An Evaluation of the New Zealand-Singapore Closer Economic Partnership Agreement

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New Zealand and Singapore have negotiated a Closer Economic Partnership agreement in the year 2001 to promote trade in goods and services and facilitate bilateral investment. The objective of this paper is to evaluate the determinants of bilateral trade flows particularly, the effects of the Closer Economic Partnership (CEP) agreement between the two countries during the years 2001 to 2010. Gravity model is applied to assess the effect of the CEP on the trade flows in addition to the influence of other variables such as GDP, population, and distance. The results indicate that New Zealand's GDP, populations in both the countries and, the CEP had a positive impact on the bilateral trade flows, whereas Singapore's GDP and distance had a negative influence.

Keywords: Closer Economic Partnership, Bilateral Trade Flows, Gravity Model

1. Introduction

Small countries tend to rely more on international trade for economic prosperity. Accordingly, trade contributes a significant share of their gross domestic product (gdp).The OECD statistics show that the trade to gdp ratios for most of the small member countries are relatively higher compared to the large member countries. In the year 2008, Finland with a population of five million had a trade to gdp ratio of 45%, Ireland with a population of four million had a ratio of 78% compared to 17% for Japan and 15% for the USA (OECD 2010). The underlying reason for this high dependence on external sector by the small countries can be attributed to the small domestic market size with limited capacity to absorb the national output coupled with limited resources and technology. Given these internal constraints the contribution of the external sector becomes crucial for small countries to achieve higher growth and maintain a higher standard of living (Baldauf *et al*, 2000; Greenway 1998). New Zealand (NZ) being a small open economy has a trade to gdp ratio of 30% which indicates the extent of its dependence on trade. External sector is crucial to the New Zealand economy to achieve two key objectives *viz* to achieve long-term sustainable growth and be a part of the global economy (NZIER 2005; *Battisti & Perry 2008*). However, capital goods and technology are essential to achieve growth. Since New Zealand is endowed with abundant natural resources such as land and climate, the country has comparative advantage mostly in land based products such as dairy products, meat, timber etc. A study on New Zealand's comparative advantage revealed that out of fifty goods in which NZ had comparative advantage in 1999 forty five were in the primary sector (Bllingall & Briggs 2002). Even after a decade there

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has been no considerable change in New Zealand's heavy reliance on exports of natural resource based products and a relatively small proportion of high growth sectors such as engineering and pharmaceutical products. However, New Zealand has developed the ability to cope positively with globalisation pressures (Lattimore *et al* 2009). Thus, trade is essential to NZ for the export of primary products in which it has a comparative advantage and import of capital goods such as plant and machinery to increase the productive capacity of the economy. In order to promote trade and investment flows, over the years NZ has entered into several bilateral and regional trade agreements including the Closer Economic Partnership (CEP) agreement with Singapore in 2001.

The CEP aims not only to improve opportunities for trade in goods, services and investment in both the countries but also to support the wider liberalisation process in APEC. Singapore was the 18th largest export destination in the year 2001 and became the 11th largest export destination by the year 2010. As a source of imports Singapore was the 13th largest source in 2001 and in 2010 it was the sixth largest source of imports (Statistics New Zealand 2011). The motivation for this study is to find out the extent to which the CEP has contributed to the growing importance of Singapore to New Zealand's external trade. The main objective of this paper is to examine the influence of relevant variables including the effect of the Closer Economic Partnership agreement on the increasing trade flows between New Zealand and Singapore.

The rest of the paper is organised as follows: An overview of the free trade agreements signed by New Zealand is provided in section II. Section III consists of the literature review. The methodology is explained in section IV. Section V presents data analysis and section VI concludes.

2. New Zealand's Trade Agreements

Historically, New Zealand had a special trading relationship with the UK and the latter was New Zealand's only major trading partner. New Zealand and the UK entered into a trade agreement in 1932 which enabled the NZ firms to export (mostly primary products) to Britain at reduced tariffs and allowed the British exporters to export capital goods to New Zealand at lower tariffs. Consequently, UK remained New Zealand's only major trading partner accounting for 70% of the latter's exports. However, this special status accorded to New Zealand ended in mid 70s after the UK joined the EEC in 1973 (Abbott 2007). Given the importance of trade to its economy NZ had to find new trading partners to gain entry into their markets. Accordingly, NZ has signed free trade agreements (FTAs) with a number of countries to promote free trade by eliminating barriers to trade. The most important bilateral trade agreement called the Closer Economic Relations Trade Agreement (CER) was signed with Australia in 1983. The main objective of the CER was to promote free trade by eliminating barriers to trade and promoting free competition. The CER has been described by the WTO as the most effective, comprehensive and mutually compatible free trade agreement. As a consequence of the CER there has been a significant growth in bilateral trade between the two countries and Australia has emerged as New Zealand's most important trading partner in the post CER period. Currently, Australia accounts for 21% NZ's merchandise exports and about same

percent of imports, a considerable growth from 13% in 1983. Encouraged by the successful outcome of CER and the growing trend of bilateral and regional trade agreements in different parts of the world as a consequence of slow progress in WTO negotiations on agriculture, New Zealand has entered into free trade negotiations with a number of countries. These include a Closer Economic Partnership (CEP) agreement with Singapore (2001), Trans-Pacific Strategic Economic Partnership agreement with Singapore, Chile and Brunei (2005), a CEP with Thailand (2005), NZ-China FTA (2008), and ASEAN-AUSTRALIA-NZ FTA in 2010 to strengthen the external sector and enhance the gains of free trade.

In so far as the NZ-Singapore CEP is concerned there has been an increase in the bilateral trade in the post-CEP years (Table 1).

Table 1: Bilateral Trade Flows between New Zealand and Singapore (2001-2010)

Year	Exports (NZ$ M)	Imports (NZ$ M)	Total Trade (NZ$ M)
2001	399	618	1017
2002	387	595	982
2003	307	630	937
2004	362	973	1335
2005	428	1240	1668
2006	540	1850	2390
2007	687	2149	2836
2008	863	2252	2115
2009	1100	1625	2725
2010	826	1622	2448
% increase	107.0%	162.5%	58.5%

Source: Statistics New Zealand

As shown in table-1, merchandise exports to Singapore registered a growth of 107% during this period i.e. an average increase of about 10% per annum as against the annual average increase of 3.3% of total merchandise exports during the same period (Statistics New Zealand 2011). The total trade flows (exports plus imports) between the two countries increased by 58.5% during the same period. A recent exporter survey to identify specific interests of concern from a broad range of businesses who have been identified as exporters to NZ's target (FTA) markets, 53% of respondents rated Singapore as a current export market (MFAT 2009). This is a clear indication of the potential for further improvement of bilateral trade between these two countries.

3. Literature Review

FTAs are a means to increase trade among the member countries and to achieve economic growth. FTAs are also a channel for economic integration as they aim to eliminate or minimise tariff and non-tariff barriers. Baier and Bergstrand (2005) in their comprehensive study of the effects of FTAs on international trade concluded that an FTA will on average increase the trade between two member countries by

86% after 15 years. Duran, Mulder, and Onodera (2008) in a study on trade liberalisation and economic performance found that the East Asian countries have been more successful both in terms of integration with the global economy and achieving higher economic growth. Efficient resource allocation among the member countries is possible through regional economic integration resulting in improved profitability to the firms and higher per capita income to the households (NZIER 2009). In order to realise the benefits of free trade many countries around the world have entered into bilateral and regional trade agreements. According to the World Trade Organisation (WTO) Regional Trade Agreements (RTAs) have become a very prominent feature of the Multilateral Trading System (MTS).There has been a surge in RTAs since the early 1990s. As of 31 July 2010, 283 agreements were in force (WTO 2011). Conversely, those countries that are not a party to any FTA cannot be expected to have access to gains arising out of such agreements. Caporale *et al* (2009) investigated the effects of free trade agreements between the EU-15 and the CEEC-4 countries and found a positive and significant impact of FTAs on trade flows. They made a comparison of the trade flows between the EU-15 and the CEEC-4 that signed the FTA and those who did not e.g., the Russian Federation. It was found that the trade among member countries of an FTA improved by 14% compared to trade with the non-members. Cheng (2008) found that many countries use RTAs to promote free trade in place of multilateral trade negotiations. Khatoon (2010) in her study found that the economic gains of Bahrain, Israel and, Jordan have increased considerably after signing FTAs with the US. Another example is that of Japan which signed its first free trade agreement with Singapore in 2002. This heralded a major policy shift for Japan because it had pursued non-discriminatory trade policy under the multilateral trade frameworks of the General Agreement of Tariffs and Trade and its successor, the World Trade Organisation. One of the reasons behind Japan's shift in trade policy was the rapid expansion of FTAs in the world. Concerned with the negative impacts of being excluded from the trade agreements, Japan decided to change its policy and pursue FTAs (Takahashi & Urata 2010). In light of the growing economic power among the Asian economies New Zealand must maintain good trade relations with these countries to enhance trade flows. The 2025 Taskforce (2010) concluded that the shift in the centre of global economic activity from Europe and North America towards Asia will create opportunities for New Zealand and suggested that NZ must offer a better policy environment to overcome the obstacles created by economic geography. The negative effects of geographical distance can be reduced by FTAs resulting in increased intra-regional trade flows. An analysis of South Korea's trade flows using gravity model showed that the Asia-Pacific trade network had a significant positive effect on Korea's trade flows as a result of intra-regional trade. The study also found that the Asia-Pacific trade network partly offset the effect of geographical distance by economic distance (Sohn 2005). FTAs benefit the member economies not only at the macro level in terms of increased trade flows but also percolate down to individual businesses at micro level. In a recent survey on the benefits of FTAs, about 75% of the respondents expressed the view that their profitability and business efficiency will improve due to the elimination of barriers to trade (MFAT 2009). However, it may be noted that the FTAs may have a positive effect on some sectors and cause a decline in some sectors. Fung & Zhang (2007) evaluated the CEP arrangement between China and Hong Kong and found that the CEP had a positive effect on the manufacturing sectors but there has been a decline in food and services sectors in

both the countries. In light of the evidence of the benefits associated with FTAs this study aims to examine the effect on the bilateral trade flows between NZ and Singapore of the CEP.

4. Methodology

Gravity model is applied to evaluate the impact of variables such as national income, population, distance and the CEP on the bilateral trade flows during the years 2001 to 2010. The relevant data has been sourced from Statistics New Zealand and the IMF databases.

Gravity Model
Gravity Model is used to assess the impact of the CEP on the trade flows between New Zealand and Singapore. Ever since developed by Tinbergen in 1962, the model has been extensively used in a modified form to evaluate the trade flows among trading partner countries. The original model used only the national income (GDP) and the geographical distance to evaluate the trade flows between two countries. Subsequently, other variables such as population, language, cultural and institutional have been incorporated to assess their impact on the bilateral trade flows. A significant modification to the model is the inclusion of FTAs to evaluate their impact on the trade flows. Martinez-Z, (2003) applied a generalized gravity model to evaluate the determinants of bilateral trade flows among 47 countries including the effects of preferential agreements between regional blocs such as the European Union (EU) and the North-American Free Trade Area NAFTA). According to this model, the volume of exports between pairs of countries is a function of their incomes (GDPs), their populations, their geographical distance, and a set of dummies including membership of a preferential trade agreement. Tang (2001) applied a modified gravity model to examine the effect of the APEC free trade area on the intra APEC-member trade flows. APEC membership was represented by a dummy variable. The study indicated that the APEC countries were more likely to trade with each other than with non-member countries. The inclusion of the FTA dummy variable, among others, in the gravity model to evaluate the bilateral free trade agreements was also emphasised by DeRosa (2008), in his study of global and regional integration of Maghreb countries. Kein (2009) further modified the model by incorporating the exchange rate in addition to the FTA dummy variable to examine the trade flows in the ASEAN free trade area. A generalised gravity model as specified below is used to evaluate the impact of CEP on the bilateral trade flows between New Zealand and Singapore.

General Form:

lnX ij = lnA j + lnY + lnY j + lnN + lnN j + lnD ij + U

Where:
lnX ij = Log of Bilateral Trade Flows from Country I to Country J ($)
lnA j = Log of Intercept Term
lnY i(j) = Log of Country I(J) s GDP ($)
lnN i(j) = Log of Country I(J) s Population
lnD ij = Log of Distance between Country I(J)

U = Log Normally Distributed Error Term

A dummy variable i.e. CEP is added to the equation and is expressed as:

$\log X_{ij} = A + a_1 \log(Y_i) + a_2 \log(Y_j) + b_1 \log(Pop_i) + b_2 \log(Pop_j) + c(\log D_{ij}) + CEP$

X_{ij} = trade flows between NZ and Singapore
(Y_i) = NZ's Gross Domestic Product ($)
(Y_j) = Singapore's Gross Domestic Product ($)
Pop_i = NZ's population
Pop_j = Singapore's population
D_{ij} = Geographical distance between NZ and Singapore
CEP = Dummy variable for NZ-Singapore CEP agreement

The dependent variable, X_{ij}, is the dollar value of trade flows between New Zealand and Singapore and consists of both exports plus imports. Y_i and Y_j are the national incomes of both the countries as represented by their respective gross domestic products (GDP). As the national income increases countries can be expected to trade more with each other and hence the GDP co-efficients are expected to have a positive sign. Similarly, bilateral trade flows between the countries are likely to increase as the population grows over a period of time and the co-efficients are expected to have a positive sign. D_{ij} denotes the geographical distance between the two countries. This variable is indicative of the degree of trade resistance between the trading partners. Higher the distance, higher the transportation costs and hence the co-efficient is expected to have a negative sign. The dummy variable i.e., the CEP agreement between the two countries, can be expected to have a positive influence on the bilateral trade flows.

5. Data Analysis

The results (Table-2) indicate that there is a significant positive relationship between New Zealand's GDP with a co-efficient of 11.359 (0.003). Although the co-efficient for Singapore's GDP has a negative value of (-)0.121, the p-value indicates no significant effect on the trade flows. The populations in both the countries with respective co-efficients of 2.807 and 3.180 indicate significant positive effect. The co-efficient for the variable, distance, as can be expected, has a negative value of (-)0.848 and is significant with a p-value of 0.002. The dummy variable, CEP with a co-efficient of 1.805 is also considered to be statistically significant with a p-value of 0.003. The R-Square with a value of 0.988 indicates a high degree of variation in the dependent variable accounted for by the explanatory variables.

Table 2: Gravity Model Results

	Co-efficinet	t-value	p-value*
Constant	-28.966	-6.555	0.001
Yi	11.359	5.229	0.003
Yj	(-)0.121	(-)0.200	0.849
Popi	2.807	5.497	0.003
Popj	3.180	5.215	0.003
Dij	(-)0.848	(-)5.686	0.002
CEP	1.805	5.470	0.003

R Square = 0.988
*α=0.05

6. Conclusions

This study investigated the effect of the CEP agreement negotiated by New Zealand and Singapore in 2001, on the bilateral trade flows during the post-CEP era. Gravity model was applied to assess the impact of respective national incomes, populations, distance, and the dummy variable CEP. The results indicate that New Zealand's GDP has a positive effect on trade. Whereas, Singapore's GDP has a negative influence on trade but found to be statistically not significant. Overall, an increase in national incomes means an increase in bilateral trade. As can be expected, populations in both countries indicate a positive influence on trade. Both the countries being open economies, growth in population means increase in demand for imports. The variable, distance, a proxy for transaction costs, as can be expected has a negative influence on bilateral trade flows. This is no surprise given the fact that New Zealand is geographically isolated and is away from most of its export markets. Finally, the dummy variable, CEP, indicates a positive impact on bilateral trade flows, which means that the free trade agreement between the two countries has indeed contributed to the growth in the bilateral trade flows. New Zealand has negotiated new FTAs with China (2008), Malaysia (2010), and Hong Kong, China (2010). Whether these FTAs lead to an increase in trade flows needs to be investigated in future.

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