The Potential Of The APEC Grouping To Promote Intra-Regional Trade In The Asia-Pacific Region

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Abstract

This study examines whether the proposed APEC free trade area would promote a high level of intra-APEC trade after its completion. To achieve this goal, a modified gravity model is estimated for the thirteen APEC countries based on annual trade data from 1989 to 1998. The results indicate that a high level of trade interdependence already exists to help promote the intra-APEC trade flows after its FTA completion. The results also suggest that the APEC countries are more likely to trade with other member countries than with non-member countries

Introduction

Exactly eleven years ago, the Asia-Pacific countries created what was to become the most influential regional trading arrangement in the world. The Asia-Pacific Economic Cooperation (APEC) grouping encompasses three major regional trading arrangements in the world - North American Free Trade Agreement (NAFTA), Association of Southeast Asian Nations (ASEAN), and Australia-New Zealand Closer Economic Relations (ANZCER) (Frankel et al., 1996). These three trading arrangements comprise the world's leading trading partners. By rough measure, the total share of APEC exports in 1995 already exceeded half of the world trade (Langhammer, 1999). According to estimation, the prospective APEC Free Trade Area will account for more than 60% of the world's Gross National Product. With the inclusion of leading trading nations and the significant share of world trade, the APEC has the full potential to become a major trading bloc second only to the European Union (EU). A central issue arises whether the APEC trading arrangement has promoted the intra-APEC trade flows since its formation in 1989.

Compared to other trading arrangements, the APEC has progressed very rapidly from a trade discussion forum group to a formalized trade liberalization organization (Cheong, 1997). Within five years of its formation, a free trade area (FTA) was proposed at the 1994 summit meeting. The full-scale FTA would include the United States, Canada, Japan, China, Australia, New Zealand, Mexico, Chile, Hong Kong, Singapore, South Korea, Taiwan, Indonesia, Malaysia, Philippines, Thailand, Brunei, and New Guinea. Adhered to the open regionalism principle, the APEC would utilize the FTA to foster free trade through extending the tariff reduction measures to both member and non-member countries (Frankel et al., 1998).

The road map to form the FTA was clearly drawn out during the three summit meetings from 1994 to 1996. In the 1994 summit meeting, the Bogor Declaration established the objective of forming the FTA for developed countries by 2010 and for developing countries by 2020 (Krueger, 1999). At the subsequent summit meeting in 1995, the Osaka Action Agenda (OAA) was agreed on by all member countries to implement the objectives of the Bogor Declaration.

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The OAA consists of two major components: (1) trade liberalization and (2) economic and technical co-operation. The trade liberalization includes policy measures on tariff and non-tariff reductions such as custom procedures, rules of origin, standards and conformance, and competition policy. The economic and technical co-operation include key programs on industrial science and technology, economic infrastructures, and telecommunications and information (Yamazawa, 1997). In the 1996 summit meeting, each member country submitted the so-called Individual Action Plans (IAP) to show how to implement all those OAAs. The trade liberalization efforts achieved by the APEC during the mid-1990s mark the first major step to progress toward deeper integration.

The majority of literature on the APEC integration focuses on the prospects for the APEC FTA. A recent study by Sharma (2000) revealed that the intra-APEC trade increased substantially after its formation in 1989. A noticeable increase was found between the ASEAN countries and the rest of the APEC countries. This high degree of intra-APEC trade flows provides the ideal condition to form a full-scale FTA similar to the NAFTA.

Other studies went a step further to examine the potential benefits of shaping the FTA based on open regionalism approach. The main conclusion is that such approach should lead to higher economic growth for integrating countries. According to Vamvakidis (1999), closed economies should choose open regionalism rather than preferential (discriminatory) free trade approach. Vamvakidis results confirm the expectation that the economies experience higher economic growth by using open regionalism. Cheong (1998) study reached similar conclusion. In a competitive global economy, the APEC would benefit higher welfare gains under open regionalism approach. This happens because there is no trade diversion under unilateral extension of trade liberalization. The majority of these studies seems to support the use of open regionalism approach in the APEC FTA.

The purpose of this study is to examine the level of trade interdependence among the APEC countries between 1989 and 1998. Specifically, this study will utilize the gravity model to test whether a high level of trade interdependence already exists to help promote the intra-APEC trade flows after the FTA completion. The prospect for a higher level of the APEC integration is important for two reasons. First, the high economic growth among the APEC countries (ASEAN, NAFTA, and ANZCER) helped accelerate the intra-regional trade across these groupings. The increased intra-APEC trade among these groupings in three continents provides the ideal condition for the APEC to progress from regional to global trade liberalization in the next decade. Second, the trend of a regional grouping integrating with another regional grouping will continue as we enter the next century. Almost all major trading nations belong to at least one regional trading grouping (Frankel and Wei, 1998). There are clear indications that the major APEC members (i.e., NAFTA and ASEAN) are developing closer economic ties with the EU (Hajidimitriou and Mourdoukoutas, 1999). If the APEC and EU integrate with each other in some way, it would certainly emerge as the most dominant trading bloc in the world.

The paper is divided into three sections. The first section describes the methodology used in this study. It is followed by a discussion of the empirical results. Finally, this paper is concluded with a discussion of the implications of findings for future research.

Methodology

This study uses the modified gravity model (Brada and Mendez, 1985) to analyze the level of trade interdependence among the APEC countries between 1989 and 1998. This nine-year period was selected because the APEC was formed in 1989. The results will indicate if a high level of trade interdependence already exists to help promote the intra-APEC trade flows after the FTA completion. The gravity model is used for two reasons. First, the gravity model is very useful in explaining bilateral trade flows among

member countries at different stages of economic development (Tinbergen, 1962). The gross national product variable in the model can accurately measure if the level of economic development among the APEC countries has any impact on the trade flow. Second, previous studies have demonstrated that the gravity model can be used effectively to examine the trading patterns of regional groupings (Frankel, 1993; Frankel et al., 1995). The gravity model can be used to analyze the intra-regional trade biases among several of the APEC regional trading groupings (EU, NAFTA, and APEC).

The modified gravity model used in this study will estimate a regression equation using the ordinary least squares method. The regression equation pools the trade data for eighteen countries from 1989 to 1998: (a) thirteen APEC countries (United States, Canada, Australia, New Zealand, Japan, South Korea, Hong Kong, China, Singapore, Malaysia, Indonesia, Philippines, and Thailand) and (b) five non-APEC countries (United Kingdom, France, Switzerland, Netherlands, and Italy). The three APEC countries (Brunei, Taiwan, Mexico) are excluded due to the lack of trade data. The new member countries (Vietnam, Chile, and New Guinea) are omitted as they joined the APEC only recently.

The modified gravity model equation used in this study is:

$$\log T_{ij} = A + a_1 \log Y_i + a_2 \log Y_j + B \log Q_{ij} + c_1 P_{ij} \log (Y_i/N_i)(Y_j/N_j) + c_2 P_{ij} \log D_{ij} + \log e_{ij} \quad (1)$$

The dependent variable, T_{ij} , is the real dollar value of country i 's exports to country j , measured as country j 's imports. For independent variables, Y_i and Y_j are the incomes of the exporting and importing countries as measured by their gross national products (GNP). When countries become more developed, they tend to trade more with each other (Frankel, 1993). The income coefficients (a_1 and a_2) are expected to have a positive sign. Q_{ij} is the dummy variable representing the APEC preferential trading effect. When both trading partners belong to the APEC countries, Q_{ij} is equal to 2. When bilateral trade occurs (a) between APEC country and non-APEC country or (b) between two non-APEC countries, Q_{ij} is equal to 1. A value of 2 and 1 rather than 1 and 0 is used because the dummy variable is used in logarithm format. $P_{ij} [(Y_i / N_i)(Y_j / N_j)]$ measures the real GNP per capita of the APEC countries. The APEC dummy variable, P_{ij} , is added to the variable to form an interaction term. The whole term measures the level of economic development of the APEC countries. When the two countries belong to the APEC grouping and trade with each other, the P_{ij} is equal to 1. If either country does not belong to the APEC grouping, the P_{ij} is equal to 0. If the coefficient of the interaction term (c_1) has positive value, this indicates that the richer APEC countries do trade more than the poor APEC countries. Finally, $P_{ij} D_{ij}$ measures the geographical distance between the APEC countries. It represents the level of trade resistance (transportation cost and time) between trading nations. Due to the lower transportation cost, the neighboring APEC countries should trade more with each other than with distant countries. Therefore, the coefficient of distance variable (c_2) is expected to have a negative sign.

Data Sources

Annual data from 1989 to 1998 are used in this study. The total trade data between two trading partners are obtained from the *Direction of Trade Statistics* (International Monetary Fund, 1989-1998a). The data on Gross National Product (GNP) are taken from the *International Financial Statistics* (International Monetary Fund, 1989-1998b). Since the individual country's real GNP figure is reported in local currency, it can be converted to the U.S. dollars using the exchange rates published in the *International Financial Statistics*. Finally, the economic centers (ports plus distances to economic centers) used for the APEC countries are obtained from the *Direct Line Distances* (Fitzpatrick, 1986).

Empirical Results

Equation (1) pooled the trade data from 1989 to 1998 to examine the overall level of trade interdependence among the APEC countries. The APEC dummy variable is added to the equation to measure the intra-APEC trade flows since 1989. The parameter estimates are reported in Table 1.

As expected, the GNP coefficient for the APEC countries is positive and is statistically significant at the 1% level. The income of the APEC countries has a positive effect on the intra-APEC trade flows, indicating that developed APEC countries tended to trade more than developing APEC countries from 1989 to 1998. This result is consistent with Frankel (1995) study on the positive effect of the country's GNP on trade. However, Frankel concluded that the GNP effect gradually becomes less important in predicting the intra-APEC trade flows since the early 1980s. The country compositions in other trading arrangements has revealed that poorer countries are as equally likely as richer countries to join a regional trading arrangement. For example, NAFTA grouping includes richer countries (United States and Canada) to trade with poorer country (Mexico). If this trend continues, the overall GNP effect will become a less important factor in predicting the intra-APEC trade in future.

The most crucial finding in this study is related to the APEC dummy variable, which measures the intra-APEC trade flows. The coefficient for the APEC dummy variable is positive and statistically significant at the 1% level. This indicates that the APEC countries were more likely to trade with other member countries than with non-member countries between 1989 and 1998. This result confirms the early assertion that a higher level of trade interdependence among the APEC countries has led to the creation of the APEC (Dutta, 2000). In particular, the substantial growth in the intra-APEC trade occurred between the United States and Asian APEC countries since the early 1980s. This finding is consistent with Frankel (1995) and Sharma (2000) studies. The significance of this result is that a higher intra-APEC trade flows provide the necessary condition for the creation of a free trade area. It is likely that the prospective FTA would help promote a higher level of intra-APEC trade.

The distance variable for the APEC countries is negative and statistically significant at the 1%. This confirms our expectation that shorter distance between the APEC countries should increase the intra-APEC trade. As two member countries are located close to each other, the reduced transportation cost should promote the intra-regional trade between them.

The rest of the variables in the equation have the expected signs. The income coefficients of the exporting and importing countries are both positive and are statistically significant at the 1% level. The result supports the hypothesis that incomes of countries have a positive effect on the intra-regional trade flows. As the countries become more developed, they tend to trade more with other countries. Previous studies have confirmed the positive impact of open trade policy on economic growth. Vamvakidis (1999) study concluded that countries that adopt the open trade policy tend to achieve higher economic growth than those countries adopt discriminatory trade policy. Most APEC countries have consistently maintained open trade policy with non-member countries (Sampson, 1997). This open trade policy has somewhat contributed to the rapid economic development of these APEC countries (Langhammer, 1999).

Conclusion

This study confirms the assertion that a higher level of trade interdependence already existed among the APEC countries during the period of 1989-98. The prospective FTA would further enhance the intra-APEC trade flows after its completion. Being the second largest regional grouping after the EU, the direction of APEC's global trade liberalization strategy will have far reaching impact on other trading blocs.

Suggestions for Future Research

Further analysis of the prospective APEC FTA has significant implications for the world trade in the next decade. The APEC grouping already includes two major regional trading arrangements in North America (NAFTA) and Asia (ASEAN). The APEC membership will be expanded to include not only the Asia Pacific countries, but also major trading nations from other continents (Langhammer, 1999). Major trading countries in South America (MERCOSUR grouping) have expressed interest in joining the APEC. There are indications that the APEC has started to develop closer economic relations with the EU since 1996 (Dent, 1998). The APEC realizes the EU's role in achieving global integration. Given the potential positive impact of the APEC FTA on the world trade, the concept of a global free trade area will be a realistic topic for future research. □

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Table 1
Parameter Estimates for Pooled
Regression Equation (1), 1989-1998

Independent Variables	Parameter Estimates
A	0.3428 (0.992)
a ₁	0.3533* (26.511)
a ₂	0.3671* (27.566)
B	4.2379* (6.651)
c ₁	0.0701* (4.269)
c ₂	-0.4729* (-9.789)
R ²	0.2760

Notes: Independent variables are in log form. Numbers in parentheses are t-ratios. *Denotes level of significance at the 1%.