The impact of Inward FDI on Host country:

Firm Performance in New Zealand

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ABSTRACT

Foreign direct investment (FDI) and its multinationals' activities are well accepted as an engine of growth by which a host country can benefit from the injection of capital investment, technology and managerial knowhow to build up indigenous competitiveness through spillovers effects and productivity gap between foreign affiliates and local firms New Zealand is a small but developed economy. FDI plays an important role in the development and growth of local industry in New Zealand. In the extant literature, there was very few studies research on the performance gap in New Zealand context. This paper investigates the effect of inward FDI on host country theoretically, focusing on the spillover effects and firm performance. Statistical analysis tests the possibility of performance gap's existence in New Zealand firms. In addition, separated attention is provided to service industry to differ from manufacturing industries that always be testified in many empirical studies. The findings provide evidence that foreign owned firms have superior performance advantages over local firms. But more research needs to be conducted for more conclusive results.

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CHAPTER ONE

INTRODUCTION AND OVERVIEW

This chapter will lay the foundations for this thesis. It introduces the research problem and research questions/hypotheses. Then the research was justified briefly for the theoretical background. The main purpose of this chapter is twofold: introducing the rationale of why this research study is undertaken and the main contents addressed in each of the chapters in this study.

1.1 BACKGROUND TO THE RESEARCH

Foreign direct investment (FDI) comprises activities that are controlled and organized by firms (or groups of firms) outside of the nation in which they are headquartered and where their principal decision makers are located (Dunning, 1988). As such, an FDI relationship mainly comprises a parent enterprise and foreign affiliates or subsidiaries that together form a multinational company (MNC). In recent years the study of FDI and related subjects has attracted the attention of scholars from diverse fields since the surge of FDI in line with globalization for the last few decades. The increase of FDI has brought a package of capital, technology, management expertise (Johanson and Vahlne, 1977), which can not only help boost a host country's growth rate but also spur industrial development through positive spillover effects (Lipsey, 2004).

There is a widely accepted proposition that FDI generates productivity gains and better performance for the domestic/host economy in addition to all the other benefits of FDI to the host country (Lall, 1980; Dunning, 1994). Extensive theoretical and empirical literatures study the extent and importance of FDI effects in terms of FDI

motives (Dunning, 1993:1994; Buckley et al., 2007); impact on home and host countries (Lipsey, 2004); foreign ownership and affiliate performance in host countries (Harris and Robinson, 2003; Griffith, et al, 2004; Howenstine and Zeile, 1992); technological transfer and spillover effects etc. (Gorg and Greenaway, 2004; Haddad & Harrison, 1993; Blomstrom and Kokko, 2001).

Such FDI related studies have important policy implications for governments worldwide, which spend considerable resources on incentive programs aimed at attracting FDI in hopes of reaping the benefits of globalization (UNCTD, 2004) and maximising spillover effects. Empirical studies reveal differences in the performance of foreign-owned affiliates and domestically-owned firms across countries, industries, over time and also on the plant level (Griffith, 1999; Gorg and Greenaway, 2004; Blomstrom and Kokko, 1998). However, empirical evidence is not always conclusive. In some studies, foreign owned affiliates perform better than domestic firms. But other studies have shown the reverse to be "true". Such "inconsistency" is largely due to the fact that many explaining factors impact on a firm's performance and the wide variety of measurements is being used to measure performance such as, productivity, profitability, sales growth, R&D and wages etc. This "inconsistency" throws up the question as to: Are foreign owned firms performing differently with domestic firms? Does foreign ownership matter for firm performance?

Within the existing literatures, FDI importance and MNC activities receives a wide coverage, particularly in, large, developed economies such as the United States, Europe, and Japan due to their sophisticated business activities and large proportion of total capital flows. And more recently, in the past two decades, many less developed countries/regions and emerging economies like China, Russia, South America, and Africa have drawn popular attention due to their economic potential and growing participation on the world stage. In contrast, there has been less study focused on small and developed countries outside Europe, like New Zealand.

Inward FDI for New Zealand was perceived to be an important contributor to economic growth and firm performance (Akoorie, 1997). The country's economy relied heavily on FDI as a source of capital inflow and development engine, due to the perennial dependence on foreign capital to fund domestic investment. The importance of welcoming all types of foreign investment is deeply embedded in the minds of policy makers. However, up until now, only minimal attention has been given to FDI development and its impact on New Zealand within the academic field. Currently, there is a lack of systematic, in-depth study into the impact of FDI and how it affects the performance of New Zealand enterprises even though it appears to be of great interest to academics, policy-maker and foreign investors.

1.2 RESEARCH PROBLEM AND HYPOTHESES

The research problem central to this thesis focuses on why a performance gap between foreign owned affiliates and domestic owned firms in a host country might exist (theoretically) and to test whether such gaps exist empirically. The purpose of this research, initially, is to survey the vast literature that addresses one or more of the performance gaps and in particular how they are explained. The literature review is based on a range of frequently cited scholarly articles covering a broad range of countries and performance indicators. Then, statistical tests will be carried to empirically test the differences in performance using New Zealand industrial data.

The main problem this research will be addressing is the impact of FDI on the performance of New Zealand enterprises by foreign ownership participated in the business. The study will focus on the following research objectives.

- To determine the recent trends and developments of FDI in New Zealand

- To describe and analyze the impact of FDI on host country economies to ground the theory for performance gaps between foreign owned firms and domestic owned firms

- To investigate whether the foreign owned firms perform significantly better than local firms

- To provide useful recommendations to investors and policy makers

This paper will study such questions in the New Zealand context. How foreign ownership affects the business performance will be the focus. The differences between foreign firms and domestic firms will then be discussed, focusing, on four key objectives:

- It will provide arguments from economic literature for a performance gap between foreign owned firms and domestic owned firms, seeking theoretical support for a superior performance of one over the other.

- It will analyze and compare earlier papers to provide an overview of existing empirical studies across countries and sectors.

- Measurement of relevant variables using empirical data will be considered and analyzed in terms of methodology and limitations

- Based on a data sample of New Zealand firms[1], analysis is carried out in search of the significant differences performances gaps of the two groups (foreign vs. domestic) in terms of measurements of profitability and productivity.

1.3 JUSTIFICATION FOR THE RESEARCH

The development of FDI literature has gone through two main stages: the development of **international trade theories** (eg. Ricardo, 1817; Hecksher and Ohlin,

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[1] Annual Enterprises Survey & Business Demography Statistics

1933; Vernon, 1966) and **FDI theories/frameworks** (eg. Hymer, 1970; Buckley and Casson, 1976; Dunning, 1980; Johanson and Wiedersheim-Paul, 1975; Johanson and Mattson 1988). Development of such literature grounded the theoretical explanation for MNCs' decisions of why and how to invest abroad. The Dunning's OLI framework (Dunning, 1981) states that firms decide to invest abroad if:

- they have market power given by *ownership* of firm-specific advantages (O)
- they have a *location* advantage in locating activities in a foreign country (L)
- they have an advantage from *internalizing* their foreign activities in fully owned subsidiaries, rather than carrying them out though channels in the market (I)

As explained by the development of the FDI theory, MNCs need to possess some compensating firm-specific advantages (FSAs), in order to compete effectively with local players in the host economy, who generally have better access to and knowledge of, the host market (Dunning, 1980). When these FSAs are not fully internalised by MNC into local subsidiaries, spillovers accrue to the domestic firms (Blomstrom and Kokko, 1998; Javorcik, 2004). There are many interrelated channels for knowledge and technology transfer between foreign affiliates and local firms to conduct spillovers, grounded by Balassa's (1961) view on horizontal and vertical linkages between industries as a key source of productivity spillovers. Such spillovers are based on the assumption that there is a performance gap between foreign affiliates and their local counterparts. A number of papers have tested whether or not this is the case, however, the result are mixed (Harris and Robinson, 2003).

This thesis will test the possible existence of such performance gaps in terms of productivity and profitability in New Zealand context. This paper will also explore such performance gap separating manufacturing and service industries. In doing so, this study addressed two key research gaps; the first being performance gaps in the small, developed economy context and the second, the inclusion and distinction of the service sector.

1.4 OUTLINE OF THIS REPORT

The structure of the thesis is organised as follows, into five chapters. In addition to this introduction (**Chapter One)**, **Chapter Two** reviews research studies of general FDI theory, FDI impact on host countries with specific attention to spillover effects, foreign ownership and firm performance, leading to the research gap and identification of hypotheses. This is followed by overview of trends in world FDI in the last few decades and discussion of FDI and New Zealand studies. **Chapter Three** focuses on the description of the research methodology, in terms of the sample and adopted dataset, measures for performance, the process of statistical analysis, and methodological limitations. **Chapter Four** focuses on the presentation of the research results for the tested hypotheses in the research. Building on the limited data available for the study, the first section focuses on the description of the statistical results through illustrative tables and is followed by the interpretations of these results. **Chapter Five** as the conclusion chapter addresses a review of the main contents and findings, emphasises on the contributions, limitations and the future research areas that are arise from this research study.

CHAPTER TWO

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This chapter will look into research studies on general FDI theory, FDI impact on host countries, spillovers, ownership and performance. The review will lead to the research gap and identify hypotheses, followed by development and discussion of FDI in the world and in New Zealand.

2.1 GENERAL FDI STUDIES AS THE FUNDAMENTAL THEORY

FDI often plays an important role in the economic growth of host countries (Dunning, 1993; Lall, 1980), and it is considered the "engine of development" (Casey, 2006). Across the world, FDI inflows are increasingly being seen as a possible means to boost long term economic growth. The extant literature suggests that inward FDI can contribute to the accumulation and upgrading of host country resources, skills and knowledge as well as production output, exporting and technological capability for local firms (Blomstrom, 1989; Dunning & Narula, 1996; Kokko, et al., 1996; Aitken, et al., 1997). As a result, countries are motivated to liberalise their investment regimes in order to create favourable climate for inward FDI (OECD, 2002).

Such international business theory provides us with different approaches to study the direct and indirect effects of FDI on host countries. Direct FDI effects measure the difference in firm performance between foreign owned firms and domestic owned firms (Blomstrom and Zejan, 2000). Indirect effects are spread through different aspects of interaction between MNCs and local firms in host countries through

linkages and spillovers (Blomstrom, et al, 1994).

2.1.1 Early exploration of FDI and MNCs

A multinational or transnational corporation or enterprise (MNC, TNC or MNE) is an enterprise that engages in foreign direct investment (FDI) and owns or controls value adding activities in more than one country (Dunning, 1993). Therefore, foreign direct investment (FDI) is the main activity of MNCs. It involves the transfer of a package of assets or intermediate products, which include capital, management and organizational expertise, technology, etc across national boundaries.

During the past three decades, many academics have engaged in studies of the determinants of FDI and the foreign activities of multinational corporations (MNCs). The theory of capital movements is one of the earliest explanations for FDI, which was viewed as a part of portfolio investments (Dunning and Rugman, 1985). Over the years FDI research and development has been viewed through several different theoretical lenses, with researchers taking different snapshots of this phenomena. Three important FDI theories/frameworks for FDI that are well accepted in the literature appeared. They are: Market Imperfections (Hymer, 1970), Internalisation (Buckley and Casson, 1976; Rugman, 1980) and International Production or Eclectic Paradigm (Dunning, 1980; Dunning, 1988). The key studies can be summarised in *Table 2.1*.

Throughout this period, academics have contributed their different points of view to the literature. The monopolistic advantage theory of FDI advanced by Hymer (1976) and Kindleberger (1969) asserts that the MNCs possess a rent yielding asset (eg., production know-how) which gives them the edge in competing with firms in their home market, as well as with indigenous firms abroad. MNCs then have superior technology or product differentiation which enables them to compete in markets

around the world.

Table 2.1 Theoretical base of FDI studies

Authors and date	Theory type	Theory and its main findings towards FDI
Vernon 1966	Product Life Cycle	Explained FDI from developed countries to developing countries
Hymer 1970	Market imperfections	Characteristic of FDI, FDI in general
Buckley and Casson 1976	Internalisation-Firm specific advantages	Cost and benefits of intermediate items specific to the firms but transferable between countries
Rugman 1980	Internalisation	Internalisation serves to determine the reasons for the foreign production in response to imperfections in the goods and factor markets
Williamson 1979	Transaction cost (TC) approach	Concepts of Hierarchies as an alternative way of transactions
Hennart 1988	Extension of TC approach	Hierarchical modes of organisations across national boundaries reduces costs of international coordination
Dunning 1980, 1988, 1993	Eclectic paradigm–OLI advantages	Eclectic theoretical framework to analyse MNCs and FDI motives

Market Imperfection Theory (Hymer, 1970) attempts to explain firms' expansion into international markets as depending on two reasons: firstly, the possession of advantages and secondly, the removal of conflict. Four types of market imperfections have been identified as facilitating the development of international firms: 1) market imperfections in the goods markets (eg., special marketing skills), 2) market imperfections in factor markets (eg., advantages with respect to raising capital, or

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superior management), 3) internal or/and external economies of scale (eg., vertical integration), and 4) governments' interference with international production. Hymer's work makes a substantive contribution to our understanding FDI as one of the first explanations of FDI in the industrial organization tradition. He saw FDI as a means of transferring knowledge and other firm assets, both tangible and tacit, in order to organize production abroad. With this contribution, Hymer (1970) differentiated FDI from portfolio investment. However, the market imperfection theory is limited in explaining firms' internationalisation by these four types of imperfection.

In a similar way, Vernon (1966) uses the Product Life Cycle concept to theorize that firms capture economies of scale and lower costs of factors of production by producing offshore. Both Hymer (1970) and Vernon (1966) had numerous contributions to explain FDI and MNC activities from different theoretical bases. Caves (1974) and Dunning (1988) considered FDI as a way of exploiting ownership advantages. Rugman (1980) saw FDI as risk diversification while Kogut and Zander (1993) considered it as organizational assets and knowledge transfer. Further, Buckley and Casson (1976), Hennart (1982) explained the logic for internalizing transactions within the MNC, while Knickerbocker (1973) argued that MNCs follow their rivals into new markets as an oligopolistic reaction (Sethi, Guisinger, Phalan, Berg, 2003).

Internalisation Theory (Buckley and Casson, 1976; Rugman, 1980) is highly associated with Transaction Cost Theory (Williamson, 1979; Hennart, 1989). Transaction Cost Theory seeks to explain that, in order to lower transaction costs, firms tend to create internal markets, with the aim of preventing high transaction costs. According to the theory, firms entering foreign markets through FDI are working to minimise the costs of exploiting their specific advantages and to maximise the opportunities to exploit their specific advantages abroad. Similarly, Internalisation Theory suggests that firms should internalise cross borders to avoid transaction costs. According to the theory, firms entering foreign markets through FDI are working to

minimise the costs of exploiting their firm-specific advantages and to maximise the opportunities to exploit their specific advantages abroad. Moreover, Rugman (1980:370) even suggests "Internalisation is a synthesizing explanation of the motives for FDI". These theories are limited, however, by only considering the internal aspects of the firm while largely ignoring external factors, such as host country environment, etc, that may also affect foreign market entry and FDI motives.

2.1.2 The Eclectic Paradigm and Firm Specific Advantages

Early research on FDI identified the role played by research and development. Large, research-intensive firms, typically from the most developed capital economies, were observed to dominate FDI (Vernon, 1966). The decision to undertake FDI was a stage in their growth strategy (Buckley & Casson, 1976). These firms were able to create differentiated products that could be competitive abroad (Vernon, 1966; Caves, 1974; Hymer, 1976). The ability for a firm to utilize its competitive advantage through foreign investment was said to depend on discovering product, locational or financial market imperfections that encourage FDI to take place. Dunning (1988), Vernon (1966), Caves (1974), Hymer (1976), Buckley and Casson (1976), Dunning (1980) and Hennart (1988) pioneered the research to find a comprehensive framework for explaining FDI. This became known as the OLI paradigm and has been utilized intensively to the present time.

The OLI paradigm is explained in Dunning's work (1980, 1988, and 1993) as a framework to study FDI and MNCs. Such a paradigm is considered a significant piece of academic work in the FDI field, which best explains the determinants of MNCs' investment abroad. This framework denotes three types of advantages: ownership-specific (O), location-specific (L) and internalisation-specific (I). Dunning (1988) indicates that when one considers the determinants of MNCs' investment abroad, the OLI variables have to be considered altogether. The eclectic paradigm

contributes to the literature by synthesizing three different components into one framework that helps to explain the motives and determinants of FDI.

The "O" - ownership-specific advantage in the OLI paradigm are in the form of firm-specific advantage (FSA), in which conventional theory on MNCs and FDI often suggests knowledge-based assets constitute FSA owned by MNCs, that these motivate investment across borders (Buckley, et al., 2007). In deciding whether to undertake FDI a firm must have developed firm-specific characteristics that enable it to be competitive in the home market (Hymer, 1976). These FSA must also be transferable abroad and strong enough to compensate for the extra costs and barriers that confront the competitor abroad. Dunning (1980, 1988) asserts this FSA can be subdivided into two types of advantage: asset advantages and transaction advantages.

FSAs typically possessed by successful MNCs are the proprietary knowledge incorporated in: (1) economies of scale and scope; (2) managerial expertise and advanced technology; (3) R&D; and (4) differentiated products/services. Managerial and technological resources in particular, have been the focus of many studies for FSA (eg, Rugman, 1980; Cantwell, 1989). In line with these arguments, mainstream theoretical perspectives, such as the discussed OLI paradigm suggests that MNCs often operated predominately in technology intensive industries for the better use of their own FSA.

For this study, this "O" factor associated with FSA serves to ground the fundamental theory in order to identify and analyse the impact of foreign ownership on a firm's performance in host country. The earlier exploration of FDI theory suggests that the firm-specific advantages embedded within MNCs enable them to compete in foreign markets against local competitors. Given the advanced proprietary knowledge, foreign owned firms in host countries could serve to improve host countries' industrial capability and their competitiveness by acting as a medium transferring international diffusion of skills, knowledge, technology through linkages and spillovers (Findlay, 1978; Dunning, 1994).

This section discussed the earlier development of FDI fundamental theories. The academic literature emphasises the connection between market imperfections and foreign investment, with focus on market structure issues. From Hymer (1970)'s FDI characteristic to Dunning (1980; 1988; 1993; 1994)'s OLI, the positive effects of FDI has been explored theoretically – MNCs with Firm Specific Advantages bring in potential gain of resources and knowledge to the host countries. These FSAs not only help to explain performance gaps between foreign and domestic enterprises, but also, and particularly in the small, developed economy context, the potential for spillovers from foreign MNC activities.

2.2 IMPACTS OF INWARD FDI ON HOST COUNTRIES

In analysing how MNC activities affect host countries and firm performance, it is convenient to distinguish between direct and indirect impacts (Blomstrom and Kokko, 2001). FDI can play a significant role in the development process of host economies. Such influences include growth by raising total factor productivity and more generally, the efficiency of resource use in the recipient economy. This works through three channels: the direct impact on structural factors (inflows of capital formation and resources) in the host country, the linkages between FDI and foreign trade flows, and the indirect spillovers and other externalities vis-à-vis the host country business sector. In particular, the spillover effect of FDI has been widely considered as the source of technology improvement and transfer in many studies. FDI by MNCs has since been advocated as a primary source of technology diffusion and economic growth for host countries, especially for developing countries (Blomstrom and Kokko, 2001)

2.2.1 Foreign Presence and Economic growth

Many studies looking into the FDI-Growth relationship have found a positive relationship between FDI inflows and economic growth in the host countries through

upgrading competitiveness (Dunning, 1994), capital formation (Blomstrom and Zejan, 2000; Borensztein et al. 1998; James, 2009), the transfer of new technology and spillover efficiency resulting in increased productivity and higher growth (Haddad and Harrison, 1993; Eden et al., 1997; Liu et al., 2000).

UNCTAD World Investment Reviews suggests that FDI has a positive impact on growth but that it varies from country to country (UNCTAD, 2003). For the host country or enterprise receiving investment, FDI carried by MNCs, delivers necessary new technologies, capital stock, managerial resources/skills and global contact/network relationships that provide fundamental support to economic development. FDI also stimulates domestic investment and facilitates improvements in human capital and institutions in host countries. Although FDI has a positive impact on economic growth, the size of the impact often varies across countries depending on the level of human capital, domestic investment, infrastructure, macro-economic stability and government policies. Recent literature continues to debate the role of FDI in economic growth as well as the importance of economic and institutional developments in fostering FDI. This lack of consensus limits our understanding of the role of FDI in economic growth processes and restricts governments' ability to develop policies to promote economic growth.

The Blomstrom et al. (1994) study of economic growth in 78 developing countries and 23 developed countries uses data from 1970 to 1990. The paper's focus is largely on the influence of FDI and trade, and how it impacts on economic growth. Blomstrom's findings show find that FDI is positively associated with per capita income growth in the long run "via technology upgrading and knowledge spillovers" in those countries. Similar results can also be found in Chen et al. (1995). Here the authors investigate the role of FDI in the economic development of China. They argue that by contributing to capital formation, export earnings and bringing about advanced managerial skill, FDI inflows are positively correlated with post-1978 economic growth in China.

Other studies argue that the impact of FDI on economic growth depends on the characteristics of different countries. Borenzstein et al. (1998) focus on the effect of FDI on economic growth in a cross-country framework and study FDI flows from OECD countries to 69 developing countries from 1970 to 1989. The authors find that FDI can increase host country's economic growth, but only when the host country's human capital level achieves a certain threshold level.

There is ample evidence supporting a positive impact of FDI on economic growth in developing countries, while the evidence of the contribution of FDI inflows to the developed countries is mixed. In Blomstrom et al. (1994), FDI not only contribute to the economic growth of the developing countries, but also has a significant positive impact on the 23 developed countries. However, Kasibhatla and Sawhney (1996) examine the relations between FDI and GDP in the U.S. based on an error correction model, and conclude that U.S. data does not support the hypothesis that FDI promote GDP growth.

2.2.3 Effect of Foreign presence on Productivity

Another commonly discussed impact of inward FDI on firm performance is productivity. The issue that mainly arises in literature is the question of whether foreign-owned firms are more efficient. If they are, the second question is whether their superior productivity spills over to domestic-owned firms in their industries. Domestic firms might increase their efficiency by copying the operations of foreign firms or be forced by competition to raise their efficiency to survive.

International economy literature on MNCs generally suggests that foreign affiliates of foreign MNCs in a host country are more productive than their local counterparts with early studies such as Vernon (1966) and Caves (1974) highlighting the advantages

embodied in their managerial resources (see also Dunning, 1988; Markusen, 1991). Moreover, the entry of MNCs may also affect overall productivity levels by bringing new ideas or increasing the level of competition in the market.

Most theoretical discussions of the possible role of inward investment refer to the transmission of superior technology. Comparisons of productivity between firms with foreign presence and domestic firms have been undertaken to examine possible technology spillovers to domestic firms. Many of the productivity comparisons have highlighted or examined the manufacturing sectors in developing countries. Blomstrom and Wolff (1994) in their study of Mexico manufacturing data for 1970, found both value-added and gross output per employee are more than twice as high in foreign affiliates as in private local firms. Okamoto and Sjoholm (1999) examined Indonesian manufacturing micro data from 1990 to 1995 and also found labour productivity was higher in foreign-owned firms. Sjoholm (1999) analysed Indonesian establishment data from 1980 and 1991, calculating differences in technology between foreign affiliates and domestic firms. The estimated technology differences were found to be in favour of the foreign firms in 26 out of 28 industries. Kokko, Zejan, and Tansini (2001) reported that in Uruguay in 1988, productivity measured by value-added per worker, was about twice as high on average in foreign firms as in local firms. Comparing foreign owned firms and domestic firms in five East Asian countries over 15 to 20 years, Ramstetter (1999) reported that value-added per worker was higher in the foreign owned plants in all the countries.

Although most empirical studies of the productivity differences between foreign owned affiliates and domestic firms have focused on developing countries, research has also been conducted in a number of developed countries as well, most notably the United States, United Kingdom and European countries. One such study, carried out by Howenstine and Zeile (1994, found that foreign owned plants had higher labour productivity than domestically owned ones in the United States. Conyon et al. (2002) also found that acquisitions of UK firms by foreigners led to increases in their

profitability. The literature has, however, pointed out that the superiority of foreign owned firms in terms of productivity may often be due to the tendency of foreign entry to be concentrated in industries where productivity is generally high and may possibly be due to plant size, capital intensity, employee skill etc, rather than simply the foreign ownership. A study by Harris and Robinson (2002) confirmed this suspicion that foreign firms selected relatively high productivity plants to acquire, which is commonly to as "cherry picking".

2.2.4 Inward FDI and spillover effects

The spillover literature further argues that due to FDI's superior productive capacity it is likely to introduce best practices in production, thus promoting leading edge production technology to host countries (Dunning, 1993). There is a large volume of research exploring the linkages between inward FDI and productivity as described above. The existence of how FDI spillover effects benefit host countries is well presented and embedded in this literature, especially for developed host countries.

Since Caves' (1974) pioneering work on spillovers in Canadian and Australian manufacturing by analysing cross-sectional data, an extensive empirical literature has emerged. It is commonly argued that the spillovers from FDI are the most important benefit to host counties, particularly associated with economic growth and improvements in productivity as discussed previously. It is generally agreed that spillovers took place in non-market transactions through linkages involving foreign MNCs' resources, in particular when knowledge is spread to local industry without a contractual relationship (Meyer, 2004). However, the determinants of the size and scope of the spillover benefits have not been described clearly and consistently in existing spillover studies (Blomstrom, et al., 1999).

In theory, MNCs need to possess some compensating Firm Specific Advantages

(FSAs), in order to compete effectively with local players in the host economy, who generally have better access to and knowledge of, the host market (Graham and Krugman, 1991). When these FSAs are not fully internalised by MNC into local subsidiaries, spillovers accrue to the domestic firms (Blomstrom and Kokko, 2001; Javorcik, 2004). Before spillovers can occur one condition needs to be met: the foreign owned firms need to be more productive than their domestic counterparts. A number of papers have tested whether or not this is the case, obtaining mixed results (Harris and Robinson, 2003).

There are many interrelated channels for knowledge and technology transfer between foreign owned affiliates to domestic firms to conduct spillovers, grounded by Balassa's (1961) view on horizontal and vertical linkages between industries as a key source of productivity spillovers. These spillovers could be intended and result from forward and backward linkages between the MNCs and associated local firms, typically business customers and suppliers (vertical spillovers). MNCs generally are found to provide technical assistance, training and other information to raise the quality of the suppliers' products. Many MNCs assist local suppliers in purchasing raw materials and intermediate goods and in modernizing or upgrading production facilities. Benefits can also be unintentional as a result of "accidental leakage" of knowledge and technology to competing and unrelated firms (horizontal spillovers) through channels such as the movement of trained/skilled labour from the MNCs to the local industry (Fosfuri et al., 2001) and observational learning and imitation (Gorg and Greenaway, 2004).

The effects of MNCs are not always beneficial. Positive spillovers are not always found in the empirical literature. Haddad and Harrison (1993) find that spillovers do not take place in all industrial sectors and the foreign presence lowers the average dispersion of a sector's productivity.

Vertical spillovers take place as a result of inter-industry linkages when MNCs and their local suppliers or customers interact and conduct business activities. MNCs bring with them some kind of advanced proprietary technology when they enter the local market. MNCs will not hesitate to pass some of their knowledge directly to their local associated firms to encourage their improved performance (Javorcik, 2004). Therefore, it has been argued that vertical spillovers are the most likely source of productivity benefits for the host country (Kugler, 2001; Gorg and Greenaway, 2004; Wang and Zhao, 2008).

Vertical spillovers occur through two channels, backward and forward linkages. Local suppliers may learn about product and process technologies and foreign market conditions from linkages with MNCs. The indirect effects might be that local firms are able to learn how to succeed in foreign markets by copying MNCs' strategies. MNCs may also direct transfer some kind of technology in order to ensure the quality of inputs (Gorg and Greenaway, 2004). These linkages that contact with local suppliers are referred as backward linkages in literature and empirically proven by Javorcik (2004). Javorcik (2004) emphasises the role of vertical spillover effects with special attention to the determinants of this backward linkage, empirically found positive backward spillovers in Lithuania in the period of 1996-2000.

There are also forward linkages – the contacts between MNCs and their local customers. Through such linkages, foreign affiliates may transmit knowledge of product methods, innovative technology, and international market access to their upstream local customers in order to achieve better sales (Barrios, et al, 2009). Empirically, Wang and Gu (2006) tested spillovers based on Canadian manufacturing sector, presenting positive spillovers from vertical linkages. Gorg and Greenaway (2004) in their study also found positive vertical spillovers that including one forward spillover. However, the empirical result is always mixed. Javorcik (2004) found contradictory result in forward spillovers in her study.

Horizontal spillovers process is believed to take effect through several different intra-industry channels: the movement of labour (Gorg and Greenaway, 2004; Fosfuri, et al., 2001), imitation and observational learning (Kokko, 1994; Gorg and Greenaway, 2004), and competition intensity (Wang and Gu, 2006).

It has been observed that the most important channel is the movement of MNC trained labour to the domestic sector – either by changing jobs or starting new ventures (Blomstrom an Kokko, 2001; Fosfuri et al., 2001). The relocation of the MNC trained workers can potentially enhance productivity through two forms. First, the MNC trained workers may carry with them knowledge of new technology or management techniques and consequently become direct agents of technology transfer (Gorg and Greenaway, 2004). Second, the MNC trained workers may raise the productivity of the co-workers in the domestic firms, simply by association and demonstration (Fosfuri, et al., 2001). It is noticeable that there is a possible negative impact to the local industry by MNCs as they attract the best workers from domestic firms by offering higher wages. There is also evidence to suggest that MNCs deliberately pay higher wages to plug this "leak" of trained labour to local firms (Aitken et al., 1997). In response, domestic firms also have been observed to increase worker compensation (Aitken et al., 1997).

The advanced technologies and new products unleashed by an MNC in the domestic market force the local players to respond by innovating. Often, innovation takes the form of imitation (e.g. reverse engineering), whereby the domestic firms replicate the products and/or the processes of the MNC. The scope for imitation is restricted by the complexity of the product and process; the more complex they are, the more difficult it is to imitate them. Nonetheless, it should be noted that any upgrading of local technology derived from imitation is a gain for the domestic economy. However, where the MNC's products and technologies are vastly different from those of local firms, spillovers are unlikely to materialise (Kokko, 1994). In addition to the imitation of products and processes, the local firms may also imitate the management or export

practices of the foreign firm (Gorg and Greenaway, 2004). The presence of MNCs in the domestic sector also provides different opportunities for the domestic firms to observe and learn.

The increased competition induced by MNCs is another channel of FDI spillovers (Markusen and Venables, 1999). Competition in the host market between MNCs and local firms is an incentive for the latter to make a more efficient use of existing resources or upgrade technology, thereby leading eventually to higher productivity (Blomstrom, 1989; Wang and Blomstrom, 1992). However, domestic firms may also be negatively affected and crowded out because a foreign entrant may be large enough to establish a position of market power, effectively reducing the amount of domestic market competition (Markusen and Venables, 1999). The presence of MNCs may imply significant losses of local firms' market share, therefore forcing them to operate on a less efficient scale (Haddad and Harrison, 1994; Aitken and Harrison, 1999).

Empirically, the results from horizontal spillovers are mixed. Most studies focus on the spillover effects of FDI on domestic firms in the same industry. Gorg and Greenaway (2004) summarised only 20 out of the 42 studies on horizontal productivity spillovers in developed, developing and transition economies report positive and significant results.

In summary, the proposition that FDI-led MNCs generates productivity gains for the wider domestic economy through spillovers has substantial theoretical ground. Whether such spillovers are in fact positive or negative or non-existent is an empirical matter.

2.2.5 Determinants of Spillovers Effect

Despite the abundance of theoretical FDI literature identifying a range of spillover

channels, with explanation on how they could help local industry, empirical support for positive spillovers is mixed. Gorg and Greenaway (2004) found that it was difficult to find conclusive evidence supporting spillover effects. In practice, MNCs may be effective at ensuring that FSAs do not spillover. Moreover, the scale and scope of such spillovers varies with a firm's characteristics and the context in which they are interacting (Blomstrom and Kokko, 2001). It is up to the associated firms' capacity to receive and utilise possible spillovers.

Various factors have been suggested to condition the size and nature of FDI productivity spillovers including host country characteristics like industrial market structure, technological sophistication and overall economic size (Kokko, et al., 1996). Attributes of the nature of the inward FDI have also been considered in terms of entry mode and ownership. Some attention has also been paid to the motives and attributes of the foreign investor. Notwithstanding, the theoretical consideration of the determinants of spillovers is still limited and inconclusive.

The factor that has been analyzed in most detail is the absorptive capacity of domestic firms, together with the influence of the technological gap between foreign and domestic firms.

Absorptive capacity is defined as "the ability to identify, assimilate and exploit technology from the environment (Cohen and Levinthal, 1990, p.569). Extended into spillover literature, absorptive capacity is widely accepted in the FDI field as the ability and potential for local firms to learn advanced technology and knowhow from MNCs in the host country and fit into their own practice (Borensztein, et al, 1998; Blalock and Gertler, 2002). Blalock and Gertler (2002) in their study measure absorptive capacity as the technology gap between the foreign affiliates and domestic firms in the host country.

It is a commonly understood that some technological gap must exist between the two groups of firms for spillovers to occur. A vast, but mixed, array of literature has investigated whether a larger, smaller or a moderately sized technology gap is more conductive to capturing spillovers from FDI.

Regarding the factor of the size of the firm, some believe that large firms can use their economies of scale to take advantage of R&D with better result than smaller firms. This implies that large firms benefit more from the presence of foreign firms than smaller firms because they have more resources to exploit those benefits. A contrary view holds that small firms create innovation by exploiting the knowledge that was created by their larger counterparts whereas the large firms tend to get bogged down in developing those innovations in their own firms. In addition, OECD (1993) points out that since SMEs have a limited ability of internal R&D, they depend more on external source technology then the larger firms. As a result, spillover contributes more benefit to the smaller firms.

Another pioneering contribution is Findlay (1978), who argues that spillovers are determined by the degree of foreign presence, measured by the ratio of the capital stock of foreign owned firms in the backward economy to the capital stock of the domestic owned firms. The larger gap between the foreign affiliates and domestic firms, the bigger potential for positive spillover benefits to exist. Accordingly, for a given technology gap, the spillovers increase with the degree of foreign presence. Kokko (1994) and Wang and Blomstrom (1992) support such idea and demonstrate that, for a given level of foreign presence, spillovers increase with the technology gap between foreign investors and domestic firms. However, the gap cannot be too big for the domestic firms to absorb MNCs' technological advantage. Wang and Blomstrom (1992) argue that the technology gap is necessary for spillover to happen but it is associated with the size of such gap. The domestic firms in the high-technology industries would benefit better from spillovers than those in the less intense technology industries. In addition to Findlay's proposition between technology gap

and spillovers, they emphasise the importance of competition. The more competition existing in the host country, the more technology will be practiced by the MNC affiliates and the larger the spillovers will be. Kokko (1994) also found that a high technology gap with low degree of competition was found to prevent spillovers.

Supporting infrastructures and development level in the host economy are also very important to favour spillovers. In less developed countries, spillover level is usually lower due to the higher differentiated wages by MNCs and local firms that barrier the transfer of skilled labour (Lipsey and Sjoholm, 2004). Hermes and Lensink (2003) suggest that a developed financial system encourage FDI spillovers. Blomstrom et al. (1994) and Kokko and Blomstrom (1995) show that MNCs tend to apply more advanced technology in countries and industries that have a higher share of skilled labour.

The lesson to be drawn from these arguments is that domestic firms must have a moderate gap in order to maximise the spillover benefit from MNCs' higher technologies with support from favouring macro factors. These spillovers serve as a vehicle passing MNCs' unique firm specific advantages into local industry therefore promote the increases for higher productivity and better performance for local economy. Furthermore, the entry of MNCs and the resulting of competition might act as an incentive to the local players to better practice labour and boost up their productivity level.

2.2.6 Liability of Foreignness and Firm Performance

On one hand, MNCs bring their Firm Specific Advantages into their local subsidiaries/affiliates as competitive advantages; on the other hand, foreign firms also face disadvantages while doing business overseas. This is a well articulated concept in the field of international business, starting with Hymer (1976) and Kindleberger

(1969), has been referred to as "Liability of Foreignness". The original work of Hymer has been expanded by later scholars who have attributed liability of foreignness to a set of interrelated factors. Zaheer (1995, p.343) has defined it as "all additional costs a firm operating in a market overseas incurs that a local firm would not incur". Eden and Miller (2001) described the concept as "stranger in a strange land" for the additional costs faced by a foreign firm.

Due the widely accepted Liability of Foreignness, it is arguable that foreign owned firms may not perform as well as some of their domestic counterparts as the previous literature suggested. The advantage of foreign affiliates over domestic firms in terms of technology, economies of scales are likely to be offset by unfamiliar business environment, cultural distances, lack of network relationships and local support etc. The diffusion of indigenous technology and local knowledge helps the productivity enhancement of foreign affiliates in the local market (Wei, et. al., 2008) as well as the possible technology sourcing from MNCs in a host country (Driffield and Love, 2003), causing reverse spillovers.

2.2.7 Conclusion

Even though there are a large number of studies examining the relationship between FDI and economic growth at different scales/levels, the results of these studies are not able to clarify the relationship between FDI and economic growth.

Commonly accepted, the main effect of FDI on host country economy is that FDI increases productivity through transfer of knowledge, resources, managerial expertises to host market directly or indirectly (in the form of spillovers), resulting in higher economic growth. The scope for such spillovers depends on technological strength of the parent firm, the extent to which technologies are transferred to the affiliate, and the extent of integration of the foreign firm into the host market (OECD, 2007).

Impacts of FDI on host country in terms of productivity spillovers from foreign affiliates to domestic firms explain the performance differences between these two groups (Bellek, 2004; Haddad and Harrison, 1993) if the performance gap does exist. Such performance gaps will be discussed in the next section.

2.3   FOREIGN   OWNERSHIP   AND   CORPORATE PERFORMANCE

A large literature compares the performance of foreign-owned firms versus domestic-owned firms in order to understand the effects of FDI and MNCs on host countries. The existing literature focusing on the causal link of foreign ownership and corporate performance falls into three broad areas: studies of FDI and productivity in product market and studies on the implications for wages in factor market, to examine if foreign owned firms and domestic firms behave differently, as well as studies on extent of spillovers. It is common to ask whether foreign owned affiliates perform better than domestic firms, using resources more efficiently and whether positive spillovers exist between foreign owned firms and domestic firms.

2.3.1 Foreign ownership and Productivity

The possibility that foreign affiliates perform better than their domestic counterparts is well embedded in theory (Bellak, 2004). MNCs have the natural ability to exploit ownership advantages and firm-level economies of scale or access cheap factors for production through international experiences and networks. They also have higher R&D expenditures and well-established FSAs that should enable them, perform better. Models of both horizontal and vertical linkage activity also provide a natural explanation of why foreign firms are more productive than those that only serve the local market in theory. Helpman et al. (2004) suggest that if firms are heterogeneous and there is some cost to becoming a multinational, then only more productive firms will be more advantageous to operate foreign subsidiaries.

A number of empirical studies have tested whether or not this is the case. However, these have produced mixed conclusions. Globerman et al. (1994) analyse all Canadian establishments in 21 sample industries at plant level and find that, foreign owned

firms have higher productivity and FDI improves industry efficiency. However, once size, capital intensity, and workforce composition are controlled for, foreign owned firms do not exhibit superior performance compared to their domestic counterparts. Barbosa and Louri (2005) investigate if foreign owned firms operating in Portugal and Greece perform differently than their domestic counterparts, also finding no conclusive evidence. Such results suggest that foreign ownership do not make a significant difference to firm performance. On the other hand, some studies examined the relationship between foreign ownership and firm performance, reaching opposite conclusions. Doms and Jensen (1995) study labour productivity in the U.S., using control variables of plant size, age, location etc, find that foreign affiliates in the U.S. are more productive than domestic-owned ones, but are on average less productive than U.S. owned MNCs. Similarly, Harris (2002), and Harris and Robinson (2003) find evidence that in the UK, foreign owned firms generally perform better than their purely domestic counterparts. Oulton (1998) in his study, analyses productivity for non-manufacturing companies in the UK, find that foreign ownership raise productivity by about a third in domestic firms showing superior productivity advantages. Also, the analysis of firm-level data for UK, US and various other developed and developing countries reports that average labour productivity of foreign owned firms in host country is between 30 and 70% higher than local firms (Griffith, 1999; Griffith and Simpson, 2004). Finally, Temouri et al. (2008) find that in Germany, foreign owned firms are more productive than their domestic counterparts.

There is also additional support in spillover literature providing some evidences for the relationship between foreign ownership and productivity as foreign owned affiliates in host country need to possess some technological and productivity advantages for spillover to occur. Aitken and Harrison (1999) analyse from a sample of Venezuelan firms for FDI impact on spillover, finding that there is a positive correlation between foreign ownership and productivity, but the effect is limited to small enterprises.

As a result, it is proposed:

H1: Foreign firms have a significant superior advantage over domestic firms in productivity

2.3.2 Foreign ownership and Profitability

Foreign affiliates generally perform better than domestic-owned firms with mixed but more than supportive empirical evidence, no matter which indicator is analysed – with the exception of profitability.

Most of performance studies tend to focus on comparing productivity between foreign affiliates and domestic firms, except a few papers. Chhibber and Majumdar (1999) in a cross-section study from India, study the correlation between foreign ownership and firm performance, where performance is defined in financial terms as return on assets (ROA) or return on sales. The authors use foreign ownership data for a single year for each firm, but the year foreign ownership is observed differs among firms. Chhibber and Majumdar find no significant correlation between foreign ownership and ROA at ownership levels below 51%. Kumar (1990) again examines determinants of profit margin gap between foreign affiliates and domestic firms using Indian manufacturing industries, finding MNCs have advantage over local firms. Kumar (1990) provides hints there is profit gap between foreign owned affiliates and domestic firms.

Mataloni (2000) found that ROA of foreign owned non financial companies was consistently below that of US-owned companies between 1988-1997, though the gap narrowed over time. A variety of explanations have been explored for the apparent underperformance of foreign firms in the US. A favourite explanation centred on the possibility of transfer pricing and suggestion that foreign affiliates were actually

doing better than it seemed, but this has proven hard to verify empirically (Bellak, 2004). In addition, Mataloni (2000) explored a number of different factors. He concluded that market share and age effect have significant and satisfactory explanatory variables. In general, as a foreign firm's market share increase, the gap will decrease. The negative ROA gap tended to fall with their degree of newness.

Therefore, this study will test the performance gap between foreign affiliates and domestic owned firm in profitability as well by proposing:

H2: Foreign firms have a significant superior advantage over domestic firms in profitability

2.3.3 Performance differences in Service Industry

Most of the above empirical studies focus on the manufacturing sectors, due to the data availability, except Temouri, et. al. (2008). Temouri, et. al. (2008) study differences in firm-level total factor productivity across 17 service and 22 manufacturing industries, found significant higher productivity in foreign owned firms than domestic firms. In order to better understand the impact of foreign presence in service industry for this study, FDI studies on services will be generally discussed below.

Services account for an increasing share of GDP in developed countries and an increasing share of FDI and trade. The trend of FDI shifting towards service partly reflects the ascendancy of services around the world and the nature of services as discussed earlier. The provision of business services is becoming increasingly international in scope. It is important to consider services sector into studies. However, the internationalisation of firms within the sector has yet to be fully explored

(Buckley and Pass, 1992; Roberts, 2002). In comparison with manufacturing internationalisation, less emphasis has been placed on the service sector. One of the early studies of service FDI was conducted by Dunning (1989). In this paper, he addresses the reasons for the growth of MNCs' involvement in the service sector over a 20-year period. He also discusses why FDI has been a preferred route for organising international activities involving services.

Unlike the manufacturing industries, there has been little analysis of the role of foreign ownership on performance on services sector due to the nature of the services and lack of empirical data. Until recent, a few studies have paid attention to such issue. One exception is Griffith, et. al (2004), who examine the relationship between foreign ownership and productivity, paying particular attention to the role of MNCs in service sectors. They find in both manufacturing and service sector, multinational establishments are more productive than those domestically owned firms. For that reason, this study will extend the test of performance between foreign affiliates and domestic firms separating manufacturing and services industries to see if foreign ownership has different impact on performance in service industry than manufacturing by proposing:

H3: Foreign firms also have a significant superior productivity advantage over domestic firms in services industries.

2.4 DEVELOPMENT OF FDI – GLOBAL OVERVIEW AND NEW ZEALAND PERSPECTIVE

The aim of this section is to provide some up-dated figures regarding worldwide FDI, in order to offer readers a sense of how worldwide FDI has developed over a 20-year period. The development of both inward and outward FDI is included. The development of inward FDI into New Zealand is of a particular concern, as it is closely associated with the author's interest in studying the impact of inward FDI on New Zealand and how foreign ownership relate to the performance of New Zealand enterprises. The unit of currency for the data provided is the US dollar.

2.4.1 Total World FDI Flows and Stocks

FDI has played a fundamental role in encouraging global economic integration and has been a driving force behind worldwide economic restructuring over the past decades. Worldwide, there has been a tremendous growth in FDI during the past few decades (see Figure 2.1 for trend). This movement is demonstrated by considering the two indicators of world FDI flows and stocks.

Figure 2.1 FDI inflows, global and by groups of economies, 1980-2008
(Billions of dollars)
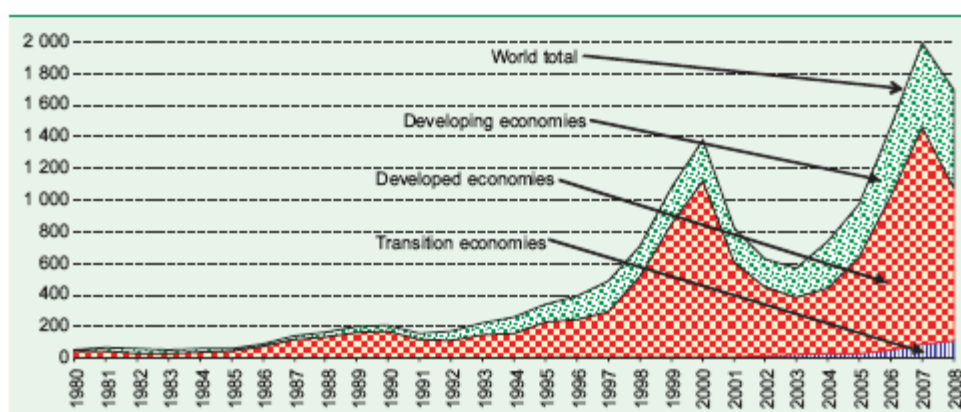
Source: UNCTAD, World Investment Report 2009

Global FDI Flows

With the integration of international capital markets, global FDI flows grew strongly in the 1990s (indicated in Figure 2.1), at a much quicker rate than world economic growth. Recorded global FDI inflows grew by an average of 13 percent a year during 1990-1997. Remarkably, these inflows increased by an average of nearly 50 percent a year during 1998-2000, peaking at a record of $1.5 trillion in 2000, mainly driven by large cross-border mergers and acquisitions (Patterson, et al., 2004).

After years of growth, global flows of FDI dropped with two consecutive declines to $824 billion in 2001 and $651 billion in 2002, until remaining stagnant in 2003 at $653 billion (UNCTAD, 2004) and picking up again in 2004. FDI flows continued to rise in 2007: at $1,979 billion – a new record level surpassing the 2000 figure (UNCTAD, 2008). The current financial and credit crisis, which began in late 2007, had a dampening impact on the world economies as well as FDI. As a result, FDI flows declined 14% in 2008 to $1,697 billion, and are expected to fall further to $900-$1,200 billion in 2009 (UNCTAD, 2009).

Regional FDI Flows

The regional distribution of world FDI flows, during the last two decades shows that (Figure 2.2 and Figure 2.3) developed countries accounted for the highest share and, have long dominated both market and economic activities. However, developing economies now account for an increasingly share of both FDI inflows and outflows, which indicates their increasing importance on the world scene.

Figure 2.2 Shares of the three major groups of economies in global FDI inflows, 1990-2008 (per cent)
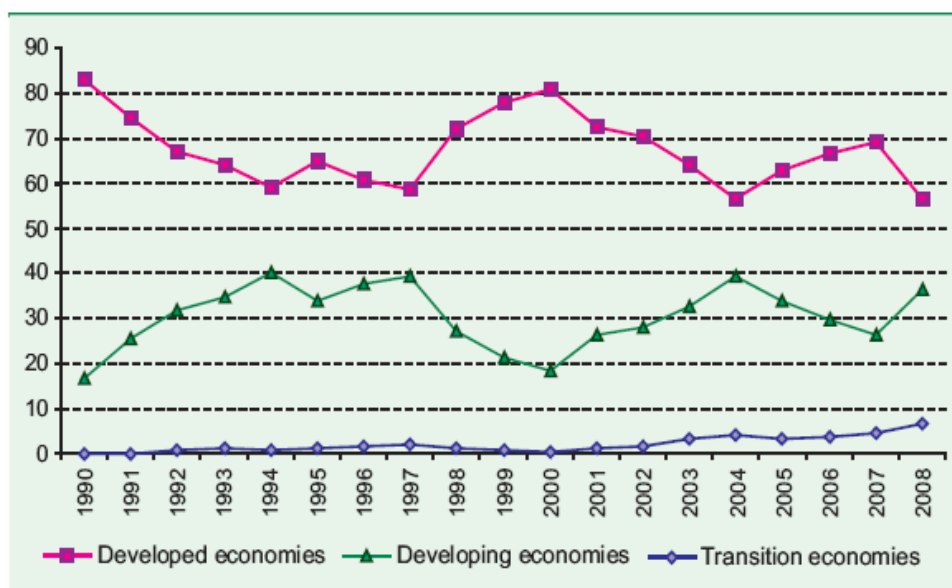
Source: UNCTAD, World Investment Report 2009, page 4.

Figure 2.3 FDI flows by region, 2005-2007 (Billions of dollars)
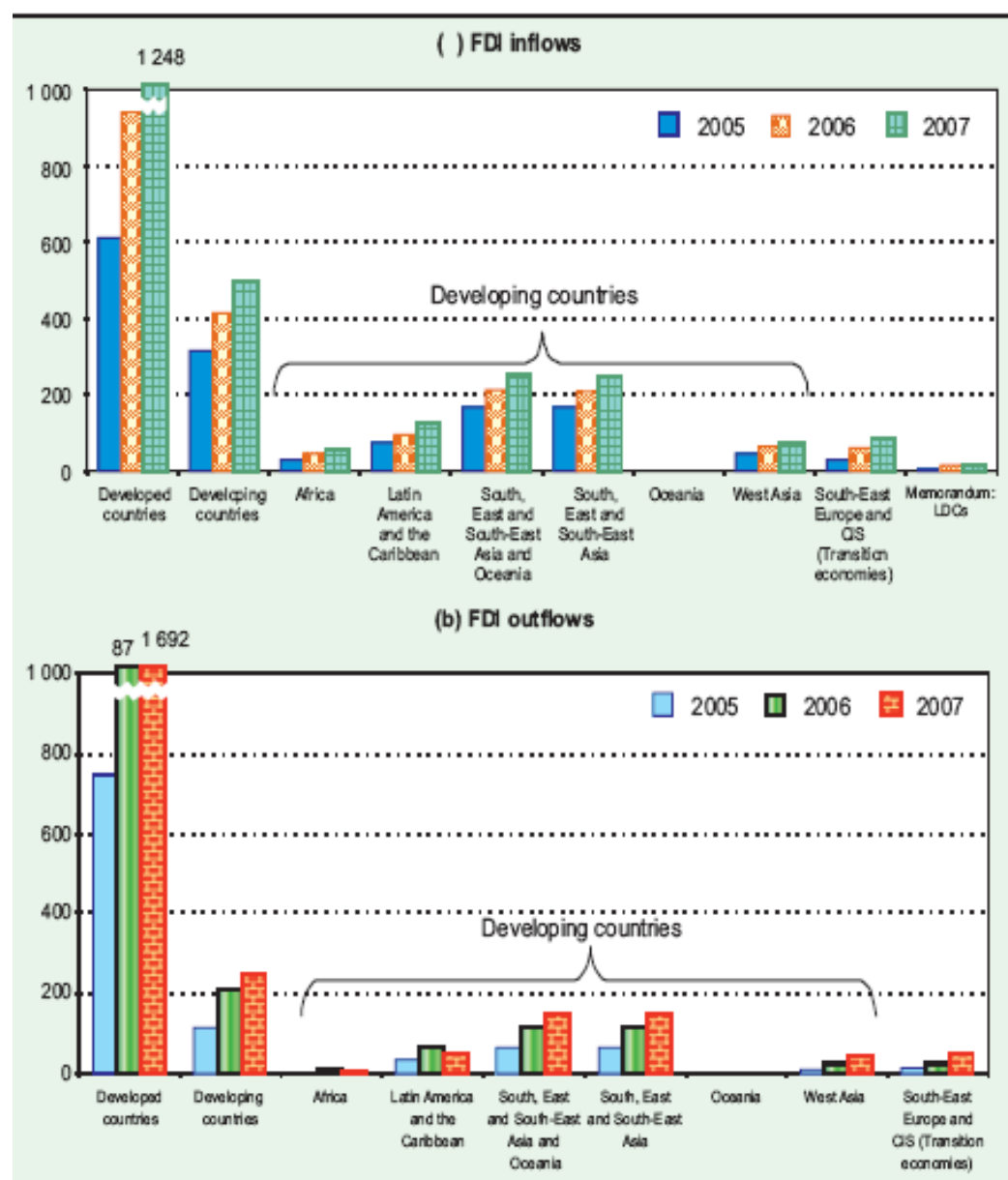
Source: UNCTAD, World Investment Report 2008, P8

Trend towards services

FDI has grown in the primary, manufacturing and service sectors simultaneously. However, the structure of FDI has shifted towards services. The service sector accounts for approximately 60% (Figure 2.4) of the global inward FDI stock in 2002, compared to less than 50% in 1990. In contrast, during the same period, the share of the primary and manufacturing sectors declined from 9% to 6% and 42% to 34%, respectively. In addition, today, outward FDI in the service sector continues to be dominated by developed countries. However, service FDI from developing countries has also begun to grow since the 1990s.

Figure 2.4. Global inward FDI stock, by sector, 1990 and 2002 (Percent)
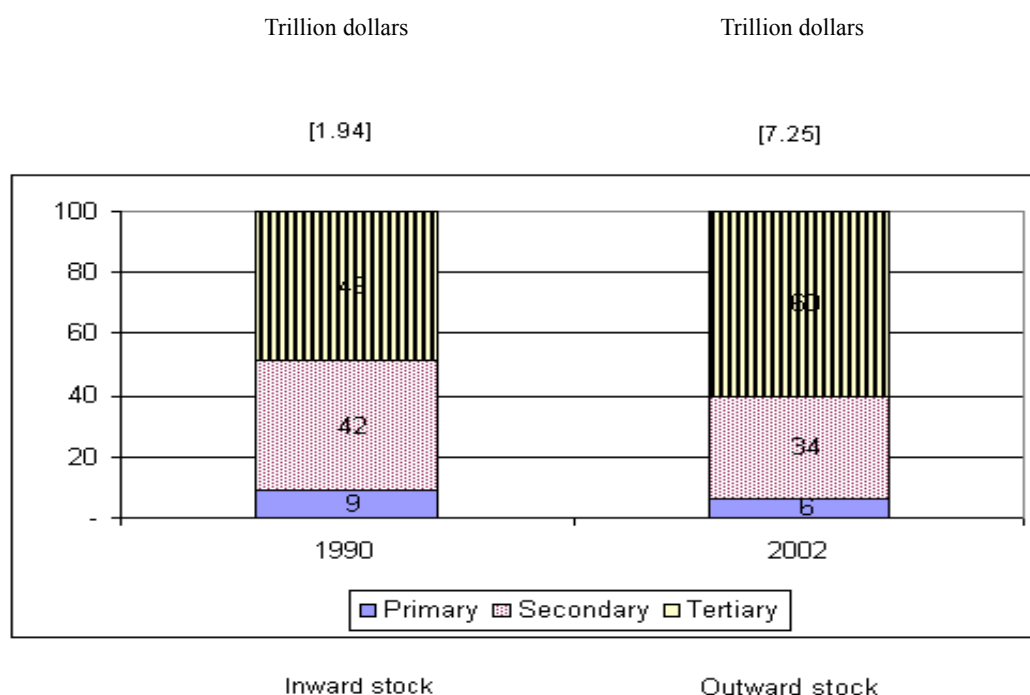
Source: UNCTAD, World Investment Report 2004, page 65.

The shift towards services partly reflects the non-tradable nature of services. Most services need to be produced when and where they are consumed (Erramilli, 1990; Erramilli and Rao, 1993). Therefore, the main way to bring services to foreign markets is through FDI.

Moreover, service firms are investing more and more abroad as they seek new clients and exploit their ownership advantages. They have also been encouraged by the liberalized service FDI regimes and government policies, including privatizing state-owned utilities (UNCTAD, 2004). Traditionally, service firms have undertaken FDI in industries such as banking, insurance and transportation, to support the manufacturing clients venturing abroad. Since 1990, as more countries have become open to FDI, along with the continuous increase of these traditional service sectors, FDI in several other service industries also experienced increases. These industries include electricity, telecommunications, water services, and a variety of business services. It is expected that more and more service firms will invest abroad, due to the improved investment environment worldwide.

2.4.2 FDI in New Zealand

Most studies that focus on the impact of FDI on the host country tend to concentrate on a given region/location. Historically, most of the research has been based on the US, UK, EU and more recently, developing countries like China. Currently, little work has been done on FDI in New Zealand, due to the country's small size and long distance from the rest of the world. However, New Zealand as a typical small but opened developed economy, which replies heavily on inward FDI as previously discussed, has its own characteristics in terms of foreign presence/FDI impact on the local market. There is a great desire to study FDI in New Zealand (Enderwick, 1998) in a more systemic, empirical way. A case study of New Zealand will also serve as a useful guide and offer lessons other smaller economies can draw upon.

FDI in New Zealand is significant. The amount of domestic capital available in New Zealand is limited due to the small size of the economy; hence the country is relatively reliant on foreign source of capital. From 1984, New Zealand FDI was promoted by a range of policies, including deregulation of the financial and banking

sector, liberalised foreign exchange and removal of barrier to entry in stock-broking (OECD, 2001). In the early 1990s there were large inflows of FDI to New Zealand as state owned enterprises were privatised, and foreign companies took advantage of such investment (Akoorie, 1997). Between 1985 and 1996, New Zealand inward stock of FDI increased 17 times to US$35 billion, before decreasing to US$21 billion in 2001 (OECD, 2001). Inward FDI inflows in New Zealand peaks in 2006, with $7.758 billion, refer to Appendix One for a trend over years.

New Zealand has a high stock of inward FDI. Inward FDI has played an important role in New Zealand's economic development. The high stock of FDI in New Zealand is similar to that of other small, open economies. Small open economies tend to rely more heavily on external sources of investment to compensate for a lack of domestic sources of finance (for example, where there is a low level of domestic savings). New Zealand IFDI stock as percentage of GDP is normally high compared to world and other developed economies (refer to Appendix One). The latest figure shows inward FDI stock occupied 42.3% of GDP in 2008, was much higher than most of the developed countries and world average (UNCTAD, 2009).

Australia has long been the single most important source of New Zealand inward FDI, illustrated below (Figure 2.5). It is clearly shown from the chart that inward FDI from Australia has been growing in significance, particularly since 2003. In 2007, over 50% of the inward FDI stock in New Zealand originated from Australia. This dominance can be explained by the similar cultures and business climates as well as the relatively close physical distance between New Zealand and Australia.

Figure 2.5 New Zealand inward FDI stock by source

Value of New Zealand IFDI stock in NZ$ million by source country
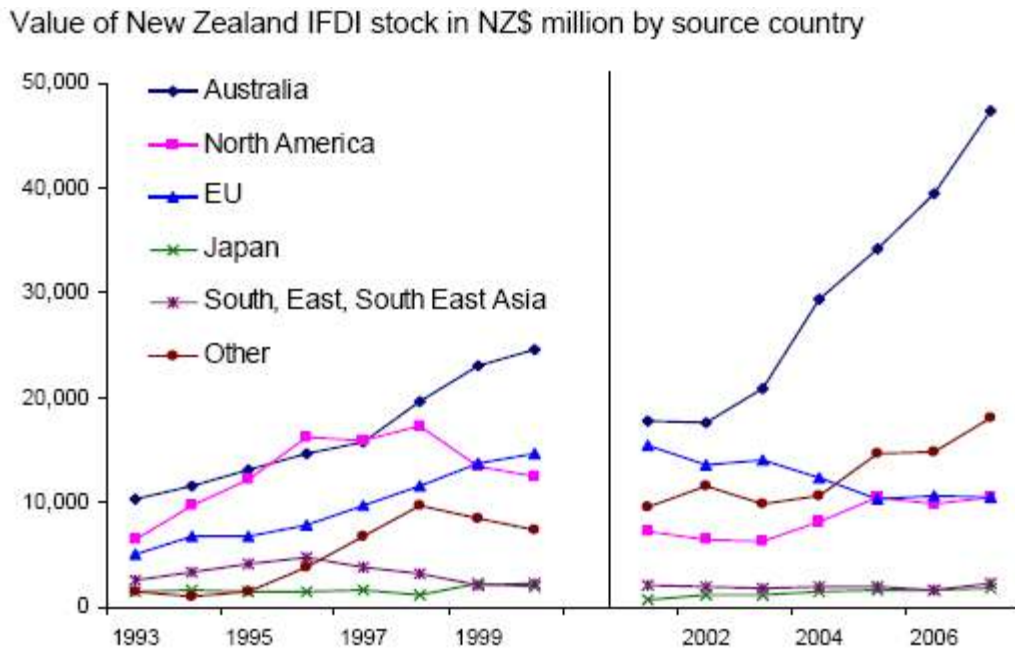
Source: Statistic New Zealand

Internationally, FDI inflows are increasingly being seen as a possible means to boost long term economic growth. In New Zealand, inward FDI began to be reviewed in mid-1960s, and was particularly popular during 1990s after the liberalisation in 1980s. Discussion and research remained similar to other FDI host countries like Australia, UK and Canada in terms of types of benefits and costs of FDI to host countries, the importance of FDI, and government policy to govern FDI for maximum benefits etc. However, the New Zealand experience of FDI is still under evaluated especially in empirical research. Much evidence is more indicative than definitive (Enderwick, 1997).

Commonly accepted, FDI in general has the potential to generate employment, raise productivity, transfer skills and technology, enhance exports, and contribute to the long term economic development through new formation of capital and technology to host country by foreign investment. Two types of IFDI impacts in New Zealand can be identified: first round of immediate capital flows, employment creation, and

technology transfer; and second round of economic activity increases and competitiveness upgrade for local firms through linkages with foreign firms in long term (Scott-Kennel, 2004b).

New Zealand definition of FDI

Statistics New Zealand recorded FDI as an investment resulting in foreign ownership of 25% or more of an asset, up until March 2000 (Statistics New Zealand, 2001). From 2001 financial year, investment consisting of 10% or more was defined as FDI, which was similar to the most commonly adopted definition in the world (UNCTAD, 2004). However, for the purpose of this paper, 25% threshold has been adopted.

Theoretically FDI studies in New Zealand

The FDI related study for New Zealand attracted far less attention comparing to many other OECD countries, especially in the area of FDI impact to host country in terms of productivity spillover, performance gaps etc popular but specific topic. Understanding the importance of FDI and its major medium, the multinationals, have many implications at different economic, industrial and firm level, especially for a small economy like New Zealand, where its final markets are generally overseas (Enderwick, 1997).

The impact of FDI in New Zealand has mostly been studied in three stands: 1) The studies of positioning and historical role of New Zealand FDI with and policy implications (Akoorie, 1997). 2) The theoretical impacts of FDI on New Zealand in terms of economic growth, capital gain, technology transfer, created employment etc related benefits and issues. Such impacts are referred as first round impacts by Scott-Kennel (1997, 2004b) and are those occurring at the time of the investment. 3) The contribution of foreign ownership which lies in the unique competitive advantages that MNCs bring to the acquired business and associated firms through increasing economic activities and competition as a result of linkages and spillovers – the second round effects (Scott-Kennel, 1997, 2004b, 2007; Scott-Kennel and

Enderwick, 2004, 2005).

2.5 CONCLUSION

Home- and host-country effects of FDI have drawn many arguments since the early 80s when multinationals started actively investing overseas. There are many criticisms against globalisation and MNCs involving a wide spectrum of discontent with modern life and market economies. They mainly relate to the disruption of traditional or established economic practices and restructuring of home and host-country employment etc (Wilkins, 1989), especially in emerging economies.

However, several papers argue that one potential engine of economic growth is FDI (eg., Blomstrom, et al., 1994; Chen et al; 1995). Inward FDI could indeed have a positive impact for the host country. It is also now widely accepted that MNCs play a crucial role in facilitating international transfers of resources, technology, management know-how, products and services from a home country to a host country (Blomstrom, et al, 1994). They also make positive contribution to the economic growth of a host country by supplying capital, technology and other resources that may not be available in that country. Local firms experience inward FDI as both a competitor and a source of advanced technologies and managerial knowledge and benefit from the spillover effect leading to improved performance.

Theoretically, multinationals in a host country should possess superior technology and performance advantages over local firms suggested by FDI and spillover literature. Empirical studies although have shown very mixed results using different measures.

FDI plays an important role in New Zealand. As a small developed economy but far distanced from the rest of the world, New Zealand has long been enjoying and relying on inward FDI for extra capital and access to the global market through linkage and

networks of MNCs. It is important to find out if foreign presence (FDI) promotes better performance of foreign affiliates over domestic owned firms in the New Zealand context.

CHAPTER THREE

RESEARCH METHOD

The research question underlying this thesis is as follows: Does foreign owned firms perform better than domestic firms? Do they have a superior advantage over domestic firms in productivity and profitability? This section presents the data and research methodology, in terms of the data description, and the process of statistical analysis.

3.1 RESEARCH METHODOLOGY

As we discussed in the previous part, foreign ownership as an impact of FDI on firm performance has substantial theoretical background. However, no conclusive empirical results have been found. Having stated the main question of this paper "do foreign owned firms perform better than domestic firms?" we test for FDI effects on firms' performance in terms of productivity and profitability in the New Zealand context using a secondary dataset.

3.1.1 Sample and Data

The empirical dataset used in this study comes from industry level data collected by Statistic New Zealand through the 1992-1998 financial years, namely Annual Enterprises Survey and Business Demography Statistics by overseas ownership and selected NZSIC (The New Zealand Standard Industrial Classification) industries. This data set covers 21 2-digit industries over the seven year period including all compulsory GST registered enterprises.

The dataset itself includes values of 21 industries plus all industries total of 22

different measurements (See Table 3.1 below) for 4 different ownership groups plus ownership group total, across seven years period, given 16,940 potential[2] values in 2420 rows across 7 columns in excel file. For the purpose of this thesis, only five appropriate measurements are adopted for testing performance, which will be discussed in the next few sections. Data has to be obtained from the dataset separately and arranged into formats that tests can be conducted. The process has been carefully dealt with so no manual mistakes could happen to bias the results.

The dataset is divided into four groups by foreign ownership percentage. Four criteria have been used: less than 1% foreign ownership; less than 25%; 25% or more and 50% or more overseas ownership. Although this study adopted the 25% foreign ownership mark for the definition of foreign owned firms, the other two criteria will still be considered in comparison in order to shape the impact of foreign presence better.

In this paper, firms with 25% or more of their capital/assets owned by foreigners are defined as foreign owned firms/affiliates. All other firms will be regarded as locally owned firms. This definition was adopted by Statistics New Zealand before March 2000, and is constant with the time period for the dataset. On the basis of this definition, there were 5,643 foreign affiliates in all 21 industries comparing to 224,137 of total firms in the year 1997/98.

The empirical study will be conducted on the industry level to systematically assess the pattern of foreign presence in New Zealand and its association with firm performance across the seven years period. The dataset will be analysed in Microsoft Excel using its statistic data analysis functions.

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[2] There will be confidential data missing.

Table 3.1List of different measurements and categories in the original dataset

Measurement items	Overseas Ownership
Enterprises	Less than 1%
Fixed Tangible Assets	Less than 25%
Full-time Employee	25% or more
LIABILITIES STRUCTURE	50% or more
NET PROFIT BEFORE TAX, EXTRAORD.,SWtoWPs	Total
NET PROFIT BEFORE TAX, SW to WPs	
Net Profit per FTE	
Other Assets	
Other Liabilities	
PROFIT MARGIN ON SALES	
RETURN ON EQUITY	
RETURN ON TOTAL ASSETS	
Salaries & Wages paid to employees	
Sales of Goods and Services	
Shareholders Funds or Owners Equity	
Total Assets	
Total Capital and Liabilities	
TOTAL EXPENDITURE	
TOTAL INCOME	
Total Income Before Adjusting For Stocks	
Total Income per FTE	
Total Purchases of Fixed Tangible Assets	

3.1.2 Data Summary

Data will be summarised and described in this section to provide a broad picture of foreign presence in New Zealand industries.

Appendix Two lists the names of the 21 NZ 2-digit industries and total number of firms for each industry. There were 168,520 firms included in this dataset for the 1991/92 financial year, compared to 223,535 firms for 1997/98. Within these firms, 3,432 firms were foreign owned (2.04% of total firms) in 1991/92, compared to 5,643 (2.52% of total firms) in 1997/98, an increase of 64% of the foreign firms compared to an increase of 33% of total firm numbers over the seven year period.

Table 3.2 below provides an overview of foreign presence in New Zealand industry, for the entire period and for all 21 industries. The variable was measured in the following three ways, similar to previous studies: (1) the percentage of foreign owned affiliates to total firm number by industry (Liu, et al, 2000; Kokko, 1996); (2) the percentage of Fixed Tangible Assets (FTA) owned by foreign affiliates to total FTA in the entire industry (Haddad and Harrison, 1993); and (3) the percentage of foreign owned firms' Full Time Employee (FTE) to total FTE in each industry (Caves, 1974; Aitken and Harrison, 1999; Sinani and Meyer, 2004). While only a small percentage of all firms (2.22%), foreign affiliates in the seven year period on average employed 18.94% of the total full-time employment numbers and held 52.05% of fixed tangible assets, indicating they were significantly larger on average than domestic firms.

Table 3.2 also shows that foreign presence varies considerably among industries. Foreign firms are mostly concentrated in Mining & Quarrying; Manufacture of Chemicals & Other Products; Financing; Wholesale Trade; and Basic metal industries in terms of firm numbers. Focusing on the foreign share of employment, Financing; Basic metal industries; Insurance; and Manufacture of Chemicals & Other Products are dominated by foreign owed companies, which employed exceeds 50% of total industry FTE.

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Table 3.2 Summary for Foreign presence in 21 New Zealand 2-digit industries over the 1991/92-97/98 seven years average

category	Industry	Foreign share of total firm	Foreign share of FTA	Foreign share of total FTE	Classification
1	Agriculture, Hunting, Forestry & Fishing	0.82%	23.33%	3.25%	Primary
2	Basic Metal Industries	7.15%	..C[3]	62.75%	Primary
3	Community, Social & Personal Services	0.56%	3.42%	2.14%	Tertiary-Services
4	Construction	0.22%	5.72%	5.47%	Tertiary-Services
5	Electricity, Gas & Water	6.46%	17.60%	11.94%	Tertiary-Services
6	Financing	12.83%	53.43%	71.48%	Tertiary-Services
7	Food, Beverage, Tobacco	4.48%	28.50%	27.31%	Secondary-Manufacturing
8	Insurance	3.70%	46.71%	53.28%	Tertiary-Services
9	Manuf of Fabricated Metal Prods/Machy	2.61%	36.26%	23.22%	Secondary-Manufacturing
10	Manufacture of Chemicals & Other Prods	13.03%	42.75%	52.29%	Secondary-Manufacturing
11	Manufacture of Wood, Paper, Printing, & Publishing	1.80%	62.97%	32.64%	Secondary-Manufacturing
12	Manufacturing	3.13%	46.44%	29.42%	Secondary-Manufacturing
13	Mineral Product Manufacture (Glass etc)	3.10%	66.80%	44.61%	Secondary-Manufacturing
14	Mining & Quarrying	14.38%	21.09%	25.92%	Primary
15	Other Manufacturing Industries	1.90%	22.65%	9.58%	Secondary-Manufacturing
16	Real Estate & Business Services	1.80%	17.96%	10.17%	Tertiary-Services
17	Restaurants & Hotels	0.91%	25.16%	14.12%	Tertiary-Services
18	Retail Trade	0.70%	18.42%	17.52%	Tertiary-Services
19	Textile, Apparel & Leathergoods	2.42%	20.13%	15.11%	Primary
20	Transport, Storage & Communication	2.09%	58.47%	36.26%	Tertiary-Services
21	Wholesale Trade	9.27%	53.03%	31.31%	Tertiary-Services
	Total	2.22%	52.05%	17.94%	

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[3] ..C indicates data is not available due to confidential reasons

3.1.3 Measurements and Variables

Foreign ownership in a firm

All the tests are conducted between different foreign ownership groups: less than 1%; less than 25%; 25% or more; 50% or more overseas ownership. Most of the tests are conducted for comparison between less than 25% and 25% or more overseas ownership groups, as firms with 25% or more foreign ownership are defined as foreign firms for this study.

Firm performance

In order to test firm performance, different measurements for performance are adopted. This study discussed firm performance in related with foreign presence in terms of productivity and profitability in the previous review. As discussed in the literature review, many scholars have adopted productivity (eg. Howenstine and Zeile, 1994; Oulton, 1998; Doms and Jensen, 1998; Harris and Robinson, 2003) and profitability (eg. Chhibber and Majumdar, 1999; Mataloni, 2000) as measurements of firm performance in their studies. There are also other factors to measure firm performance as growth, technology and innovation in the literatures. But due to data availability, only productivity and profitability will be compared in this study between foreign affiliates and domestic firms.

For purpose of this thesis and statistic tests, productivity is defined by two different measures using measuring items in the dataset: Total income per full time employee (TIFTE) and Net profit per full time employee (NPFTE). Profitability is defined by three measures: Profit margin on sales (PMSales); Return on Equity (ROE) and Return on total Assets (ROA).

3.1.4 Statistic Analysis

Statistical analysis was undertaken to understand more about the impact of foreign presence on New Zealand firm. The primary analytical approach was the use of t-tests to compare mean performance measurements between foreign affiliates and domestic firms to investigate if foreign affiliates have a superior productivity/performance over domestic counterparts. The advantages of the t-test approach are the method's robustness to small samples and groups of unequal size (Diamantopoulos and Schlegelmilch, 2000).

The author has conducted the t-tests in three different parts. Firstly, t-tests were used to compare performance variables of total firms in all industries between four groups catergorised by different level of ownership for the seven year period included in the dataset as well as five, three-year moving averages. Secondly, t-tests were conducted to compare means of performance variables of each available industry (see *Table 3.3*) between foreign owned and domestic owned firms (by the 25% foreign ownership standard) for the seven year period. And last, t-tests were conducted to compare means of performance variables of total manufacturing firms and total services firms between foreign firms. Although in some industries data was not available duet to confidential reasons, there is still sufficient to conduct useful analysis (see *Table 3.3* for classified service and manufacturing industries with valid data).

Table 3.3Data availability for each individual industry and industry classification

category	Industry	Classification	profit margin on sales	net profit per FTE	total income per FTE	ROA	ROE
1	Agriculture, Hunting, Forestry & Fishing	Primary	..C	..C	..C	..C	..C
2	Basic Metal Industries	Primary	..C	..C	..C	..C	..C
3	Community, Social & Personal Services	Services	Y	Y	Y	Y	Y
4	Construction	Services	..C	Y	Y	Y	..C
5	Electricity, Gas & Water	Services	..C	..C	..C	..C	..C
6	Financing	Services	Y	Y	Y	Y	Y
7	Food, Beverage, Tobacco	Manufacturing	Y	Y	Y	Y	Y
8	Insurance	Services	..C	Y	Y	..C	..C
9	Manuf of Fabricated Metal Prods/Machy	Manufacturing	Y	Y	Y	Y	Y
10	Manufacture of Chemicals & Other Prods	Manufacturing	Y	Y	Y	Y	Y
11	Manufacture of Wood, Paper, Printing, & Publishing	Manufacturing	Y	Y	Y	Y	Y
12	Manufacturing	Manufacturing	Y	Y	Y	Y	Y
13	Mineral Product Manufacture (Glass etc)	Manufacturing	..C	Y	Y	..C	..C
14	Mining & Quarrying	Primary	..C	Y	Y	..C	..C
15	Other Manufacturing Industries	Manufacturing	..C	Y	Y	..C	..C
16	Real Estate & Business Services	Services	Y	Y	Y	..C	..C
17	Restaurants & Hotels	Services	..C	Y	Y	..C	..C
18	Retail Trade	Services	Y	Y	Y	Y	Y
19	Textile, Apparel & Leathergoods	Manufacturing	..C	Y	Y	..C	..C
20	Transport, Storage & Communication	Services	..C	Y	Y	..C	..C
21	Wholesale Trade	Services	Y	Y	Y	Y	Y
	Total						

..C indicates data is not available due to confidential reasons

Y - all data in this category are available.

Categories of services and manufacturing for New Zealand industry

Services	Manufacturing
Community, Social & Personal Services	Manuf of Fabricated Metal Prods/Machy
Construction	Manufacture of Chemicals & Other Prods
Financing	Manufacture of Wood, Paper, Printing, & Publishing,
Food, Beverage, Tobacco	Manufacturing
Insurance	Mineral Product Manufacture (Glass etc)
Real Estate & Business Services	Mining & Quarrying
Restaurants & Hotels	Other Manufacturing Industries
Retail Trade	
Transport, Storage & Communication	
Wholesale Trade	

For each part of the t-tests, the means of different performance variances for two different ownership groups are compared, using an independent samples t-test. Levene's test is used to assess whether each t-test should be conducted under the assumption of equal or unequal variances, with observed significance levels less than 0.05 taken as evidence of unequal variances between the two groups. The appropriate version of the t-test is then used to assess whether or not the sample data suggest a significant difference between the means of the two groups. For all t-tests, a significant result is defined as one with an observed significance level of 0.10 or less, meaning that results are stated with at least 90% confidence. The analysis is undertaken using Microsoft Excel 2003 with add-in data analysis tool. The two samples assuming unequal variances t-test simply tests whether or not two independent populations have different mean values on some measures.

The process of Part One t-tests for testing Hypotheses 1 and 2 on total firms of all industries

Hypotheses 1 and 2 concern differences in firm performances between foreign affiliates and their domestic counterparts. T-tests firstly tested the value of industry totals for firms with different level of foreign ownership for productivity variables (using TIFTE and NPFTE testing H1) and profitability variables (using PMSales, ROE and ROA testing H2) over seven years.

There are more than one (TIFTE and NPFTE for productivity and PMSales, ROE and ROA for profitability) measures are adopted for testing by the author, in aims to have some different perspectives of performance measurement to avoid possible data bias.

Next, based on the seven years, Moving Average (MA) data has been formed based on average of every three continuous years to create a sample size of 5 MA years for further testing. Moving average method is helpful to take account of time effects in performance measures because it takes time for foreign presence to have effects in some cases such as new market entry eg., merger and acquisitions.

Based on the new formed MA data for 5 MA years, t-tests were conducted again to test the value of industry totals between different level of foreign ownership for both productivity variables (for H1) and profitability variables (for H2).

These two t-test procedures test industry total in general, will be referred as Part One t-tests for discussion later in this thesis.

The process of Part Two t-tests for testing Hypotheses 1 and 2

More t-tests have been conducted, focusing on each possible individual industry with available data to have a better understanding of foreign presence and impact in different industries. T-tests were used to compare foreign and domestically-owned firms (with overseas ownership 25% or more vs. less than 25%) in performance measures of productivity variables (using TIFTE and NPFTE testing H1) and profitability variables (using PMSales, ROE and ROA testing H2) over seven years. This part of t-tests is referred as Part Two t-tests for later discussion.

The process of Part Three t-tests for testing Hypotheses 3

In order to test H3 – whether the performance differences between foreign owned and domestically owned firms also exist in services industries, the data for all services industries need to be separated from all industry total that including manufacturing industries in the dataset.

New Zealand Standard Industrial Classification (NZSIC) 1993 was adopted to classify all 21 industries in the original dataset (see Table 3.3). Deducted all the primary industries that are not relevant to this study, we had 10 services industries and 7 manufacturing industries in the dataset.

The dataset[4] has then been extended by author's own calculation to work out the

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[4] The dataset doesn't separate service or manufacturing firms

means for services industry total and manufacturing industry total with different overseas ownership of 25% or more and less than 25% to test the differences between foreign and domestically owned firms with possible performance variable. This part will be referred as Part Three t-tests.

By looking at the original dataset for data availability with different performance variables (see Table 3.3), most of the profitability data is missing for confidential reason. Therefore, for testing H3, only productivity measurements have available data. Furthermore, only TIFTE is used for testing in this paper as it represents a better productivity measure than Net profit per FTE (NPFTE) as net profit will be affected by company expenses, which vary in different situation.

Instead of simply averaging all TIFTE values for each service industry to get a mean value for services industry total, the TIFTE mean for services industry total has been worked out by author's own calculations. A summation notation equation is set up for calculation, where an output is the mean for all services industry total or similarly the mean for all manufacturing industry total.

The calculation is presented as follows:

$$\overline{X_{it}} = \frac{\sum X_{it} N_{it}}{\sum N_{it}}$$

Where i, t represent industry and time (year), correspondingly; X_{it} is the value of performance variable (ie. Total income per FTE - TIFTE) for an industry at a year; and N_{it} is the number of firms in that industry at that year.

Four sets of calculations were conducted separately to get average TIFTE values of services industry total and manufacturing industry total with foreign and domestic

ownership across seven years, in names of foreign owned services industry total (FOS), foreign owned manufacturing industry total (FOM), domestically owned services total (DOS), and domestically owned manufacturing total (DOM), respectively.

T-tests then were conducted to determine if there is any statistically significant difference between FOS and DOS in order to test Hypothesis 3. FOM vs. DOM has been tested for further support for Hypothesis 1. FOS vs. FOM and DOS vs. DOM were also tested to see if services industry has a better productivity than manufacturing industry.

3.2 METHODOLOGY LIMITATIONS

The dataset used in this study covered all the firms in the 21 classified industries in New Zealand. It was produced by Statistics New Zealand – the official government statistics department. The quality and coverage of the data is guaranteed. However, due to its nature as a secondary source for this study, there are several limitations in the dataset and research methodology.

This dataset covers the seven years from financial year 1992/92 to 1997/98 only. It lacks the up to date information to provide a timely result to shape the current situation. Due to the limited resources and time, it is impossible to get an up to date dataset or conduct a survey to get as much detailed financial data from all firms with GST registration in this country as this dataset covered in a personal way. A sample size of seven years is also relatively small to conduct more accurate analysis to minimise time lag effects. However, New Zealand as a developed economy has a comparatively static environment for the last few decades. The results based on this dataset will have some reflection to characteristics nowadays.

There are no other important control variables such as wages, innovations, size of industry, firms characteristics etc included in this dataset to test firm performance. There will be possible bias by simply believing foreign ownership is positively or negatively related to firm's performance. That's the reason t-tests are adopted for this paper to test if foreign affiliates perform better than domestic firms.

Data for several industries was missing from the dataset due to confidentiality reasons[5]. They are mainly the primary industries like Agriculture, Hunting, Forestry & Fishing or financially sensitive industries as Electricity, Gas & Water. During the testing process, the industries with missing data were carefully avoided to not mess up the total. However, they will still have some negative impact on generalising the industrial picture for the study.

In the real world, FDI decisions are always made at firm level since they vary in each MNC's strategy and motives for investment (Blomstrom and Zejan 2000). Consequently these decisions and MNC's behaviours are best to be examined at the firm level of analysis. However, this firm level analysis is empirically difficult to conduct, especially to get a good sample. This study tested data at industry level, at least covering all the firms in all the NZSIC 2-digit industries to provide a good industry level picture.

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[5] A list of missing data for certain industries and performance measurements is included in Table 4.2

3.3 CONCLUSION

This chapter discussed the major methodology used to test the dataset to test the hypotheses. T-tests are adopted as it is an appropriate tool to test if there is any significant difference between two samples with the limited sample size – seven years data availability and five for the 3 years' moving average modification. Data is analysed at industry level with detailed tests conducted. Although there are limitations in the dataset and methodology, the author is fully aware of the limitations. This study carefully deals with the data and tests to mitigate the limitations to as much as possible. Results of all the tests towards hypotheses will be presented and analysed in the next section.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter aims to present research results for the tested hypotheses in the study. Building on the limited data available for the study, the chapter focuses firstly on the description of the statistical results, followed by interpretations of these results.

4.1 INTRODUCTION

In this chapter, the empirical results and analysis of the t-tests for the three hypotheses presented in chapter 2 are presented. The first section will provide some descriptive data about the different performance measuring variables under different foreign ownership groups. Following this, the pattern of data analysis results for each part of t-tests for each of the three hypotheses will be presented, followed by a discussion of the results.

4.2 DESCRIPTIVE STATISTICS

Descriptive statistics were conducted to organise, summarise and present raw data. Appendix Two with graphs provided some broad picture on presences of foreign affiliates in total firms comparing to domestic firms. *Table 4.1* below presents some descriptive statistics for performance variables.

Table 4.1 Summary Statistics by foreign ownership

Variables	Foreign Owned <25%		Foreign Owned ≥25%		Foreign Owned ≥50%		Foreign Owned <1%	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
TIFTE ($000)	160,728	1,661	344,961	31,251	340,978	30,019	155,062	3,095
NPFTE ($000)	14,331	1,561	31,537	10,177	30,396	9,894	14,121	1,546
PMSales (%)	9.761%	0.925%	11.303%	3.137%	11.144%	3.101%	9.846%	0.911%
ROE (%)	14.555%	3.888%	10.363%	3.136%	10.731%	2.933%	17.049%	3.088%
ROA (%)	6.487%	1.699%	3.064%	0.877%	2.977%	0.810%	7.642%	1.518%

Five performance variables and four foreign ownership groups are clearly presented in *Table 4.1* with mean for each comparison. However, the descriptive statistics alone do not prove a significant difference between foreign and domestic firms. The results of t-tests below will provide better justification for conducting that there are differences.

4.3   STATISTICAL RESULTS OF PART ONE T-TESTS FOR HYPOTHESES 1 AND 2

Hypothesis 1 and 2 propose that foreign owned firms are more likely to perform better than domestically owned firms in productivity and profitability, respectively. In part one t-tests, t-tests have been conducted on industry total of all five performance measures between different foreign ownership level for seven years as well as three year moving averages (total of five), provided 40 t-tests results, summarised in *table 4.2* below.

4.3.1 Results of part one t-tests for H1

The H1 result shown in *Table 4.2* prove strong evidence to Hypothesis 1 that proposed foreign owned firms have a superior productivity advantage over domestic-owned

firms. Firms with different levels of foreign ownership in test 1, 2, 4, for 7 years period as well as 5 MA years all have significant higher value of productivity in terms of TIFTE and NPFTE than domestic owned firms. Test 3 testing if there is any difference in productivity between firms with 50% or more foreign ownership and firms with 25% or more foreign ownership, returned no supportive evidence.

Table 4.2 Summary of Part One t-tests with significant level

	7 years period 1991/92-1997/98				5 Moving average of every three continuous years			
	Test 1	2	3	4	Test 1	2	3	4
H1								
TIFTE	0.000 *** +	0.000 *** +	0.406	0.000 *** +	0.000 *** +	0.000 *** +	0.406	0.000 *** +
NPFTE	0.002 *** +	0.002 *** +	0.418	0.003 *** +	0.001 *** +	0.001 *** +	0.385	0.001 *** +
H2								
PMSales	0.126	0.138	0.463	0.162	0.035 ** +	0.039 ** +	0.439	0.043 ** +
ROE	0.024 ** −	0.001 *** −	0.412	0.001 *** −	0.037 ** −	0.001 *** −	0.405	0.001 *** −
ROA	0.001 *** −	0.000 *** −	0.412	0.001 *** −	0.037 ** −	0.001 *** −	0.405	0.001 *** −

* significant at the 90% level

** significant at the 95% level

*** significant at the 99% level

+ the sample mean of Variable 1 is statistically significant higher than the sample mean of Variable 2 in test

– the sample mean of Variable 1 is statistically significant lower than the sample mean of Variable 2 in test

Test	Variable 1	vs.	Variable 2
1	Firms with foreign ownership ≥ 25% - foreign-owned		Firms with foreign ownership <25% - domestic-owned
2	Firms with foreign ownership ≥ 25%		Firms with foreign ownership < 1%
3	Firms with foreign ownership ≥ 50%		Firms with foreign ownership ≥ 25%
4	Firms with foreign ownership ≥ 50%		Firms with foreign ownership <1 %

4.3.2 Results of part one t-tests for H2

The H2 t-test results shown in *Table 4.2* prove contradictory evidence to Hypothesis 2's proposition, that foreign owned firms have a better profitability than domestic-owned firms. Firms with different levels of foreign ownership in test 1, 2, 4,

for 7 years period as well as 5 MA years have all shown significant lower value of productivity in terms of ROE and ROA than domestic owned firms. Same H2 test 1, 2, 4 for PMSales prove no significant differences for 7 years period, but shown significance for 5 MA years, in the way supporting H2 but contradictory to the results of ROA and ROE. Test 3 testing if there is any difference in profitability between firms with 50% or more foreign ownership and firms with 25% or more foreign ownership, again, returned no supportive evidence at all.

4.4   STATISTICAL RESULTS OF PART TWO T-TESTS FOR HYPOTHESES 1 AND 2

Part two t-tests focused on comparing between foreign owned and domestically owned firms in each possible individual industry with available data to have a better understanding of foreign presence and its impact in different industries. Foreign vs. Domestic firms (at 25% foreign ownership level) were tested for productivity (H1) variables – TIFTE and NPFTE, as well as profitability (H2) variables – PMSales, ROE and ROA) for each of the 21 industries across seven years. Testing in different industries with valid data, given 64 t-tests results, summarized in *Table 4.3* for H1 testing and *Table 4.4* for H2 testing.

4.4.1 Results of part two t-tests for H1

The results of Part two t-tests for H1 in different industries are rather mixed but prove general supporting evidence to H1 (see Table 4.3). Foreign firms in most industries with data available possessed significant productivity advantage in terms of TIFTE over domestic firms, except for "financing" and "food, beverage and tobacco" industry, where foreign firms show significant disadvantage of TIFTE comparing to

domestic firms.

Same tests in each individual industry over seven years for NPFTE provided a more mixed and less significant results. In additional to "financing" industry, foreign firms have a significant less productive NPFTE value than domestic firms in "manufacture of fabricated metal products/machinery" and "retail trade". Such mixed results are inconsistent with test results for TIFTE – the other productivity measure.

4.4.2 Results of part two t-tests for H2

Results of part two t-tests for H2 are even more mixed with less significant differences (see Table 4.4). Across the whole table for 21 industries with 3 measures (ROE, ROA, PMSales), there were only 27 t-tests conducted with available data. Within the 27 tests, 19 were significant at the 90% level, but provided mixed results even for same industry. Except foreign firms only in "food, beverage and tobacco" show significant higher profitability than domestic firms in all 3 measures constantly supporting H2. Results in "manufacture of fabricated metal products/machinery" and "retail trade" show significant disadvantage in foreign owned firms comparing to domestic firms.

Table 4.3 Profitability Comparisons between Foreign and Domestic firms (at 25% ownership level)

Industry	Net Profit per FTE					Total Income per FTE				
	Foreign	Domestic	sig			Foreign	Domestic	sig		
Agriculture, Hunting, Forestry & Fishing										
Basic Metal Industries										
Community, Social & Personal Services	8,694	6,803	0.04	+	**	96,201	67,593	0.002	+	***
Construction	5,103	16,124	0	-	***	204,643	115,932	0	+	***
Electricity, Gas & Water										
Financing	143,891	263,324	0.008	-	***	629,505	1,013,666	0.004	-	***
Food, Beverage, Tobacco	20,128	10,456	0	+	***	240,740	265,575	0.006	-	***
Insurance	61,844	35,861	0.003	+	***	482,859	400,393	0.065	+	*
Manuf of Fabricated Metal Prods/Machy	11,277	13,545	0.022	-	**	193,182	121,851	0	+	***
Manufacture of Chemicals & Other Prods	24,176	28,759	0.076	-		280,258	247,087	0.022	+	**
Manufacture of Wood, Paper, Printing, & Publishing	24,022	12,889	0.015	+	**	242,088	127,728	0	+	***
Manufacturing	19,449	13,015	4.15	+		236,581	169,141	0	+	***
Mineral Product Manufacture (Glass etc)	42,678	18,619	0	+	***	251,755	149,077	0	+	***
Mining & Quarrying	219,237	123,984	0.056	+	**	809,057	402,729	0.001	+	***
Other Manufacturing Industries	22,016	11,786	0	+	***	165,882	89,893	0	+	***
Real Estate & Business Services	20,674	24,081	0.335	-		209,535	107,704	0	+	***
Restaurants & Hotels	5,861	5,674	0.434	+		91,248	70,303	0	+	***
Retail Trade	5,217	11,629	0	-	***	247,484	199,745	0	+	***
Textile, Apparel & Leathergoods	8,975	8,112	0.262	+		172,642	103,195	0.001	+	***
Transport, Storage & Communication	44,336	16,661	0.002	+	***	295,613	119,293	0	+	***
Wholesale Trade	35,695	25,439	0.032	+	**	700,066	498,699	0	+	***
Total										

* significant at the 90% level

** significant at the 95% level

*** significant at the 99% level

Highlighted indicates where foreign owned firms have a significant higher value

+ the sample mean of Foreign owned firms is statistically significant **higher** than the sample mean of Domestically owned firms in test

– the sample mean of Foreign owned firms is statistically significant **lower** than the sample mean of Domestically owned firms in test

These Indications are as the same as Table 4.4 below

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Table 4.4 Profitability Comparisons between Foreign and Domestic firms (at 25% ownership level)

Industry	ROE				ROA				Profit Margin on Sales			
	Foreign	Domestic	sig		Foreign	Domestic	sig		Foreign	Domestic	sig	
Agriculture, Hunting, Forestry & Fishing												
Basic Metal Industries												
Community, Social & Personal Services	0.235	0.172	0.029	+ **	0.099	0.112	0.166	-	0.09	0.11	0.028	- **
Construction												
Electricity, Gas & Water												
Financing	0.095	0.064	0.014	+ **	0.021	0.025	0.177	+	2.11	2.25	0.334	-
Food, Beverage, Tobacco	0.212	0.153	0.002	+ ***	0.102	0.069	0.000	+ ***	0.08	0.04	.000	+ ***
Insurance												
Manuf of Fabricated Metal Prods/Machy	0.225	0.449	0.000	- ***	0.093	0.197	0.000	- ***	0.06	0.11	.000	- ***
Manufacture of Chemicals & Other Prods	0.234	0.293	0.125	-	0.089	0.088	0.490	-	0.09	0.1	0.093	- *
Manufacture of Wood, Paper, Printing, & Publishing	0.295	0.345	0.120	-	0.098	0.156	0.003	- ***	0.1	0.1	0.431	-
Manufacturing	0.230	0.345	0.001	- ***	0.089	0.115	0.008	- ***	0.08	0.08	0.215	+
Mineral Product Manufacture (Glass etc)												
Mining & Quarrying												
Other Manufacturing Industries												
Real Estate & Business Services										0.12	0.24	0.016	- **
Restaurants & Hotels												
Retail Trade	0.187	0.461	0.000	- ***	0.078	0.188	0.000	- ***	0.02	0.06	.000	- ***
Textile, Apparel & Leathergoods												
Transport, Storage & Communication												
Wholesale Trade	0.247	0.292	0.098	- *	0.098	0.118	0.084	- *	0.05	0.05	0.467	-
Total												

63

4.5 STATISTICAL RESULTS OF PART THREE T-TESTS FOR HYPOTHESIS 3

The calculated services industry total and manufacturing industry total with different foreign ownership at 25% level in each year for TIFTE is presented in *Table 4.5* below with further t-tests results for H3 testing.

Hypothesis 3 proposed foreign owned firms will also have a superior productivity advantage over domestic owned firms in services industries. The results shown in *Table 4.5* prove strong support for this hypothesis. With strong significance (all tests are significant at 99% significant level), foreign owned firms have higher Total income per FTE compared to domestic owned firms in both the services industries and manufacturing industries, supporting Hypothesis 3. This result is also supportive to Hypothesis 1's result in Part One t-tests, suggesting foreign owned firms have higher productivity measures than domestic owned firms in general. An exception need to be mentioned is "Finance" industry that stood out in H2 testing, which will be discussed in the next section of interpretation. Although foreign owned firms in services industry total, and all industry total enjoy a better productivity than local firms, the advantage did not show any evidence in financing industry alone.

Additional t-tests were conducted for FOS vs. FOM and DOS vs. DOM with TIFTE values. Total income per FTE in service industry is significantly higher than in manufacturing industry, for firms both under foreign ownership and domestic ownership (*see Table 4.6*).

Table 4.5 the calculated value using summation notation equation for TIFTE and t-tests results

TIFTE	1991/92	19912/93	1993/94	1994/95	1995/96	1996/97	1997/98
FOS Total	388,986	423,801	472,089	547,881	501,306	506,691	543,853
FOM Total	220,402	250,011	249,316	282,035	294,898	293,284	301,479
DOS Total	164,320	171,428	197,103	182,550	193,123	189,032	202,092
DOM Total	146,928	147,924	151,992	153,828	150,932	155,543	157,987

t-test results for Total Income per FTE over seven years

H3:	FOS vs. DOS			FOM vs. DOM		
	FOS	DOS			FOM	DOM
Mean	483,515	185,663	Mean		270,203	152,162
Variance	3.545E+09	189267145	Variance		9.3E+08	1.6E+07
t Stat	12.895951		t Stat		10.1505	
P(T<=t) one-tail	1.958E-06	***	P(T<=t) one-tail		2.7E-05	***
P(T<=t) two-tail	3.916E-06		P(T<=t) two-tail		5.3E-05	

Table 4.6 t-tests for services total vs. manufacturing total

	FOS	FOM		DOS	DOM
Mean	483515.0905	270203.385	Mean	185664	152162
Variance	3544866308	930816991	Variance	2E+08	1.6E+07
t Stat	8.435950717		t Stat	6.1891	
P(T<=t) one-tail	7.22572E-06	***	P(T<=t) one-tail	0.0002	***
P(T<=t) two-tail	1.44514E-05		P(T<=t) two-tail	0.0005	

4.6 DISCUSSION AND INTERPRETATION OF RESULTS

Our statistical results provide some support for, hypotheses 1 and 3. Hypothesis 2 received mixed results in different industries. This section focuses on the interpretation of the results by discussing the possible causes linked back to literature. The main purpose of this section is twofold: 1) to identify whether the t-test results for the hypotheses follow the main findings in the previous literature and 2) for t-test results that contradict existing work, to suggest explanations for why these results may have been obtained.

4.6.1 Interpretation of Hypothesis 1 results

Based on the statistically significant results in Table 4.2, it is noted that both of the 7-years and moving average results supporting the hypothesis of foreign owned firms have a higher productivity in terms of net profit per FTE and total income per FTE than domestic owned firms. The hypothesis is further supported by part two of the t-tests with most of the individual industries have a higher total income per FTE (except Financing and Food, beverage & tobacco). These results are consistent with the previous findings in the literature, suggesting that foreign affiliates in a host country perform better than local firms theoretically and empirically (eg., Bellak, 2004; Doms and Jensen, 1998; Harris, 2002; Harris and Robinson, 2002). The average means of industry total over seven years for total income per FTE are $344,960 for foreign affiliates and $160,727 for domestic-owned firms. Therefore, on average, foreign owned firms have a more than doubled the productivity than domestic firms for this measure. Similarly for the net profit per FTE, foreign firms also have double the net profit per FTE for domestic firms. This echoes the findings that foreign owned firms have a 30% to 70% higher productivity in UK manufacturing industries in Griffith (1999) and Griffith and Simpson (2004).

In individual industry, foreign owned firms in most of industries have significant higher total income per FTE than domestics firms in the same industry, correlated with

part one tests on the industry total. But on the other measure of NPFTE, there are several industries shown significant less NPFTE in foreign firms than domestic firms, while showing higher TIFTE at the same time (eg., Construction and Manufacture of fabricated metal products and machinery). This contradiction could possibly be explained by foreign owned firms having higher expenditures in such industry comparing to their local counterparts for innovation and technology development etc. But without more detailed tests controlling other possible causes and with more data available rather than forbidden by confidential reasons, we cannot explain that conclusively.

Furthermore, the part one tests compared performance means between firms with different levels of foreign ownership. According to the results, there are significant differences between foreign owned firms (with ≥25%) and domestic firms with no foreign ownership (<1%), suggesting further support to H1 with previous discussion. However, productivity gap between firms with 50% or more and 25% or more foreign ownership is not significant, leaving no support for the association of more foreign ownership and better performance when the firms are split into these ownership levels.

4.6.2 Interpretation of Hypothesis 2 results

Hypothesis 2 proposed foreign owned firms have better performance than domestic firms similar to H1, but in terms of financial measurements of profitability. Unlike H1 was strongly supported by the test results, tests for H2 returned contradictory and mixed results.

Part one t-test results returned some significant inferior performance gaps between foreign affiliates and domestic firms, contrary to the hypothesis. Many literature had explored the odd phenomenon of foreign affiliates have a lower ROA/ROE than local firms, suggesting different causal factors. Affiliates are more likely to repatriate profits through dividends, interest, and royalty payments to parent firms (Dunning and Lundan, 2008). These payments are treated as a cost by the affiliate (Mataloni, 2000). Therefore instead of showing on the balance sheet as a profit, such earning will be

calculated into costs. As a result, less profitability will be reported. Another favourite explanation centred on the possibility of transfer pricing and suggestion that foreign firms were actually doing better than it seemed, but this has proven hard to verify empirically (Bellak, 2004). Mataloni (2000) also took market share and age effect into account for explanation, controlling the factor that some foreign affiliates are newly acquired or established. Such explanatory factors are consistent with the theory of "Liability of Foreignness" (Hymer, 1976; Kindlberger, 1969; Zaheer, 1995), which argued that foreign firms may not perform as well as some of their domestic counterparts due to unfamiliar business/cultural environment.

This can also be partially explained by the major difficulty in measuring profitability – particularly when confidential data is missing for many industries. Out of 21 industries included in the tests, there were only 9 industries with available data to test ROA and ROE. The results from testing H2 cannot fully represent the population. Due to the empirical difficulties discussed above, the author will not reject the hypothesis 2 based on the limited data for the entire population.

4.6.3 Interpretation of Hypothesis 3 results

Hypothesis 3 proposed foreign owned service firms will also have a superior productivity advantage over domestic owned service firms, which is similar to H1 but with separated attention paid to services industry. Tests results for H3 shown in *Table 4.6* prove strong support for H3 with significance level at 99%.

An exception need to be mentioned is "Financing" industry that stood out in H2 testing. Although foreign owned firms in services total, and all industries total in general enjoy a better productivity than local firms, the advantage did not show any evidence in both NPFTE and TIFTE for financing industry. In contrast, profitability measures of ROE and ROA in financing industry show a better profit return for foreign owned firms than domestic firm comparing to most of the foreign firms showing a worse profitability than domestic firms. Such exception has no given reason by this dataset testing, and requires more control variables such as characteristics of industry to find out.

Tests for H3 also extend to test if services industries have a better productivity than manufacturing. The tests results are quite positive. However, since services have a different nature, the value added per employee would be measured differently to manufacturing industry. Simply the superior gap of total income per FTE between services and manufacturing cannot answer the question in a statistically significant way to reflect the real situation.

4.7   CONCLUSION OF RESULTS

The results of the statistic tests in this thesis, based on an analysis of New Zealand industry dataset, supports the views that, foreign owned firms in general perform better than domestic-owned firms in productivity. Tests show mixed and inconclusive results for profitability measures in comparison of foreign and domestically owned firms. Foreign owned services firm enjoy a significant superior productivity advantages over domestically owned firms. Firms in services industries in general have a higher productivity than firms in manufacturing industries; however, service's differences to manufacturing in nature will make the comparison less significant.

CHAPTER FIVE

CONCLUSION

This section focuses on summarising the main contents and findings, which have been arisen from the research, as well as addressing the major contributions and limitations of this research. Future research areas are also recommended additions to this research study.

5.1 SUMMARY OF DISCUSSION AND FINDINGS

In this thesis, a literature review, hypotheses, research methodology, and interpretation of results are presented. This section first draws a conclusion on the key contents and findings from **Chapter two** to **Chapter four**. Building on the overall review of this thesis, contributions, limitations and future research areas are then discussed in the second part this final chapter.

Chapter two reviews previous literature on FDI. It mainly addresses the fundamental FDI theories, the previous studies of FDI impact on host countries, firm ownership and performance and at last, the hypotheses are raised.

Foreign Direct Investment (FDI) is considered, in most countries, to be an important component of their development strategy, and policies are accordingly designed to stimulate inward flows. FDI can play a significant role in the development process of host economies. In additional to providing capital inflows, FDI is considered to be a vehicle for obtaining foreign technology, knowledge, managerial skills and other important inputs through MNC activities in host countries, that result in technology improvement and promote economic growth. The fundamental theory grounding the possible better performance of MNCs and spillover effects is the firm-specific advantages theory based on Dunning (1980; 1993) OLI frame work.

Another important motivation for attracting FDI to host country is the possible existence of FDI spillovers, a concept that embodies the fact that MNCs' own technology which can be transmitted to domestic firms and thereby raise their productivity level and competitiveness. The spread of productivity spillovers is thus a matter of externalities being transmitted from established foreign producers to domestic ones. Since the pioneering study of Caves (1974), the occurrence of FDI spillovers has been widely investigated. However, empirical evidence, as surveyed for instance by Meyer (2004) or Görg and Greenaway (2004), has provided mixed results.

Impacts of FDI on host country in terms of productivity spillovers from foreign firms to domestic firms explain the performance differences between these two groups (Bellek, 2004; Haddad and Harrison, 1993) assuming the performance gap does exist. Hypotheses are then being developed based on the question of "Is there any performance gap existing between foreign owned firms and domestic owned firms as FDI/MNC theory predict in a New Zealand context?" by proposing foreign firms have a better productivity and profitability than domestic owned firms.

The global overview of FDI provided some up-dated figures of world FDI in the past two decades as well as some figures for New Zealand FDI development to draw a broad picture of current situation.

Chapter Three discussed the methodology used for the dataset, providing some summarised figures and general overview of foreign owned firms in New Zealand. Foreign presence varies considerably among industries and indicates foreign owned firms were significantly larger on average than domestic firms. The process of statistic analysis is discussed. T-tests were used to test if there is a performance gap between foreign firms and domestic firms.

Chapter Four presented the test results for hypotheses. H1 and H3 were supported by evidence with minor exceptions. Foreign owned firms in general perform better than domestic-owned firms in productivity. H2 was not supported by the mixed and contradictory results for profitability measures in comparison of foreign and domestically owned firms. The reasons for contradictory findings were discussed.

Performance gaps do exist between foreign owned and domestic owned firms in New Zealand, but due to the limitation of data and methodology, conclusion cannot be drawn simply to say performance gap is related to foreign ownership.

5.2 CONTRIBUTIONS OF THE RESEARCH

Examining how foreign ownership affects firm performance has important policy implications for governments worldwide, which spend considerable resources on incentive programs aimed at attracting FDI in hopes of reaping the benefits of globalization (UNCTAD, 2004) and upgrading domestic competition and technology in order to promote economic growth eventually.

The effect of FDI on firm performance has long been issue of interest for academics and policy-makers. It is widely accepted that FDI plays a critical role for economic growth and development, particularly in a small sized country like New Zealand, who relies on the injection of foreign capitals. MNCs carrying funds, resources and technologies become a major and important influences shaping the host country economy.

Many studies in literature research the theoretical roots of why foreign versus domestic-owned firms possess a superior productivity gap and test the gap empirically at different levels, mainly for manufacturing industries (Pfaffermayr and Bellak, 2000). But rarely any study has tested the same question in services industries.

This paper provided a literature review of FDI impact on host country and firm performance with foreign presence. New Zealand Industrial Classification Standard data has been catergorised and analysed to provide a good overview of foreign presence in New Zealand. Although this paper is limited by data and methodology, it contributes to the existing literature by testing existence of performance gaps in New Zealand context. Furthermore, it highlights the differences in manufacturing industries as well as in services industries, in which not much study has been done.

5.3 LIMITATIONS IN LITERATURE AND METHODOLOGY

This paper surveyed performance differences between foreign owned firms and domestic owned firms. The theoretical argument is based on the idea that foreign firms enjoy an advantage over their domestic counterparts in the host country, as a result of their firm specific advantages suggested by FDI theories. The fact that empirical evidence is still scarce is mainly due to the requirements in terms of data availability, which are hardly met by many datasets.

Many studies found superior performance of foreign firms and some report substantial gaps between foreign firms and domestic firms related to ownership. Literatures suggest that foreign ownership is not accounted for most of the variation.

While it is generally assumed that foreign owned firms perform better than domestic firms, it is less clear that if foreign ownership improves performance. There is possibility that foreign firms would pick the best domestic firms for acquisition or enter high-productivity industries, so foreign owned firms would appear to be better off in terms of productivity and profitability that may has little to do with foreign ownership.

In real world, FDI decisions are always made at firm level since they vary in each MNC's strategy and motives for investment (Blomstrom and Zejan 2000). Consequently these decisions and MNC's behaviours are best to be examined at the firm level of analysis. However, this firm level analysis is empirically difficult to conduct, especially to get a good sample to represent entire population. Many studies raised this issue.

There are several limitations in aspect of methodology limiting the significance of this study. The dataset adopted for the statistical testing is relatively out of date, dated back to financial year 1992 to 1998. It is hard to provide conclusion relevant to the current situation in this case.

There are also no other important control variables such as wages, innovations, size of industry, firms characteristics etc included in this dataset to test firm performance in relation with foreign presence. There will be possible bias by simply believing foreign ownership is positively or negatively related to firm's performance. That's the reason t-tests are adopted for this paper to only test if there is a performance gap between foreign and domestic firms rather than testing the relationship between foreign ownership and performance. Furthermore, too many data were missing from the dataset due to confidential reason, which create bias in generalise significant conclusions.

The dataset adopted for this thesis, does not separate domestic firms into the purely local firms and multinationals based in New Zealand with other international contacts. Many studies reveal the differences in performance among purely domestic firms, local MNCs and foreign MNCs (eg. Doms and Jensen, 1998). Such differences were not able to be explored in this study.

5.4 FURTHER RESEARCH AREAS

There are extensive studies that consider productivity differences between foreign and domestic owned firms. Empirical results are mixed and inconclusive. Literature and empirical tests have suggested it would be better to use firm level data to explore the relationship of foreign presence and firm performance for future research. Future research should imply analysis considering level of data as this may address the problem with mixed results.

There are also many other research areas not dealt with adequately in the existing literature, including the following issues:
- How to include the services sector with more details and control variables, especially better performance measurement to compare service firms to manufacturing.
- How other possible factors might explain causes and determinants of spillovers other than performance gap, such as host country conditions, industrial market structure, technological sophistication and overall economic size suggested by

Kokko, et al. (1996).

- How existing performance gaps change over time, in what direction, and the causes of such possible changes. Eg. Productivity and technology spillover from foreign firms to domestic firms may narrow the gap; or foreign owned firms' strategy will overcome the effect of "Liabilities of Foreignness" and enhance reverse spillovers to widen the gap.

- More studies should address the differences in domestic MNCs and foreign MNCs in terms of performance and spillover effects. Since both parties have their firm specific advantages that enable their international presence and competitiveness in the same market, how would they interact in terms of spillovers impacts and determinants?

5.5 POLICY IMPLICATIONS

Based upon this study in literature review and results, a number of specific policy implications and recommendations can be considered by the government for policy marking. According to the review of FDI impact on host country and evidence presented, several aspects are of interest for economic policy. First, government should continue providing incentives, to encourage inward FDI, in order to bring additional capital, technology and market access into local market, especially for New Zealand, a small country with far distance with rest of world. Finding in this study supported foreign owned firms have a higher productivity than local firms. Attracting more FDI is in hope of increasing overall productivity for the country through competition and spillovers. However, government policy would be wise to enact such policy to maximise benefits and minimise potential harms to local industry. Secondly, FDI policy should encourage small to medium size firms (SMEs)' participation and linkage with MNCs, while upgrading research and development institutions and innovation activities to help SMEs to benefit from potential spillovers from foreign presence in the industry. In concept, spillovers will be maximised by relatively large technology gap with proper degree of foreign presence in a developed and supporting infrastructure. In addition, the linkage and connection between SMEs and foreign firms should be strengthened and promoted by government policy.

REFERENCES

Aitken, B., Hanson, G and Harrison, A. (1997). Spillovers, foreign investment, and export behaviour, *Journal of International Economics, 43*(1-2): 687.

Aitken, B. and Harrison, A. (1999). Do Domestic firms benefit from direct foreign investment? Evidence from Venezuela. *American Economic Review, 89*(3): 605.

Akoorie, M. (1997). The historical role of foreign investment in the New Zealand economy. In *Foreign investment: the New Zealand experience,* Enderwick, P. (Ed), The Dunmore Press Ltd, Palmerston North, 67-92.

Balassa, B. (1961). *The Theory of Economic Integration.* London: Allen & Unwin.

Barbosa, N., Louri, H. (2005). Corporate performance: Does ownership matter? A comparison of foreign- and domestic-owned firms in Greece and Portugal. *Review of Industrial Organization 27* (1):73.

Barrios, S., Gorg, H., and Strobl, E. (2009). Spillovers through backward linkages from Multinationals: measurement matters! *IZA discussion Paper NO.4477.* Oct 2009. Retrieved from http://ftp.iza.org/dp4477.pdf

Bellak, C. (2004). How domestic and foreign firms differ and why does it matter? *Journal of Economic Survey, 18*(4),483.

Blalock, G. and Gertler. P. (2002), Firm Capabilities and Technology Adoption: Evidence from Foreign Direct Investment in Indonesia, *Working Paper, Department of Applied Economics and Management*, Cornell University.

Blomstrom, M. (1989). *Foreign direct investment and spillovers: a study of Technology Transfer to Mexico,* London, Routledge.

Blomstrom, M. and Kokko, A. (1998). Multinational corporations and spillovers. *Journal of Economic Surveys, 12*(3): 247.

Blomstrom, M. and Kokko, A. (2001). Foreign direct investment and spillovers of technology. *International Journal of Technology Management. 22*(5): 435.

Blomstrom, M., and Zejan, M. (2000), *Foreign Direct Investment: Firm and Host Country Strategies*, London, Macmillan.

Blomstrom, M., Globeman, S. and Kokko, A. (1999). The determinants of Host country spillovers from foreign direct investment: review and synthesis of the literature. *SSE/EFI Working Paper Series in Economics and Finance* No. 239.

Retrieved: http://zunia.org/uploads/media/knowledge/76.pdf

Blomstrom, M., Lipsey, R., Zejan, M. (1994), What explains the growth of developing countries? *In Convergence of Productivity: Cross-national studies and historical evidence.* Baumol, W.J. et al. (Ed.), Oxford University Press, Oxford and New York, 243-259.

Borensztein, E., Gregorio, J. and Lee, J. (1998). How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics 45*(1):115-135.

Buckley, J. and Pass, C. (1992). The internationalization of service firms: A comparison with the manufacturing sector. *Scandinavian International Business Review 1*(1): 39.

Buckley, P. J. and Casson, M. C. (1976). *The Future of the Multinational Enterprise,* London: Macmillan.

Buckley, P. J., Wang, C. and Clegg, J. (2007). The impact of foreign ownership, local ownership and industry characteristics on spillover benefits from foreign direct investment in China. *International business review. 16*(2007): 142.

Cantwell, J. (1989). *Technological Innovation and Multinational Corporations.* Oxford: Basil Blackwell.

Casey，William L. (2006). Foreign direct investment as an engine of economic development. *Advances in Competitiveness Research, 14*(1), 1-15.

Cave, R. E. (1974). Multinational firms, competition and productivity in host country markets. *Economica, 41*:176-93

Chen, C., Chang, L., Zhang, Y. (1995). The role of foreign investment in China's post-1978 Economic development. *World Development 23*, 691-703.

Chhibber, P. K. and Majumdar, S. K. (1999). Foreign ownership and profitability: Property rights, control, and the performance of firms in Indian industry. *Journal of Law and Economics 42* (1), 209–238.

Cohen, W. and Levinthal, D. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly,* 35:128.

Conyon, M., Girma, S., Thompson, S., and Wright, P. (2002). The productivity and wage effects of foreign acquisition in the United Kingdom. *The Journal of Industrial Economics, 50(*1):85.

Diamantopoulos, A. and Schlegelmilch, B. (2000). *Taking the Fear out of data analysis.* Business Press, Thomson Learning.

Doms, M. and Jensen, J. (1995). *Geography and Ownership as Bases for Economic Accounting.* The University of Chicago Press.

Driffield, N. and Love, J. (2003). Foreign direct investment, technology sourcing and reverse spillovers. *The Manchester School. 71*(6): 659.

Dunning, J. and Lundan, S. (2008). *Multinational enterprises and the global economy.* Edward Elgar Publishing

Dunning, J. H. (1980). Towards an Eclectic Theory of International Production: Some Empirical Tests, *Journal of International Business Studies, Spring/Summer*: P9.

Dunning, J. H. (1988). The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions, I(1): 1.

Dunning, J. H. (1989). Multinational Enterprises and the Growth of Services: Some conceptual and theoretical issues. *The Service Industries Journal 9*(1): 5.

Dunning, J. H. (1993). *Multinational Enterprises and the Global Economy*, Workingham, England: Addison Wesley.

Dunning, J. H. (1994). Re-evaluating the benefits of foreign direct investment. *Transnational Corporations, 3*(1):23.

Dunning, J. H. and Rugman, A. M. (1985). The Influence of Hymer's Dissertation on the theory of foreign direct investment. *The American Economic Review, 75*(2): 228.

Dunning, J.H. and Narula, R. (1996). 'The Investment Development Path Revisited: some emerging issues' in J.H. Dunning and R. Narula (eds) *Foreign Direct Investment and Governments: Catalysts for Economic Restructuring*, Routledge, London and New York.

Eden, L and Miller, S. (2001). Opening the black box: multinationals and the costs of doing business abroad, in *Proceedings of the Academy of Management.*

Eden, L., Levitas, E. and Martinez, R. (1997) 'The production, transfer, and spillover of technology', *Small Business Economics 9* (1): 53-66.

Enderwick, P. (1997) (ed). *Foreign Investment: the New Zealand experience.* The Dunmore Press Ltd: Palmerston North.

Findlay, R. (1978). Relative backwardness, direct foreign investment and transfer of technology: A simple dynamic model, *Quarterly Journal of Economics, 92*(1):1-16.

Fosfuri, A., Motta, M. and Ronde, T. (2001), Foreign direct investment and spillovers through workers' mobility, *Journal of international economics 53*(1):205-22.

Globerman, S., Ries, J. and Vertinsky, I. (1994). The economic performance of foreign affiliates in Canada. *Canada Journal of Economics* 27:143.

Gorg, H. and Greenaway, D. (2004). Much ado about nothing? Do domestic firms really benefit from foreign direct investment? *World bank research observer, 19*(2): 171-97.

Graham, E. and Krugman, P. (1991). Foreign *Direct Investment in the United States.* Washington, D.C.: Institute of International Economics, 2nd edition.

Griffith, R. (1999). Using the ARD establishment level data to look at foreign ownership and productivity in the United Kingdom. *The Economic Journal,* 109: 416.

Griffith, R., Redding, S. and Simpson, H. (2004). Foreign Ownership and Productivity: New Evidence from the Service Sector and the R&D Lab. *Oxford Review of Economic Policy, 20*(3):440.

Haddad, M. and Harrison, A. (1993) 'Are there positive spillovers from direct foreign investment? Evidence from panel data for Morocco', *Journal of Development Economics 42* (1): 51-74. http://www.proquest.com.helicon.vuw.ac.nz/ (accessed October 7, 2009).

Harris, R. (2002). Foreign ownership and productivity in the United Kingdom – some issues when using the ARD establishment level data. *Scottish Journal of Political Economy,* 49, August, 318.

Harris, R. and Robinson, C. (2002). The effect of foreign acquisitions on total factor productivity: Plant-level evidence from U.K. manufacturing, 1987-1992. *Review of Economics and Satistics 84*(3): 562-68.

Harris, R. and Robinson, C. (2003). Foreign ownership and productivity in the United Kingdom: estimates for UK manufacturing using the ARD. *Review of Industrial Organization, 22*, 207.

Hecksher, E. and Ohlin, B. (1933). *Interregional and International Trade*, Harvard University Press: Cambridge, MA

Helpman, E. (1984), A Simple Theory of Trade with Multinational corporations, *Journal of Political Economy, 92,451–71.*

Helpman, E., Melitz, M. and Yeaple, S. (2004). Export versus FDI with Heterogeneous firms. *The American Economic Review, 94*(1):300.

Hennart, J. (1982). *A theory of the multinational enterprise.* Ann Arbor, Mich.: University of Michigan.

Hennart, J. (1988). A transaction costs theory of equity joint ventures. *Strategic Management Journal,* 9: 361.

Hermes, N. and Lensink, R. (2003). Foreign direct investment, Financial development and economic growth. *Journal of Development Studies, 40*(1):142.

Howenstine, N. G. and Zeile, W. J. (1994). Characteristics of foreign-owned U.S. manufacturing establishments. *Survey of current business 74*(1):34-59.

Hymer, S. (1970). The Efficiency (Contradictions) of Multinational Corporations, *American Economic Review, 60*(2): 441.

Hymer, S. (1976). *The international operations of national firms: a study of direct investment*, MIT Press, Cambridge, MA.

James, B. Ang. (2009). Foreign direct investment and its impact on the Thai economy: the role of financial development. *Journal of Economics and Finance, 33*(3), 316-323.

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages, *The American Economic Review 94*(3):605.

Javorcik, B. S., Arnold, J. and Mattoo, A. (2008). Does Service sector liberalization benefit manufacturing firms? Evidence from the Czech Republic. *CEPRdiscussion papers, 5902.*

Jiang, F. (2006). The Determinants of the Effectiveness of Foreign Direct Investment in China: An Empirical Study of Joint and Sole Ventures. *International Journal of Management, 23*(4), 891-908,944。

Johanson, J. and Mattsson, L. (1988). *Internationalisation in Industrial systems - A network approach.* Beckenham, Croom Helm.

Johanson, J. and Vahlne, J. E. (1977). The Internationalisation Process of the Firm: A Model of Knowledge Development and Increasing Foreign Market Commitments, Journal of International Business Studies, 8(1): 23.

Johanson, J. and Wiedersheim-Paul, F. (1975). The internationalisation of Fir-four Swedish Cases. *Journal of Management Studies 8*(1): 23.

Kasibhatla, K., Sawhney, B., (1996). Foreign direct investment and economic growth in the US: evidence from co-integration and granger causality tests. *Rivista Internazionale di Scienze Economiche e Commerciali 43*, 411-420.

Kindleberger, C. (1969). *American business abroad*, University Press, New Haven,

CT.

Knickerbocker, F. T. (1973). *Oligopolistic reaction and the multinational enterprise.* Cambridge, MA, Harvard University Press.

Kogut, B. and Zander, U. (1993). Knowledge of the firms and the evolutionary theory of the multinational corporation. *Journal of International Business Studies, 24*(4):625.

Kokko, A. (1994). Technology, Market characteristics, and spillovers. *Journal of Development Economics, 43*, 279.

Kokko, A. (1996). Productivity spillovers from competition between local firms and foreign affiliates. *Journal of International Development, 8*(4): 517.

Kokko, A. and Blomstrom, M. (1995). Policies to encourage inflows of technology through foreign multinationals. *World Development, 23*(3): 459.

Kokko, A., Tansini, R. and Zejan, M. (1996). Local technological capability and productivity spillovers from FDI in the Uruguayan Manufacturing Sector. *Journal of Development Studies, 32*(4):602.

Kokko, A., Zejan, M. and Tansini, R. (2001). Trade regimes and spillover effects of FDI: evidence from Uruguay. *Weltwirtschaftliches Archive 137*(1):124-49.

Konings, J. (2001). The effects of Foreign direct investment on domestic firms: evidence from firm-level panel data in emerging economies. *Economics of Transition, 9*(3):619.

Kugler, M. (2001). *The diffusion of externalities of foreign direct investment: the sectoral pattern of technological spillovers*. Mimeo, University of Southampton, Southampton.

Kugler, M. (2006), Spillovers from foreign direct investment: within or between industries? *Journal of Development Economics 88*(2):444.

Kumar, N. (1990). Mobility Barriers and Profitability of Multinational and Local Enterprises in Indian Manufacturing, *The Journal of Industrial Economics, 38*(4): 449.

Lall, S. (1980). Vertical Inter firm Linkages in LDCs: an Empirical Study. *Oxford Bulletin of Economics and Statistics, 42*(3):203.

Lipsey, R. (2004). Home and Host country effects of foreign direct investment, in Baldwin, R. and Winters, A. (2004) (**Ed**), *Challenges to Globalization: analyzing the economics.* The University of Chicago Press, Chicago and London.

Lipsey, R. and Sjoholm, F. (2004). Foreign direct investment, education and wages in

Indonesian Manufacturing. *Journal of Developing Economics, 73*, 415.

Liu, X., Siler, P., Wang, C., and Wei, Y. (2000). Productivity spillovers from foreign direct investment: evidence from UK industry level panel data, *Journal of International Business Studies 31* (3): 407-425.

Markusen, J. (1991). The Theory of the Multinational Enterprise: A Common Analytical Framework, in E. Ramstetter (Ed.) *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region*, Westview Press, 11-32.

Markusen, J. and A. Venables (1999), Foreign Direct Investment as a Catalyst for Industrial Development, *European Economic Review, 43*, 335.

Mataloni, R. (2000). An Examination of the Low Rates of Return of Foreign-Owned U.S. Companies, *Survey of Current Business*, March: 55-73.

Meyer, E.K. (2004). Perspectives on multinational enterprises and the theory of international trade. *Journal of International business Studies, 35*(4): 259.

OECD (2001a). *Reviews on Foreign direct investment: New Zealand*. OECD, Paris.

OECD (2001b) *Measuring globalisation the role of multinationals in OECD economies. Manufacturing and services*. OECD, Paris.

OECD (2002). Foreign direct investment for development: Maximising benefits, minimising costs. OECD, Paris.

OECD (2007). Intellectual Assets and International Investment: A Stocktaking of the Evidence, *Report to the OECD Investment Committee*, 6, OECD, Paris.

Okamoto, Y., and Sjoholm, F. (1999). *FDI and the dynamics of productivity: microeconomic evidence*. Stockhom, Sweden.

Oulton, N. (1998). Labour productivity and foreign ownership in the UK, *NIESR discussion paper,* No. 143, mimeo.

Patterson, N., Montanjees, M., Motala, J. and Cardillo, C. (2004). *Foreign direct investment: trends, data availability, concepts and recording practices*. Washington, D.C., International Monetary Fund.

Pfaffermayr, M. and Bellak, C. (2000). Why foreign owned firms are different: conceptual framework and empirical evidence for Austria. *Hamburg Institute of International Economics*. HWWA discussion paper 115. Hamburg.

Ramastetter, E.D. (1999). Comparisons of foreign multinationals and local firms in Asian manufacturing over time. *Asian Economic Journal 13*(2):163-203.

Ramaswamy, K., and Li, M. (2001). Foreign investors, foreign directors and corporate diversification: An empirical examination of large manufacturing companies in India. *Asia Pacific Journal of Management 18*(2), 207.

Ricardo, D. (1871). Principles of Political economy, in Saffra, P. (Ed.) (1951), *The Words and Correspondence of David Ricardo*, 1, Cambridge University Press: London.

Roberts, J. (Ed). (2002). *From market to resource-oriented overseas expansion: re-examining a study of the internationalization of UK business services firms.* Internationalization, Technology and Services, Edward Elgar.

Rugman, A. (1980). Internalisation as a General Theory of Foreign Direct Investment: A Reappraisal of the Literature, *Weltwirtschaftliches Archiv Review of the World Economies, 116*(2):365.

Schoors, K. and Tol, B. (2001). The Productivity Effect of Foreign Ownership on Domestic Firms in Hungary. University of Gent.

Scott-Kennel, J. (1997). Foreign investment and privatisation in New Zealand, in Enderwick, P. (Ed). *Foreign investment the New Zealand experiences,* chapter 4, P112-133. Dunmore Press: Palmerston North.

Scott-Kennel, J. (2004a). Foreign Direct Investment: A catalyst for local firm development. *The European Journal of Development Research, 16*(3):617.

Scott-Kennel, J. (2004b). Foreign direct investment to New Zealand. *University of Auckland Business Review 6*(2): 41.

Scott-Kennel, J. (2007). Foreign direct investment and local linkages: An empirical investigation. *Management International Review, 41*(1): 1-27.

Scott-Kennel, J., and Enderwick, P. (2004). Inter-firm alliance and network relationships and the eclectic paradigm of international production: An exploratory analysis of quasi-internalisation at the subsidiary level. *International Business Review, 3*(4): 425-445.

Scott-Kennel, J., and Enderwick, P. (2005). Economic upgrading and foreign direct investment: Exploring the black box of the IDP. *Transnational Corporations, 14*(1): 105- 137.

Sethi, D., Guisinger, S., Phelan, S. and Berg, D. (2003). Trends in foreign direct investment flows: A theoretical and empirical analysis. *Journal of International Business Studies 34*:315.

Sinani, E and Meyer, K. Spillovers of technology transfer from FDI: the case of

Estonia. *Journal of Comparative Economics, 32*, 445.

Sjoholm, F. (1999). Technology gap, competition, and spillovers from foreign direct investment: evidence from establishment data. *Journal of development studies 36*(1): 53-73.

Temouri, Y., Driffield, N., and Anon Higon, D. (2008). Analysis of Productivity Differences among Foreign and Domestic Firms: Evidence from Germany. *Review of World Economics, 144*(1), 32-54.

UNCTAD (2003) Foreign direct investment and performance requirements: new evidence from selected countries. *United Nations Conference on Trade and Development.* New York: United Nations. xii,306.

UNCTAD (2004). Prospects for FDI Flows, TNC Strategies and Policy Developments, 2004-2007, retrieved from http://www.unctad.org/en/docs/tdxibpd8_en.pdf [13/05/09]

UNCTAD (2008). *World investment report: Transnational corporations and the infrastructure challenge*. New York and Geneva: United Nation.

UNCTAD (2009). *World investment report: Transnational corporations, agricultural production and development.* New York and Geneva: United Nation.

Vernon, R. (1966). International Investment and International Trade in the Product Life Cycle, *Quarterly Journal of Economics, 80*(2): 190.

Wang, C. and Zhao, Z. (2008). Horizontal and vertical spillover effects of foreign direct investment in Chinese manufacturing. *Journal of Chinese Economic and Foreign trade studies. 1*(1):8.

Wang, Y and Blomstrom, M. (1992). Foreign investment and technology transfer: a simple model. *European Economic Review, 36*(1): 137.

Wang. Y. and Gu, W. (2006) FDI, Human Capital and Productivity: The Role of Vertical Linkages, *forthcoming in the Statistics Canada Working Paper series*.

Wei, Y., Liu, X., and Wang, C. (2008). Mutual productivity spillovers between foreign and local firms in China. *Cambridge Journal of Economics, 32*(4): 609.

Wilkins, M. (1989). *The History of foreign investment in the United States to 1914*. Cambridge: Harvard University Press.

Williamson, O. E. (1979). Transaction-Cost Economics: The Governance of Contractual Relations, *Journal of Law and Economics, 22*(2):233-261.

Zaheer, S. (1995). Overcoming the liability of foreignness, *Academy of Management Journal 38*(2):341.

Zaheer, S. and Mosakowski, E. (1997). The dynamics of the liability of foreignness: a global study of survival in financial services, *Strategic Management Journal* *18*(6): 439.

APPENDICES

Appendix One

FDI overview in selected years for New Zealand and the rest of the world

Foreign direct investment (FDI) overview, selected years

(Millions of dollars and percentages)

FDI flows	1990-2000 (Annual average)	2005	2006	2007	2008	as a percentage of gross fixed capital formation			
						1990-2000 (Annual average)	2006	2007	2008
New Zealand									
Inward	2 008	1 472	7 758	2 494	1 979	18.6	31.1	8.2	7.0
Outward	537	- 1 521	501	3 234	100	5.0	2.0	10.7	0.4
Memorandum									
Australia									
Inward	6 946	- 32 080	27 864	44 330	46 774	8.2	13.8	17.5	16.4
Outward	3 192	- 38 080	23 418	16 806	35 938	3.8	11.6	6.6	12.6
United Kingdom									
Inward	40 321	176 006	156 186	183 386	96 939	19.9	37.2	37.0	21.8
Outward	73 378	80 833	86 271	275 482	111 411	36.1	20.6	55.6	25.0
United States									
Inward	109 513	104 773	237 136	271 176	316 112	8.0	9.4	10.9	12.5
Outward	92 010	15 369	224 220	378 362	311 796	6.8	8.9	15.2	12.3
European Union									
Inward	206 990	498 440	590 305	842 311	503 453	12.1	19.4	23.4	13.0
Outward	277 869	609 733	697 193	1 192 141	837 033	16.3	23.0	33.1	21.6
Developed economies									
Inward	354 786	613 053	972 762	1 358 628	962 259	7.7	13.4	17.1	11.4
Outward	435 731	741 972	1 157 910	1 809 531	1 506 528	9.5	15.9	22.8	17.9
World									
Inward	490 196	973 329	1 461 074	1 978 838	1 697 353	8.2	13.4	16.0	12.3
Outward	490 009	878 988	1 396 916	2 146 522	1 857 734	8.2	12.9	17.4	13.5

FDI stocks	1990	1995	2000	2007	2008	as a percentage of gross domestic product			
						1990	2000	2007	2008
New Zealand									
Inward	7 938	25 728	24 894	70 942	53 424	18.1	47.3	55.1	42.3
Outward	4 422	7 676	8 491	15 066	13 093	10.1	16.1	11.7	10.4
Memorandum									
Australia									
Inward	73 644	104 074	111 139	341 657	272 174	23.2	28.6	37.7	27.4
Outward	30 507	53 009	85 385	289 516	194 721	9.6	22.0	31.9	19.6
United Kingdom									
Inward	203 905	199 772	438 631	1 263 652	982 877	20.6	30.4	45.1	36.9
Outward	229 307	304 865	897 845	1 841 018	1 510 593	23.1	62.3	65.7	56.7
United States									
Inward	635 605	1 634 121	1 840 463	2 109 876	2 278 892	6.8	12.9	15.3	16.0
Outward	770 549	2 241 656	2 477 268	2 916 930	3 162 021	7.4	13.5	21.2	22.2
European Union									
Inward	1 244 000	4 423 573	5 577 528	6 906 856	6 431 893	10.6	25.6	40.9	35.1
Outward	1 498 470	5 406 000	6 650 128	8 314 750	8 086 804	11.3	35.3	49.2	44.2
Developed economies									
Inward	2 243 364	7 055 164	8 645 262	10 591 083	10 212 893	8.1	16.1	27.5	24.7
Outward	2 879 603	9 167 925	10 999 174	13 478 752	13 623 626	9.5	21.1	35.0	33.0
World									
Inward	3 237 229	10 050 885	12 404 439	15 660 498	14 909 289	9.1	18.1	28.4	24.5
Outward	3 288 331	10 603 662	12 953 546	16 226 586	16 205 663	8.5	19.2	29.7	26.9

Source: UNCTAD, *World Investment Report 2009*; www.unctad.org/wir or www.unctad.org/fdistatistics

Appendix Two Total Numbers of Enterprises in Classified Industries for Financial year period of 1991/92-1997/98

Industry	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	7 years average	Industry ratio to total	Share of foreign firms
Electricity, Gas & Water	85	92	104	108	116	119	135	108	5.06%	0.82%
Basic Metal Industries	162	166	203	211	215	216	267	206	0.11%	7.15%
Mining & Quarrying	516	487	473	483	491	483	467	486	15.60%	0.56%
Mineral Product Manufacture (Glass etc)	652	688	656	737	726	738	738	705	15.07%	0.22%
Manufacture of Chemicals & Other Prods	934	893	908	977	967	959	995	948	0.06%	6.46%
Other Manufacturing Industries	954	1,003	938	1,033	1,033	1,005	972	991	3.47%	12.83%
Food, Beverage, Tobacco	1,790	1,816	1,914	2,061	2,020	2,053	2,127	1,969	1.03%	4.48%
Textile, Apparel & Leather goods	2,148	2,176	2,157	2,294	2,256	2,172	2,200	2,200	1.71%	3.70%
Insurance	3,409	2,865	3,802	3,362	3,109	3,120	3,166	3,262	3.82%	2.61%
Manufacture of Wood, Paper, Printing, & Publishing	4,333	4,455	4,604	4,992	4,953	4,986	5,149	4,782	0.50%	13.03%
Financing	4,406	4,641	6,778	7,486	7,461	7,770	7,888	6,633	2.51%	1.80%
Manufacture of Fabricated Metal Prods/Machine	6,830	6,779	6,684	7,256	7,566	7,774	8,213	7,300	10.01%	3.13%
Agriculture, Hunting, Forestry & Fishing	8,042	7,952	7,510	9,029	9,447	12,496	13,192	9,667	0.37%	3.10%
Restaurants & Hotels	9,995	10,192	9,725	10,733	10,700	11,234	11,656	10,605	0.25%	14.38%
Wholesale Trade	11,164	11,435	11,544	13,186	14,026	14,460	14,946	12,966	0.52%	1.90%
Transport, Storage & Communication	11,601	11,555	10,933	12,363	12,983	13,619	14,401	12,494	15.84%	1.80%
Manufacturing	17,803	17,976	18,064	19,561	19,736	19,903	20,661	19,101	5.56%	0.91%
Real Estate & Business Services	21,295	22,205	24,929	30,590	34,162	36,590	41,881	30,236	14.03%	0.70%
Construction	26,099	25,506	24,238	28,321	30,664	32,248	34,312	28,770	1.15%	2.42%
Retail Trade	26,985	26,796	26,123	27,951	26,184	26,303	27,079	26,774	6.55%	2.09%
Community, Social & Personal Services	27,120	27,905	27,453	29,698	30,678	31,875	33,751	29,783	6.79%	9.27%
Total	168,520	169,607	171,676	192,871	199,757	210,220	223,535	190,884	100.00%	2.22%

Average number of firms by ownership for financial year 1992-98

Average number of full time employees for 1992-98
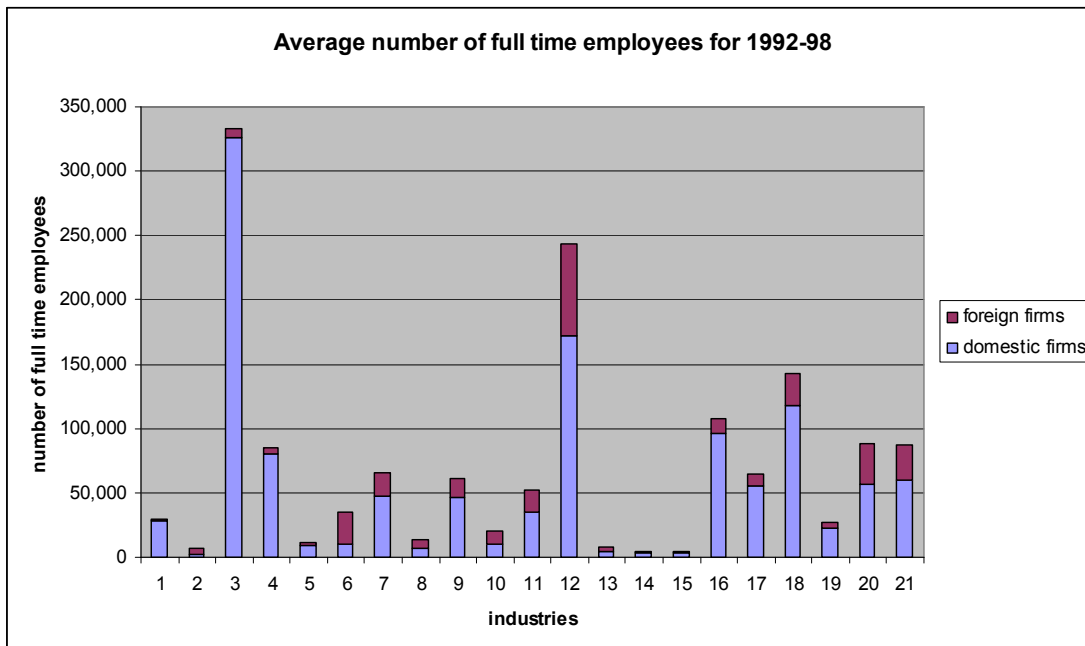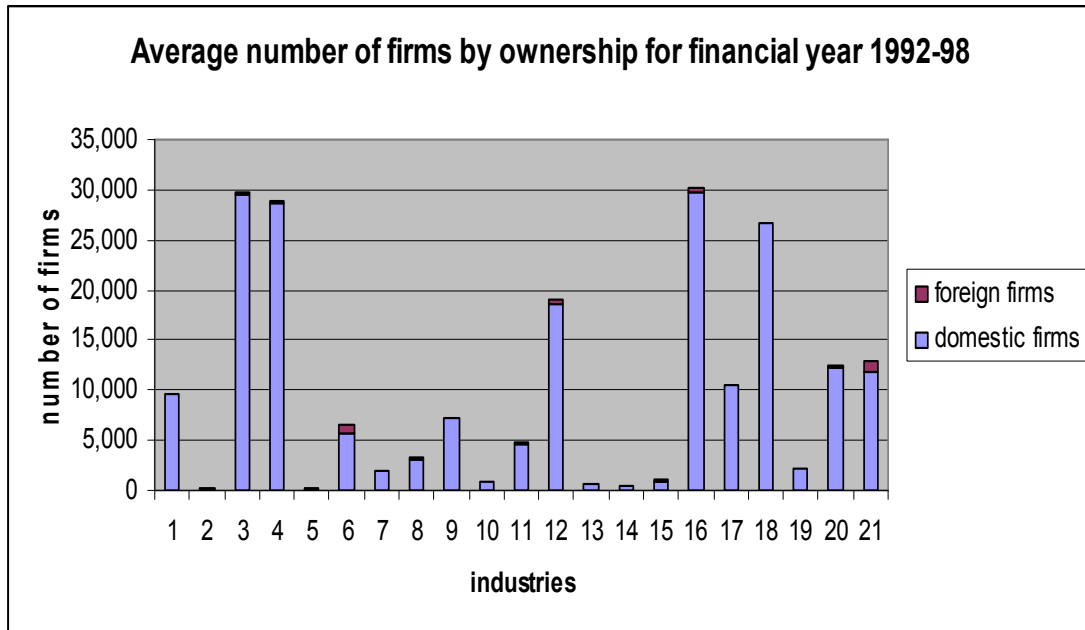
Appendix Three Part one t-tests comparison for five performance variables between different ownership groups

The impact of Inward FDI on Host country: Firm Performance in New Zealand

Test	I. Total Income per FTE Industry total on 7 years					MA 3 years		
1		Group 1	Group 2				Group 1	Group 2
	Mean	344960.769	160727.585			Mean	347811.03	160889.04
	Variance	976613566	2758570.44			Variance	486848955	327747.54
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	15.5755362				t Stat	18.936606	
	P(T<=t) one-tail	2.2169E-06				P(T<=t) one-tail	2.29E-05	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	4.4339E-06				P(T<=t) two-tail	4.58E-05	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	
2		Group 1	Group 3				Group 1	Group 3
	Mean	344960.769	155062.186			Mean	347811.03	154809.47
	Variance	976613566	9578378.1			Variance	486848955	3846245.1
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	15.9988961				t Stat	19.482286	
	P(T<=t) one-tail	1.8937E-06				P(T<=t) one-tail	2.046E-05	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	3.7874E-06				P(T<=t) two-tail	4.093E-05	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	
3		Group 4	Group 1				Group 4	Group 1
	Mean	340978.497	344960.769			Mean	344372.74	347811.03
	Variance	901141260	976613566			Variance	492028850	486848955
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	12				df	8	
	t Stat	-0.2431423				t Stat	-0.2457332	
	P(T<=t) one-tail	0.40600086				P(T<=t) one-tail	0.4060379	
	t Critical one-tail	1.78228755				t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.81200172				P(T<=t) two-tail	0.8120757	
	t Critical two-tail	2.17881283				t Critical two-tail	2.3060041	
4		Group 4	Group 3				Group 4	Group 3
	Mean	340978.497	155062.186			Mean	344372.74	154809.47
	Variance	901141260	9578378.1			Variance	492028850	3846245.1
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	16.2994955				t Stat	19.035007	
	P(T<=t) one-tail	1.6973E-06				P(T<=t) one-tail	2.244E-05	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	3.3946E-06				P(T<=t) two-tail	4.487E-05	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	

The impact of Inward FDI on Host country: Firm Performance in New Zealand

Test	II. Net profit per FTE	Industry total on 7 years					MA 3 years	
1		*Group 1*	*Group 2*				*Group 1*	*Group 2*
	Mean	31537.3821	14331.3601			Mean	34279.733	14759.394
	Variance	103577045	2437112			Variance	42813078	523434.28
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	4.42127534				t Stat	6.6304863	
	P(T<=t) one-tail	0.0022324				P(T<=t) one-tail	0.0013421	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	0.00446481				P(T<=t) two-tail	0.0026843	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	
2		*Group 1*	*Group 3*				*Group 1*	*Group 3*
	Mean	31537.3821	14121.1323			Mean	34279.733	14537.987
	Variance	103577045	2391212.33			Variance	42813078	590793.96
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	4.4762648				t Stat	6.7004863	
	P(T<=t) one-tail	0.00210458				P(T<=t) one-tail	0.0012907	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	0.00420915				P(T<=t) two-tail	0.0025813	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	
3		*Group 4*	*Group 1*				*Group 4*	*Group 1*
	Mean	30396.0611	31537.3821			Mean	33058.68	34279.733
	Variance	97886684.6	103577045			Variance	38248771	42813078
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	12				df	8	
	t Stat	-0.2127445				t Stat	-0.3032573	
	P(T<=t) one-tail	0.41754869				P(T<=t) one-tail	0.3847151	
	t Critical one-tail	1.78228755				t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.83509739				P(T<=t) two-tail	0.7694303	
	t Critical two-tail	2.17881283				t Critical two-tail	2.3060041	
4		*Group 4*	*Group 3*				*Group 4*	*Group 3*
	Mean	30396.0611	14121.1323			Mean	33058.68	14537.987
	Variance	97886684.6	2391212.33			Variance	38248771	590793.96
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	6				df	4	
	t Stat	4.29997084				t Stat	6.6451541	
	P(T<=t) one-tail	0.00254648				P(T<=t) one-tail	0.0013311	
	t Critical one-tail	1.94318027				t Critical one-tail	2.1318468	
	P(T<=t) two-tail	0.00509296				P(T<=t) two-tail	0.0026623	
	t Critical two-tail	2.44691185				t Critical two-tail	2.7764451	

Test	III. Profit Margin on Sales Industry total on 7 years				MA 3 years		
1		*Group 1*	*Group 2*			*Group 1*	*Group 2*
	Mean	0.11303	0.09761		Mean	0.12207	0.10025
	Variance	0.00098	0.00009		Variance	0.00037	0.00002
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	7			df	4	
	t Stat	1.24756			t Stat	2.46386	
	P(T<=t) one-tail	0.12615			P(T<=t) one-tail	0.03470	
	t Critical one-tail	1.89458			t Critical one-tail	2.13185	
	P(T<=t) two-tail	0.25231			P(T<=t) two-tail	0.06940	
	t Critical two-tail	2.36462			t Critical two-tail	2.77645	
2		*Group 1*	*Group 3*			*Group 1*	*Group 3*
	Mean	0.11303	0.09846		Mean	0.12207	0.10112
	Variance	0.00098	0.00008		Variance	0.00037	0.00002
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	7			df	4	
	t Stat	1.18013			t Stat	2.36643	
	P(T<=t) one-tail	0.13825			P(T<=t) one-tail	0.03856	
	t Critical one-tail	1.89458			t Critical one-tail	2.13185	
	P(T<=t) two-tail	0.27649			P(T<=t) two-tail	0.07712	
	t Critical two-tail	2.36462			t Critical two-tail	2.77645	
3		*Group 4*	*Group 1*			*Group 4*	*Group 1*
	Mean	0.11144	0.11303		Mean	0.12018	0.12207
	Variance	0.00096	0.00098		Variance	0.00033	0.00037
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	12			df	8	
	t Stat	-0.09536			t Stat	-0.15862	
	P(T<=t) one-tail	0.46280			P(T<=t) one-tail	0.43895	
	t Critical one-tail	1.78229			t Critical one-tail	1.85955	
	P(T<=t) two-tail	0.92560			P(T<=t) two-tail	0.87790	
	t Critical two-tail	2.17881			t Critical two-tail	2.30600	
4		*Group 4*	*Group 3*			*Group 4*	*Group 3*
	Mean	0.11144	0.09846		Mean	0.12018	0.10112
	Variance	0.00096	0.00008		Variance	0.00033	0.00002
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	7			df	4	
	t Stat	1.06246			t Stat	2.27343	
	P(T<=t) one-tail	0.16165			P(T<=t) one-tail	0.04270	
	t Critical one-tail	1.89458			t Critical one-tail	2.13185	
	P(T<=t) two-tail	0.32330			P(T<=t) two-tail	0.08540	
	t Critical two-tail	2.36462			t Critical two-tail	2.77645	

The impact of Inward FDI on Host country: Firm Performance in New Zealand

Test	IV. ROE	Industry total on 7 years				MA 3 years	
1		*Group 1*	*Group 2*			*Group 1*	*Group 2*
	Mean	0.10362654	0.14555463		Mean	0.1131999	0.146654
	Variance	0.00098354	0.0015119		Variance	0.0003637	0.0008986
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	11			df	7	
	t Stat	-2.2206556			t Stat	-2.1054828	
	P(T<=t) one-tail	0.02415497			P(T<=t) one-tail	0.0366378	
	t Critical one-tail	1.79588481			t Critical one-tail	1.8945786	
	P(T<=t) two-tail	0.04830995			P(T<=t) two-tail	0.0732756	
	t Critical two-tail	2.20098516			t Critical two-tail	2.3646243	
2		*Group 1*	*Group 3*			*Group 1*	*Group 3*
	Mean	0.10362654	0.1704936		Mean	0.1131999	0.1732148
	Variance	0.00098354	0.00095374		Variance	0.0003637	0.0004144
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	12			df	8	
	t Stat	-4.0194381			t Stat	-4.8107935	
	P(T<=t) one-tail	0.00085059			P(T<=t) one-tail	0.0006685	
	t Critical one-tail	1.78228755			t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.00170118			P(T<=t) two-tail	0.001337	
	t Critical two-tail	2.17881283			t Critical two-tail	2.3060041	
3		*Group 4*	*Group 1*			*Group 4*	*Group 1*
	Mean	0.10731428	0.10362654		Mean	0.1160536	0.1131999
	Variance	0.00086051	0.00098354		Variance	0.0002938	0.0003637
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	12			df	8	
	t Stat	0.22720811			t Stat	0.2488455	
	P(T<=t) one-tail	0.41204335			P(T<=t) one-tail	0.4048749	
	t Critical one-tail	1.78228755			t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.8240867			P(T<=t) two-tail	0.8097498	
	t Critical two-tail	2.17881283			t Critical two-tail	2.3060041	
4		*Group 4*	*Group 3*			*Group 4*	*Group 3*
	Mean	0.10731428	0.1704936		Mean	0.1160536	0.1732148
	Variance	0.00086051	0.00095374		Variance	0.0002938	0.0004144
	Observations	7	7		Observations	5	5
	Hypothesized Mean Diff	0			Hypothesized Mean Diff	0	
	df	12			df	8	
	t Stat	-3.9244217			t Stat	-4.8028236	
	P(T<=t) one-tail	0.00100946			P(T<=t) one-tail	0.0006753	
	t Critical one-tail	1.78228755			t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.00201892			P(T<=t) two-tail	0.0013507	
	t Critical two-tail	2.17881283			t Critical two-tail	2.3060041	

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Test	V. ROA	Industry total on 7 years				MA 3 years		
1		*Group 1*	*Group 2*				*Group 1*	*Group 2*
	Mean	0.03064347	0.0648676			Mean	0.1131999	0.146654
	Variance	7.6865E-05	0.00028881			Variance	0.0003637	0.0008986
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	9				df	7	
	t Stat	-4.7351218				t Stat	-2.1054828	
	P(T<=t) one-tail	0.0005331				P(T<=t) one-tail	0.0366378	
	t Critical one-tail	1.83311292				t Critical one-tail	1.8945786	
	P(T<=t) two-tail	0.0010662				P(T<=t) two-tail	0.0732756	
	t Critical two-tail	2.26215716				t Critical two-tail	2.3646243	
2		*Group 1*	*Group 3*				*Group 1*	*Group 3*
	Mean	0.03064347	0.1704936			Mean	0.1131999	0.1732148
	Variance	7.6865E-05	0.00095374			Variance	0.0003637	0.0004144
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	7				df	8	
	t Stat	-11.525652				t Stat	-4.8107935	
	P(T<=t) one-tail	4.1655E-06				P(T<=t) one-tail	0.0006685	
	t Critical one-tail	1.8945786				t Critical one-tail	1.859548	
	P(T<=t) two-tail	8.331E-06				P(T<=t) two-tail	0.001337	
	t Critical two-tail	2.36462425				t Critical two-tail	2.3060041	
3		*Group 4*	*Group 1*				*Group 4*	*Group 1*
	Mean	0.10731428	0.10362654			Mean	0.1160536	0.1131999
	Variance	0.00086051	0.00098354			Variance	0.0002938	0.0003637
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	12				df	8	
	t Stat	0.22720811				t Stat	0.2488455	
	P(T<=t) one-tail	0.41204335				P(T<=t) one-tail	0.4048749	
	t Critical one-tail	1.78228755				t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.8240867				P(T<=t) two-tail	0.8097498	
	t Critical two-tail	2.17881283				t Critical two-tail	2.3060041	
4		*Group 4*	*Group 3*				*Group 4*	*Group 3*
	Mean	0.10731428	0.1704936			Mean	0.1160536	0.1732148
	Variance	0.00086051	0.00095374			Variance	0.0002938	0.0004144
	Observations	7	7			Observations	5	5
	Hypothesized Mean Diff	0				Hypothesized Mean Diff	0	
	df	12				df	8	
	t Stat	-3.9244217				t Stat	-4.8028236	
	P(T<=t) one-tail	0.00100946				P(T<=t) one-tail	0.0006753	
	t Critical one-tail	1.78228755				t Critical one-tail	1.859548	
	P(T<=t) two-tail	0.00201892				P(T<=t) two-tail	0.0013507	
	t Critical two-tail	2.17881283				t Critical two-tail	2.3060041	