

PRIORITISING FOREIGN INVESTMENT IN APEC

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April 2017

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Abstract

Expanded international trade in goods and services has driven economic growth in the Asia-Pacific since the 1994 Asia Pacific Economic Co-operation (APEC) Bogor declaration that called for free trade and investment in the region. Despite this Bogor goal, APEC has predominantly focussed on international trade rather than investment. To help redress this bias the paper first highlights the benefits that stem from increased international investment at the industry and economy-wide levels before examining APEC foreign investment trends in global context and the extent to which trade flows dominate investment flows in APEC economies. It then examines the empirical nexus between foreign investment and national income in APEC before concluding that APEC should prioritise liberalising foreign investment as a means of accelerating living standards in the region.

Keywords: APEC, foreign investment, international trade

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1. Introduction

The Asia Pacific Economic Co-operation (APEC) group of economies accounts for forty per cent of world GDP yet around half of world trade (APEC 2017). This relatively high global trade share suggests greater globalisation in the Asia-Pacific than in other major regions of the world and reflects an objective of the touchstone of APEC, the 1994 APEC Bogor declaration that called for “free and open trade and investment in the region.” Asia-Pacific economic integration significantly intensified after the Bogor declaration and is summed up in part by APEC’s motto: “Advancing Free Trade for Asia-Pacific Prosperity.”

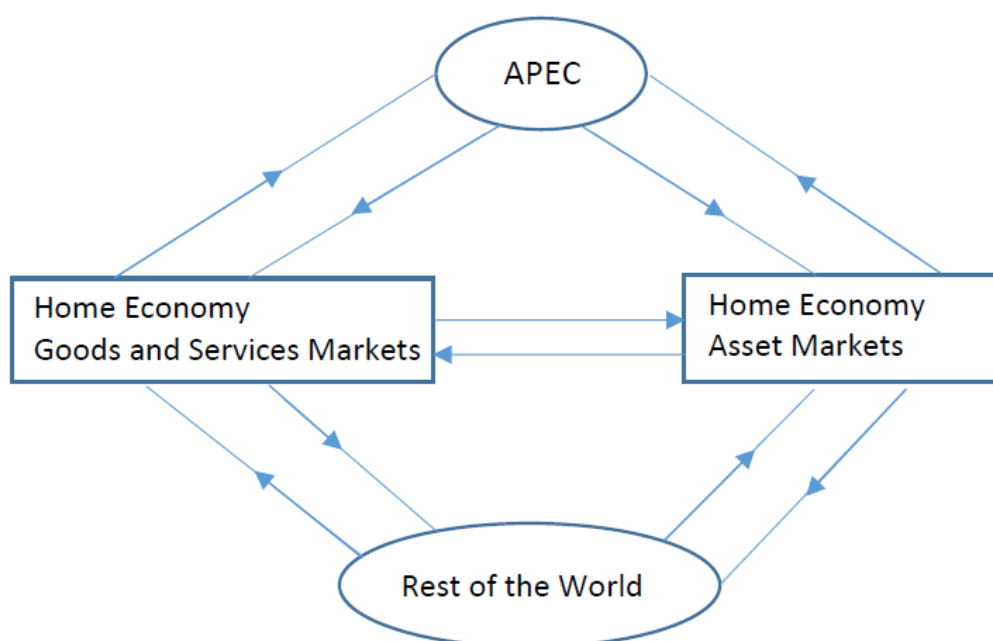
Economists since Adam Smith (1776) and David Ricardo (1817) have consistently argued that international trade in goods and services improves nations’ overall economic welfare. The corollary is that trade restrictions are welfare reducing since they impose additional costs on consumers. They also increase costs on exporters reliant directly via imported intermediate goods and indirectly through a stronger exchange rate than otherwise. Restricted trade also implies domestic producers operate in smaller markets and that the pricing power of firms domestically is less constrained in the absence of import competition.

While the Bogor declaration equally emphasised international trade and investment, in practice APEC’s promotion of cross-border investment has paled in comparison to its promotion of international trade in goods and services. Likely reasons for the biased trade advocacy include the greater political sensitivity of foreign investment and that, historically, the international economics literature has focussed more heavily

on the theoretical benefits and evidence of liberalising international trade in goods and services than on liberalising foreign investment flows.¹

Figure 1 below schematically depicts an APEC economy's domestic and international exchanges of goods, services and assets. If closed, the only transactions are those within and between the central rectangular boxes depicting an Asia-Pacific economy's goods and services and asset markets. In open APEC economies, transactions also occur between real and financial home markets, those markets in other APEC economies, and those in the rest of the world.

Figure 1 - APEC Trade and Investment Linkages



Mainstream international economics has emphasised international trade linkages on the left side of this figure rather than asset exchanges and related international investment flows on the right. In other words, far more attention has been paid to

1. This is reflected in the emphasis on the theory of trade in standard international economics textbooks. See for instance Krugman and Obstfeld (2016), Feenstra and Taylor (2012), Carbaugh(2015), Gerber (2015) and Salvatore (2015).

liberalising trade flows recorded in current accounts of economies' balance of payments than to asset sales recorded in their capital and financial accounts.

Greater cross border investment within the APEC and between APEC and the rest of the world could play a greater role in regional economic development. International trade barriers between APEC members have already been lowered significantly and further trade expansion will be impeded by the termination of the Trans Pacific Partnership (TPP) by US President Trump. Meanwhile, the Regional Comprehensive Economic Partnership (RCEP) and overarching Free Trade Area of Asia and the Pacific (FTAAP) are progressing slowly and to some extent were expected to have the TPP as an antecedent.

This paper proposes that liberalising foreign investment should be afforded a much higher priority in APEC in view of the mutually beneficial effects that accrue to both recipient and source economies. Facilitating greater foreign investment flows within the Asia-Pacific and between the region and the rest of the world presents an alternative pathway to higher growth and living standards in the region. Allowing capital to move to where it is most productively employed potentially confers benefits akin to those bestowed by expanding international trade, as evidenced by a sizeable empirical literature on foreign investment and growth.

The next section summarises key micro- and macro-economic arguments for accelerating international investment. Section 3 examines APEC foreign investment trends in global context, before highlighting how international trade flows dominate investment flows in individual APEC economies due in part to existing restrictions on

foreign investment. Section 4 examines the empirical nexus between foreign investment and APEC members' national income levels. Section 6 concludes that liberalisation of foreign investment in APEC should be prioritised to bolster regional and world economic growth.

2. The Economic Case for FDI

A range of microeconomic and macroeconomic arguments support FDI as a means of raising national income and living standards.²

2.1 Microeconomic Arguments

FDI involves the establishment of subsidiaries of foreign multinationals (MNCs) or takeover of domestic firms. MNCs directly and indirectly generate productivity benefits through the transfer of technology and product development. Furthermore, domestic employees of foreign-owned firms are exposed to international management practices and the presence of new entrants in domestic markets stimulates imitative behaviour and acts as a spur to greater competition. In turn, higher labour productivity allows domestic wages to be higher than they would be with a smaller capital stock.

A commonly expressed concern about FDI is that in the form of foreign takeovers, or acquisition of real estate by non-residents, results in the loss of control of established domestic firms. Against these economic nationalist concerns however, there are economic benefits which accrue to the residents who choose to dispose of their assets to foreigners. It is generally not appreciated by opponents of foreign investment that

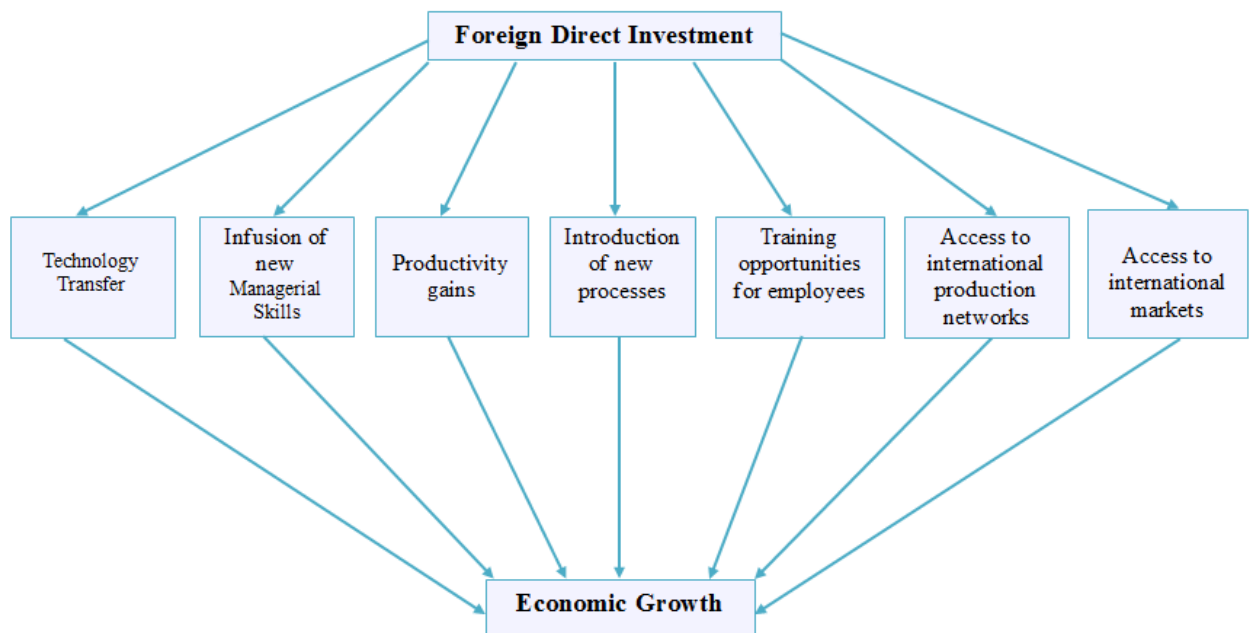
² See for instance McDougall (1960), Caves (1971), Carr, Markusen and Maskus (2001), Borenstein, De Gregorio and Lee (1998), Alfaro, Chandab and Kalemli-Ozcan (2004), Li, Xu and Liu (2005), Chowdhury and Mavrotas (2006), Helpman (2006) and Razin and Sadka (2007).

whenever domestic financial or real assets are purchased by non-residents, the quantum of funds available to residents for additional spending is supplemented as a result of the asset sales.

When foreigners buy existing local assets at higher prices than other residents buyers would be willing to pay, the residents who sell such assets to foreigners make capital gains they otherwise would not have made. The proceeds of the sale of assets may then be used to create new domestic assets, be spent on consumption, or be used to acquire new foreign assets. Foreign inward investment in essence measures how much capital foreigners are willing to invest in an economy's future with positive effects on the scale of domestic investment, production and consumption. Meanwhile, foreign investors can earn higher income investing in host economies than at home should the return on the capital deployed exceed the return on that capital in their home economies.

Figure 2 below summarizes the various microeconomic channels through which FDI enhances economic growth and hence living standards.

Figure 2: Links Between FDI and Economic Growth



Foreign dominance of certain industries could result from merger and acquisition activity which in turn could limit domestic competition in those industries. However, this then becomes a matter for the domestic competition authorities treating the foreign owned firms no differently from domestically owned firms. Similarly there could be problems with transfer pricing by multinational firms. But this too need not be an issue for foreign investment policy *per se*, but a matter for the domestic taxation authorities.

2.2 Macroeconomic Arguments

According to national accounting conventions an economy's use of foreign saving or net inward foreign investment, equals its investment- saving gap. Hence, increases in the domestic real capital stock are partly financed by domestic saving and partly by

foreign investment, broadly defined. Another way of thinking about the macroeconomic significance of foreign investment is that it measures the volume of consumption spending that residents would have to forego to lift domestic saving to the level required to fund the economy's investment needs.

In sum, at the macroeconomic level, FDI is reflected in the capital account surpluses which match the regular current account deficits of a host foreign investment nation. What is generally not appreciated is that the more foreign investment an economy attracts, the higher its current account deficit and foreign liabilities are likely to be. To the extent that, in aggregate, the productivity of the extra physical capital acquired through foreign capital inflow exceeds the servicing costs on that foreign investment, then national income can grow faster than otherwise.

Foreign capital inflow in aggregate can also improve an economy's economic welfare to the extent that it frees it from the constraint of its own saving level. The amount of additional economic activity in a range of domestic activities would not be as great and overall GDP growth would be lower without the benefit of net foreign investment. Alternatively, the national income gains that accrue from foreign investment can be shown using economic growth accounting precepts as set out in Appendix 1.

3. The Nature and Scale of Foreign Investment in APEC

Analysis of foreign investment usually distinguishes between Foreign Direct Investment (FDI), which includes real estate acquisitions, and foreign portfolio investment that entails foreign purchases of locally issued equities and debt

instruments for portfolio investment purposes.³ The remainder of this paper focuses on FDI.

What distinguishes foreign investment flows from international trade flows is their inherent volatility. Though it is well known that portfolio investment flows are highly volatile due to their susceptibility to speculative pressures, FDI flows can also vary considerably more than trade flows from year to year due to the ‘lumpy’ nature of large scale investment projects and sizeable one-time mergers or acquisitions of domestic firms.

3.1 Comparing FDI in APEC with Other Regional Groups

Globally, FDI has grown tenfold over the last thirty years and compared to other regional bodies, such as the EU and the G20, APEC’s FDI flows appear sizeable in absolute terms (see Table 1 and Table 2), though, as we will see in the next section, are not large relative to trade flows. FDI inflows to APEC economies in 1990 were under \$US100 billion, though are now approaching \$US1 trillion. In 2015, APEC absorbed more than half of global flows - on par with the G-20 – a significant increase as a share of global FDI inflows from pre-crisis levels of around 40 percent (Table 1).

APEC as a group showed a more dramatic rise in its FDI outflows, with its share in global FDI outflows, more than doubling between the pre-crisis period and 2015, accounting for two-thirds of global FDI outflows and greater than the G-20 share. Among top-ten investors in 2014, seven (United States, Hong Kong (China), China, Japan, Russian Federation, Canada and Singapore) were APEC economies.

³ Foreign investment is classified as 'direct' if at least 10 per cent of a firm's equities are owned by foreign shareholders, since this is deemed to confer a foreign management control over the operations of the enterprise.

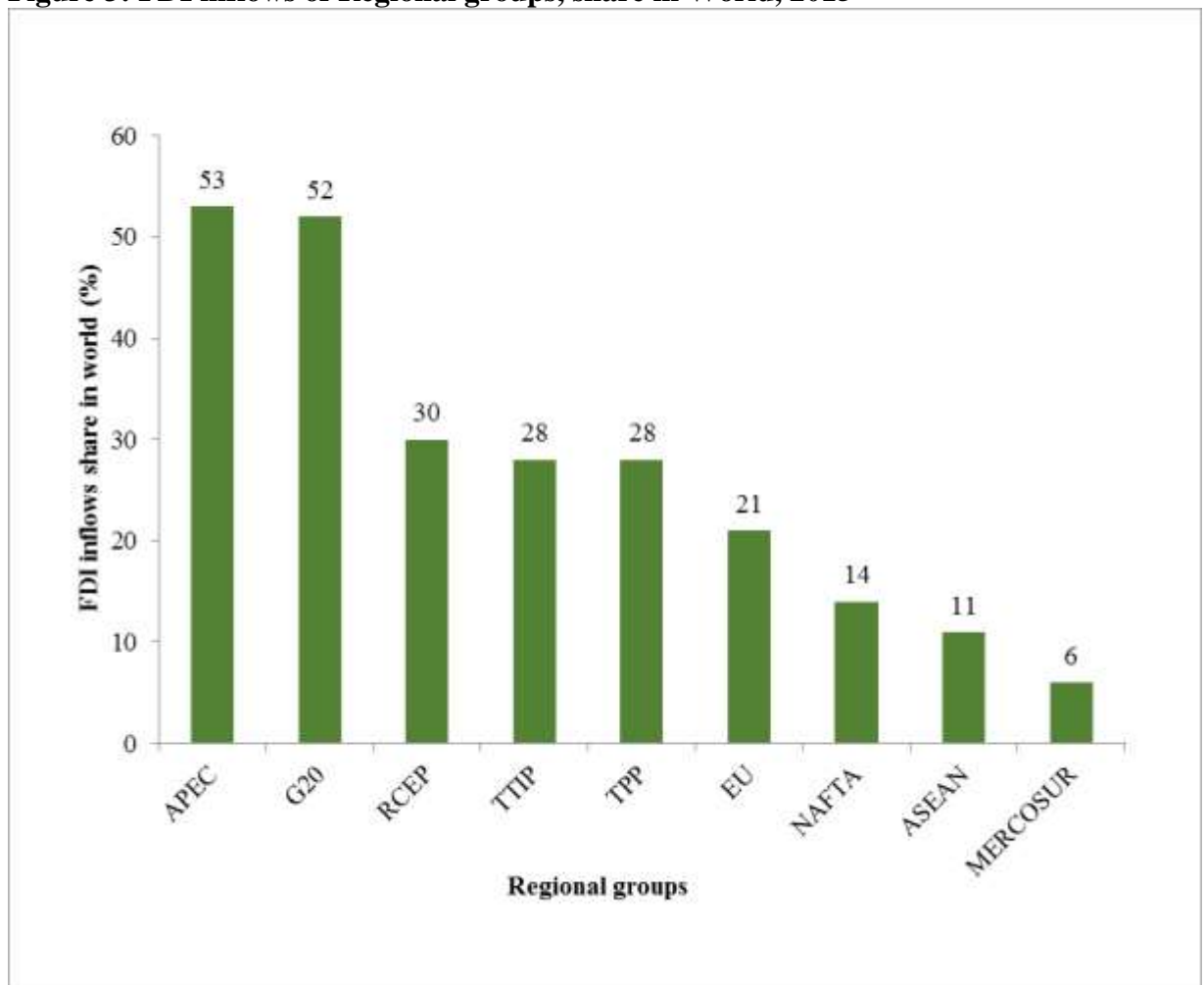
Table 1: FDI inflows (US\$ billion) to APEC and other selected regional and inter-regional groups, selected years 1990 - 2015

Regional or Interregional Groups	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015
APEC	93	176	565	321	646	737	702	811	669	953
ASEAN	13	29	23	43	111	96	116	129	125	126
BRICS	5	47	81	116	261	297	256	267	271	256
EU	96	131	680	472	385	426	446	319	292	439
G20	134	211	875	583	769	896	739	844	652	926
MERCOSUR	4	11	48	24	99	116	101	69	81	80
NAFTA	59	78	399	156	253	293	252	329	191	459
RCEP	29	85	91	112	297	327	335	355	341	330
TPP	79	118	450	194	386	448	420	505	353	581
TTIP	144	190	994	577	583	656	635	531	399	819
Percentage share in World FDI inflows										
APEC	45	52	42	34	47	47	46	57	52	54
ASEAN	6	8	2	5	8	6	8	9	10	7
BRICS	2	14	6	12	19	19	17	19	21	15
EU	47	38	50	50	28	27	30	22	23	25
G20	66	62	64	61	55	57	49	59	51	53
MERCOSUR	2	3	4	3	7	7	7	5	6	5
NAFTA	29	23	29	16	18	19	17	23	15	26
RCEP	14	25	7	12	21	21	22	25	27	19
TPP	39	34	33	20	28	29	28	35	28	33
TTIP	70	56	73	61	42	42	42	37	31	46

Source: Author format based data from UNCTADstat 2017 (unctadstat.unctad.org)

Note: APEC = Asia-Pacific Economic Cooperation; G20 = only the 19 member countries of the G20 (excludes the European Union); EU = European Union; TTIP = Transatlantic Trade and Investment Partnership; TPP = Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership; BRICS = Brazil, Russian Federation, India, China and South Africa; NAFTA = North American Free Trade Agreement; ASEAN = Association of Southeast Asian Nations; MERCOSUR = Common Market of the South.

Figure 3: FDI inflows of Regional groups, share in World, 2015



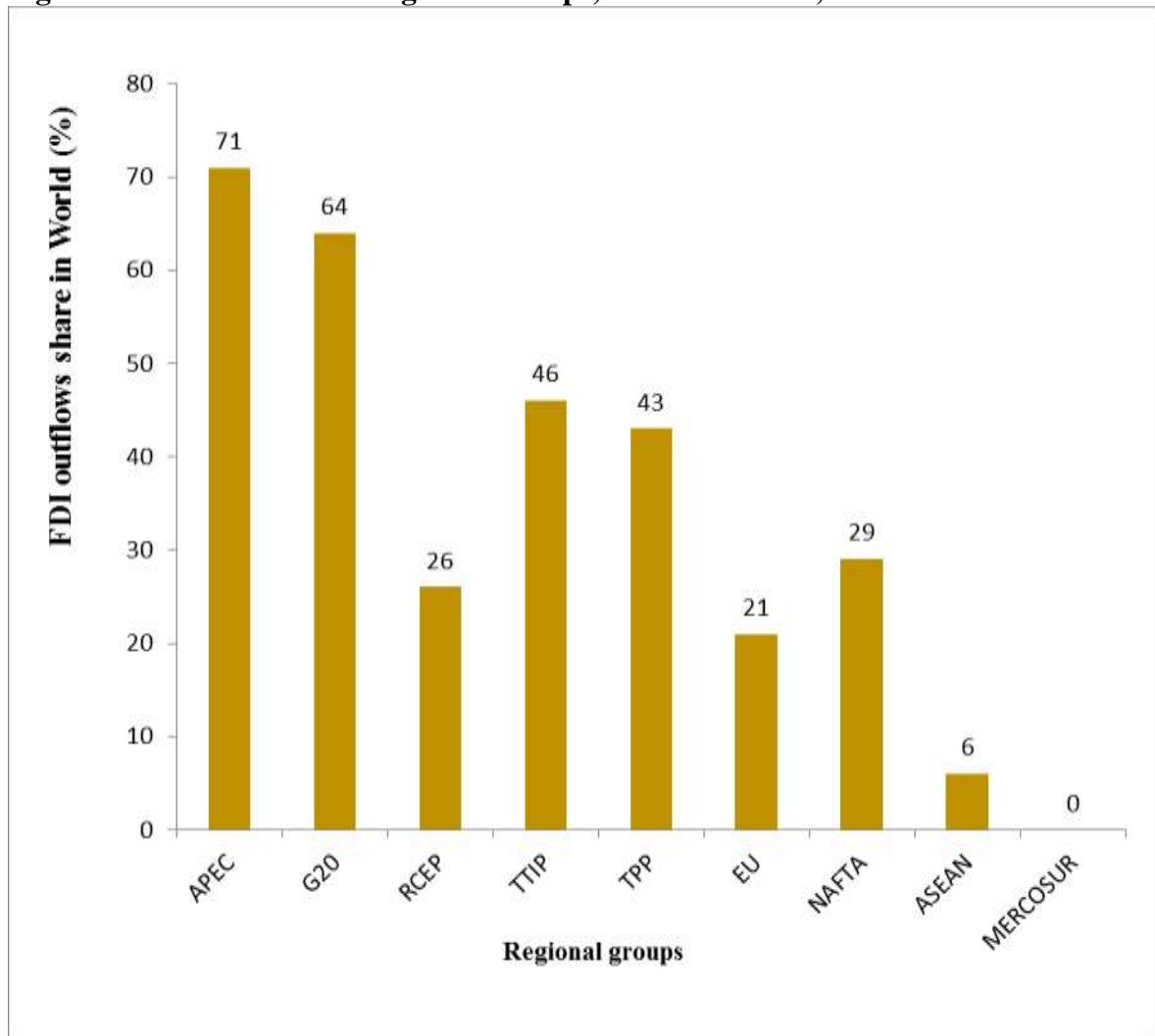
Source: Author format based data from UNCTADstat 2017 (unctadstat.unctad.org)

Table 2: FDI outflows (US\$ billion) from APEC and other inter-regional groups, selected years 1990 - 2015

Regional or Interregional Groups	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015
APEC	102	178	305	150	714	911	841	903	935	821
ASEAN	2	12	9	20	61	62	55	79	75	67
BRICS	1	6	7	35	148	147	122	186	209	170
EU	132	158	791	554	479	492	352	273	296	487
G20	178	246	695	379	843	1040	816	815	846	798
MERCOSUR	1	3	4	5	26	12	0	0	5	3
NAFTA	36	103	187	49	328	461	397	376	381	375
RCEP	58	45	50	52	251	291	310	355	352	342
TPP	92	141	235	76	465	635	579	579	563	550
TTIP	163	250	934	569	757	888	670	581	613	787
Percentage share in World FDI outflows										
APEC	42	50	26	18	51	58	64	69	71	56
ASEAN	1	3	1	2	4	4	4	6	6	5
BRICS	1	2	1	4	11	9	9	14	16	12
EU	54	44	68	68	34	32	27	21	22	33
G20	73	69	60	46	61	67	62	62	64	54
MERCOSUR	0.4	1	0.3	1	2	1	0	0	0.4	0.2
NAFTA	15	29	16	6	24	30	30	29	29	25
RCEP	24	13	4	6	18	19	24	27	27	23
TPP	38	39	20	9	33	41	44	44	43	37
TTIP	67	70	80	70	54	57	51	44	46	53

Source: Author format based on data from the UNCTADstat 2017 (unctadstat.unctad.org)

Figure 4: FDI Outflows of Regional Groups, Share in World, 2015



Source: Author format based data from UNCTADstat 2017 (unctadstat.unctad.org)

How much of these FDI flows are sourced from within the APEC region? As shown in Table 3 below, 70% of FDI projects in APEC in recent years are intraregional, up nearly 10% from 2005. This share is considerably higher than other regional bodies, only 40% for instance in the EU and a mere 4% in MERCOSUR. This suggests FDI outflows from large APEC economies are mainly benefiting other large APEC economies, as flows within the ASEAN sub group remain modest.

Table 3: Intra-regional and Extra Regional FDI Projects in APEC and Other Selected Regional Groups

Region	Period	Total	(Billions of dollars)		(% share in total)	
			<i>Intra-regional</i>	<i>Extra-regional</i>	<i>Intra-regional</i>	<i>Extra-regional</i>
APEC	2003-05	389.8	239.1	150.7	61	39
	2012-14	467.9	328.3	139.6	70	30
ASEAN	2003-05	55.0	6.1	48.9	11	89
	2012-14	80.0	10.0	70.0	13	87
MERCOSUR	2003-05	36.0	1.5	34.5	4	96
	2012-14	43.8	1.6	42.2	4	96
European Union	2003-05	324.7	176.8	147.9	54	46
	2012-14	262.3	103.7	158.6	40	60

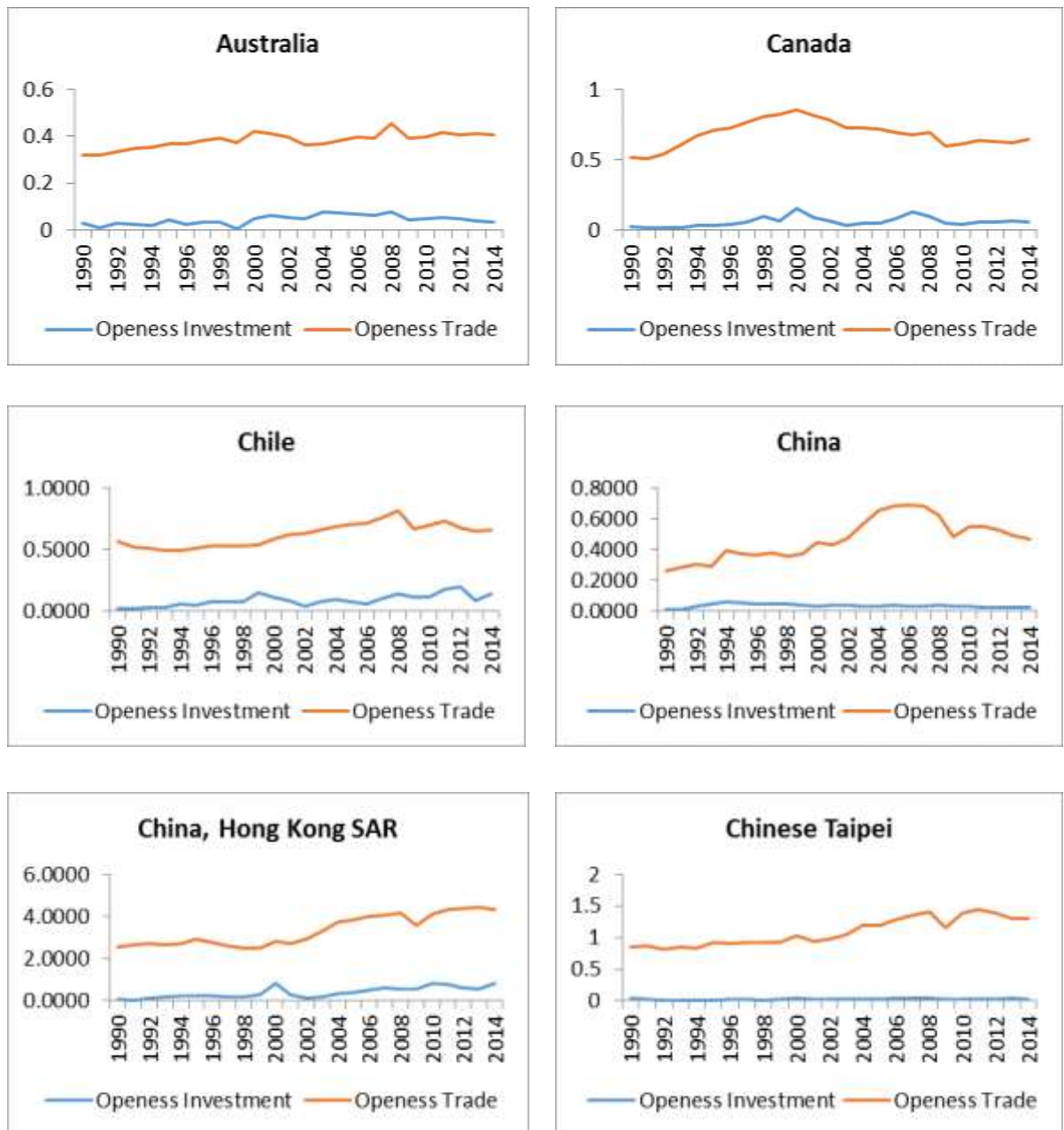
Source: UNCTAD cross-border M&A database and information from the Financial Times Ltd, FDI markets for greenfield projects, the Australian APEC study centre (2015).

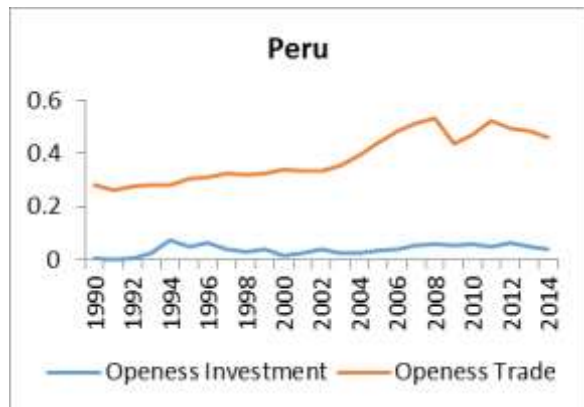
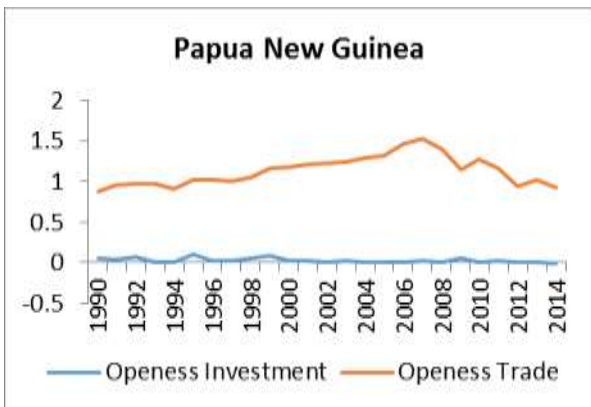
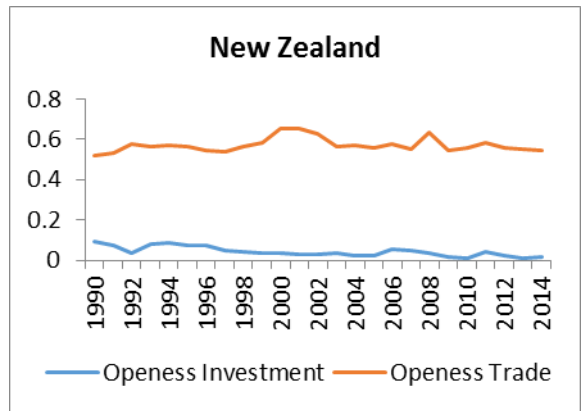
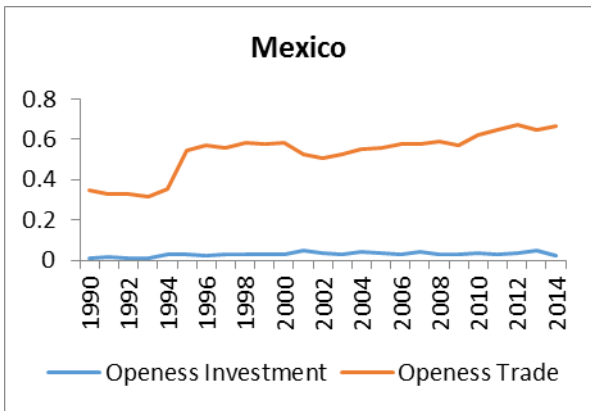
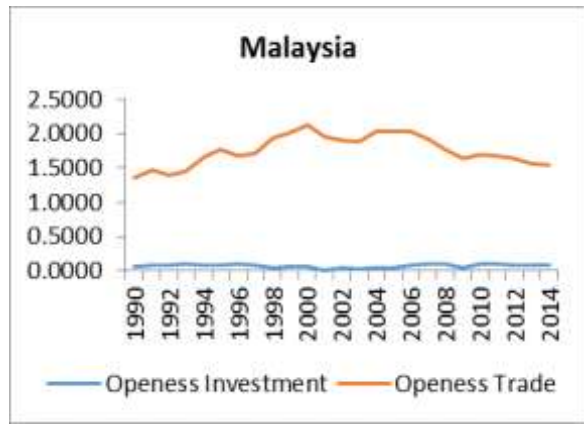
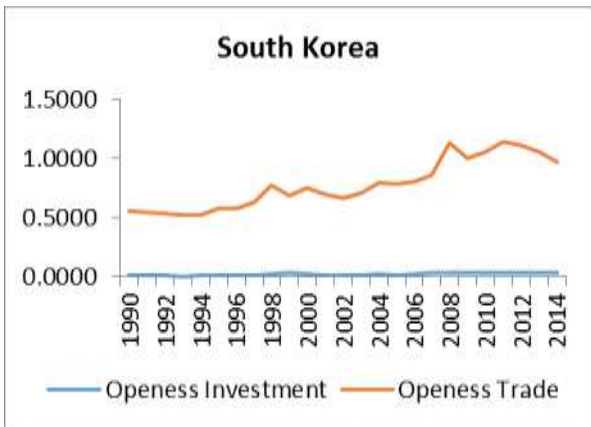
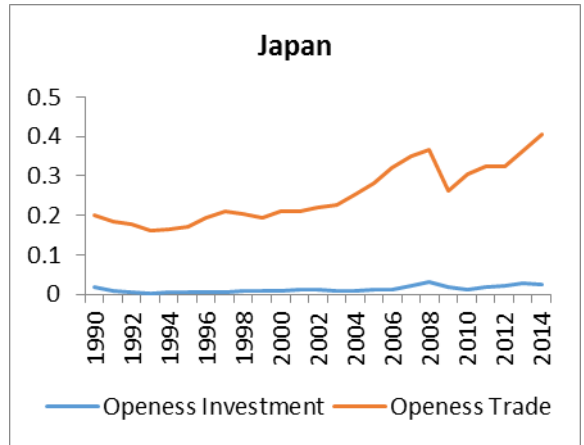
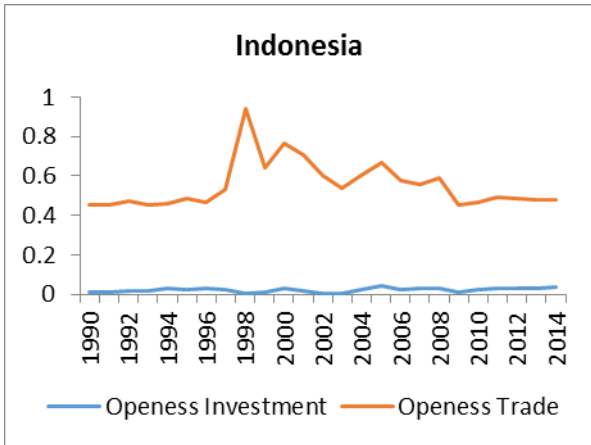
Although FDI flows are growing within APEC, this growth is uneven, the major FDI source economies, notably China, USA, Hong Kong, and Singapore, also receive major FDI inflows. At the same time, Australia is a major recipient of FDI inflows but not a major source of FDI. On the other hand, other APEC economies, notably Russia, South Korea and Malaysia are major sources of FDI, but not large recipients.

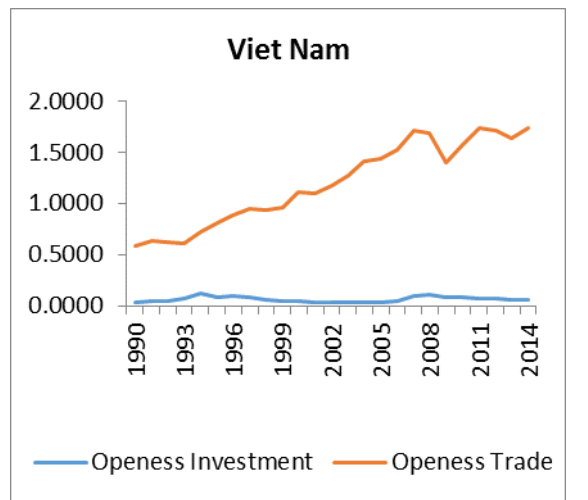
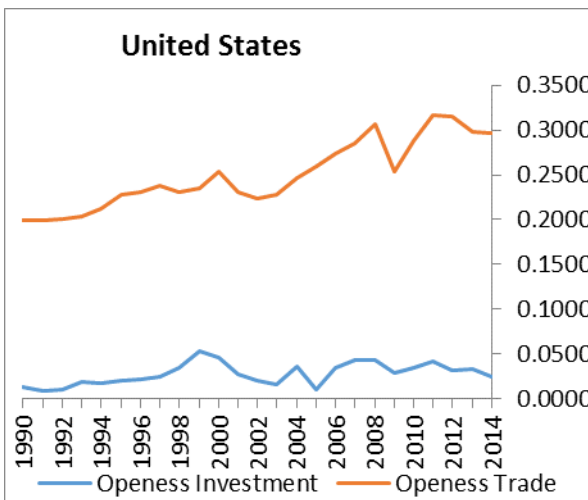
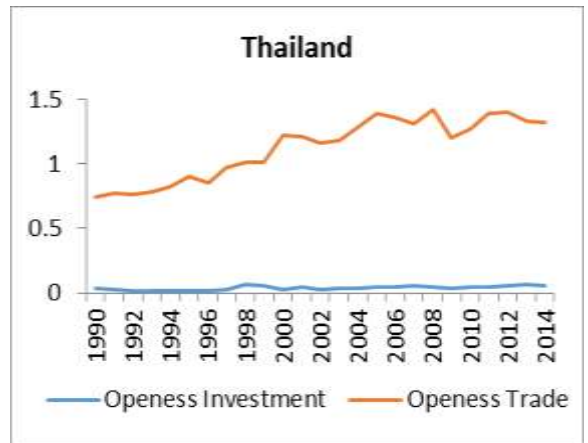
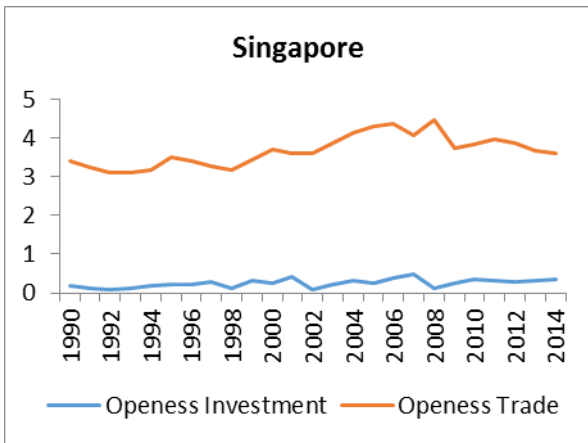
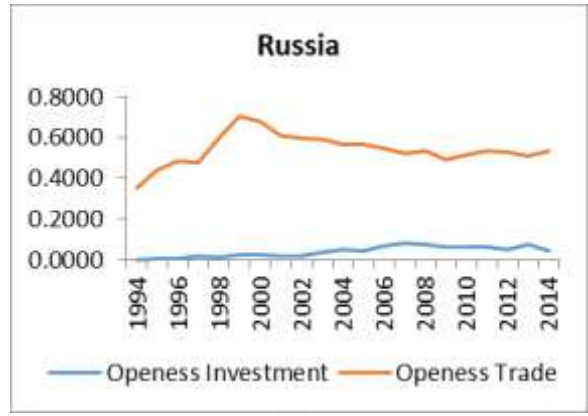
3.2 Comparing International Trade and FDI Flows in APEC

How does the scale of FDI compare to the scale of international trade within APEC? This can be answered by comparing the sum of exports and imports as a share of GDP (a measure of trade openness), to the sum of FDI inflows and outflows as a share of GDP (a measure of investment openness). Without exception, the below charts for each APEC member clearly convey the dominance of trade flows over FDI flows by a large margin.

Figure 5 - Trade versus Investment Openness in APEC







Except for relatively small increases in investment openness for Chile, Peru and Russia, investment openness has generally remained flat over the period, in contrast to elevated trade openness for most APEC members.

Although there were temporary trade falls during the 2008-09 Global Financial Crisis, most APEC economies, notably Chile, China, Japan, Korea, Mexico, Peru, Singapore, Thailand, the United States and Vietnam, remain considerably more open to foreign trade than at the time of the Bogor Declaration in 1990. Canada, Indonesia, Malaysia, the Philippines and Russia have however experienced a decline in trade openness from the turn of the century, while the trade openness of Australia and New Zealand has remained relatively static over that time.

While most APEC economies experience both significant FDI inflows and outflows, many are characteristically either net capital importers (such as Australia, China, Singapore, Peru and Chile), or net capital exporters, (for example, the United States). Interestingly, several economies which have been significant net capital importers since 1990 have more recently become net capital exporters, notably Malaysia, Mexico and Korea.

3.3 Restrictions Limiting FDI

Regulatory barriers to foreign investment are a key reason investment flows are much smaller than trade flows. These barriers can be defined as any government policy measure which distorts decisions about where to invest and in what form. They include policy measures that limit the level of foreign investment, create the need for firms to endure costly, and time consuming screening processes required to convince

national authorities that projects are in ‘the national interest’.⁴ The main barriers, termed ‘border restrictions’ are:

(i) Restrictions on market entry, including outright prohibition of foreign investment in certain sectors, quantitative restrictions, screening and approval processes, admission taxes, and specific conditions on location, minimum capital requirements;

(ii) Ownership and control restrictions, including compulsory joint ventures with domestic partners, limit on the number of foreign board members, government approval require for certain decisions, restrictions on foreign shareholder’s rights; and

(iii) Operational restrictions including export requirements, local content restrictions, operational permits or licenses, restrictions on import of labour capital and other raw materials, restrictions on repatriation of capital and profits.⁵

Most APEC economies adopt some form of screening or registration of foreign investor along with restrictions on levels of foreign ownership of domestic firms. Case-by-case judgments by government bodies are widespread in the region as are limits on ownership, managerial control and board membership, especially in sectors such as telecommunications, broadcasting, and banking.

In addition, other government policy settings indirectly inhibit FDI by worsening the investment climate via high corporate taxes (Djankov et al (2010), the lack of protection for intellectual property (Javorcik et al. 2004) and inflexible labour markets

⁴ Hardin and Holmes (1997) elaborates.

⁵ UNCTAD (1996) elaborates.

(Driffield and Taylor 2000). Reducing such ‘behind-the-border’ barriers is central to fostering FDI flows among APEC economies (Nixon 2007).

4. FDI and National Income: Empirical Evidence

A range of models have been used to empirically test the theoretical benefits of FDI, mostly for non-APEC economies.⁶ In the neoclassical growth models, FDI promotes economic growth by increasing the volume of investment and/or its efficiency. In the endogenous growth models, FDI raises economic growth via technological diffusion from the home countries to the host. Evidence to date on the relationship between FDI and economic growth is mixed. Although numerous empirical studies spanning different groups of countries and time periods have found FDI is an important determinant of economic growth, some ambiguity remains.

What is clear is that the relationship may be significant or insignificant depending on various factors such as market size and the growth potential of a host economy; financial and natural resource endowments and quality of workforce; the macroeconomic environment, law and order situation; legislative and incentive structure; openness to international trade and access to international markets; and the quality of physical, financial and technological infrastructure.

Political instability and inadequate security in a country can also disrupt foreign and domestic investments. Unstable political environments increase the risk of investments. Good governance practices provide a clear signal to domestic and foreign investors that the country in question values their contribution to the

⁶ See for instance Ahmed (2012), Afa (2014), Brock (2005), Chakraborty and Basu (2002), Choe (2003), De Mello (1999), Mah(2010), Makki and Somwaru (2004), Vu, Gagnes and Noy (2006) and Zhang (2001).

betterment of the society and that it will work with these investors to achieve mutual benefits.

We proceed with a simple examination of the relationship between GDP and FDI in the APEC economies. Figure 6 illustrates this through the observed positive correlation between (log) FDI stock per capita and (log) GDP per capita in APEC countries. The 21 APEC countries are divided into five groups:

- ANZ: Australia and New Zealand
- East Asia: China, Hong Kong, Japan, Republic of Korea and Taiwan
- North America: Canada, Mexico and United States
- South-East Asia: Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam
- South America and others: Chile, Papua New Guinea, Peru and Russian Federation

The variables used in the analysis are inward FDI stock, FDI inflows, FDI outflows, and GDP per capita. Inward FDI stock, FDI inflows and FDI outflows are calculated at current prices and current exchange rates in millions US\$. GDP per capita (Real) is measured at constant prices (2005) and constant exchange rates (2005) in millions US\$. These data for FDI inflows, FDI outflows, and GDP per capita are collected from UNCTAD Statistics (2016). The data for the study cover the years from 1980 to 2014.

Figure 6 - FDI Stock per capita and GDP per capita in APEC countries

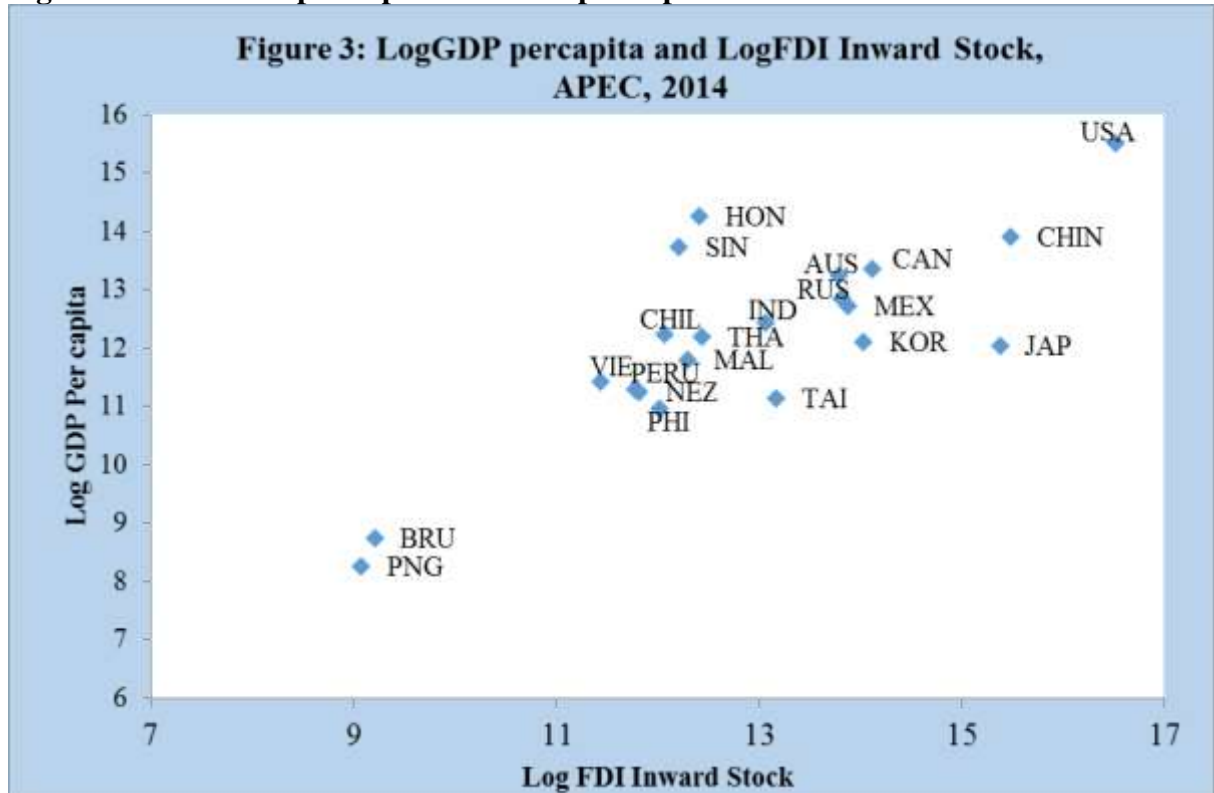


Figure 7 reports the results of a simple OLS where the dependent variable is GDP per capita and the independent variable is FDI inflows. These results indicate that the strongest relationship between these two variables appear to be in the ANZ group, followed closely by the East Asia group and the South-East Asia group. The relationship between these variables is weaker for both the North American and The South American and others group.

Concerning the relationship between FDI outflows and GDP per capita, Figure 8 reveals a similar pattern for the Asian and American groups. The relationship between FDI outflows and GDP per capita is relatively strong in the East Asian group and South East Asian Group. It is relatively weaker in the North American and South American and Others group. In the case of the ANZ group, it is interesting to note that the relationship between GDP and FDI outflows appears to be relatively weaker than

the relationship between GDP and FDI inflows. Australia's recent mining boom is the likely driver of this asymmetric relationship.

Figure 7 - FDI inflows vs GDP per capita in APEC groups

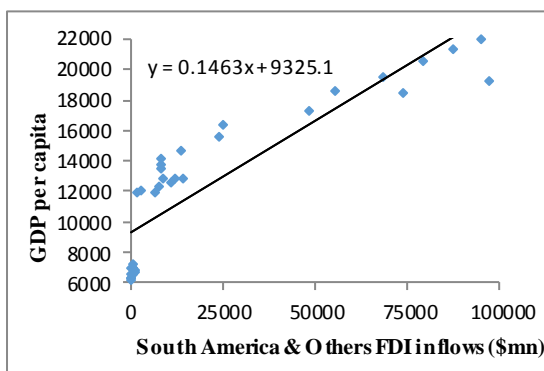
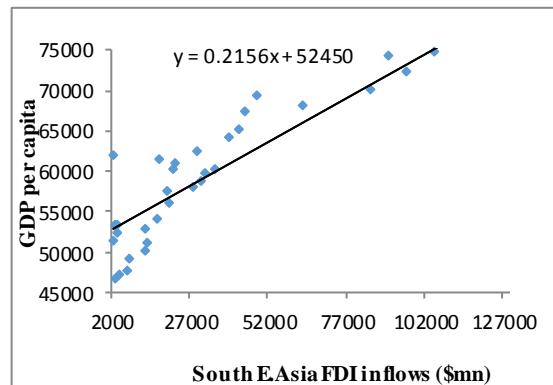
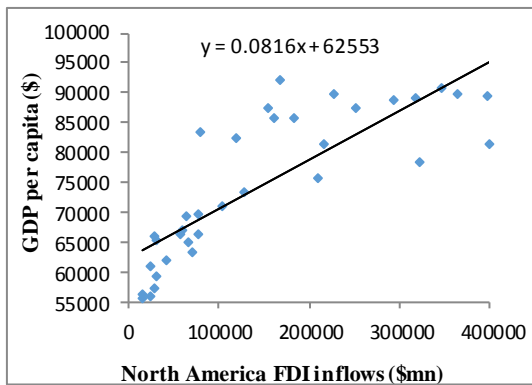
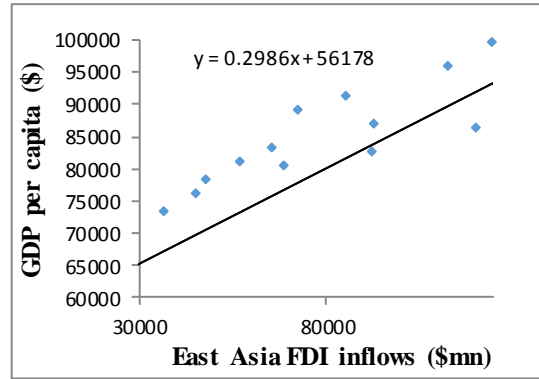
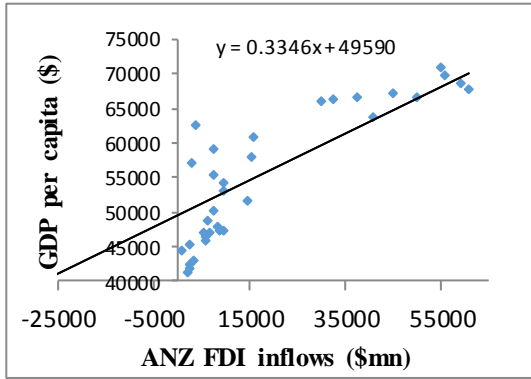
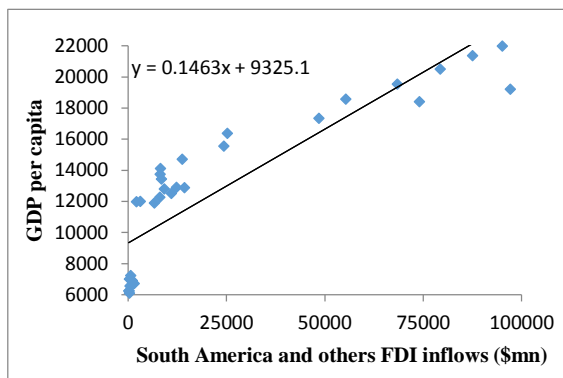
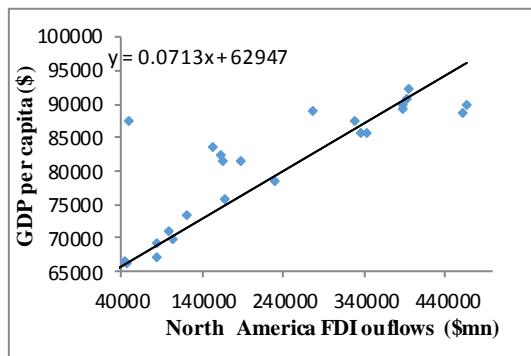
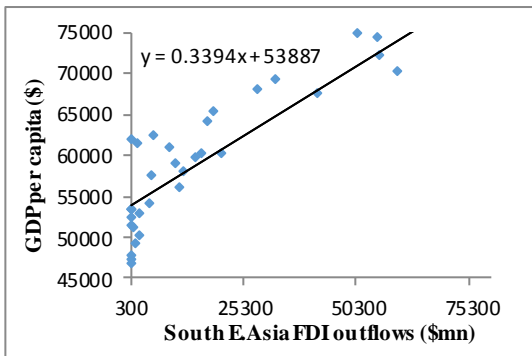
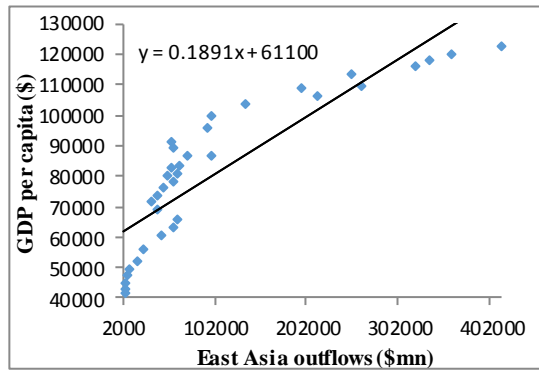
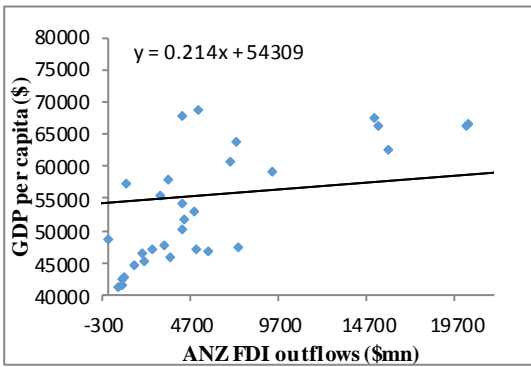


Figure 8 - FDI outflows vs GDP per capita in APEC groups



5. Conclusion

International trade growth has persistently dwarfed foreign investment growth in APEC economies since the 1994 Bogor declaration, reflecting the priority given to liberalising international trade over foreign investment. Yet given capital's primary role in generating output, increased foreign investment can conceivably play as important a role in economic development as increased international trade in goods and services.

As a general principle, the greater the international trade in assets, the greater are the potential economic welfare gains. It is widely accepted that liberalisation of international trade in goods and services enhances economic welfare, yet similar gains arising from international trade in assets, both financial and real, are under recognised. Disallowed foreign investment in APEC economies is additional investment those economies could otherwise have put to productive use. Hence restrictive foreign-investment policies in the region deprive economies of opportunities to accumulate extra capital, through either the creation of new assets or the acquisition of existing ones.

Further liberalising cross border investment in the Asia-Pacific would significantly improve national income and living standards throughout the region via numerous channels. These include productivity gains due to technology transfer, international management practices, imitative behaviour by locally-owned firms and improved domestic competition. At the macroeconomic level, freer foreign investment in APEC would unshackle economies with unrealised investment opportunities from the constraint of their own saving levels.

In view of extensive behind the border barriers identified above, considerable scope exists for liberalising foreign investment policy regimes in Asia-Pacific economies. Most notably, foreign investment in the financial, manufacturing, media, real estate and transport industries is either heavily regulated or prohibited in most APEC economies, on the grounds that foreign ownership in these sectors contravenes the ‘national interest’, an ill-defined concept that obscures the economic gains foreign investment can bestow.

Appendix 1 - Foreign Investment as a Source of Economic Growth

A macroeconomic production function may be specified as

$$Y = f(A, K^d, K^*, \ell) \quad (1)$$

where K^d is that part of the total domestic capital stock that has been funded by domestic saving and K^* is that part of the total domestic capital stock has been foreign-financed.

By totally differentiating this open economy production function, the sources of increased gross domestic product in the short run are shown to be

$$dY = f_A dA + f_K dK + f_{K^*} dK^* + f_\ell d\ell \quad (2)$$

where $f_{A, K, K^*, \ell}$ denotes the derivative of Y with respect to A, K, K^*, ℓ .

For economies that are net recipients of foreign investment, national output and national disposable income diverge to the extent of net income paid abroad. Hence,

$$Y^n = Y - r^* K^* \quad (3)$$

where Y^n is national disposable income and r^* is the effective servicing cost of foreign capital (inclusive of dividends) on external liabilities. So,

$$dy_n = dY - (r^* dK^* + dr^* K^*) \quad (4)$$

The effective income paid abroad may vary from interval to interval as world interest rates fluctuate or as any risk premium varies through time.

From (2) and (4), the sources of national income growth can therefore be shown as

$$dY^n = \{f_A dA + f_L d\ell + f_K dK\} + \{f_{K^*} dK^* - (r^* dK^* + dr^* K^*)\} \quad (5)$$

The first set of braces captures the domestic sources of growth whereas the second set includes the foreign sources of central interest. Hence, national income gains can be attributed to domestic sources and foreign sources, such that

National Income Growth = Domestic Contribution + Foreign Contribution

(%)

(%)

(%)

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