

Trends, Patterns and Determinants of Australian Foreign Direct Investment

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Abstract: The aim of this paper is to present empirical evidence of the determinants of Australian foreign direct investment using hypotheses drawn from an investment demand model, new trade theory and institutional economics. The findings suggest that countries which are open, have a large domestic market, and have a similar language and culture to Australia's attract most of its foreign investment. There is also evidence to suggest that countries in regional blocs tend to attract Australian investment, possibly opening up opportunities for investors to capture a large regional market. Although difficult to prove statistically, the findings also suggest that countries that are economically more stable and have strong institutional credibility tend to attract Australian investment.

Keywords: foreign direct investment, openness, regional integration, Australia

JEL Classification Codes: F21, F23, F14

The Australian economy has witnessed dramatic growth in both inward and outward foreign direct investment (FDI) since the 1990s, but the latter has grown more rapidly than the former.¹ Between 1990 and 2007, Australia's stocks of outward FDI expanded nine fold, while inward FDI grew just over fourfold (United Nations Conference on Trade and Development [UNCTAD] 2008). Most Australian FDI has been directed toward developed countries in Europe and North America, with countries in Asia and the Pacific attracting a lesser amount. Despite significant growth in outward FDI, no studies appear to have been undertaken into the determinants of this form of investment. This information is crucial if rational decisions are to be made. To the best of our knowledge, this is the first study that examines the

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determinants of Australian outward FDI. Using hypotheses developed from the literature on investment demand models, new trade theory and institutional economics, we investigate if market size, market growth, openness, regional integration, knowledge capital, efficient institutional set up, language and cultural similarity have any impact in influencing the destination of Australian FDI. An understanding of the significance of these variables would provide useful insights for Australian firms making decisions on FDI.

After a discussion of the trends and patterns in Australian FDI in the next section, the following section reviews the literature to provide an analytical framework to the research and presents a model. This is followed by a discussion of the empirical results and the concluding remarks in the final section.

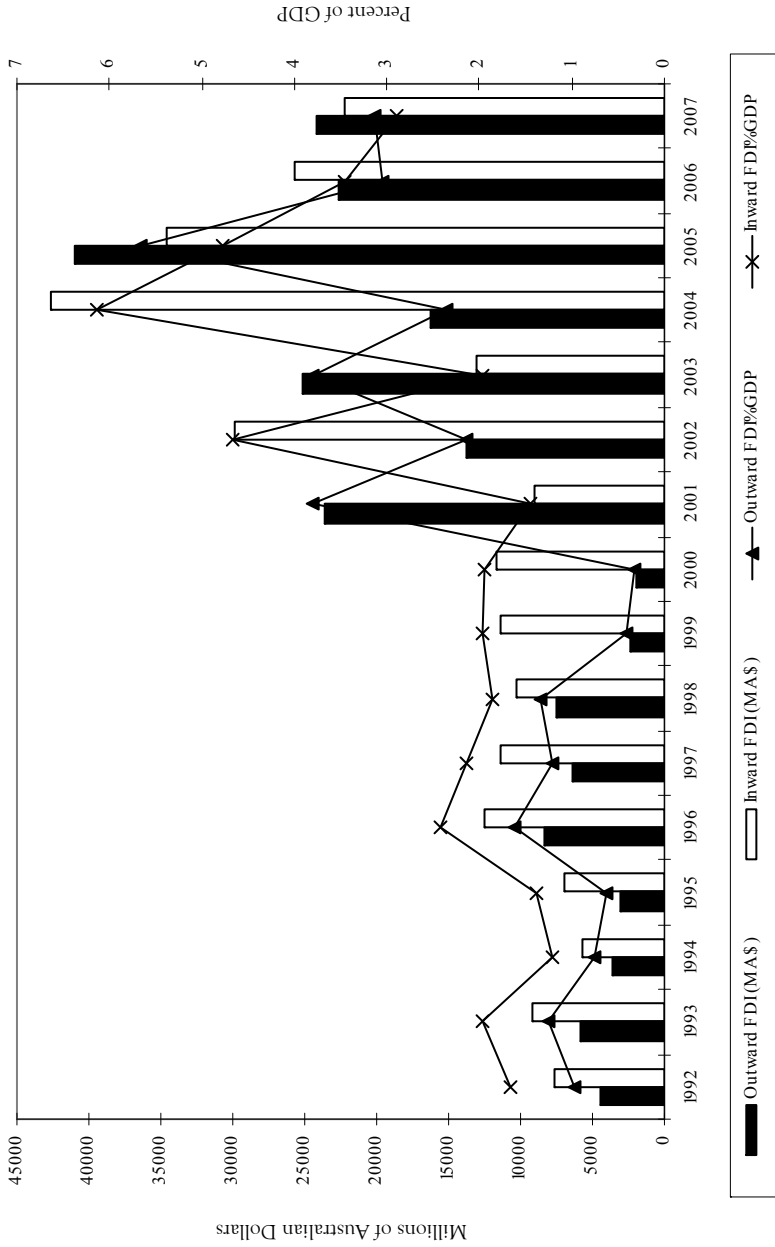
Trends and Patterns of Australian FDI

In the second half of the twentieth century the world economy has witnessed major developments in international trade and investment flows. The creation of international institutions (such as the World Trade Organization [WTO], International Monetary Fund [IMF] and World Bank), the collapse of the former Soviet Union and a significant removal of barriers to trade and investment in both developed and developing countries are some of the examples. These, together with developments in transport and communications, have not only increased the volume of international trade, but also the flows of international capital. Between 1990 and 2007, FDI has emerged as the most significant source of international capital flows (increased from US\$ 3,699 billion in 1990 to US\$ 30,812 billion by 2007), making countries become both the host and the source of FDI (UNCTAD 2008).

This global trend has also been seen in Australia. For instance, between 1990 and 2007, it experienced a significant increase in both inward and outward FDI. Until 2000, inward FDI grew much faster than outward FDI, both in absolute terms and in terms of its percentage of GDP. However, since 2001, there has been rapid growth in outward FDI with some variations from year to year (see Figure 1). Outward FDI – that was less than 1% of GDP in the early 1990s – reached about 6% of GDP in the mid 2000s. On the other hand, inward FDI also grew, but not at the same rate as outward FDI. The sharp increase in outward FDI appears to be mainly due to globalization of the world economy. This appears to have encouraged Australian investors to tap profitable and growing international markets, particularly in developed countries (Productivity Commission 1996).

Most Australian outward FDI has been directed toward developed countries. Among them, the United Kingdom, the United States and New Zealand are the major hosts, absorbing about 70% of Australian outward FDI. The United States is the major host, its share having increased from 20% in 1990 to 46% in 2007 (Appendix I). In the same period, the proportions going to the United Kingdom and New Zealand have fluctuated, though remaining the second and third largest recipients of Australian outward FDI (Appendix II). As argued in the institutional literature the heavy concentration of Australian FDI in these countries appears to be

Figure 1. Australia: Inward and Outward FDI Flows, 1992-2003 (Million A\$ and as % of GDP)



Source: Compiled by the authors from OECD (2003 & 2004b) and ABS (2003).

due to similarities in culture, language and institutional environment, which appear to influence investment flows (Buckley 1989; Tennant and Kirton 2007; Bitzenis and Marangos 2008). The relatively large size of host-country markets (with the exception of New Zealand), and gaining access to the large regional markets of the EEC (European Economic Community) and NAFTA (North American Free Trade Agreement) may also explain the higher concentration of Australian investment in these countries.

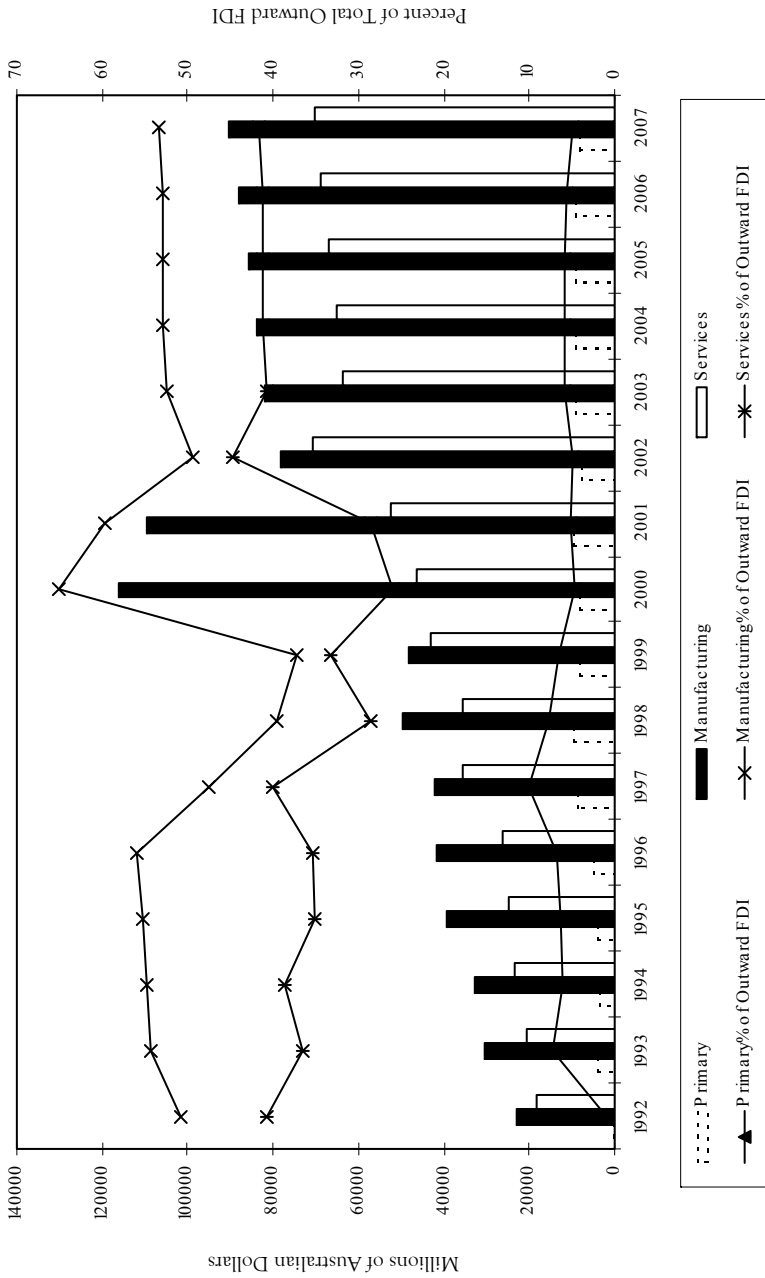
Among the high performing Asian countries, Hong Kong and Singapore are the major recipients of Australian outward foreign investment, although their shares have declined significantly in recent years. Japan's share remains very low, while China, Indonesia, Malaysia and Thailand are small players in attracting Australian FDI. Among the Pacific island countries, Papua New Guinea (PNG) is the major recipient of Australian FDI, although its share declined from 6% in 1980 to 3% in 1994 and less than 1% in 2007 (Appendices I and II). A declining proportion of Australian investment going to Papua New Guinea appears to be linked to the on-going conflict and the problems of maintaining law and order in the country.

As shown in Figure 2, most outward FDI has gone into services and manufacturing activities. These two sectors together account for about 95% of investment, while the share going into the primary sector has widely fluctuated. By the mid 2000s, about 53% of Australian outward FDI was in manufacturing, followed by services which attracted just over 40% of the investment, although there has been significant variations from year to year (Figure 2). This reflects Australia's intrinsic comparative advantage in financial services, print media (which is grouped under manufacturing) and mining. Given the nature of these sectors, Australian investors need to physically locate near the customers in order to serve them efficiently (for example, financial services, print media and recording) or near the source of raw material (in the case of mining).

Analytical Context and the Model Formulation

Foreign direct investment originates from the decision by a multinational enterprise (MNE) to relocate part of its activities to a selected host country. This decision is underpinned by the desire to reap benefits from its specific advantages such as technology, managerial expertise and marketing know-how provided the general business environment is conducive to profit making. However, FDI is not a homogeneous phenomenon, being a complicated and highly differentiated approach to globalization. For the purpose of discussing factors impacting on the decision of foreign firms to invest in a given overseas country, it is important to distinguish the three categories of MNE affiliates in terms of their operations in a host country (Athukorala and Sharma 2006). These include, producers largely engaged in serving the domestic market (known as "market-seeking" FDI), firms involved in extraction and processing of natural resources both for sale in domestic and international markets ("resource-seeking" FDI), and those engaged in production for the global market ("efficiency-seeking" FDI).

Figure 2: Australia: Outward FDI by Sector, 1992-2003 (Million A\$ and as % of Total Outward FDI



Source: Compiled by the authors from OECD (2003 & 2004b).

The location decision of market-seeking FDI depends primarily on the opportunity to expand markets by producing goods in the host country. For them, not only the size of the host country's market but also its growth rate is important. On the other hand, resource-seeking FDI is primarily influenced by the availability of natural resources in overseas countries, while efficiency-seeking FDI is motivated by lower production costs arising from cheap labor, tax incentives, lower tariffs and the quality of physical infrastructure in order to be competitive in the global market.²

Theoretically, the determinants of FDI have been developed and modeled within an investment demand model and new trade theory (Krugman 1991; Markusen and Venables 1998). The market size, its growth rate, and trade discrimination have been hypothesized as factors explaining the location determinants of FDI (Scaperlanda and Mauer 1969; Filippaios, Papanastassiou and Pearce 2003). Over time, new hypotheses such as the role of knowledge capital have also been added to explain the location determinants of foreign investment (Markusen 1998; Griffith 2005). It has been demonstrated that cross-border technological variations, caused by differences in knowledge capital, are the main motives for MNEs for investing in different countries, which has allowed them to produce differentiated products, while remaining competitive (Cantwell 1992). For instance, "both Japanese and European multinationals are setting up R&D [research and development] units in each other's markets with a view to responding to local customers' needs and tastes, as well as to capturing the locality-specific innovation in order to produce new products and varieties which can not only be sold locally, but also exported to other countries" (Ozawa 1992, 37). Theoretically, it has been shown that outward FDI from countries with similar resource endowment is strongly influenced by knowledge capital (Markusen 1998). The fact that high-income developed countries are both the host and the source of a large proportion of FDI tends to suggest that knowledge capital is a key location determinant of FDI, particularly among developed countries.³

Increasingly, it is believed that similarities in institutional environment as well as in language and culture also play a role in the movement of FDI between countries (Dunning 1981; Buckley 1989). With the creation of EEC and NAFTA, several studies have emerged to capture the effects of regional integration on the movement of FDI. These studies have shown that regional trade blocs are especially attractive to non-member countries seeking to secure a large regional market (Balassa 1967; Weinstein 1996; Markusen 1998; Velde and Bezemer 2006). Globalization has led to a change in the ways in which MNEs pursue their strategies. For instance, MNEs increasingly seek locations where they can combine their own mobile assets most efficiently with the immobile resources (such as liberal policy). This has led to the view that where trade is free, multinationals have a greater incentive to produce differentiated goods in different markets, suggesting a link between openness and FDI.

Based on the above review of the literature, in which a number of factors influencing FDI were identified, the following model has been developed. The expected signs are given in parentheses.

$$FDI_{it} = \alpha_i + \beta_1 MS_{it} + \beta_2 MG_{it} + \beta_3 KC_{it} + \beta_4 OP_{it} + \beta_5 ES_{it} + \beta_6 RI_{it} + \beta_7 LC_{it} + \beta_8 IS_{it} + \varepsilon_{it} \quad (1)$$

(+) (+) (+) (+) (+) (+) (+) (+)

where; i represent 1, ..., 13 countries, and t represent 14 years from 1994, ..., 2007.

FDI is the value of outward FDI in the real term (US\$), market size (MS) is represented by real GDP in US\$, market growth (MG) is measured by real GDP growth, knowledge capital (KC) is proxied by R&D expenditure as a percentage of GDP, openness (OP) is represented by tariff rates, economic stability (ES) is proxied by budget deficit/surplus as a percentage of GDP, regional integration (RI) dummy, which is one (1) for members of the EEC or NAFTA and zero (0) otherwise,⁴ language and culture similarity (LC) dummy, one (1) for English speaking country and zero (0) otherwise, and institutional similarity (IS) dummy, one (1) for developed countries and zero (0) otherwise. Data sources are discussed in Appendix III.

Model Estimation

Following the standard practice in the empirical literature on the determinants of FDI we have used the multiple regression model instead of the gravity model (see for example, More 1993; Wang and Swan 1995; Filippaios, Papanastassiou and Pearce 2003).⁵ The variables included in the model are guided by the literature and theoretical considerations.

The model is estimated using panel data (i.e., pooled cross-sectional and time series data) for 13 countries for the period 1994 to 2007.⁶ At the diagnostic test stage, we undertook the Hausman Test, which favored the Random Effects Model (REM) over the Fixed Effects Model (FEM) to investigate the issue at hand. The White Heteroskedasticity Procedure was used to correct for heteroskedasticity. To judge the robustness of our results we also used alternative definitions for some of the explanatory variables, but these did not improve the predictability of the model.⁷ Table 1 reports econometric results, which is estimated using Limdep 8.0.

As expected, the coefficient for the variable market size (MS) is statistically significant and has a positive sign, suggesting that the size of the host country market is a key determinant of attracting Australian FDI. Countries that have large domestic markets tend to attract Australian investment, possibly due to the benefits of economies of scale. This result is in line with the previous studies by Lunn (1980) on the determinants of U.S. direct investment in the EEC and by More (1993) on the determinants of German FDI. Filippaios, Papanastassiou and Pearce (2003) also found that market size was an important determinant of U.S. outward FDI in the Pacific Rim countries.

We did not find any statistical evidence in support of the view that growth in the host country market (MG) is a key determinant of attracting Australian FDI. This appears to be due to the fact that a large proportion of Australian FDI has been attracted to European countries and North America, which provides easy access to regional markets. Thus, growth in the host country market may not be a crucial determinant of Australian FDI. Knowledge capital (KC) – as a determinant of

Table 1: Determinants of Australian Outward FDI: Results of the Random Effects Models

Variable	Full Model	
	Coefficient	P value
Constant	-26417.8375** (11980.440)	0.027
Market Size (MS)	10.878*** (0.794)	0.000
Market Growth (MG)	-89.531 (139.673)	0.521
Knowledge Capital (KC)	-5057.349*** (1880.657)	0.007
Openness (OP)	376.246** (181.570)	0.038
Economic Stability (ES)	241.393 (176.196)	0.170
Regional Integration (RI)	17143.002* (10491.910)	0.102
Language and Culture Similarity (LC)	13198.839** (6934.873)	0.0570
Institutional Similarity (IS)	13024.401 (10294.883)	0.205
Time Trend (T)	680.722*** (142.395)	0.000
Baltagi-Li form of LM Statistics	259.03	
Number of Observations	128	

Note: Standard errors are reported in parentheses.

Significance levels are: *** 1%, ** 5%, * 10%.

Balagati-Li form of LM Statistics is used to assess whether the specified regression model is linear or not. A high value of the test suggests that the selected Random Effect Model (REM) is superior to classical regression model.

attracting FDI – was found to be statistically significant, but had an unexpected negative sign, suggesting that countries with the higher level of knowledge capital discourage Australia FDI. This unexpected result is difficult to explain given that most Australian outward FDI has gone to the countries that have a high level of knowledge capital.

We find that the coefficient for openness (OP) has an expected positive sign and is statistically significant, indicating that countries that are more open tend to attract Australian FDI – a result similar to More (1993), Filippaios, Papanastassiou and Pearce (2003) and Majocchi and Strange (2007). Our results about the link between openness and FDI provide further evidence in support of the view that openness facilitates foreign investment.

Although the coefficient of macro-economic stability (ES) is statistically insignificant, it has an expected positive sign. While statistically weak evidence, this provides some support for the view that countries with a stable macro-economic environment tend to attract Australian FDI. This may be due to the fact that, unlike portfolio investment, FDI is not liquid, and hence once investment is made it is not easy to pull out, which is why investors look for countries that have a stable macro-economic climate (Krugman 2001).

As expected, the coefficient for regional integration (RI) variable is statistically significant and has a positive sign, providing evidence to support the view that regional economic integration attracts Australian investment. The heavy concentration of Australian offshore investment in Europe and North America appears to have been motivated by the creation of NAFTA and the EEC, which opens a larger regional market for Australia. Our result about the link between regional integration and outward foreign investment is similar to those of Weinstein (1996) and Velde and Bezemer (2006).

The coefficient for language and cultural similarity (LC) variable is statistically significant and has an expected positive sign, suggesting that countries with similar language and culture to Australia tend to attract much of its FDI.

Although the coefficient for institutional similarity (IS) variable is statistically insignificant, it has a positive sign, which seems to provide some support for the view that a strong institutional environment helps ensure the rule of law and protects private property, factors that are important in attracting trade and foreign investment.

Conclusion

This paper presents empirical evidence of the determinants of Australian foreign direct investment using hypotheses drawn from an investment demand model, new trade theory and institutional economics. The investigation of the determinants of offshore investment is particularly important in the context of a rise in such investment, which expanded from about 1% of GDP in the early 1990s to over 6% by 2007.

Our results suggest that countries that have a large domestic market, an open trade regime and similar language and culture as Australia tend to attract most of its

foreign investment. Also, countries in regional blocs (such as NAFTA and EEC) tend to attract a significant amount of Australian FDI, seeking entry to a larger regional market. Surprisingly, our findings tend to indicate that countries with a high level of knowledge capital do not attract Australian investment. This unexpected result is difficult to explain, given that about 70% of Australian investment goes to the countries with higher knowledge capital. Although statistically small, our results tend to suggest that macro-economic stability and an efficient insitutional environment tend to attract Australian investment, providing some support for the view put forward by institutional economists.

These findings have significant policy implications not only for Australia, but also for other developed countries that view foreign investment as a means of accumulating advanced technology and improving productivity. Our findings point to the importance of policy reforms aimed at achieving macro-economic stability, removing barriers to trade and investment (at both regional and multilateral levels), and creating a strong institutional environment to facilitate foreign investment.

It is important to point out the limitations of our study and scope for future research. The limitations are threefold. First, we were unable to segregate Australian offshore investment data by key sectors (such as manufacturing and services etc.), which could have offered useful insights. Sector-specific characteristics may have an impact on the locational determinants of foreign investment. Second, openness is a complex phenomenon and this complexity cannot be fully captured by a quantitative measure (such as, trade percentage of GDP) that we have used. Although it is widely used in the literature, there are well-known problems with this measure of openness. Third, measuring knowledge capital through R&D expenditure is problematic given that it is an input measure, which does not tell us how much has been actually translated into knowledge capital. In other words, not all R&D expenditure is commercially successful and contributes to knowledge capital. Further research is thus justified. Future researchers should use sector-specific disaggregated investment data to see whether the findings hold true for all major sectors or sector-specific features have an impact on the choice of location. Also, wherever possible better proxy for openness and human capital should be deployed.

Appendices

Appendix I: Country Composition of Australian Direct Investment Abroad (ADIA) Stock, 1994 to 2007 (%)

Year Ending	United States	United Kingdom	New Zealand	PNG	China	Canada	Belgium-Luxembourg				Japan	Netherlands	Hong Kong	Indonesia	Malaysia	Singapore	Thailand	Other
1994	23.86	34.32	12.34	2.88	0.13	1.13	0.22	0.20	1.50	7.86	0.50	1.12	2.68	0.14	11.11			
1995	25.92	34.46	13.11	2.48	0.15	0.95	0.19	0.45	1.38	6.40	0.57	0.96	2.21	0.12	10.64			
1996	30.26	29.51	12.29	2.79	0.23	0.83	0.16	0.30	1.59	5.61	0.67	1.10	1.91	0.12	12.62			
1997	27.61	32.74	10.11	2.41	0.53	0.85	0.13	0.27	2.02	6.16	0.87	0.69	1.39	0.20	14.02			
1998	37.74	31.56	6.75	1.68	0.27	0.66	0.07	0.12	0.83	5.39	0.54	0.40	1.04	0.14	12.81			
1999	43.61	28.29	7.88	2.39	0.29	0.41	0.07	0.16	2.04	3.71	0.60	0.61	0.34	0.16	9.44			
2000	51.33	23.24	6.68	0.79	0.20	0.76	0.17	0.14	1.28	2.41	0.35	0.22	1.04	0.12	11.26			
2001	49.99	17.34	9.15	0.74	0.22	1.35	0.26	0.19	1.54	2.78	0.29	0.21	1.05	0.03	14.85			
2002	43.34	24.29	10.88	0.87	0.18	0.70	0.39	0.23	1.73	2.09	0.25	0.18	0.83	0.08	13.96			
2003	46.05	20.23	12.88	0.74	0.15	0.97	0.32	0.20	1.34	2.01	0.26	0.16	1.07	0.12	13.52			
2004	45.49	22.07	11.09	0.73	0.16	0.84	0.35	0.21	1.51	2.05	0.27	0.17	0.95	0.10	14.01			
2005	44.82	21.01	10.71	0.71	0.19	0.91	0.33	0.19	1.40	2.56	0.24	0.16	0.98	0.11	15.02			
2006	45.80	21.50	10.89	0.69	0.18	0.88	0.30	0.18	1.45	2.47	0.23	0.18	0.89	0.12	13.75			
2007	46.07	21.2	11.10	0.68	0.21	0.90	0.29	0.19	1.39	2.49	0.24	0.15	0.87	0.13	14.87			

Sources: Productivity Commission (1996), OECD (2004a; 2004b) and ABS (2003; 2008a; 2008b).

Appendix II: The Stock of Australian Direct Investment Abroad (ADIA) in Selected Country and Region, 1980 to 2007 (%)

Year Ending	United States		United Kingdom		New Zealand		ASEAN	PNG	China	Other	Total
	United States	United Kingdom	United Kingdom	New Zealand							
1980	13.11	11.83	8.06	28.28	5.78	0.00	32.95	100.00			
1981	14.36	10.28	9.67	38.89	9.60	0.00	17.21	100.00			
1982	13.05	12.57	9.31	34.61	12.69	0.00	17.76	100.00			
1983	13.90	11.60	10.23	23.99	8.19	0.00	32.09	100.00			
1984	17.66	16.37	10.48	14.89	7.34	0.00	33.26	100.00			
1985	24.84	20.04	8.10	6.92	5.16	0.00	34.95	100.00			
1986	31.05	18.73	11.69	2.37	5.53	0.00	30.63	100.00			
1987	24.48	15.96	14.48	4.29	6.35	0.00	34.44	100.00			
1988	17.87	30.54	14.46	2.73	5.38	0.00	29.02	100.00			
1989	26.26	26.83	11.87	5.68	3.61	0.00	25.75	100.00			
1990	20.61	32.53	14.66	7.51	3.56	0.00	21.13	100.00			
1991	19.59	36.77	16.18	7.23	3.93	0.00	16.30	100.00			
1992	27.48	30.48	13.94	4.17	3.77	0.00	20.17	100.00			
1993	27.35	25.94	13.65	4.01	3.66	0.00	25.40	100.00			
1994	23.86	34.32	12.34	4.35	2.88	0.13	22.12	100.00			
1995	25.92	34.46	13.11	3.89	2.48	0.15	19.99	100.00			
1996	30.26	29.51	12.29	4.18	2.79	0.23	20.73	100.00			
1997	27.61	32.74	10.11	3.56	2.41	0.53	23.03	100.00			
1998	37.74	31.56	6.75	2.55	1.68	0.27	19.44	100.00			
1999	43.61	28.29	7.88	2.22	2.39	0.29	15.33	100.00			
2000	51.33	23.24	6.68	2.16	0.79	0.20	15.60	100.00			
2001	49.99	17.34	9.15	2.07	0.74	0.22	20.48	100.00			

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2006	45.80	21.50	10.89	2.98	0.69	0.18	17.94	100.00
2007	46.07	21.2	11.10	2.75	0.68	0.21	18.30	100.00

Note: Date before and after 1986 are not strictly comparable due to a change in definition of ADIA. According to the ABS, ADIA is defined as net capital investment by Australians in foreign enterprises in which they have at least a 10% equity interest. Prior to 1985-86, Australian equity shares had to be at least 25% in order to be qualify as direct investment (Productivity Commission, 1996, 7-8).

Sources: Productivity Commission (1996), OECD (2004a; 2004b) and ABS (2003; 2008a; 2008b).

Appendix III: Definition of Variables and their Data Sources

- FDI = Outward Australian FDI in real US\$.
- Data sources:* OECD (2004b) and (ABS 2003; 2005; 2008a; 2008b).
- MS = Market size, estimated by the level of real GDP in US\$.
- Data Sources:* OECD (2006b) for OECD countries and for other countries World Bank (2008 and previous issues)
- MG = Market growth, proxy by the growth in real GDP.
- Data sources:* Same as for market size variable.
- KC = Knowledge capital, proxy by the R&D expenditure as percentage of GDP.
- Data Sources:* OECD (2006a; 2006b; 2006c); National Science Foundation (2004); Statistics New Zealand (2002); Office of the National Research Council of Thailand (2006) and APEC (2006).
- OP = Openness is measured by tariff rates for each country.
- Data Sources:* Gwartney, Lawson and Gartzke (2005); World Bank (2006) and World Bank (2008).
- ES = Economic stability, measured by budget deficit/surplus as a percentage of GDP.
- Data Source:* International Monetary Fund (various issues).
- RI = Regional integration dummy whose value is 1 for NAFTA and EEC countries, 0 otherwise.
- LC = Language and culture similarity dummy, 1 for English speaking countries, 0 otherwise.
- IS = Institutional similarity dummy whose value is 1 for developed countries in Europe, USA, Canada, New Zealand and Singapore, 0 otherwise.

Notes

1. In this paper we use outward FDI, Australian FDI and Australian offshore investment synonymously.
2. Based on the above typology, it is clear that Australian FDI is either market seeking or resource seeking type.
3. It is important to note that knowledge capital includes not only human capital of employees, but also patents, blueprints, work procedures, marketing knowledge and trade marks (Markusen 1998, 753). Since there is no single measure to capture these, we are forced to use R&D expenditure as a percentage of GDP to determine if knowledge capital has an influence in attracting FDI, although we are aware of the limitations of this measure.
4. Note that we have not introduced a separate dummy to capture the effect of AUSFTA (Australia–United States Free Trade Agreement) as Australia and the United States entered into the agreement only in 2005 and the agreement is not yet fully implemented. The exclusion of AUSFTA dummy, however, is unlikely to have an impact on our results.
5. The traditional gravity model is normally applied in trade flow analysis.
6. The selection of countries is mainly guided by data availability. These include the United States, Canada, UK, New Zealand, Japan, Netherlands, Belgium, China, Indonesia, Thailand, Singapore, Malaysia and Papua New Guinea. These countries absorb about 95% of Australian outward FDI.
7. For example, openness was measured using: trade percentage of GDP and tariff rates. Knowledge capital was measured: using R&D expenditure as a percentage of GDP and a dummy variable (1 for knowledge intensive advanced countries and 0 otherwise). Similarly, economic stability was measured using: the budget deficit/surplus as a percentage of GDP and the real exchange rate.

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