

ASEAN-New Zealand Trade Relations and Trade Potential: Evidence and Analysis

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Abstract

This study examines the development of trade between ASEAN and New Zealand. Indices of trade intensity and trade potential are used to analyse the intensity of existing trade for the period 1980~2010 and trade potential going forward. This is the first use of the trade potential method to assess the trade potential between New Zealand and ASEAN across industries. The results show significant potential for future growth in specific export sectors and demonstrate changing trade patterns between New Zealand and ASEAN members. Our findings also show that New Zealand-ASEAN trade has intensified over the years, even if it has been marked by fluctuations. This study also highlights development of Australian trade with ASEAN in the context of the ASEAN-Australia-New Zealand FTA. Our findings have implications for the integration of ASEAN with Australia and New Zealand.

JEL Classifications: F10, F02, F13, F14, F15, RI, E63

Key Words: International Trade, Economic Integration, Trade Intensity, Trade Potential, ASEAN, Australia, New Zealand, FTA, CER, CEP, TPP, AANZFTA

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I. Introduction

New Zealand (NZ) became a dialogue partner of ASEAN in 1975. On February 27, 2009, some 34 years later and after numerous rounds of discussions and negotiations, the ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA) was signed at the 14th ASEAN Summit in Thailand. AANZFTA went into effect the following year.

AANZFTA is the first regional agreement signed by these countries and also the first such agreement that Australia and New Zealand signed jointly with other trading partners. This created a free trade area of over 600 million people with a combined GDP of US\$2.3 trillion, expected to reach US\$ 4.1 trillion in 2012.

New Zealand has been at the forefront of entering into such trade agreements. In 1983, it entered into a CER (Closer Economic Relations) Agreement with Australia, thus formalizing and extending their already close relationship in terms of the movement of goods, labour, and capital, which the two countries had enjoyed since World War II. Under the CER, all tariff and non-tariff barriers between the two countries were progressively liberalized and eliminated. The CER was renegotiated in 1988 to provide for the acceleration of the timeframe for investment and trade liberalization in goods and services. As a result of the CER, the economies of Australia and New Zealand became closer to each other than ever. Both countries have adopted free trade policies with each other and also enjoyed relatively free trade with the rest of the world. Capital and labour have moved freely between the two countries, with many companies (e.g., ANZ, BNZ, Goodman/Fielder/Watties) becoming joint Trans-Tasman ventures.

Aside from the CER agreement with Australia, New Zealand has to date concluded seven other FTAs between 2000 and 2011: with Singapore (2001); Thailand (2005); China (2008); Malaysia (2010) and Hong Kong, China (2011); the Trans-Pacific Strategic Economic Partnership (2005); and the ASEAN-Australia-New Zealand Free Trade Agreement (2010). Another eight are currently under negotiation: New Zealand-Australia Closer Economic Relations Investment Protocol, New Zealand-Gulf Cooperation Council Free Trade Agreement, New Zealand-Russia-Belarus-Kazakhstan Free Trade Agreement, New Zealand- India Free Trade Agreement, New Zealand-Korea Free Trade Agreement, Expansion of the Trans-Pacific Strategic Economic Partnership, and New Zealand-Hong Kong Closer Economic Partnership Investment Protocol.

ASEAN has also entered into similar trade agreements with other countries in East and South Asia: the ASEAN-China Free Trade Agreement (ACFTA), ASEAN-India Free Trade Agreement (AIFTA), ASEAN-Japan Comprehensive Economic Partnership (AJCEP), and the ASEAN-Korea Free Trade Area (AKFTA).

But even before AANZFTA went into effect, intra-regional trade between ASEAN, Australia, and New Zealand had been growing at about 16% per annum since at least 2005 when negotiations started (ASEAN Secretariat, 2009). Both Australia and New Zealand send approx-

imately 10% of their exports to ASEAN. Australia receives approximately 20% of its imports from ASEAN, and New Zealand receives approximately 14% of its imports from ASEAN. These figures are significant given the fact that New Zealand sends approximately 22% of its exports and receives approximately 16.5% of its imports from Australia. New Zealand is a major agricultural exporter, with approximately 36% of its agricultural exports going to ASEAN. What is less well known is that approximately 17% of ASEAN agricultural exports were sent to New Zealand in 2011.

II. Objectives

This study examines the development of the trade relationship between New Zealand and ASEAN countries. We analyse the evolution of trade and changes in trade direction, composition, and patterns. Australia's trade with ASEAN as well as with New Zealand is highlighted. This examination is undertaken in view of the recent signing of the AANZFTA. The paper also looks into the prospects for enhancing these relationships through increased trade as it is well known that ASEAN is central to New Zealand and that New Zealand and Australia are both important trading partners for ASEAN.

In examining trade relations, we use both the trade intensity index and the trade potential method to identify potential for increasing trade. This is the first study to use the trade potential method; other studies have used gravity trade models to examine trade potentials between trading partners. The reason for our preference is that the trade potential method as proposed by Mukherji (described in a following section) seems to perform better than other methods. For the trade potential calculation, United Nations Commodity Trade Statistics (UN COMTRADE) data, which is readily available, is used. Through this method, we are able to identify that trade potential is well-defined across industrial sectors (and/or commodity groups) using the United Nations Standard International Trade Classification (UNSITC) for selected years; 1980, 2007, 2008, and 2010.

This study has six major parts or sections. The first section, which includes I and II, serves as the introduction. The third section presents theoretical considerations on trade, economic integration, and welfare. The fourth section presents key macroeconomic indicators and economic-demographic characteristics of ASEAN, New Zealand, and Australia. This is followed, in the fifth section, by an examination of the strength of trading relationships using trade intensity indices. The results of the examination are then analysed and interpreted with particular focus on the New Zealand-ASEAN trading relationship. In section VI, trade potential is estimated for each ASEAN country and across UNSITC industries or commodity groups, with particular focus on export potential. The last section presents the conclusions and the authors' suggestions for further research.

III. Free Trade, Economic Integration, and Economic Welfare

Free trade maximizes global efficiency in a distortion-free world. Trade is also one of the most important determinants of the economic growth of nations. For these reasons, in recent years there has been a proliferation of arrangements aimed at increasing trade between nations or regions through the lowering of tariffs and other trade barriers (Free trade areas, of course, existed as early as the 12th century, when the merchants of northern European towns around the Baltic Sea organized the Hanseatic League. The League is regarded as the early forerunner of the European Community). One of these common arrangements is the bilateral Free Trade Agreement (FTA); another, more encompassing one is through regional trading arrangements, or regional economic integration. These arrangements aim to promote economic growth and welfare by realizing the benefits of free trade among the members. But such agreements being discriminatory to non-members are in theory a second-best option.

Jacob Viner (1950) pioneered work on the welfare effects of economic integration by developing the concepts of trade creation and trade-diversion. Trade creation exists when, as a result of a customs union or economic integration, trade among the member countries increase. There is trade diversion when trade with non-members decreases as a result of such union or integration. There is a net benefit or increase in welfare from the formation of a customs union or from economic integration if, as a result, the increase in trade among members is greater than the loss in trade with non-members. In this study, we investigate changes to trade and identify trade potential that are expected to have positive impacts on the well-being of trading partners' citizens.

The literature on customs unions, free trade agreements and the like is of course well known and need not be extensively reviewed. Important contributions were made by James Meade's "The Theory of Customs Unions" (1955), Paul Krugman's "Is Bilateralism Bad?" (1990), and a very recent paper, Giovanni *et al.*'s "The Customs Union Issue: Why do we observe so few of them?" (2012). In 1998, a whole issue of *World Bank Economic Review* (1998) was devoted to the proceedings of a symposium on regionalism and development, the overall findings and conclusion of which was that regionalism had a beneficial effect on the development of member countries if not their people.

Thus, despite Giovanni *et al.*'s lament that there are so few customs unions in actual operation, a number of trading blocs, FTAs, closer economic partnerships (CEPs), closer economic relations (CERs), and like agreements have emerged all over the world. In recent years, countries have entered into numerous bilateral as well as trilateral and multilateral agreements among themselves. With the World Trade Organization (WTO) stalled, the motivation of individual countries to enter into such agreements seems to have increased. Since the ideal of a free trade area that encompasses most countries, if not the whole world, seems unrealistic at the

moment, bilateral FTAs, CERs, CEPs, and similar arrangements may be the short-term solution or temporary fall-back position. Whether or not they are necessary stepping stones on the long and winding road to the WTO, these arrangements are important.

IV. The Economies of ASEAN and New Zealand

A. ASEAN

ASEAN as a regional association was established in August 1967, with Indonesia, Malaysia, the Philippines, Singapore, and Thailand as founding members. The aims of ASEAN are: (a) to accelerate economic growth, social progress, and cultural development in the region through joint endeavours, and (b) to promote regional peace and stability in the relationships amongst countries in the region as well as adherence to the principles of the United Nations Charter. From the original five, membership of ASEAN has expanded to ten countries with the accession of Brunei in January 1984, Vietnam in July 1995, Laos and Myanmar in July 1997, and Cambodia in April 1999.

In 1976, the member countries signed the Treaty of Amity and Cooperation in Southeast Asia, which sets out the basic principles to govern their relationships and the conduct of the Association. In 1992, ASEAN leaders launched the ASEAN Free Trade (AFTA), which is equivalent to EFTA (European Free Trade Area), eliminating tariff and non-tariff barriers among the member countries. As a result, most products covered by the agreement are presently subject to tariffs of not more than 5%.

1. Economic-Demographic Characteristics

In 2010, ASEAN member nations had a combined population of close to 600 million, a total area of 4.5 million square kilometres, a combined GDP of around US\$1,865 billion, and total trade of around US\$2,000 billion per annum (IMF, World Economic Outlook Database, 2011). Table 1 shows the population of ASEAN at approximately 8.6% of the total world population in 2010. The same table shows that ASEAN's population is growing faster than the overall world population, so that ASEAN's share of the world population will certainly increase. As most ASEAN members are developing countries (Singapore being the exception), the high population growth rate is not at all surprising. ASEAN is bigger than NAFTA (composed of the US, Canada, and Mexico), which had a combined population of 432 million in 2005, which was projected to increase to 453 million in 2010. Considering that the ASEAN population is growing faster than NAFTA's, the gap between the two regions will almost certainly increase to 155 million in 2012, according to the IMF (World Economic Outlook Database, 2011). By

population size, ASEAN is one of the largest economic blocs in the world (it is also larger than the EC); although in Asia it is still dwarfed by China and India, each of which has a population of over a billion. Importantly, other things being equal, a large and growing population with rising levels of income constitutes a potentially large and expanding market.

Since 2005, ASEAN's GDP has grown at an average rate of 15% and ASEAN's combined GDP now stands at US\$1,865 billion (IMF, 2011). In 2010, ASEAN's total exports were valued at US\$1,052 billion and total imports at US\$950 billion. Over the same period, exports grew by more than 45%. However, the annual growth rate was just 29% in 2010, perhaps partly because of the recession in some export markets while imports growing by about 42% over these years (See Appendix 1 for details).

Of the ten ASEAN member nations, Indonesia is the largest in terms of land area and population. Indonesia also has the highest GDP, significantly higher than the four other founding member-nations, namely; Malaysia, Philippines, Thailand, and Singapore. Indonesia's GDP approximately doubled between 2001 and 2009, as did the GDPs of Brunei, Cambodia, Laos, Malaysia, the Philippines, Thailand, Vietnam, and the ASEAN region as a whole. Approximately 90% of the total GDP of ASEAN is accounted for by the five founding members of ASEAN.

Overall, the member nations of ASEAN have done well in terms of economic growth. Singapore, Malaysia, Thailand, Indonesia, Vietnam, and to a lesser extent the Philippines, have all grown at a fairly rapid rate. In recent years, relatively lower growth rates (although still high by world standards) have occurred in Singapore and Myanmar, but in the case of the former, with its already high GDP per capita, even small annual percentage increments translate into fairly large absolute amounts. The two smallest countries in ASEAN in terms of population, Singapore and Brunei Darussalam, have significantly higher per capita incomes (more than four times that of Malaysia, which is the next highest) than the other member-nations.

2. ASEAN Imports and Exports

Table 2, from the UNCTAD database, shows that the exports of ASEAN as a percentage of world exports have increased from 3.5% in 1980 to 6.7% in 2010. This increase slowed down in 2007, because of the onset of the current recession in some ASEAN trading partners. In 2009, the top five export commodities from ASEAN were: electric machinery, equipment and parts, sound equipment, and television equipment (85); mineral fuels, mineral oils and products of their distillation; bitumen substances, and mineral wax (27); nuclear reactors, boilers, machinery and mechanical appliances, and parts thereof (84); vehicles (not railway, tramway, rolling stock), and parts and accessories (87); and plastics and articles thereof (39); (reported in ASEAN Trade Statistics Database, 2010, by HS Classification).

Table 2 also shows that ASEAN imports as a percentage of world imports rose rapidly, from 3.5% in 1980 to 6.6% in 1995, but later declined to just over 5.5% in 2005, although they

recovered slightly to 6.1% in 2010. In each of the years cited, ASEAN's share of global exports was higher than its share of global imports, indicating a strong export bias in the region. As shown in Figure 1, the growth rates of exports and imports from/to ASEAN have followed very similar paths over time.

In the years following the formation of ASEAN, the growth in ASEAN trade with the world was quite slow. Trade continued to be relatively low until the late 1980s, when it began to increase and combined ASEAN imports and exports with the world exceeded US\$100 billion for the first time. From this point on, both ASEAN imports and exports have grown rapidly, reaching US\$200 billion in 1992 and US\$300 billion in 1995. During the financial crisis between 1997 and 1998, exports levelled off at approximately US\$350 billion, while imports from around the world declined to under US\$300 billion. However, the gap between exports and imports has remained constant after the recovery from the crisis in 2000, with the value of exports exceeding the value of imports by more than US\$100 billion, of which approximately US\$70 billion came from the trade surplus of Malaysia in 2010.

As shown in Figure 2, growth in Indonesia's trade with the world has been more measured and less erratic than that of many of its fellow ASEAN members. Exports grew steadily over time to exceed US\$20 billion in the early 1980s, US\$60 billion in the late 1990s, and almost US\$158 billion in 2010. Imports followed a similar path but at a lower level, reaching a value of just under US\$132 billion in 2010. Thailand, the Philippines, Singapore, and Malaysia followed a path similar to that taken by Indonesia.

Brunei's erratic foreign trade is an exception to the larger ASEAN economies. Prior to 1980, imports and exports were relatively low at less than half a billion US dollars. By the time of the Asian financial crisis, imports had increased steadily to exceed US\$4 billion, but fell dramatically to approximately US\$3 billion in 2010. Exports, on the other hand, sharply increased from approximately half a billion US dollars in 1980 to approximately US\$4 billion in 1981. From 1981 to 2000, the value of exports fluctuated between US\$2 billion and US\$4 billion, but has since grown rapidly to over US\$6 billion in 2005 and US\$9 billion in 2010.

Cambodia is one of the newer members of ASEAN. Its trade with the world prior to 1990 was almost non-existent in terms of value. Since the early 1990s, its imports and exports have increased rapidly, with the value of imports exceeding that of exports by just under US\$1 billion in 2007. Since then, the gap has increased with the rapid growth of both imports and exports: it was approximately US\$2 billion, with US\$7.5 billion in imports and US\$5 billion in exports in 2010.

Like Cambodia, Laos' foreign trade was relatively low prior to 1990. But in the early 1990s, imports grew rapidly to exceed US\$800 million, while exports grew to almost US\$500 million. Imports and exports fluctuated through the 1990s, but a trend of imports exceeding exports is also discernible; for example, in 2007, the value of imports (at over US\$1.1 billion) into Laos was approximately twice the value of exports from Laos.

To some extent, all ASEAN countries have experienced exponential growth in their imports

and exports. This is very evident in Vietnam's trade with the world, which after relatively low trade levels in 1990 surged to nearly US\$35 billion in 2005. Apart from a short period in the early 1990s when imports exceeded exports, Vietnam's import and export growths have followed almost identical paths, with exports exceeding imports. Compared to the other ASEAN countries, Vietnam's trade growth also appears to have been least affected by the Asian financial crisis.

3. Intra-ASEAN Tariff

Appendix II on Intra-ASEAN Tariff Commitment shows that a common effective preferential tariff (CEPT) schedule exists for goods originating from member nations. On January 1, 2005, tariffs on 99% of the products in the Inclusion List (products had to undergo immediate liberalization through reductions in intra-regional CEPT tariff rates) of the ASEAN-6 (Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand) were reduced to not more than 5%. More than 60% of these products actually have zero tariffs. The average tariff for the ASEAN-6 has been reduced from more than 12% when AFTA started to just 2% in 2005. For the newer member countries of Cambodia, Lao PDR, Myanmar and Vietnam (CLMV), tariffs on about 81% of their Inclusion List have been reduced to within the 0-5% range. Under the 2007 CEPT commitments, the original members must reduce tariffs on 80% of the goods on the Inclusion List to 0%, while the newer members must reduce the tariffs on 90% of the goods on the Inclusion List to the 0-5% range (ASEAN Secretariat website). Under the 2009 commitments, tariffs on all The Information and Communication Technologies (ICT) and Professional Information Services (PIS) products will be eliminated (Appendix 3).

4. Major Trading Partners

The value of imports into the entire ASEAN region is significantly lower than the value of exports from the region. Approximately a quarter of total ASEAN imports and exports are with other ASEAN nations. NAFTA and the EU make up relatively similar shares of trade with ASEAN, with ASEAN-USA trade being approximately equal to ASEAN-EU trade. For both NAFTA and the EU, the value of exports from ASEAN to these blocs significantly exceeds the value of imports into ASEAN. On the other hand, Japan and China each make up more than 10% of ASEAN's total trade, with the value of imports from and exports to Japan being approximately equal. However, this is not the case with China, whose exports to ASEAN in value exceed its imports from the region. Note that trade with China is the only exception to the general rule that ASEAN exports always exceed its imports from trading partners (See Table 3).

5. ASEAN Trade Tariffs with New Zealand, prior to FTA

Unlike other regional economic arrangements, such as the EU, in which a single tariff rate exists, each nation in ASEAN is able to set its own tariff schedule for goods produced by or originating from countries which are not members of ASEAN. Under the Trans-Pacific Strategic Economic Partnership Agreement signed in 2005, tariffs were eliminated on 92% of New Zealand's exports to Brunei. New Zealand and Indonesia enjoy an open trading relationship, where Indonesian tariffs on products imported from New Zealand are generally below 5%, although tariffs on some agricultural products remain as high as 47%.

B. New Zealand and Australia

Like the ASEAN member countries, Australia and New Zealand also have similar growth paths, as Figure 3 shows. Both had low rates of growth in exports and imports throughout the early to mid-1980s, followed by a relatively steady but steeper growth in trade until 2000. Since 2001, both countries have experienced high growth in the values of their imports and exports. Prior to 2000, the difference between the values of imports and exports was relatively insignificant, but in more recent years the difference has become more pronounced for both countries, with imports exceeding exports. This indicates that as the New Zealand and Australian economies grew, their demand for imports also grew. If the increased demand is for ASEAN (or Asian) products, trade within the region would certainly get a boost.

Japan is currently New Zealand's third most important export market after Australia and the USA. New Zealand's export of goods to Japan has grown rapidly over the years, while Japan has become the third largest source of imports into New Zealand. Although access to this market is difficult in certain areas, New Zealand exporters of certain products benefit from substantial and profitable opportunities which, because of market size, make even small increments in New Zealand's share of the market translate to large increases in its exports (NZ Embassy, Tokyo 2002). Increased trade between New Zealand and Japan has been accompanied by strong political ties between the two countries, reflecting a certain commonality of views, a shared interest in the stability, growth, and development of the Asia/Pacific community, Japan's acknowledgment of the positive role of New Zealand in the region (and vice-versa), and substantial (at least for New Zealand) economic, trade, tourism, and people-to-people links.

Although the relationship between Japan and New Zealand has been getting closer, it still needs to be carefully nurtured. There are divergent interests and values in some areas, notably over the sensitive issues of agricultural trade liberalisation, whale fishing, fisheries management, and the transport of nuclear materials.

Malaysia is the ASEAN nation with whom New Zealand currently has the strongest trading relationship in terms of value. New Zealand and Malaysia have signed a bilateral trade agree-

ment and are currently negotiating a free trade agreement. But although Malaysia's tariffs are relatively low for most goods, the range is wide at between 0 and 30%.

New Zealand has a CEP agreement with Singapore, which came into force in 2001; under the agreement, tariffs have been eliminated. New Zealand also signed a CEP agreement with Thailand in 2005 under which tariffs on 52% of New Zealand exports have been removed.

The Philippines does not currently have a trade agreement with New Zealand, but has a tariff regime under which most imported goods face 0-10% tariff rates. New Zealand's trade with Cambodia, Laos, Myanmar, and Vietnam (also called CLMV), which are the newest members of ASEAN, is still very limited.

1. Australia–ASEAN Trade

In 2010, Australia's exports to ASEAN were valued at approximate AU\$20 billion, which was approximately 9% of its total exports and is almost the same as those of the two preceding years (Tables 4a and 4b), being only slightly lower. Australia's imports from ASEAN, on the other hand, were valued at over AU\$37 billion, which was nearly 19% of total Australian imports. (See Tables 4a and 4b)

ASEAN is clearly an important trading partner of Australia. The Australian Department of Foreign Affairs and Trade (DFAT) has recognized that, as a group, ASEAN is a larger trading partner of Australia than any single country except China, with trade in goods and services with the 10 ASEAN countries, which was valued at approximately AU\$80 billion, accounting for 15% of Australia's total trade in 2010 (Australian DFAT, 2010). In 2008, Australia supplied 94% of ASEAN's wool imports, 95% of its live cattle imports (ASEAN Database, 2012), and more than 50% of its alumina, salt, and barley imports (DFAT, 2007). Tables 5a and 5b show Australia's most important exports and imports with ASEAN.

2. New Zealand–ASEAN Trade

The value of New Zealand's exports to ASEAN has increased at the rate of approximately 10% per an-num since 2003. The proportion of New Zealand's total exports going to the ASEAN region has also shown an upward trend, from below 8% in 2003 to over 10% in 2010. New Zealand imports from the ASEAN region also show an upward trend; from 9% of the total in 2003 to 15% in 2011. The value of New Zealand's imports from ASEAN has likewise shown an upward trend, with significant increases between 2005 and 2006 as reported in Tables 6a and 6b. The most significant exports and imports of New Zealand to/from ASEAN are shown in Table 7.

As Table 8 shows, New Zealand's main export partners are still Australia, the EU, and the US, which are also important sources of New Zealand's imports. But the original five members of ASEAN are also important trading partners, with each receiving close to 2% of New Zea-

land's exports.

China is another important source of imports, providing over 15% of New Zealand's imports in 2010, as Table 8 shows. Table 9, however, shows that for countries other than Australia (and more recently, China); New Zealand is a relatively small source of imports. Of the ASEAN nations, New Zealand provides an export market of approximately 0.5% of the total exports from Malaysia, Singapore, and Thailand. New Zealand's exports also provide a small share of close to 1% of the total imports of the Philippines and Indonesia, the two countries with the largest populations in ASEAN (See Table 9).

3. New Zealand-ASEAN: Composition of Trade in Agricultural Products¹

Agricultural exports (HS code: 07 - 11) from New Zealand to ASEAN fluctuated in value over the 2000-2011 period, ranging from a low value of NZ\$494 million in 2003 to a high value of NZ\$590 million in 2011. As a proportion of New Zealand's total agricultural exports to the world, exports to ASEAN countries fluctuated between 30% and 49% during 2003 to 2011.

The value of meat (HS code: 02) exports from New Zealand to ASEAN has shown an upward trend in recent years, from NZ\$137 million in 2003 to NZ\$375 million in 2010. As a proportion of New Zealand's total meat exports to the world, the proportion exported to ASEAN countries has followed the same trend, increasing from 3% in 2003 to 7% in 2010.

The value of dairy products (HS code: 0401 – 0406) exported from New Zealand to ASEAN fluctuated over the 2000-2011 period, from a low value of NZ\$1,157 million in 2003 to a high value of NZ\$2,309 million in 2011. As a proportion of New Zealand's total dairy exports to the world, exports to the ASEAN countries also fluctuated, although within a relatively narrow range, from 19% in 2011 to 25% in 2007.

V. Examination of New Zealand–ASEAN Trade Intensities, 1980~2010

In this section, the trade intensities between New Zealand and ASEAN are estimated, using time series data from IMF-Direction of Trade Statistics for the years 1980~2010, with the results being reported in Table 10. The intensity of trade between New Zealand and its trading partners is formally analysed through the export intensity index (XII) and the import intensity index (MII), which are calculated based on the following formulas (see Kojima 1964, Wadhva *et al.* 1985):

¹ All values in this section are given in NZ\$ FOB and taken from New Zealand External Trade Statistics (various December editions) held by Statistics New Zealand.

A. The Export Intensity Index (*XII*)

$$XII_{ij} = (X_{ij} / X_i) / [M_j / (M_w - M_i)]$$

where:

X_{ij} = country <i>i</i> exports to country <i>j</i>	X_i = total exports of country <i>i</i>
M_j = total imports of country <i>j</i>	M_i = total imports of country <i>i</i>
M_w = total world imports	XII_{ij} = export intensity index

The first term, the numerator of the formula, X_{ij}/X_i , is the proportion of exports of country ‘*i*’ to the bilateral trading partner as a percentage of its total exports. This indicates how significant the trading partner is to the home or *i* country for its exports. The second term or the denominator, $M_j / (M_w - M_i)$, is the trade partner’s total imports as a proportion of total world imports less the import of the domestic economy or country *i*. The average value of this index is equal to unity. A trade intensity of unity would indicate that country *i* exports to each country *j* in accordance with trading partners’ purchasing power. A value greater than unity indicates a high degree of trade intensity between two countries, while a value less than unity indicates low trade intensity between trading partners.

B. The Import Intensity Index (*MII*):

$$MII_{ij} = (M_{ij} / M_i) / [X_j / (X_w - X_i)]$$

where:

M_{ij} = country <i>i</i> imports to country <i>j</i>	M_i = total imports of country <i>i</i>
X_j = total exports of country <i>j</i>	X_i = total exports of country <i>i</i>
X_w = total world exports	MII_{ij} = import intensity index

Similar to the *XII*, the numerator of the formula, M_{ij}/M_i , is the proportion of imports from the country ‘*i*’ to a trading partner as a percentage of its total imports. This indicates how significant the trading partner is to the home country for its imports. The denominator, $X_j / (X_w - X_i)$, is the trade partner’s total exports as a proportion of total world exports less the exports of the domestic economy.

According to UNESCAP (2005), a trade intensity value greater than one indicates an above average or intense trade relationship. In the words of Bandara and Smith (2002), a *XII* value greater than 1 indicates a “match between the specialisation of the exporting country and the need of the importing country, and/or a positive influence on trade of factors such as proximity and historical association of trade relations” (Bandara & Smith, 2002). Using these measures, Bano (2002) examined the strength of trade relations between Australia-New Zealand and selected trading partners. Her study found that bilateral trade flows between New Zealand and Australia have become more intense and have remained high and on an upward trend; with the

CER agreement, the trade ties between the two countries have grown even stronger. Several studies have also employed trade intensity indexes as indicators of relative resistance factors by explaining variations in the indices over time and across bilateral trading relationships (Drysdale *et al.*, 1994).

Trade intensity indices have been used in academic work since Brown (1947) and Kojima (1964) developed these methods. From a regional perspective, the Trade Intensity Index (TII) shows whether a region exports more as a percentage to a certain region than the rest of the world does (UNESCAP, 2005). Wu and Zhou (2006) applied these indices to perform a comparative statistical analysis of the strength of trade between India and China between 1992 and 1997. Their study showed that trade intensities were lower than expected, indicating a potential for growth in bilateral trade. Trade intensity indices have also been used by international institutions such as UNCTAD, UNESCAP, the World Bank, and the IMF to examine the strength of the bilateral trading relationship between two trade partners.

More recently, a number of scholars have used trade intensity indices to identify the strengths (or weaknesses) of trading relationships. For example, Assem *et al.* (2012) showed lower than expected trade intensity between Egypt and China, and concluded that although trade between the two countries had expanded substantially, there is still room for further expansion. Chandran (2011) analysed trade intensity between India and ASEAN in order to identify the optimal trade structure after the India–ASEAN RTA comes into force next year. They found out that India and ASEAN have complementary industries and products, and since ASEAN member countries are in different stages of development, India and ASEAN stand to realize a huge trade potential.

C. Trade Intensity Estimates and Analysis

Using trade data from the IMF Direction of Trade Statistics Year Book, trade intensity indices were calculated for ASEAN member countries for the years 1980 through 2010. The results by country are reported in Table 10 and described below.

Brunei: There is considerable variation in the export intensity (*XII*) with New Zealand, ranging from 0 in 1987, 1988, and 1991 to 13.75 in 2006, the latter value being, however, unusual and higher than all the others. Import intensity (*MII*) also shows considerable variation: while values of 0 appeared for 1983–1995 and for 1998, values greater than 1 were obtained for all other years from 1996 onwards, with unexpectedly high values of above 10 being obtained for the years 2003, 2004, 2006, and 2008 forward.

Indonesia: The results demonstrate high export and export intensities between New Zealand and Indonesia. All values are above 1 throughout the period, with a value of 2.9 in 2001, which increased to 4.8 in 2007, and with marginal decreases in 2008, 2009, and 2010. Although there is greater variation in the degree of trade intensity, the majority of the values remain above 1.

Malaysia: The *XII* for Malaysia has fluctuated over the last decade, reaching a low of 1.4 in 2006 before increasing rapidly by 74% over the next two years to reach a high of 2.4 in 2008. There is, however, a general downward trend in the *XII*, from 2.4 in 1981 to 1.7 in 2007 and 2009. On the other hand, there appears to be a general upward trend in the *MII*, with all values above 1 after 1995. The *XII* for Malaysia has stayed above one, indicating an above-average trading relationship with New Zealand. As of 2010, the *XII* figure was 1.65, which is only marginally larger than the *XII* of 1.63 in 2000.

Philippines: All the *XII* values are above 1, with the majority above 2, and the values are relatively consistent. The vast majority of *MII* values are below 1, but there is no real trend.

Singapore: There is a general downward trend in the value of the *XII* from 1.24 in 1980 to 0.6 in 2006; after climbing to above 1 in 2007, it went back to 0.93 in 2010. A downward trend in the *MII* persisted until the early 1990s, taking the index below 1. This trend began to reverse in the mid-1990s with the index increasing up to 2.3 in 2007; thereafter, the downward trend resumed.

Thailand: The *XII* was relatively constant over the period, with values fluctuating close to unity, particularly from 1990 onwards. The *MII* consistently increased from 0.38 in 1981 through to 2.46 in 2010. All values since 1998 have been above unity.

Vietnam: *XII* values prior to 1994 varied significantly, with several values of 0 reported. However, all reported *XII* values since 1994 have been greater than 1. *MII* values also vary, although the vast majority are below 1, with many values being reported as 0.

D. Further Observations on New Zealand-ASEAN Trade Relations

Although there were fluctuations, trade intensities between New Zealand and ASEAN (with the exception of the Philippines) increased over the years 1980~2006, and continued to increase up to 2010. The increase is very evident, as shown in the values of exports and imports and as measured more rigorously by the trade-intensity indices. Increased bilateral trade between New Zealand and the ASEAN member states of Singapore, Brunei, Thailand, and Malaysia is particularly evident, which can be easily explained by the fact that New Zealand has entered into bilateral trade agreements with these countries.

VI. Trade Potential between New Zealand and ASEAN

Potential trade between two trading partners can be estimated by matching the total export supply for a given commodity (or group of commodities/products) of a country with the total import demand for that commodity of a trading partner. The importance of products in bilateral trade is examined in terms of their estimated high potential. Potential trade is estimated with the

following formula:

$$\text{Trade Potential} = [\min (SE, MI) - ET]$$

where: *min* means having the smallest or minimum value of the pair of *SE* and *MI*

- SE* - Suppliers' Global Exports (e.g. New Zealand's Global Exports)
- MI* - Markets' Global Imports (e.g. Trading Partner's Global Imports)
- ET* - Existing Bilateral Exports (NZ Export of a product to a trading partner, e.g. Indonesia)

According to Mukherji (2007), "By matching the import demand with the export supply of a given commodity, an estimate can be made of the possibility of trade expansion under the most favourable competitive conditions, after subtracting existing trade". In the same article, the author identified the trade potential and trade complementarity between country pairs and concluded that China, Korea, and India each brought large domestic markets and trade potentials to the Asia-Pacific Trade Agreement (APTA) countries. However, deeper liberalisation would be needed to realize these potentials (Mukherji, 2007).

The trade potential index was used by Mukherji (2005) as "bilateral potential trade (BPT)" to estimate the benefits of the negative list approach in the economic integration of the Asia-Pacific region. By comparing the trade intensity index in selected products, the author demonstrated the enormous trade potential from expanding the Bangkok Agreement with China. In the paper, analyses of the trade potential method showed that manufactured products have substantial trade potential in the Asia-Pacific region. For example, the industry of the most significant trade potential between India (as supplier) and China (as market) is identified as "Iron ores and concentrates" (HS code: 260111). The top potential industry of the Republic of Korea is "Parts and accessories of the machines of heading" (HS code: 847330). The potential values of these two industries are 441 million U.S dollars and 3 billion U.S dollars, respectively.

The index was also proposed by Helmers and Pasteels (2006) as "Indicative Trade Potential (ITP)" to estimate the trade potential at the commodity level. They argued that the ITP can avoid problems such as lack of data when using the gravity model. Further, because this index is based on a strong assumption of complementarity between two trade partners, it is an indicator of potential trade. Pant and Panta (2009) also used this method to estimate the trade potential between Nepal and the US. They identified the main trade potential of Nepal with the USA as being in wool carpet, fine animal hair, and cotton; whereupon they suggested that the Nepal government should diversify its exports. The trade potential measure has also been used by Paswan (2003) to identify trade potential in India's agriculture sector.

Kabir and Salim (2011) examined the integration of ASEAN and EU by using a different method of assessing their trade potential. They used the intra-EU trade estimated by Pastore, Gerragina and GIOvannetti (2009) as a benchmark and then put the data of ASEAN-EU country pairs into a similar gravity model to calculate the "estimated potential trade". They also esti-

mated the undiscovered trade potential by using the ratio of estimated potential trade and actual trade. Their results showed that in ASEAN-EU trade, the gap between potential and actual trade was considerable for the period 1996–2008, although it slowly decreased over time.

The two different methods of estimating trade potential have their own advantages and disadvantages. The obvious disadvantage of the Kabir and Salim method is that it treats trade potential as a static variable. Since the benchmark is a constant, trade potential has no possibility of surpassing it. For identifying key determinants of trade, the gravity model is more appropriate. For identifying trade potential, however, the trade potential method is more appropriate. It is possible for trade potential to increase with the increase of the benchmark. For example, the results of the Mukherji method used in our paper show that trade potential grows with the actual trade growth. The Kabir and Salim method does, however, give a reasonable benchmark to assess the trade potential at a specific time. Therefore, it is appropriate when used for latitudinal comparisons for a short period, while the Mukherji method is better for longitudinal comparisons, especially for catching dynamic effects.

This study attempts to fill a research gap, as there appears to be no published application of trade potential methods in the context of the New Zealand and ASEAN trading relationship. Since one of the aims of this paper is to capture the trade pattern over time, the Mukherji method is more appropriate for the analysis.

Table 11 provides a breakdown of trade potential between New Zealand and its ASEAN trading partners. It also demonstrates how New Zealand's trade potential can be calculated using Indonesia as an example of a bilateral trading partner. The results for four years are reported in Tables 12 and 13. SITC in revision 3 is aggregated at the SITC 1-digit level.

0 = Food and live animals	5 = Chemicals and related products
1 = Beverages and tobacco	6 = Manufactured goods classified chiefly by material
2 = Crude materials, inedible, except fuels	7 = Machinery and transport equipment
3 = Mineral fuels, lubricants, and related materials	8 = Miscellaneous manufactured articles.
4 = Animal and vegetable oils, fats, and waxes	

The trade potential calculations presented in Table 12 indicate the maximum levels of trade which would have been possible between New Zealand and each of the ASEAN trading partners from the 2010 import and export data. Recent bilateral data for Laos, Cambodia, and Myanmar were not available from the UN COMTRADE database, and neither were 2007 bilateral data for Brunei Darussalam and 2010 bilateral data for Vietnam; hence, trade potential calculations for these two countries were based on 2006 and 2009 data.

Not surprisingly, the SITC category which provides the most potential for trade is SITC 0, “food and live animals.” Malaysia and Indonesia are the two ASEAN countries with which New Zealand has the greatest trade potential, especially at the SITC 0 categories. Indonesia

stands out, with the results showing that about a US\$9 billion trade potential exists in food and live animal products alone, about US\$3 billion in crude materials, and US\$2.8 million in manufactured products. Trade potential indicators clearly point to potential gains to New Zealand in a number of export sectors. The lowest trade potential with regard to New Zealand's exports is with Brunei Darussalam, where trade in none of the SITC categories for this country exceeds US\$1 billion.

Table 13 shows a comparison of calculated trade potential between New Zealand and ASEAN countries for selected years - 1980, 2007, 2008, and 2010. An interesting pattern can be identified: the trade potential in SITC 0 (food and live animals), 1 (beverages and tobacco), and 2 (crude materials, except fuels) categories keep increasing during this period, whoever the trade partner is. Meanwhile, the trade potential of SITC 5 (chemicals and related products), 6 (manufactured goods), 7 (machinery and transport equipment) and 8 (Miscellaneous manufactured articles) categories have a tendency to marginally decrease in this period, with SITC 3 (mineral fuels, lubricants, and related materials) and 4 (animal and vegetable oils, fats, and waxes) categories showing a reverse V-shaped pattern of trade potential. Therefore, it is reasonable to expect that there is a huge trade potential for New Zealand and ASEAN countries in New Zealand's traditional industries such as food, animal, and crude materials, and that the potential will keep increasing. On the other hand, in industries where New Zealand doesn't have a comparative advantage, the trade potential showed a decreasing tendency. However, in 2010, results show a high trade potential in those sectors such as manufacture goods, machinery, and transport equipment that is, a high trade potential worth nearly 3 billion U.S. dollars. We would expect these sectors to also grow with the process of deep liberalisation of trade between New Zealand and ASEAN. In addition, the ASEAN-Australia-New Zealand Free Trade Agreement may further facilitate potential growth.

VII. Conclusion

Our findings show that New Zealand-ASEAN trade has intensified over the years, even if it has been marked by fluctuations. There is also room for further growth and deepening of this growing relationship. The results of the two methods that we have used, the intensity of trade index and the trade potential, clearly support these conclusions.

Based on the application of the trade intensity indices, by the end of the period studied, New Zealand's export intensity was highest with the Philippines, Indonesia, Vietnam, Malaysia, and Thailand; on the other hand, import intensity was highest for Brunei, Singapore, Indonesia, Thailand, and Malaysia. Trade potential analysis shows that a considerable number of industries in both New Zealand and ASEAN have trade potential. Large potential exists in New Zealand's trade with Malaysia, Indonesia, Singapore, and Thailand, that are geographically

closest to New Zealand.

These findings should gladden the hearts of those in New Zealand who have pushed for, and continue to advocate, more and freer trade with countries in the Asia-Pacific region and beyond. At the same time, they should also recognize that in entering into such trade arrangements, they are dealing with a heterogeneous group of countries - in terms of population, incomes, political systems, cultures, etc., and need to nuance their responses to the opportunities and challenges for increased trade in the region.

It may be asked at this point why, with AANZFTA in place, there is still a need for New Zealand (or Australia, for that matter) to enter into bilateral trade agreements. The two arrangements entered into by New Zealand are not mutually exclusive, but are complementary. This is so since unlike the EU, which has a uniform tariff with non-members, individual ASEAN member-states are free to set their own tariffs with non-members.

For historical reasons, New Zealand's trade relations have been mainly with Europe and the US. This has changed over the years, and continues to change, with ASEAN and Asia now becoming New Zealand's major trading partners. With the continued economic dynamism of the Asia-Pacific region and the current economic crisis in some Western countries, this trend is likely to continue. It has been said that 'geography is destiny'; it increasingly looks like New Zealand's trade destiny is with the Asia-Pacific region in general and with ASEAN in particular.

Future research should focus on identifying the key determinants of trade, the static and dynamic revealed comparative advantages of countries in the region, and the complementarities among ASEAN member countries and between ASEAN and New Zealand. Challenges associated with food security, aid, and investment also need to be addressed.

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Table 1. ASEAN Population: Total and Percentage of World Population, 1980~2010

	1980	1985	1990	1995	2000	2005	2010
ASEAN (Millions)	359.01	401.85	445.36	485.76	523.83	558.87	592.29
Per cent of World Population (%)	8.06	8.26	8.39	8.48	8.56	8.59	8.59
World Population (Millions)	4453.01	4863.29	5306.43	5726.24	6122.77	6506.65	6895.89
ASEAN Population Growth Rate (%)		9.21	9.11	7.91	6.92	6.27	5.98
Average Growth Rate of 5-year		1.84	1.82	1.58	1.38	1.25	1.20

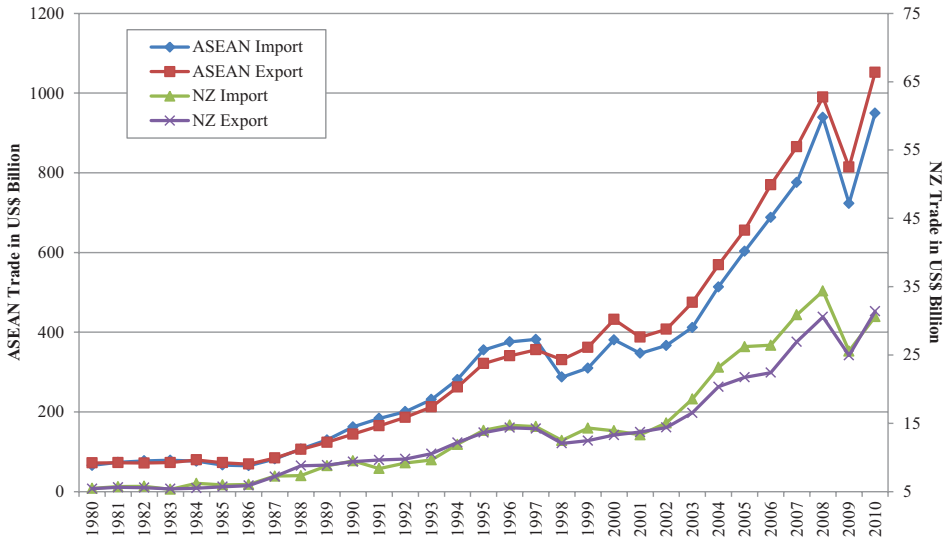
(Source) UNCTAD Stats Database, 2012

Table 2. ASEAN Export, Import, and Share in World Trade, 1980~2010

	1980	1985	1990	1995	2000	2005	2008	2009	2010
ASEAN Export (US\$ Billions)	82	85	175	398	512	776	1,191	1,001	1,277
World Export (US\$ Billions)	2,373	2,317	4,274	6,342	7,930	12,938	19,868	15,890	18,947
ASEAN Import (US\$ Billions)	83	81	179	415	465	710	1,102	880	1,138
World Import (US\$ Billions)	2,389	2,333	4,276	6,252	7,933	12,781	19,540	15,529	18,531
ASEAN Share in World Export (%)	3.46	3.66	4.10	6.28	6.45	6.00	5.99	6.30	6.74
ASEAN share in World Import (%)	3.47	3.46	4.18	6.63	5.86	5.55	5.64	5.67	6.14

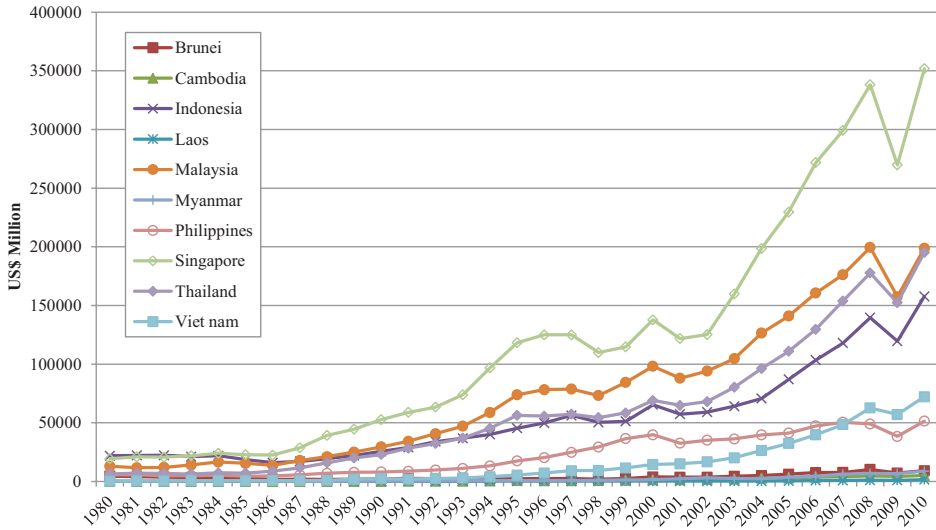
(Source) UNCTAD Stats Database, 2012

Figure 1. ASEAN–World Trade and NZ–World Trade over time, 1980–2010



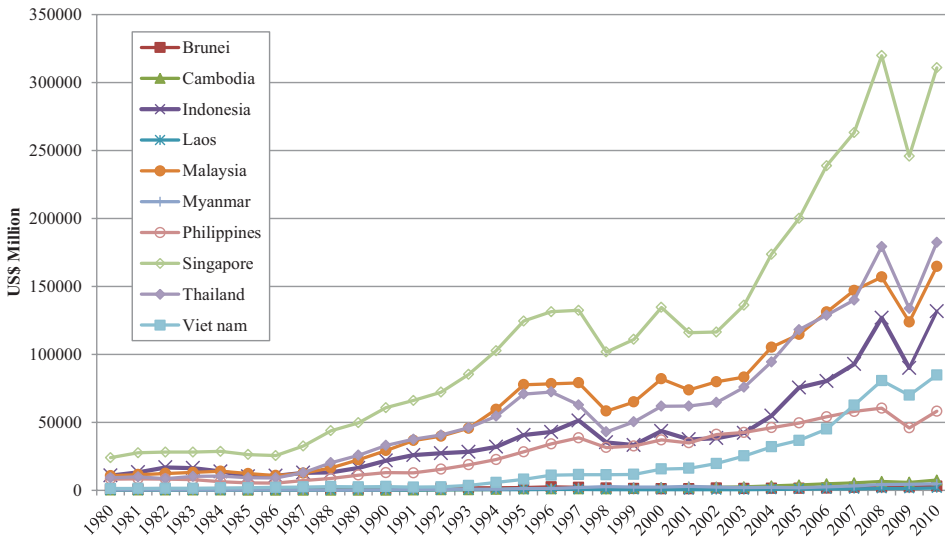
(Source) WTO database, 2012, Authors' calculations.

Figure 2a. ASEAN Exports to World



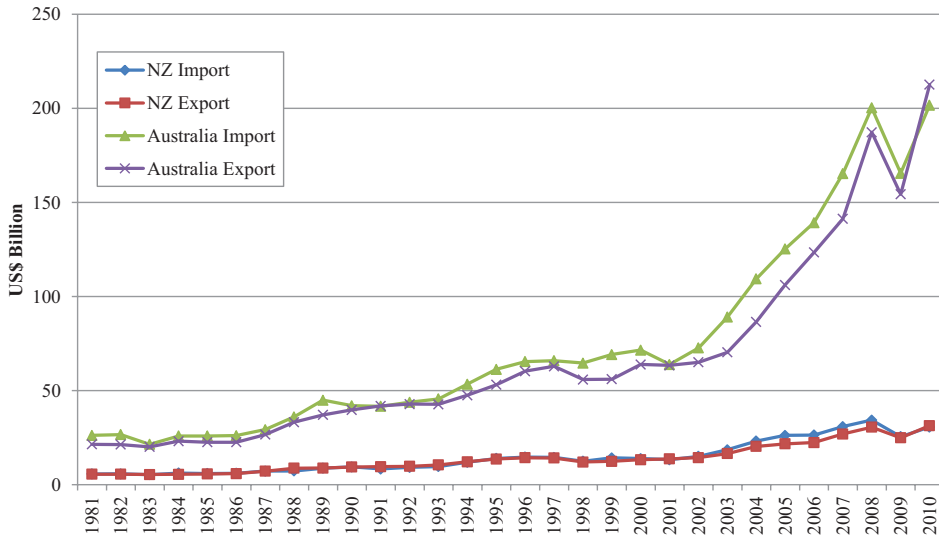
(Source) WTO database, 2012, Authors' calculations.

Figure 2b. ASEAN Imports from World



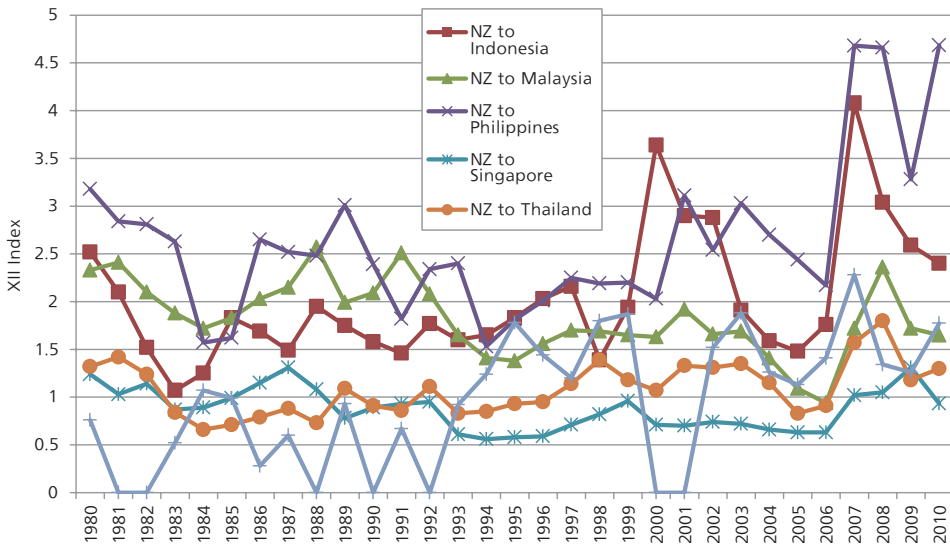
(Source) WTO database, 2012, Authors' calculations.

Figure 3. New Zealand - Australia Trade with World



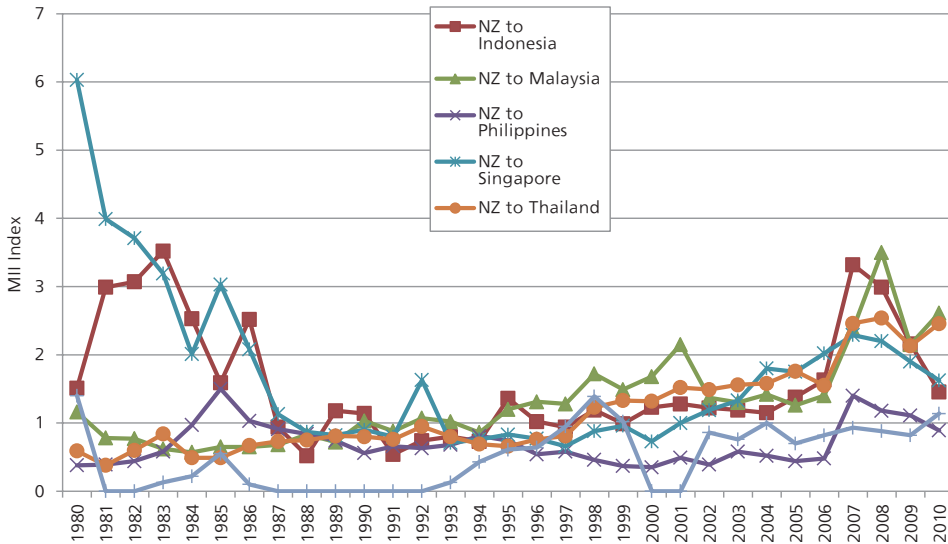
(Source) WTO database, 2012, Authors' calculations.

Figure 4a. Export Intensity Indexes of NZ to ASEAN Countries



(Source) IMF Direction of Trade Statistics Yearbooks, various issues
 Authors' calculations using IMF data

Figure 4b. Import Intensity Indexes of NZ to ASEAN Countries



(Source) IMF Direction of Trade Statistics Yearbooks, various issues
 Authors' calculations using IMF data

Table 3a. ASEAN Trade by Selected Partner Country/Region, 2010

(value in US\$ millions, share in percent)

Partner Country/Region	Exports		Imports	
	Value	Share	Value	Share
Intra-ASEAN	267,981	25	251,824	26
EU-27	115,036	11	93,548	10
China	113,000	11	119,013	12
NAFTA (USA and Canada)	105,668	10	90,887	9
Japan	102,891	10	103,746	11
Total Selected Partner Country / Region	704,576	66	659,019	68
Others	366,366	34	315,771	32
Total	1,070,941	100	974,790	100

(Source) ASEAN Merchandise Trade Statistics Database, 2012.

Table 3b. ASEAN Trade by Selected Partner Country/Region, 2006

(value in US\$ millions, share in percent)

Partner Country/Region	Exports		Imports	
	Value	Share	Value	Share
Intra-ASEAN	189,177	25	163,595	25
NAFTA (USA and Canada)	100,860	13	67,223	10
EU-25	94,472	13	66,118	10
Japan	81,285	11	80,496	12
China	65,010	9	74,951	11
Total Selected Partner Country / Region	530,804	71	452,382	69
Others	219,904	29	201,716	31
Total	750,708	100	654,098	100

(Source) ASEAN Secretariat Statistics, 2007

Table 4a. Australia Exports to ASEAN as a Share of Total Exports, 1980–2010

(value in US\$ millions)

	1980	2005	2006	2007	2008	2009	2010
ASEAN	1,834	12,111	14,121	15,267	19,660	15,435	19,991
Total	22,267	105,681	119,595	142,589	213,813	157,728	196,982
Percent	8.24	11.46	11.81	11.46	9.19	9.79	10.15

(Source) IMF Direction of Trade Statistics Yearbook, various versions, Authors' Calculations.

Table 4b. Australia Imports from ASEAN as a Share of Total Imports, 1980–2010

(value in US\$ millions)

	1980	2005	2006	2007	2008	2009	2010
ASEAN	1,531	23,707	28,722	34,258	34,246	34,246	41,199
Total	22,399	125,281	139,253	165,336	165,471	165,471	201,639
Percent	6.84	18.92	20.63	20.72	22.16	20.70	19.44

(Source) IMF Direction of Trade Statistics Yearbook, various versions, Authors' Calculations.

Table 5a. Australia's Most Significant Exports to ASEAN, 2010

(AUS\$ millions)

Commodity	SITC	Exports Value	Share of Total Exports to ASEAN (%)
Crude petroleum	333	3,680	16.90
Gold	971	2,368	10.88
Wheat	41	1,776	8.16
Copper	682	1,142	5.25
Aluminium	684	976	4.48

(Source) Australian Department of Foreign Affairs and Trade, 2010.

Table 5b. Australia's Most Significant Imports from ASEAN, 2010

(AUS\$ millions)

Commodity	SITC	Imports Value	Share of Total Imports from ASEAN (%)
Crude petroleum	333	9,562	23.47
Refined petroleum	334	6,338	15.56
Gold	971	2,872	7.05
Goods vehicles	782	2,710	6.65
Computers	752	1,382	3.39

(Source) Australian Department of Foreign Affairs and Trade, 2010.

Table 6a. New Zealand Exports to ASEAN as a Share of Total Exports, 2003-2010

(value in NZ\$ millions)

	2003	2004	2005	2006	2007	2008	2009	2010
ASEAN	2,291	2,221	2,401	2,659	3,082	4,589	4,218	4,379
Total	29,291	29,864	30,618	32,430	34,934	40,028	43,028	40,672
Percent	7.82	7.44	7.84	8.20	8.82	11.46	9.80	10.77

(Source) Infoshare, Statistics New Zealand, 2011

Table 6b. Australia Exports to ASEAN as a Share of Total Exports, 2003-2010

(value in NZ\$ millions)

	2003	2004	2005	2006	2007	2008	2009	2010
ASEAN	2,678	2,844	3,324	4,685	4,905	6,661	5,801	5,081
Total	30,161	31,342	33,433	36,586	38,671	41,925	43,438	37,940
Percent	8.88	9.07	9.94	12.81	12.68	15.89	13.36	13.39

(Source) Infoshare, Statistics New Zealand, 2011

Table 7a. New Zealand's Most Significant Exports to ASEAN, 2010

(NZ\$ millions)

Commodity	Exports Value	Share of Total Exports to ASEAN (%)
Dairy, Eggs, Honey, etc.	2,184	49.8
Meat	375	8.5
Wood	228	5.2
Baking Related	183	4.2
Wood pulp, etc.	176	4.0

(Source) New Zealand Ministry of Foreign Affairs and Trade, 2012

Table 7b. New Zealand's Most Significant Imports from ASEAN, 2010

(NZ\$ millions)

Commodity	Imports Value	Share of Total Imports from ASEAN (%)
Mineral Fuel, Oil etc.	2,306	39.7
Electrical Machinery	616	10.6
Machinery	466	8.0
Vehicles, Not Railway	368	6.3
Plastic	270	4.7

(Source) New Zealand Ministry of Foreign Affairs and Trade, 2012

Table 8. New Zealand Bilateral Trade with Selected Countries/Regions, 2010

(as a percentage of total NZ trade)

Partner	Exports to Partner as a % of Total NZ Exports	Imports from Partner as a % of Total NZ Imports	X + M as a Per cent of Total NZ Trade
Australia	22.39	16.47	19.46
EU	11.29	15.14	13.19
US	8.53	11.25	9.88
China	12.23	15.85	14.02
Japan	7.32	6.61	6.97
UK	3.29	2.37	2.83
Singapore	1.65	4.72	3.17
Malaysia	1.80	3.45	2.61
Thailand	1.59	3.17	2.37
Indonesia	1.87	1.57	1.72
Philippines	1.57	0.31	0.94
Vietnam	0.97	0.56	0.77
Brunei Darussalam	0.01	1.08	0.54
Myanmar	0.04	0.00	0.02
Lao PDR	0.00	0.00	0.00
Cambodia	0.03	0.03	0.03
Rest of the world	25.42	17.43	21.48
World Total	100.00	100.00	100.00

(Source) Infoshare, Statistics New Zealand, 2011

Table 9. New Zealand Bilateral Trade with Selected Countries/Regions, 2010

(as a percentage of partner's trade)

Partner	NZ Exports as a % of Partner's Imports	NZ Imports as a % of Partner's Exports	NZ Bilateral Trade as a % of Partner's Total Trade
Australia	3.41	3.48	3.44
Philippines	0.75	0.06	0.42
Indonesia	0.54	0.25	0.38
Thailand	0.28	0.41	0.35
Malaysia	0.37	0.47	0.42
Japan	0.39	0.25	0.31
Singapore	0.18	0.49	0.34
Vietnam	0.42	0.18	0.31
China	0.27	0.17	0.22
EU	0.07	0.06	0.07
UK	0.21	0.14	0.18
US	0.15	0.22	0.18
Myanmar	0.13	0.02	0.09
Lao PDR	0.02	0.01	0.02
Cambodia	0.06	0.04	0.05
Brunei Darussalam	0.16	6.23	4.93
World	0.21	0.18	0.20

(Source) IMF, Direction of Trade Statistics Yearbook, 2011

Table 10. New Zealand-ASEAN Trade Intensity 1980~2010**A: The exports intensity indexes (XII) of NZ to ASEAN countries**

Year	Brunei	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
1980	0.25	2.52	2.33	3.18	1.24	1.32	0.76
1981	0.29	2.1	2.41	2.84	1.03	1.42	0
1982	0.22	1.52	2.1	2.81	1.14	1.24	0
1983	0.62	1.07	1.88	2.63	0.87	0.84	0.52
1984	0.43	1.25	1.72	1.57	0.89	0.66	1.07
1985	0.27	1.83	1.83	1.62	0.99	0.71	0.99
1986	0.21	1.69	2.03	2.65	1.15	0.79	0.28
1987	0	1.49	2.15	2.52	1.31	0.88	0.6
1988	0	1.95	2.57	2.48	1.08	0.73	0
1989	0	1.75	1.99	3.01	0.78	1.09	0.93
1990	0.21	1.58	2.09	2.39	0.89	0.91	0
1991	0	1.46	2.51	1.82	0.93	0.86	0.67
1992	0.72	1.77	2.08	2.34	0.95	1.11	0
1993	0.59	1.6	1.65	2.4	0.61	0.83	0.92
1994	0.91	1.65	1.41	1.53	0.56	0.85	1.24
1995	1.39	1.83	1.38	1.81	0.58	0.93	1.78
1996	0.85	2.03	1.56	2.01	0.59	0.95	1.44
1997	0.89	2.16	1.7	2.25	0.71	1.14	1.2
1998	0.61	1.39	1.69	2.19	0.82	1.39	1.8
1999	0.72	1.94	1.65	2.2	0.96	1.18	1.87
2000	0.78	3.64	1.63	2.03	0.71	1.07	-
2001	0.51	2.9	1.92	3.11	0.7	1.33	-
2002	0.63	2.88	1.66	2.54	0.74	1.31	1.52
2003	0.28	1.91	1.69	3.03	0.72	1.35	1.88
2004	0.55	1.59	1.41	2.7	0.66	1.15	1.26
2005	0.55	1.48	1.09	2.44	0.63	0.83	1.13
2006	13.75	1.76	0.94	2.17	0.63	0.91	1.41
2007	0.3	4.08	1.72	4.68	1.02	1.57	2.28
2008	0.59	3.04	2.36	4.66	1.05	1.8	1.34
2009	0.58	2.59	1.72	3.28	1.31	1.18	1.26
2010	0.49	2.40	1.65	4.68	0.93	1.30	1.77

(Source) IMF Direction of Trade Statistics Yearbooks, various issues, Authors' calculations.

B: The imports intensity indexes (MII) of NZ to ASEAN countries

Year	Brunei	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
1980	1.34	1.51	1.16	0.38	6.03	0.59	1.4
1981	0.42	2.99	0.78	0.39	3.99	0.38	0
1982	0.8	3.07	0.77	0.44	3.71	0.6	0
1983	0	3.52	0.62	0.58	3.19	0.84	0.13
1984	0	2.53	0.57	0.97	2.01	0.49	0.22
1985	0	1.59	0.65	1.5	3.03	0.49	0.55
1986	0	2.52	0.65	1.03	2.08	0.67	0.1
1987	0	0.94	0.68	0.91	1.13	0.73	0
1988	0	0.52	0.83	0.84	0.87	0.75	0
1989	0	1.18	0.72	0.74	0.82	0.81	0
1990	0	1.14	1.03	0.56	0.9	0.8	0
1991	0	0.54	0.88	0.66	0.8	0.76	0
1992	0	0.74	1.07	0.63	1.63	0.95	0
1993	0	0.8	1.02	0.68	0.71	0.8	0.13
1994	0	0.73	0.86	0.81	0.76	0.69	0.43
1995	0	1.36	1.2	0.74	0.83	0.66	0.61
1996	2.63	1.02	1.31	0.54	0.77	0.76	0.64
1997	1.24	0.94	1.28	0.58	0.66	0.81	0.95
1998	0	1.19	1.72	0.46	0.88	1.23	1.39
1999	3.86	0.99	1.49	0.37	0.96	1.33	1.02
2000	1.55	1.23	1.68	0.35	0.73	1.32	-
2001	1.57	1.28	2.15	0.49	1	1.52	-
2002	8.93	1.22	1.37	0.39	1.19	1.49	0.86
2003	10.48	1.19	1.3	0.58	1.33	1.56	0.76
2004	11.56	1.15	1.42	0.52	1.8	1.58	1
2005	3.98	1.38	1.26	0.44	1.75	1.76	0.7
2006	10.5	1.63	1.4	0.48	2.02	1.55	0.82
2007	8.93	3.32	2.38	1.4	2.29	2.46	0.93
2008	15.87	2.99	3.5	1.18	2.2	2.54	0.88
2009	18.61	2.16	2.15	1.11	1.9	2.13	0.82
2010	26.83	1.46	2.61	0.89	1.62	2.46	1.14

(Source) IMF Direction of Trade Statistics Yearbooks, various issues, Authors' calculations.

Table 11. Trade Potential between New Zealand and Indonesia, 2010

(US\$ millions)

Commodity Classification, 1 digit UNSITC (Rev. 3)	NZ Global Exports (All countries) (SE)	Trade Partners Global Imports (MI)	Existing NZ Exports to Trade partner (ET)	Estimated Trade Potential
0 - Food and live animals	15,303	9,675	467	9,208
1 - Beverages and tobacco	958	535	0	535
2 - Crude materials, inedible, except fuels	3,479	7,312	127	3,353
3 - Mineral fuels, lubricants and related materials	1,465	27,506	0	1,465
4 - Animal and vegetable oils, fats and waxes	120	180	0	120
5 - Chemicals and related products, n.e.s.	1,360	16,649	25	1,335
6 - Manufactured goods classified chiefly by material	2,925	20,467	30	2,896
7 - Machinery and transport equipment	2,489	48,598	9	2,480
8 - Miscellaneous manufactured articles	1,267	4,656	2	1,265

(Source) IMF Direction of Trade Statistics Yearbooks, various issues, Authors' calculations.

Table 12. Trade Potential between New Zealand and Selected ASEAN Trading Partners, 2010

(US\$ millions)

Partner (y)	SITC (1 digit)	NZ exports (SE)	Partners imports (MI)	Existing NZ exports to partner (ET)	Trade Potential
Indonesia	0	15,303	9,675	467	9,208
	1	958	535	0	535
	2	3,479	7,312	127	3,353
	3	1,465	27,506	0	1,465
	4	120	180	0	120
	5	1,360	16,649	25	1,335
	6	2,925	20,467	30	2,896
	7	2,489	48,598	9	2,480
	8	1,267	4,656	2	1,265

Partner (y)	SITC (1 digit)	NZ exports (SE)	Partners imports (MI)	Existing NZ exports to partner (ET)	Trade Potential
Malaysia	0	15,303	9,421	425	8,996
	1	958	733	2	731
	2	3,479	6,054	40	3,440
	3	1,465	16,402	0	1,465
	4	120	2,244	0	120
	5	1,360	14,981	14	1,347
	6	2,925	20,421	41	2,884
	7	2,489	81,471	24	2,464
	8	1,267	9,912	3	1,264
The Philippines	0	15,303	5,953	435	5,518
	1	958	191	2	189
	2	3,479	2,039	20	2,019
	3	1,465	9,905	-	-
	4	120	195	4	116
	5	1,360	5,585	10	1,351
	6	2,925	4,683	44	2,881
	7	2,489	27,519	4	2,485
	8	1,267	1,929	1	1,266
Singapore	0	15,303	6,816	373	6,443
	1	958	2,253	14	944
	2	3,479	2,175	8	2,168
	3	1,465	81,157	40	1,426
	4	120	694	0	120
	5	1,360	20,732	21	1,340
	6	2,925	18,995	15	2,910
	7	2,489	143,915	79	2,410
	8	1,267	21,771	31	1,237

Partner (y)	SITC (1 digit)	NZ exports (SE)	Partners imports (MI)	Existing NZ exports to partner (ET)	Trade Potential
Thailand	0	15,303	7,099	314	6,785
	1	958	368	1	367
	2	3,479	5,646	67	3,413
	3	1,465	31,665	47	1,419
	4	120	250	1	119
	5	1,360	19,896	7	1,353
	6	2,925	33,146	17	2,908
	7	2,489	64,303	24	2,465
Brunei (2006)	0	10,351	236	2	236
	1	507	41	-	-
	2	2,531	14	0	14
	3	368	28	-	-
	4	68	7	-	-
	5	1,150	175	0	175
	6	2,787	405	0	405
	7	2,684	589	63	526
Vietnam(2009)	0	15,303	4,579	111	4,468
	1	958	342	3	339
	2	3,479	3,224	53	3,171
	3	1,465	7,497	-	-
	4	120	492	0	120
	5	1,360	10,215	1	1,359
	6	2,925	17,767	26	2,899
	7	2,489	21,928	2	2,487
8	1,267	3,272	1	1,266	

(Source) United Nations COMTRADE database, 2012, Authors' calculation.

**Table 13. Trade Potential between New Zealand and ASEAN Trading Partners:
Over Selected Years: 1980, 2007, 2008 and 2010**

(US\$ millions)

Partner/Country	SITC (1-digit)	Trade Potential			
		1980	2007	2008	2010
Indonesia	0	1,229	6,477	7,438	9,208
	1		330	478	535
	2	488	2,799	2,822	3,353
	3		1,178	2,103	1,465
	4	9	91	140	120
	5	217	1,548	1,737	1,335
	6	723	3,146	3,097	2,896
	7	252	2,735	2,802	2,480
Malaysia	8	157	1,249	1,256	1,265
	0	1,060	6,456	7,908	8,996
	1	15	495	633	731
	2	484	2,856	2,922	3,440
	3	128	1,178	2,036	1,465
	4	13	100	140	120
	5	217	1,551	1,749	1,347
	6	723	3,146	3,088	2,884
The Philippines	7	249	2,727	2,790	2,464
	8	156	1,246	1,254	1,264
	0	515	3,309	5,444	5,518
	1	15	245	278	189
	2	314	1,299	1,215	2,019
	3		1,178	2,103	-
	4	20	98	138	116
	5	217	1,560	1,751	1,351
	6	732	3,127	3,077	2,881
	7	255	2,742	2,804	2,485
	8	157	1,249	1,257	1,266

Partner/Country	SITC (1-digit)	Trade Potential			
		1980	2007	2008	2010
Singapore	0	1,314	4,903	5,801	6,443
	1	15	694	771	944
	2	1,427	1,861	2,349	2,168
	3	128	1,066	1,978	1,426
	4	51	101	140	120
	5	215	1,546	1,739	1,340
	6	723	3,152	3,101	2,910
	7	243	2,685	2,734	2,410
	8	155	1,231	1,236	1,237
Thailand	0	314	4,640	6,545	6,785
	1	15	302	370	367
	2	483	2,838	2,901	3,413
	3	128	1,131	1,982	1,419
	4	52	100	139	119
	5	218	1,564	1,757	1,353
	6	727	3,155	3,104	2,908
	7	254	2,733	2,756	2,465
	8	156	1,247	1,254	1,264
Brunei (2006)	0	68	236		
	1		-		
	2	7	14		
	3		-		
	4		-		
	5	46	175		
	6	137	405		
	7	227	526		
	8	39	172		
Vietnam	0		3,067	4,341	4,468
	1		180	267	339
	2		2,599	2,908	3,171
	3		1,178	2,103	-

Trade Potential					
Partner/Country	SITC (1-digit)	1980	2007	2008	2010
	4		100	140	120
	5		1,567	1,765	1,359
	6		3,144	3,099	2,899
	7		2,751	2,811	2,487
	8		1,249	1,257	1,266

(Source) United Nations COMTRADE database, 2012, Authors' calculation.

Appendices

Appendix 1. ASEAN and World Trade and Growth over Time

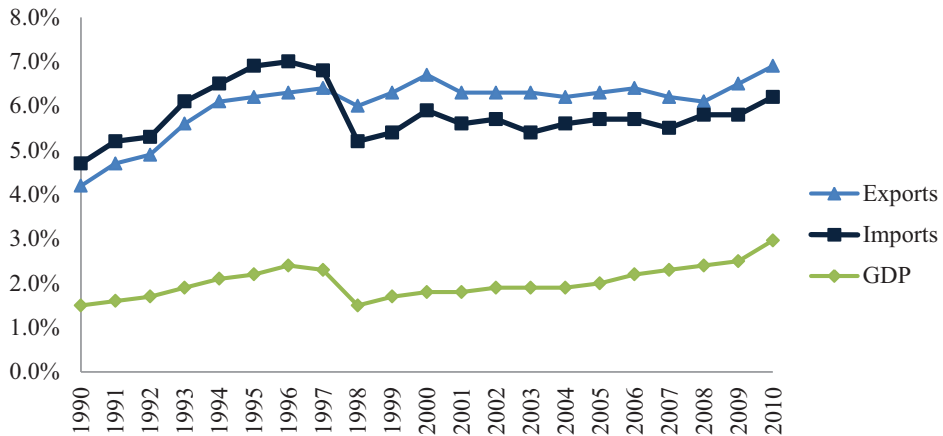
(in current US\$ billions)

Year	ASEAN Trade			World Trade			ASEAN Share in World (%)			Growth (%)			GDP			
	Exports	Imports	Total Trade	Exports	Imports	Total Trade	Exports	Imports	Total Trade	Exports	Imports	Total Trade	ASE-AN	World	ASEAN share in World (%)	Growth (%)
1990	144	162	306	3,449	3,550	6,999	4.18	4.57	4.38				358	22,183	1.61	
1991	165	184	349	3,515	3,632	7,147	4.70	5.06	4.88	14.59	13.13	13.82	399	23,259	1.72	11.56
1992	186	201	387	3,766	3,881	7,647	4.95	5.18	5.06	12.81	9.36	11.00	453	24,315	1.86	13.62
1993	212	231	443	3,782	3,875	7,657	5.61	5.96	5.79	13.94	15.08	14.53	509	24,951	2.04	12.31
1994	262	281	543	4,326	4,428	8,754	6.06	6.35	6.21	23.46	21.67	22.53	588	26,780	2.20	15.56
1995	321	355	677	5,164	5,283	10,447	6.22	6.73	6.48	22.61	26.35	24.55	689	29,723	2.32	17.01
1996	341	376	717	5,403	5,544	10,947	6.31	6.78	6.55	6.01	5.79	5.90	764	30,456	2.51	10.94
1997	356	382	738	5,591	5,737	11,328	6.37	6.66	6.51	4.45	1.58	2.95	725	30,325	2.39	-5.09
1998	331	287	618	5,501	5,681	11,182	6.02	5.06	5.53	-6.97	-24.77	-16.18	492	30,095	1.63	-32.20
1999	362	310	672	5,712	5,921	11,633	6.34	5.23	5.78	9.36	7.84	8.65	572	31,263	1.83	16.42
2000	432	381	813	6,456	6,724	13,180	6.69	5.66	6.17	19.31	22.89	20.96	609	32,216	1.89	6.37
2001	388	347	735	6,191	6,483	12,674	6.26	5.35	5.80	-10.28	-8.81	-9.59	583	32,008	1.82	-4.20
2002	407	367	774	6,492	6,742	13,234	6.28	5.44	5.85	5.10	5.66	5.37	649	33,275	1.95	11.29
2003	475	412	887	7,586	7,867	15,453	6.26	5.23	5.74	16.54	12.27	14.52	731	37,393	1.95	12.59

Year	ASEAN Trade			World Trade			ASEAN Share in World (%)			Growth (%)			GDP			
	Exports	Imports	Total Trade	Exports	Imports	Total Trade	Exports	Imports	Total Trade	Exports	Imports	Total Trade	ASE-AN	World	ASEAN share in World (%)	Growth (%)
2004	569	514	1,083	9,218	9,568	18,786	6.17	5.37	5.76	19.83	24.76	22.12	819	42,084	1.95	12.03
2005	656	603	1,259	10,489	10,855	21,344	6.25	5.55	5.90	15.30	17.34	16.27	912	45,525	2.00	11.41
2006	770	688	1,458	12,113	12,437	24,550	6.35	5.53	5.94	17.35	14.15	15.82	1,094	49,308	2.22	19.91
2007	865	775	1,641	14,003	14,304	28,307	6.18	5.42	5.80	12.43	12.69	12.55	1,309	55,680	2.35	19.71
2008	990	939	1,929	16,120	16,524	32,644	6.14	5.68	5.91	14.38	21.06	17.53	1,522	61,191	2.49	16.25
2009	814	723	1,537	12,516	12,720	25,236	6.50	5.69	6.09	-17.76	-22.96	-20.29	1,503	57,722	2.60	-1.29
2010	1,052	950	2,002	15,237	15,402	30,639	6.90	6.17	6.53	29.23	31.32	30.21	1,865	62,911	2.97	24.14

(Source) IMF, World Economic Outlook Database, 2011; WTO database, 2012. Authors' calculation

Appendix 2. ASEAN Trade and GDP World Share, 1990~2010



(Source) IMF, World Economic Outlook Database, 2011; WTO database, 2012, Authors' calculation

Appendix 3. ASEAN Tariff Commitment Information

Country	2007 Commitments	2008 Commitments	2009 Commitments	Long-Term Commitments
Brunei D.	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Cambodia	80% at 0-5 tariffs	Tariff elimination of the 1st tranche of ICT products	Tariff elimination of all ICT and PIS products	All import duties removed by 2015, with flexibility to 2018
Indonesia	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Lao PDR	90% at 0-5 tariffs	60% at 0 tariffs	Tariff elimination of all ICT and PIS products	All import duties removed by 2015, with flexibility to 2018
	Tariff elimination of the 1st tranche of ICT product.	Tariff elimination of the 1st tranche of ICT products	all at 0-5 tariffs	
Malaysia	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Myanmar	90% at 0-5 tariffs	60% at 0 tariffs.	Tariff elimination of all ICT and PIS products	All import duties removed by 2015, with flexibility to 2018
		Tariff elimination of the 1st tranche of ICT products	all at 0-5 tariffs	
Philippines	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Singapore	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Thailand	80% at 0 tariffs		Tariff elimination of all ICT and PIS products	All import duties removed by 2010
Viet Nam		Tariff elimination of the 1st tranche of ICT products	Tariff elimination of all ICT and PIS products	All import duties removed by 2015, with flexibility to 2018
			all at 0-5 tariffs	

(Source) ASEAN Trade in Goods Agreement, Cha-am, Thailand, 2009. ASEAN website, 2012