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FROM THE EDITORS

International trade is important to New Zealand. This edition of *EcoNZ@Otago* includes two articles that help us to think about international trade: one considers how economic changes in China affect its trading partners, and the other looks at the effect on NZ of changes in world prices and the 'terms of trade'. Two other articles explore different ways in which innovations in media and ICT intersect with economics, taking us away from the world envisaged by traditional textbooks: at the macroeconomic level, we have an article on Twitter and US monetary policy; at the microeconomic level, is an article on the design of mobile-banking apps. We conclude with our regular commentary on the NZ economy.

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China's changing comparative advantage: Trends and implications

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Source: observers.france24.com/en

In 1978, China was one of the world's poorest countries and barely engaged in the global economy. Today China is the world's second largest economy (after the United States) and is the fastest growing in terms of per capita income, expanding at more than 7% per annum since 1978.¹ The country's economic reforms, which started in 1978, have resulted in a rapid transition from a central planning system to a market-oriented one.

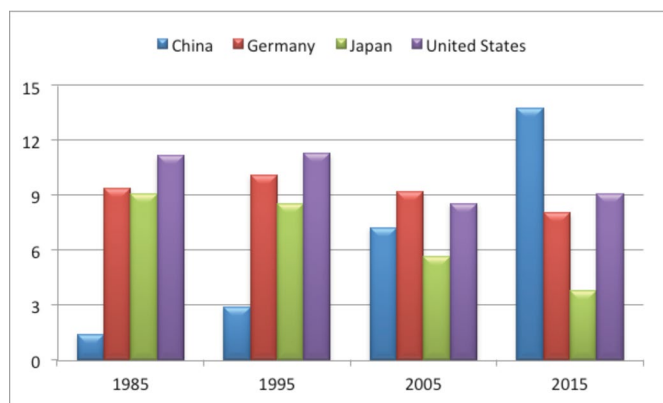
GONE GLOBAL

For many years, China's development was largely indigenous, mainly because of the country's isolation from other countries. However, China has become an increasingly important part of the global trading system, especially over the last two decades. China, the world's most populous country, has become the leading exporter for merchandise trade in the world.

Figure 1 displays the shares in total world merchandise exports of China, Germany, Japan, and the US. China overtook Japan in 2004 and was the world's third biggest exporter in 2005. China passed the US in 2007 and Germany in 2009 to become the world's leading exporter. The share of China's exports in world merchandise trade increased from 1.4% in 1985 to 13.8% in 2014.

1 See Üngör (2016) for a brief review of China's economic development since 1978.

Figure 1: Leading exporters in world merchandise exports (percentage shares)



Source: World Trade Organisation (2016).

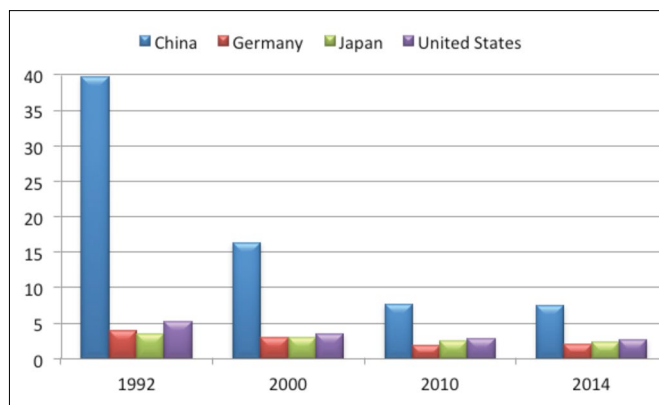
CHINA OPENS ITS DOORS

Since 1978, China has been moving toward a much more liberal trade regime. Reforms include: gradual elimination of central plans and the introduction of market competition in tradeable sectors; reduction of barriers to trade, including both tariff and non-tariff restrictions; and freeing up of the foreign exchange regime. Market-friendly special economic zones were established on China's southern coast, far away from Chinese power centres.²

Trade liberalisation laid the basis for China's integration into the global economy. An important phase of liberalisation began in 1992 when the 14th National Congress of the Communist Party endorsed a "socialist market economy" whereby markets were to be extended to all main sectors of the economy.

Foreign direct investments (FDIs) surged from US\$4.4 billion in 1991 to US\$11.2 billion in 1992 – a 156% increase.³ Tariff rates and non-tariff barriers were significantly reduced. Figure 2 shows the evolution of tariff rates in China, Germany, Japan and the US.⁴ Tariff rates have been in continual decline in China: from about 40% in 1992 to less than 8% in 2014.

Figure 2: Tariff rates, all products (%)



Source: World Bank (2016).

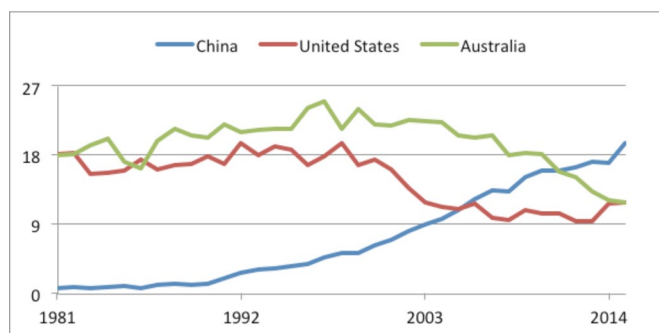
LET'S TRADE!

China's accession to the World Trade Organisation (WTO) marked an important milestone. China officially started its WTO membership application in 1986 and was formally accepted on 11 December 2001. In accordance with WTO rules, China committed to liberalise further in order to better integrate into the global economy.⁵

Since 2002, China has signed many free trade agreements (FTAs) to strengthen international economic cooperation.⁶ New Zealand is the first developed country to have signed a FTA with China: the NZ-China Free Trade Agreement took effect in October 2008,⁷ resulting in a large increase in trade between the two countries.

Figure 3 shows NZ's three most important partners in terms of total commodity imports. In 1981, Australia and the US supplied 36.2% of NZ's commodity imports. That share declined to 23.7% in 2015 as China increased its share of NZ's imports from 0.7% in 1981 to almost 20% in 2015.⁸ China gradually became NZ's main source of imports.

Figure 3: Shares of NZ imports (%), 1981-2015



Source: United Nations (2016).

INCREASING SOPHISTICATION

Table 1 decomposes Chinese trade in the post-1978 period into industrial categories (according to one-digit Standard International Trade Classification codes). Two main trends stand out.

One, 'primary goods' (i.e., food and live animals chiefly for food) have declined in importance as a proportion of China's total commodity trade. Two, China's exports have changed from being dominated by labour-intensive manufactured products in the 1990s to more sophisticated manufactures nowadays. For example, in 1994 40.6% of exports were miscellaneous manufactured articles (e.g. clothing, footwear, furniture, etc) whereas in 2014 45.8% of exports were machinery and transport equipment.⁹

2 Goodfriend and McDermott (1998) and Naughton (2007) argue that China's rapidly growing coastal provinces benefited from the proximity to Chinese-speaking Hong Kong and Taiwan.

3 During the 1980s, FDI inflows never exceeded 1% of GDP, whereas they were more than 6% in 1993 and 1994.

4 Simple 'mean applied tariff' is the unweighted average of effectively applied rates for all products subject to tariffs, calculated for all traded goods.

5 China's commitments can be found at: wto.org/english/news_e/pres01_e/pr243_e.htm.

6 These agreements include: China-ASEAN FTA, China-Pakistan FTA, China-Chile FTA, NZ-China FTA, China-Singapore FTA, China-Peru FTA, China-Costa Rica FTA, China-Iceland FTA,

China-Korea FTA, and China-Australia FTA. See *China FTA Network* for details (fta.mofcom.gov.cn/english/index.shtml).

7 On April 7, 2008, Chinese Premier Wen Jiabao and NZ Prime Minister Helen Clark witnessed the signing of the NZ-China Free Trade Agreement in Beijing, which came into force on

October 1, 2008.

8 Similarly, China has become NZ's top commodity export destination in recent years; for example, about 20% of NZ's exports went to China in 2014.

9 Chinese brands, such as Lenovo and Huawei, have been shaping the global manufacturing sector since the 2000s.

Table 1. Export and import shares of China, by category of goods, 1984-2014 (%)

Category (SITC code)	Shares in China's Exports				Shares in China's Imports			
	1984	'94	'04	'14	1984	'94	'04	'14
Food and live animals (0)	12.4	8.3	3.2	2.5	8.3	2.7	1.6	2.4
Beverages and tobacco (1)	0.4	0.8	0.2	0.1	0.4	0.1	0.1	0.2
Crude materials, inedible, except fuels (2)	9.2	3.4	1.0	0.6	9.2	6.2	9.8	13.8
Mineral fuels, lubricants and related materials (3)	23.0	3.4	2.4	1.5	0.5	3.5	8.6	16.3
Animal and vegetable oils, fats and waxes (4)	0.6	0.4	0.02	0.03	0.3	1.6	0.8	0.5
Chemicals and related products, not elsewhere specified (5)	5.2	5.1	4.4	5.6	15.3	10.4	11.5	9.6
Manufactured goods classified chiefly by materials (6)	19.3	19.7	17.1	17.3	26.5	24.3	13.2	8.9
Machinery and transport equipment (7)	5.7	18.0	45.2	45.8	27.1	44.9	45.1	37.0
Miscellaneous manufactured articles (8)	18.0	40.6	26.3	26.4	4.4	5.6	9.0	7.2
Commodities and transactions, not elsewhere specified (9)	6.1	0.3	0.2	0.1	8.0	0.6	0.3	4.2

Source: United Nations (2016).

DYNAMIC COMPARATIVE ADVANTAGE

Kwan (2002, pp. 15-17) provides a simple approach for revealing a country's comparative advantage by calculating the specialisation indices for its major sectors or products. Comparative advantage concerns a country's ability to produce certain goods at lower opportunity costs than other producers. Instead of trying to produce a wide range of goods, countries can grow faster by specialising in the goods they can produce most cheaply and trading for others.¹⁰

For a particular sector, the specialisation index is defined as its trade balance (exports – imports) divided by its volume of trade (exports + imports).¹¹ By definition, this index ranges from –1 to +1. A higher value implies stronger international competitiveness for the sector concerned, and positive values reveal a comparative advantage and negative values a comparative disadvantage.¹²

Kwan argues that the trade structures of many Asian countries (e.g. Japan, Korea, Taiwan) have passed through some or all of the four stages listed in Table 2. A country's trade structure can be classified into any of these four stages according to the relative magnitudes of the country's specialisation indices across these three sectors: *Primary commodities* (SITC codes 0-4), *Other manufactures* (SITC codes 5, 6, 8, 9) and *Machinery* (SITC code 7). In this formulation, *Machinery* proxies for capital-and-technology-intensive products whereas *Other manufactures* represents labour-intensive products.

As can be seen in Table 2, the first stage is the Developing Country stage, where Primary commodities are more competitive than both *Other manufactures* and *Machinery*. The second and third stages are the young and mature NIEs (newly industrialised economies) respectively, where for both stages *Other manufactures* is the most competitive sector, but the ranking of *Other manufactures* vis-à-vis *Machinery* is opposite. At the fourth stage – the pinnacle of trade structures – *Machinery* is most competitive.

Table 2. Four stages of trade structure

Stage	Specialisation Index (relative magnitudes)
1. Developing Country	Primary commodities > Other manufactures > Machinery
2. Young NIE*	Other manufactures > Primary commodities > Machinery
3. Mature NIE*	Other manufactures > Machinery > Primary commodities
4. Industrial Country	Machinery > Other manufactures > Primary commodities

* NIE = Newly-Industrialised Economy. Source: Kwan (2002, p. 17)

MATURITY

Figure 4 illustrates the evolution of China's trade structure during 1984-2014. It can be seen that China became a young NIE in 1990 – when the specialisation index of *Other manufactures* surpassed that of *Primary commodities* – and then a mature NIE in 1999 – when *Machinery* passed *Primary commodities*. This pattern is consistent with the changing composition of China's exports, from labour-intensive products to a more sophisticated mix led by various types of machinery and equipment.¹³

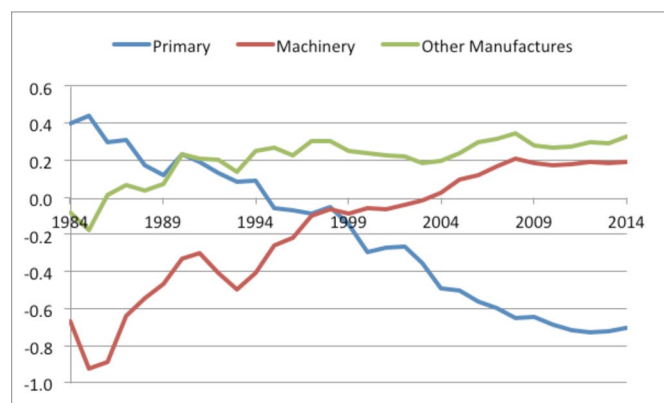
10 See Winchester (2004) for a simple illustration of the theory of comparative advantage.

11 Various measures and indices of revealed comparative advantage have been proposed to approximate actual comparative advantage since Liesner (1958), Kojima (1964), and Balassa (1965). Recent studies provide theoretical foundations to guide the empirical analysis (Eaton and Kortum, 2002; Costinot et al., 2012).

12 The rationale behind the index is that countries are revealed as having a comparative advantage in a particular product if they export more of it than they import.

13 It is worthwhile noting that not all countries follow these stages in the course of economic development, as the stages of trade structure are listed in Table 2 on a somewhat ad hoc basis. The purpose of this exercise is to show that simple calculations can offer some insights into the changing nature of China's comparative advantage.

Figure 4: Evolution of specialisation indices in China: 1984-2014



Source: United Nations (2016).

POLICY ISSUES

China's rapid rise poses both challenges and opportunities for other countries as they are exposed to increased competition at home and abroad. For many firms in rich countries, intensifying competition from China's exports has reduced demand for the goods they produce, with a corresponding decline in workers employed. Such changes in the global economic environment affect the allocation of factors of production and cause sectoral productivity fluctuations, as well as driving changes in comparative advantages among nations.

Trade between developing (e.g. China) and developed economies (e.g. US) has been on the rise. Developed countries with high wages and expensive welfare programmes are having trouble coping with the effects of developing countries becoming major global players. An active research agenda is investigating such issues. For example, Acemoglu et al. (2016) estimate that 2.0-2.4 million people in the US lost their jobs as a result of increasing Chinese import competition during 1999-2011.

IMPLICATIONS FOR NZ

Similar issues to the ones above are potentially relevant for NZ. What is the effect of the trade relationship between NZ and China on labour-intensive sectors in NZ? Might Māori and Pacific Peoples be more at risk of job losses than other ethnic groups, given these two ethnicities are over-represented in relatively low-skilled occupations (MBIE, 2015)? In general, how does trade with China affect the welfare of its trading partners like NZ?

Determining answers to such questions and bringing them to the attention of policy-makers are important challenges ahead.

QUESTIONS TO CONSIDER

1. Have China's reforms led to a convergence between the country's trade patterns and its underlying comparative advantage?
2. How does trade with China affect low-skilled occupation groups in developed countries?
3. Why have so many manufacturing jobs been lost in the richest countries in recent decades?
4. Do changes in trade patterns have implications for trade tensions between developed (e.g. US) and developing economies (e.g. China)?

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