

# **Looking at the numbers**

## **A view of New Zealand's economic history**

### **Chapter: External sector**

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At the time of the first publication of this book *Phil Briggs* was a senior research economist at NZIER where he specialised in quantitative analysis and economic forecasting.

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# Preface

The New Zealand Institute of Economic Research (NZIER) was founded in 1958 as a non-profit making trust to provide economic research and consultancy services. The institute is probably best known for its long-established *Quarterly Survey of Business Opinion* and *Quarterly Predictions*. The institute also undertakes a wide range of consultancy activities for government and private organisations.

This monograph has been prepared at NZIER by Phil Briggs. The assistance of Vhari McWha, Ralph Lattimore, Alex Sundakov, Doug Steel, John Yeabsley, Frances Gamble, Sarah Spring, Corina Basher, Cherloe Morgan, Daniel Briggs and Liz Hodgson is gratefully acknowledged. Thanks also to Grant Scobie and Katie Katyan at the Treasury for supplying a number of the long-term data series that they have collected.

It was first updated in 2007 and subsequently in 2015.

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# External sector

## Exports and imports, nominal

Figure 1 shows exports and imports, in nominal dollars, over the 100-year period from 1840. Even though the values in Figure 26 **Error! Reference source not found.** haven't been adjusted for price movements, we can spot a few features:

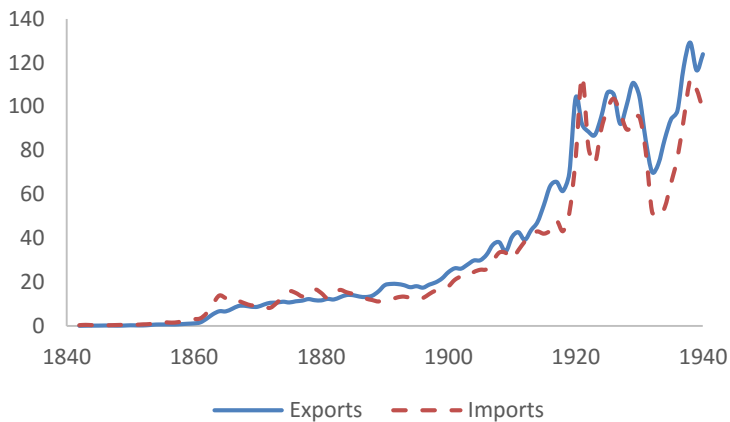
- Exports rose suddenly in the early 1860s, reflecting the effect of gold. They then grew steadily through to the 1890s.
- Export earnings increased strongly from the mid-1890s.
- Growth in exports came to a full stop in 1920 and export earnings generally remained flat over the 1920s.
- Nominal exports declined sharply in the late 1920s and early 1930s as the depression hit.

Note that from the late 1880s onwards, exports generally exceeded imports by a comfortable margin.

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**Figure 1 Exports and imports, nominal, to 1940**

Dollars, millions



Sources: Lloyd Prichard (1970), official yearbooks

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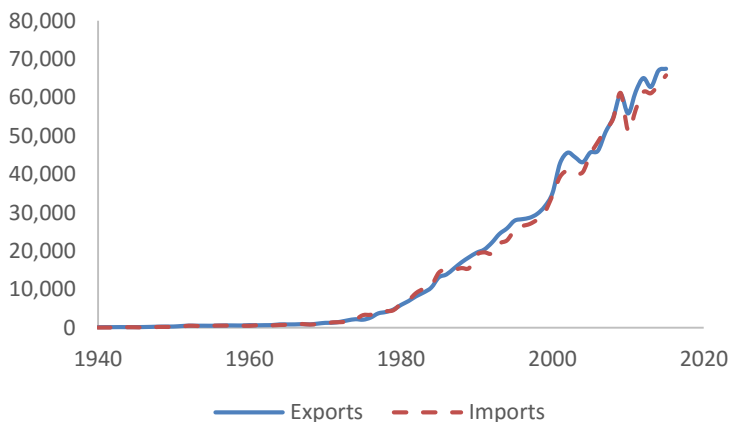
The values in Figure 1 are for merchandise trade only, that is, they cover trade in goods but not trade in services. We have no numbers on services trade for this period but it is likely that services trade would have been relatively low prior to 1940.

Figure 2 shows nominal exports and imports from 1940. There is a discontinuity in this chart, although it is not visible. Up to and including 1950 the numbers are for merchandise trade only, since no data on services is available for these years. For 1951 and later years the figures include services.

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**Figure 2 Exports and imports, nominal, from 1940**

Dollars, millions



Sources: Official yearbooks, INFOS

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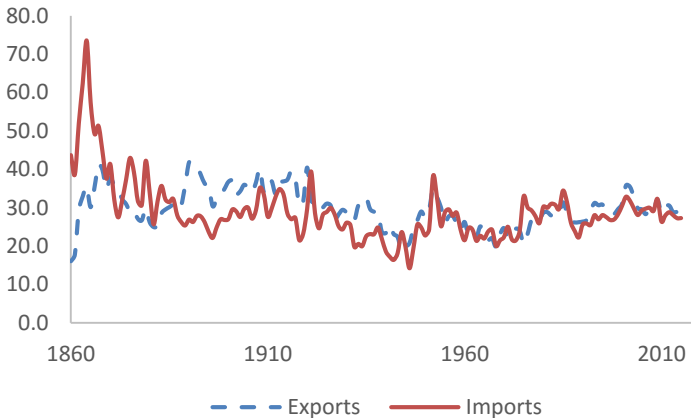
Note that Figure 2 starts where Figure 1 left off. If we had plotted exports for the pre-1940 period on Figure 2, the numbers would have hardly been visible. Clearly we need to adjust our export numbers for price changes if we are to make any sense of them. We'll spend much of this section looking at these price changes, and the influences on them.

One way of partly masking out the effects of inflation is to look at exports and imports as a percent of nominal GDP. Figure 3 does this. The chart indicates that exports as a proportion of GDP have generally fluctuated around 30 percent. In the past we've tended to

view this, rather proudly, as showing that New Zealand is a trading nation—that we have an ‘open economy’. In the context of modern developed economies though, an exports/GDP ratio of 30 percent or even 40 percent no longer looks particularly high. Still, the performance of our economy has been, and still is, largely dependent on how well we do in world markets.

**Figure 3 Exports and imports, percent of GDP**

Percent



Sources: Trade data is from the same sources as for Figure 1 and Figure 2. Nominal GDP figures are from the same sources listed for **Error! Reference source not found.**

## Exports by type of commodity

### *Goods exports*

Figure 4 shows exports by commodity type as a percent of total merchandise exports. It is perhaps one of the most interesting charts we will see, in that it seems to encapsulate the whole of New Zealand’s economic history.

Some of the major features of the chart:

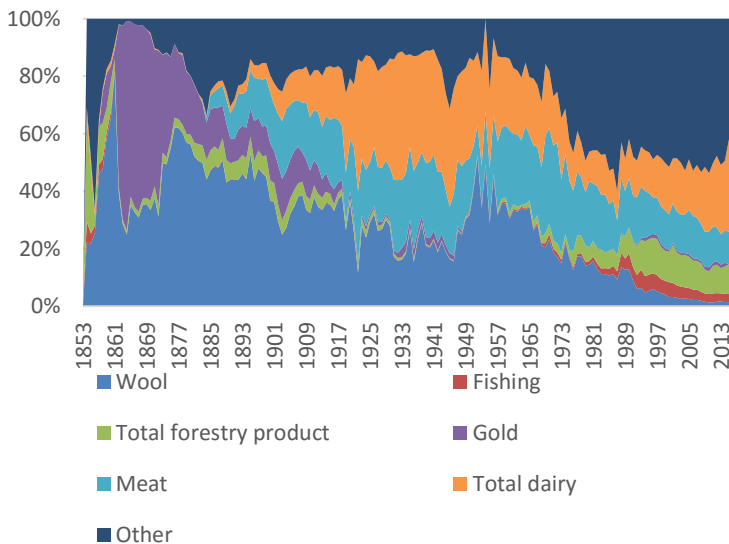
- In 1853, the first year for which we have commodity data, goods exports were dominated for forestry (which included timber and

kauri gum) and wool. Fishing also made a significant contribution as did 'other', which included flax.

- By 1860 wool accounted for 75 percent of goods exports. But within a year it had been overtaken by gold. Gold peaked at 72 percent of goods exports in 1863, but by 1880 its share had dropped to less than 20 percent. Still, gold remained a significant export commodity until the onset of the first world war. (As we will see later, British and New Zealand currencies went off the gold standard in 1914, which probably accounts for the declining interest in gold from this time.)
- By the early 1870s wool was again the predominant export. However, from 1882, when refrigerated shipping started, both meat and dairy began to emerge as major export industries. And by 1902—only 20 years later—the combined value of meat and dairy exports exceeded the value of exported wool. (As we will see later, the combined value of meat and dairy exports exceeded the value of exported wool by 1902.)

**Figure 4 Goods exports by type of commodity**

Percent of total



Sources: Condliffe (1915), Bloomfield (1984), INFOS. The figures are for calendar years to 1961 and June years from then on.



- Dairy went on to become the biggest export earner, peaking at 46 percent of goods exports in 1921.
- Wool regained its supremacy in the early 1950s, initially due to the influence of the Korean war. (Fighting a war in a cold climate did wonders for wool sales.) Wool continued to be the main earner through to 1967.
- Over the ‘long expansion’ period—from the mid-1930s to the mid-1960s—exports continued to be dominated by wool, dairy and meat.
- From 1967 a new pattern emerged. Wool was now facing strong competition from synthetic fibres like nylon and began its long decline. Wool now makes up only 3 percent of goods exports. In contrast, from the mid-1960s the ‘other’ category began to grow, and today it accounts for nearly half of all goods exports. This category includes such things as fruit, aluminium, steel, and manufactures. Forestry, and then fishing, began to re-emerge as important industries. This time though, fishing was not based on whaling but on fish like hoki, mackerel and squid. And forest products were derived not from kauri but from exotic pine.
- Meat has declined from around 30 percent of goods exports in the late 1960s to 14 percent today. Dairy fell from 28 percent in 1967 to 11 percent by 1987, but has since recovered to 19 percent. This recovery partly reflects higher overseas prices, which to some extent have been the result of the GATT round concluded in 1994 (Nixon and Yeabsley, 2002). Dairy volumes have also risen as farmers have noted the higher export prices and have converted to dairy. However, despite the recent emergence of ‘super company’ Fonterra, the dairy sector as a whole no longer dominates the export scene like it used to.
- The ‘other exports’ category, which includes horticultural products and manufactures, has increased markedly as a proportion of total exports over the last few decades. The major market for New Zealand manufactures has been Australia, and growth in our trans-Tasman exports has been aided by two significant trade treaties: the New Zealand Australia Free Trade Agreement (NAFTA) in 1965 and CER in 1982.

- Despite the growth in manufactured exports, primary-based products still account for around just under half of our goods exports in 2000s.

Overall, over the last 50 years there has been a remarkable shift in the composition of New Zealand's goods exports and markets. This has largely been the result of necessity—with the decline in wool as a major commodity and the entry of Britain into the EEC, New Zealand has had no option but to diversify with respect to both the composition and the destinations of its exports.

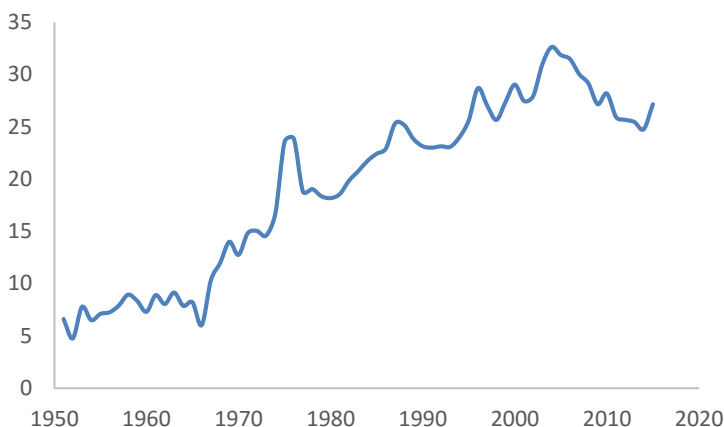
### *Services exports*

Services exports cover travel, transport, insurance, and 'other services'. This last component covers such things as education and consulting services. The largest components of services exports are transport and travel, and both include spending by overseas tourists.

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**Figure 5 Services' share of total exports**

Percent of total



Sources: Official yearbooks, INFOS

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Figure 5 shows services exports as a percent of total exports. Some of the chart's major features:

- Services' share of exports remained fairly low, at 7 to 8 percent of the total, until the late 1960s.
- From the late 1960s services' share begins to shoot up. Initially this was partly due to the fall in wool prices that happened at this time, which lowered goods' share of total exports. But as we can see, services' share of the total climbs sharply all the way through to the mid-1970s. This reflects strong tourism growth with air travel becoming more affordable for overseas consumers.
- Services' share of total exports was particularly high in the mid-1970s. This seems to have been the result of two things: the high visitor inflows that were associated with the Commonwealth games held in Christchurch, and an easing in the growth of goods' exports as the first oil shock began to affect international demand.
- Service's share of exports has generally climbed since the late 1970s, and reflects continuing strong growth in tourism inflows.

## Exports by trading partner

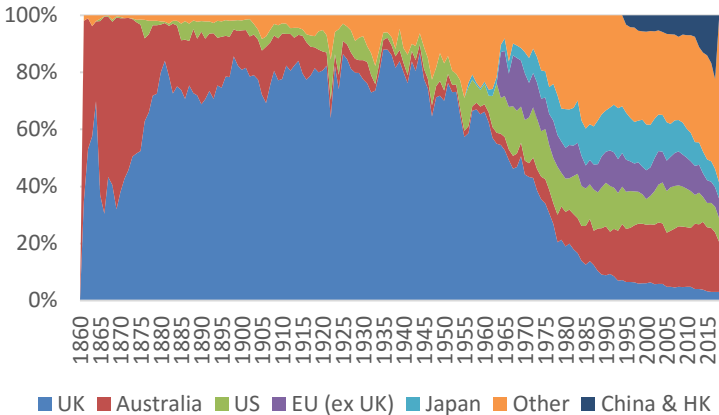
Which countries have we traded with? Which countries have been our largest markets? Figure 6 shows the proportion of our goods exports going to various markets. (We don't have data for destinations of services exports.)

Some points to note:

- Back in the 1860s, Australia was where we shipped most of our goods to. However, not all of these goods were destined for the Australian market. Some were trans-shipped through Australia to other destinations. The share of exports going across the Tasman declined as exports of wool, and then refrigerated products, to Britain picked up. Only over the last 30 years has Australia become a major destination again. As mentioned above, this reflects the influence of the NAFTA and CER agreements.
- From the late 1870s through to 1940 Britain was by far our biggest market, taking 70 percent or more of our total exports. Since the end of the second world war the share of exports to Britain has fallen, and this fall was accentuated by the entry of Britain into the EEC in 1973.
- Trade with the US increased sharply after the second world war.
- Exports to Japan increased sharply between 1960 and 1980. This partly reflects exports of aluminium from the Tiwai Point smelter.
- Exports to EU countries other than Britain have remained relatively constant as a share of total exports over the last 40 years.
- APEC nations continue to increase in importance as sources for New Zealand exports, growing from around 15 percent of trade in 1935 to about 69 percent in 2006.
- While the significance of Japan as a destination for our exports has decreased the rest of Asia, included in 'other' has steadily increased. In 2006 Australia is still our largest single export market.

**Figure 6 Goods exports by destination**

Percent of total



Sources: Bloomfield (1984), INFOS. The figures are for calendar years to 1961 and June years from then on. Data for the EU, which began as the EEC in 1958, starts in 1960.

In the space of half a century, New Zealand has seen a massive diversification in the destinations for its exports. It has gone from being Britain's colonial farm to being a country that supplies goods to a wide range of countries located around the Pacific Rim and beyond.

### Trading partner growth

It's conventional wisdom among economic forecasters that:

- Our trading partners' economic growth influences the demand for our exports.
- Our export performance largely determines our economic growth.

If both of these propositions hold, then our economic growth should be related to the economic growth of our trading partners. But is it?

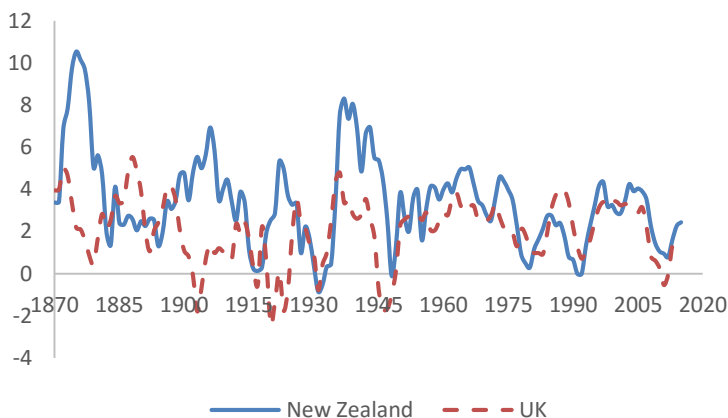
Figure 7 shows economic growth for both New Zealand and the UK. (The series show average growth over 5 years). As can be seen, the correlation between the two series is fairly high from 1930 on. But

the two countries had significantly different experiences prior to that. New Zealand showed stronger growth in the earlier 1870s, which was probable due to Vogel's spending policies. But Britain showed stronger growth in the 1880s. New Zealand then fared remarkably well in the early 1900s, unlike Britain which had a downturn following the Boer war. Even after the British economy had recovered, economic activity grew at a fairly low rate. Britain also faced a severe downturn after the first world war.

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**Figure 7 Real GDP growth, New Zealand and UK**

Average annual percent change over 5 years



Sources: Mitchell and Deane (1962), Maddison (1995), Datastream

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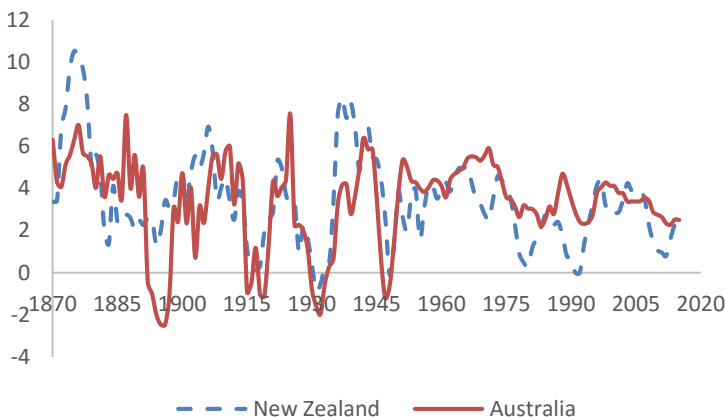
Figure 8 shows New Zealand growth relative to Australian growth. The two countries have had similar growth profiles, both before and after 1930. There was a major divergence in the 1890s when Australia had a severe depression. The effects of this depression on Australia appear to have been even more severe than those of the world depression of the 1930s. This depression was triggered by the financial woes of stock and station agents, which flowed on to the banking sector. A total of 13 banks, including Baring's, collapsed, and this in turn scared off overseas investors from putting their money into Australia.

Turning to more recent times, note the higher growth in Australia, relative to New Zealand, since the mid-1960s.

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**Figure 8 Real GDP growth, New Zealand and Australia**

Average annual percent change over 5 years



Sources: Butlin (1962), Maddison (1995), Datastream

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Figure 9 shows New Zealand growth against US growth.

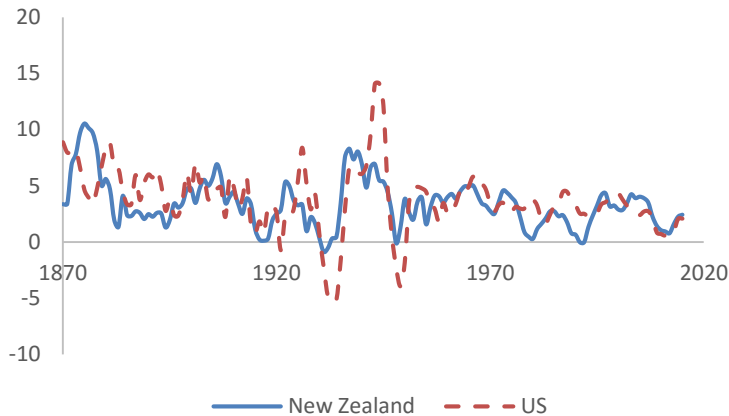
Two features to note:

- Unlike New Zealand, the US did not experience a significant slowing in growth in the 1880s.
- The US economy was generally more volatile than the New Zealand economy between 1920 and 1950. Particularly noticeable from the US figures are the boom of the 1920s, the depth of the 1930s depression, the boom during the second world war, and the post-war bust.

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### Figure 9 Real GDP growth, New Zealand and US

Average annual percent change over 5 years



Sources: Mitchell (1993), Maddison (1995), Datastream

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Overall, New Zealand's growth profile is more like that of Australia than that of Britain, our major market. This was especially the case prior to 1930. Perhaps this is not surprising. During this period both New Zealand and Australia could be classified as developing agrarian economies, unlike Britain which was becoming increasingly industrial. In short, both countries were in a similar development phase; to a large extent they were supplying one market, Britain, with similar products.

### Export prices and volumes

So far we have looked only at export values. Can we adjust these values for changes in prices and see how real exports—that is, export volumes—have grown? We can, but it's hard work:

- For the period to 1914 we have deflated nominal goods exports using Easton's export price series, the one which included gold (see **Error! Reference source not found.**).
- Statistics New Zealand has a price series for goods exports going back to 1914. This is the series used in deriving the terms of trade



index. We have used this export price series to deflate nominal exports for the period from 1914 to 1952.

- As noted earlier, since 1951 total nominal exports include services as well as goods. (The figures from 1951 are also for March years rather than calendar years.) However, reliable figures for the goods component and for the services component appear to be available only from 1952. For the period from 1952 to 1955 we have used these components, using the CPI to deflate services, while using Statistics New Zealand's series for merchandise export prices to deflate goods. We then weight the two deflated series together to get a real series for total exports.
- For the period from 1955 to 1979 there are official estimates from Statistics New Zealand of total real exports, so we have used these.
- There is a gap in the official estimates of real exports from 1979 to 1983. For this period we used the same approach as for the 1952 to 1955 period, deflating nominal values for goods and services separately, then weighting them together. For the period from 1983 we have used official estimates of total real exports.

Got that? Yes, it's hard work.<sup>1</sup> We have put all of our estimates of real exports onto a March year basis and linked them together to get a series going back to 1862. Annual percent changes in this series — that is, annual percent changes in the volume of exports — are shown in Figure 10.

Two years stand out: the year ended March 1863 and the year ended March 1920, which both have very high growth. The growth in 1863 is due to the gold rush. The growth in 1920 is probably the result of the first world war ending. Demand in Britain was no doubt

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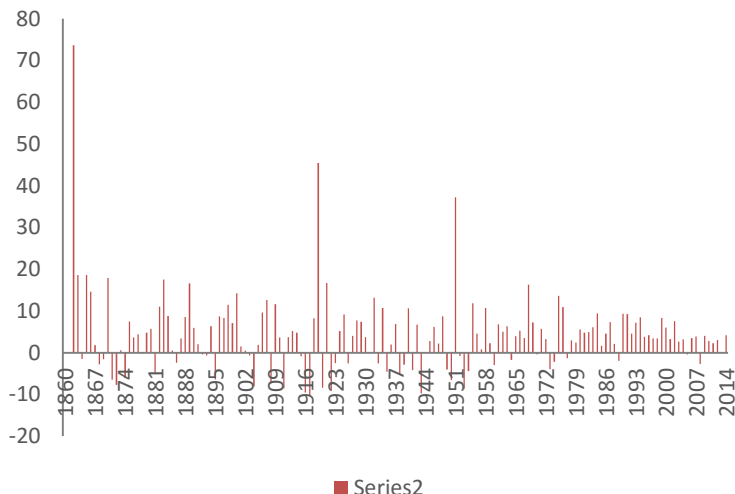
<sup>1</sup> Also, this isn't the only way of doing it. There are figures for goods exports in 1900 prices in official yearbooks and these figures run from 1900 to 1938. Then there is a volume index for goods exports on INFOS which begins in 1936. But these series don't appear to account for any changes in the quality of goods being shipped, and may be no more accurate than the estimates of volumes produced via the method outlined above. So for the period to 1952 we have stuck with the general approach of using price series to deflate nominal values.

getting back to normal. But there were probably supply side influences too. As the soldiers came home the country would have been able to pump out more production and hence export more.

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**Figure 10 Export volume growth**

Annual percent change



Sources: Calculated using nominal values from the same sources as for Figure 1 and Figure 2, and deflators from Easton (1984), official yearbooks, and INFOS.

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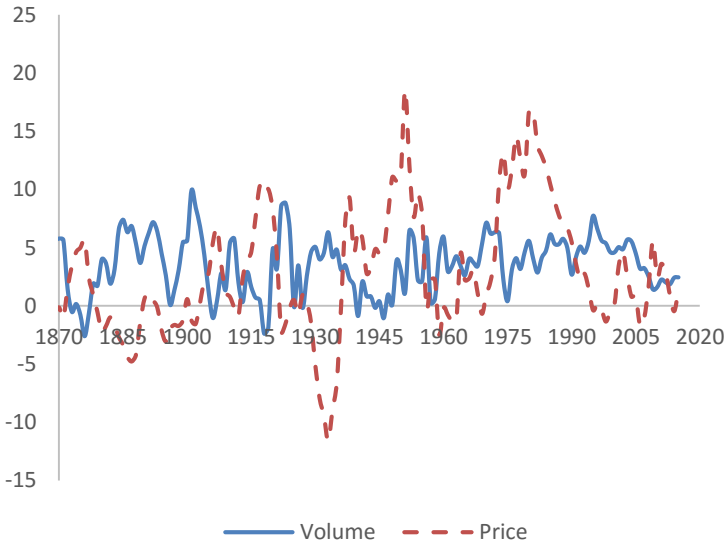
However, as with the real GDP figures we looked at earlier, we probably shouldn't read too much into the annual figures; we can probably get a better view of what's happened from looking at average growth rates over 5 years. Figure 11 shows such growth rates for both volumes and prices from 1870. (We have chopped off the 1860s period so that the scale of the vertical axis is not affected by the high growth of export volumes in the early 1860s).

The chart highlights big swings in prices, which have generally been more volatile than volumes. In particular, note the decline in export prices during the depression of the 1930s—it was prices that took the big hit, rather than volumes. But let's see if we can make some sense of what went on by looking at movements in volumes and prices over our selected periods (see Table 1).

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### Figure 11 Growth in export volumes and prices

Average annual percent change over 5 years



Sources: As for Figure 10

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Looking at volume growth first, we can see that it was reasonably high in the years before 1934. But in the 1934–1966 period, which is what we have called ‘the long expansion’, export volume growth was surprisingly low.<sup>2</sup> Volume growth has actually been much higher in the period since 1966, when we have been ‘dropping off the OECD pace’ with respect to overall economic growth. So it appears that our performance in the long expansion period may have been due more to the prices we were getting for our exports rather than the volume of exports that we were sending overseas.

Turning to prices, we see that growth averaged a low 0.4 percent per annum over the 1870–1914 period. But as Figure 11 shows, and as we have seen before in the previous section, prices generally fell

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<sup>2</sup> If we use the export volume indexes referred to in footnote 1, rather than deflating nominal exports, the average growth rate for this period comes out slightly higher, at 1.9 percent per annum. But still the figure is surprisingly low.

prior to 1895 and rose afterwards. These movements largely reflected changes in prices in Britain. The 1914–1934 period, during which price movements averaged -0.8 percent, also included several distinct phases: prices grew strongly during the first world war, levelled out in the 1920s, and then dropped as the world depression took hold.

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**Table 1 Growth in export volumes and prices**

Average annual growth rate

	<b>Volume</b>	<b>Price</b>
1870–1914	3.5	0.4
1914–1934	3.8	-0.8
1934–1966	1.7	5.5
1966–2005	4.6	5.6
2005–2015	2.0	1.9

Sources: Statistics New Zealand, NZIER

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Average growth in export prices was strong during the 1934–1966 period, especially in the late 1930s and during the second world war. Price growth peaked in the early 1950s as the Korean war sent wool prices sky high.

Price growth was also strong during the post-1966 period, with the peak occurring in 1980. But to a large extent these big rises reflect world inflation.

Could we identify the component of price growth that is coming from our trading partners' inflation? We have to remember though that our export prices, as measured in New Zealand dollars, also reflect movements in our exchange rate, as well as movements in world prices. The influence of exchange rate movements is worth noting when considering price movements from early in the 21<sup>st</sup> century when the New Zealand dollar strengthened to a post float high against the US dollar.

## **Exchange rates**

I have derived a long-run series for our exchange rate (Figure 12) and we can use it to illustrate the impact of the exchange rate on our export prices.

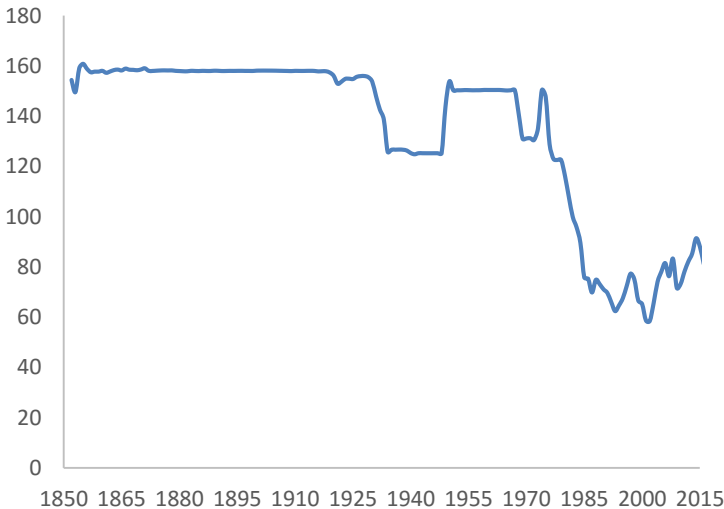
In deriving this exchange rate, I have used the series for the trade weighted index (TWI) from Lattimore and Dalziel (2001). This runs from 1960. For earlier years I had to derive a series, and this involved a number of steps:

- Information from Hawke (1973) was used to construct a series of the New Zealand dollar against sterling.
- I obtained annual figures for the exchange rate between Australia and sterling going back to 1851 from Wamplen (1987).
- I found figures for the exchange rate between the US dollar and sterling back to 1850 on the *Economic History Services* website.<sup>3</sup>

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### Figure 12 Nominal exchange rate index from 1851

Base June 1979 = 100



Sources: Pre-1960 figures were estimated using data from Hawke (1973), Wamplen (1973), and the *Economic History Services* website. The figures from 1960 are from Dalziel and Lattimore (2001) and the Reserve Bank of New Zealand.

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Using this data, I calculated the Australia/New Zealand cross rate and the US/New Zealand cross rate. These cross rates, together with the UK/New Zealand cross rate, were then weighted together by the

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<sup>3</sup> <http://eh.net/hmit/exchangerates/pound.php>

shares of our exports going to each country. The resulting series was butted onto the Lattimore and Dalziel series at 1960.

But why did we need an exchange rate against sterling, you might be asking? Wasn't the New Zealand currency tied to the British pound for a long time? Perhaps we'd better have a brief look at the history of our currency.

New Zealand currency first came into being in 1851 when the Colonial Bank of Issue began issuing notes. A New Zealand pound note was equivalent to one pound sterling. Later in the 1850s trading banks also began to issue their own notes, again equivalent to sterling in value. Coins that were in use continued to be British. In fact there was a shortage of these, and local 'tokens' came into use for a time (NZOYB, 1990, 636-637).

Trading banks' notes became legal tender in 1914, a move that was brought on by the war. However, by 1929, with the depression beginning to take hold, trading banks were starting to charge a 'premium' on sterling and a 'discount' on New Zealand currency. In effect, the local currency was being devalued. By 1933 the New Zealand dollar had been devalued by 20 percent (as Figure 12 highlights).

Trading banks lost the right to issue notes in 1934, when the Reserve Bank was established. Even so, the value of the New Zealand pound was kept at its level of 80 percent of sterling. The value of the currency stayed at this rate, with a few insignificant adjustments, until 1948, when the currency was restored to parity with sterling.

The next devaluation did not occur until 1967. But as Figure 12 indicates, further devaluations were to follow, until 1985, when the currency was floated.

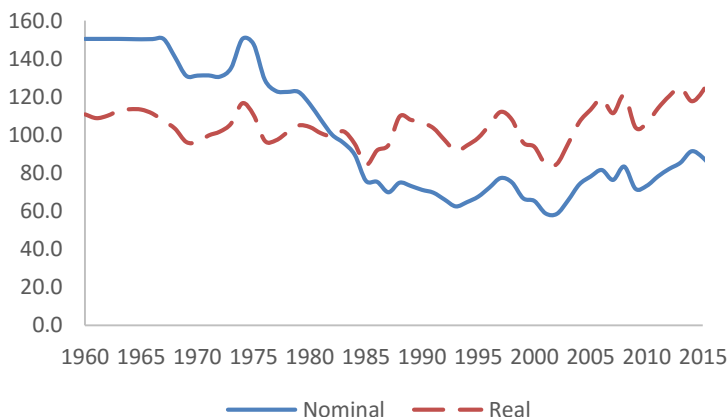
Before moving on, it's worth noting a few further points about Figure 12:

- Variations in the exchange rate in the early 1850s were due to temporary fluctuations in the value of the Australian pound. These were probably related to the gold rush in Australia.

- The slight depreciation which began in the mid 1910s was due to the depreciation of the British pound relative to the US dollar. Britain abandoned the gold standard in 1914, during the first world war. (Britain returned to the gold standard in 1925 before finally abandoning it in 1931.)
- The low values between 1929 and 1948 reflect the weakness of the New Zealand pound relative to sterling, as outlined above.
- With the return to parity with the British pound in 1948, the New Zealand currency was stable through to 1967. Note though that the value of the currency was lower than it had been prior to 1914. This reflects the lower value of the British pound relative to the US dollar.

**Figure 13 Nominal and real exchange rates since 1960**

Base 1982 = 100



Sources: Dalziel and Lattimore (2001), Reserve Bank of New Zealand, IMF *International Financial Statistics*

Despite the decline in the nominal exchange rate that began in 1967, the real exchange rate has stayed relatively constant. What is the real exchange rate? The nominal exchange rate, which is what we have looked at so far, is the value of the New Zealand dollar against foreign currencies. Let's call this  $e$ . The real exchange rate is  $e$  times  $(P/PF)$  where  $P$  is the New Zealand price level and  $PF$  is the foreign

price level. In effect, the real exchange rate is the price of goods and services in New Zealand relative to other countries. In general, we wouldn't expect the real exchange rate to vary much over time. This reflects the theory of purchasing power parity (PPP), which is itself based on 'the law of one price'. The PPP theory states that, after adjustment for the exchange rate, goods and services should cost the same in one country as they do in another. Hence if prices rise more in one country than they do overseas, that country's exchange rate will tend to fall, so that relative prices are not altered.

As Figure 13 illustrates, since the late 1960s, when the nominal exchange rate began to decline, the real exchange rate did in fact remain relatively constant. This reflects the fact that over this period our inflation exceeded that of our trading partners. The fall in the nominal exchange rate was simply reflecting our relative performance regarding inflation.

## **World prices**

Now we can adjust our export price series by the exchange rate and get a rough look at world prices. Again it's only a rough look, since in making this adjustment we are assuming that the full effects of an exchange rate movement comes through into export prices. This may not be the case. For example, as our currency depreciates, an exporting firm may take the opportunity to lower its prices, thereby lowering the price on the world market. Still, it's worth having a look at our derived series for 'world prices'.

As Figure 14 shows, since 1960 world prices have not generally grown quite as strongly as prices in New Zealand currency. The gap between the two growth rates generally reflects the depreciation of our currency. Note that back in the 1930s, the depreciation of the New Zealand pound meant that the prices New Zealand exporters were getting didn't fall quite as far as world prices did. But the difference was minimal, and the effects of the depression on exporters' prices were severe.

Overall, it is perhaps a little disappointing—if not surprising—to see how similar the changes in both price series look, especially given the work done in extending the exchange rate index back into the



past. But we now have a clearer view of what world prices were doing. Hence, we also have a better handle on how world events have affected export prices.

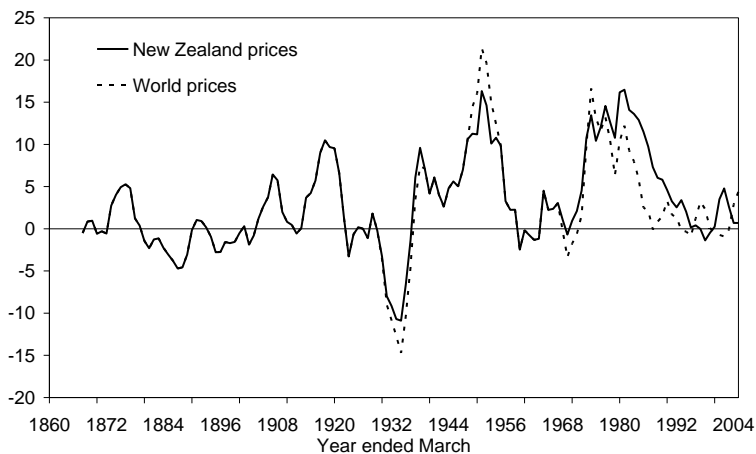
Recapping, world events that have influenced our export prices include:

- A fall in British prices in the 1880s.
- Increased demand from Britain for our food and fibre products in the early 1900s.
- Strong inflation in Britain during the first world war.
- A sharp fall in world demand during the 1930s depression.
- Continuing demand for New Zealand primary products from the late 1930s through the second world war and the Korean war.
- The ‘great inflation’ that occurred between the mid-1960s and the early 1980s as growth in the US money supply increased at unprecedented rates.

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**Figure 14 New Zealand export prices and derived world prices**

Annual average percent change over 5 years



Sources: As for Figure 10 and Figure 12

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This last phenomenon brings home the fact that a rise in our export prices doesn't necessarily mean we are better off, since import prices also tend to rise with world inflation. What we need to look at

is our export prices relative to the prices of the goods we import. That is, we need to look at the terms of trade.

### Terms of trade

As noted in the earlier section on prices, the terms of trade is the export price index divided by the import price index. Both indexes are based on prices in New Zealand dollars. A rise in the terms of trade generally indicates we are better off—we can now buy more imports with one unit of our exports. A fall in the terms of trade shows we are worse off.

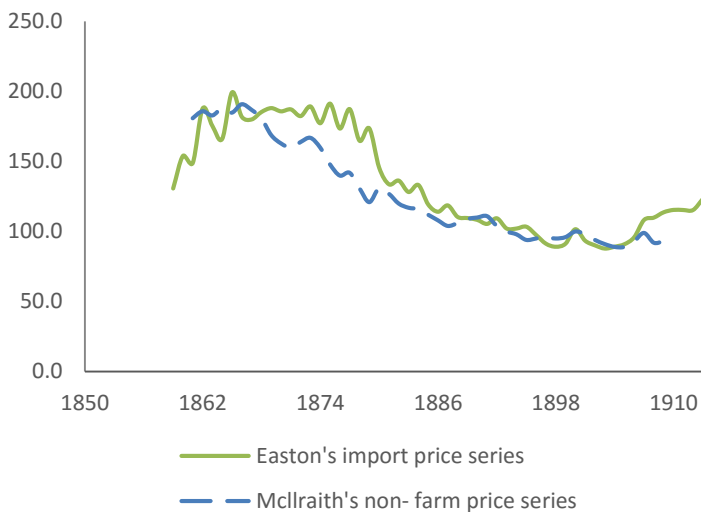
We have already looked at the export price index back in **Error! Reference source not found.**, and have seen the difference between McIlraith's series and Easton's series. Let's look now at the other component of the terms of trade, the import price series.

Figure 15 shows both McIlraith's non-farm price series and Easton's import price series.

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**Figure 15 Import prices 1859–1914**

Index, 1890–99=100



Sources: Easton (1984), McIlraith (1911)

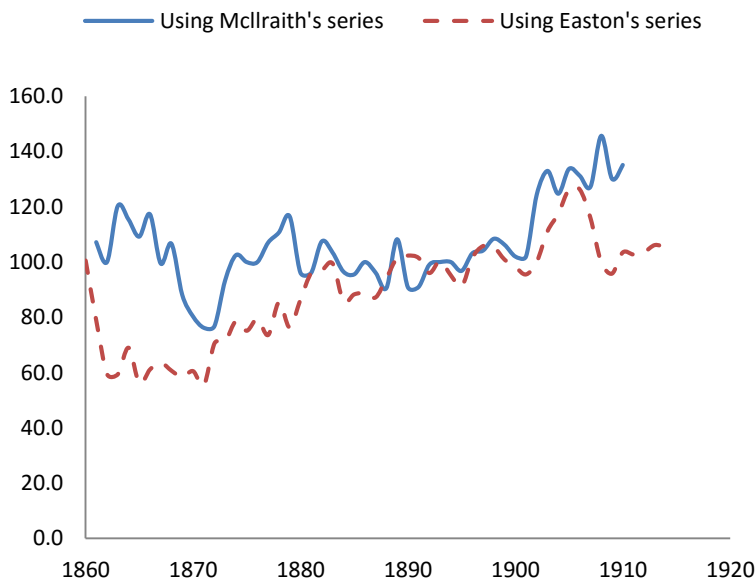
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As with his export price series, Easton weighted together the price indexes for individual items in producing the composite series. McClraith's and Easton's series are broadly similar, but let's note two differences. First, Easton's series suggests that import prices held up reasonably well during the late 1860s and early 1870s, while McClraith's series shows import prices falling. Second, Easton's series shows import prices rising in the early 1900s while McClraith's series has them staying relatively constant.

So let's look now at the terms of trade. Figure 16 shows the terms of trade from 1860 through to 1914. The first series has been derived from McClraith's series for farm and non-farm prices, while the second has been derived using Easton's series for exports (including gold) and imports.

**Figure 16 Terms of trade 1860–1914**

Index, 1890–99 = 100



Sources: McClraith (1911), Easton (1984)

As can be seen, apart from the period in the late 1860s when wool prices fell, the McClraith series is relatively steady until the early

1900s, when it takes off. It ends in 1910 at a high level. The Easton series shows a different picture. It is lower in the earlier part of the period, mainly because the price of exported gold is accounted for in Easton's series but not in McIlraith's series (see the export price series in **Error! Reference source not found.**). The Easton terms of trade series also climbs sharply from 1900 but comes back as export prices ease from 1907 and import prices rise. This is in contrast with McIlraith's terms of trade series, which stays high because import prices remain low (see Figure 15).

Perhaps we shouldn't put too much weight on these results. Easton notes the limitations of his derived series. (For example, neither the export or import price series take into account changes in the quality of goods being shipped.) But it is interesting to note that by early 1913, when McIlraith wrote his article for *The Press* (see **Error! Reference source not found.**), he had substantially revised up the value of the non-farm index for 1910. Also, the farm index for 1910 had been revised down slightly. As noted earlier, I have not yet tracked down any documentation about the reasons for these revisions.

Overall, it seems that the upward shock to the terms of trade that occurred from 1900 may not have been sustained for as long a period as McIlraith's original 1911 publication indicated.

Figure 17 shows the terms of trade from 1860 through to 2001. For the period up to 1914, the series derived from Easton's export and import price series has been used.

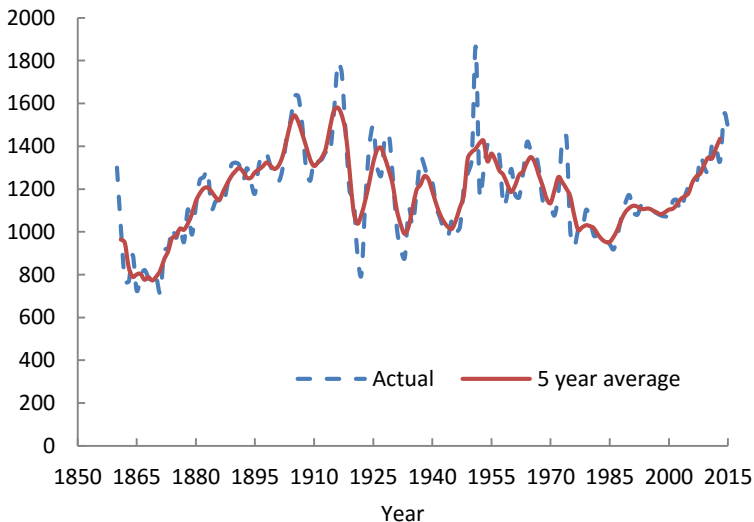
For the period after 1914, we have used, on the export side, the export price series produced by Statistics New Zealand. On the import side, the Statistics New Zealand series for import prices doesn't begin until 1926. To fill in the gap—the 1914–1926 period—we have used the wholesale price series for imports.

Note that the terms of trade we are looking at here is the merchandise terms of trade, which until recently was the only official measure we had. It is derived from price series for exports and imports of goods, and excludes services. Statistics New Zealand now produces a series that covers services, but it doesn't go back very far into the past.

So what do movements in the terms of trade show us? Connor and Easton (1980) look at these movements in detail, at least up until 1978. They note that from 1870 the terms of trade began to rise and by 1880 was almost a third higher than it had been a decade earlier. The rise over the rest of the century was more gradual. The new century brought a new pattern though: over the next 50 years the underlying trend in the terms of trade was flat. But the trend was dominated by four large cycles, with peaks in 1905, 1915, 1927 and 1938, and troughs in 1910, 1920, 1933 and 1944.

**Figure 17 Terms of trade from 1860**

Index, average of 10 years ended 1989 = 1000



Sources: Easton (1984), INFOS

The terms of trade rose to a record high in 1950, largely due to the impact of the Korean war on wool prices. But even after the war, the terms of trade generally stayed high for a time. In 1967 it began to deteriorate. The commodity boom of the early 1970s temporarily interrupted the fall but the terms of trade then declined through to 1987 before picking up.

Figure 18 shows the terms of trade for three export commodities that have played a major role in New Zealand's past: wool, meat and dairy. For each commodity, the terms of trade is the export price index for the commodity divided by the price index for total exports.

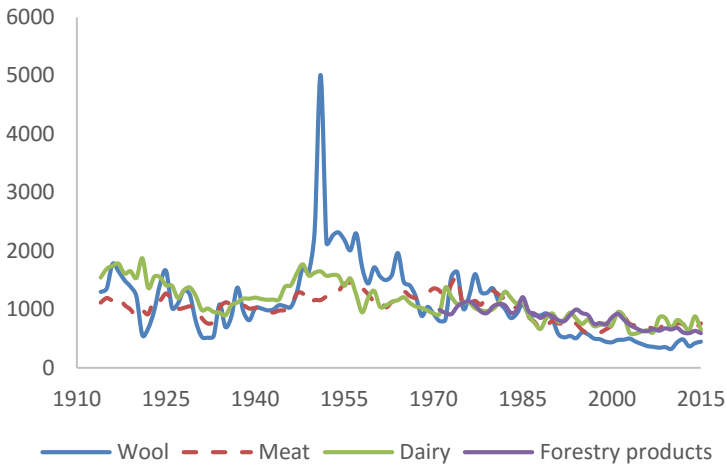
A number of features stand out from the chart:

- Wool prices have shown sharp fluctuations, with the biggest being in 1950 as New Zealand benefited from the increased demand for wool during the Korean war.
- While wool prices stayed relatively high through to 1967, it has been mostly downhill since then as synthetics such as nylon have affected demand, and hence the price, for wool.
- The terms of trade for dairy began to trend downwards in the late 1960s, although like the terms of trade for the other groups, it got a sudden upward boost during the commodity boom of 1972. The dairy terms of trade eventually bottomed out in 1987. Part of the reason for the fall was the effects of high EU subsidies for its own dairy products. However the dairy terms of trade rose sharply from 1987 through to 1990 and has stayed high since. Since 1994 the GATT round has resulted in reduced dairy subsidies in developed countries, especially in Europe, and this has had a positive impact on dairy prices. (For a description of the GATT round see Nixon and Yeabsley, 2002. For an analysis of the impact of the GATT round on New Zealand's export earnings see Ministry of Foreign Affairs and Trade, 2001).

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**Figure 18 Terms of trade for commodity groups**

Index, average of 10 years ended 1989 = 1000



Sources: INFOS, NZIER

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- The terms of trade for meat also began to rise in 1987. It is difficult to account for this improvement, although prices for New Zealand meat have been helped recently by overseas occurrences of ‘mad cow’ disease and foot and mouth disease.

But let’s turn back briefly to the total merchandise terms of trade, as shown in Figure 17. We saw that it was very high in the early 1950s, and stayed reasonably high through to the mid-1960s. Is this the reason for ‘the long expansion’ of the 1934–1966 period? Table 2 shows average values of the terms of trade for our usual periods.

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**Table 2 Period averages of the terms of trade index**

Merchandise terms of trade index, average of 10 years ended 1989=1000

<b>Period</b>	<b>Average index value</b>
1871–1914	1073
1915–1934	1092
1935–1966	1217
1967–2015	1134

Sources: Easton 1984, INFOS

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The averages for the periods 1871–1914, 1915–1934 and 1967–2015 are remarkably similar. (These averages though do mask some large variations in the terms of trade, such as those that occurred during the 1915–1934 period.) However the average for the long expansion period stands out, being very high. And so it seems that we have confirmed what we suspected when we first saw the low growth in export volumes for this period back in Table 1. Our overall economic performance in the long expansion period was driven more by the favourable terms of trade than by export volume growth. To some extent our performance in this period was driven more by good luck—the luck which gave us relatively high export prices—than by good management.

### **Current account**

The current account balance, often referred to as the balance of payments, is equal to the country's income received from overseas minus payments made to overseas entities. It shows whether, as a country, we are earning more than we spend.

The current account balance includes four components:

- *Merchandise trade.* The merchandise trade balance is often referred to simply as the trade balance. It is equal to goods exports minus goods imports.
- *Services.* We looked at services briefly above. They cover tourism, transport, insurance, telecommunications and such things as education and consultancy services. The balance on services is equal to the value of services we sell overseas less the value of services we buy from overseas.



- *Investment income.* The balance on investment income is the earnings made by New Zealand firms that operate overseas minus the earnings that overseas firms make here.
- *Transfers.* Transfers cover donations, aid, and other payments. The balance is equal to transfers that we make to the rest of the world less the transfers that we receive from overseas.

The last three components are often lumped together and called ‘invisibles’.

We have data for the current account, and its four components, from 1951. Prior to that we have data for the merchandise trade balance only. Figure 19 shows the trade balance from 1870 and the current account balance from 1951. Both are shown as percentages of nominal GDP.

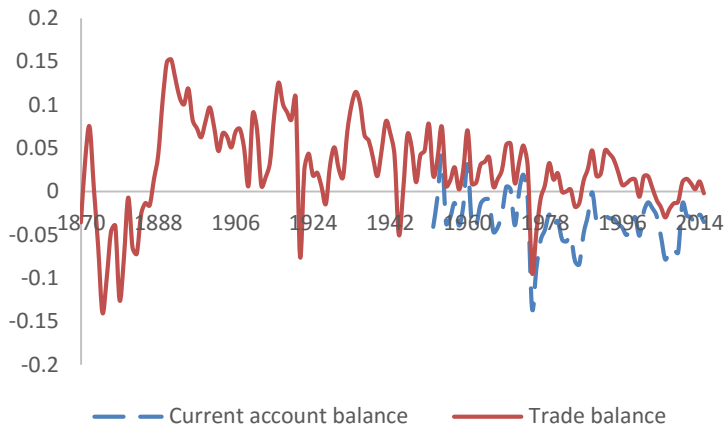
Some points that arise from the chart:

- From the figures for the period after 1951, for which we have both the trade and current account balance, we can see that the current account balance is lower than the trade balance. That is, New Zealand runs a big deficit on the ‘invisibles’. This largely reflects the investment income component of the current account; the earnings of overseas owned firms based here are much higher than the earnings of our firms based overseas.
- New Zealand generally runs a current account deficit. Given that we spend more than we earn, the corollary is that we have to borrow. And yes, statistics show that New Zealand’s overseas debt—which includes private debt as well as government debt—has shown an almost continuous rise. This in itself would not be a problem, provided that the organisations that are taking on the debt can meet the interest payments and can either finally pay off the debt or refinance loans as they come due. A high current account may simply reflect expected future sales growth with organisations and individuals borrowing to cover their present investment needs.

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**Figure 19 Merchandise trade balance and current account balance**

Percent of GDP



Sources: Trade balance figures are based on the same sources as Figure 1 and Figure 2. The current account figures are from Deane *et al* (1981), Dalziel and Lattimore (2001), and INFOS.

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- On the other hand, a persistently high current account deficit can indicate that the exchange rate is overvalued. A high exchange rate can result in exports being overpriced and hence uncompetitive on the world market. At the same time a high exchange rate makes imports relatively cheap. Hence, with an overvalued exchange rate, the current account deficit is wide. As a rough rule of thumb a current account deficit of 4 percent of GDP is getting uncomfortable, a deficit of 8 percent of GDP is serious, and a deficit of 12 percent, if it persists, is likely to result in a currency crisis. As the chart shows, New Zealand's worst results were in the mid-1970s at the time of the first oil shock, and in the mid-1980s, when the currency rose sharply after being floated. With a floating currency, current account imbalances are generally self correcting. So it proved in the late 1980s, as the currency depreciated and current account deficit shrank.
- Looking at the years prior to 1951, three difficult periods stand out. The first was from the mid-1870s to the late 1880s. This partly reflects Vogel's infrastructure spending, which sucked in

imports. The second bad period was in the early 1920s when meat prices were low and wool prices dropped sharply. The third period was in 1943 when primary exports fell. (I haven't as yet found a reason for this. The period isn't included among the drought periods listed in NZOYB (1990). However, as Figure 6 shows, the proportion of exports going to the UK fell in this period; perhaps it was a disruption stemming from the war.)

### **An exercise**

In this chapter we've focused on exports and haven't said a lot about imports. Look at Figure 3 again (see page 7). Imports as a proportion of GDP is similar to the proportion for exports. Why is this? Is there any limit to the amount of goods and services that New Zealand might import?