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A review and re-analysis of evidence from Australia

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The determinants of foreign direct investment:

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Abstract

Foreign direct investment (FDI) is foundational to economic growth. Despite this, the Australian empirical literature is limited. Therefore we examine the empirical determinants of Australia's inflow of FDI to understand the factors that motivate FDI. Using autoregressive distributed lag models, the study also highlights how these determinants change across time. While inward FDI can be explained by various theories it is most effectively understood by Dunning's Ownership, Locational and Internalisation framework. Therefore, the factors most important in Australia to attracting FDI are monetary policy, productivity, a competitive tax structure, labour market flexibility, and costs of trade and investment.

JEL codes: F15, F21

Keywords: foreign direct investment, autoregressive distributed lag model, short-run determinants, long-run determinants.

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1. Introduction

Over the past century the world economy has undergone enormous structural and institutional change. The creation of global institutions in the 1940s (e.g., the United Nations, International Monetary Fund (IMF) and GATT (World Trade Organisation)) and the large-scale reduction of trade barriers has liberalised the global flow of trade and capital (Sharma and Bandara, 2010). However, compared to international trade, studies of international capital flows have been less pronounced. Prior to 1960, analysis of international capital flows was considered under the guise of portfolio investment. Studies by Hymer (1960), Vernon (1966) and Kindleberger (1969) later made more explicit distinctions between portfolio and other types of investment that would cultivate a new stream of literature on foreign direct investment (FDI) and the multinational enterprise (MNE).

MNEs are defined as large companies with global operations controlled by a parent organisation (Faeth, 2009). Their rise coincided with increasing global economic integration and appetite for profit beyond domestic borders. To exploit opportunities in foreign markets MNEs engaged in FDI or investment that reflects a long-term or controlling interest of a foreign asset[1]. Unlike portfolio investment, FDI contends with obstacles of distance, culture, and government regulation. Theories of FDI are therefore concerned with how organisations compete in international jurisdictions.

Although contested by some, the presence of multinationals and FDI generates higher productivity through the transfer of technology and expertise – stimulating imitative behaviour and improving market competition (Borensztein, De Gregorio and Lee, 1998). The benefits of FDI also occur at the macroeconomic level. When financing the gap between investment and savings (i.e., net capital inflow), the cost of servicing the inflow is outweighed by higher rates of productivity. As such, multinational investment acts to accelerate the growth of national income and facilitate improvements to a country's living standards (Makin and Chai, 2018).

But, if not correctly managed FDI can have destabilising effects. The inflow of foreign firms has the potential to displace local investment, give rise to national security concerns, and hamper employment and wage growth as a result of firms' capital-intensive activities and the substitution of capital for labour (Faeth, 2005). There is also evidence suggesting that while

[1] According to the United Nations (1973), 'control' is defined as a minimum equity share of 10%. Examples of FDI may include investment in real estate, production or manufacturing facilities, mergers and acquisitions – among many others.

FDI has a positive long-term impact on domestic entrepreneurship it may come at the expense of domestic entrepreneurship in the short-run (De Backer, 2003).

In 2017, Australia was host to USD$49 billion of FDI, the eighth largest in the world (UNCTAD, 2018). While Australia's FDI has had a growing contribution to the domestic economy, its share among developed economies has been in steady decline since the 1980s (see Figure 1). Large emerging economies such as China and India appear to be a partial reason for this as they have redirected a large share of the world's economic activity. Nevertheless, Australia's fall in international competitiveness or its ability to attract investment is potentially just as consequential.

Since the introduction of application fees in 2015 by Australia's Foreign Investment Review Board (FIRB), the flow of approved direct investment proposals has slumped from 41,445 in 2015-16 to a low of 8,724 in 2018-19 (FIRB, 2019). Geopolitical risks with China have grown, banking sector disputes have surfaced and restrictive taxation procedures and labour market regulations have persisted. Over this period the World Economic Forum (WEF) has made several downgrades to Australia's position in the Global Competitiveness Index (WEF, 2017). Despite the Bogor Declaration's call for equal promotion of FDI and trade in 1994, in reality Australia and the broader Asia-Pacific Economic Cooperation (APEC) region have achieved the opposite, favouring trade as the principal external source of growth (see Figure 2).

The link between increasing competitiveness and the contribution FDI has to GDP, though, may not be so straightforward. The current literature on direct investment in Australia is limited. This is important as the nation's characteristics are a unique – large in its physical dimensions, highly endowed with natural resources and geographically isolated from the majority of its trading partners (Guttmann and Richards, 2006). This may be the cause of two concerns: one, the current foreign investment policy held of the FIRB restricts its ability to benefit from FDI – suppressing total welfare; two, Australia's growing reliance on trade as a source of growth increases fragility and sensitivity to global trade shocks. Failing to improve the understanding of how to attract direct investment and diversify external sources of growth, Australia may continue to forego productive long-term opportunities generated by FDI for more convenient but potentially less sustainable ones.

The primary aim of this work is to examine the empirical determinants of Australia's inflow of direct investment through the lens of various theories. As the motivations of multinationals are to some degree heterogeneous across countries, the value of this work is its contribution to the

understanding of which factors attract and deter FDI in Australia. Using autoregressive distributed lag (ARDL) models, we also highlight how these determinants change over the short- and long-run in an attempt to guide policymakers in the future.

2. Theories of FDI

The initial theoretical framework explaining foreign investment originated from the Heckscher-Ohlin model. This two-good, two-factor, two-country general equilibrium model assumed perfectly competitive markets; capital and labour as the only inputs to production using constant returns to scale technology; and zero transportation costs (Leamer, 1995). To understand capital trade, the model inferred that the decision to export capital was due primarily to price differentials. Arising from the heterogeneous factor intensities and endowments among goods and countries, the price differentials caused capital to flow into countries where the rental rate on capital was higher and wage rate was lower. In the long-run this process would lead to factor price equalisation (Krugman, Obstfeld, and Melitz, 2018). Thus, factor abundant economies would choose to export (import) capital or labour when the opportunity cost was low (high), i.e., factor scarcity.

Iterations of this model were later developed by MacDougall (1960), Kemp (1964) and Aliber (1970). After relaxing its initial assumptions, the MacDougall model predicted that while capital tended to flow toward those countries with the highest return. The inclusion of transportation costs meant capital was not completely mobile, and as a result, governments could effectively manipulate the rate of return through taxes and tariffs. Aliber's (1970) model accounted for foreign exchange in the capital market. While concluding that capital flows were driven by the relative rate of return, Aliber found that the source of these differentials was a result of currency risk that was reflected by a premium matching the expected appreciation or depreciation. Given the varying risk structure associated with hard and soft currencies,[2] it was hypothesised that firms operating within hard currency areas could borrow from those in soft currency areas at a lower interest rate. Indirectly, firms borrowing internationally would improve their expected return on capital at home through a lower cost of debt thus providing an advantage over other domestic firms.

Hymer (1976) questioned the validity of the neoclassical interpretation of foreign investment by noting that a theory of FDI cannot assume perfect competition given the degree of market

[2] Hard currencies are those that are stable and contain less risk whereas soft currencies are volatile and are of higher risk and thus demand a lower borrowing rate (Faeth, 2009).

power of the entities (MNEs) from which the investment originates. Crucially, Hymer distinguished the difference between portfolio and direct investment (i.e., controlling versus smaller equitable interest in a foreign asset), suggesting that FDI was a function of various monopolistic advantages rather than interest rate differentials. Kindleberger (1969) agreed with this critique claiming that under the conditions of perfect competition firms could not possess an advantage that would justify foreign investment. Collectively, Hymer and Kindleberger hypothesised the departure from perfect competition in the good and factor markets as due to the presence of 'ownership advantages'. [3] These monopolistic advantages acted as a counterbalance for the disadvantages associated with entering foreign markets, e.g., greater risk, imperfect information, as well as new cultural, political and legal environments. As such, it was theorised that firms were more likely to participate in foreign investment when the monopolistic advantages were high as it allowed them to better compete internationally (Rayome and Baker, 1995).

Caves (1971), and later Knickerbocker (1973), developed similar conclusions of competition in the theory of multinational investment. While having a narrower view, Caves highlighted that FDI was driven by product differentiation and often occurred in concentrated industries (oligopolistic or monopolistic markets) where the barriers to entry were significant. From this hypothesis Caves observed that large foreign firms enjoyed testing new markets by locally producing differentiated products – otherwise known as horizontal FDI – while smaller firms favoured licensing due to its cost efficiency in the short-run. While initially more costly, MNEs benefited from lower production costs and a faster product adaptation process when producing in the host nation – giving them a significant advantage over domestic competitors.

Product differentiation was also the primary focus of Vernon (1966, 1974, and 1979) in his Product Cycle Hypothesis. Vernon's theory posited the link between investing and exporting highlighting that the decision to invest or export was influenced largely by the lifecycle stage of the product: new, mature or standardised. Once the product had serviced domestic demand, it transitioned into its mature state whereby exporting occurred. Vernon then stipulated that the comparative advantage of production in a host country over exporting provides a sufficient rational for participating in FDI.

[3] These advantages included: product differentiation, retail price maintenance and marketing; patents and new technology, managerial expertise, greater access to capital; internal and external economies of scale; and government intervention on output or entry.

Extending the research of Coase (1937), Buckley and Casson (1976) formalised the Internalisation Concept in order to justify foreign production. The central hypothesis concerned the intra-firm efficiency of transactions where market imperfections are present. Buckley and Casson found that firms would rather internalise their intermediate good or factor by creating an internal market thus bypassing any cost of inefficiency. Intermediate goods such as knowledge, expertise or technology were typically bound to information and bargaining costs, particularly in the case of licensing. A motivation for FDI will emerge when an MNE can conduct an internal transaction of the intermediate good at no disadvantage (e.g., with no loss of protection in knowledge or expertise, as well as good replication). Based on various firm, industry, region and country-specific factors, Buckley and Casson identified that knowledge-intensive industries, or those that partake in a high volume of research and development, were often found to internalise more than other industries.

Similarly, Magee (1977) developed the 'appropriability problem' which expressed the relationship between innovation and replication of technology. Defining appropriability as the degree of imitability, Magee highlighted that the transfer of technology or knowledge through a common ownership (i.e., subsidiary) allows firms to protect their income generating assets from emulation when appropriability is high.

Hennart (1982) later formed a variant of Internalisation Concept (the Transaction Cost theory) that stipulated the inefficiency of participating in markets where property rights are ill-defined or imperfect. His approach showed that MNEs overcome these costs via hierarchical methods of coordination[4] in order to manage international interdependencies. The Transaction Cost theory also suggested the existence of horizontal and vertical investments, where the internalisation advantages were underpinned by knowledge and goodwill or backward and forward integration. Later, Hennart (1988) developed explanations for various forms of multinational investment (e.g., countertrade, contracts and joint ventures) and concluded that his approach was the most comprehensive explanator of FDI.

Dunning's (1977) Eclectic Paradigm, also known as the OLI Framework, combined the theory of market imperfection, internalisation and trade in order to understand the existence of multinationals. Categorised into Ownership, Locational and Internalisation (OLI) advantages, Dunning highlighted that the satisfaction of all three conditions provide a sufficient motive for

[4] That is, having employees in a foreign country rather than managing interdependencies in an inefficient market with price distortions.

engaging in FDI. Following the premise of Hymer (1976) and Kindleberger (1969), ownership advantages were described as the comparative edge of a multinational's production process as a result of superior managerial or technological sophistication. Locational advantages were classified as the benefit of accessibility to markets, tax havens, lower tariff duties, as well as a lower cost of production; all of these relate to the horizontal and vertical theories of FDI from Markusen (1984) and Helpman (1984). Finally, internalisation advantages, as discovered by Coase (1937) and developed by Buckley and Casson (1976), refer to the improved efficiency of transferring ownership advantages (e.g., knowledge or expertise) intra-firm rather than in the market via other modes of entry (exporting or licensing).

In a later paper, Dunning (1980) improved his framework to illustrate three forms of FDI, market-seeking, resource-seeking, and efficiency-seeking. MNEs engaging in resource-based FDI (seeking to exploit natural or physical endowments) or market-based FDI (pursuing particular domestic or adjacent markets) were related to an initial capital investment. On the other hand, those wishing to conduct efficiency-based FDI (looking to improve production processes or global networks) were typically sequential. Dunning also argued for the existence of export-platform FDI (i.e., where most of an affiliate's output is exported rather than sold in the host economy) in order to acquire proximity and cost advantages. While acknowledging the potential sources of improvement,[5] Dunning (1988a, 1988b) underlined that his approach also allowed for various types of OLI advantages depending on the country or activity.[6]

After providing support for the theory of Market Imperfection, Rugman (1975) took the notion of portfolio theory from Tobin (1958) and Markowitz (1959) and applied it in the context of multinational enterprise. Based on the initial attempts by Cohen (1972) and Severn (1974), Rugman described multinationals as indirect vehicles for international diversification motivated by the stability of net income. Importantly, the reduction of risk was a function of firm size, the expansion of operations abroad and the diversification of sales – assuming the location of those sales had a negative correlation to the home economy. By minimising exposure to systemic risks[7] (in both product and factor markets) implied theoretically positive relationship between international diversification and firm value.

[5] See Dunning (1988a, 1988b) for reflection upon the criticism of the modelling process, static-nature, economic involvement, divestments and the consequences of multinational enterprise.
[6] OLI advantages were said to vary depending on a nation's development, size, industrialisation, productivity, nature of competition, as well as firm size, maturity and the rate of replication.
[7] Systemic risks within a particular economy may include political unrest, business cycles or natural disasters.

Furthermore, Rugman highlighted that multinationals (compared to those with fewer foreign operations) could provide greater value to shareholders who could not achieve portfolio diversification. Where such cases existed, individual investors purchased equities (stocks) of multinational companies and enjoyed the same benefits of diversification. Kim, Hwang and Burgers (1993) agreed with Rugman's conjectures, claiming, too, that global market diversification increased the rate of return on capital at a lower risk than those otherwise domestically located. More specifically, their claims rested on three key arguments that global diversification: (1) minimises risk; (2) provides access to optimal markets and cheaper resources; and (3) allows for greater economies of scale.

Established by Markusen et al. (1996) and Markusen (1997), the Knowledge-Capital Model unified both horizontal and vertical motivations into a theory of foreign investment. Horizontal investments related to repositioning production for greater market accessibility and lower trade costs. By contrast, vertical investments, as first theorised by Helpman (1984), were associated with the fragmentation of the production process in order to access relatively cheap and abundant factor inputs. Independently, horizontal FDI was expected to occur between economies of similar market size and factor endowments while those with relatively different factor intensities attracted vertical FDI. After simulating the liberalisation of trade and FDI, Markusen's model found the existence of both horizontally and vertically motivated MNEs, where the greater share was horizontal. Importantly, however, in the case of price equalisation (or where countries had identical factor intensities) the evidence of multinationals was insignificant.

Finally, the theory of Institutional Fitness analysed a nation's flow of FDI based on four measures (1) government, (2) markets, (3) education, and (4) cultural fitness. These measures reflected an economy's competency in attracting and retaining FDI. Conceptualised by Wilhelms and Witter (1998), the theory suggested the importance of education as a driver for productivity and the sponsor of creativity and information processing. In conjunction with FDI, a basic level of education improves operational efficiency and the productivity of capital. Further, the development of markets was another key component of Institutional Fitness. Specifically, the theory found that the sophistication of financial markets had a significant impact on a firm's decision to conduct FDI, as well as the competitiveness of markets and protective regulation.

Government fitness, broadly described as the level of restrictiveness, was argued as the largest determinant of FDI flows. As echoed by Popovici and Calin (2014), they proposed that open and transparent economies with low rates of intervention were more likely to entice investment. In the theory's final pillar, Wilhems and Witter hypothesised that the receptiveness of a nation's culture was crucial in attracting FDI given its signal of a high perceived cultural proximity. Ultimately, while highlighting that the four "pillars" were inextricably linked, the net effect illustrated strong explanations of FDI's determinants as well as the distribution of multinational investment across countries.

3. Australian evidence on FDI

A country-specific review of the determinants of FDI for Australia is necessary due to the unique country case it represents, i.e., small, geographically distant and resource abundant. These characteristics imply that research conducted on other countries may not apply to Australia. Additionally, while there has been a wealth of empirical studies in the US, UK and Europe, Australia studies are fewer. Australian studies on FDI are summarised in Table 2.

Brash (1966) was the first to empirically estimate the determinants of FDI in Australia. After collecting survey data from 100 US manufacturing firms, Brash found that initial investment in Australia was typically driven by host market growth, trade restrictions (tariffs) and the cost of production (labour or factor availability, transport costs and financial inducements from government).

Other Australian studies using this methodology were conducted by Buckley and Mathew (1979), followed by Hutchinson and Nicholas (1994). Directed at UK investors, Buckley and Mathew developed a questionnaire that revealed the reasons behind the decision to expand nationally, globally, or to Australia. After collecting 52 observations, their analysis suggested that market failure was the primary determinant for FDI in Australia; this was consistent with theoretical predictions. Broadly, it was found that firms wished to exploit their company advantage (or firm-specific skill) in efficient and less restrictive markets, while a more specific analysis highlighted that Australia's market access to Asia and structural similarities to the UK were also key in determining the UK's outward investment pattern. Based on their findings from 21 Japanese manufacturing firms, Hutchinson and Nicholas made similar conclusions

claiming that tariffs, cost of resources and government policy were crucial for Australia's flow of FDI. Nevertheless, contrary to theoretical predictions, product pricing, wage rates and productivity were found to be insignificant factors.

Parry (1978) conducted cross-sectional analysis of Australian FDI by regressing foreign ownership with various structural and conduct characteristics across 128 Australian manufacturing industries. Consistent with the theory of firm advantage, foreign ownership was said to be positively related with R&D expenditure, capital-intensity, seller concentration, geographical density and product differentiation. Critically, Parry's results found industry profitability and diversification to be insignificant while resource intensity and multi-plant operations contradicted theoretical predictions.

An alternative cross-sectional model was employed by Ratnayake (1993) where inter-industry fluctuations of foreign ownership in Australia were examined within 132 manufacturing sectors. Defined as the percentage of sales by foreign-owned firms, foreign ownership was evaluated using a simultaneous equation model. The results again suggested the importance of ownership advantages highlighting that skilled labour, industry concentration, economies of scale and the rate of protection were all important and positively related to multinational investment. Although contributing to the literature, Ratnayake's model was criticised for its specification, which biased parameter estimates and reflected prior conclusions.

Later, Karunaratne and Tisdell (1998) constructed a vector autoregressive model (VAR) to observe the relationship between quarterly Australian FDI inflows and trade openness[8], US FDI flows[9] and GDP. Their findings indicated bi-directional Granger causality between Australian FDI inflows and outflows (a feedback effect), as well as a positive relationship with US GDP. Importantly, the model showed trade openness to be a positive long-run determinant for multinational investment – indicating that trade and FDI were not substitutes thereby rejecting the neoclassical theory. The analysis also stressed the existence of the complementarity hypothesis (suggesting inflows and outflows increase together) and export-platform FDI[10] in order to improve accessibility to Asian markets. In the same year, Moshirian (1998) used a simple OLS regression model, finding financial sector size, bank foreign reserves, cost of

[8] Defined as: $100 \times \left[\frac{(\text{EXPORTS}+\text{IMPORTS})}{\text{GROSS DOMESTIC PRODUCT}}\right]$.

[9] Both US inflows and outflows were expressed as a ratio to GDP.

[10] Export-platform foreign direct investment in which the affiliate's output is (largely) sold in third markets rather than in the parent or host markets.

capital (real interest rate), relative exchange rates and manufacturing investment to all be powerful explanators of Australian FDI.

Tcha (1999) investigated Australian FDI using pooled data (quarterly and annual) from countries including the US, UK, NZ, Canada, Japan and Germany. The quarterly model tested two variables: the real exchange rate and labour disputes, each with four time lags. These had limited explanations for Australian FDI. The country-specific model did find significant coefficients for Canadian (negative) and Japanese (positive) dummies whereas the remaining variables (host real GDP, relative real GDP per capita, real exchange rate, real wages ratio, disputes ratio and UK, NZ and German country dummies) were insignificant.

Departing from a theoretical approach, Yang et al. (2000) then estimated a model based solely on data and specification to analyse Australia's foreign investment inflow. Using quarterly aggregate data, the regression highlighted that industrial conflicts, wage rate changes, and relative interest rates all increased multinational investment in Australia. Contradicting some theoretical predictions as well as the empirical findings from Karunaratne and Tisdell (1998), trade openness had a negative impact on inward investment while host market size and relative exchange rates were insignificant.

Nevertheless, the robustness of the results were called into question considering the model's data limitations (35 observations), weak independent variable (nominal FDI) and the atheoretic approach. As such, the inconsistent results (industrial disputes, wage rates and trade openness) were emphasised as reasons for more thorough research.

Finally, the most recent and comprehensive study of Australia's inward investment was led by Faeth (2005). Expanding upon the Yang et al. (2000) model, Faeth estimated a quarterly distributed lag model in conjunction with various theoretical frameworks (i.e., Heckscher-Ohlin, OLI, Horizontal, Vertical, Knowledge-Capital and Diversification theories). Examining data between 1985 and 2003, the results suggested the importance of long-term factors (up to five time lags) to the investment decision. More specifically, Faeth found host GDP growth, labour supply, real wages, trade openness and the real interest rate to be positive determinants, whereas inflation, corporate tax rates and the real exchange rate had unexpected impacts on Australian FDI. While exchange rate appreciation had an immediate and positive impact on investment, the current economic climate had a seemingly limited effect. Faeth concluded that the partial support for the Neoclassical, OLI, Horizontal and Knowledge–Capital models

underlined the valid application of numerous FDI theories. Importantly, Faeth emphasised that the most applicable theory for Australia remains unclear.

4. Methodology

The objectives of this section are to: (i) describe the data, (ii) describe and justify the methodology (ARDL), and (iii) report test results of the data.

The data used here were retrieved from the Australian Bureau of Statistics (ABS); the Reserve Bank of Australia (RBA) and the OECD. Although some firm level details are lost to aggregation, the use of these secondary sources provide the advantage of accessibility, completeness and international comparability (Faeth, 2005). Disseminating this information was rationalised by what the literature indicated was a likely determinant of FDI, and the availability and credibility of the data.

Table 3 summarises the data that met these criteria. The quarterly time series spans from 1988 to 2018 and contains 119 observations. Due to changes in the classification of Australian FDI,[11] any analysis prior to 1985 is considered inapplicable. While this limitation inhibits our understanding of Australian FDI in a time of crucial regulatory and policy reform, these data are the most extensive available since the seminal work of Faeth (2005).

4.2 Independent and explanatory variables

The empirical models regress several aggregate indicators against the quarterly stock of direct investment liabilities (FDI), measured as a ratio to GDP.[12] By accounting for fluctuations in market size, here the dependent variable is considerably more robust than pure inflow data. The potential determinants included in the FDI model capture three broad national characteristics relevant to the multinational firm as identified in the literature: production conditions; competitiveness; and market risk. These variables have been summarised in Table 4.

[11] The rate of controlling interest in an asset was lowered from a minimum of 25% to 10% by the Australian government (ABS, 2003) as per the Balance of Payments Manual 5 (BPM5). In their use of the fully consolidated system, the scope of investments considered include directly and indirectly owned subsidiaries (more than 50% ownership), associates (between 10% and 50% ownership) and branches (full or joint owned enterprises).

[12] Calculated using the seasonally adjusted GDP series from the National Accounts (5206.0).

4.3 Time series analysis

Time series modelling applies various statistical techniques to examine economic variables through time. These time series models serve as an appropriate tool for estimating variables whose relationships present themselves across several periods, such as FDI (Pickup, 2015). However, these methods can be invalidated by errors such as non-stationarity and autocorrelation. Testing of the data and the employment of an ARDL modelling approach is used to address these issues, as detailed below.

4.4 ARDL Modelling

The ARDL process was developed by Pesaran et al. (2001). This process integrates the short- and long-run equilibria to retain relationships between variables of different orders across time (I(0) and/or I(1).[13] Containing lagged dependent (AR) and independent (DL) variables, these models are dynamic single equations that produce a reparameterised result into an error correction model (EMC) where a cointegrating relationship is present.

The formal determination of this process is achieved by computing an F-statistic (Wald test) for each endogenous regressor in the model. Once the optimal lag selection has been derived using the Akaike's Information Criterion (AIC), the model then conducts a bounds test to identify the absence (H_0) or presence (H_1) of a long-run relationship.

4.5 The Empirical Models

Using the data described in section 4.2 the ARDL models in this study attempt to embody Australia's environment for direct investment by capturing three key national characteristics relevant to the multinational firm. First, Australia's production conditions, which are represented by both unit and relative labour cost variables (4.1). Second, national competitiveness as represented by trade openness, the T-NT ratio, and both corporate and trade tax indicators (4.2). Third, market risk and instability, as captured through the rate of interest, inflationary pressures and changes in the real effective exchange rate (4.3).

[13] A series integrated of order I(1) is stationary after first differencing, while I(0) suggests no differencing is required. Importantly, this procedure does not succeed for those variables under consideration which are I(2). Only those which are I(0), I(1) or a combination of both will work in this process.

Model one:

$$\Delta FDI_t = \delta_{0i} + \alpha_1 \Delta FDI_{t-1} + \alpha_2 \Delta RI_{t-1} + \sum_{i=1}^{4} \alpha_3 \Delta ULC_{t-i} + \sum_{i=1}^{4} \alpha_4 \Delta REER_{t-i} + \sum_{i=1}^{2} \alpha_5 \Delta TNT_{t-i} + \delta_1 FDI_{t-1} + \delta_2 RI_{t-1} + \delta_3 ULC_{t-1} + \delta_4 REER_{t-1} + \delta_5 TNT_{t-1} + v_{1t} \quad (4.1)$$

Model two:

$$\Delta FDI_t = \delta_{0i} + \sum_{i=1}^{2} \alpha_1 \Delta FDI_{t-i} + \alpha_2 \Delta RLC_{t-1} + \alpha_3 \Delta TT_{t-1} + \sum_{i=1}^{2} \alpha_4 \Delta TGDP_{t-i} + \delta_1 FDI_{t-1} + \delta_2 RLC_{t-1} + \delta_3 TT_{t-1} + \delta_4 TGDP_{t-1} + v_{1t} \quad (4.2)$$

Model three:

$$\Delta FDI_t = \delta_{0i} + \sum_{i=1}^{2} \alpha_1 \Delta FDI_{t-i} + \alpha_2 \Delta RLC_{t-1} + \alpha_3 \Delta OPEN_{t-1} + \sum_{i=1}^{3} \alpha_4 \Delta INF_{t-i} + \sum_{i=1}^{2} \alpha_5 \Delta TNT_{t-i} + \delta_1 FDI_{t-1} + \delta_2 RLC_{t-1} + \delta_3 OPEN_{t-1} + \delta_4 INF_{t-1} + \delta_5 TNT_{t-1} + v_{1t} \quad (4.3)$$

Where α_i and δ_i represent the short- and long-run dynamics, respectively – and the lag order for y_t and x_t was determined using Akaike's Information Criterion.

4.6 Serial correlation tests

Evidence for serial correlation among model variables was identified using an Augmented Dickey-Fuller (ADF) test – where the null hypothesis illustrates the existence of a unit root. Here we find that the series under consideration are integrated of different orders. In some instances, we are able to reject the null hypothesis in levels (interest rate, unit labour cost, and the inflation rate), while we cannot in the dependent, relative labour cost, exchange rate and tax-to-GDP variables – thus indicating the need for differencing. Reported in Table 5, the ADF test finds all series to be stationary in first differences at 1% significance. As such, it can be concluded that the variables are integrated of order I(0) or I(1), deeming the ARDL process an appropriate estimation method for the determinants of FDI in Australia.

4.7 ARDL bounds tests

The models were then examined for cointegration using the bounds test proposed by Pesaran et al. (2001); see Table 6. After generating critical F- and p-values, the bounds test indicated a statistical long-run significance at 10% in both model one and three (5.8% and 9.6%, respectively), while model two was weakly related at 11%. Since model one and three rejected the null hypothesis of no long-run relationship, it can be concluded that the linear combination

of each variable is I(0) and their interaction with FDI is dynamically stable across time. However, since model two returned a critical F-statistic fractionally below the upper bound, the variables within the model may only be partially integrated (or less conclusive) in the long-run. Importantly, the results suggest that the parameter estimates across model one, two (weakly) and three are relatively stable across time – such to bolster the validity of the relationships discussed in the next section.

5. Results and analysis

This section presents the results of the models described above and insights into the determinants of Australia's FDI over the short- and long-run to inform recommendations for policy. These results are summarised in Table 7.

5.1 Short-run effects

Observing the results generated by the ARDL process illustrates the significant impact that real interest rates have in encouraging direct investment to Australia in the short-run (see Table 8). Used here as a proxy for the return on capital, we find that the real interest rate is strong and positively related with FDI. This result supports the conclusions made by Faeth (2005) and Yang et al. (2000) and indicate a degree of validity of the predictions made by Neoclassical and Risk Diversification theory.

Factor costs, represented by unit and relative labour cost variables, were seen to reduce FDI in all estimations of the short-run (current and second time lags). As Neoclassical, OLI and Vertical theory predict, increases in the cost of labour act to deter foreign production through hindrances to profitability. This result also provides insight into the impact that labour market dynamics have in determining direct investment. In cases where FDI is rationalised by lower production costs, falling unemployment, higher job vacancies or market growth can cause upward wage pressures – increasing the cost of production and reducing the appeal of Australia's production environment.[14]

Appreciation in the real effective exchange rate were, as predicted, a strong deterrent for Australian FDI in the short-run (current and third time lag). Consistent with Aliber (1970), Cushman (1988) and the conclusions made by OLI and Diversification models, a stronger host currency indicates a loss of relative wealth to foreign investors and increases the cost of cross-

[14] This is supported by an alternative model (excluded from this analysis) which found industrial disputes and job vacancies to discourage FDI in the short- and long-run, respectively – consistent with Vertical FDI theory.

border transactions. While this analysis indicated a reduction in FDI, Faeth's (2005) account of Australia found contrasting results, i.e., higher exchange rates encourage direct investment.

The model also revealed that increases in the tradable to non-tradable goods ratio caused an increase in FDI in both the current and previous period. Intuitively, a higher ratio would occur when the demand for goods traded abroad rise – thus describing an improvement to national competitiveness (Makin and Ratnasiri, 2015). In line with Milner and Pentecost (1996) as well as New Trade and Institutional theories of FDI, this result demonstrates the significant advantage competitive economies have in attracting direct investment.

Conceptualising barriers to entry, taxes on international trade were found to significantly increase FDI in Australia in the short-term – a conclusion emphasised by the OLI, Horizontal, Vertical and Knowledge-Capital models. As previously mentioned, tariffs and other custom duties cause the opportunity cost between trade and FDI to rise – making direct investment appear relatively cheaper – thus providing a sufficient motive for FDI. In contrast, trade openness was seen to reduce Australia's direct investment in the short-run. Consistent with Faeth's (2005) analysis, an increase in openness would make trade comparatively cheaper than FDI, suggesting that a short-run trade-off between exporting and direct investment exists – and thereby providing evidence for the Neoclassical argument.

Taxes on resident corporations (measured as a ratio to GDP) also exhibited a negative relationship with FDI in the short-run, as predicted by the Institutional and OLI frameworks. Having a contemporaneous and lagged effect (one-time period), higher taxes reduce firm profit margins and increase the cost of operating within Australia. This result therefore stresses the importance of tax competitiveness in accelerating multinational investment.

Finally, estimates of the inflation rate developed rather inconclusive results in the short-run, since investment was deterred and encouraged in the current and previous period, respectively. While this outcome may be due to market growth (producing higher prices), the more likely result is explained by the OLI and Risk Diversification theories – where macroeconomic instability (captured through inflation) causes a reduction in FDI.

5.2 Long-run effects

The model's long-run output for FDI produced intriguing yet plausible results (see Table 9). In contrast to the short-run analysis, real interest rates delivered a negative effect on multinational investment – thereby rejecting the application of the Neoclassical and Risk Diversification

theories. This outcome, however, is conceivably explained by the perception of interest rates and risk over the long-term. As the OLI framework suggests, higher interest rates indicate greater market, political or country risks which can interfere with the overall return on investment. Thus, while we find that a higher return on capital attracts FDI in the short-run, persistently high interest rates may act to deter direct investment over the long-run due to its association with uncertainty. It may also be true that some MNEs are discouraged by higher borrowing costs and unfavourable monetary policy conditions. As such, multinational investment could be motivated by the opportunity cost of debt versus equity – once the firm is established within the host economy.

Similarly, long-run unit and relative labour cost indicators also showed conflicting results to conclusions of the short-run. Importantly, though, we find that the interpretation of factor prices change across the period of analysis. While initially describing production costs, these variables provide an indication to the nation's level of skill and productivity of labour in the long-run. Consequently, this result implies that multinational investment can also be determined by the productivity of the host's labour force – a perspective which strengthens the argument for Horizontal FDI and the validity of Yang et al.'s (2000) empirical account of Australia.

Further, the long-run models also found the real effective exchange rate to strongly improve Australian FDI. Compared with the theoretically consistent conclusions seen in the short-run model, here a higher exchange rate may actually capture the strength of Australia's economic conditions – thereby indicating a sound host for investment. Thus, we find that while appreciation of the host currency act to reduce FDI in the short-run, its effect in the long-run is more ambiguous.

The ratio of corporate taxes-to-GDP also had an unexpected positive influence on FDI in Australia. This is plausibly explained, however, by greater firm profits which are captured through higher tax revenue – implying that FDI can be motivated by the nature of Australia's financial prospects. Importantly, though, since tax revenues are increasing in both the number of corporations and the profits they generate, the interpretation of this indicator is less intuitive in the long-run. Although both estimates of exchange rates and corporate taxes contradicted predictions, the results were consistent overall with Faeth's (2005) analysis – illustrating their suitability to the short-run.

While barriers to entry were insignificant, trade openness delivered an improvement to Australia's direct investment – indicating that although substitutes in the short-run, trade and

FDI are complimentary in the long-run – a result consistent with New Trade theory. As such, we find that the investment decision is driven by the short-run opportunity cost of trade and FDI, as well as the long-run restrictiveness of a nation's borders (otherwise known as easy-come, easy-go economies – i.e. Institutional Fitness theory).

5.3 Other considerations

We acknowledge that there have been major changes in the sources of Australia's FDI since 1988 (e.g., China). Importantly, the analysis presented here is robust to these structural changes because of the methodology applied. ARDL models are tailored to data integrated of different orders, i.e., stationary or non-stationary data (Shrestha and Bhatta 2018). The statistical tests relating to these models are reported in section 4.6 and 4.7. They highlight that the variables are integrated of different orders and the statistical long-run significance of the models are robust. Thus, they indicate that the linear combination of each variable is I(0) and their interaction with FDI is dynamically stable across time.

Further, the models evaluated Australia's environment for direct investment from 1988 to 2018 using quarterly data on three national characteristics relevant to the multinational firm: production conditions; national competitiveness; and market risk and instability. While this data does not perfectly capture changes in the investment environment we believe the rise of external economies, the competitiveness of our own, and changes in the structure of the Australian economy are generally captured by the model's competitiveness variables. These include trade openness (trade to GDP), which describes the relative importance of trade to an economy compared to other sources of growth (e.g., investment); trade tax (trade taxes to total trade) which describes relative changes in the cost of conducting trade; and the tradable to non-tradable goods ratio which describes changes in the economic base (i.e., the share of output generated by tradable goods versus service goods).

6. Conclusion

We empirically examine the determinants of Australia's inflow of direct investment over the short- and long-run using an ARDL approach. The short-run empirical results display partial evidence for Neoclassical, Risk Diversification, OLI, Knowledge-Capital, Vertical and Institutional theories through support of the real interest rate, trade barriers and competitiveness in attracting multinational investment. The long-run empirical results offer explanations for the

practicality of each theory across time. Although interest rates improved FDI in the short-run, persistently high rates imply country risks that could deter investment over the long-term. Unit and relative labour costs support the Neoclassical model but provide greater support for the significance of labour productivity in attracting direct investment over the long-run. The negative role of higher exchange and corporate tax rates on FDI in the short-run is, in the long-run, a signal for Australia's sound economic landscape. Trade openness is also found to encourage FDI in the long-run. Therefore, we find that while substitutes in the short-run, trade and direct investment are complimentary over the long-term.

Overall, the models underline the diverse motivations for direct investment by firms and the fact that FDI cannot be defined by one theory. Importantly, however, Dunning's (1977) OLI framework was seen as the most comprehensive in explaining FDI overall, and therefore the most appropriate lens through which to draft Australia's long-run foreign investment policy. By implication of these findings, a suitable environment for FDI in Australia depends on monetary policy and the rate of interest, productivity and the competitiveness of the tax system, labour market settings, and the costs of conducting trade and investment.

With respect to policy, Australia's monetary stance is accommodative and allows profit-seekers to prosper though not at the cost of excessive inflation, risk and volatility. Australia's current stance is therefore already considered conducive to greater flows of FDI. This too can be said for Australia's level of trade openness, to the extent that a recommendation to reduce trade barriers further would be unnecessary.

However, there are three key areas where government policy can support FDI:

1) **Improve the competitiveness and efficiency of labour laws and regulations.** As echoed by the Australian Industry Group (2018), Australia's current employment protection laws hinder technological developments in the workplace. Specifically, we find that barriers to business restructuring, outsourcing, as well as the assessment and restrictions of enterprise agreements inhibit the growth of employment, competitiveness and of the inward flow of long-term investment.

2) **Gradual reduction of the corporate tax rate.** Although a key source of national revenue, Australia's high corporate tax rate hinders firm profitability and acts as a tax on foreign investment (PwC, 2015). This is emphasised by the growing disparity between the average corporate tax rates seen across OECD countries (21.94%) versus Australia (30%) (OECD Stat,

2018). Gradual liberalisation of the tax rate would therefore be advantageous in offsetting Australia's decline in tax competitiveness and flow of FDI.[15]

3) **Reduce the cost of conducting FDI.** The FIRB's recent introduction of application fees has caused the cost of inquiring for investment into Australia to increase considerably – causing a fall in the volume of approved proposals. To increase the flow of FDI, Australia must adopt a more competitive foreign investment regime by reducing the cost of applications. The screening mechanisms for these investment applications must be tailored to allow FDI to serve its intended economic effect, but strict enough as to not become a risk to national security, as discussed in Kirchner and Mondschein (2018).[16]

It has also been noted that while data on aggregate FDI is reasonably long and frequently updated, explanatory variables are restricted by reporting differences and limited industry and regional detail. In a more data rich environment FDI could be analysed at an industry level which would provide a stronger understanding of where multinationals invest (and in which sectors) and allow government to tailor policy to Australia's key markets. This would be useful in areas of mining and manufacturing, which accounted for almost half of Australia's FDI in 2017 at 48.6% (DFAT, 2018). Without improved reporting (e.g. on the number and types of foreign affiliates, investment types, and R&D expenditure) most analysis of Australian FDI will be confined to the use of aggregate data.

Despite this, the ever-changing composition of the Australian and global macroeconomy still indicates the demand for updated aggregate accounts of FDI. Shifts in structural policies, political stability and the likely revolutions in technology will change the competitiveness landscape of economies and potentially the drivers of multinational investment. This study should therefore be replicated in the future in order to account for the changes in Australia's economic conditions.

[15] Although outside the scope of this research, it is acknowledged, however, that these changes would necessarily come with a new set of budgetary implications that must be considered.

[16] Concerns of national security are underpinned by the risks that may arise from various investments. Examples are foreign ownership of critical infrastructure, data and surveillance (Kirchner and Mondschein, 2018).

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TABLES

Table 1 – Summary of Empirical Inward FDI Studies in Australia

Factors	Theoretical Prediction	Impact on FDI	Source
R&D Expenditure	Positive	Positive	Parry (1978), Ratnayake (1993)
Advertising Intensity	Positive	Positive	Ratnayake (1993)
Capital Intensity	Positive	Positive	Parry (1978)
Human Capital Intensity	Positive	Positive	Ratnayake (1993)
Natural Resource Intensity	Positive	Negative	Parry (1978)
Export Intensity	Negative	Positive	Ratnayake (1993)
Product Differentiation	Positive	Positive	Parry (1978)
Multi-plant Operations	Positive	Negative / Positive	Parry (1978), Ratnayake (1993)
Scale Economies	Positive	Positive	Ratnayake (1993)
Seller Concentration	Positive	Positive	Parry (1978), Ratnayake (1993)
Geographical Concentration	Positive	Positive	Parry (1978)
Industry Profitability	Positive	N.S / Positive	Parry (1978), Ratnayake (1993)
Diversification Ratio	Positive	N.S	Parry (1978)
Δ in Host Real GDP	Positive	N.S / Positive	Yang et al. (2000), Faeth (2005)
Relative Income per capita	Positive	N.S	Tcha (1999)
Relative Real Wages	Negative	N.S	Tcha (1999)
Δ in Host Wage	Negative	Positive / Negative	Yang et al. (2000), Faeth (2005)
Job Vacancies	Negative	Negative	Faeth (2005)
Transportation Costs	Positive	N.S	Ratnayake (1993)
Rate of Protection	Positive	Positive	Ratnayake (1993)
Trade Openness	Positive	Positive / Negative / Positive	Karunaratne and Tisdell (1998), Yang et al. (2000), Faeth (2005)
Trade	Positive	N.S	Faeth (2005)
Corporate Tax Rates	Negative	Positive	Faeth (2005)
Exchange Rate Risk	Negative	Negative	Tcha (1999)
Currency Appreciations	Negative	N.S/ Positive	Tcha (1999), Yang et al. (2000), Faeth (2005)
Interest Rate	Positive	Positive	Yang et al. (2000), Faeth (2005)
Inflation Rate	Negative	Negative/ Positive	Yang et al. (2000), Faeth (2005)
Labour Disputes	Negative	N.S	Tcha (1999)
FDI Outflow	---	Positive	Karunaratne and Tisdell (1998)
US GDP	Positive	Positive	Karunaratne and Tisdell (1998)
OECD Market Size	Mixed	N.S	Faeth (2005)

Source: Faeth (2005); N.S = not significant.

Table 2 – Descriptive Statistics

Variable	Label	Obs.	Mean	Std. Dev.	Min.	Max.
Time	---	119	60.000	34.496	1.000	119.000
FDI / GDP *	FDI	119	35.220	13.787	19.204	65.419
Real Interest Rate *	RI	119	5.249	3.253	1.130	16.470
Real Effective Exchange Rate	REER	119	85.240	12.490	66.070	112.040
Inflation Rate *	INF	119	0.7	0.6128566	-0.3	3.8
Relative Labour Cost	RLC	119	79.547	15.661	58.100	113.800
Unit Labour Cost *	ULC	119	2.491	2.472	-1.800	9.300
Corporate Tax / GDP *	TGDP	119	4.228	0.790	2.614	6.534
Trade Tax / Trade *	TT	119	0.0498777	0.0174884	0.0271022	0.1049166
Trade Openness *	OPEN	119	13.192	1.269	10.332	16.619
Tradable / Non-Tradables *	TNT	119	0.4565515	0.8385664	-1.75	3.2

* Seasonally adjusted data

Table 3 – Summary of Quarterly FDI Dataset

Variable (Source)	Description	Source and notes
FDI / GDP	Quarterly stock of direct investment liabilities (FDI), measured as a ratio to GDP.	Calculated using ABS series: A3484150X, A2304418T
Trade Openness	Ratio of trade to GDP.	Calculated using ABS series: A2718579F, A2718582V, A2304418T.
Tradable / Non-Tradable	Ratio of tradable to non-tradable (T-NT) goods	Calculated using RBA series: GCPITIQP, GCPINTIQP.
Unit or Relative Labour Cost	Average price of labour (L) per unit of output (GDP)	Values from OECD Database.
Real Interest Rate	Quarterly averaged yields on Bank Accepted Bills (BABs) after accounting for inflation.	Calculated using RBA series: FIRMMBAB90 and A2325850V.
Inflation	Quarterly change in the price level.	Value from ABS series: A2325850V
Real Effective Exchange Rate	Weighted average of indexed nominal bilateral rates, adjusted for the fluctuations in national price and wage costs developments.	Value from IMF series: EREER_IX
Corporate Tax / GDP	Ratio of corporate tax to GDP.	Calculated using ABS series: A2454561L, A2304418T.
Trade Tax / Total Trade	Ratio of trade tax to total trade.	Calculated using ABS series: A2454539T, A2718579F, A2718582V.

Table 4 – Augmented Dickey-Fuller Test Results

Variable	Level					Differenced				
	τ	1%	5%	10%	p-val.	τ	1%	5%	10%	p-val.
FDI / GDP	-1.921	-4.034	-3.448	-3.148	0.643	-7.604	-4.035	-3.448	-3.148	0.000
Interest Rate	-4.312	-4.035	-3.448	-3.148	0.003	-5.290	-4.036	-3.448	-3.148	0.001
ULC	-3.126	-3.505	-2.889	-2.579	0.025	-6.349	-3.506	-2.889	-2.579	0.000
RLC	-2.219	-4.035	-3.448	-3.148	0.479	-5.812	-4.035	-3.448	-3.148	0.000
REER	-2.520	-4.035	-3.448	-3.148	0.318	-6.106	-4.035	-3.448	-3.148	0.000
Inflation Rate	-4.075	-3.505	-2.889	-2.579	0.001	-9.480	-3.505	-2.889	-2.579	0.000
Tax/GDP	-1.952	-3.505	-2.889	-2.579	0.308	-6.002	-3.506	-2.889	-2.579	0.000
Trade tax / trade	-2.605	-3.505	-2.889	-2.579	0.092	-6.915	-3.505	-2.889	-2.579	0.000
Trade Openness	-1.909	-3.505	-2.889	-2.579	0.328	-6.427	-3.506	-2.889	-2.579	0.000
T - NT	-7.741	-3.504	-2.889	-2.579	0.000	-12.828	-3.505	-2.889	-2.579	0.000

Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 5 – Bounds Test Results

F-Statistic	Model 1		Model 2		Model 3	
	4.046*		3.733		3.632*	
Critical F-Values	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
10 %	2.448	3.606	2.746	3.819	2.464	3.602
5%	2.894	4.157	3.274	4.441	2.911	4.149
1%	3.880	5.348	4.442	5.790	3.899	5.331
P-Values	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
10%	0.008	0.058	0.027	0.110	0.016	0.096

Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 7 – Summarised Short-run and Long-run Empirical Results

Short-run variables	Prediction	Result	Notes
Real Interest Rate	Positive/Negative	Positive	Consistent with Neoclassical/Risk theory.
Unit or Relative Labour Cost	Positive/Negative	Negative	Evidence for Neoclassical, OLI and vertical frameworks.
Real Effective Exchange Rate	Negative	Negative	Result aligns with Aliber (1970), OLI and risk theory.
Tradable / Non-Tradable	Positive	Positive	Consistent with Makin et al. (2015) and Policy/ Institutional approach.
Trade Tax / Total Trade	Positive	Positive	Predicted by OLI, Horizontal, Vertical and Knowledge-Capital models.
Trade Openness	Positive/Negative	Negative	Supports Neoclassical argument that trade and FDI are substitutes.
Corporate Tax / GDP	Negative	Negative	Predicted by OLI and Policy/Institutional approach.
Inflation	Negative	Positive/Negative	Contrasted result in second lag, though consistent with OLI and Risk theory in t_0.
Long run variables			
Real Interest Rate	Positive/Negative	Negative	Consistent with OLI framework.
Unit or Relative Labour Cost	Positive/Negative	Positive	Evidence for Horizontal FDI and supports Yang et al. (2000).
Real Effective Exchange Rate	Negative	Positive	Result aligns with Faeth (2005) – indicating economic soundness in the long run.
Corporate Tax / GDP	Negative	Positive	Consistent with Faeth (2005) – indicated greater firm profit.
Trade Openness	Positive/Negative	Positive	Supports OLI and New Trade theory – trade and FDI are compliments.

Table 8 – Short-run ARDL Results

Variable	Model 1 (1,1,4,4,2)	Model 2 (2,1,1,2)	Model 3 (2,1,1,3,2)
L. FDI	-0.048**	-0.041**	-0.043**
	(0.020)	(0.017)	(0.017)
SR:D. Real Interest Rate	0.835***		
	(0.217)		
SR:L2D. Unit Labour Cost	-0.295**		
	(0.128)		
SR:D. Real Effective Exchange Rate	-0.339***		
	(0.049)		
SR:L3D. Real Effective Exchange Rate	-0.124**		
	(0.050)		
SR:D. Tradables / Non-Tradables	0.676**		0.672**
	(0.261)		(0.267)
SR:LD. Tradables / Non-Tradables	0.402**		0.386*
	(0.184)		(0.211)
SR:D. Relative Labour Cost		-0.292***	-0.290***
		(0.046)	(0.054)
SR:D. Trade Tax / Total Trade		55.586*	
		(32.957)	
SR:D. Corporate Tax / GDP		-1.218**	
		(0.506)	
SR:LD. Corporate Tax / GDP		-0.865*	
		(0.481)	
SR:D. Trade Openness			-0.947**
			(0.428)
SR:D. Inflation			-0.954**
			(0.390)
SR:L2D. Inflation			0.519**
			(0.259)
SR: Constant	-0.282	-4.030*	-4.566**
	(1.373)	(2.108)	(1.835)
Obs.	115	115	115
R-squared	0.432	0.333	0.425

Standard errors are in parenthesis | *** p<0.01, ** p<0.05, * p<0.1 | Only significant variables included

Table 6 – Long-run ARDL Results

Variable	Model 1 (1,1,4,4,2)	Model 2 (2,1,1,2)	Model 3 (2,1,1,3,2)
L. FDI	-0.048**	-0.041**	-0.043**
	(0.020)	(0.017)	(0.017)
LR: Real Interest Rate	-4.649**		
	(2.093)		
LR: Unit Labour Cost	7.692*		
	(4.016)		
LR: Real Effective Exchange Rate	0.715**		
	(0.290)		
LR: Relative Labour Cost		0.743***	0.667***
		(0.253)	(0.250)
LR: Corporate Tax / GDP		17.097*	
		(9.079)	
LR: Trade Openness			7.128*
			(3.682)
	(1.373)	(2.108)	(1.835)
Obs.	115	115	115
R-squared	0.432	0.333	0.425

Standard errors are in parenthesis | *** p<0.01, ** p<0.05, * p<0.1 | Only significant variables included

FIGURES

Figure 1: Australia's share of domestic GDP and developed FDI (1980-2019)

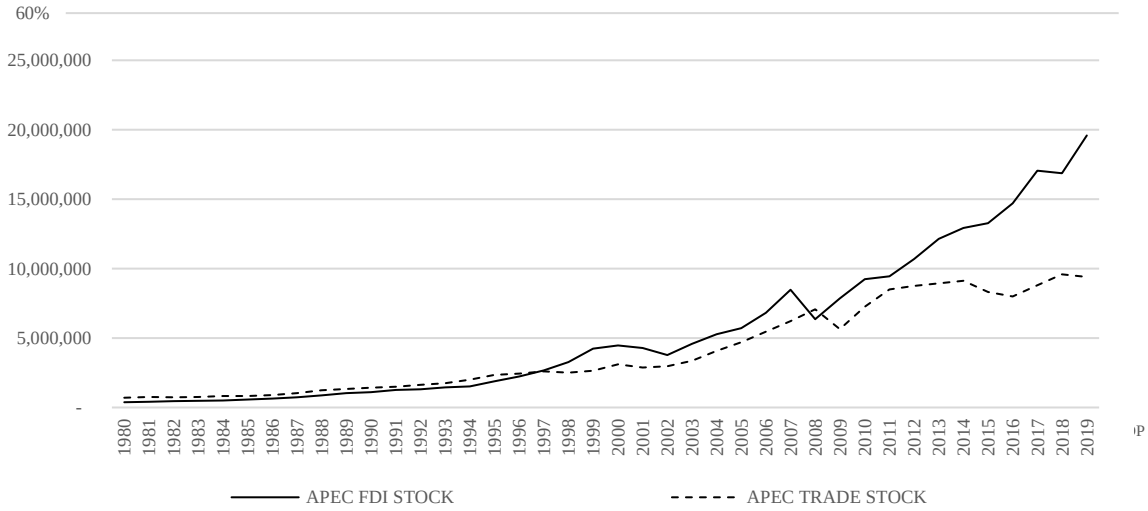

Figure 2: APEC Inward FDI and Total Trade (1980-2019)