EFTA											
Austria	2,858	6,263	3,031,061	15,436,942	119%	409%	3,405	11,698	2,536	10,044,622	(10,041)
Finland	3,590	3,690	2,655,794	13,075,474	3%	392%	100	14,086	3,186	9,161,761	(9,162)
Norway, S	4,200	2,190	10,825,910	14,038,737	-48%	30%	(2,010)	1,246	3,727	36,195	(38)
Sweden	8,565	6,590	19,886,787	19,929,035	-23%	0%	(1,975)	18	7,600	(2,188)	0
Switz. Liec	5,806	10,766	19,058,742	27,339,917	85%	43%	4,960	2,523	5,152	391,237	(386)
Total	25,019	29,499	55,458,294	89,820,105	18%	62%	4,480	15,502	22,201	3,609,513	(3,605)
Canada	132,603	102,289	39,926,029	69,356,386	-23%	74%	(30,314)	97,745	117,666	33,909	(64)
USA	669,942	816,575	114,848,445	294,541,737	22%	156%	146,633	1,048,199	594,478	205,101	(58)
Australia	315,119	865,681	14,012,832	22,231,955	175%	59%	550,562	184,831	279,623	112,843	438
Japan	387,568	829,846	60,616,906	125,773,308	114%	107%	442,278	416,592	343,911	139,671	303
Turkey	219	3,493	159,077	5,496,519	1492%	3355%	3,274	7,360	195	4,854,778	(4,852)
Tot. OECD	3,236,116	3,652,549	557,125,206	1,008,232,026	13%	81%	416,433	2,620,298	2,871,592	682,662	(266)
Asia											
Hong Kong	19,135	85,698	9,081,635	29,404,448	348%	224%	66,563	42,821	16,980	1,406,606	(1,340)
Nepal	493	712	25,272	149,605	45%	492%	219	2,424	437	12,485	(12)
India	5,116	21,196	6,039,755	11,879,961	314%	97%	16,080	4,947	4,540	(887)	17
Bangladesh	1,324	2,149	811,936	1,855,830	62%	129%	825	1,703	1,175	189,906	(189)
Mauritius	2,345	13,215	199,706	446,460	464%	124%	10,870	2,898	2,081	68,299	(57)
Indonesia	12,283	55,828	4,414,309	8,926,694	355%	102%	43,545	12,556	10,900	5,533	38
Korea Re.	5,845	87,953	5,751,952	31,038,606	1405%	440%	82,108	25,696	5,187	8,649,075	(8,567)
Malaysia	26,916	67,964	4,352,106	12,473,245	153%	187%	41,048	50,226	23,884	114,076	(73)
Pakistan	4,671	11,501	3,426,184	4,449,294	146%	30%	6,830	1,395	4,145	134,966	(128)
Philippines	20,439	25,686	3,392,068	2,795,216	26%	-18%	5,247	(3,596)	18,136	79,664	(74)
Singapore	32,103	74,429	7,769,435	25,877,953	132%	233%	42,326	74,824	28,487	35,432	7
Sri Lanka	8,806	16,214	1,210,242	1,385,354	84%	14%	7,408	1,274	7,814	(2,244)	10
Thailand	11,661	19,842	3,638,790	6,768,502	70%	86%	8,181	10,030	10,348	13,304	(5)
Total	151,139	482,387	50,113,391	137,451,168	219%	174%	331,248	263,405	134,114	104,338	227
Latin America											
Argentina	61	220	2,288,387	2,451,241	259%	7%	159	4	54	826,461	(826)
Brazil	94	3,598	262,416	6,990,869	3746%	2564%	3,504	2,399	83	6,350,044	(6,347)
Chile	1,048	5,666	1,823,548	2,073,874	440%	14%	4,618	144	930	944,196	(940)
Colombia	181	2,460	887,484	1,529,370	1262%	72%	2,279	131	160	861,333	(859)
Barbados	7,110	5,138	294,484	515,637	-28%	75%	(1,972)	5,339	6,309	168,073	(170)
Guadeloup	274	1,359	176,603	273,155	396%	55%	1,085	150	243	145	1
Martinique	352	735	91,287	359,197	109%	293%	383	1,032	312	235,989	(236)
Panama	1,542	5,389	670,558	890,714	249%	33%	3,847	506	1,368	179,640	(176)
Reunion	81	148	127,571	301,014	84%	136%	67	110	72	133,838	(134)
Trinidad To	19,171	10,546	802,032	1,352,902	-45%	69%	(8,625)	13,167	17,012	67,368	(76)
Jamaica	35,292	1,286	1,565,915	574,807	-96%	-63%	(34,006)	(22,337)	31,316	(17,139)	(17)
Mexico	6,423	32,636	6,103,723	15,431,866	408%	153%	26,213	9,815	5,699	3,247,268	(3,221)
Peru	15,858	15,920	1,050,774	1,689,197	0%	61%	62	9,635	14,072	806,990	(807)
El Salvador	39	3,213	355,387	333,876	8200%	-6%	3,174	(2)	34	134,457	(131)
Venezuela	1,577	26,448	4,841,132	6,252,738	1577%	29%	24,871	460	1,400	510,338	(485)
Total	89,101	114,762	21,341,302	41,020,457	29%	92%	25,661	82,162	79,065	245,906	(220)
Middle East											
Egypt	190	6,926	621,210	3,353,306	3539%	440%	6,736	837	169	2,935,387	(2,929)
Cyprus	3,352	1,488	616,371	566,286	-56%	-8%	(1,864)	(272)	2,974	894	(3)
Oman	455	9,696	140,464	3,015,639	2031%	2047%	9,241	9,315	404	2,614,862	(2,606)
Malta	194	1,913	265,265	294,255	888%	11%	1,719	21	172	182,476	(181)
Qatar	380	1,386	148,901	1,053,090	265%	607%	1,006	2,305	337	662,088	(661)
Syrian A.R.	3,118	8,078	613,596	818,719	159%	33%	4,960	1,042	2,767	1,365	4
Tunisia	548	934	75,513	473,822	70%	527%	386	2,893	487	271,697	(271)
Jordan	39	11,011	170,403	1,140,038	28344%	569%	10,972	220	34	696,962	(686)
Libya	6	3,330	279,477	3,165,095	51509%	1033%	3,324	67	6	3,165,089	(3,162)
Kuwait	545	10,812	1,493,832	5,581,751	1883%	274%	10,267	1,492	484	423,467	(413)
Total	8,827	55,574	4,425,032	19,462,001	530%	340%	46,748	29,995	7,832	195,834	(149)
Africa											
Algeria	6	51,354	396,668	4,449,908	795788%	1022%	51,348	66	6	2,307,625	(2,256)
S.Africa.Cu	15,475	12,605	11,541,280	8,207,541	-19%	-29%	(2,870)	(4,470)	13,732	(3,100)	0
Morocco	706	1,976	1,434,103	1,771,968	180%	24%	1,270	166	627	151,872	(151)
Total	16,188	65,935	13,372,051	14,429,417	307%	8%	49,747	1,280	14,364	15,891	34
Pacific Island Nations											
Brunei Dar.	42	505	232,500	581,825	1104%	150%	463	63	37	86,878	(86)
Tonga	7,722	13,689	25,415	41,088	77%	62%	5,967	4,762	6,852	3,392	3
Fiji	36,935	59,155	322,974	430,082	60%	33%	22,220	12,249	32,775	7,897	14
Papua New	10,710	46,078	795,927	894,865	330%	12%	35,368	1,331	9,504	153,001	(118)
Total	55,409	119,427	1,376,816	1,947,860	116%	41%	64,018	22,981	49,168	18,534	45

	NZ Exports 1970 Vij	NZ Exports 1985 Vij*	World Imports 1970	World Imports 1985	NZ % Change	Country % Change rj	Actual Change	rj*Vij	r*Vij	rij*Vij	Residual
Total World Comodity Trade											
0	2,168,689	2,028,170	90,977,262	119,852,573	-6%	32%	(140,519)	688,321	1,924,402	605,768	
0111	572,864	434,074	4,039,862	4,978,581	-24%	23%	(138,790)	133,113	508,335	154,766	
0112	636,465	360,730	1,288,130	963,352	-43%	-25%	(275,735)	(160,473)	564,772	(114,716)	
02	653,148	548,499	3,955,871	7,031,892	-16%	78%	(104,649)	507,877	579,576	438,137	
05	72,733	211,320	14,896,457	21,935,436	191%	47%	138,587	34,368	64,540	31,477	
Other0	233,478	473,547	66,796,943	84,943,312	103%	27%	240,069	63,428	207,179	48,285	
1	1,947	11,453	6,308,243	9,773,289	488%	55%	9,506	1,070	1,728	175,083	
2	964,719	946,947	85,867,854	86,348,148	-2%	1%	(17,772)	5,396	856,051	(55,703)	
21	154,093	192,877	2,909,851	4,211,309	25%	45%	38,784	68,919	136,735	49,890	
24	121,171	79,179	9,719,068	10,061,503	-35%	4%	(41,992)	4,269	107,522	35,301	
25	32,488	94,855	862,997	3,618,605	192%	319%	62,367	103,737	28,829	121,363	
26	553,437	488,386	13,272,951	11,984,055	-12%	-10%	(65,051)	(53,743)	491,097	(98,341)	
Other2	103,530	91,650	56,472,676	56,472,676	-11%	-4%	(11,880)	(4,607)	91,868	(10,578)	
3	1,379	91,567	22,477,426	92,652,457	6540%	312%	90,188	4,305	1,224	164,648	
4	29,934	37,757	4,545,107	7,214,268	26%	59%	7,823	17,579	26,562	32,930	
5	124,480	241,638	50,113,042	111,756,415	94%	123%	117,158	153,121	110,458	147,417	
6	176,416	723,194	140,684,713	207,114,868	310%	47%	546,778	83,302	156,544	74,401	
68	12,287	250,628	21,486,656	18,100,094	1940%	-16%	238,341	(1,937)	10,903	103,848	
Other6	164,128	472,566	119,198,057	189,014,774	188%	59%	308,438	96,133	145,641	85,248	
7	55,815	210,099	189,737,321	436,269,385	276%	130%	154,284	72,522	49,528	68,985	
8	33,401	199,810	57,042,830	151,561,526	498%	166%	166,409	55,345	29,639	49,637	
Total	3,556,780	4,490,634	647,753,798	1,222,542,929	26%	89%	933,854	1,080,962	3,156,135	1,263,166	(329)

TOTAL WORLD TRADE (OECD + Asia + L.America + Middle East + Africa + Pacific)

	NZ Exports 1970 Vij	NZ Exports 1985 Vij*	World Imports 1970	World Imports 1985	NZ % Change	Country % Change rj	Actual Change	rj*Vij	r*Vij	rij*Vij
Total	3,556,780	4,490,634	647,753,798	1,222,542,929	26%	89%	933,854	3,020,121	3,156,135	1,263,166

	NZ Exports 1985 Vij	NZ Exports 1993 Vij*	World Imports 1985	World Imports 1993	Z Change	Country Change rj	Actual Change	rj*Vij	r*Vij	rij*Vij	Residual
OECD Countries											
EC											
Belgium-Lu	72,806	90,810	44,229,215	76,997,350	25%	74%	18,004	53,940	47,028	7,261,469	(7,243)
Denmark	10,440	12,267	14,548,330	21,824,916	18%	50%	1,827	5,222	6,744	5,372	(4)
France, Mo	102,158	84,517	82,372,442	133,304,815	-17%	62%	(17,641)	63,166	65,988	1,778,532	(1,796)
Greece	36,410	27,445	7,041,349	4,924,379	-25%	-30%	(8,965)	(10,947)	23,519	(21,223)	12
Ireland	6,635	6,763	8,366,721	13,670,594	2%	63%	128	4,206	4,286	204,843	(205)
Italy	132,764	85,679	63,806,319	97,957,052	-35%	54%	(47,085)	71,059	85,758	12,540	(60)
Netherland	63,474	42,916	49,667,728	81,605,883	-32%	64%	(20,558)	40,816	41,001	1,339,669	(1,360)
Portugal	8,808	10,418	4,470,434	15,846,052	18%	254%	1,610	22,413	5,689	3,206,747	(3,205)
Spain	29,753	27,261	18,643,129	54,108,034	-8%	190%	(2,492)	56,599	19,219	1,134,795	(1,137)
United King	541,918	463,272	107,866,349	153,832,681	-15%	43%	(78,646)	230,934	350,047	111,182	(190)
Tot. EU	1,005,166	851,350	401,012,016	654,071,755	-15%	63%	(153,816)	634,313	649,279	220,014	(374)
EFTA											
Austria	6,263	5,982	15,436,942	33,542,490	-4%	117%	(281)	7,346	4,046	3,594,664	(3,595)
Finland	3,690	2,742	13,075,474	11,379,548	-26%	-13%	(948)	(479)	2,384	84,228	(85)
Norway, S	2,190	2,374	14,038,737	16,900,354	8%	20%	184	446	1,415	130,359	(130)
Sweden	6,590	16,200	19,929,035	28,109,999	146%	41%	9,610	2,705	4,257	3,882,186	(3,873)
Switz. Liec	10,766	25,431	27,339,917	42,378,264	136%	55%	14,665	5,922	6,954	58,060	(43)
Tot. EFTA	29,499	52,730	89,820,105	132,310,655	79%	47%	23,231	13,955	19,055	8,137	15
Canada	102,289	130,132	69,356,386	89,191,619	27%	29%	27,843	29,254	66,073	154,685	(127)
USA	816,575	874,896	294,541,737	427,274,175	7%	45%	58,321	367,982	527,460	43,461,518	(43,403)
Australia	865,681	1,369,588	22,231,955	30,415,201	58%	37%	503,907	318,644	559,179	257,858	246
Japan	829,846	1,122,268	125,773,308	172,837,919	35%	37%	292,422	310,530	536,032	517,843	(225)
Turkey	3,493	37,595	5,496,519	18,324,067	976%	233%	34,102	8,152	2,256	5,086,282	(5,052)
Tot OECD	3,652,549	4,438,559	1,008,232,026	1,524,425,392	22%	51%	786,010	1,870,027	2,359,334	1,221,803	(436)
Asia											
Hong Kong	85,698	173,061	29,404,448	101,340,466	102%	245%	87,363	209,654	55,356	148,560	(61)
Nepal	712	17,463	149,605	181,638	2353%	21%	16,751	152	460	35,640	(19)
India	21,196	62,921	11,879,961	15,677,834	197%	32%	41,725	6,776	13,691	4,615,819	(4,574)
Bangladesh	2,149	4,048	1,855,830	1,636,235	88%	-12%	1,899	(254)	1,388	608,711	(607)
Mauritius	13,215	11,594	446,460	1,288,048	-12%	189%	(1,621)	24,911	8,536	19,407	(21)
Indonesia	55,828	90,833	8,926,694	19,117,193	63%	114%	35,005	63,732	36,062	50,097	(15)
Korea Re.	87,953	367,937	31,038,606	60,941,875	318%	96%	279,984	84,736	56,813	76,329	204
Malaysia	67,964	153,019	12,473,245	32,054,065	125%	157%	85,055	106,692	43,901	48,401	37
Pakistan	11,501	9,801	4,449,294	5,906,655	-15%	33%	(1,700)	3,767	7,429	2,454	(4)
Philippines	25,686	86,469	2,795,216	11,543,610	237%	313%	60,783	80,391	16,592	1,608,912	(1,548)
Singapore	74,429	102,223	25,877,953	61,698,456	37%	138%	27,794	103,025	48,077	42,858	(15)
Sri Lanka	16,214	26,180	1,385,354	2,487,983	61%	80%	9,966	12,905	10,473	1,576	8
Thailand	19,842	78,445	6,768,502	30,342,302	295%	348%	58,603	69,107	12,817	51,966	7
Total	482,387	1,183,994	137,451,168	344,216,360	145%	150%	701,607	725,646	311,594	422,157	279
Latin America											
Argentina	220	14,500	2,451,241	11,914,391	6491%	386%	14,280	849	142	1,736,625	(1,722)
Brazil	3,598	11,351	6,990,869	16,734,416	215%	139%	7,753	5,015	2,324	1,236,174	(1,228)
Chile	5,666	16,538	2,073,874	6,765,752	192%	226%	10,872	12,819	3,660	26,992	(16)
Colombia	2,460	384	1,529,370	6,344,409	-84%	315%	(2,076)	7,745	1,589	4,023,190	(4,025)
Barbados	5,138	4,659	515,637	365,337	-9%	-29%	(479)	(1,498)	3,319	60,427	(61)
Guadeloup	1,359	2,811	273,155	523,313	107%	92%	1,452	1,245	878	319,654	(318)
Martinique	735	2,572	359,197	752,326	250%	109%	1,837	804	475	184,139	(182)
Panama	5,389	5,880	890,714	1,380,062	9%	55%	491	2,961	3,481	215,325	(215)
Reunion	148	1,982	301,014	1,340,814	1239%	345%	1,834	511	96	810,688	(809)
Trinidad To	10,546	5,326	1,352,902	725,777	-49%	-46%	(5,220)	(4,888)	6,812	53,467	(59)
Jamaica	1,286	5,972	574,807	827,985	364%	44%	4,686	566	831	137,558	(133)
Mexico	32,636	122,197	15,431,866	45,968,507	274%	198%	89,561	64,580	21,081	33,382	56
Peru	15,920	34,103	1,689,197	2,803,307	114%	66%	18,183	10,500	10,283	13,692	4
El Salvador	3,213	10,990	333,876	166,214	242%	-50%	7,777	(1,613)	2,075	40,588	(33)
Venezuela	26,448	33,605	6,252,738	7,623,307	27%	22%	7,157	5,797	17,084	697,357	(690)
Total	114,762	272,870	41,020,457	104,235,917	138%	154%	158,108	176,856	74,130	80,518	78
Middle East											
Egypt	6,926	19,258	3,353,306	4,683,722	178%	40%	12,332	2,748	4,474	913,196	(901)
Cyprus	1,488	3,412	566,286	1,465,092	129%	159%	1,924	2,362	961	635,714	(634)
Oman	9,696	6,654	3,015,639	2,650,355	-31%	-12%	(3,042)	(1,174)	6,263	(318)	(3)
Malta	1,913	1,832	294,255	980,658	-4%	233%	(81)	4,462	1,236	1,042	(1)
Qatar	1,386	1,472	1,053,090	1,149,424	6%	9%	86	127	895	93	(0)
Syrian A.R.	8,078	5,042	818,719	1,330,438	-38%	63%	(3,036)	5,049	5,218	824,611	(828)
Tunisia	934	1,655	473,822	994,391	77%	110%	721	1,026	603	493,719	(493)
Jordan	11,011	20,571	1,140,038	1,923,236	87%	69%	9,560	7,564	7,112	757,369	(748)
Libya	3,330	1,478	3,165,095	2,156,257	-56%	-32%	(1,852)	(1,061)	2,151	932	(3)
Kuwait	10,812	10,966	5,581,751	4,282,735	1%	-23%	154	(2,516)	6,984	67,046	(67)
Total	55,574	72,339	19,462,001	21,616,307	30%	11%	16,765	6,152	35,898	(3,271)	20
Africa											
Algeria	51,354	40,181	4,449,908	1,520,475	-22%	-66%	(11,173)	(33,807)	33,172	(14,967)	4
S.Africa.Cu	12,605	15,503	8,207,541	11,969,749	23%	46%	2,898	5,778	8,142	97,614	(95)
Morocco	1,976	12,701	1,771,968	2,155,519	543%	22%	10,725	428	1,276	1,094,785	(1,084)
Total	65,935	68,385	14,429,417	15,645,743	4%	8%	2,450	5,558	42,590	89,303	(87)
Pacific Island Nations											
Brunei Dar.	505	156	581,825	669,285	-69%	15%	(349)	76	326	82	(0)
Tonga	13,689	10,514	41,088	44,691	-23%	9%	(3,175)	1,200	8,842	1,286	(4)
Fiji	59,155	63,755	430,082	447,296	8%	4%	4,600	2,368	38,211	7,397	(3)
Papua New	46,078	27,537	894,865	933,434	-40%	4%	(18,541)	1,986	29,764	5,904	(24)
Total	119,427	101,962	1,947,860	2,094,706	-15%	8%	(17,465)	9,003	77,143	16,443	(34)

	NZ Exports 1985 Vij	NZ Exports 1993 Vij*	World Imports 1985	World Imports 1993	Z Change	Country Change rj	Actual Change	rj*Vij	r*Vij	rij*Vij	Residual
Total World Comodity Trade											
0	2,028,170	2,786,889	119,852,573	161,703,756	37%	35%	758,719	708,214	1,310,079	726,071	
0111	434,074	521,717	4,978,581	7,999,079	20%	61%	87,643	263,352	280,387	281,756	
0112	360,730	423,235	963,352	1,236,210	17%	28%	62,505	102,172	233,010	144,285	
02	548,499	872,415	7,031,892	12,850,521	59%	83%	323,915	453,863	354,299	474,150	
05	211,320	296,597	21,935,436	32,498,515	40%	48%	85,277	101,762	136,500	97,420	
Other0	473,547	672,926	84,943,312	107,119,431	42%	26%	199,379	123,629	305,884	130,266	
1	11,453	28,996	9,773,289	22,009,877	153%	125%	17,543	14,340	7,398	106,827	
2	946,947	1,140,744	86,348,148	95,931,289	20%	11%	193,797	105,095	611,673	99,142	
21	192,877	141,072	4,211,309	3,319,928	-27%	-21%	(51,805)	(40,825)	124,587	(68,087)	
24	79,179	486,705	10,061,503	21,053,499	515%	109%	407,526	86,502	51,145	85,687	
25	94,855	113,077	3,618,605	5,274,843	19%	46%	18,222	43,415	61,271	346,527	
26	488,386	237,788	11,984,055	10,156,343	-51%	-15%	(250,598)	(74,485)	315,469	(104,903)	
Other2	91,650	162,102	56,472,676	56,126,675	77%	-1%	70,452	(562)	59,201	(2,254)	
3	91,567	169,048	92,652,457	123,090,338	85%	33%	77,481	30,081	59,147	30,865	
4	37,757	32,584	7,214,268	6,152,370	-14%	-15%	(5,173)	(5,558)	24,389	(9,168)	
5	241,638	372,102	111,756,415	192,111,639	54%	72%	130,465	173,742	156,084	153,335	
6	723,194	971,392	207,114,868	316,602,945	34%	53%	248,198	382,305	467,141	342,096	
68	250,628	274,037	18,100,094	34,040,017	9%	88%	23,408	220,717	161,891	185,050	
Other6	472,566	697,355	189,014,774	282,562,928	48%	49%	224,789	233,885	305,250	217,719	
7	210,099	362,768	436,269,385	774,498,232	73%	78%	152,669	162,884	135,712	137,212	
8	199,810	273,586	151,561,526	320,133,979	37%	111%	73,776	222,236	129,066	240,574	
Total	4,490,634	6,138,109	1,222,542,929	2,012,234,425	37%	65%	1,647,475	1,793,341	2,900,688	1,826,953	(179)

TOTAL WORLD TRADE   (OECD + Asia + L.America + Middle East + Africa + Pacific)

	NZ Exports 1985	NZ Exports 1993	World Imports 1985	World Imports 1993	Z Change	Country Change	Actual Change	rj*Vij	r*Vij	rij*Vij
Total	4,490,634	6,138,109	1,222,542,929	2,012,234,425	37%	65%	1,647,475	2,793,243	2,900,688	1,826,953

RESEARCH REPORTS

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