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Cross-Border Mergers and Acquisitions Within APEC and Their Implications for Exports, Greenfield FDI, and GDP

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by

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Executive Summary

1 Cross-border mergers and acquisitions (M&As) are an important global economic activity. As a form of capital flows, cross-border M&As are also an effective way to transfer technologies and managerial expertise between economies. They are also likely to reduce production costs, improving firm's efficiency by integrating complementary tasks etc. In particular, the 2001 OECD (Organisation for Economic Co-operation and Development) Report has identified cross-border M&As as one of the two most important features of the present industrial globalization. This is not only the case among the OECD countries, but also the case within the APEC economies. Cross-border M&As within the APEC region have been increasing rapidly.

2. The main focus of this study is on intra-APEC cross-border mergers and acquisitions (M&As) from 1980 to 2007, i.e. cross-border M&As with both the acquiring firms and target firms in the APEC (Asia-Pacific Economic Cooperation) economies. It aims at (i) examining the pattern of intra-APEC cross-border M&As; (ii) exploring the determinants of cross-border M&As; (iii) analyzing the impacts of cross-border M&As on international trade, greenfield FDI, and GDP; and (iv) discussing policies on promoting cross-border M&As and the consequences on economic performance .

3. This study is among the first to take an econometric approach on intra-APEC cross-border M&As and their economic impacts at the macroeconomic level. Building on other related studies, this study has lengthened the time coverage that helps, uncovered more details of cross-border M&As in APEC, and examined more issues related to cross-border M&As.

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4. Our results characterize the various patterns of intra-APEC cross-border M&As and their relationship with other economic variables. We conclude that cross-border M&As should be encouraged. Our empirical models suggest that intra-APEC cross-border M&As help raise GDP levels directly and indirectly, with the latter primarily via trade. Our trade model indicates that cross-border M&As promote international trade. Hence, this report identifies another important factor of promoting economic development, namely cross-border M&As.

5. More specifically, we summarise the seven key findings in the following.

(1). (***General trend of cross-border M&As in APEC***): Cross-border M&As within APEC have expanded rapidly, but with large fluctuations. During the sample period (1980-2007), annual growth rates are 21.5% in value and 25.3% in number. The growth exhibits three waves or cycles: 1980-1990, 1990-2000, and 2000-2007. The time trend of cross-border M&As is closely related to domestic M&As of the APEC economies. However, cross-border M&As have increased more rapidly than domestic M&As over time.

(2). (***Individual economies' cross-border M&As***): Industrialized economies (especially the United States, Canada, and Australia) and emerging economies in the East Asia have been the key driving forces for cross-border M&As within APEC. The United States has transformed from a popular target economy to both active acquirer and target economy. Canada has been active in cross-border M&As throughout the sample period. The importance of China in cross-border M&As has increased rapidly, especially in the past decade. Hong Kong, China has shown intensified participation both as acquirer and target economy. Singapore started to take off in the 1990s. The time trends of different APEC economies are generally highly correlated, with intra-APEC M&As showing largely synchronised cycles. However, the scale, income and asset of firms participating in cross-border M&As vary widely across APEC economies.

(3). (***Sectoral cross-border M&As***): On the acquiring side, the share of mining and construction and that of light manufacturing have declined since mid-1980. In contrast, the share of utility and transportation and that of finance and insurance industry has increased over time. The shares of other industries have been quite stable over time. On the target side, similar pattern appears to a lesser extent. In addition, most industries heavily target the same industries for cross-border M&As, suggesting high degree of vertical supply chain and horizontal scale economies integration within APEC.

(4). (***Individual firms' cross-border M&As***): Over time, the scale of acquiring firms has decreased and there were more and more firms participate in acquisitions. More M&As may be induced by the increasing market size as a result of deeper market integration across the APEC economies. This

observation may also reflect certain degree of increasingly liberalized markets across the board. We also find that acquiring firms are generally larger and more profitable than target firms, indicating that advanced technologies and management skills brought about by M&As are likely to be transferred from more efficient firms to less efficient firms. As a result, it also improves average industry productivity.

(5). (Cross-border M&As and trade): Exports are conducive to overseas acquisitions. We find that if an economy exports more to another economy, the former will also acquire more assets in the latter. Moreover, if an economy acquires more assets in another economy, the former will trade more (both imports and exports) with the latter.

Specifically, we have found intra-industry cross-border M&As more prevalent in APEC than inter-industry cross-border M&As. For intra-industry cross-border M&As, they can take the form of either vertical supply chain integration or horizontal scale economies integration at the regional level. Both forms are conducive to driving productive efficiency and cost-effectiveness across-border, either through the sharing of comparative advantages between participating economies or through enlarging economies of scale in production and distribution of output.

Like trade, cross-border M&As promote GDP and enhance economic development. Like trade, cross-border M&As help drive regional economic integration through capital/technology and skill/people transfers. Moreover, there are more economies participating as both acquirer and target economies in APEC over time. The reducing size of participating firms also indicates a more open regime in APEC that facilitates transfers among APEC economies.

Thus, trade and cross-border M&As are largely complementary in this region. Trade flows and capital flows (as a result of cross-border M&As) in this region reinforce each other.

(6). (***Cross-border M&As and greenfield FDI***): Generally speaking, we do not find significant effects between cross-border M&As and greenfield FDI in all directions. However, it is found that if there are more M&As between two economies, the acquiring economy's greenfield FDI outflows to the target economy would decrease. This finding indicates some degree of substitution between cross-border M&As and greenfield FDI to the acquirer.

(7). (***Cross-border M&As and GDP***): Cross-border M&A activities and the size of GDP (i.e. economic size of the economy) are positively related. Understandably, larger economies in terms of GDP level tend to acquire more foreign assets. On the other hand, larger economies also attract more foreign acquisitions as they represent better market potential.

More importantly, cross-border M&As raise GDP. We find that after acquiring more foreign assets, an economy's GDP will also increase. This finding provides support to the possibility that cross-border M&As promotes economic development via channels such as trade and efficiency improvement in the supply chain.

Our empirical findings also help draw the following potential policy implications.

(1). Intra-APEC cross-border M&As are conducive to GDP and trade flows. The empirical results suggest removing barriers to cross-border M&As is beneficial from an economic development perspective. This can be one of the driving forces to greater regional economic integration, especially in respect of technology and skills transfers. Nevertheless, while policies promoting cross-border M&As are recommended, there may be concern about the need to balance market concentration with market competition.

(2). Trade liberalization not only promotes trade flows, but also induces more cross-border M&As. Although barriers to trade have been lowered through continuous efforts jointly by all economies, various kinds of trade barriers still have significant impacts on trade flows, albeit to various extents in different economies. While the traditional trade barriers such as tariffs and quotas have already be reduced to a lower level, especially in developed economies, other forms of barriers such as anti-dumping and technical barriers are on the rising trend. There is no doubt that governments have been putting in effort to further remove those barriers. Our study makes us to stress one point, which is, removing barriers to trade not only promotes trade flows but also cross-border M&As.

(3). The existing regional trade agreements (RTA), with an exception of the North American Free Trade Agreement (NAFTA), are not effective in promoting cross-border M&As directly as they are not originally motivated to increase cross-border M&As. Moreover, we do not find evidence that an economy's WTO membership helps promote the economy's cross-border M&As directly. These two findings imply that the existing regional integration in APEC has not given sufficient support to cross-border M&As. Thus, while we are arguing for further regional integration, we should pay more attention to removing barriers to cross-border M&As.

I. Introduction

1.1. Objective of This Study

Cross-border mergers and acquisitions (M&As) have become an important global economic activity. There is an increasing trend of cross-border M&A activities, but the fluctuations of such activities are also large. The 2001 OECD (Organisation for Economic Co-operation and Development) Report has identified cross-border M&As as one of the two most important features of the present industrial globalization. This is not only the case among the OECD countries, but it is also the case within the APEC (Asia-Pacific Economic Cooperation) economies. Cross-border M&As in the APEC region have been increasing rapidly. Based on the cross-border M&A data in APEC, this project aims to achieve FOUR objectives:

(i) Examine the patterns of cross-border M&As within APEC;
(ii) Explore the determinants of cross-border M&As;
(iii) Analyze the impacts of cross-border M&As on international trade, greenfield FDI, and GDP; and
(iv) Discuss the possible policy implications based on these observations and empirical analysis.

First, in order to examine how cross-border M&As influence other economic activities, we must study the stylized facts and patterns of M&A activities. While cross-border M&As have become very popular among the OECD countries (see 2001 OECD Report), the situations in APEC vary a great deal between economies. Evidence (see 2001 OECD Report) has shown that cross-border M&As are the major form of FDI flows in developed economies, but greenfield FDI (e.g., building new plants in foreign countries for production) is more common for developing economies. It would be of great interest to understand whether this general pattern prevails in APEC. As cross-border M&As and greenfield FDI may have very different implications for regional trade, competition, and economic growth, it is important to examine the cross-border M&A activities within APEC.

We are particularly interested in understanding the following questions: which economies have more cross-border M&As? which industries have more cross-border M&As? what types of firms are more likely to engage in cross-border M&As? how do trade and therefore trade liberalization affect cross-border M&As? how do cross-border M&As affect GDP? Answers to these questions will form an important basis for the subsequent empirical and theoretical investigations on cross-border M&As, and help inform how regulatory policies would influence cross-border M&As.

Second, cross-border M&As is another form of FDI. Traditionally, multinationals gain access to foreign markets through exports and greenfield FDI. With enhanced possibilities of cross-border

M&As, multinationals can gain access to foreign markets by purchasing local firms. While there are numerous studies of how FDI (mainly greenfield FDI) would affect trade, it is not so clear whether cross-border M&As would substitute for the traditional forms of market entry by reducing trade and greenfield FDI. However, it is not impossible that cross-border M&As, by merging two firms, may encourage more intra-firm transactions and increase international trade. To enhance understanding, we have made the investigation of the impact of cross-border M&As on trade in APEC as one of the key tasks of this paper.

Third, economic development could be affected by international trade and FDI. There is a fair amount of literature on how trade and FDI (mainly greenfield FDI) generally affect economic growth. With cross-border M&As being another form of FDI, it is important to examine whether its direct impacts on economic development differ from those of trade and greenfield FDI. Moreover, cross-border M&As may also affect economic development indirectly through their influence on trade flows. As cross-border M&As rise over time, a better understanding about their impacts on economic development is important in helping economies in shaping a policy framework to attract cross-border M&As.

Finally, as the study of the above issues will provide us insights on the possible impacts of intra-APEC cross-border M&As on trade, greenfield FDI, and GDP, it also helps us understand how various policies (e.g., trade liberalization, capital movement liberalization, and anti-trust regulation) would have direct and indirect impacts on cross-border M&As, which in return affects trade, greenfield FDI and GDP. For instance, the following questions are particularly pertinent: Would trade liberalization stimulate more cross-border M&As? How would competition policies affect cross-border M&As and therefore affect trade, greenfield FDI, and economic development? We hope that some lessons can be learned and some policy implications can be drawn from the results of the present study.

This study is among the first to take an econometric analysis on intra-APEC cross-border M&As and their economic impacts.

1.2. Distinction Amongst International Trade, Greenfield FDI and Merger and Acquisition

The classical theory of trade emphasizes that trade can promote growth by taking advantage of each economy's comparative advantage. The new trade theory points out that free trade could also generate agglomerates, thus increasing economic productivity due to increasing-returns to scale. International trade also results in more varieties of goods for consumers. Furthermore, trade could increase the level of competition and thus increase market efficiency. Trade could also increase the exposure of the trading economy to a larger set of ideas or technologies, thus increasing the rate of

technical progress. The trade of intermediate goods could be an alternative way to increase the aggregate productivity of domestic economy.[1]

The ways that greenfield FDI affects economic development are different. Foreign investments could enhance productivity in the form of technology and, business know-how being directly transferred and their spillovers (Romer, 1993). FDI could directly reduce the cost of accessing foreign markets, thus improving trade and growth indirectly. FDI would also intensify market competition, thereby making the economy more efficient.

The channel through which cross-border M&As promote productivity and GDP might be similar to that of greenfield FDI. However, there are at least two important differences. First, cross-border M&As could be more cost effective as firms do not need to make a large fixed investment to setup the plants when entering the foreign markets. Second, both greenfield FDI and cross-border M&As are effective channels to effect capital and technology transfers. While the former is likely to be more direct through its fixed investment in the host (target) economies, the latter tends to have more influence on management skills and corporate culture. The initial round of employment effect of greenfield FDI is likely to be more notable, especially at the manual or production end as a new plant is set up, usually with only the managerial and supervisory staff seconded from the home economy by the acquiring firm. For merger and acquisitions, very often the initial employment effect is less prominent as the acquirer buys up an existing entity, though there may be secondment of managerial staff at the upper end.

1.3. Relations to Previous Studies

The phenomenon of cross-border M&As has attracted increasing attention from both the policymakers and the academia. Chen and Findley (2002) provide a general overview of cross-border M&As in the APEC. Based on the two UNCTAD (United Nations Conference on Trade and Development) reports (2000, 2001), they show that cross-border M&As in the APEC have grown rapidly during the period of 1991-2000; the transactions have been dominated by industrialized economies; the tertiary sector has been the most important sector in cross-border M&A transactions; and there has appeared an increasing imbalance between purchases and sales across different economies.

Our study differs much from Chen and Findley (2002) in many ways. First, they characterize cross-border M&As in APEC based on the findings of the two UNCTAD reports, but we conduct our analysis based on the original data, the SDC data (Thomson Financial's Securities Data Company). Second, their report only provides a picture about some aspects of cross-border M&As in APEC, but

1 See Winters (2004) for a discussion on how international trade could affect productivity and hence GDP.

we provide more pictures and more details (e.g., we also examine the pattern and compare the average size of the acquirers and that of the targets, which has implications on the changes in the barriers to cross-border M&As). Third, their report covers cross-border M&As from 1991 to 2000, while our study covers a much longer time span, from 1980 to 2007. Finally, the main objective of their report is to examine a series of questions (e.g., what is the motivation for cross-border M&As) by reviewing the existing literature, while, in contrast, the aim of our report is to conduct an original research on the implications of cross-border M&As on trade, greenfield FDI, and GDP, in addition to providing a detailed description of cross-border M&As in the APEC economies.

In another related paper, Moon et al. (2003) study the impacts of cross-border M&As on the competitiveness in three APEC members: Republic of Korea, China, and Hong Kong, China. They collect information based on 15 cross-border M&A cases and demonstrate how the target firms respond to the deals. Four dimensions of competitiveness are examined: (1) factor conditions, (2) demand conditions, (3) related and supporting sectors, and (4) strategy, structure and rivalry. The evidence suggests that the benefits of cross-border M&As are larger than the costs.

While the study of Chen and Findley (2002) is based on basic data analysis and Moon et al (2003) rely on case study, some researchers have gone a step further to empirically examine the economic driving forces of cross-border M&As (but not for APEC). Particularly related to our study is the paper by Andersson and Svensson (1994), who examine the relationship between firm-specific skills and the entry modes of FDI. The data in their study cover all Swedish multinationals from 1965 to 1990. They use a logit model in which the dependent variable is zero if a firm makes greenfield investment and takes the value of one otherwise (i.e., cross-border M&As). Several alterative proxies are used to approximate firm size and R&D intensity to reflect on the size and skill level of firms. They find that firm-level skills affect the entry mode of the multinational firms. Relatively more organizational skill favors takeover, while relatively more technological skill favors greenfield operations. Moreover, it is found that firms established longer in the host economy are more likely to be taken over.

Head and Ries (2008) propose an innovative approach to examine empirically the incentive of corporate control (as opposed to capital injection, technology transfer, etc) in explaining cross-border M&As. Specifically, they use a two-step approach to estimate a structural model that determines cross-border M&A flows. In the first step they estimate acquirer-specific and acquiree-specific fixed effects, which contain important components (e.g. corporate control, which is proxied using variables including population and per capita GDP of the origin country)) predicted by theory. In the second step those fixed effects are regressed on proxies for corporate controls. The methodology is applied to bilateral FDI data for 30 OECD countries and 32 non-OECD partners (in a cross section model). It is also applied to 1990-1999 M&A data for 101 source countries and 198 destination countries (in a

panel data model). Their study finds that the structural model fits the data, providing support for the relevance of corporate control to acquire firms overseas.

Several other studies have explored the economic outcomes of cross-border M&As. Wang and Wong (2004) decompose FDI into greenfield FDI and cross-border M&As and examine their effects on economic growth using country level panel data (a panel of 84 economies, both APEC and non APEC from 1987 to 2001). Interestingly, they find that greenfield FDI has an unambiguous positive association with economic development, while cross-border M&As are effective only when host countries have sufficient human capital.

There is a small, but growing literature on modeling and analyzing the rationales for cross-border M&As and their impacts. We can classify those studies in three categories. Some are concerned about the implications of trade liberalization for the profitability of cross-border mergers (e.g., Long and Vousden (1995)), some focus on the rationales for the emergence of cross-border mergers (e.g., Horn and Persson (2001) on trade costs; Lommerud et al. (2006) on the presence of plant specific unions in oligopolistic competition; Neary (2007) on international differences in technology; Qiu and Zhou (2006) on the benefit of information sharing), and others are related to the various effects of cross-border mergers (e.g., Head and Ries (1997), Chen (2004), and Qiu and Zhou (2006) on competition and welfare; Neary (2004) on trade pattern and income distribution).

In particular, Long and Vousden (1995) investigate the profitability of cross-border mergers in the presence of trade liberalization. The results depend on whether trade liberalization is unilateral or bilateral and on how large the cost savings generated from the mergers can be. Horn and Persson (2001) use the coalition formation approach to analyze international mergers. They show that international mergers may arise due to lower trade costs, contrary to the "tariff jumping" argument. International merger leads to a trade-off between duplicating fixed cost and saving trade cost. Neary (2007) uses a general equilibrium model to show that international differences in technology generate incentives for cross-border mergers in which low-cost firms from one country take over high-cost firms from another country. Such mergers serve as instruments of comparative advantage. Lommerud et al (2006) explain international mergers as a result of oligopolistic competition in the presence of plant specific unions. They argue that unions are plant specific in the international setting and, hence, international mergers are profitable because wages decrease after the mergers.

Qiu and Zhou (2006) give a different explanation for cross-border merger incentives. They show that firms from different countries face different information sets with regard to the market's situation such as demand. When there is no market for information sharing, firms would merge in order to benefit from information sharing. Qiu and Zhou (2007) construct a dynamic model to analyze endogenous mergers and explain merger waves. Qiu (2009) examines and compares the incentives

for domestic mergers and cross-border mergers, and the relationship between cross-border mergers and firms' international market entry modes, i.e., export and FDI.

1.4. Contributions of This Study

The present study is empirical in nature. In this regard, several studies reviewed above are relevant, including Andersson and Svensson (1994), Burns and Moya (2006), Chen and Findley (2002), Moon et al. (2003) and Wang and Wong (2004). The main contributions of our study are the following.

First, this study intends to investigate a range of issues as described in subsection 1.1. These issues include the pattern of cross-border M&As, the determinants of cross-border M&As, the impacts of cross-border M&As on trade, greenfield FDI, and GDP, and a discussion on policy implications.

Second, this study aims at deploying the most up-to-date data with a special focus on the APEC economies. Currently, most existing studies on APEC cross-border M&As are based on data up to 2000 only. In this study, we intend to extend our observations to year 2007 (the latest data available). As we will see in the next section (Figure 2.1-1), a new wave of cross-border M&As is observed after 2001.

Third, we will attempt to adopt an econometric approach to study intra-APEC M&As from a quantitative perspective.

Unlike many earlier studies, this study will focus specifically on the APEC economies. While other studies like Andersson and Svensson (1994); Head and Ries (2008), and Chen and Findley (2002) are concerned about the possible forces driving cross-border M&As, we are concerned about the scale of the M&As. Our model is different from Andersson and Svensson (1994)'s firm-level analysis in that they are concerned just whether or not a firm makes cross-border M&As. While we also consider firm-level information, but we will provide richer information by discussing the impact of M&As at macro level. Our study is also based on empirical evidence of a longer time series and larger data set (using the SDC database) to enable quantitative measurement of relations.

As mentioned earlier, Chen and Findley (2002) also summarize the patterns of cross-border M&As during 1991-2000 using economy and industry level data. Since our data are at the firm level and cover a longer time period (1980-2007), we are able to provide a comprehensive and up-to-date picture on the evolution path of the cross-border M&As between the APEC members. For example, while Chen and Findley (2002) find the value of cross-border M&As in APEC rising monotonically during the sample period, we by looking at a longer time span (1980-2007) observe several cycles in cross-border M&As (as indicated in Figure 2.1-1 in section 2)

Lately, there is growing interest in cross-border M&As. Although the existing literature of international trade and (greenfield) FDI is large, the literature of cross-border M&As, unfortunately, is still small. Researchers have started to investigate why multinationals engage in cross-border M&As; whether the more or the less productive multinationals are more likely to take on cross-border M&As; which sectors are more attractive to cross-border M&As; how trade liberalization affects such activities; and what is the development implications of these activities. While these studies have helped improve the understanding of the academia, business people and policymakers on the recent trends of cross-border M&As, more in-depth research is needed to gain a better understanding of those issues and their related policy implications.

1.5. Organization of This Study

In Section II, we first present the patterns of intra-APEC cross-border M&As with regard to their time trend, correlation and variations across the APEC economies, similarities and differences across industries, and characteristics of acquiring firms and target firms. In Section III, we conduct econometric analysis to investigate the relationship and causality amongst cross-border M&As, international trade, greenfield FDI, and GDP. In Section IV, we explore policy implications based on the findings in Sections II and III. Section V presents the concluding remarks.

II. Patterns of Cross-Border Mergers and Acquisitions within APEC

Cross-border M&As have become an important feature of the recent industrial globalization. The OECD Report (2001) has unveiled the pattern of cross-border M&As among OECD countries. Based on UNCTAD (2000, 2001), Chen and Findley (2002) have also provided a summary of the patterns of cross-border M&As among APEC economies during 1990-2000. In this section, we will try to revisit the subject and extend the coverage of the study by lengthening the data series to 1980-2007.

The main bulk of the data, i.e., cross-border M&As, used in this study are extracted from the Thomson Financial's Securities Data Company (SDC) database. SDC is intended to include all M&A deals (both private and public transactions) around the world. We use information on cross-border M&A transactions of APEC members that are both the targets and acquirers during the period 1980 to 2007. In total we have information on 34,578 cross-border M&A transactions between the APEC economies.

Before we present the findings, let us first discuss the data and their definitions. Based on the SDC data, we consider a deal as cross-border M&A if the acquirer and target are from different economies. If they are from the same economy, then these are domestic M&As. Cross-border M&As of APEC economies, or intra-APEC cross-border M&As, are those in which all parties of a merger, or both the acquiring and target firms in the case of acquisition, are from economies in APEC.

Tables 2.1 through 2.3 provide summary figures on intra-APEC cross-border M&As during 1980-2007. The number and value of transactions are summarized by year in Table 2.1. It is observed that cross-border M&As in this region has been growing very rapidly, in terms of the number of transactions, the total value of transactions, and the maximum value of individual transactions. While not all APEC economies participated in cross-border M&As in the 1980s, all of them have started to engage in cross-border M&As by 1992.

In Table 2.2, we break down all intra-APEC cross-border M&A transactions by economy. There is apparently very large variations across APEC economies in all aspects. The United States dominates all other economies, in terms of total number and total value of cross-border M&As, and both as the target and as the acquiring economy. It is followed by Canada in all aspects. Hong Kong, China is the third largest acquirer, Japan comes fourth and Singapore fifth. China, on the other hand, is the third largest target economy, Australia the fourth and Hong Kong, China the fifth. Most economies exhibit acquirer and target asymmetry. The not very active ones are Chile, Papua New Guinea, Russia and Viet Nam, although their firms are relatively more popular targets.

In Table 2.3, we further break down the cross-border M&As by individual APEC economies. For each APEC economy, we list the number of other APEC economies from where firms choose to target. We also give the top three target economies and the corresponding shares. Two patterns emerge. First, most of the economies in APEC are outward looking and active in intra-APEC cross-border M&As, as demonstrated by the number of target economies of each APEC economy. Second, the United States is among the most favoured targets by most other APEC economies, followed by Australia. Third, rather than focusing on a few economies as the targets, most economies acquire firms from a large number of economies.

The rest of this section is organized as follows. We begin with a description of the general trend of cross-border M&As within APEC in subsection 2.1. In subsection 2.2, we compare the cross-border M&As across APEC economies and use alternative measures to demonstrate the relationship between the cross-border M&As of different economies. We then turn to industry-specific patterns in subsection 2.3. In subsection 2.4, we present the characteristics of firms participating in cross-border M&As and examine how they evolve over time. In subsection 2.5, we summarize the major stylized patterns found.

2.1. General Trends

2.1.1. Time Trend of Cross-border M&As

As shown in Table 2.1 and Figure 2.1-1, cross-border M&As within APEC have increased rapidly since early 1980s, in both transaction value and transaction number. In 1980, the total value of transactions amounted to US$1.75 billion, and the number of transactions was only 8. By 2007, the corresponding figures were US$ 335.64 billion and 3493. The average annual growth rates in transaction value were 21.5% and 25.3% in transaction number as shown in Fugure 2.1-2. There were three waves of cross-border M&As within APEC during this period. The first wave ended in 1990. The second wave started from mid-1990s and ended in 2000. The total value of cross-border M&As was quite low in 2002. It then started to increase, forming the third wave which continued until 2007. While UNTACD (2000, 2001) and Chen and Findley (2002) covered up to the second wave, this study aims at revealing the third wave with extended data coverage to 2007.

Table 2.1: Cross-border M&As by all APEC economies

Year	Number of cross-border M&A transactions	Total value of cross-border M&A transactions (Billion, US$)	Maximum value of cross-border M&A transactions (Billion, US$)	Number of APEC economies as acquiring economy	Number of APEC economies as target economy
1980	8	1.75	0.6	2	1
1981	37	10.2	6.19	6	2
1982	50	1.31	0.26	7	2
1983	128	6.07	2.4	7	4
1984	116	6.15	0.9	8	6
1985	141	8.21	2.31	11	14
1986	221	18.42	3.58	9	13
1987	283	31.13	9.8	11	12
1988	431	42.75	6.51	11	15
1989	650	41.68	2.61	15	17
1990	806	58.02	7.41	17	17
1991	818	18.9	2.36	17	19
1992	695	15.08	1.1	18	21
1993	964	20.83	1.19	18	20
1994	1278	24.53	0.98	19	20
1995	1347	50.07	5.7	18	20
1996	1557	54.05	3.95	20	20
1997	1705	72.92	3.77	19	21
1998	2014	90.38	9.27	18	21
1999	1970	130.77	6.57	18	21
2000	2587	172.93	34.16	20	20
2001	1896	120.36	12.82	16	21
2002	1667	52.49	3.69	19	20
2003	1895	78.69	11.06	19	21
2004	2364	101.58	4.21	19	20
2005	2471	117.36	18.47	19	21
2006	2985	240.77	16.14	20	21
2007	3493	335.64	26.92	20	21

Source of data: Authors' calculation based on SDC data.

Table 2.2: Cross-border M&As by APEC economies (1980-2007)

Economy	As acquiring economy		As target economy	
	Number of cross border M&A transactions	Value of transactions (Billion, US$)	Number of cross border M&A transactions	Value of transactions (Billion, US$)
Australia	2440	178.43	2967	195.97
Brunei Darussalam	18	0.85	22	0.02
Canada	6972	406.35	5301	337.56
Chile	49	2.75	446	22.52
P.R.China	892	59.17	4254	142.71
Hong Kong, China	3535	139.63	2263	77.73
Indonesia	153	4.95	930	27.92
Japan	3078	172.64	1004	69.48
Malaysia	1357	29.65	966	17.46
Mexico	194	37.42	1143	60.95
New Zealand	555	24.37	1201	50.68
Papua New Guinea	9	0.02	117	3.59
Peru	12	0.33	310	8.11
Philippines	112	4.55	606	20.53
Russia	65	12.92	342	11.29
Singapore	2704	121.72	1300	40.48
Republic of Korea	477	25.12	734	61.81
Chinese Taipei	454	14.06	537	28.84
Thailand	210	2.96	815	20.04
United States	11278	684.87	9130	723.55
Viet Nam	14	0.28	190	1.78

Source of data: Authors' calculation based on SDC data.

Table 2.3: Concentration of target economies in intra-APEC cross-border M&As

Acquiring economies	Number of target economies	Top 3 target economies	Percentage share	Acquiring economies	Number of target economies	Top 3 target economies	Percentage share
Australia	20	United States	65.18	Mexico	11	United States	51.43
		New Zealand	14.62			Australia	38.11
		Canada	5.19			Peru	2.71
Brunei Darussalam	10	United States	47.46	New Zealand	17	Australia	60.50
		Indonesia	15.35			United States	27.74
		Australia	14.65			Hong Kong, China	5.08
Canada	19	United States	90.02	Papua New Guinea	5	Philippines	82.20
		Australia	3.03			United States	17.80
		New Zealand	1.65			Indonesia	0.00
Chile	5	Peru	51.76	Peru	3	Chile	71.17
		United States	19.45			Canada	27.03
		Canada	18.29			Mexico	1.79
P.R. China	19	United States	48.66	Philippines	14	Australia	36.41
		Hong Kong, China	17.13			Singapore	28.94
		Australia	10.36			United States	10.17
Chinese Taipei	15	United States	52.63	Russia	12	Canada	62.63
		Hong Kong, China	15.63			United States	31.02
		Singapore	7.11			Australia	3.57
Hong Kong, China	19	P.R. China	57.39	Singapore	19	Australia	22.07
		United States	11.28			Hong Kong, China	19.51
		Singapore	6.01			United States	18.22
Indonesia	11	United States	35.83	Viet Nam	6	Canada	90.86
		Australia	27.52			Australia	7.72
		Singapore	15.64			United States	1.42
Japan	20	United States	67.08	Thailand	17	Indonesia	30.45
		Korea	5.16			United States	23.65
		Australia	4.64			Philippines	8.72
Republic of Korea	18	United States	60.24	United States	20	Canada	44.77
		Hong Kong, China	11.44			Australia	14.30
		P.R. China	10.68			Japan	8.42
Malaysia	19	Singapore	31.23				
		Indonesia	13.77				
		Australia	11.97				

Source of data: Authors' calculation based on SDC data.

In order to check whether the cyclical pattern was driven by APEC economies that are also OECD members, we exclude cross-border M&As from the OECD economies and re-plot the figure (Figure 2.1-3). Since the non-OECD economies in APEC had not been actively involved in cross-border M&As till late 1980s, we therefore exclude the first wave. Although the transition from the second to the third wave in terms of transaction number is not clear, the two waves in terms of transaction value are more vivid. Hence, the cyclical pattern is not merely due to the OECD economies in APEC.

2.1.2. Comparison of Cross-border and Domestic M&As

In this subsection we compare cross-border M&As to domestic M&As in APEC. The domestic M&A dataset is also constructed from the SDC database. Data on 300,194 domestic M&As in APEC economies are obtained for comparison purpose. Domestic M&As are those M&As in which both the targets and acquiring firms belong to the same economy in APEC. Table 2.1-1 shows that both the total number of domestic M&As in APEC economies and their values increased steadily over time. In Figure 2.1-4, we plot the value of cross-border M&As with that of domestic M&As. Generally, domestic M&As and cross-border M&As all rise over time, and show largely similar cycles.

We also observe that cross-border M&As have generally grown at a more rapid pace than domestic M&As. As a result, even though the gap in absolute value between domestic M&As and cross-border M&As are getting wider, the share of cross-border M&As is still rising over time. Figure 2.1-5 shows the dynamics of the ratio of cross-border M&As to domestic M&As, which is rising in overall terms. In particular, the value of cross-border M&As as a percentage of domestic M&As has increased from 5 percent in 1980 to 15 percent in 2007. More or less similar pattern is found for the number of transactions. This is another evidence of cross-border M&As becoming increasingly an important channel for regional flows of capital.

Figure 2.1-1: Trend of cross-border M&As in APEC

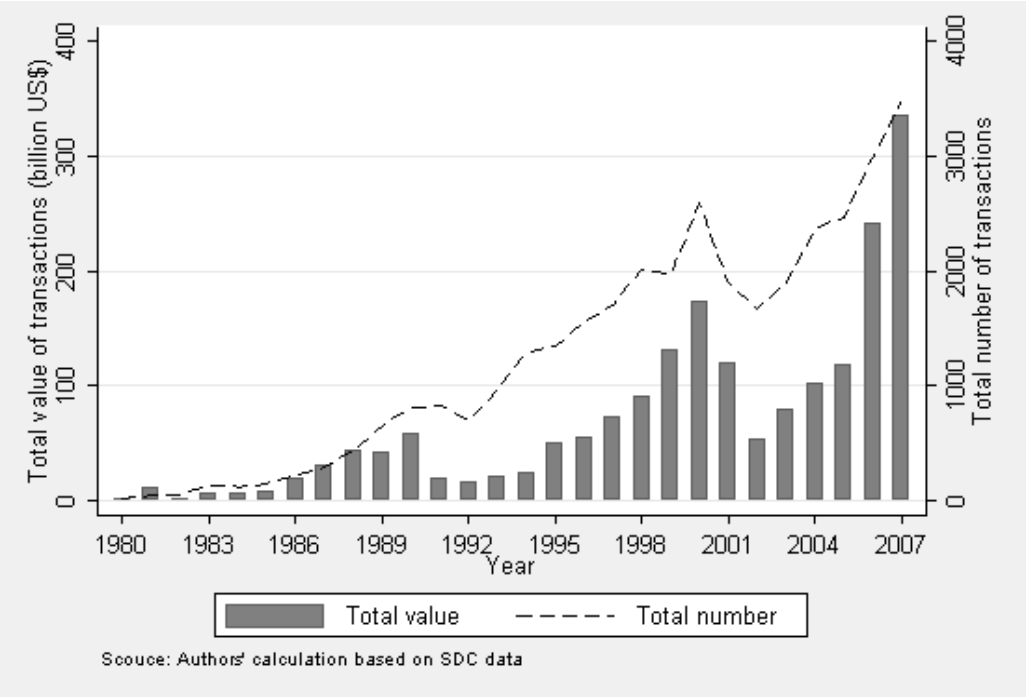


Figure 2.1-2: Growth rate of cross-border M&As in APEC (in value)

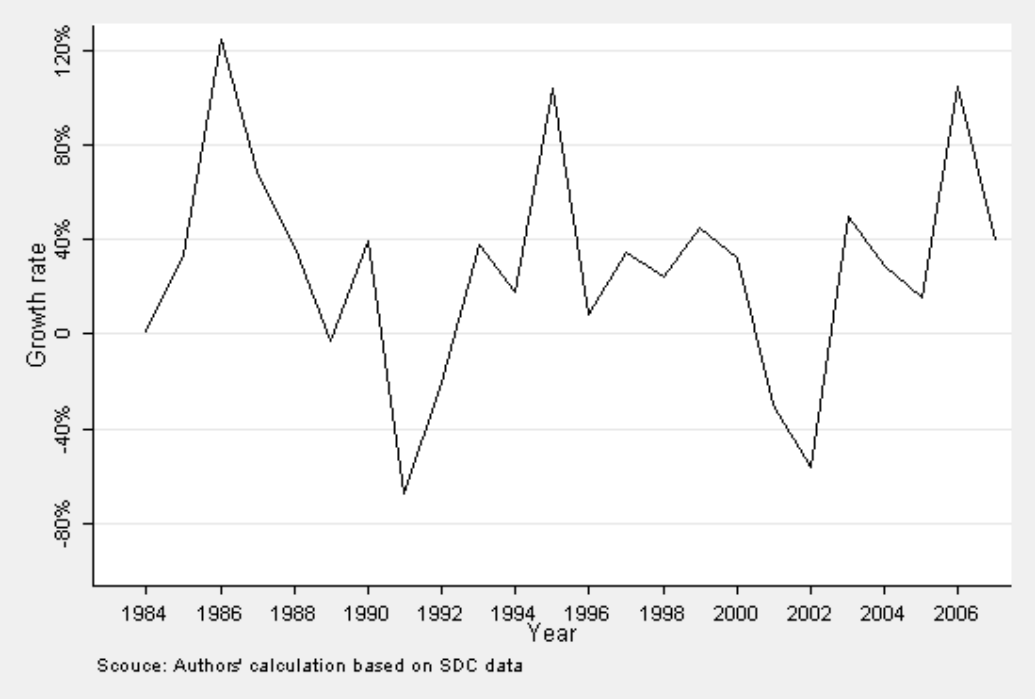


Figure 2.1-3: Cross-border M&As in APEC (excluding the OECD economies)

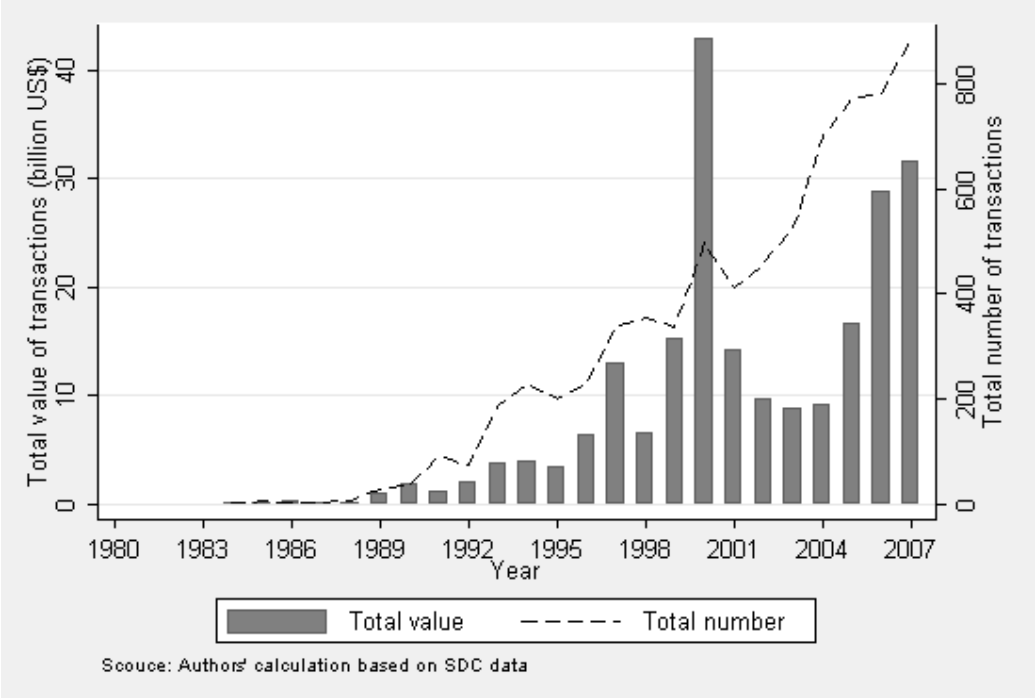


Table 2.1-1: Domestic M&As in APEC

Year	Number of domestic M&As	Total value of domestic M&As (Billion US$)	Year	Number of domestic M&As	Total value of domestic M&As (Billion US$)
1980	95	20.05	1994	10756	502.80
1981	1184	124.87	1995	13262	762.51
1982	2003	77.90	1996	15344	905.48
1983	3283	119.56	1997	16133	1259.02
1984	3850	246.04	1998	18315	1821.81
1985	2705	330.89	1999	17666	2123.57
1986	3663	357.67	2000	17703	2064.67
1987	4567	400.24	2001	14312	1112.27
1988	4778	604.43	2002	14691	732.72
1989	6875	556.80	2003	16621	900.48
1990	7258	275.57	2004	18106	1368.56
1991	7497	215.51	2005	18932	1815.91
1992	7595	239.79	2006	20670	2273.07
1993	9131	380.53	2007	23158	2580.32

Source of data: Authors' calculation based on SDC data.

Figure 2.1-4: Total value of cross-border and domestic M&As in APEC

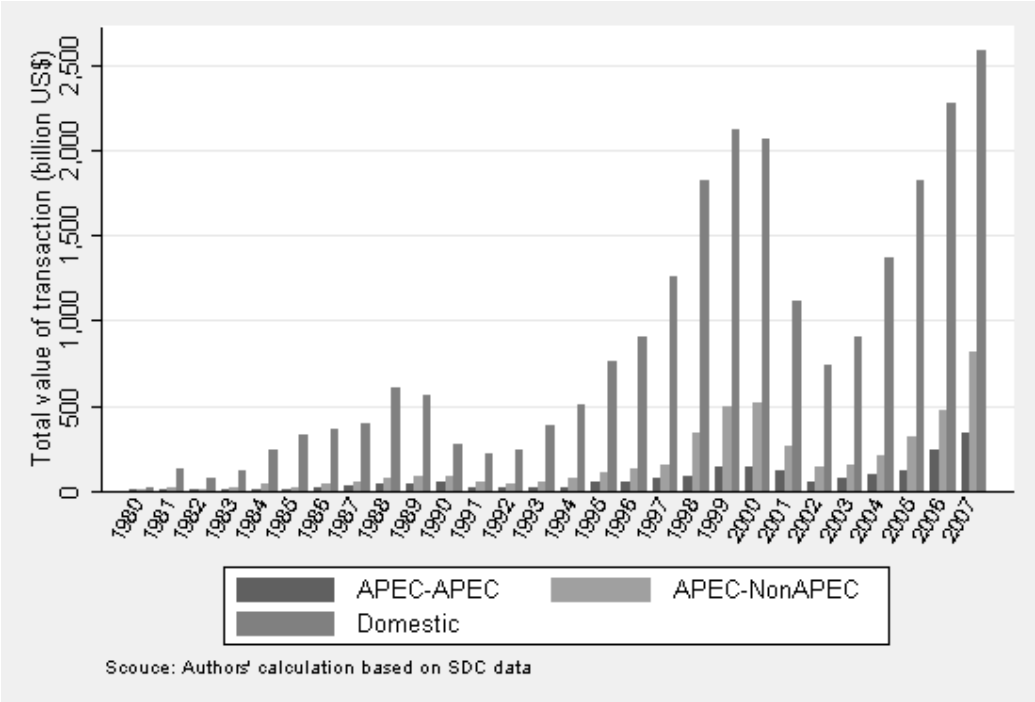
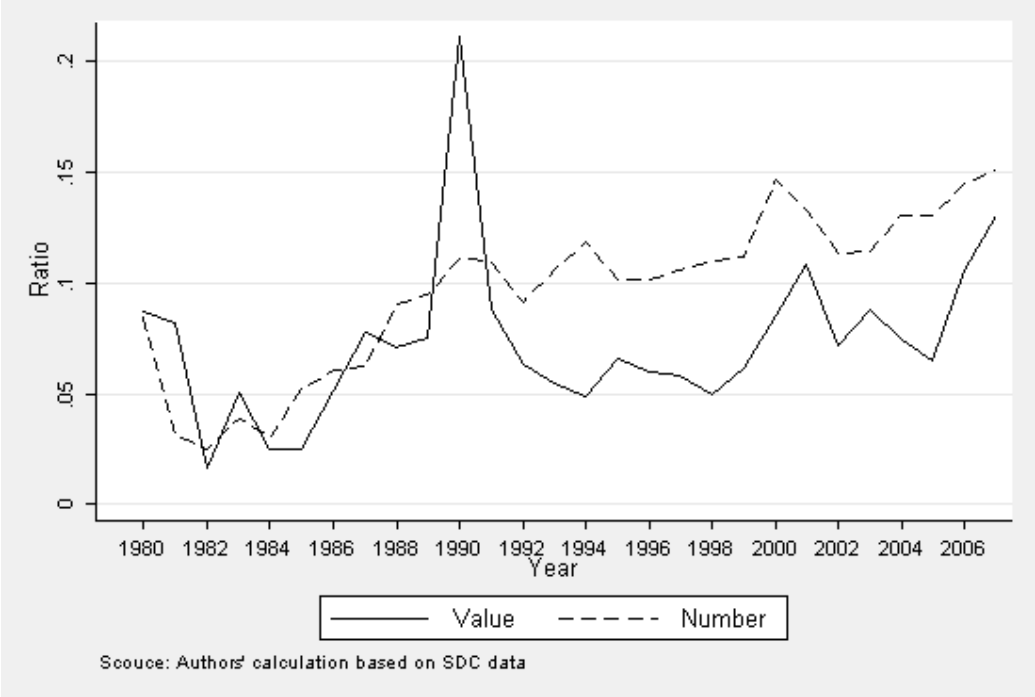


Figure 2.1-5: Ratio of cross-border to domestic M&As in APEC (in value and number)



2.2. Individual Economies and Regional Linkage

2.2.1. Cross-border M&As by Key APEC Economies

In this section we compare the cross-border M&A activities across APEC economies. Besides quantifying the importance of cross-border M&As in different economies, we also examine their correlations.

In Tables 2.2-1 and 2.2-2, the shares of each APEC economy in the total value and total number of transactions of intra-APEC cross-border M&As in the three waves of cycles are shown separately.

In the 1980s, the key acquirer economies were normally also the key target economies, with the United States, Canada, Japan and Australia largely dominating the scene. Among these four, Japan was far more significant as an acquirer in the region, taking up nearly 27% in terms of transaction value or 28% in terms of transaction number, than as a target taking up only around 2% of the total. The United States, on the other hand, was the key target attracting substantial capital inflow through M&As (over 60% in total transaction value and transaction number). The rest of the APEC economies were relatively small in terms of both cross-border M&A value and number.

However, by the turn of the 21st century, the acquiring and targeting economies in APEC have become more dispersed. In particular, China[(2)]. has picked up substantially as a target economy, accounting for nearly 8% in share of transaction value and close to 20% in share of transaction number in 2001-2007, compared to 0.01% and 0.31% in 1980-1990. As an acquirer, China has also seen rising shares, albeit less rapidly than as a target economy. Meanwhile, Hong Kong, China[(3)] has shown rising shares on both the acquiring and target fronts, and with those in transaction number more than doubled. Singapore started to take off in the 1990s. The Republic of Korea[(4)], Russia and Vietnam have also seen rising participation.

All in all, the United States, Canada and Australia remain the top three most prominent acquiring and target economies in APEC. Japan, on the other hand, is overtaken by China and Hong Kong China in terms of both acquirer and target economies, and Singapore in terms of acquirer economy. With

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2 Moon, Kim and Lee (2003) examine five cases of foreign M&As in China. They conclude that foreign companies' motivations include factor conditions and demand conditions. Foreign firms can provide better technologies and they also aim at entering the Chinese market.

3 Moon, Kim and Lee (2003) also examine five cases of foreign M&As in Hong Kong, China. They find that Hong Kong may already have a long history of cross-border M&As and therefore fewer areas to improve in terms of variety of impacts. However, economies of scale are an important factor behind some mergers.

4 Moon, Kim and Lee (2003) have examined five cases of foreign M&As in the Republic of Korea. It shows a concentration of impacts on the factor conditions. Those Korean firms in the cases are either having high debt-to-equity ratio or are under restructuring. They are for sales on the market (i.e., pending for being acquired).

cross-border M&As in APEC showing substantial increases both in transaction value and number, the observed change across economies reflect more a relative than absolute change in relative significance by economy.

Table 2.2-1: Shares of cross-border M&As in transaction value (%)

	1980~1990		1991~2000		2001~2007		1980~2007	
Economies	target	acquiring	target	acquiring	target	acquiring	target	acquiring
Australia	6.55	12.65	8.57	7.87	11.98	9.43	10.19	9.28
Brunei Darussalam	0.00	0.15	0.00	0.08	0.00	0.00	0.00	0.04
Canada	11.94	28.50	16.47	20.87	19.44	19.71	17.55	21.13
Chile	0.04	N.A.	1.83	0.33	1.01	0.06	1.17	0.14
P.R.China	0.01	0.24	9.12	0.87	7.97	5.06	7.42	3.08
Chinese Taipei	0.05	1.42	0.81	1.04	2.24	0.39	1.50	0.73
Hong Kong, China	2.87	4.60	4.15	11.47	4.23	5.22	4.04	7.26
Indonesia	1.06	0.31	1.68	0.37	1.40	0.17	1.45	0.26
Japan	2.01	26.79	4.68	9.00	3.29	5.12	3.61	8.98
Republic of Korea	0.10	0.12	4.34	0.97	3.19	1.77	3.21	1.31
Malaysia	0.39	0.25	1.01	2.63	0.96	1.14	0.91	1.54
Mexico	6.85	0.51	2.66	1.85	2.69	2.32	3.17	1.95
New Zealand	3.34	2.07	2.78	1.48	2.39	0.96	2.64	1.27
Papua New Guinea	0.00	0.00	0.29	0.00	0.16	0.00	0.19	0.00
Peru	N.A.	N.A.	0.79	0.01	0.29	0.03	0.42	0.02
Philippines	0.46	0.00	1.66	0.14	0.83	0.35	1.07	0.24
Russia	0.00	N.A.	0.23	0.05	0.94	1.20	0.59	0.67
Singapore	0.78	1.60	2.71	3.86	2.01	8.88	2.10	6.33
Thailand	0.03	0.14	1.52	0.26	0.96	0.09	1.04	0.15
United States	63.51	20.67	34.66	36.85	33.89	38.07	37.63	35.61
Viet Nam	N.A.	N.A.	0.04	0.00	0.15	0.03	0.09	0.01

Source of data: Authors' calculation based on SDC data.

Table 2.2-2: Shares of cross-border M&As in transaction number (%)

	1980~1990		1991~2000		2001~2007		1980~2007	
Economies	target	acquiring	target	acquiring	target	acquiring	target	acquiring
Australia	6.62	8.12	9.71	5.46	7.91	8.29	7.06	8.58
Brunei Darussalam	0.03	0.07	0.06	0.08	0.07	0.02	0.05	0.06
Canada	15.05	26.40	18.37	19.37	12.68	19.80	20.16	15.33
Chile	0.70	N.A.	1.67	0.20	1.05	0.11	0.14	1.29
P.R. China	0.31	1.01	7.15	2.13	18.94	3.25	2.58	12.30
Chinese Taipei	0.77	1.11	1.31	1.38	1.90	1.29	1.31	1.55
Hong Kong, China	3.69	5.47	6.41	8.52	7.15	12.55	10.22	6.54
Indonesia	0.59	0.52	2.79	0.58	2.96	0.30	0.44	2.69
Japan	2.33	27.97	3.14	8.83	2.79	5.70	8.90	2.90
Republic of Korea	0.38	0.49	2.38	1.01	2.19	1.86	1.38	2.12
Malaysia	0.63	0.56	2.87	3.81	3.10	4.60	3.92	2.79
Mexico	1.60	0.38	3.90	0.74	3.07	0.44	0.56	3.31
New Zealand	2.86	2.02	3.50	1.60	3.56	1.54	1.61	3.47
Papua New Guinea	0.10	0.07	0.34	0.04	0.38	0.01	0.03	0.34
Peru	N.A.	N.A.	0.94	0.03	1.01	0.05	0.03	0.90
Philippines	0.84	0.14	2.37	0.40	1.36	0.29	0.32	1.75
Russia	0.03	N.A.	1.13	0.11	1.03	0.29	0.19	0.99
Singapore	1.46	1.71	3.69	6.75	4.22	9.81	7.82	3.76
Thailand	0.70	0.17	2.82	0.58	2.23	0.70	0.61	2.36
United States	61.30	23.79	25.04	38.36	21.65	29.01	32.62	26.40
Viet Nam	N.A.	N.A.	0.42	0.02	0.76	0.07	0.04	0.55

Source of data: Authors' calculation based on SDC data.

Figure 2.2-1: Cross-border M&As of the United States

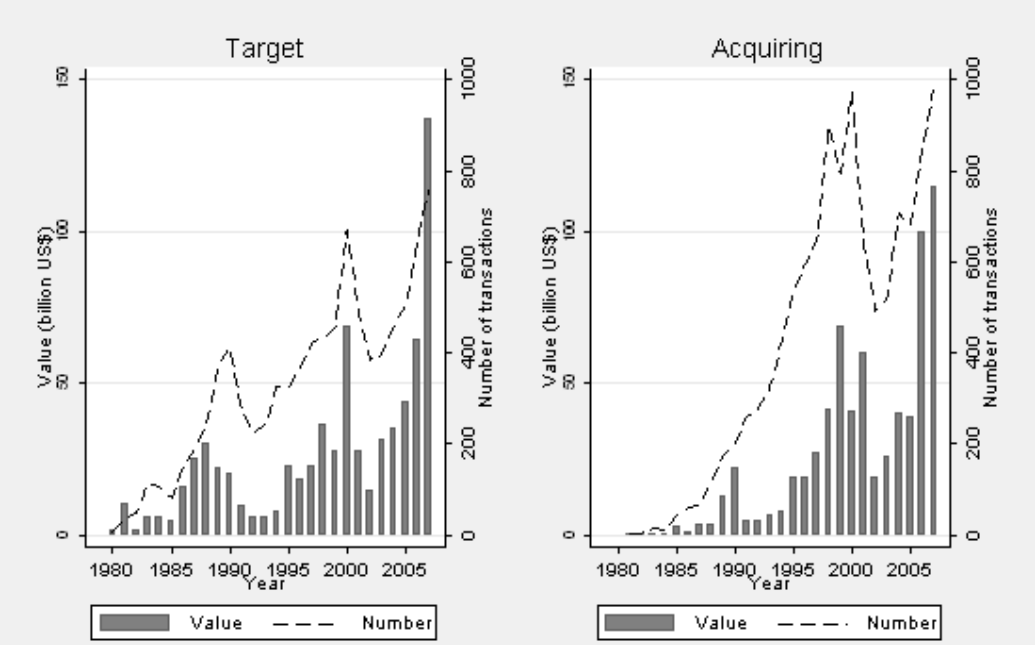


Figure 2.2-2: Cross-border M&As of Canada

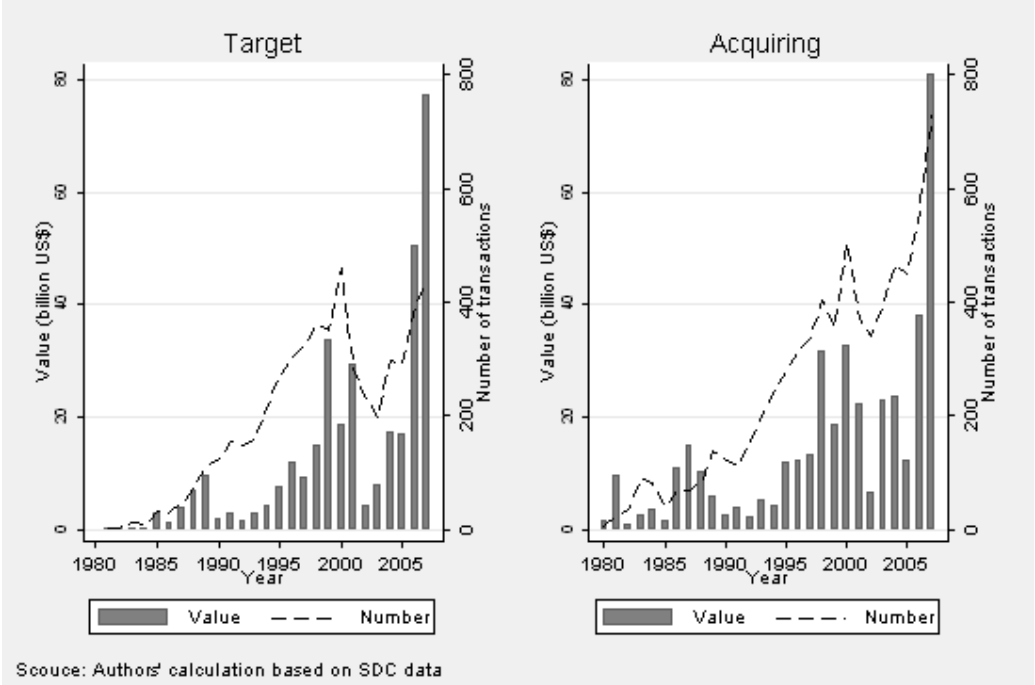


Figure 2.2-3: Cross-border M&As of Australia

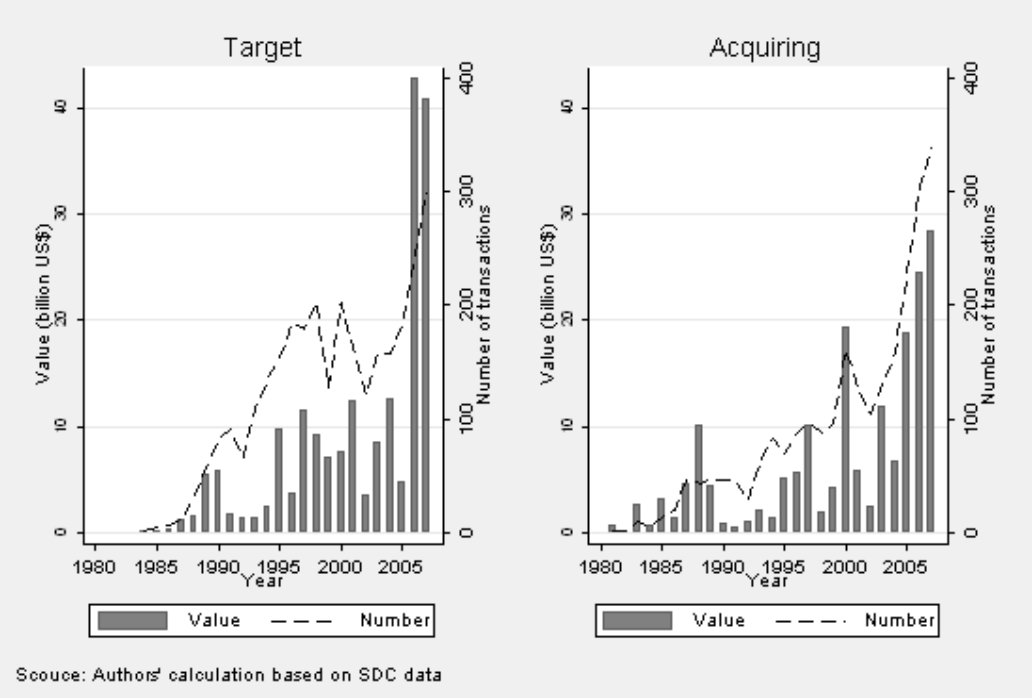


Figure 2.2-4. Cross-border M&As of P.R. China

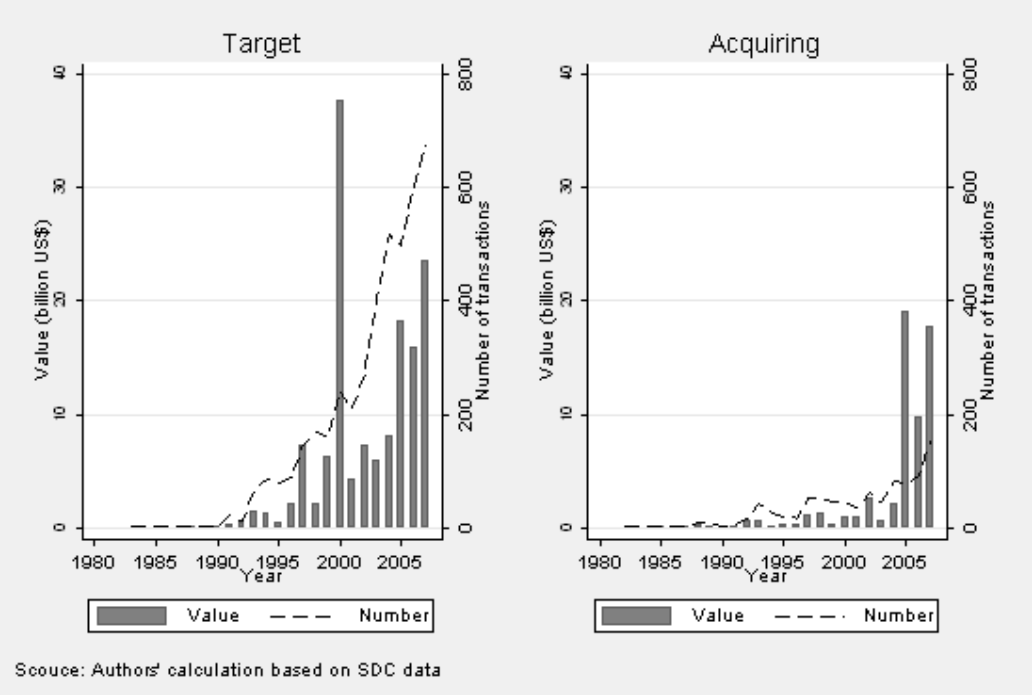


Figure 2.2-5: Cross-border M&As of Hong Kong, China

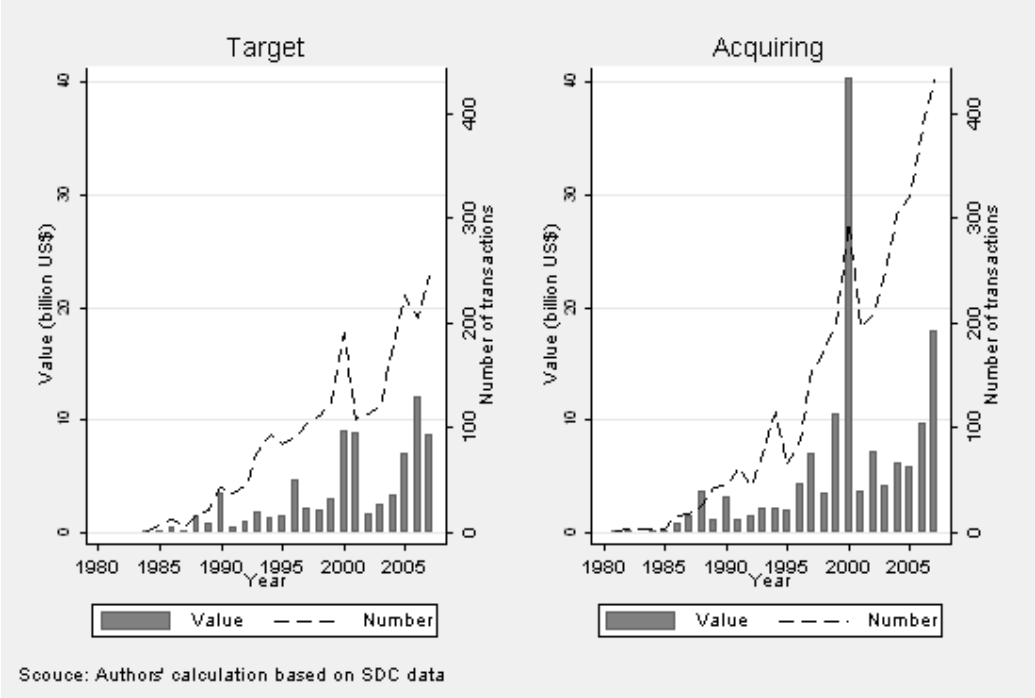


Figure2.2-6. Cross-border M&As of Japan

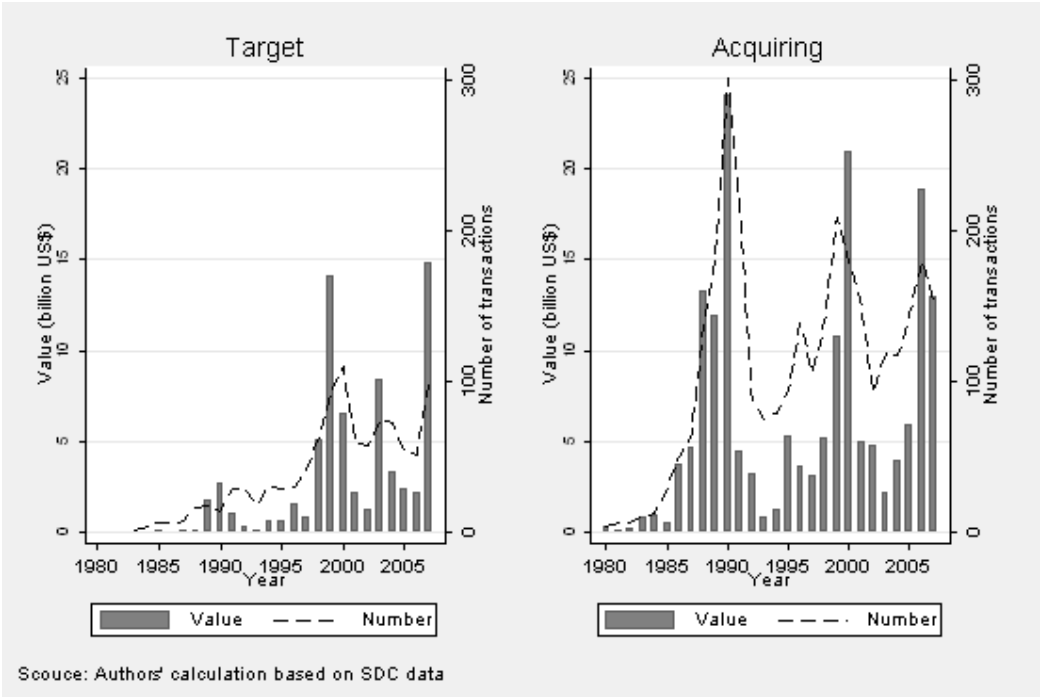


Figure 2.2-7. Cross-border M&As of Republic of Korea

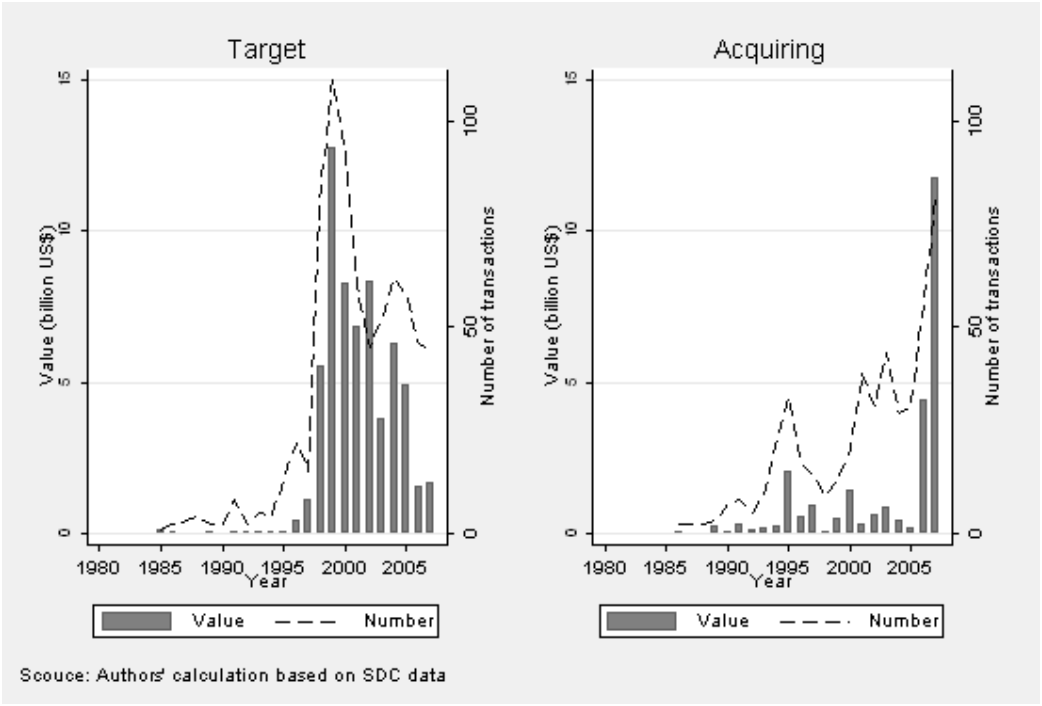
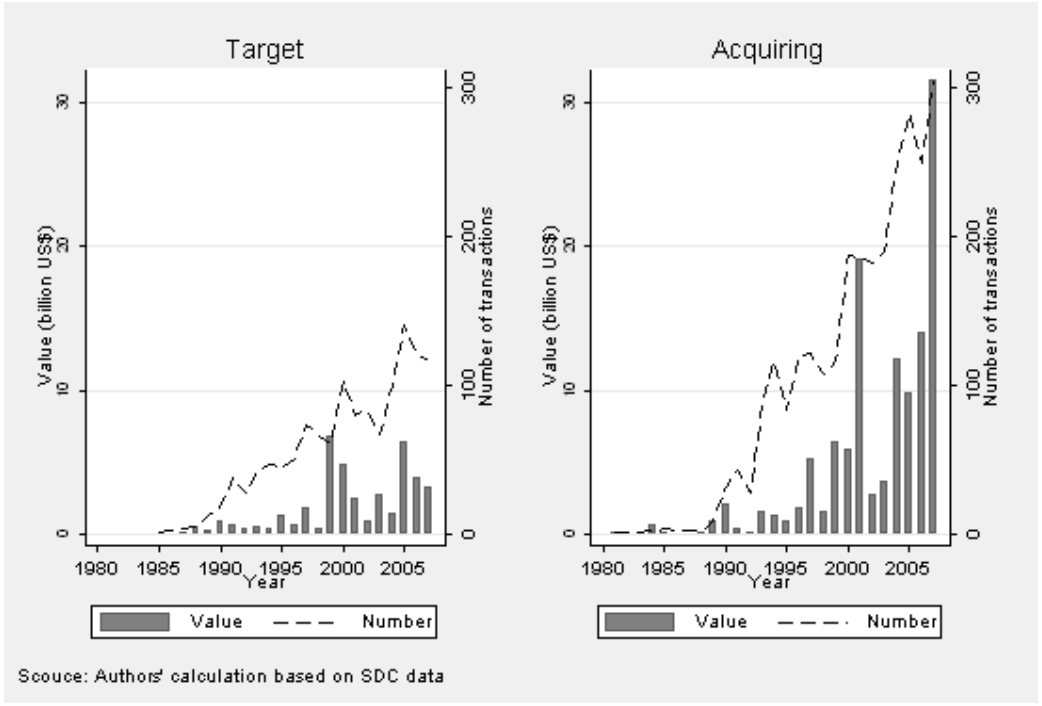


Figure 2.2-8. Cross-border M&As of Singapore



2.2.2. Correlation between the Cross-Border M&As of APEC economies

Although the scale of cross-border M&As varies significantly across APEC economies, their time trends appear to be quite similar. This may imply that the cross-border M&As in different APEC economies have been driven by some common factors. To gauge this linkage between different APEC economies, we calculate the correlation between the time series of an APEC economy as a target and the time series of another APEC economy as a target, for both transaction value (Table 2.2-3) and transaction number (Table 2.2-4). We also calculate the correlation between the time series of an APEC economy as an acquirer and the time series of another APEC economy as an acquirer, for both transaction value (Table 2.2-5) and transaction number (Table 2.2-6). The correlation analysis below is restricted to the selected APEC economies that account for the largest share of cross-border M&As in the APEC region.[5]

Based on Tables 2.2-3 to 2.2-6, it is observed that most of the cross-border M&A activities among the APEC economies are positively correlated. That is to say they tend to increase (or reduce) their overseas acquisitions at the same time, and their firms' are targeted by foreign acquisitions also at the same time.

Australia, Canada and the United States are highly correlated with one another both as target and as acquirer in both transaction value and transaction numbers. Multinationals from these three economies tend to increase or decrease their cross-border M&As together and other APEC economies also tend to increase or decrease their acquisitions of firms in these three economies at the same time. But these three economies correlate among themselves more strongly than with other APEC economies.

In contrast, the intra-APEC cross-border M&A activities of some economies are negatively correlated with others, in transaction value or in transaction number. For example, Table 2.3-3, indicates that as targets, Mexico has negative correlation with Japan, Singapore, China, and Malaysia. That is to say when multinationals increase (reduce) their acquisition (value) in Japan, Singapore, China, or Malaysia, they may reduce (increase) their acquisition in Mexico. This may imply certain degree of substitution between Mexico and some Asian economies. Also as demonstrated by Table 2.2-6 on the acquiring economies, Japan has negative correlation with many economies including the United States, Canada, Singapore, China, Mexico, Malaysia, Korea, and New Zealand. It shows that when those economies increase (reduce) their overseas acquisitions, Japan may actually do the opposite.

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5 By total transaction value of target economies during 1980-2007, the top ten economies are: The United States, Canada, Australia, P.R.China, Hong Kong, China, Japan, Republic of Korea, Mexico, New Zealand, and Singapore; by total transaction value of acquiring economies during 1980-2007, the top ten economies are: The United States, Canada, Australia, Japan, Hong Kong, P.R.China, Singapore, China, Mexico, Malaysia, and Republic of Korea.

Table 2.2-3. Correlation of transaction value (target economy, 1980-2007)

	United States	Canada	Australia	Japan	Hong Kong, China	Singapore	P.R.China	Mexico	Malaysia	Republic of Korea	New Zealand
United States	1.00										
Canada	0.89	1.00									
Australia	0.81	0.89	1.00								
Japan	0.68	0.68	0.43	1.00							
Hong Kong, China	0.70	0.73	0.71	0.30	1.00						
Singapore	0.48	0.52	0.31	0.59	0.60	1.00					
P.R. China	0.76	0.55	0.46	0.45	0.73	0.67	1.00				
Mexico	-0.06	0.02	0.07	-0.10	0.24	-0.09	-0.17	1.00			
Malaysia	0.67	0.75	0.86	0.29	0.77	0.40	0.59	-0.11	1.00		
Republic of Korea	0.16	0.22	-0.03	0.51	0.23	0.62	0.39	0.05	0.05	1.00	
New Zealand	0.32	0.48	0.55	0.19	0.68	0.52	0.24	0.29	0.60	0.10	1.00

Source of data: Authors' calculation based on SDC data.

Table 2.2-4. Correlation of transaction number (target economy, 1980-2007)

	United States	Canada	Australia	Japan	Hong Kong, China	Singapore	P.R. China	Mexico	Malaysia	Republic of Korea	New Zealand
United States	1.00										
Canada	0.81	1.00									
Australia	0.81	0.88	1.00								
Japan	0.75	0.78	0.63	1.00							
Hong Kong, China	0.84	0.80	0.85	0.75	1.00						
Singapore	0.76	0.75	0.79	0.68	0.96	1.00					
P.R.China	0.76	0.61	0.77	0.64	0.92	0.89	1.00				
Mexico	0.64	0.72	0.88	0.56	0.68	0.56	0.67	1.00			
Malaysia	0.81	0.83	0.89	0.72	0.93	0.91	0.91	0.75	1.00		
Republic of Korea	0.58	0.71	0.47	0.87	0.61	0.60	0.47	0.31	0.60	1.00	
New Zealand	0.85	0.79	0.91	0.65	0.91	0.85	0.88	0.76	0.93	0.49	1.00

Source of data: Authors' calculation based on SDC data.

Table 2.2-5. Correlation of transaction value (acquiring economy, 1980-2007)

	United States	Canada	Australia	Japan	Hong Kong, China	Singapore	P.R. China	Mexico	Malaysia	Republic of Korea	New Zealand
United States	1.00										
Canada	0.87	1.00									
Australia	0.77	0.79	1.00								
Japan	0.45	0.32	0.42	1.00							
Hong Kong, China	0.43	0.53	0.61	0.55	1.00						
Singapore	0.87	0.84	0.73	0.24	0.35	1.00					
P.R. China	0.63	0.60	0.78	0.19	0.22	0.69	1.00				
Mexico	0.46	0.20	0.45	0.42	0.27	0.19	0.24	1.00			
Malaysia	0.24	0.22	0.30	-0.14	0.15	0.12	0.15	-0.09	1.00		
Republic of Korea	0.76	0.88	0.74	0.31	0.38	0.79	0.65	0.18	0.18	1.00	
New Zealand	0.72	0.90	0.69	0.33	0.49	0.67	0.51	0.13	0.16	0.85	1.00

Source of data: Authors' calculation based on SDC data.

Table 2.2-6. Correlation of transaction number (acquiring economy, 1980-2007)

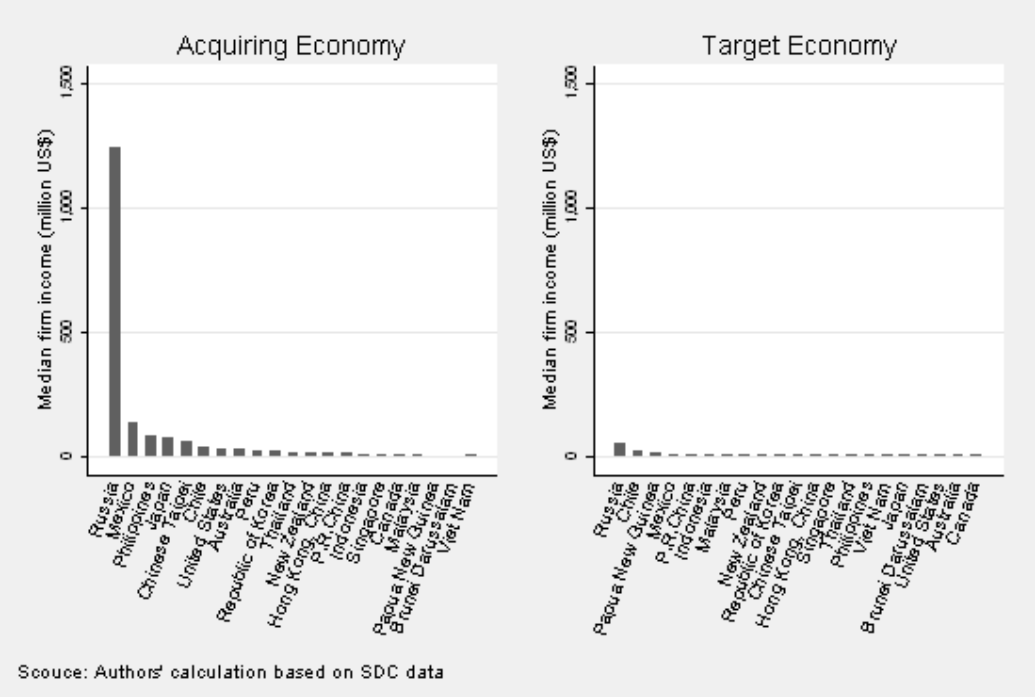
	United States	Canada	Australia	Japan	Hong Kong, China	Singapore	P.R. China	Mexico	Malaysia	Republic of Korea	New Zealand
United States	1.00										
Canada	0.91	1.00									
Australia	0.72	0.91	1.00								
Japan	-0.05	-0.09	0.04	1.00							
Hong Kong, China	0.81	0.95	0.94	0.00	1.00						
Singapore	0.74	0.91	0.90	-0.16	0.95	1.00					
P.R. China	0.72	0.91	0.90	-0.15	0.90	0.87	1.00				
Mexico	0.64	0.50	0.35	-0.13	0.48	0.36	0.33	1.00			
Malaysia	0.62	0.78	0.82	-0.28	0.78	0.88	0.74	0.20	1.00		
Republic of Korea	0.57	0.82	0.87	-0.12	0.80	0.82	0.81	0.13	0.74	1.00	
New Zealand	0.83	0.88	0.79	0.10	0.83	0.77	0.71	0.56	0.54	0.76	1.00

Source of data: Authors' calculation based on SDC data.

2.2.3 Cross-Economy Firm Size Distribution

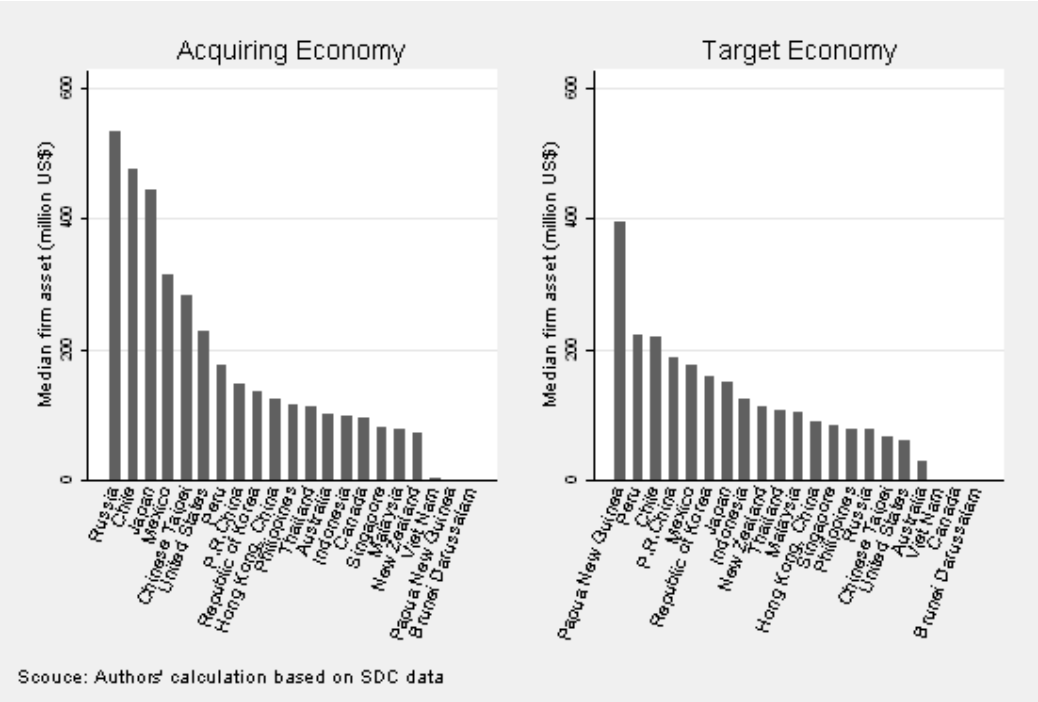
Three different measures of firm size, viz. income, asset and sales (of output), are used to reflect the cross-economy firm size distribution. The median firm (in terms of income, asset, or sales, depending on the measure) involved in cross-border M&As in each economy is chosen to represent that economy's firm size. Based on Figures 2.2-9, 2.2-10 and 2.2-11, we observe that acquiring firms are generally larger than target firms. Russia has the highest firm income, asset and sales on the acquiring side, and also has the highest income and the second largest sales on the target side. Firms in Viet Nam and those in Canada are the smallest both as acquirer and as target. As to asset and sales, firms in Brunei Darussalam are the smallest both as acquirer and as target.

Figure 2.2-9. Median firm income (by economy)



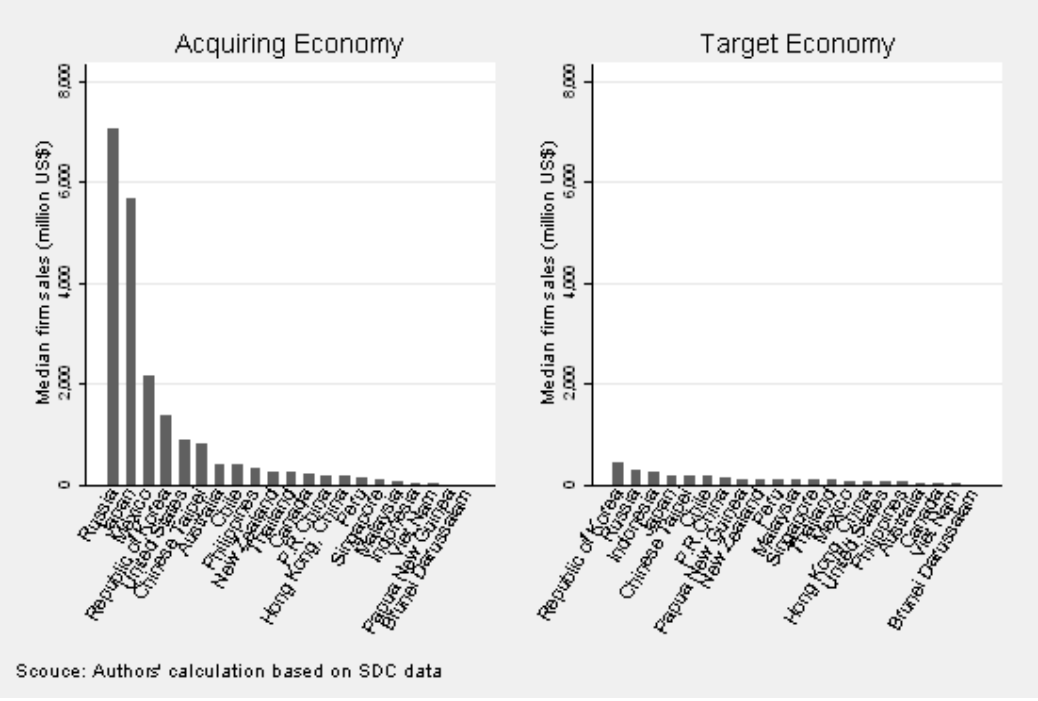
Scouce: Authors' calculation based on SDC data

Figure 2.2-10. Median firm asset (by economy)



Scouce: Authors' calculation based on SDC data

Figure 2.2-11. Median firm sales (by economy)



Scouce: Authors' calculation based on SDC data

2.3. Cross-Sector (Industry) Patterns

In this subsection we compare the patterns of intra-APEC cross-border M&As across sectors (or industries). The objective is to discern common trends and specific features of different sectors (industries). This might help inference of the driving forces of cross-border M&As.

2.3.1. Comparison between Secondary and Tertiary Sectors

The cross-border M&As of the secondary and the tertiary sectors were comparable in terms of transaction number. However, the transaction value of the secondary sector was significantly smaller than that of the tertiary sector, especially after 1990 (Table 2.3-1 and Figure 2.3-1). During the entire sample period (1980-2007), the value of cross-border M&As of the secondary sector was 79.5% of the tertiary sector on the target side and 68.8% on the acquiring side. By 2007, the transaction value of the secondary sector was about 89.6% of the tertiary sector on the target side and 46.2% on the acquiring side.

Interestingly, the cross-border M&As of the secondary and tertiary sectors have demonstrated different growth patterns during 1990-2000. In the 1990s, the growth rate of cross-border M&As in the tertiary sector was much higher than that in the secondary sector, echoing the rapid development of the services industries in the same period. As a result, the transaction value of the tertiary sector was about 20% higher than that of the secondary sector. This is consistent with the finding of Chen and Findley (2002), which suggests that liberalization and deregulation may have affected the tertiary sector the most.

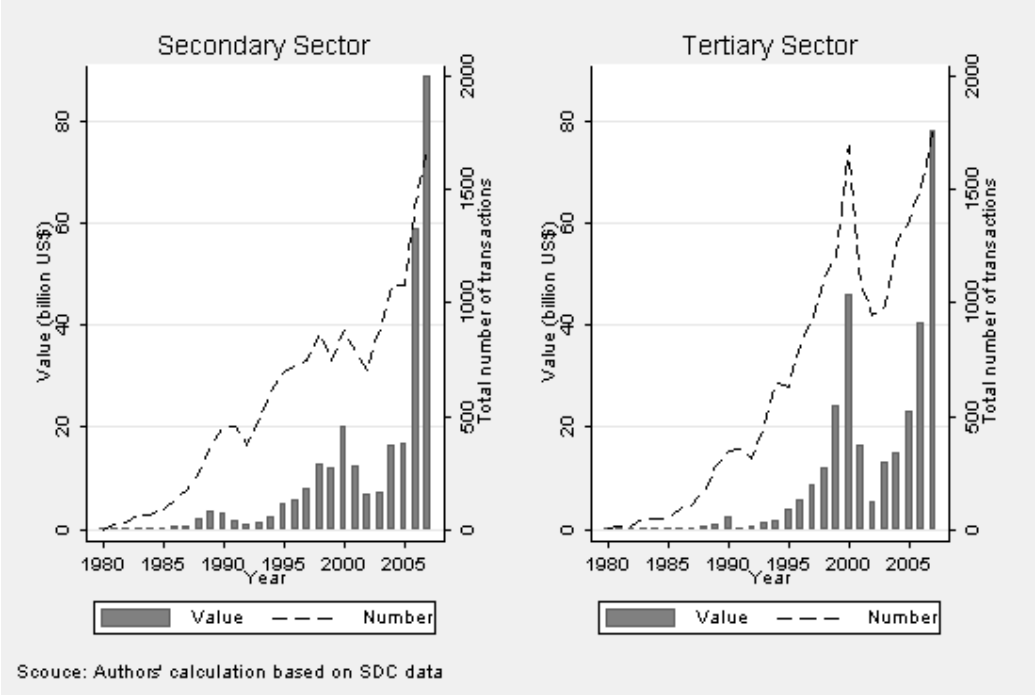
Table 2.3-1: Comparison of secondary and tertiary sector

	Target						Acquiring					
	Secondary			Tertiary			Secondary			Tertiary		
year	Value (Billion, US$)	Number	Value/ Number (Billion, US$)	Value (Billion, US$)	Number.	Value/ Number. (Billion, US$)	Value (Billion, US$)	Number.	Value/ Number. (Billion, US$)	Value (Billion, US$)	Number.	Value/ Number. (Billion, US$)
1980	0.73	2	0.37	1.01	6	0.17	0.98	3	0.33	0.76	5	0.15
1981	9.53	20	0.48	0.64	16	0.04	9.64	18	0.54	0.56	18	0.03
1982	0.83	31	0.03	0.48	19	0.03	0.84	30	0.03	0.47	20	0.02
1983	3.31	72	0.05	2.73	53	0.05	3.32	78	0.04	2.72	47	0.06
1984	5.02	63	0.08	1.12	51	0.02	5.28	68	0.08	0.87	48	0.02
1985	4.58	89	0.05	3.50	50	0.07	6.56	90	0.07	1.65	51	0.03
1986	9.26	132	0.07	9.17	89	0.10	8.21	123	0.07	10.22	98	0.10
1987	11.07	175	0.06	20.06	108	0.19	18.93	142	0.13	11.63	138	0.08
1988	24.88	255	0.10	17.56	169	0.10	25.04	246	0.10	17.71	184	0.10
1989	27.25	367	0.07	14.39	279	0.05	25.44	336	0.08	16.22	309	0.05
1990	20.47	450	0.05	37.24	344	0.11	23.99	396	0.06	33.80	403	0.08
1991	11.70	458	0.03	7.18	353	0.02	9.67	404	0.02	9.15	406	0.02
1992	8.13	375	0.02	6.74	315	0.02	7.45	352	0.02	7.50	334	0.02
1993	8.69	496	0.02	11.88	460	0.03	9.98	427	0.02	10.77	523	0.02
1994	12.61	606	0.02	11.36	649	0.02	10.44	556	0.02	13.99	701	0.02
1995	23.07	695	0.03	26.87	633	0.04	23.55	597	0.04	26.44	728	0.04
1996	24.39	720	0.03	29.44	814	0.04	22.05	664	0.03	31.75	872	0.04
1997	32.04	750	0.04	40.42	939	0.04	33.99	728	0.05	37.92	963	0.04
1998	41.47	867	0.05	45.92	1111	0.04	40.69	829	0.05	49.01	1162	0.04
1999	43.26	749	0.06	87.09	1209	0.07	42.40	707	0.06	87.84	1248	0.07
2000	53.31	881	0.06	119.04	1691	0.07	62.40	882	0.07	109.69	1684	0.07
2001	50.23	786	0.06	69.38	1094	0.06	44.16	742	0.06	76.01	1136	0.07
2002	27.13	708	0.04	24.87	943	0.03	25.78	651	0.04	26.64	1006	0.03
2003	24.93	897	0.03	52.60	986	0.05	27.74	754	0.04	50.78	1129	0.04
2004	45.96	1081	0.04	52.54	1260	0.04	38.87	929	0.04	62.57	1414	0.04
2005	47.58	1079	0.04	69.42	1363	0.05	41.08	990	0.04	75.87	1456	0.05
2006	115.95	1457	0.08	124.62	1506	0.08	106.20	1261	0.08	133.33	1702	0.08
2007	156.63	1698	0.09	174.88	1761	0.10	105.97	1376	0.08	229.28	2089	0.11

Source of data: Authors' calculation based on SDC data.

Note: The secondary sector includes mining, construction, light manufacturing and heavy manufacturing. The tertiary sector includes utilities transportation, wholesale and retail, finance and insurance services, services, other services and public administration.

Figure 2.3-1. M&As in the secondary and tertiary sectors



2.3.2. Comparison between Labor-intensive and Capital-intensive Industries

We plot the transaction value and numbers of light manufacturing (labor-intensive) and those of heavy manufacturing (capital-intensive) industries in Figure 2.3-2.[(6)] From 1980 to 2007, the heavy manufacturing industry had about the same number of transactions as the light manufacturing industry. As the value per transaction was higher for the heavy manufacturing than the light manufacturing industry, the total transaction value of the heavy manufacturing industry was 42.7% higher than that of the light manufacturing industry over the entire sample period.

The heavy and light manufacturing industries have demonstrated similar cyclical patterns in cross-border M&As during the period 1980-2007. This might suggest that the growth of cross-border M&As in the manufacturing industries has not been driven either by labor related or capital related factors alone. It is interesting to note that the heavy manufacturing industry boomed in late 1990s, while the light manufacturing industry showed no such pattern.

6 Light manufacturing includes dairy products, fats and oils, broad woven fabric mills etc.; heavy manufacturing includes engines and turbines, metal forgings and stampings, sheet metal work etc.

One might wonder whether the difference (or similarity) between the two industries is mainly driven by the cross-border M&A activities taken by the U.S. firms, because they have the largest share of cross-border M&As. To verify this, we plot the same figure without the U.S. data on both the acquiring and target sides. The same cyclical pattern is shown (Figure 2.3-3), suggesting that the difference (or similarity) between heavy and light industries is not completely driven by US firms.

Figure 2.3-2. M&As in the light and heavy manufacturing industries

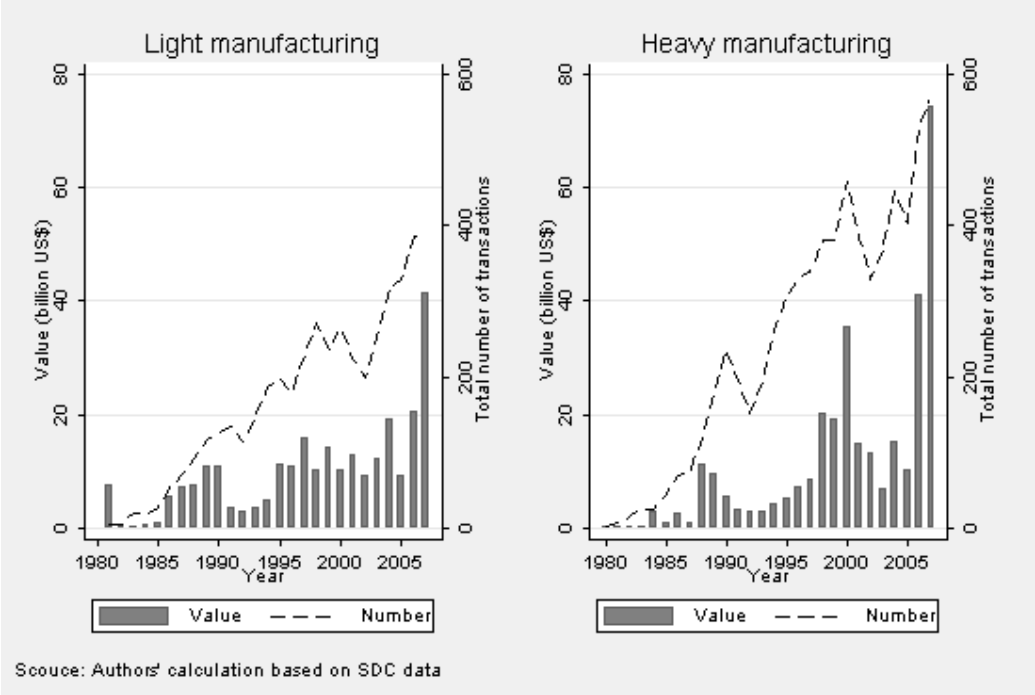
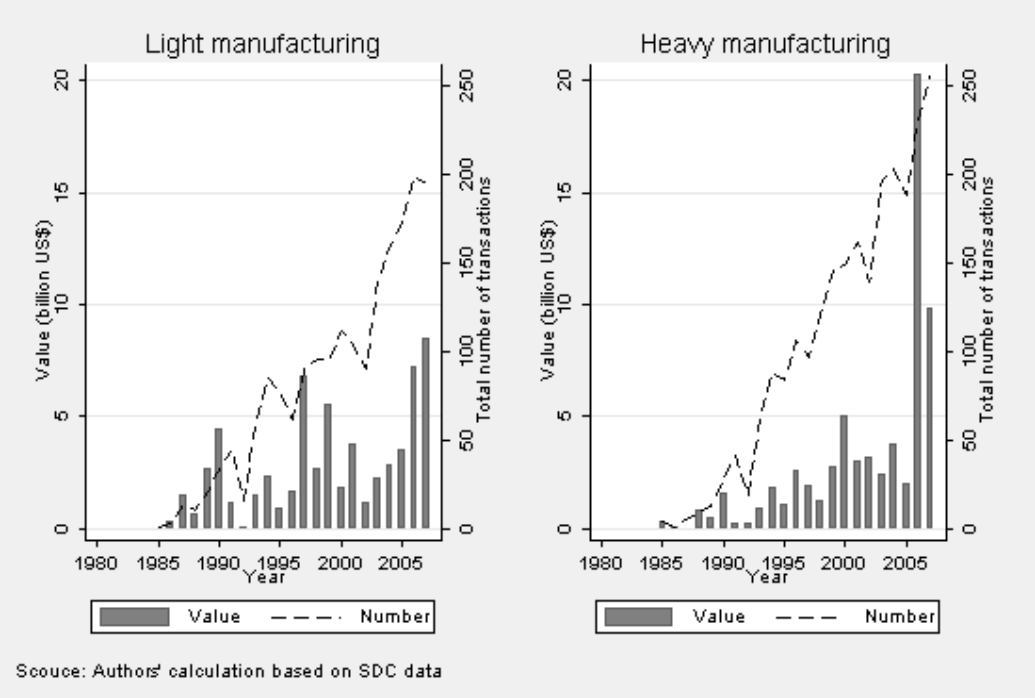


Figure 2.3-3. M&As in the light and heavy manufacturing industries (without U.S. data)



2.3.3. Industrial Composition of Cross-border M&As

In this subsection we further decompose cross-border M&As into ten industries and compare their relative growth (in transaction value). In particular, we have decomposed the secondary sector into mining and construction, light manufacturing, heavy manufacturing, and utilities and transportation. For the tertiary sector we have wholesale and retail, finance and insurance, service, public administration, and others. For the service industry, it includes financial service, entertainment service, and health service. The public administration industry includes education, transportation, and environmental service. Table 2.3-2 presents the shares of each industry as acquirer and as target in the ten-industry group. Generally, the relative importance of the primary, the secondary, and the tertiary sectors as acquirer and target has been quite stable during the sample period. In these sectors, some industries like mining & construction (industry 1) and light manufacturing (industry 2) have seen declining shares as acquirer and target over time, while others like, utilities & transportation (industry 4), finance & insurance (industry 6) and services (industry 7) have been rising rapidly.

To better illustrate the time trend of some specific industries, we regroup them into four: the manufacturing, the finance and insurance, other services, and all others. The shares of these four groups by years are plotted in Figure 2.3-4 (acquiring side) and 2.3-5 (target side). On the acquiring side, the share of manufacturing has declined since mid-1980. The share of other services has increased, mainly due to the expansion of finance and insurance. The others only account for a minor share of total cross-border M&As and the share has declined slightly over time. On the target side (Figure 2.3-4), such a pattern is not apparent. The shares of different industries appear to be relatively stable over time.

Table 2.3-2: Shares of different industries (%)

Period	Industry	0	1	2	3	4	5	6	7	8	9
1980-1985	Acquiring	0.08	28.95	37.17	12.90	1.90	1.33	17.22	0.12	0.34	N.A.
	Target	0.54	28.50	28.78	14.01	8.98	4.42	12.87	1.62	0.29	N.A.
1980-1990	Acquiring	0.35	14.28	18.25	20.44	5.86	2.56	35.96	2.01	0.30	N.A.
	Target	0.31	10.59	22.05	15.78	17.88	12.09	11.05	10.00	0.26	N.A.
1991-1995	Acquiring	0.22	11.91	21.60	13.09	11.82	4.31	26.78	8.68	1.59	0.01
	Target	1.03	13.22	20.62	13.68	13.34	5.85	10.54	19.87	1.64	0.20
1996-2000	Acquiring	0.52	6.51	14.12	18.08	25.39	2.10	23.93	8.07	1.24	0.03
	Target	0.38	8.08	11.94	17.50	31.49	3.54	15.80	10.27	0.95	0.05
2001-2007	Acquiring	0.17	12.81	9.44	15.01	8.46	2.78	46.40	3.68	1.17	0.07
	Target	0.93	15.99	11.92	16.85	17.08	4.77	24.37	6.30	1.75	0.04
1980-2007	Acquiring	0.29	11.53	12.78	16.32	12.82	2.68	37.51	4.91	1.12	0.05
	Target	0.71	13.46	13.81	16.70	20.63	5.21	19.55	8.43	1.46	0.05

Source of data: Authors' calculation based on SDC data.

Note: 0-Agriculture 1-Mining&Construction 2-Light Manufacturing 3-Heavy Manufacturing 4-Utilities&Transportation 5-Wholesale&Retail 6-Finance&Insurance 7-Services 8-OtherServices 9-Public Administration

Figure 2.3-4. Shares of acquiring industries

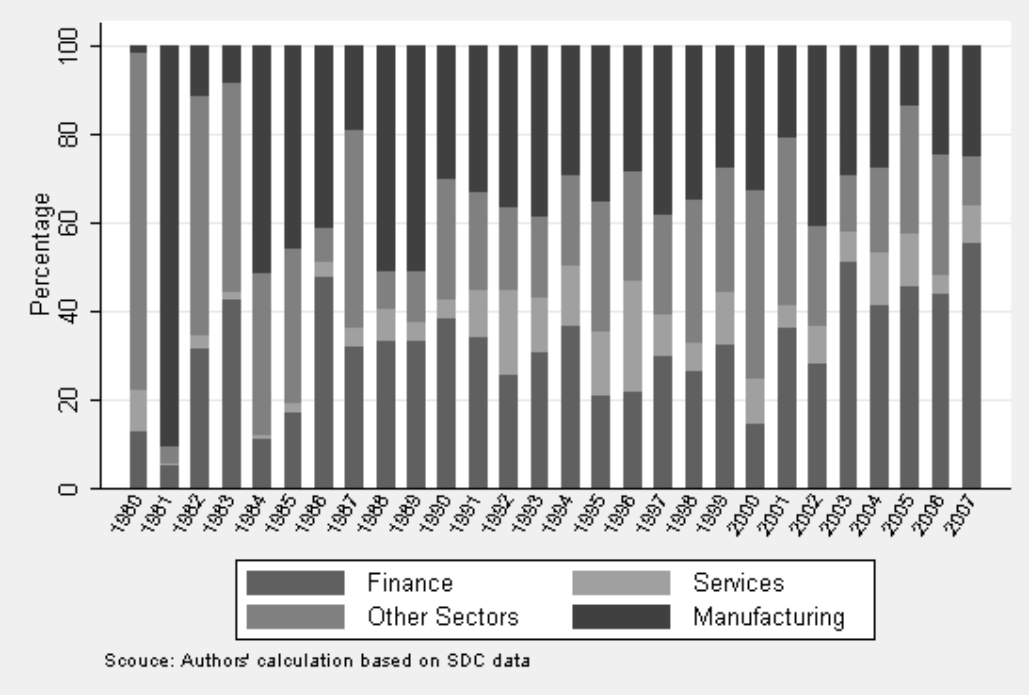


Figure 2.3-5. Shares of target industries

To provide further information on the linkage between acquiring and target industries, we return to the ten-industry groups. Table 2.3-3 presents the shares of industry i acquiring industry j. Some interesting patterns appear. First, as for inter-industry M&As, the finance and insurance industry (industry 6), being an acquiring industry, clearly dominates other industries in cross-border M&As, accounting for 37.6% of total transactions. This is consistent with the findings from the OECD report (2001). Second, intra-industry M&As (i.e., firms merge with or acquire other firms from the same industry) dominate inter-industry M&As (i.e., firms merge with or acquire firms from different industries). In particular, intra-industry M&As are most important in finance and insurance industry, which accounts for almost half of this industry's acquisition (17.9/37.6). Third, for the finance and insurance industry, in terms of inter-industry M&As, it is much more likely to acquire firms from the utilities and transportation industry (industry 4) than those from other industries. As a result, the utilities and transportation industry accounts for the largest share of targets (20.6%), and the finance and insurance industry is closely behind.

We further decompose the shares by two sub-periods: 1990-2000 and 2001-2007 in Tables 2.3-4 and 2.3-5, respectively. The cross-border M&As from the finance and insurance industry dominated other industries in both periods. More importantly, the wedge significantly widened in the second period: the share of finance and insurance as acquiring industries increased from 25.9% in 1990s to 46.4% in the 2000s. Moreover, the target industry has become less concentrated, and has shifted from the utilities and transportation industry (industry 4, as shown in Table 2.3-4) to mining and construction (industry 1), light and heavy manufacturing (industries 2 and 3), and finance and insurance (industry 6).

Table 2.3-3. Shares in total transactions (%, 1980-2007)

		Target Industry										
		0	1	2	3	4	5	6	7	8	9	total
Acquiring Industry	0	0.05	0.03	0.14	0.01	0.00	0.05	0.01	0.00	0.00	0.00	0.29
	1	0.00	9.30	0.66	0.32	0.90	0.06	0.26	0.04	0.02	0.00	11.55
	2	0.39	1.09	7.75	0.55	1.65	0.35	0.26	0.66	0.09	0.00	12.80
	3	0.01	0.96	0.55	12.24	0.27	0.29	0.31	1.48	0.18	0.01	16.31
	4	0.02	0.34	0.18	0.16	11.12	0.05	0.12	0.66	0.05	0.03	12.73
	5	0.03	0.29	0.28	0.21	0.08	1.47	0.14	0.14	0.02	0.00	2.68
	6	0.20	1.38	3.61	2.79	6.31	2.79	17.85	2.10	0.53	0.00	37.56
	7	0.00	0.02	0.53	0.31	0.24	0.14	0.31	3.25	0.11	0.00	4.92
	8	0.00	0.05	0.10	0.13	0.04	0.02	0.26	0.10	0.44	0.00	1.12
	9	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.05
	total	0.71	13.47	13.80	16.71	20.63	5.21	19.53	8.43	1.46	0.05	100.00

Source of data: Authors' calculation based on SDC data.

Note: 0-Agriculture 1-Mining&Construction 2-Light Manufacturing 3-Heavy Manufacturing 4-Utilities&Transportation 5-Wholesale&Retail 6-Finance&Insurance 7-Services 8-OtherServices 9-Public Administration

Table 2.3-4. Shares in total transactions (%, 1990-2000)

		Target Industry										
		0	1	2	3	4	5	6	7	8	9	total
Acquiring Industry	0	0.11	0.00	0.18	0.01	0.00	0.12	0.01	0.00	0.01	0.00	0.44
	1	0.00	6.40	0.97	0.25	0.10	0.09	0.21	0.04	0.01	0.00	8.07
	2	0.21	0.57	8.18	0.49	3.08	0.65	0.13	1.32	0.02	0.03	14.69
	3	0.01	0.41	0.61	12.98	0.38	0.31	0.38	2.35	0.35	0.04	17.84
	4	0.01	0.50	0.41	0.24	18.68	0.10	0.10	1.52	0.12	0.00	21.68
	5	0.03	0.27	0.34	0.20	0.09	1.42	0.18	0.09	0.04	0.00	2.67
	6	0.11	0.98	2.02	1.59	5.75	1.24	12.16	1.67	0.38	0.00	25.90
	7	0.00	0.03	1.15	0.46	0.27	0.09	0.36	5.01	0.10	0.00	7.47
	8	0.00	0.07	0.14	0.06	0.06	0.00	0.58	0.03	0.27	0.00	1.21
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02
	total	0.49	9.22	14.02	16.29	28.42	4.03	14.13	12.03	1.30	0.07	100.00

Source of data: Authors' calculation based on SDC data.

Note: 0-Agriculture 1-Mining&Construction 2-Light Manufacturing 3-Heavy Manufacturing 4-Utilities&Transportation 5-Wholesale&Retail 6-Finance&Insurance 7-Services 8-OtherServices 9-Public Administration

Table 2.3-5. Shares in total transactions (%, 2001-2007)

		Target Industry										
		0	1	2	3	4	5	6	7	8	9	total
Acquiring Industry	0	0.01	0.01	0.14	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.17
	1	0.01	11.49	0.30	0.19	0.52	0.04	0.20	0.02	0.03	0.00	12.81
	2	0.57	1.04	5.99	0.52	0.69	0.18	0.20	0.09	0.15	0.00	9.44
	3	0.01	1.17	0.25	11.68	0.23	0.25	0.31	1.01	0.10	0.00	15.01
	4	0.02	0.27	0.05	0.10	7.65	0.02	0.16	0.12	0.02	0.03	8.43
	5	0.02	0.34	0.22	0.21	0.08	1.60	0.13	0.15	0.01	0.00	2.78
	6	0.29	1.61	4.70	3.73	7.60	2.46	22.93	2.40	0.69	0.00	46.42
	7	0.00	0.02	0.19	0.23	0.20	0.20	0.32	2.38	0.14	0.00	3.68
	8	0.00	0.04	0.08	0.19	0.02	0.02	0.08	0.13	0.61	0.00	1.17
	9	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.07
	total	0.92	16.00	11.93	16.86	17.08	4.77	24.34	6.31	1.75	0.04	100.00

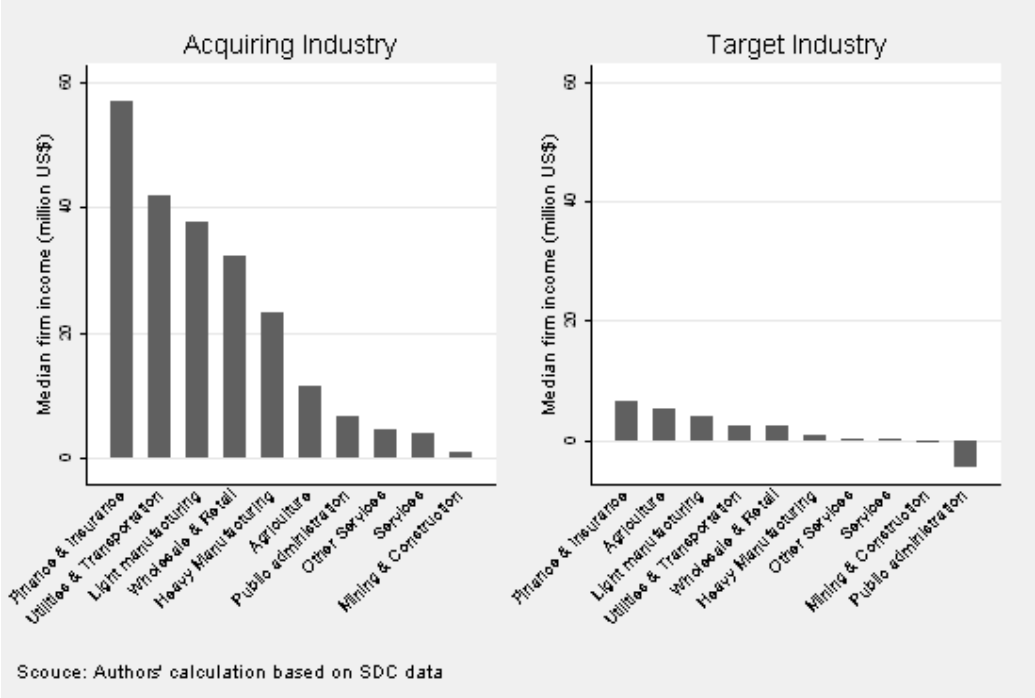
Source of data: Authors' calculation based on SDC data.

Note: 0-Agriculture 1-Mining&Construction 2-Light Manufacturing 3-Heavy Manufacturing 4-Utilities&Transportation 5-Wholesale&Retail 6-Finance&Insurance 7-Services 8-OtherServices 9-Public Administration

2.3.4. Firm Size Distribution by Industry

We now compare firm size across industries. Similar to the cross-economy firm size comparison (in subsection 2.2.3), acquiring firms are much larger than target firms. Moreover, there is a large variation of median firm size across industries. By industry, finance and insurance has the largest income as a target and as an acquirer, the largest asset as an acquirer, and largest sales as a target.

Figure 2.3-6. Median firm income (by industry)



Note: In public administration section, there are 53 observations in the target side and only one observation has the record of income, which is -4.36.

Figure 2.3-7. Median firm asset (by industry)

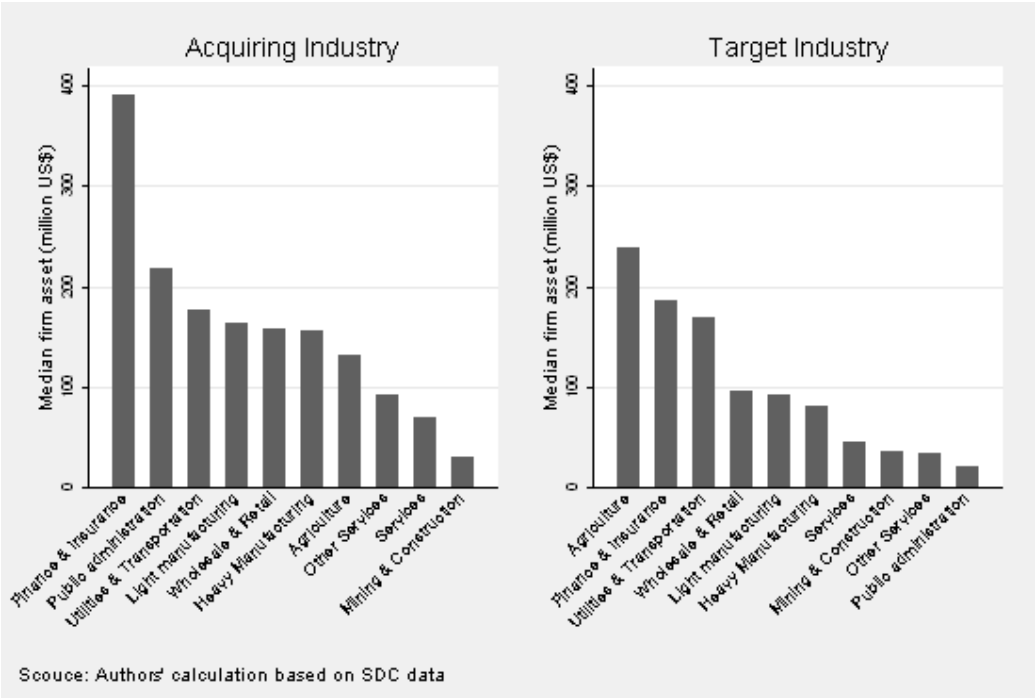
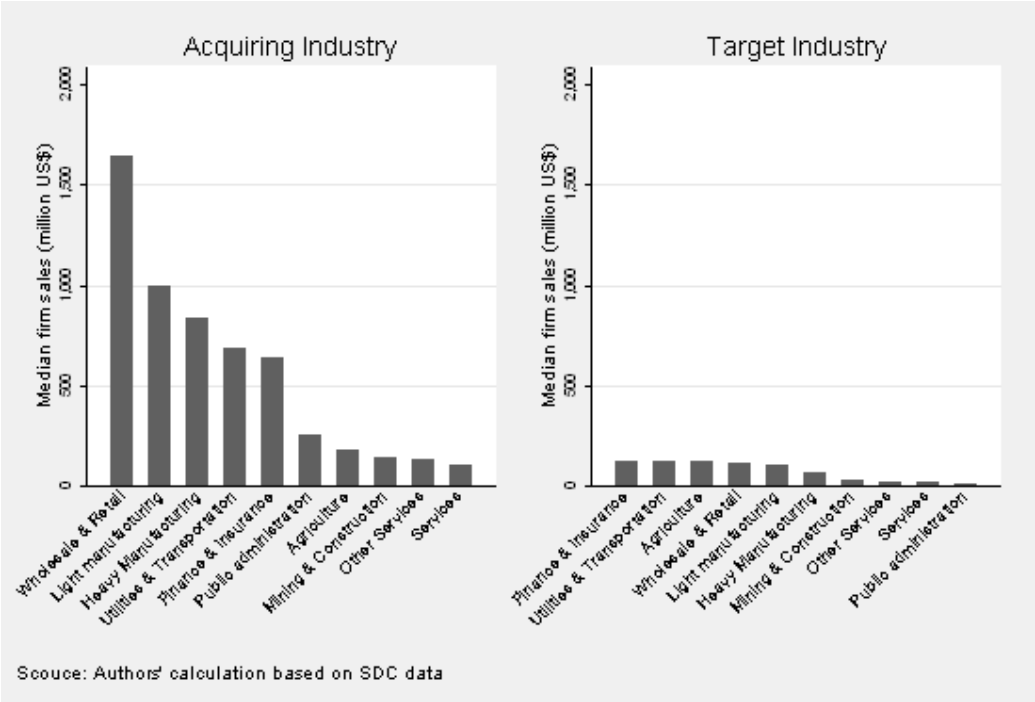


Figure 2.3-8. Median firm sales (by industry)



2.4. Characteristics of Acquirers and Targets

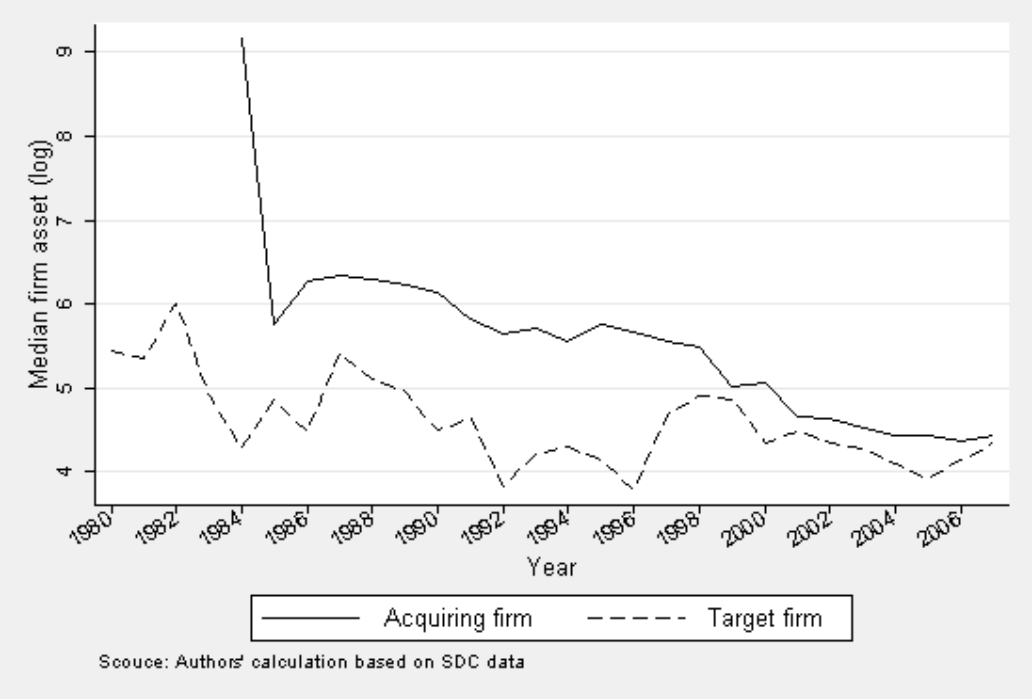
In this subsection we compare acquiring firms and target firms in terms of their size. The general observation is that both the target and acquirer's sizes have declined over time. This clearly indicates that the barriers to cross-border M&As in APEC have reduced. The barriers could be technical and information barriers, but they could also be policy barriers. Because of the reduction of barriers, smaller firms are able to participate in M&A activities. And this is a key source of efficiency improvement.

In terms of the logarithm of sales revenue, median acquiring firms are significantly bigger than median target firms (Figure 2.4-1). But the sizes of both acquiring and target firms have been declining since early 1990s, suggesting that M&As as a form of economic integration and a major source of capital flows have become more accessible to the APEC economies.

Alternatively, we can use asset value as a proxy for firm size and repeat the exercise above (Figure 2.4-2). Interestingly, the median asset values of acquiring firms have declined at a faster rate than those of the target firms. Before 1999, acquiring firms had significantly larger asset than target firms but this gap narrowed quickly after 1999.

Figure 2.4-1. Acquiring and target firms' sales revenue

Figure 2.4-2. Acquiring and target firms' asset (median)



2.5. Summary of Patterns

In this section, we have analyzed various patterns of intra-APEC cross-border M&As. Our sample covers all APEC economies and spans the whole period from 1980 to 2007. The main findings are as follows:

(1). (General trend of cross-border M&As in APEC): Cross-border M&As within APEC have expanded rapidly, but with large fluctuations. During the sample period (1980-2007), annual growth rates are 21.5% in value and 25.3% in number. The growth exhibits three waves or cycles: 1980-1990, 1990-2000, and 2000-2007. The time trend of cross-border M&As is closely related to domestic M&As of the APEC economies. However, cross-border M&As have increased more rapidly than domestic M&As over time.

(2). (Individual economies' cross-border M&As): Industrialized economies (especially the United States, Canada, and Australia) and emerging economies in the East Asia have been the key driving forces for cross-border M&As within APEC. The United States has transformed from a popular target economy to become both an active acquirer and target economy. Canada has been active in cross-border M&As throughout the sample period. The importance of China in cross-border M&As has increased rapidly, especially in the past decade. Hong Kong, China and Singapore have both gained in relative importance. The time trends of different APEC economies are generally highly correlated. The scale, income and asset of firms participating in cross-border M&As vary widely across APEC economies.

(3). (Sectoral cross-border M&As): On the acquiring side, the share of mining and construction and that of light manufacturing have declined since mid-1980. In contrast, the shares of utility and transportation and of finance and insurance have increased over time. On the target side, similar pattern is seen albeit to a lesser extent. In addition, most industries heavily target the same industries for cross-border M&As.

(4). (Individual firms' cross-border M&As): Over time, the scale of acquiring firms has decreased. This indicates that more and more firms participate in acquisitions and the barriers to acquisitions have been reduced gradually, perhaps due to policy changes or deeper market integration across the APEC economies. Acquiring firms are generally larger and more profitable than target firms. Consequently, advanced technologies and management skills are transferred from more efficient firms to less efficient firms, thereby improving overall industry productivity.

III. Empirical Analysis of Cross-Border M&As, Trade, Greenfield FDI, and GDP

In the previous section, we have described the patterns of cross-border M&As in APEC economies. We now turn to examining the determinants of intra-APEC cross-border M&As and the impacts of cross-border M&As on trade, greenfield FDI and GDP in this region.

Gravity model framework is deployed in this empirical analysis. Gravity models are commonly used in the trade and FDI literature. Despite its simplicity, gravity model fits data well. The strategy is to introduce new variables to the gravity models in order to see how these variables affect the dependent variables. We start with a focus on the determinants of cross-border M&As (in section 3.2). Then, we examine how cross-border M&As affect international trade (in section 3.3), greenfield FDI (in section 3.4), and GDP (in section 3.5). Following the literature, we will report the results based on the pooled cross-sectional OLS estimators. We also run the regressions by the fixed-effect panel data method to check the robustness of our estimates from the OLS. We use the standard F-test to test whether the OLS or fixed-effect models are preferred. When our diagnostic test cannot reject the OLS results, we report the OLS results because the fixed effects estimators will absorb the effect of all time-invariant variables into the unobserved country-specific intercept. However, if the OLS results fail the test, we would report the fixed-effect results.

3.1. Data and Summary Statistics

The M&A dataset is constructed based on Thomson Financial's SDC database. Data on real GDP, real GDP gap and exchange rates are obtained and calculated based on the Penn World Table (PWT 6.2, 2000 as base year). Data on relationship between two economies, e.g. the distance between two capital cities of two economies, and whether they have common official languages, are obtained from the French Research Center in International Economics (CEPII). Bilateral trade data are from the World Bank's website. Finally, bilateral FDI data are obtained from OECD Online Statistics Databases, and are thus confined to outward investments by the APEC members that belong to OECD.[7]

Since the M&A data are at firm level while other data are at economy level, we aggregate the bilateral cross-border M&A deals for each APEC member to economy level. All relevant data are on annual basis. Table 3-1 presents summary statistics of the key variables.

[7] The FDI outflow economies are Australia, Canada, Japan, Korea, Mexico, New Zealand and United States. The inflow economies are all APEC economies (but the amounts are zero for Brunei Darussalam in our sample years).

Table 3-1. Summary Statistics at Economy Level, on Annual Basis (1980– 2004)

Variables	Number of Observations	Mean	Standard Deviation
Value of M&A (Thousand US$) (log)	1048	10.615	2.369
M&A Stock Value (Thousand US$) (log)	1199	12.491	2.409
Number of M&A(log)	1302	1.143	1.117
M&A Stock Number (log)	1302	2.513	1.565
Import (Thousand US$) (log)	1302	15.108	2.068
Export (Thousand US$) (log)	1302	15.136	1.955
GDP (Thousand US$)(log)	499	19.191	1.699
Distance (Kilometers) (log)	410	8.744	0.884
GDP Growth (%)	413	0.427	0.244
GDP Gap_ij (Thousand US$) (log)	1302	0.245	0.535
Exchange Rate Depreciation (%)	1302	0.046	0.217
Greenfield FDI (Thousand US$) (log)	938	11.777	2.325
Population (Thousand people) (log)	431	10.411	1.515
Area (Square Kilometers) (log)	431	12.991	2.746

3.2. Cross-border M&As and Their Determinants

3.2.1. The Hypothesis: What Affect Cross-border M&As

Many factors could potentially affect cross-border M&A activities. The possible correlations between cross-border M&As and other economic factors such as trade flows, greenfield FDI flows and GDP are explored in this study with an aim to understand how these may drive cross-border M&As.

First, we investigate the impacts of exports on cross-border M&As. Suppose economy i exports to economy j. Will this trade pattern affect economy i's decision on acquiring assets/firms in economy j? The result is ambiguous – depending on the types of firms or the types of assets the acquisitions aim at. On the one hand, a firm from economy i may acquire another firm's assets in economy j, such as distribution network and after-sales services, to help its product exports to economy j. In other words, acquisition of foreign asset extends economy i's supply chain. This firm may also consider buying a competing firm in economy j to use it as a production base (to substitute for its exports) and enhance its market power. In both cases, more exports from economy i to economy j would lead to more acquisition on economy j's assets by economy i. On the other hand, exports from economy i

may also reduce the incentives of firms in the economy to acquire foreign asset for the sake of accessing the foreign market. This implies that exports may reduce cross-border M&As.

Second, we study the impacts of imports on cross-border M&As. When a firm imports intermediate goods or raw materials from another economy, it has the incentive to acquire the supplier to internalize demand and supply of those inputs. The most important motive is to secure the supply of those inputs. Under this circumstance, more imports induce more cross-border M&As. Moreover, a domestic competing firm may also have incentive to acquire a foreign firm that exports to the domestic market. The objective for this type of M&As is to enhance a firm's market power in the domestic market and/or to acquire foreign technologies. In either case, more imports lead to more cross-border M&As. In contrast, when economy i has already imported a lot of intermediate goods or raw materials that a firm in economy i needs for its production, it is not necessary for it to acquire the foreign suppliers because it is more efficient to buy from the market and the issue of securing supply is less prominent. In this case, more imports would result in less acquisition in the exporting economy. In short, the impacts of imports on cross-border M&As are not obvious.

Third, we examine the impacts of greenfield FDI on cross-border M&As. Cross-border M&A is also a kind of FDI. To emphasize its difference from other types of FDI, in this report greenfield FDI refers to total FDI excluding cross-border M&As. In general, a firm needs to make a fix investment to build a plant/factory in another economy when it undertakes greenfield FDI. In contrast, when a firm enters a foreign market via M&As, it may simply bring in technologies, management expertise and other tangible and intangible assets, without involving a large amount of capital to build the plant/factory. Greenfield FDI and cross-border M&As share a lot of similarities: both serve as a channel for firms to enter foreign markets and acquire foreign resources. In this regard, they are substitutes to each other. However, they can also be complements. After investing in a foreign country and building its production facilities (greenfield FDI), a firm may purchase foreign logistic firms to help distributing its products (cross-border M&As). In this regard, greenfield FDI has positive impacts on cross-border M&As. Given these opposite effects, the net impacts of greenfield FDI on cross-border M&As are not clear.

Finally, we explore the impacts of GDP on cross-border M&As. With higher GDP, domestic firms are richer and will consider expanding their businesses. Although reinvestment can help the firms to expand their production capacity and extend to other businesses, they can achieve these goals more easily and quickly through M&As, both domestic and cross-border. This suggests that when an economy has a larger GDP, it will acquire more foreign assets. On the other hand, foreign companies may also have stronger incentives to acquire this economy's assets because they have better value and a more sizeable market. That implies that when an economy has larger GDP, it also attracts more foreign acquisitions, i.e., it attracts more cross-border M&As as a target economy.

Therefore, we expect that GDP has a positive effect on an economy's cross-border M&As both as an acquiring economy and as a target economy.

The possible impacts of international trade, greenfield FDI, and GDP on cross-border M&As are our primary interest. In addition, we will discuss the impacts of other factors on cross-border M&As below after presenting the empirical findings.

Before we proceed to our models and regressions, it is important to point out that in the main model, we would not include greenfield FDI as an independent variable. The reason is because we only have bilateral FDI outflow data for those APEC economies that also belong to OCED. Hence, if we include greenfield FDI as part of the independent variables, it would reduce the sample size by about two-third because we would have to restrict the sample to acquiring economies that belong to both OECD and APEC. This will significantly reduce the generality of our empirical results and depart from our original objective which is to examine all intra-APEC cross-border M&As. However, we will also run a regression model with greenfield FDI as an independent variable using data from only those APEC economies that also belong to OECD. At the end of this section, we will report and discuss the impacts of greenfield FDI on cross-border M&A deriving from the subsample economies.

3.2.2. The M&A Model

A typical gravity model states that the flows of trade between two economies are negatively related to the distance between two economies, and positively and proportionally related to their economic size (proxied by GDP). Other variables could also be introduced as additional independent variables. The gravity model, originally used to examine trade flows, has also been used to study FDI flows. However, there are very few applications to cross-border M&A studies, with an exception of the recent paper by di Giovanni (2005). di Giovanni (2005) focuses primarily on the impacts of financial institutions on cross-border M&As,. While our M&A model shares some common independent variables as hers, we have different focuses. Our cross-border M&A model is given below.

$$\begin{aligned}
&\ln(MA_{ijt}) = \beta_0 + \beta_1 \ln(EX_{ijt-1}) + \beta_2 \ln(IM_{ijt-1}) + \beta_3 \ln(Stock_{ijt}) + \beta_4 \ln(GDP_{it}) \\
&+ \beta_5 \ln(GDP_{jt}) + \beta_6 \ln(GDPgrowth_{it}) + \beta_7 \ln(GDPgrowth_{jt}) + \beta_8 \ln(GDPgap_{ijt}) \\
&+ \beta_9 \ln(GDPgap_{jit}) + \beta_{10} \ln(ER_{it}) + \beta_{11} \ln(ER_{jt}) + \beta_{12} \ln(Dist_{ij}) + \beta_{13} Border_{ij} \\
&+ \beta_{14} Lang_{ij} + \sum_{1981}^{2004} \beta_{15,t} Y_t + \sum_{1}^{3} \beta_{16,k} Continent_i + \sum_{1}^{3} \beta_{17,k} Continent_j + \beta_{18} RTA_{ijt} + \beta_{19} WTO_{it} \\
&+ \beta_{20} WTO_{jt} + \xi_{ijt}.
\end{aligned}$$

Very broadly, i is the economy that the acquiring firm belongs to and j is the economy that the target firm belongs to in a given cross-border M&A deal. The dependent variable MA_{ijt} is measured by the

number of cross-border M&As with economy i as the acquiring side and economy j as the target side in year t. The idiosyncratic error term is given by ξ_{ijt}. The independent variables in the model include the following:

- EX_{ijt-1} and IM_{ijt-1} are the value of economy i's exports to and imports from economy j in year t-1, respectively;
- $Stock_{ijt}$ is the accumulated number of M&As with economy i as the acquirer and economy j as the target, calculated as the sum of MA_{ijt} from 1980 up to year t-1;
- GDP_{it} is economy i's GDP in year t and GDP_{jt} is economy j's GDP in year t;
- $GDPgrowth_{it}$ and $GDPgrowth_{jt}$ are the average GDP growth rates of the two economies from year t-5 to year t;
- $GDPgap_{ijt}$ and $GDPgap_{jit}$ are used to estimate the asymmetric effect of technology gap (or income gap) on cross-border M&As. If economy i is more advanced, i.e., it has a larger GDP per capita than economy j in year t, we use $GDPgap_{ijt}$ to measure the gap between the two economies' per capita GDP; and $GDPgap_{jit}$ takes the value of zero. On the contrary, If economy i is less advanced than economy j in year t, we let $GDPgap_{ijt}$ be zero and $GDPgap_{jit}$ be the gap between the two economies' per capita GDP;
- ER_{it} is economy i's currency depreciation rate (not equal to exchange rate?) against the US dollar from year t-1 to year t; ER_{jt} is economy j's depreciation rate;
- $Dist_{ij}$ is the distance between economies i and j;
- $Border_{ij}$ is a dummy variable which is equal to 1 if the two economies have a common border and zero otherwise;
- $Lang_{ij}$ is a dummy variable which equals 1 if the two economies have common official (or primary) language and zero otherwise;

- Y_t is the year dummy which is equal to 1 for year t and zero otherwise;
- $Continent_i$ ($Continent_j$) is a dummy variable indicating the acquiring (target) economy's continent;[8]
- RTA_{ijt} is a dummy variable equal to 1 if economy i and economy j have common regional trade agreement in year t;
- WTO_{it} is a dummy variable which is equal to 1 if economy i is a WTO (or GATT before 1995) member in year t and zero otherwise; WTO_{jt} is similarly defined.

Most of the above independent variables have been used in various studies of trade flows with gravity models. They can also potentially affect cross-border M&As. Other variables like *RTA* and *WTO* capture, to some extent, the effect of trade liberalization on cross-border M&As.

3.2.3 The Empirical Results [Subheading move to next page]

Based on the M&A model, we obtain some interesting empirical results using the OLS approach. These are summarized in Table 3-2. But we have not reported all estimators (for example, *Continent*) in the table. In order to resolve the reverse causality issue, we have introduced time lag for the exports and imports. The coefficient of exports is *positive* and statistically significant. This indicates that more exports from economy i to j would lead to more acquisition from economy i in economy j.[9] This suggests complementarities between exports and cross-border M&As. There are two possible channels underlied. A manufacturing firm, which produces goods and exports to a foreign market, may purchase a services firm in the importing economy to facilitate its exporting activity in that market. This would be a result of inter-industry M&As (a firm from manufacturing industry acquires a firm in the tertiary industry). Alternatively, the exporting firm can acquire another firm from the same industry but in the importing economy which has its own distribution (or other services) network. This would be a result of intra-industry M&As. The latter channel appears to be more common in our dataset as we have observed from subsection 2.3.3 where there have been more intra-industry M&As than inter-industry M&As.

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8 We categorize the APEC economies according to the following classification: Asia: Brunei Darussalam, P.R. China, Hong Kong, China, Indonesia, Japan, Republic of Korea, Malaysia, Philippines, Singapore, Chinese Taipei, Thailand, Vietnam; North America: Canada, Mexico, United States; South America: Chile, Peru; Russia, and; Australasia: Australia, New Zealand, Papua New Guinea.

9 As discussed earlier, there is no clear theoretical prediction on how trade affects cross-border M&As. di Giovanni (2005) uses exports, but not imports, as the independent variable. She found positive effect of exports on cross-border M&A flows, which is consistent with our finding despite that fact that she uses the same year's exports while we use the previous year's exports.

In contrast, the coefficient of imports is *negative* and significant. It means that if economy i imports more from economy j, firms from economy i would reduce their acquisitions on country j's firms. There seems to exist substitution between imports and cross-border M&As. This is perhaps due to the fact that when an economy imports a lot of materials and intermediate products, reflecting the market is fairly liberalized, security of supply is not an issue. Hence, they prefer buying from imports to acquiring the foreign suppliers, which could be very costly.

With regard to GDP, the empirical results show strong positive impacts. This suggests larger economy is more likely to be an acquirer and a target. This finding is consistent with our hypothesis stated in subsection 3.2.1.

Although the size of an economy measured by GDP has significant impacts on cross-border M&A activities, the GDP growth rates of either the acquiring or target economy do not have significant impacts. Using the comparison of GDP per capita to capture technology gap, there is clear evidence that if economy i has higher income per capita than economy j, increasing the gap would reduce economy i's acquiring of economy j's firms. However, the technology gap has no significant impact on foreign asset acquisitions if the acquiring economy has lower GDP per capita than the target economy.

There exists agglomeration or positive externality in cross-border M&As. Economies with a larger stock of cross-border M&As in the same target economy tend to acquire more assets in the same destination.

In terms of policy factors, the direct effects are not as expected. First, although the RTA effect is positive, it is not significant. However, we also run the regression using NAFTA only. We find that its effect on cross-border M&As is positive and significant. These results suggest that the effectiveness of each RTA between the APEC economies, with respect to promoting cross-border M&As, indeed may vary.

Second, we find that WTO membership either has insignificant (for the acquiring economy) or negative (for the target economy) influences on cross-border M&As for either the acquiring economies or target economies. This looks like a surprising result. But we note that there are only very few economies that were not WTO members during the studied period. In addition, it is not uncommon in the literature that the effects of WTO on trade and GDP are not as expected. In any case, even though RTA and WTO membership may not have significant impacts on cross-border M&As, they may well affect cross-border M&As through their influences on international trade and greenfield FDI.

Moreover, we find that exchange rates of the acquiring economy and the target economy do not have any significant effect on cross-border M&As.[10]

One might wonder whether the Asian financial crisis, which occurred in 1997, affects our estimation. The answer is no. We have run a regression with the above model but including the Asian financial crisis dummy (an interaction term between a Southeast Asian economy and the year dummy, 1997 (for the immediate effect), or 1998 (for the lasting effect) and found that the basic results reported in Table 3-2 do not change.

The model results for the other usual determinants in the gravity model are as expected. Distance has negative impact on cross-border M&As, as this increases information barriers that tend to hamper M&A deals. Common border and common official languages between the acquiring and the target economies increase cross-border M&As, as a result of lower information costs.

Since our data is in a panel framework, we also apply the fixed-effect approach to estimate the model. Compared with OLS, the fixed-effect method further includes dummy variables for each pair of economies i and j (with direction). Our diagnosis test supports the OLS approach.

Finally, about the impact of greenfield FDI on cross-border M&As. We have also run the regression with greenfield FDI on the right-hand-side of the model using the reduced sample. The estimated effects of greenfield FDI (both inwards and outwards) are highly insignificant (the coefficient is 0.037 with standard error 0.046, which is not significant), while the effects of other independent variables are similar under both models.

[10] However, the fixed-effect approach shows that the depreciation (or appreciation) of the acquiring economy's currency would significantly reduce (or increase) its M&As overseas. This is consistent with the view that depreciation (appreciation) reduces (increases) the firms purchasing power when they go to acquire foreign assets.

Table 3-2. Regression Results of the M&A Model

Independent Variables	OLS Results	Independent Variables	OLS Results
EX_{ijt-1}	0.076	ER_{it}	-0.039
	(0.031)**		(0.373)
IM_{ijt-1}	-0.063	ER_{jt}	-0.477
	(0.029)**		(0.369)
$Stock_{ijt}$	0.402	$Dist_{ij}$	-0.205
	(0.025)***		(0.037)***
GDP_{it}	0.175	$Border_{ij}$	0.360
	(0.026)***		(0.101)***
GDP_{jt}	0.100	$Lang_{ij}$	0.128
	(0.026)***		(0.054)**
$GDPgrowth_{it}$	0.107	RTA_{ijt}	0.021
	(0.119)		(0.080)
$GDPgrowth_{jt}$	0.128	WTO_{it}	-0.037
	(0.146)		(0.084)
$GDPgap_{ijt}$	-0.289	WTO_{jt}	-0.200
	(0.050)***		(0.102)**
$GDPgap_{jit}$	-0.018		
	(0.035)		
Observations	1172	R-squared	0.67

Note: 1) Robust standard errors in parentheses;

2) * significant at 10%; ** significant at 5%; *** significant at 1%;

3) Coefficients of year dummies, continent dummies and intercepts are not reported.

3.3. Imports and Exports: The Effects of Cross-border M&As

3.3.1 The Trade Model

In this section, we estimate the impacts of cross-border M&As on trade. Our model is given below.

$$\ln(EX_{ijt}) = \beta_0 + \beta_1 \ln(MA_{ijt-1}) + \beta_2 \ln(MA_{jit-1}) + \beta_3 \ln(EX_{ijt-1}) + \beta_4 \ln(GDP_{it})$$
$$+ \beta_5 \ln(GDP_{jt}) + \beta_6 \ln(GDPgrowth_{it}) + \beta_7 \ln(GDPgrowth_{jt}) + \beta_8 \ln(GDPgap_{ijt})$$
$$+ \beta_9 \ln(GDPgap_{jit}) + \beta_{10} \ln(ER_{it}) + \beta_{11} \ln(ER_{jt}) + \beta_{12} \ln(Dist_{ij}) + \beta_{13} Border_{ij}$$
$$+ \beta_{14} Lang_{ij} + \beta_{15} RTA_{ijt} + \sum_{1981}^{2004} \beta_{16,t} Y_t + \sum_{1}^{3} \beta_{17,k} Continent_i + \sum_{1}^{3} \beta_{18,k} Continent_j + \beta_{19} WTO_{it}$$
$$+ \beta_{20} WTO_{jt} + \xi_{ijt}.$$

All the variables in the above model have been defined and explained in section 3.2.2. In particular, the dependent variable EX_{ijt} is the value of exports from economy i to economy j in year t. With EX_{jit}, economy i's imports from economy j have also been captured in the above trade model. For the same reason given in the M&A model, we do not include greenfield FDI as an independent variable.

The key variable of interest to us is cross-border M&As and we would determine its possible effects on trade. Suppose a manufacturing firm in economy i has acquired some assets of a firm in economy j. If the assets acquired are for trade service (such as distribution), this will facilitate the acquiring firm's exports to economy j and we expect that exports from i to j will increase (i.e., cross-border M&As have a positive effect on exports). On the other hand, if the assets acquired are for production (such as a production plant), then after acquisition, the acquiring firm could use the target firm to serve the target economy. This will then possibly substitute for the imports from the acquiring economy. In this case, exports from the acquiring economy to the target economy will decrease. In overall terms, the impact of M&A on exports is ambiguous.

Alternatively, suppose a firm in economy j has been acquired by another firm from economy i. If the target firm is exporting, say intermediate inputs, to the acquiring economy i, then we expect to see exports from economy j to economy i increase after [the cross-border vertical integration by] M&A. In contrast, if both the acquirer and target firms produce the same products for the target economy, then the acquiring firm may have incentives to reduce exports to overseas target. In that case, cross-border [horizontal integration by M&As] will reduce the target firm's exports. Both types of M&As can be taken as intra-industry M&As either vertically or horizontally in the supply chain, and

this is consistent with the dominance of intra-industry M&A as observed in subsection 2.3.3. The impact of an increase in cross-border M&As on trade between economy i and economy j is not clear cut.

On the impact of WTO and RTA on trade, existing literatures do not have consistent conclusion. Rose (2004) finds little evidence that countries benefit from joining the GATT/WTO, but more recent studies (Subramanian and Wei, 2007; Tomz, Goldstein and Rivers, 2007; Liu, 2009) have shown some evidence that WTO membership does promote trade. Focusing on APEC economies, our result lends support to the positive effects of WTO membership and RTA formation.

3.3.2 The Empirical Results

Table 3-3 shows the regression results of the trade (or export) model based on OLS estimation. The coefficients of cross-border M&As are of key interest. To avoid endogeneity, we use time lag for M&A variables. The result shows that past cross-border M&As between two economies have significant positive effect on current trade, both exports and imports. More precisely, if firms from economy i acquire more firms in economy j in a given year (i.e. economy i as an acquirer) or vice versa (i.e. economy i as a target), it would increase economy i's exports to economy j in the following year. In other words, if there are more M&As between economies i and j (irrespective of which one is acquirer/target), there would be more trade between the two economies. The finding is supported by the supply chain linkage motivation of cross-border M&A and trade activities, discussed in subsection 3.3.1. If a firm from economy i has acquired an input supplier in economy j, by reducing the market transaction cost after the acquisition, the former will import more from economy j. If an exporting firm from economy i has acquired the services related assets of a firm in economy j for supporting its exports, the increased efficiency as a result of acquisition will facilitate the former's exports to economy j.

Some other estimates need further discussion. We find that common language does not have a significant effect on trade, but common national borders increases trade. Distance has negative effect, though insignificant, on trade flows. Trade between two economies is positively related to each economy's GDP size and GDP growth. The gap between the GDP per capita of the acquiring and target economies reduces trade.

Export trade is also larger if any one of the economies in the pair is a WTO member. However, RTAs have a negative and significant effect on trade between the RTA members. This last result is unexpected. Nevertheless, when we only have NAFTA in the RTA variable, we obtain the expected positive and significant effect.

We have also run a regression including the dummy of Asian financial crisis and found that after controlling this effect, the results are the same as those reported in the Table 3-3.

Although it is very common in the literature to use the OLS approach to estimate the gravity models on trade flows, we still need to check whether unobserved country-specific heterogeneity exists which rejects our OLS results. We do this by applying the fixed-effect approach to the same trade model and run the diagnosis test to see whether it supports the OLS results. The answer is positive and hence the OLS estimates cannot be rejected.

Table 3-3. Regression Results of the Trade Model

Independent Variables	OLS Results	Independent Variables	OLS Results
MA_{ijt-1}	0.263	ER_{it}	0.395
	(0.040)***		(0.879)
MA_{jit-1}	0.130	ER_{jt}	-0.867
	(0.038)***		(0.764)
GDP_{it}	0.439	$Dist_{ij}$	-0.068
	(0.039)***		(0.055)
GDP_{jt}	0.452	$Border_{ij}$	1.405
	(0.041)***		(0.205)***
$GDPgrowth_{it}$	0.669	$Lang_{ij}$	0.113
	(0.252)***		(0.086)
$GDPgrowth_{jt}$	0.109	RTA_{ijt}	-0.462
	(0.262)		(0.206)**
$GDPgap_{ijt}$	-0.347	WTO_{it}	0.462
	(0.096)***		(0.135)***
$GDPgap_{jit}$	-0.515	WTO_{jt}	0.550
	(0.095)***		(0.167)***
Observations	661	R-squared	0.82

Note: 1) Robust standard errors in parentheses;

2) * significant at 10%; ** significant at 5%; *** significant at 1%;

3) Coefficients of year dummies, continent dummies and intercepts are not reported.

3.4. Greenfield FDI: The Effects of Cross-border M&As

3.4.1 The FDI Model

Although the gravity model was first used to study international trade, it was later adopted to analyze FDI flows. In the current FDI gravity model, cross-border M&As is included as an additional explanatory variable along with other control variables. Moreover, FDI in this model is greenfield FDI as opposed to total FDI in the general application of the FDI gravity model. The specification of the model is as follows[11] (same problem of the following equation as those in the previous sections)

$$\ln(FDI_{ijt}) = \beta_0 + \beta_1 \ln(MA_{ijt-1}) + \beta_2 \ln(MA_{jit-1}) + \beta_3 \ln(GDP_{it})$$
$$+ \beta_4 \ln(GDP_{jt}) + \beta_5 \ln(GDPgrowth_{it}) + \beta_6 \ln(GDPgrowth_{jt}) + \beta_7 \ln(GDPgap_{ijt})$$
$$+ \beta_8 \ln(GDPgap_{jit}) + \beta_9 \ln(ER_{it}) + \beta_{10} \ln(ER_{jt}) + \beta_{11} \ln(Dist_{ij}) + \beta_{12} Border_{ij}$$
$$+ \beta_{13} Lang_{ij} + \sum_{1981}^{2004} \beta_{14,t} Y_t + \sum_{1}^{3} \beta_{15,k} Continent_i + \sum_{1}^{3} \beta_{16,k} Continent_j + \beta_{17} RTA_{it} + \beta_{17} WTO_{it}$$
$$+ \beta_{18} WTO_{jt} + \xi_{ijt}$$

3.4.2 The Empirical Results

Due to data limitation as explained earlier, we run the regression based on a smaller sample in which only those APEC economies that also belong to OECD are included. The regression results from the FDI model are shown in Table 3-4. Since the F-test rejects the OLS model in favor of the fixed-effect model, we only report the results from the latter approach.

Our empirical results find that if firms from economy i acquire more firms in economy j in a given year, economy i's greenfield FDI outflows to economy j will decrease in the following year. On the contrary, for the acquisitions of economy i's firms by economy j, its effect on greenfield FDI from i to j is insignificant. These two observations are consistent with the view that cross-border M&As and greenfield FDI are substitutes. In particular, a larger cross-border M&As (acquiring foreign assets) in the previous year may indicate that it is an effective investment mode in the target economy and so it would be used more this year, resulting in less greenfield FDI outflows to the target economy.

The effect of the source economy's GDP on greenfield FDI outflows is positive and significant. This indicates that an economy with larger economic size is also more likely to make more greenfield FDI. For a similar reason, the effect of the GDP growth in the source economy on greenfield FDI

[11] Note that we do not include trade on the right hand side of the model as another explanatory variable. We have tried to include it, but the coefficient is insignificant. This is not surprising as other explanatory variables, such as GDP and distance, have already captured the trade effect.

outflows is also positive and significant. In contrast, the size of the host economy and the growth of the host economy both show negative (although insignificant) effect on attracting greenfield FDI. For economies with different development levels, the GDP gap has insignificant effects on greenfield FDI flows between the two economies.

While many other variables show insignificant impacts on greenfield FDI, the host economy's exchange rate impact is negative and significant, meaning when the exchange rate of the host economy j depreciates, its greenfield FDI inflow will decrease and vice versa. This implies that multinationals do not focus just on the current cost (purchase price) of investment but also on the future returns (profit potential) of the investment. Thus, currency depreciation in the host economy, which implies cheaper to invest from acquirer firms' point of view, does not necessarily attract more foreign direct investment (greenfield). On the other hand, when economy i's currency depreciates, it takes more greenfield FDI in other economies and vice versa although the impact is not significant.

The same results reported in Table 3-4 can also be obtained if we control for Asian financial crisis.

Table 3-4. Regression Results of the FDI Model

Independent Variables	Fixed-Effect Results	Independent Variables	Fixed-Effect Results
MA_{ijt-1}	-0.321	$GDPgap_{ijt}$	-3.277
	(0.125)**		(2.285)
MA_{jit-1}	-0.058	$GDPgap_{jit}$	3.037
	(0.151)		(3.324)
GDP_{it}	7.802	ER_{it}	0.280
	(2.854)***		(1.519)
GDP_{jt}	-2.174	ER_{jt}	-3.005
	(2.182)		(1.488)**
$GDPgrowth_{it}$	2.455	RTA_{ijt}	-0.363
	(1.354)*		(0.477)
$GDPgrowth_{jt}$	-0.752	WTO_{it}	0.491
	(0.697)		(0.449)
Observations	203	R-squared	0.45

Note: 1) Robust standard errors in parentheses;

2) * significant at 10%; ** significant at 5%; *** significant at 1%;

3) Coefficients of year dummies, continent dummies and intercepts are not reported.

3.5. GDP: The Effects of Cross-border M&As

3.5.1. The GDP Model

In this section, we are interested in how cross-border M&As along with the other economic activities such as international trade affect an economy's GDP. While GDP affects trade, the latter in turn influences GDP performance. To resolve endogeneity, we follow Frankel and Romer (1999) in estimating the GDP model. This is an augmented model of Frankel and Romer (1999) in that cross-border M&As is included as an additional independent variable. Specifically, the GDP model is

$$\ln(GDP_{it}) = \beta_0 + \beta_1 \ln(MA_{it}) + \beta_2 \ln(Trade_{it}) + \beta_3 \ln(Pop_{it}) + \beta_4 \ln(Area_{it}) + \xi_{ijt},$$

where

- The dependent variable GDP_{it} is the GDP of economy i in year t;
- $Trade_{it}$ is the predicted total trade by economy i with all other APEC economies in the economy's GDP, in year t;
- MA_{it} is the predicted cross-border M&As values (both as an acquirer and as a target) of economy i in the economy's GDP, in year t;
- Pop_{it} is the population of economy i in year t;
- $Area_{it}$ is the area of economy i in year t.

As using the *actual* trade and M&A values simultaneously as explanatory variables in the GDP model will cause endogeneity bias, Frankel and Romer (1999) proposed to use the *predicted* trade, which is estimated based on some exogenous factors including distance, area, landlock, and common border. In order to construct the predicted $Trade_{it}$, we first estimate the following model:

$$\begin{aligned}\ln(\tau_{ijt}) &= \beta_0 + \beta_1 \ln(Dist_{ij}) + \beta_2 \ln(Pop_{it}) + \beta_3 \ln(Area_i) \\ &+ \beta_4 \ln(Pop_{jt}) + \beta_5 \ln(Area_j) + \beta_6 (L_i + L_j) + \beta_7 B_{ij} \\ &+ \beta_8 B_{ij} \ln(Dist_{ij}) + \beta_9 B_{ij} \ln(Pop_{it}) + \beta_{10} B_{ij} \ln(Area_i) + \beta_{11} B_{ij} \ln(Pop_{jt}) + \beta_{12} B_{ij} \ln(Area_j) \\ &+ \beta_{13} B_{ij} (L_i + L_j) + \xi_{ij},\end{aligned}$$

Where τ_{ijt} is total trade between economies i and j at time t, L is the dummy variable indicating whether the economy is landlocked or not, and B is a dummy variable for a common border between economies i and j. The difference between our model and that of Frankel and Romer (1999) is that we use the trade level rather than trade share as the dependent variable (the former is more consistent with the gravity trade models).

The predicted trade value between economy i and each of the other APEC economies in year t is used. The predicted trade of economy i in year t is then calculated as the sum of its trade with each of the other economy i, e.g., $\hat{T}rade_{it} = \sum_{j \neq i} e^{\hat{a}' X_{ijt}}$. Here $\hat{a}' X_{ijt}$ is the expression of the right-hand-side of the above model for constructed trade. The exponential function is used to convert the logarithm of trade to its level.

Following the same approach, we construct the predicted MA_{it} for economy i in year t. In particular, we first estimate the following model:

$$\ln(MA_{ijt}) = \theta_0 + \theta_1 \ln(Dist_{ij}) + \theta_2 \ln(Pop_{it}) + \theta_3 \ln(Area_i)$$
$$+ \theta_4 \ln(Pop_{jt}) + \theta_5 \ln(Area_j) + \theta_6 (L_i + L_j) + \theta_7 B_{ij}$$
$$+ \theta_8 B_{ij} \ln(Dist_{ij}) + \theta_9 B_{ij} \ln(Pop_{it}) + \theta_{10} B_{ij} \ln(Area_i) + \theta_{11} B_{ij} \ln(Pop_{jt}) + \theta_{12} B_{ij} \ln(Area_j)$$
$$+ \theta_{13} B_{ij} (L_i + L_j) + \xi_{ij},$$

The predicted M&A value between economy i and each of the other APEC economies in year t is used. The predicted M&A value of economy i in year t is then calculated as the sum of its M&As with each of the other economy i, e.g., $\hat{M}A_{it} = \sum_{j \neq i} e^{\hat{\theta}' X_{ijt}}$, where $\hat{\theta}' X_{ijt}$ is the expression of the right-hand-side of the above model for constructed M&A value.

Greenfield FDI is however not included in the model. As discussed before, including greenfield FDI will significantly reduce the sample size due to data limitation.

3.5.2. The Empirical Results

We report in Table 3-4 the regression results of the GDP model. Since the diagnostic test in the GDP model does not give conclusive answer, that is, we cannot definitely say that the OLS approach should be rejected or accepted, we report results from both approaches. The main difference from these two regression approaches lies in the effect of predicted trade on GDP. The trade value has positive impact on GDP after controlling for country-specific fixed effects. This is consistent with the findings in Frankel and Romer (1999). The contribution of our regression is that we find M&As also positively associate with GDP. The effect is statistically significant in both the OLS and the fixed-effect model.

Table 3-5. Regression Results of the GDP Model

Methods	OLS Results	Fixed-effect Results
Predicted Trade	−0. 031	1. 264
	(0. 028)	(0. 103)***
Predicted M&A	0. 399	0. 083
	(0. 019)***	(0. 013)***
Population	−0. 231	−0. 118
	(0. 028)***	(0. 213)
Area	−0. 063	
	(0. 012)***	
Observations	278	278
Number of Group		18
R-squared	0.76	0.84

Note: 1) Robust standard errors in parentheses.

2) * significant at 10%; ** significant at 5%; *** significant at 1%.

3) Brunei Darussalam is not included due to missing trade values.

3.6. Summary of Empirical Findings

We have run four separated regressions to estimate the relationship between cross-border M&As, trade, FDI, and GDP.[12] The basic framework is the gravidity model. Most of the effects obtained are consistent with the literatures. However, cross-border M&As is the new variable and we summarise its relationship with other economic variables, namely, trade, greenfield FDI and GDP below. In this summary, we report the key regression results.

(1). (Cross-border M&As and trade): If an economy exports more to another economy, the former will also acquire more assets in the latter. However, if an economy imports more from another economy, the former will acquire fewer assets in the latter. On the other hand, if an economy acquires more assets in another economy, the former will trade more (both import and export) with the latter.

By making reference to the observed industry behaviour in cross-border M&As (see 2.3.3 and Tables 2.3-3 to 2.3-5), there is an apparent tendency of intra-industry M&As in APEC (with firms tending to acquire or merge with firms from the same industry across-border). Such intra-industry cross-border

12 We have also jointly run the four regressions to see if their error terms are correlated. We found that they are actually not correlated and therefore the results obtained from the four separate regressions can be relied on.

M&As may take the form of vertical integration through the extension of supply chain either upstream or downstream to create internal efficiency in the production process on a regional basis. This could help, in particular multinationals, to secure more stable and guaranteed source of intermediate inputs, better sharing of resource cost in product research, design and development, and assured protection of innovation and hence more willing transfer of technology within the conglomerates transcending border constraint. Another form of intra-industry cross-border M&As is the horizontal integration of supply across-border to create economies of scale in production, and to enhance market power, competitiveness and ultimately market share.

While intra-industry cross-border M&As is more common in APEC, there are spillovers to other related sectors in inter-industry M&As. For instance, manufacturers may tend to acquire assets in utilities and transportation, wholesale and retail, and services other than finance and insurance to obtain better support services in transport and logistics, sales, distribution and marketing services to achieve overall cost effectiveness and promote sales in the host/home/adjacent markets.

(2). (Cross-border M&As and greenfield FDI): On the one hand, greenfield FDI has no significant impacts on cross-border M&As. On the other hand, if there are more M&As between two economies, the acquiring economy's greenfield FDI outflows to the target economy would decrease.

(3). (Cross-border M&As and GDP): Cross-border M&A activities and the size of GDP are related. Larger economies in terms of GDP level tend to acquire more foreign assets. The reason may be that they are more capable to purchase foreign assets because they have more purchasing power. On the other hand, larger economies also attract more foreign acquisitions as they represent better market potential.

More importantly, cross-border M&As result in more GDP. We find that after acquiring more foreign assets, an economy's GDP will also increase. This finding is encouraging: capital outflows as a result of foreign asset acquisitions do not necessarily reduce domestic economic activities; in contrast, they increase the economies' GDP perhaps through raising the economies' exports, transferring technologies back to the economies, and integrating regional economies.

The above individual results characterize the various patterns of intra-APEC cross-border M&As and their relationship with other economic variables. However, a key question is whether or not cross-border M&As should be encouraged. The answer is basically yes. This is because intra-APEC cross-border M&As help to raise the GDP levels of the APEC economies. Intra-APEC cross-border M&As raise GDP directly and indirectly. On the one hand, based on our GDP model (subsection 3.5), we find that an economy's cross-border M&A activities have positive and significant effects on the economy's GDP. This is the direct effect. Cross-border M&As are an effective way to

transfer technologies and managerial expertise between economies. They are also a type of international capital flows. Moreover, they are likely to create synergies (such as reducing costs, becoming more efficient by integrating complementary tasks, etc). All these benefits from cross-border M&As help increase GDP of the economies that are involved in these activities.

On the other hand, based on our trade model and GDP model, we find that intra-APEC cross-border M&As raise GDP indirectly. Cross-border M&As promote international trade, which in turn promotes GDP. The trade-promoting effect of cross-border M&A activities can be easily understood: when a firm acquires trade-related services assets abroad, this would make the firm's exports easier and less costly; such acquisitions also help the firm to source inputs and even final goods from the foreign markets and bring them to the home economy, resulting in larger imports. As it is commonly known from the literature, international trade is conducive to GDP.

Hence, we identify another important factor, namely cross-border M&As, which promotes GDP. In fact, this "new" factor affects GDP through a different channel as compared to other factors such as international trade and greenfield investment. The classical theory of trade emphasizes that trade can result in higher GDP by taking advantage of each economy's comparative advantage. The new trade theory points out that freer trade could also generate agglomerates, thus increasing economic productivity due to increasing-return to scale. International trade also results in more varieties of goods for consumers. Furthermore, trade could increase the level of competition and thus increase economic productivity. Trade could also increase the exposure of the trading economy to a larger set of ideas or technologies, thus increasing the rate of technical progress. The trade of intermediate goods could be an alternative way to increase the aggregate productivity of domestic economy. The ways that greenfield FDI affect GDP are different nevertheless. Foreign investments could enhance productivity in the form of technology and business-know-how direct transfers and spillovers (Romer 1993). FDI could directly reduce the cost of accessing foreign markets, thus improving trade and growth indirectly.

The channel through which cross-border M&As promote productivity and GDP is similar to that of greenfield FDI. However, there are at least two important differences. First, cross-border M&As could be more cost effective as firms do not need to make a large fixed investment to setup the plants when entering the foreign markets. Second, cross-border M&As help to transfer intangible assets (such as managerial skills, cooperate culture, etc) to the local firms more easily and effectively. Therefore, although some existing empirical studies in the literature do not find greenfield FDI having GDP promotion effect, we do find that intra-APEC cross-border M&As promote GDP in this region.

IV. Policy Implications

Globalization has been an ongoing force driving the world economy. However, government policies remain deterministic in the pace and effects of globalization. It is well-recognized that the globalization process has shown great impacts on all countries, albeit with different degrees. It is also well noticed that the impact of globalization may be differently felt by different economies and sectors. In this report, we focus on the economic aspects of globalization, which is mostly characterized by the flows of goods and capital, that is, international trade and investment including greenfield FDI and M&As. In this section, we will give a partial review of literature on the impacts of trade and FDI and their policy implications. We will also discuss the policy implications derived directly based on our empirical findings on the relationship between trade, greenfield FDI, cross-border M&As and GDP, as shown in the preceding section. It is worth emphasizing that our empirical studies may shed some lights on policy design, but it involves no subjective judgment. A more robust policy discussions should be carried out based on welfare analysis

Cross-border M&As have become one of the most significant phenomena arising from globalization. UNCTAD (2000) reports that during the 1990s, most of the growth in international production has been via cross-border M&As (including the acquisitions by foreign investors of privatized state-owned enterprises) rather than greenfield investment. In this study we have also seen the importance of cross-border M&As within the APEC economies (in Section 2) and we have empirically estimate the determinants of cross-border M&As in this region and the impacts of cross-border M&As on trade, greenfield FDI and GDP.

Our empirical exercise has the following main policy implications. First, intra-APEC cross-border M&As are conducive to GDP and trade flows. These empirical results suggest the benefits of removing barriers to cross-border M&As from an economic development perspective. Second, trade liberalization not only promotes trade flows, but also induces more cross-border M&As. Deeper trade liberalization is hence beneficial. Third, while we are arguing for further regional integration, we should pay more attention to removing barriers to cross-border M&As. This recommendation is supported by our finding that the existing regional trade agreements (RTA), with an exception of the North American Free Trade Agreement (NAFTA), are not effective in promoting cross-border M&As directly as they are not originally motivated to increase cross-border M&As. Moreover, we do not find evidence that an economy's WTO membership helps promote the economy's cross-border M&As directly. These two findings imply that the existing regional integration in APEC has not given sufficient support to cross-border M&As.

4.1. Cross-Border M&As and Their Impacts on Trade and GDP

Table 3-3 shows that cross-border M&As have positive and significant effects on the import/export trades. Table 3-4 shows that cross-border M&As also have positive and significant effects on GDP. Although we did not directly measure the welfare effect of having more cross-border M&As, the message from Table 3-3 and Table 3-4 is clear: cross-border M&As promote trade flows and GDP, and is thus welfare improving. While there may be worries about possible anti-competitive impacts of cross-border M&As, the fact that cross-border M&As result in larger trade flows and higher GDP has a strong implication that they facilitate market transactions in overall terms, rather than hindering competition.

As FDI can take the form of either greenfield FDI or cross-border M&As, let us relate our empirical studies on the impacts of cross-border M&As to the literature on the impacts of FDI in general. It is commonly thought that the benefits of FDI are multi-dimensional, as it is widely regarded as an amalgamation of capital, technology, marketing, and management. While the empirical evidence is not definite, our study on the APEC economies from 1980 to 2007 finds a strong and positive relations between cross-border M&As and GDP. Besides the GDP promotion effect, cross-border M&As also have a significantly positive relations with trade flows[13].

[Policy Implication 1] Intra-APEC cross-border M&As increase GDP levels and trade flows. Hence, policies should introduce incentives directed at removing barriers to cross-border M&As.

Given the particular nature of cross-border M&As, we would like to make the following observations. First, we have found intra-industry cross-border M&As more prevalent in APEC than inter-industry M&As. There are both vertical and horizontal M&As associated with intra-industry cross-border M&As. Some acquirers are probably more concerned about the supply chain efficiency and are motivated to acquire foreign assets to extend the corporate supply chain on a regional basis, taking advantage of the different comparative advantages in the target economies for the various components in the supply chain. While this helps the acquirer to secure stable external supply of key inputs and intermediate goods, it also helps improve productive efficiency through the sharing of comparative advantages among the acquiring and target economies. Other acquirers probably aim more at horizontal integration of production processes across border to achieve larger economies of scale to elevate market competitiveness and hence market share in the region.

[13] This effect is much more significant for the sample of China plus the APEC economies that are also belong to OECD. To save space, we do not include the table in the previous section.

Both types of intra-industry cross-border M&As contribute positively to trade and GDP. Both will drive economic integration at the regional level, although there may be concern about the need to balance market concentration with market competition.

Second, services sector liberalization for cross-border M&As is important. As our industry behavioral data indicates, although there are spillovers to related sectors, inter-industry cross-border M&As are less significant than intra-industry cross-border M&As. Moreover, barriers to FDI in general and cross-border M&As in particular in the services sector are usually higher than those in the manufacturing sector. Removing those barriers should help improve productive efficiency at both the firm and economy levels as proxied by the impact of cross-border M&As on GDP.

From our study, it is noted that firms in the manufacturing sectors have more incentive to acquire foreign assets in utilities and transportation, wholesale and retail, as well as services other than finance and insurance. Manufacturing activities could be better served in cross-border transport and logistics, and distribution and marketing to bring about closer cross-border linkages in the production and distribution of products. This indirectly should help expand regional economies in inter-industry transactions. This lends support to argument for liberalization of cross-border M&As in services sector.

Third, human capital movement is a crucial factor for successful cross-border M&As. In the case of M&As. It is an important channel for the transfer of technology, management skills and corporate culture to the target firms. More efforts are needed (as compared to greenfield FDI) to integrate various assets from different economies. Human resource plays an important role in the process. Barriers to mobility across economies should be removed.

There are examples of the efforts made by various economies to encourage cross-border M&As. According to UNCTAD (1998), in the recent decades, dozens of economies (both the developing and the developed) have removed many of their restrictions on FDI inflows (greenfield and M&As). For example, during 1997, 151 changes in FDI regulatory regimes were made by 76 countries, 89 per cent of them in the direction of creating a more favorable environment for FDI. Policies such as lower income taxes or income tax holidays, import duty exemptions, and subsidies for infrastructure, are common around the world now.

As for other barriers which should be lowered or completely removed in order to promote cross-border M&As, we can make a reference to the survey by IPM (2005) which provides a comprehensive list and illustration of those barriers classified according to legal barriers, tax barriers and economic barriers (see Appendix 3). Although the survey was done for European Union in the

banking area, it provides a useful guideline to understand various barriers in other regions and other sectors.

4.2. Trade Liberalization and Its Impacts on Cross-Border M&As

Trade policies may be the most common economic instruments around the world. As shown by our empirical study, cross-border M&As are affected by trade flows and hence, trade policies can affect cross-border M&As indirectly, through their influences on trade flows. While it is generally believed that trade liberalization promotes trade flows, it is clear from our study that trade liberalization also has positive and indirect impacts on cross-border M&As.

[**Policy Implication 2**] Trade liberalization is important in helping to promote cross-border M&As.

Although barriers to trade have been lowered through continuous efforts jointly by all economies, various kinds of trade barriers still have significant impacts on trade flows, albeit to various extents in different economies. While the traditional trade barriers such as tariffs and quotas have already been reduced to relatively low level, especially in developed economies, other forms of barriers such as anti-dumping and technical barriers are on the rising trend. Since this issue has been extensively and intensively discussed by many people on many occasions, we will not repeat it, but will like to stress one point, which is, removing barriers to trade not only promotes trade flows but also cross-border M&As.

4.3. Regional Economic Integration and Breakdown of Cross-border Barriers

In the previous subsection, we have argued the importance of trade liberalization for cross-border M&As. The argument is based on our finding that economies with larger exports will tend to have more cross-border M&As, and so trade liberalization indirectly facilitates cross-border M&As. In fact, in Section 3, we have also tried to understand how formal institutional set up affects cross-border M&As directly. The two forms considered are (i) formation of RTAs, and (ii) accession to the WTO. These institutional changes/agreements are motivated mainly by liberalization of trade in goods and services, and investment facilitation. By their very nature, they represent changes in trade regimes and investment policies. There are more than 200 types of RTAs in the world. Our study has tried to cover as many RTAs formed by APEC economies as possible, such as NAFTA, ASEAN, and SPARTECA. According to the WTO website, till July 2008, there are 153 members and observers of the WTO. Some of the APEC economies joined the WTO at various stages over the period covered by our study. These variations allow us to examine how memberships of the RTAs and WTO, affect cross-border M&As, directly.

Let us first look at the implications of the RTAs. On the one hand, RTA membership may directly affect cross-border M&As. Based on our M&A model and the results reported in Table 3-2, we find that after controlling for other variables, RTAs show positive but insignificant (direct) effect on cross-border M&As. However, for some RTAs, such as NAFTA, the impact is not only positive, but also significant. This implies that RTAs could potentially promote cross-border M&As directly.

Let us now turn to examine the impacts of WTO membership. Based on the M&A model and the results reported in Table 3-2, we do not find the positive direct impact of WTO membership on cross-border M&As. However, based on the trade model and the results reported in Table 3-3, we observe that WTO members trade more than non-members after controlling for other variables. Therefore, we can claim that WTO membership has indirect impacts on cross-border M&As through its impacts on trade flows. It is note that more exports result in more foreign asset acquisitions (as shown by Table 3-2). Hence the indirect effects are clearer.

[**Policy Implication 3**] Formal institutional setup in the APEC economies such as RTA and WTO accession does not seem to promote cross-border M&A directly. Perhaps more cross-border M&A policy elements should be included in the regional integration agreements.

It is well understood that RTA is mainly driven by free trade in commodities. Although many RTAs also include agreements on removing barriers to capital flows and even human resources flows, it is to some degree less successful. Our finding that RTAs in APEC (NAFTA is an exception) do not promote cross-border M&As directly tends to suggest that the current RTAs can be strengthened in regard of removing barriers to cross-border M&As. Even between economies in the same RTA, many forms of cross-border barriers still exist; it is imaginable that they could be more serious between economies not having a common RTA.

The case in WTO accession is similar. An economy needs to change its regulatory framework to comply with the WTO requirements. However, the requirements emphasize more on facilitating trade flows than on capital flows. It is indeed more difficult to monitor compliance of an economy's promise on liberalization of investment than that on liberalization of trade. In our study, we do not observe that an economy's WTO entry has direct positive impacts on its cross-border M&A activities. Thus, it is perhaps fair to say that the need to bring down the barriers to cross-border M&As have not attracted sufficient attention from members of this organization. Hence, breakdown various cross-border barriers (including those to cross-border M&As) should be on the high priority of the agenda on regional and global integration.

V. Concluding Remarks

Cross-border M&As are getting more and more important within APEC and between APEC and other regions in the world. However, rigorous studies on the motivations for and determinants of cross-border M&As are scant. Our study, with the focus on intra-APEC cross-border M&As, helps to shed light on understanding cross-border M&As and their relationship with other economic activities. It is a necessary step towards designing the right policies (such as competition policies, regulatory frameworks, and incentive packages) on both domestic and cross-border M&As.

Our study focuses on intra-APEC cross-border M&As from 1980 to 2007 and analyzes (i) the patterns of cross-border M&As within APEC; (ii) the determinants of cross-border M&As; (iii) the impacts of cross-border M&As on international trade, greenfield FDI, and economic growth; and (iv) the possible policy implications.

As one of the very first to take an econometric analysis on intra-APEC cross-border M&As and their economic impacts, our study has the longest time coverage of cross-border M&As, uncovers more details of cross-border M&As in APEC, and examines more issues related to cross-border M&As. It first characterizes the main features of intra-APEC cross-border M&As, including (i) the general trend of cross-border M&As in APEC, (ii) the individual economies' cross-border M&As, (iii) sectoral cross-border M&As, (iv) individual firms' cross-border M&As.

The study then empirically investigates the determinations of intra-APEC cross-border M&As and the relationship between (i) cross-border M&As and trade, (ii) cross-border M&As and greenfield FDI, (iii) cross-border M&As and GDP in the APEC region. Based on these findings, we obtain some policy implications.

There are many directions to extend this study in order to enhance our understanding on cross-border M&As and their implications on other economic activities. First, we could develop some theoretical models with cross-border M&As so that we can see clearly the linkage between cross-border M&As and other economic variables. Those findings would form hypotheses for further empirical analysis.

Second, we need to collect more bilateral FDI data so that we could do an even more complete empirical investigation on the relationship between greenfield FDI and cross-border M&As.

Third, we could apply our analysis to explore the other regions' (e.g., OECD) and even global cross-border M&As. By doing this, we would be able to know how our findings based on intra-APEC cross-border M&As differ from others.

Fourth, welfare measurement is important for economic activities and policies. We could make use of the CGE (computable general equilibrium) model to see the linkage of cross-border M&As and all other economic activities and the welfare changes from policy changes which affect cross-border M&As directly and indirectly.

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Appendix 1: Transaction numbers of intra-APEC cross-border M&As by economies (1980-2007)

		target economy																				
		Australia	Brunei	Canada	Chile	China	Hong Kong, China	Indonesia	Japan	Malaysia	Mexico	New Zealand	Papua N Guinea	Peru	Philippines	Russia	Singapore	Republic of Korea	Chinese Taipei	Thailand	U.S.	Vietnam
acquiring economy	Australia		1	162	29	108	121	81	16	64	13	745	50	14	53	15	112	10	19	36	780	11
	Brunei	2				1	3	1	2	3					1		1			2	2	
	Canada	309			143	179	77	58	16	13	309	54	37	140	37	66	17	22	14	11	5463	7
	chile			3					1		9			26							10	
	China	81		36	1		477	11	23	14	1	8	1	3	7	8	71	11	11	14	109	5
	Hong Kong, China	201		68	5	1999		62	102	124	8	33	1	2	72	3	256	62	100	96	325	16
	Indonesia	23		4		8	17		4	25					5		48			5	13	1
	Japan	182	2	77	8	237	180	107		88	15	25	2	2	76	13	93	129	90	175	1560	17
	Malaysia	161	10	22	1	84	252	157	6			19	7	3	74	1	345	10	11	92	79	23
	Mexico	3		10	15	3		4	1	1				9	3					2	143	
	New Zealand	412		20	9	8	13	3	2	4	4		4		1	1	5	1		3	62	3
	Papua N Guinea	4						2							1		1				1	
	Peru			5	6						1											
	Philippines	6		4		13	19	8	1	12	1		1				13	1		7	23	3
	Russian	3		10	1	3		1	4	2				1			2	3		1	34	
	Singapore	266	8	9		453	456	276	45	451	2	71	3	1	105	4		38	74	184	210	48
	Republic of Korea	32		22	2	101	35	24	41	10	3	2		1	5	8	15		11	12	139	14
	Chinese Taipei	13		6	1	112	62	2	22	10	3				9		28	15		20	148	3
	Thailand	9		2	1	30	19	27	8	13	1	2			28	1	24	2	4		25	14
	United States	1256	1	4839	224	914	532	106	710	130	773	242	11	108	129	222	268	430	203	155		25
	Vietnam	4		2		1				2							1				4	

Appendix 2: Structural Control in Competition Laws within APEC Region

WBC income group	Economy	Competition Law with general concern on Mergers & Acquisitions Control	Mergers and Acquisitions Control							
			Competition Authority	Competition Law with general concern on Mergers & Acquisitions Control	Type of Integration				Type of Notification	
					Horizontal Integrations	Vertical Integrations	Conglomerates	Trans-border acquisitions	Mandatory	Voluntary
High income economies	Brunei Darussalam		-	-						
	Singapore	√	Competition Commission of Singapore -CCS	Competition Act(2004)						
	United States	√	Antitrust Division of the Department of Justice -DOJ Federal Trade Commission -FTC	Antitrust laws(Sherman Act 1990, Clayton Act, Federal Trade Commission Act, Hart-Scott-Rodino Antitrust Improvements Act)						
	Hong Kong, China		Telecommunication Authority -OFTA (applied only on Telecom section)	Telecommunications Authority Guidelines -Mergers and Acquisitions in Telecommunications Markets(2004)						
	Canada	√	Competition Bureau	Competition Act -(1986)						
	Australia	√	The Australian Competition and Consumer Commission -ACCC	Trade Practices Act(1974)						
	Japan	√	Japan Fair Trade Commission -JFTC	The Act on Prohibition of Private Monopolization of Fair Trade(known as Antimonopoly Act-AMA)(1947) Last amendment in 2005 that came into force in 2006						
	Chinese Taipei	√	Fair Trade Commission -FTC	Fair Trade Law(FTL), February 4, 1992						
	New Zealand	√	Commerce Commission	Commerce Act (1986)						

	Korea, Rep.	√	Korea Fair Trade Commission -KFTC	Monopoly Regulation and Fair Trade Act -MRFTA(1980)						
Upper middle income economies	Russia	√	Ministry of Anti-monopolistic Policy -MAP	Law "On Competition and the Limitation of Monopolistic Activity in Product Markets"						
	Chile	√	National Economic Prosecutor's Office Tribunal of Defense of Free Competition(Competition Tribunal)	Decree Law N°211/1973 which establishes the rules for the defense of free competition(1973)						
	Malaysia	√	The Securities Commission -SC The Foreign Investment Committee -FIC	Securities Commission Act -SCA(1993) and the Malaysian Code on Take-Overs and Mergers(1998) "Guidelines for Regulation for Acquisition of Assets, Mergers and Takeovers"						
	Mexico	√	Federal Competition Commission -CFC	Federal Law of Economic Competition(1992) -Chapter II						
Lower middle income economies	Thailand	√	Competition Commission	Trade Competition Act(1999) -Section 26						
	Peru		National Institute for the Defense of Competition and the Protection of Intellectual Property -INDECOPI (applied only on Electricity Sector)	Law 26876(1997) Supreme Decree 017-98-INTINCI(1998), amended by S.D. 087-2002-EF(2002)						
	China	√	The Fair Trade Bureau -FTB of the State Administration for Industry & Commerce -SAIC	Regulations on development and protection of competition(1980),Law of the People's Republic of China for Countering Unfair Competition (1993), Price law(1998) and the Anti-monopoly Law(2007)						

	Indonesia	√	Commission for the Supervision of Business Competition(Komite Pengawasan Persaingan Usaha -KPPU)	Law No.5/1999: Concerning prohibition of monopolistic practices and unfair business competition(1999)						
	Philippines	√	-	Corporation Code of the Philippines Y RA 8799(The Securities Regulation Code)						
Low income economies	Vietnam	√	Competition Council Competition Administration Department	Competition Law(2005)						
	Papua New Guinea	√	Independent Consumer & Competition Commission -ICCC	Independent Consumer & Competition Commission Act(2002)						

indicates that the item is explicitly present in the provisions of the Law.

indicates that the item is implicitly present in the provisions of the Law/Act/Statutes.

Sources: UNCTAD (2000), respective competition laws, APEC Electronic Individual Action Plans (e-IAP), and APEC Competition Policy Database.

Appendix 3: Obstacles to Cross-border M&As

	I. Legal Barriers	II. Tax barriers	III. Implications of supervisory rules and requirements	IV. Economic barriers	V. Attitudinal barriers
a) Execution risks	1. Legal uncertainty 2. Opaque decision making processes 3. Legal structures 4. Limits or controls on foreign participations 5. Defence mechanisms 6. Impediments to effective control 7. Difficulties to assess the financial situation	14. Uncertainty on tax arrangements 15. Uncertainty on VAT regime	23. Concerns regarding financial stability 24. Misuse of supervisory powers 25. Supervisory approval processes		35. Political interference 36. Employees' reluctance 37. Shareholders' acceptance of quotation changes 38. Shareholders' and analysts' apprehension of failure risk
b) One-off costs	8. Restriction on offers	16. Exit tax on capital gains		28. Fragmentation of the European capital markets	
c) Ongoing costs	9. Employment legislation 10. Accounting systems 11. Divergent consumer protection rules 12. Data protection 13. Differences in private law	17. Transfer pricing 18. Inter-group VAT 19. No homogeneous loss compensation 20. Specific domestic tax breaks 21. Discriminatory tax treatments 22. Taxation on dividends	26. Divergences in supervisory practices 27. Multiple reporting requirements	29. Different product mixes 30. Non-overlapping fixed costs 31. Lack of middle-size institutions 32. Absence of critical size 33. Market power 34. Differences in economic cycles	39. Political concessions 40. Consumer mistrust in foreign entities