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Master Thesis

Foreign Multinational Business - Service Companies in the USA

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Regional Determinants of FDI Location Decision Making

NOVA

School of Business and Economics

Maastricht, 7th March, 2017

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Student ID: 3060

Assignment: Master Thesis

Study: M.Sc. Double Degree International Business

Track: Strategy & Innovation and Management

Supervisor: Assistant Prof. Youtha Cuypers

Abstract

This research sheds light on the relatively little-explored regional determinants of foreign direct investment location choice behavior of business service enterprises. The sample contains 311 foreign direct greenfield investment activities in 55 of 355 potential metropolitan statistical areas in the Unites States of America in the period between 2002 and 2012. By using the conditional logit regression, the study strives to ascertain two mechanisms. First, the effect of prior investments of business services that are active in the same sector were examined. Second, the research investigates whether there is an influence of prior investments of potential client companies that are active in manufacturing. Both mechanisms show significant positive results suggesting imitation behavior as an influencing factor for the locational choice of a firms' foreign direct investment.

Acknowledgements

This Master Thesis is dedicated to my father, Sultan Ahmad Mangal, without whom the breadth of my education wouldn't have been possible. I would like to thank him for being an incredible father, friend and teacher. I am deeply grateful that I have had the honor to be his daughter, and I wish to make him proud with this accomplishment. Furthermore, I intend to thank my beloved family; especially my mother Hausila Mangal, and my brothers Tareq Mangal and Haress Mangal for their unconditional love, patience, and support.

Moreover, I would like to express my deep gratitude to Prof. Dr. René Belderbos for his supervision and support throughout the thesis writing process. It is also my duty to thank Nazareno Breito for his help and assistance regarding the data. Last, I would like to thank my beloved friends, who helped me through everything in the past year and gave me their continuous motivation and mental support.

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1. Introduction

Service and manufacturing firms are operating in highly competitive environments and no longer compete exclusively within their domestic borders (Wiersema & Bowen, 2008). As a result of globalization and the digital connectedness, customers are not anymore limited to exclusive offerings of a regional or local nature. Consequently, it is essential to continuously improve the quality and costs of products and services in order for companies to endure the elevated competition (Slater & Narver, 1994). Firms operating in the service industry, for example, increasingly invest in foreign countries to maximize their profit. According to Srivastava (2006), this allows firms to distribute their service functions internationally to provide them with efficiency and cost effectivity. The benefits are mainly caused by increased cross-border tradability and information-intensive services. Thus, globalization enables companies to engage in foreign direct investments (FDI), which is one of the means to create value and serve customer satisfaction.

In recent years, service companies have gained enormous importance (e.g. Bunyaratavej, & Doh, 2009; Kolstad & Villanger, 2008). Service companies are distinct from manufacturing companies in their operations and strategic behavior. The tremendous growth in service sectors, such as financial services, consulting, telecommunications and insurances, has led service companies to become increasingly bigger players in the global market. Consequently, these multinational service enterprises are exposed to international competition and therefore need to exploit their opportunities by engaging in FDIs. In the 1990s, FDI became more popular when the world's wealthier countries started to invest in developing countries. This enabled multinational enterprises (MNEs) to engage in untapped regions rather than solely relying on domestic oversaturated markets. However, in 2013 the amount of FDIs that were directed to the United States was higher than in any other country, including the BRIC countries

(Organization For International Investment, 2014). This development was a product of the underlying macroeconomic and financial situation of the time. Ideally both parties involved in FDI should benefit from dynamic advantages and a mutual gain (Fry, Claessens, Burridge & Blanchet, 1995). Additionally, competitive pressures in the host market may create more efficiency and effectiveness (Fan, 2002). Therefore, spillover effects are created and third parties benefit from FDIs (Kokko, 1994; Cheung & Ping, 2004). Nowadays, in our globalized world, FDIs are used as a key incentive for international business projects and strategies. The choice of location is often closely scrutinized and the intentions behind the FDIs range from synergies gained through clusters to low-cost productions gained through the access of low-cost resources. Due to the differencing characteristics of services compared to manufacturing companies (see further in section 2.1.1), an international expansion for services means to physically locate their businesses abroad. Making a meaningful strategic investment in a foreign country bears a great deal of risks and uncertainties, which means that firms must make an insightful choice about the location of the investment. This locational choice will be examined for service MNEs investing in the United States of America.

Previous research predominantly focused on FDI decisions for companies specifically within the manufacturing industry (e.g. Agarwal, 1980; Coughlin, Terza & Arromdee, 1991; Friedman, Gerlowski & Silberman, 1992; Milner & Pentecost, 1996; Broadman & Sun, 1997; Zhou, Delios & Yang, 2002; Wei & Liu, 2006). Research has been lacking when it comes to investigating regional location decisions of service investments by service MNEs. Research by Jiatao (1994), Li and Guisinger (1992) and Lee, Hong and Makino (2016), have attempted to address this topic, but the general comprehension of the subject remains insufficient. Jiatao (1994) mentioned that service FDIs have started primarily by supporting functions for the manufacturing industry in transportation, trade and communication. Later on, financial

services, insurances and other related services, followed the investments abroad. Due to the different characteristics and requirements of service MNEs, the service sector calls for unique strategies and approaches towards internationalization.

In this context, two recurring topics require attention, both of which remain relatively unexplored. Firstly, the oligopolistic reactions of service MNEs (Terpstra & Yu, 1988; Li & Guisinger, 1992; Jiatao, 1994; Buch & Lipponer, 2004) when considering the locational choice of FDI must be studied. The geographic location is not the only consideration taken into account for a decision, which is of such high impact. Normally, MNEs deliberately investigate every potential advantage and disadvantage for a significant strategic move. However, Belderbos, Olffen and Zou (2011), explained that the clustering behavior of firms is most likely based on the benefits gained through agglomeration and information externalities. They found different strategies, namely a *frequency-based imitation strategy* and a *trait-based imitation strategy* by firms (see further in section 3.1). The strategic interaction between service MNEs in the same sector seems to have an influencing effect, following the conventional commandment *"If they do it - we do it even more so"*. An analysis of a service MNE's competition therefore must be taken into consideration when studying the locational choice of FDIs.

Secondly, there is the reciprocal influence between manufacturing and service MNEs when considering the locational choice of FDIs (Dunning & McQueen, 1982; Terpstra & Yu, 1988; Li & Guisinger, 1992; Kolstad & Villanger, 2008; Ramasamy & Yeung, 2010; Doytch & Uctum, 2011). Instead of imitating competition in terms of location (Guillén, 2002), service companies are assumed to follow their potential clients' foreign investment choice. Adding to the initial argumentation of Jiatao (1994), service MNEs as supporting functions are also assumed to benefit from various advantages gained through the pre-established client, one of

the benefits being a solid customer base. On the one hand, firms save the costs and energy implicit in the process of finding an ideal investment location, because other firms have previously scoped the field and exacted this effort. On the other hand, one can expect MNEs that engage through these methods of FDI, to also encounter an uncertain amount of risk; if their locational choice fails, it might endanger the firm's entire existence (Belderbos, Olffen & Zou, 2011).

This research aims to identify company interactions for service MNEs in the location choice of their FDI. The research has to be within a feasible framework in order to better study the determinants of locational decisions. Therefore, in order to identify the investing company's interaction of service MNEs in their foreign investment choices, *business-services* are the particular services that will be studied. Business-services are all services provided business-to-business (B2B), including but not limited to IT services, financial services, and delivery services, for example. They are suitable for this study, because the investment interaction between clients and rivals might be more explicit in these services than in business-to-customer (B2C) services. Moreover, consumers do not usually move abroad, but firms do. For the scope of this study, the geographical location will be examined through metropolitan statistical areas (MSA). MSAs are geographically defined areas in the USA, which represent clusters of economic activity and can be used for investigations in a statistically systematic way. They consist of urban areas with one or more counties pooled to a specified region. Accordingly, this research will be limited to *FDI of multinational business-services in the US and why they are choosing to invest in certain MSAs.* This leads to the following research question (RQ):

What are the regional determinants defining the choice of FDI locations for business-service MNEs and to what extent is this choice influenced by prior investments in the same industry and potential client firms?

The existing research lacks an exploration of FDI decision-making for MNEs active in the service industry, and also lacks at the systematic investigation of locations based on MSAs. This thesis attempts to fill this gap in the existing literature. Since previous studies have investigated locational determinants based on countries or overly-simplistic regions, this thesis will benefit ongoing research through the analysis of locational decisions based on MSAs, and thereby enhance the understanding.

This thesis is structured as follows. First, the literature review will summarize the relevant existing literature to get a broad understanding of the topic at hand. A detailed introduction of foreign direct investments to understand the reasoning of FDI decision making within the service industry will be followed by an overview of FDIs in the service industry. After that locational decisions of FDIs will be examined through the consideration of raw materials, human capital, and economies of agglomeration. Second, the hypothesis development will be illustrated. Third, the methodology that this research is based on will be further elaborated by introducing the context, procedures and data analysis. Then, the findings of this research will be presented as well as an outlook on the implications based on the results. Finally, the conclusion will review the main findings.

2. Literature Review

2.1. Foreign Direct Investment

Foreign direct investment aims to create value through resource contribution of businesses in countries outside their unique origin. The resources invested can be financial, human, educational, and/or technological. The value creation consists of the global economic development, which is initiated by foreign resource streams. Accordingly, this allows FDI to enhance employment, competition, and growth in the global economy (OECD, 2008; Moura & Forte, 2010). MNEs must explore and exploit all available opportunities in today's economies in order to be competitive. They are striving for advantages to stay ahead of the competition through a variety of means including cheap labor, tax incentives, and material costs. The manufacturing industry, for example, often increases profit by moving to foreign countries to enlarge their economies of scale and scope (Gallivan & Oh, 1999). By moving, companies can access untapped geographical areas where new customers can be reached and products can be developed further in proficient ways. The service sector is motivated to go abroad in order to additionally serve customer needs and to have standardized services regardless of the locational parameters.

2.1.1. Motives

Dunning (1993) made a significant contribution to the study of foreign investments, as he identifies three different motives for companies to engage in FDIs. First, FDI takes place in order for firms to seek for a new market. Thereby allowing MNEs to reach out to foreign countries, both to export their products and services and to market these products and services in countries outside of their unique origin. This demand-driven motive enables companies to optimize their economies of scale. Furthermore, products are adapted according to local needs (Markusen, 1984). This so-called horizontal FDI gives MNEs the opportunity to increase their

market share and transmit company procedures to foreign countries. In turn, MNEs diffuse different management practices and standardized working procedures globally (Prakash and Potoski, 2007).

Second, FDI is used as a mean for resource or asset-seeking. Hereby, MNEs take advantage of resources not available in their domestic economy, such as low-cost labor, natural resources and/or raw materials. This vertical export oriented FDI requires a rearrangement of the supply chain operations to the host country accordingly (Esanov, Raiser & Buiter, 2001). There are rather negative associations with this motive within domestic societies. Societies fear to lose employment and economic activity. However, Eckel (2003) has found that resource-seeking can be divided into two results, more specifically the relocation effect and the direct/indirect efficiency effect. The relocation effect is indeed reducing labor demand in the domestic country, however, this outcome also enhances the efficiency effect. The efficiency effect, in turn, describes the phenomenon whereby the overall higher productivity of a firm increases the demand for employment (Eckel, 2003). Consequently, the relocation for efficiency does not necessarily have a negative impact on workers of high wage countries because it is eased out through the direct/indirect efficiency effect.

Third, FDI can serve the need to increase efficiency, which can be conducted in the form of economies of scale and economies of scope created via endowment effects. Therefore, institutional, economic and cultural advantages are drawn from the FDI. This distinction made by Dunning (1993), does not appear to be much different from the resource-seeking motive, but rather augments it. Necessary requirements which are favorable for FDI include trade and cross-border regulations. Other authors have focused on the diversification of assets through the expansion to foreign countries (Bevan and Estrin, 2000; Kinoshita and Campos, 2004).

Bevan and Estrin (2000) identified this intention when the Central and Eastern European countries (The Czech Republic, Estonia, Hungary, Poland, and Slovenia) joined the European Union. This is supported by the findings of Klich (2014) who argued that there has been an increase of efficiency seeking FDIs after the treaty of accession to the European Union in 2004.

2.1.2. Modes

In general, there are different ways an MNE can fulfill the aforementioned motives to engage in FDI. There are three different methods to do so; (1) mergers and acquisitions (M&As), (2) joint ventures and (3) greenfield investments (Chaudhur & Mukhopadhyay, 2014). M&As are the transferred or combined ownership transactions of a firm. Joint ventures are defined by the mutual creation of a new business organization from two or more parties. Greenfield investments can be described as contributions of MNEs in foreign countries, where they build new facilities and therefore create operations abroad. For the scope of this study, the greenfield investment is examined, due to its required unambiguous location decision, compared to other FDI modes.

2.1.3. Ownership, Location, Internationalization Framework

All these cross border investments can be categorized by the Ownership, Location, Internationalization (OLI) Framework, which is also called Eclectic paradigm, developed by Dunning (1979). It proposes that the willingness to engage in FDI depends on these three components. Every component of this framework qualifies for a potential source of advantage on behalf of MNEs. Starting with ownership advantages, MNEs can benefit from owned patents, technologies and methodologies by transferring the skills and resources to untapped regions, while still having full control over the assets. Hereby market imperfections are avoided and new markets can be reached. MNEs acquire many location-based benefits abroad. By expanding internationally, a firm can have access to a diversified pool of raw materials, human

resources and low-cost inputs, among other things. The advantages gained from internationalization are of a holistic kind. Internationalization increases a firm's ability to regulate and control diverse markets simultaneously. The expansion of MNEs across borders also has an overall positive impact on the development of the world economy. Therefore, MNEs have the potential to be a powerful force in future trends and courses for the world's population.

2.2. FDI in the Service Industry

The manufacturing industry differentiates itself from the service industry, not only in terms of the operating environment, but also in the characteristics of companies. The distinction between manufacturing and service companies, however, cannot be drawn easily nowadays. Before the Information Age rose to the extent that we know today, large industrial manufacturing companies had very limited services, if any at all, attached to their products. The Information Age grew and transformed companies, and these days there is almost no company that does not provide a holistic approach to the customer. This approach has been called "Servitization of Businesses" by Vandermerwe and Rada (1988). The notion of a *one-stop shop* is present in almost every company nowadays, ranging from small family owned firms to conglomerates and MNEs. According to the Heckscher - Ohlin model for international trade, FDI is seen as international trade capital (Heckscher & Ohlin, 1991). The general equilibrium for this model is defined by two countries (domestic country and host country) and two factors of production. Production is usually defined by labor and capital, indicating the significance of these two characteristics for an economic advantage for MNEs.

Human capital is the key asset in the service industry. As mentioned by Thomas Reid (1786) in his *Essays on the Intellectual Powers of Man*, "In every chain of reasoning, the evidence of the last conclusion can be no greater than that of the weakest link of the chain, whatever may

be the strength of the rest" (pp.674-675). Hence, the common saying that every chain is only as strong as the weakest link can be related to today's conventional wisdom "Every company is as strong as their weakest employee". This is even more true for intangible services, which are defined by their heterogeneity. To gain a general understanding about the service industry as such, the types of services that exist must be identified and the differing determinants for FDI must be investigated (e.g. Ramasamy & Yeung, 2010). Recent literature investigates services and the distinctions of the industry from other industries. Cusumano, Kahl and Suarez (2015), for example, found an unexpected relationship between services and products and the influence of services on the structure in the industry.

2.2.1.   Service Industry: A General Gaze

Goerzen and Makino (2007) have summarized services through five key attributes. The first and the second characteristics are intangibility next to inseparability of production and consumption respectively (Capar & Kotabe, 2003; Goerzen & Makino, 2007; Lovelock & Yip, 1996). This highlights the inability to transfer services, due to their definition as a competence rather than a good. It is therefore necessary to be geographically located in certain areas for *non-tradable services* to actually provide services. In contrast, manufacturing companies can easily export goods without being physically present. Furthermore, services are characterized as heterogeneous, perishable and regulated (Goerzen & Makino, 2007). Even though heterogeneity and regulation might seem contradictory at first, these concepts come together due to the lack of proper control mechanisms at service processes. Services provided by individuals depend highly on each individual's unique skills sets. Thus, the delivery as well as the quality can be very diverse, even though the same service is provided. Boddewyn, Halbrich, and Perry (1986) have further added no-ownership as a characteristic, for the reason that services are used but cannot be possessed by anyone. These characteristics remarkably

distinguish services from the manufacturing industry. Furthermore, based on these divergent characteristics, dissimilar locational strategies for FDIs are assumed.

According to previous findings, international services can be defined as either non-tradable or tradable. Conventionally all services have been categorized as non-tradable services. Boddewyn, Halbrich, and Perry (1986), characterized the services which are location bound as non-tradable. Contrarily, tradable services are categorized differently by various authors. Jensen, Kletzer, Bernstein, and Feenstra, (2005) have ascertained that there is a significant distinction between the two forms. Tradable services are found to have more highly-skilled and highly-educated employees who are paid higher wages compared to employees in non-tradable services. Gervais and Jensen (2013), however, distinguished between tradable and non-tradable services based on a threshold trade cost. They argue that services can be classified as tradable because they exist in a high portion of the tradable sector (internationally traded output, including goods and services). Markusen, Rutherford, and Tarr (2005), called tradable services producer services, which include business-services, knowledge exchange services, customized services, and services that include personal contact.

2.3. Locational Decisions

FDIs are a key tool for MNEs in the manufacturing and service industry to successfully operate in the world's highly competitive economy. Therefore, in order to be successful, companies must thoroughly consider the locational choice of their investments. This decision is especially important in greenfield investments, which require an enormous dedication of capital, human resources, and strategic resources. In recent years, there has been an extensive amount of literature investigating the determinants of companies for conducting foreign direct investment.

This body of research has identified several determinants which influence the assessment of locations that a firm might take when considering an investment.

2.3.1.   Raw Materials & Human Capital

In the early days of FDI, the main determinant and motivation for the locational choice was the access to raw materials and natural resources for the manufacturing industry (McKern, 1996). As aforementioned, this motive is identified as *asset-seeking* by Dunning (1993). Research shows that the host countries that are exploited for their natural resources are likely to have poorer institutions, and a higher likelihood to suffer from corruption as well as a malfunctioning legal system (Aleksynska & Havrylchyk, 2013). Consequently, there is a low barrier for companies to actively use FDI, which can lead to heavy investments for resource exploitation. However, from the 1950s until the 1980s, as the technology sector started to boom, FDI was directed away from the manufacturing industry to the service industry (UNCTAD, 1993). While resource seeking used to account for 90% of FDI in the 1950s, it shifted to an almost equal distribution of investments by the 1980s (UNCTAD, 1993). Alácer and Chung (2007) found that technologically advanced manufacturing firms favor knowledge spillover effects in their decision for FDI.

With this, human resources significantly influenced the determinants for the location of FDI progressively. Noorbakhs, Paloni and Youssef (2001) found that human capital significantly determines the locational choice of FDI in developing countries. Furthermore, human capital was identified to attract, but also create, a constant stream of FDI (Dorozynska, & Dorozynski, 2015). This does not mean that human capital is the sole inviting factor for FDI. Blomstrom, Lipsey and Zejan (1992) and Narula (1996) did not find a relationship between education and FDI resource streams. Instead, there is evidence of the enhancement of employee skills, and the

development and impact of human resources through FDI (Lall and Streeten, 1977). Human capital is the key variable feeding into productivity and growth.

2.3.2.   Economies of Agglomeration

Further attempts to specify locations in detail are made via investigations of agglomeration economies through clusters. MNEs can take advantages from agglomeration economies due to the effects created by a larger number of companies being located in a concentrated area. These effects are distinguished between urbanization economies and localization economies when identifying the productivity of agglomeration (Fujita & Thisse, 2002). The urbanization economy is industry-independent, where companies within the same geographical area take advantage from various effects caused through a diverse operating environment. The localization economy is industry-specific, where companies benefit from the effects in the same area through businesses operating in the same field. Therefore, there are inter/internal (local) and intra/external (urban) economies of scale which can be created through agglomeration effects. MNEs operating in the same sector influence competitive interaction. Companies experience advantages from the number of establishments being located in the same region. Thus, MNEs experience advantages from well-known clustering benefits, such as the access to specialized resources, specialized suppliers, shared infrastructure, distribution networks as well as access to a pool of skilled human resources. This is the reason why establishments are natural outcomes, and therefore likewise born through agglomeration economies (Van Soest, Gerking, & Van Oort, 2006). In this way establishments are significantly influencing the productivity and growth of MNEs.

Generally, productivity gains and growth are two factors mentioned by various authors when considering agglomeration economies (Carlino, 1979; Moomaw, 1983; Otsuka & Yamano,

2008; Broersma & Oosterhaven, 2009). There are two sides to the discourse regarding this subject. According to Carlino (1979), it is a misconception to associate the population size to the productivity of economies of agglomeration. The author argues that a larger size of a population harms productivity and leads to diseconomies of agglomeration. Moonaw (1983), on the contrary, identified a higher productivity in cities which are larger in size. In line with this, Broersma and Oosterhaven (2009) identified a co-integration of agglomeration effects (localization, urbanization, and, diversification), leading to higher productivity. However, the research also recognized the negative external congestion effect, which is inherited with productivity growth and has a similar effect to diseconomies of scale. Even though the agglomeration effect outweighs the congestion effect, employment density was found to affect both economies.

Shaver and Flyer (2002) explored the effect of agglomeration economies on companies. They found that the lower the skill level company's workforce had, the more the companies stood to gain through the agglomeration economy. These findings were expanded and strengthened by Glaeser and Kerr (2009), who investigated the local industrial conditions for firms entering a new market. Their research found that access to workers is a more important factor for firms than the availability of suppliers. Chung and Alcácer (2002) investigated the technological component for manufacturing firms engaging in FDI. The research showed that there are differences in the location decisions based on the firm's industry. Glazer, Gradstein, and Ranjan (2003) found that there is a heterogeneity in preferences and different industries are attracted to different agglomeration economies due to the dissimilar availability of characteristics. In general, the characteristics of a given region might suit one company better than the other. Therefore, different geographical areas attract different MNEs for their FDIs. Hence, there is a need to investigate the FDI locations in more detail for companies operating as business-service MNEs to provide an accurate overall picture of the locations on a finer grained level.

3. Hypothesis Development

3.1. Competitive Interaction

Services at a broad perspective have not yet been examined enough in relation to FDI. Boddewyn, Halbrich, and Perry (1986) stated that there is no specific research necessary for FDIs of MNEs active in the service sector, because the theory gained about the manufacturing industry is sufficient and the service industry is too segmented and heterogeneous to investigate it from a broad perspective. Nonetheless, there has been research about FDI within sector-specific service environments.

In the early years, Gray and Gray (1981) started applying the FDI theory of the manufacturing industry to the banking sector. More recently, Moshirian (2001) further investigated FDI in banking and thereby identified the *Eclectic Paradigm* as the main reason for investment choices. Buch and Lipponer (2004) have found that some German banks were influenced by other German banks that had already engaged in FDI. Furthermore, they identified that general trade links from a certain geographic region made it easier to invest in that region, as evidenced by such trade agreements as those between Portugal and Angola. In general, Buch and Lipponer (2004) found that competition effects attract banks to engage in FDI more than clustering effects. Belderbos, Olffen and Zou (2011) identified organizational bandwagon mechanisms in behavioral clustering. These learning mechanisms probably arise from informational externalities and agglomeration benefits. Here, they found that the locational choice of foreign market entries is based on preceding investors. Thereby, the *trait-based imitation strategy* is a strategy when firms follow certain corporations based on specific characteristics, for example in terms of "similar size, establishments within the same industry segment and establishments by firms with high status due to their position as an industry leader with internationalization experience" (Belderbos, Olffen & Zou, 2011, p.1326). On the other hand, the *frequency-based*

imitation strategy is the behavior of firms investing in a foreign location for the first time. Especially in case of uncertainties, firms take advantage of the investments of earlier investors (Shaver, Mitchell & Yeung, 1997). DiMaggio and Powell (1983) argued that the avoidance of uncertainty through the imitation of a firm's past choices allow other firms to engage in similar choices. Similarly, Guillén (2003) found that mimicking behavior of prior firms to be motivated by gaining legitimacy and uncertainty avoidance. This behavior allows the mimicking firm to reap the benefits of risks previously taken by other firms. Lieberman and Asaba (2006) categorized the imitation behavior of firms according to (1) *rivalry based theories* and (2) *information based theories*. Rivalry based theories are the ones which feed into the firms' competitiveness. Imitation is one way to stabilize a firm's competitive positioning. Accordingly, firms enter a new market by following a competitor's previous investment choice to avoid a negative influence on their own competitive positioning, and to gain competitive parity. According to the authors, information based theories posit that an imitation takes place due to the belief that firms, which have invested previously, possess superior information. Furthermore, prior investments provide information to uncertain factors which enable followers to save search costs and have an advantage in their current choices (Levitt & March, 1988).

Nachum (2000) examined FDI in the financial and professional service industries. The research established that it is necessary to look into the proximity effects between different geographic locations. Furthermore, Moshirian (1997) detected major determinants for FDIs in the insurance sector; namely the size of the given sector in the host country, the regional demand, the exchange rate, and FDIs in the manufacturing sector. Remarkably, the author also acknowledged overlapping areas of insurances with the banking industry as a substitute. Terpstra and Yu (1988) applied and confirmed the manufacturing FDI theory on regional attractiveness on advertising agencies. The research found oligopolistic reactions, similar to the

finding of the research done by Buch and Lipponer (2004). That is, the investments of rivals magnetize other advertising agencies to likewise engage in FDI. Li and Guisinger (1992) identified locational determinants for service MNEs in the triad regions (Japan, Western Europe and USA) as market size, the openness of the host country, the competitiveness of the service industries, the global oligopolistic reaction and the growth in firm size. For the Asia-Pacific region, global oligopolistic reaction also has been identified as locational driver for FDIs of service MNEs (Jiatao, 1994). Since previous research has found similar competition effects in diverse service sectors, the following hypothesis is being posed:

Hypothesis 1: The probability that a region is chosen for a business-service investment is higher if firms in the same industry have previously invested in that region.

3.2. Reciprocal Influence of FDI

Another stream of theoretical literature addresses the effect of FDIs in the manufacturing industry on FDIs in the service industry. Dunning and McQueen (1982) found that manufacturing FDI leads to an enhancement of the service industry. Kolstad and Villanger (2008) have discovered a strong correlation between the FDIs in manufacturing and FDIs in logistics, as well as financial services. Moreover, Doytch and Uctum (2011) found that FDIs in the financial service industry are enhancing for the manufacturing industry. Conversely, non-financial service FDIs are determined to be ill-conceived to the manufacturing industry, leading to the diminishment of growth (Doytch & Uctum, 2011). In contrast, Wang (2009) did not observe a significant effect of non-manufacturing FDIs on economic growth. Wang's research ascertains that manufacturing FDIs influence general economic growth (services included) in host economies. Comparable results were recognized in the analysis of Alfaro (2003), who

found positive effects of manufacturing FDIs on growth. However, Alfaro's research also identified ambiguous results for the influence of FDIs in services on economic growth.

Research that has started to investigate the locational decision-making of FDIs in the service sector finds that service MNEs are more likely to be influenced by demand-driven reasons, like seeking new markets. Conversely, manufacturing companies are more supply-driven (Lee, Hong & Makino, 2016). This draws a distinction between locational bound and non-locational bound services. Non-locational bound services are found to contemplate inter-regional effects as determinant for decision-making in FDIs (Lee, Hong & Makino, 2016). The local market potential is created through profiting from heterogeneous neighboring regions. In line with this argumentation is the research of Ramasamy and Yeung (2010), who identified manufacturing FDIs as an important determinant for service FDI inflows. By virtue of previous findings, considering a rather general economic growth, this research investigates a direct effect of specific manufacturing MNEs on service oriented MNEs. The "client-following" behavior has been identified as the initial move for internationalization of service MNEs (Terpstra and Yu, 1988; Li and Guisinger, 1992). Majkgård and Sharma (1998) maintained the view that service firms who follow their clients and the client firms, are part of an exchange network. Hence, if existing exchange partners (clients) from this network extend their operation borders internationally, the services are pressured but also helped to imitate their clients by following them abroad to sustain the relationship. The research also implies that the pressure to follow the clients aboard allows a firm to gain in the long run. In line with this reasoning, Terpstra and Yu (1988) claimed that service MNEs must follow their clients in order to avoid losing them. Another possible motive can also be the uncertainty avoidance through client experiences similar to the aforementioned argumentation of DiMaggio and Powell (1983). Moreover, Erramilli and Rao (1990) stated, due to the little involvement of resources compared to

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manufacturing MNEs an expansion abroad for services is less expensive. Therefore, service MNEs face lower barriers to entry in markets their clients active in manufacturing have made previous investments in. Therefore, companies can take advantage of the relationships with their client and can mitigate some of the uncertainty in the foreign market.

All the aforementioned client-following arguments are about home-country client relationships. In detail, it is investigated whether a manufacturing company's FDI attracts their domestic client service company to engage in FDI in the same foreign location. This begs the questions of whether service MNE's would also follow potential manufacturing clients in their FDI location decision. Potential clients can be classified as those who have not yet been in a business relationship with a service MNE, but could hypothetically engage in a client business relationship with service MNEs. Manufacturing MNEs investing in certain locations might bear opportunities for business-service MNEs to engage in future projects located in the host as well as domestic country. Thus, the research must investigate whether there is an influence between potential clients and service MNEs. Consequently, the following hypothesis is posed:

Hypothesis 2: The probability that a region is chosen for a business-service investment is higher if potential clients of the firm have previously invested in that region.

4. Methodology

4.1. Context

In order to examine the research question, the available database on FDI greenfield projects in service industries by multinational firms in the US between 2003 and 2012 is analyzed. The available data contains non-US firms (see Appendix B - I) and their respective investments. For the scope of this study, the geographical location of the investments will be examined on a finer grained level. Therefore, data about the metropolitan statistical areas are collected from the *United States Census Bureau* (USCB) and the *Bureau of Labor Statistics* (BLS). From there, datasets in various fields were assessed (e.g. wage costs, existing establishments per industry, corporate tax, patents). The MSAs consist of 355 defined locations taken from the 2007/2008 file of the USCB. They are matched to the existing database on FDI greenfield projects to analyze the locational decision of FDIs throughout MSAs.
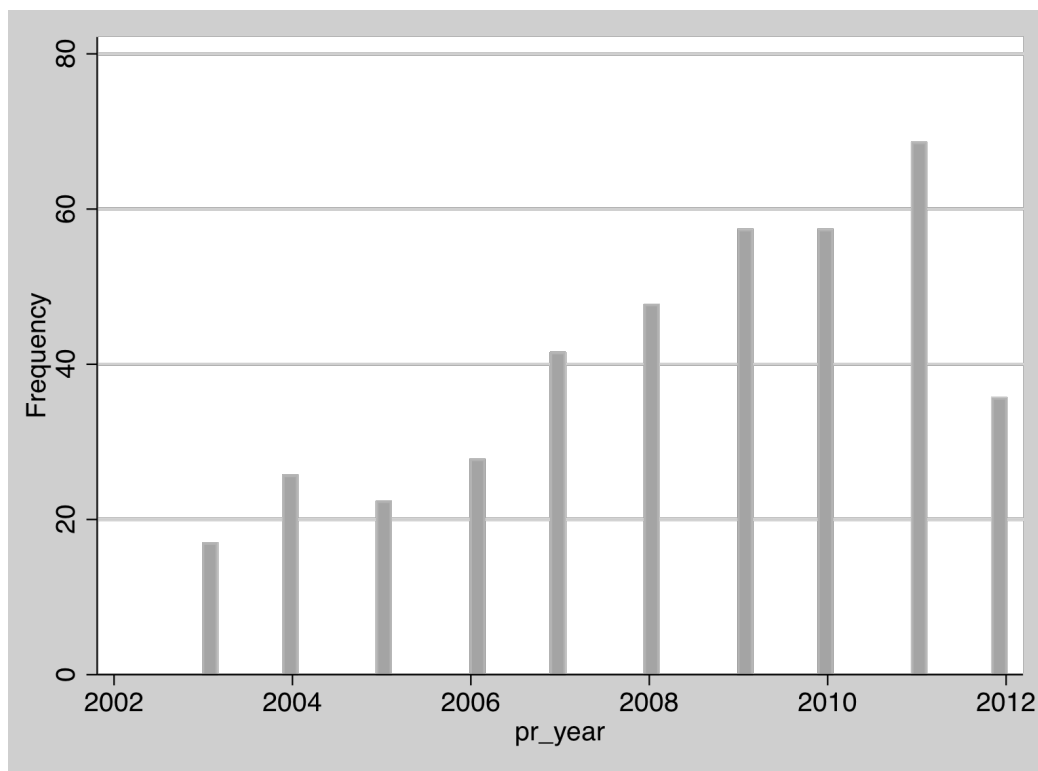
Figure 1 : FDI Frequency of Business-Services by Year from 2003-2012

The units of analysis for this research are the locational decisions of foreign business-service MNEs investing the US. There has been a steady increase of FDI project activities between 2003 and 2012 (see Figure 1).
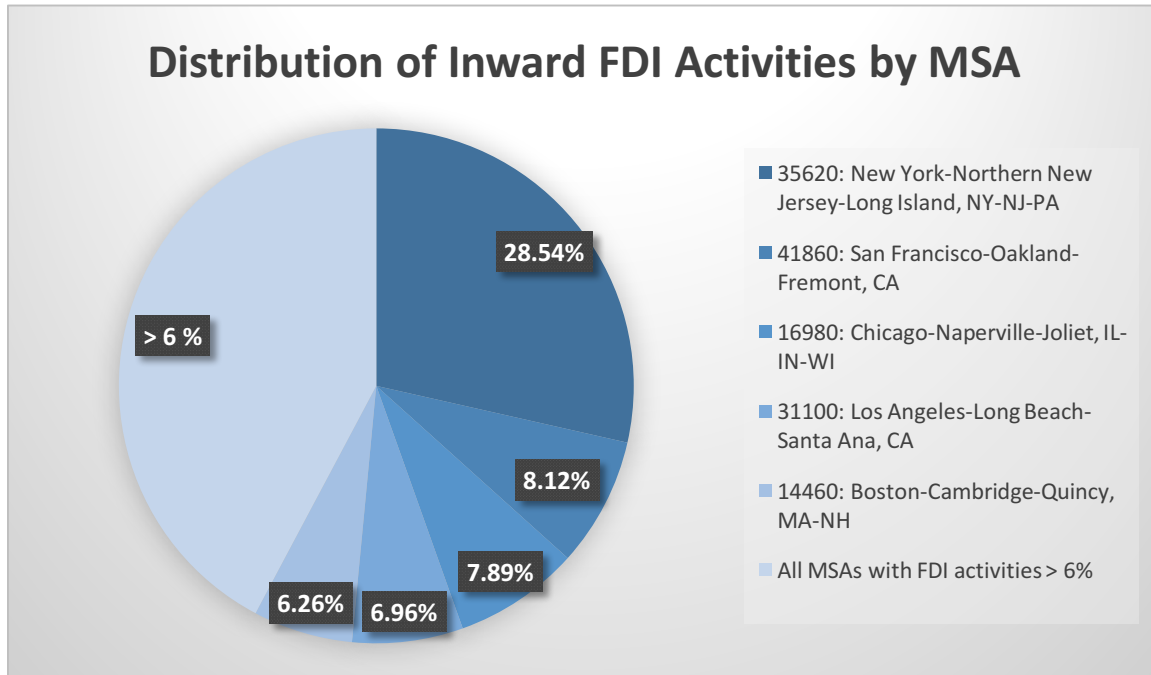
Figure 2: Distribution of Inward FDI Activities by MSA

The distribution of inward FDI activities of business-services between 2002 and 2013 are mainly within five MSAs (see Figure 2). These MSAs have received more than 50% of the business-service FDI activities in the given time period. The defined geographical areas for the MSA codes with the corresponding percentage of the inward FDI flow are the following; (1) 35620 New York-Northern New Jersey-Long Island, NY-NJ-PA with 28.54%, (2) 41860 San Francisco-Oakland-Fremont, CA with 8.12%, (3) 16980 Chicago-Naperville-Joliet, IL-IN-WI with 7.89%, (4) 31100 Los Angeles-Long Beach-Santa Ana, CA with 6.96%, and (5) 14460 Boston-Cambridge-Quincy, MA-NH with 6.26%. The remaining 50 MSAs which have received a FDI in business-services account each for less than 6% (see Appendix B - II).

4.2. Sample and Procedure

For the scope and focus of this study, the dataset has been restricted to business-services only. The 311 businesses in this study involve business-service investments from 34 countries in twelve sectors defined by the North American Industry Classification System (NAICS) as; *(1) Advertising, Public Relations, and Related Services, (2) Other Professional, Scientific, and Technical Services, (3) Employment Services, (4) Facilities Support Services, (5) Legal Services, (6) Management Consulting Services, (7) Architectural, Engineering, and Related Services, (8) Environmental Consulting Services, (9) Waste Management and Remediation Services, (10) Accounting, Tax Preparation, Bookkeeping & Payroll Services, (11) Business Support Services, and (12) Specialized Design Services*. The frequency of investments in these sectors can be seen in Appendix A – I. *Advertising, Public Relations, and Related Services*, with 130 investments, enjoy the highest frequency of investments, while *Specialized Design Services* has the lowest frequency, with only one investment recorded. This analysis has been restricted by excluding four service sectors defined by NAICS as *(1) Colleges, Universities, and Professional Schools, (2) Business Schools and Computer and Management Training, (3) Water, Sewage and Other Systems* and *(4) Newspaper, Periodical, Book, and Directory Publishers*. Hence, the final dataset consists of 431 FDI project activities.

To analyze the determinants of business-service MNEs in their locational decision making, a locational choice model is estimated by using conditional logit models as described by McFadden (1973). Here, foreign business-service investments are modeled to choose from the set of MSAs. Therefore, the sample of 431 FDI project activities has been matched to the total number of 355 MSAs, leading to 431 × 355 a dataset of 153,005 observations for the conditional logit analysis. The conditional logit regression estimates the maximum likelihood of the investment in any of the MSA locations.

4.3. Measures

4.3.1.   Dependent Variable

Location (loc). The firm's choice of location is measured by a dichotomous dependent variable coded as 0/1, where the value of location is one (loc=1) if a business-service MNE invests in a given MSA and zero otherwise (loc=0).

4.3.2.   Independent Variables

Previous investments in the same sector of business-services (lnPrevInvestSamSec). For H1 the previous investments in business-services operating in the same sector had to be identified. Therefore, a count variable measuring the number of previous investments in t-1, for each MSA, for each business-service, in the same sector has been created. The variable is transformed into a logarithm, because using conditional logit regression provides a simpler interpretation of the coefficient as elasticities.

Previous investments of potential clients in manufacturing (lnPrevInvestRelMan). Previous investments of potential business-service clients had to be identified for a thorough examination of H2. The potential client relationships between business-services and their manufacturing clients were found through input-output tables (see Appendix C). The research thus identifies the input that is needed from each industry to produce one unit output in another industry. Subsequently, a weighted count variable has been created to measure previous investments of potential clients active in manufacturing in t-1 in all MSAs for each business-service firm of the sample. This allows the research to reveal if the previous potential client investments have had an influence on the current choice of business-service investment location. The variable is log transformed because using conditional logit regression provides a simpler interpretation of

the coefficient as elasticities. Potential manufacturing client's previous investments in various sectors can be seen in Appendix A – II.

4.3.3.   Control Variables

This analysis considers factors, which existing research have previously identified as significant. This helps the analysis to control the locational decision for effects which might influence the outcome. All variables are log transformed because using conditional logit regression provides a simpler interpretation of the coefficient as elasticities.

Gross Domestic Product per Capita (lngdp_pc). The size of the market is measured through the gross domestic product (GDP) per capita as the total number of output divided by the total number of people living in each MSA. This measure is used because a relationship between FDI and market size has previously been identified as significant (Wheeler and Mody, 1992; Jackson & Markowski, 1995; Chakrabarti, 2001; Carkovic & Levine, 2002). Chakrabarti (2001) argued that a larger market size increases the inflow of FDI. Therefore, this variable is chosen to control for the effects of market size on the locational choice of foreign investment.

Corporate Tax (lnCorporateTax). The variable corporate tax is the percentage of payable state taxes on the net income in each MSA. These percentages are retrieved from *taxfoundation.org*. Previous research is divided on the influence of taxes on the locational decision of FDI. According to Hartman (1994) and Cassou (1997) there is a significant negative relationship between the locations of investment of a foreign MNEs and corporate tax restrictions. Wheeler and Mody (1992) argued there is no significant relationship between FDI inflows and the corporate tax regulations. Swenson (1994) instead, found a positive correlation between FDI

inflows and corporate taxes. This variable is therefore chosen to control for potential effects of taxes on the locational decisions of FDI inflows.

Wage (lnwage). Labor costs are measured as annual average wage across all industries in each MSA. Several studies have shown an avoidance of FDI in regions of higher labor costs (Goldsbrough, 1979; Schneider and Frey, 1985; Shamsuddin, 1994). Janicki and Wunnava (2004) found that the higher the difference between the wages of source and host country, the more attractive it is for firms to invest in these those geographical locations. Therefore, wage is chosen to control for the effects of labor costs on the locational decision of inward FDI flows.

Existing Establishments (lnExistingEstablish). Existing establishments are considered as proxy for agglomeration economies. This variable represents the number of firms/establishments in the same service sector like the investing firm, located in each MSA. Agglomeration has gained attention as a determinant due to the attractiveness of investment when competing within a single industry (Knickerbocker, 1973). Mariotti and Piscitello (1995) highlighted information gathering as determinant of FDI choices for agglomeration economies in new markets. Lall and Streeten (1977) found significant agglomeration due to the success of former firms in uncertain locations as proof to invest in the same area. This variable is therefore chosen to control for the effects of agglomeration on the locational decision.

Technology Strength (lnTechStrength). Technological strength is measured by the fractional count of patents in each MSA. The fractional number takes into account the number of MSAs per patent. The fractional count is used to avoid an inflation of the total number. Each patent is divided by the number of MSAs it belongs to. Chung and Alcácer (2002) found significant results in their expectations of firms to seek for technological activity in the locations of

investments. Accordingly, Le Bas and Sierra (2002) found that MNEs preferably locate their investments in areas of high technological activity. This variable is therefore chosen to control for effects of technological strength on the locational decision.

Higher Education (lnHighEducation). This research uses the number of PhD students in all fields to measure the overall level of higher education in a location. Cassidy and Andreosso-O'Callaghan (2006) found that the level of education in a location can determines the regional choice of FDI. Du, Lu and Tao (2008) also found significant positive results for the locational choice of MNEs investment and the level of education. Therefore, this variable is chosen to control for the effects of higher education on the locational decision.

4.4. Analytical Strategy

Four conditional logit models may be specified based on the suggested hypotheses and the aforementioned dependent, independent and control variables. The conditional logit model estimates how each regional determinant increases or decreases the probability of an MSA to be chosen over all other MSAs available as choice. Following the logic of McFadden (1973) this choice potentially maximizes the profit for each MNE. The first model contains only control variables as base specification. The second model contains in addition to the control variables the t-1 variable *lnPrevInvestSamSec* to test the first hypothesis. The third model contains in addition to the control variables the t-1 variable *lnPrevInvestRelMan* to test the second hypothesis. Finally, the fourth model is the complete model containing all control variables and both independent variables.

5. Analysis and Results

The descriptive statistics of the variables introduced in section 4.3. are depicted in Table 1. The correlation coefficients between the variables are depicted in Table 2. Considering the correlation matrix in Table 2, there is no issue of multicollinearity investigated. There is a high correlation between *lnExistingEstablish* and *lnTechStrength* (0.7202). Nonetheless, this correlation does not lead to biased coefficients.

Sample between 2003 and 2012

Description	Variable	Obs.	Mean	Std. Dev.	Min	Max
Previous Client Investment	lnPrevInvestRelMan	153,005	0,015937	0,0563876	0	1,019969
Previous Competitor Investment	lnPrevInvestSamSec	153,005	0,0139646	0,1195878	0	2,302585
Higher Education	lnHighEducation	153,005	2,116567	2,621284	0	7,969358
Technological Strength	lnTechStrength	153,005	0,5604336	0,8587718	0	4,868223
Existing Establishments	lnExistingEstablish	153,005	6,371551	1,352868	0	11,15559
Corporate Tax	lnCorporateTax	153,005	1,903578	0,5800185	0	2,564949
Wage	lnwage	153,005	1,054226	0,1360759	10,00519	11,15455
GDP Per Capita	lngdp_pc	153,005	10,46366	0,2735835	9,649755	11,42518

Table 1: Descriptive Statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) lnPrevInvestRelMan	1							
(2) lnPrevInvestSamSec	0.4084	1						
(3) lnHighEducation	0.2921	0.2117	1					
(4) lnTechStrength	0.3963	0.3528	0.5364	1				
(5) lnExistingEstablish	0.3744	0.2928	0.5743	0.7202	1			
(6) lnCorporateTax	-0.0058	0.0135	0.0591	0.0075	0.0071	1		
(7) lnwage	0.3593	0.2402	0.4159	0.4938	0.485	0.0251	1	
(8) lngdp_pc	0.2356	0.1861	0.4005	0.4563	0.515	0.0012	0.5192	1

Table 2: Correlation Matrix

The outcomes of the conditional logit models are presented in Table 3. The results of Model 1 are mostly compatible with the expectations. Model 1 has significant results for *lngdp_pc, lnExistingEstablish, lnTechStrength* and *lnHighEducation* at $p<0.05$ level with positive coefficients. Hence, the research finds that market size, establishments, patents and education significantly contribute to the determination of regional location choice of business-service FDIs. Corporate taxes have a negative coefficient as expected, however, this variable is nevertheless not statistically significant. In addition, contrarily to the expectation, *lnwage* has a positive coefficient and is not significantly contributing to the model. This might indicate the attraction of business-services to MSAs with highly skilled labor, which is a key factor in the service industry.

Model 2 adds the variable *lnPrevInvestSamSec* to the control variables on behalf of hypothesis one. The variable *lnPrevInvestSamSec* has a positive coefficient and statistical significance at $p<0,01$ level. This suggests an increased probability of a MSA to be chosen in case a previous investment has been made in the same sector. Thus, hypothesis one is accepted. Model 3 adds *lnPrevInvestRelMan* to investigate the second hypothesis. The variable *lnPrevInvestRelMan* has a positive coefficient and statistical significance at $p<0,01$. This suggests an increased probability of a MSA to be chosen if a previous investment has been made by a potential client active in manufacturing. Therefore, hypothesis two is accepted. Considering the pseudo R^2, model two is slightly stronger than model three. The fourth model comprehends all variables simultaneously. Both independent variables significantly contribute to the model. However, the control variable *lnExistingEstablish* does not significantly contribute to the model any longer.

	Model 1			Model 2			Model 3			Model 4		
	Coef.	z	P>|z|	Coef.	z	P>|z|	Coef.	z	P>|z|	Coef.	z	P>|z|
lngdp_pc	1.046013	2.08	0.038	1.56103	3.03	0.002	1.196267	2.42	0.016	1.534739	3.01	0.003
	(0.5034383)			(0.5152444)			(0.4953406)			(0.5093465)		
lnwage	1.171169	1.67	0.095	0.3758945	0.52	0.604	1.017867	1.47	0.140	0.4678814	0.65	0.514
	(0.7023588)			(0.7249846)			(0.6903302)			(0.7170616)		
lnCorporateTax	-0.1193445	-1.30	0.193	-0.1268883	-1.40	0.162	-0.1543888	-1.68	0.093	-0.1536071	-1.68	0.092
	(0.0917615)			(0.0906876)			(0.0919117)			(0.0912776)		
lnExistingEstablish	0.7414028	2.91	0.004	0.5824235	2.16	0.031	0.59566	2.21	0.027	0.5154646	1.88	0.060
	(0.2543989)			(0.2699103)			(0.2694651)			(0.2736582)		
lnTechStrength	0.3648999	2.39	0.017	0.3597445	2.29	0.022	0.3645616	2.28	0.023	0.3633529	2.26	0.024
	(0.1528048)			(0.1572962)			(0.1601868)			(0.1605818)		
lnHighEducation	0.337317	2.72	0.007	0.3530404	3.08	0.002	0.3366291	2.94	0.003	0.3488034	3.18	0.001
	(0.1240939)			(0.114605)			(0.1146645)			(0.109769)		
lnPrevInvestSamSec				0.563339	3.73	0.000				0.4263463	2.97	0.003
				(0.1511062)						(0.1436329)		
lnPrevInvestRelMan							2.042759	3.86	0.000	1.477114	3.10	0.002
							(0.5288356)			(0.4758779)		
Log pseudolikelihood	-1399.2194			-1384.8535			-1385.7417			-1378.3947		
Number of obs.	153,005			153,005			153,005			153,005		
Wald chi2(6)	679.96			1027.95			949.36			1125.76		
Prob > chi2	0			0			0			0		
Pseudo R2	0.4471			0.4528			0.4525			0.4554		

(Notes: Standard errors in parentheses; Standard errors adjusted for 311 clusters in firmid)

Table 3: Results of Conditional Logit Regression

6. Discussion

This paper examined the imitation behavior of business-service MNEs in their FDI location choices. The research hypothesized and tested whether business-service MNEs potentially invest in (H1) regions their competitors have previously invested in and (H2) regions their potential clients have previously invested in. Both hypotheses are accepted by the results, implying imitation behavior to be a regional determinant for business-service MNEs in their FDI location choice. Thus, the objective in the following is to place these findings into a broader framework and complete the understanding through a contextual theory.

6.1. Imitation Behavior

The results of the analysis lead to an examination of business-service MNEs, and more specifically, why they engage in mimicking behavior when determining the regional choice of their FDI. The examination attempts to analyze why business-service MNEs follow their competitors and/or their potential clients. The findings of this study therefore provide a more extensive understanding of the locational determinants in FDI.

6.1.1.   Following the Competitor

Existing literature has been expanded by this research. The results imply an increased probability for a MSA to be chosen, if there was previously an investment of a business-service MNE active in the same sector. The research also indicates that the competitive analysis is very important for the locational decision of FDI for business-service MNEs. Firms deciding on the location of their FDI are attracted to MSAs that have previously received the FDI inflows of competing firms. In spite of this result, former research does not lose its imporance in regard to the oligopolistic reactions of service MNEs (Terpstra & Yu, 1988; Li & Guisinger, 1992; Jiatao, 1994; Buch & Lipponer, 2004). This further implies a development of agglomeration

economies in the investment locations. Considering past research on economies of agglomeration (Glazer, Gradstein, & Ranjan, 2003; Van Soest, Gerking, & Van Oort, 2006), agglomeration may or may not be the predominant factor influencing the locational decision of the firm's investment. This study found equally significant results to determine the locational choice for agglomeration economies and the previous location choices made by competitors. The movement of MNEs is possibly motivated as a mitigation of risk by reacting to the previous experience of investing firms. Because of the general similarity of characteristics of firms active in the same sector, a less risky market entry can be assumed. The results indicate an influencing effect between business-service MNEs and their competitors active in the same sector. Therefore, successful prior foreign operations of firms attract other firms to follow their strategic investment choice.

6.1.2.   Following the Client

The results of this thesis find that there is a higher probability of an MSA to be chosen for FDI if potential client firms have previously invested in that MSA. Hence, business-service MNEs are attracted to locations where manufacturing firms, which may be potential business-clients, have invested previously. This finding adds a supplementary notion to the studies of country-based client-following behavior. The research implies that business-service MNEs determine their locational decision based on previous investments of potential clients. The imitation behavior might be rationalized through advantages gained through prior investigations of uncertainties in foreign markets by potential clients. Thus, business-service MNEs imitate the behavior of manufacturing MNEs that qualify for a potential business relationship. Accordingly, business-service MNEs that follow potential clients are enabled to build new relationships in the location of investment. Furthermore, following potential clients to remote locations might additionally enforce client relationships in the domestic countries of the MNEs.

However, following a potential client might bear the risk of failure due to the non-established previous relation as well as lack in trust and experience.

6.2. Practical Implications

The imitation behavior as a locational determinant for business-service MNEs' foreign investments implies that MNEs are investing in regions which have previously received a FDI. On the one hand, locations with high FDI inflow attract larger FDI projects. On the other hand, locations with low FDI inflow repel further FDI inflows. Thereby, regions with low FDI inflows find it difficult to attract new FDI projects. Considering the statistics of the study, this is further underlined by the number of investments in each MSA (see section 4.1, figure 2). More than 50% of the investments were distributed between only five MSAs. This effect is certainly related to agglomeration economies and their benefits. The inflow of FDIs bundled within the same geographical location strengthen agglomeration effects for future investments. Nonetheless, it is a challenge to determine how geographical locations with low FDI inflows circumvent their low desirability. Therefore, countries or regions willing to attract business-service FDIs have to increase their magnetism for potential clients and competitors of business-service MNEs. This can be done by offering specific advantages to firms in various forms (e.g. governmental support, subventions, access to resources, etc.) to increase a regions attractiveness.

6.3. Limitations and Future Research

There are a number of limitations to take into consideration in order to assess the reliability of this research. Firstly, the database contains only FDI activities as greenfield investment projects. Therefore, this study solely draws a reliable picture about locational determinants of greenfield investment projects. Secondly, even though the United States and the MSAs are

accordingly well-matched for the examination of FDI locations, this limits the research to only one country. Future research should replicate similar studies in other countries for the sake of comparison. Additionally, using the number of PhD students to determine a country's overall level of higher education might not accurately represent the level of education in each MSA. Consequently, future studies might gather information about the number of universities and the number of students, among other factors that might be relevant to analyzing a country's educational standards. Moreover, this research examines potential client firms active in the manufacturing industry in relation to business-service MNEs, rather than examining existing client relationships between business-service MNEs and manufacturing firms. Lastly, this analysis uses MSAs as clusters of economic activities to distinguish between the locational choices. These clusters however might not represent the same criteria for MNEs to determine their locational choice. Furthermore, this research is limited to an investigation of MNEs active as business-services. Because of this, the results may or may not be generally applicable to all service sectors. There is much more room for investigations about the FDI location behavior of MNEs active in services.

7. Conclusion

This research investigated the regional determinants defining the locational choice of FDI for business-service MNEs. A sample of 431 FDI project activities were analyzed through a conditional logit model. The objective was to find out to what extent the investment choices are influenced by prior investments in the same industry and through potential client firms. In conclusion, the results show significant outcomes for both hypotheses; (H1) that there is a higher probability a region is chosen if firms in the same industry have previously invested and (H2) that there is a higher probability a region is chosen if potential clients of the firm have previously invested there. The control variables including GDP per capita, existing establishments, technological strength and the level of higher education, all reveal significant results. Interestingly, corporate taxes and wage were not statistically significant. The overall findings about the business-service MNEs following behavior are in line with DiMaggio and Powell's (1983) research, which posited that businesses will avoid uncertainty through the imitation of past choices. This research suggests that competition and client imitation behavior are regional determinants for business-service MNEs and are major influencing factors in FDI locational decision-making.

References

Aitken, B.J., & Harrison, A.E. (1999), 'Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela', *American Economic Review*, 89, 3, 605–18.

Alcácer J., & Chung W. (2002). Knowledge seeking and location choice of foreign direct investment in the United States. *Management Science*. 48(12), 1534-1554.

Alcácer J., & Chung W. (2007). Location strategies and knowledge spillovers. *Management Science*. 53(5): 760-776.

Aleksynska, M., & Havrylchyk, O. (2013). FDI from the south: The role of institutional distance and natural resources. *European Journal of Political Economy*, 29, 38-53.

Alfaro, L. (2003). Foreign direct investment and growth: Does the sector matter. *Harvard Business School*.

Bevan, A., & S. Estrin (2000). The determinants of foreign direct investment in transition Economies. *University of Michigan William Davidson Institute* DP 342.

Belderbos, R., Olffen, W. V., & Zou, J. (2011). Generic and specific social learning mechanisms in foreign entry location choice. *Strategic Management Journal*, 32(12), 1309-1330.

Blomstrom, M., (1986). Foreign Investment and Productive Efficiency: The Case of Mexico. *Journal of Industrial Economics*, 35, 1, 97–110.

Blomstrom, M., Lipsey, R. E., & Zejan, M. (1992). What explains developing country growth? (No. w4132). National bureau of economic research.

Blomström, M., & Sjöholm, F. (1999). Technology transfer and spillovers: does local participation with multinationals matter?, *European economic review*, 43(4), 915-923.

Blonigen, B. A. & Figlio, D. N. (2000). The effects of foreign direct investment on local Communities. *Journal of Urban Economics*, 48, 338–63.

Boddewyn, J., Halbrich, M., & Perry, A. (1986). Service Multinationals: Conceptualization, Measurement and Theory. *Journal of International Business Studies,* 17(3), 41-57.

Broadman, H. G., & Sun, X. (1997). The distribution of foreign direct investment in China. *The World Economy*, 20(3), 339-361.

Broersma, L., & Oosterhaven, J. (2009). Regional labor productivity in the Netherlands: Evidence of agglomeration and congestion effects. *Journal of Regional Science*, 49(3), 483-511.

Buch, C. M., & Lipponer, A. (2004). Clustering or competition? The foreign investment behaviour of German banks.

Bunyaratavej, K., Hahn, E.D., & Doh, J.P. (2009). Separable but not equal: The location determinants of discrete services offshoring activites. *Journal of International Business Studies*, 40, 926-943.

Capar, N., & Kotabe, M. (2003). The relationship between international diversification and performance in service firms. *Journal of International Business Studies*, *34*(4), 345-355.

Carkovic, M. V., & Levine, R. (2002). Does foreign direct investment accelerate economic growth?. *University of Minnesota.*

Carlino, G. A. (1979). Increasing returns to scale in metropolitan manufacturing. *Journal of Regional Science*, 19(3), 363-372.

Cassidy, J. F., & Andreosso-O'Callaghan, B. (2006). Spatial determinants of Japanese FDI in China. *Japan and the World Economy*, 18(4), 512-527.

Cassou, S. P. (1997). The Link Between Tax Rates and Foreign Direct Investment. *Applied Economics*, 29, 1295-1301.

Chakrabarti, A. (2001). The determinants of foreign direct investments: Sensitivity analyses of cross-country regressions. *Kyklos*, 54(1), 89-114.

Cheung, K. Y., & Ping, L. (2004). Spillover effects of FDI on innovation in China: Evidence from the provincial data. *China economic review*, 15(1), 25-44.

Coughlin, C. C., Terza, J. V., & Arromdee, V. (1991). State characteristics and the location of foreign direct investment within the United States. *The Review of economics and Statistics*, 675-683.

Cusumano M., Kahl S., & Suarez F. (2015). Services, industry evolution, and the competitive strategies of product firms. *Strategic Management Journal.* 36(4), 559-575.

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147-160.

Dorozynska, A., & Dorozynski, T. (2015). Human Capital and fdi in Central and Eastern Europe. *Managing Global Transitions*, 13(2), 151.

Doytch, N., & Uctum, M. (2011). Does the worldwide shift of FDI from manufacturing to services accelerate economic growth? A GMM estimation study. *Journal of International Money and Finance*, 30(3), 410-427.

Du, J., Lu, Y., & Tao, Z. (2008). Economic institutions and FDI location choice: Evidence from US multinationals in China. *Journal of comparative Economics*, 36(3), 412-429.

Dunning, J. H. (1993) Multinational Enterprises and the Global Economy (Harlow: Addison-Wesley).

Dunning, J. H. (1998) Location and the multinational enterprise: A neglected factor?, *Journal of International Business Studies*, 29(1), pp. 45–66.

Dunning, J. H., & McQueen, M. (1982). Multinational corporations in the international hotel industry. *Annals of Tourism Research*, 9(1), 69-90.

Eckel, C. (2003). Fragmentation, Efficiency-Seeking FDI, and Employment. *Review of International Economics*, 11: 317–331.

Erramilli, M. K., & Rao, C. P. (1990). Choice of foreign market entry modes by service firms: role of market knowledge. *Management International Review*, 135-150.

Esanov, A., M. Raiser, and W. Buiter (2001). Nature's blessing or nature's curse: the political economy of transition in resource-based economies. EBRD WP No. 65, London.

Fan, E. X. (2002). Technological spillovers from foreign direct investment: a survey (No. 33). Manila, Philippines: Asian Development Bank.

Ford, T. C., Rork, J. C. & Elmslie, B. T. (2008). Foreign direct investment, economic growth, and the human capital threshold: evidence from US States. *Review of International Economics*, 16, 96–113.

Franco, C., Rentocchini, F., & Vittucci Marzetti, G. (2008). Why do firms invest abroad? An analysis of the motives underlying Foreign Direct Investments.

Friedman, J., Gerlowski, D. A., & Silberman, J. (1992). What attracts foreign multinational corporations? Evidence from branch plant location in the United States. *Journal of Regional science*, 32(4), 403-418.

Fry, M. J., Claessens, C. A., Burridge, P., & Blanchet, M. C. (1995). Foreign direct investment, other capital flows, and current account deficits: what causes what?.

Fujita, M., Krugman, P., & Venables, A. J. (1999). The spatial economy-cities, regions and international trade. Cambridge, Massachusetts, London, England. *The MIT Press*.

Fujita, M., & Thisse, J. F. (2002). Economics of agglomeration-cities, industrial location and regional growth. *Cambridge University*.

Fujita, M., & Thisse, J. F. (2013). Economics of agglomeration: cities, industrial location, and globalization. *Cambridge university press*.

Gallivan, M. J., & Oh, W. (1999). Analyzing IT outsourcing relationships as alliances among multiple clients and vendors. *Systems Sciences*. HICSS-32. Proceedings of the 32nd Annual Hawaii International Conference on (pp. 15-pp). IEEE.

Gervais, A., & Jensen, J. B. (2013). The tradability of services: Geographic concentration and trade costs (No. w19759). *National Bureau of Economic Research*.

Girma, S. (2005). Absorptive capacity and productivity spillovers from FDI: a threshold regression analysis. *Oxford bulletin of Economics and Statistics*, 67(3), 281-306.

Glaeser, E., & Kerr, W. (2009). Local industrial conditions and entrepreneurship: how much of the spatial distribution can we explain? *Journal of Economics and Management Strategy*. 18(3): 623-663.

Glazer, A., Gradstein, M., & Ranjan, P. (2003). Consumption variety and urban agglomeration. *Regional Science and Urban Economics*, 33(6), 653-661.

Globerman, S. (1979). Foreign Direct Investment and ''Spillover'' Efficiency Benefits in Canadian Manufacturing Industries. *Canadian Journal of Economics*, 42-56.

Goerzen, A., & Makino, S. (2007). Multinational corporation internationalization in the service sector: a study of Japanese trading companies. *Journal of international business studies*, 38(7), 1149-1169.

Goldsbrough, D. J. (1979). The role of foreign direct investment in the external adjustment process. *Staff Papers*, 26(4), 725-754.

Gray, J. M., & Gray, H. P. (1981). The multinational bank: a financial MNC?. *Journal of Banking & Finance*, 5(1), 33-63.

Greenstone, M., & Moretti, E. (2003). Bidding for indus- trial plants: does winning a 'Million Dollar Plant' increase welfare?. NBER Working Paper No. 9844, *National Bureau of Economic Research, Inc.*

Guillén, M. F. (2002). Structural inertia, imitation, and foreign expansion: South Korean firms and business groups in China, 1987–1995. *Academy of Management Journal*, 45(3), 509-525.

Guillén, M. F. (2003). Experience, imitation, and the sequence of foreign entry: Wholly owned and joint-venture manufacturing by South Korean firms and business groups in China, 1987–1995. *Journal of International Business Studies*, 34(2), 185-198.

Hartman, D. G. (1994). Tax Policy and Foreign Direct Investment in the United States. *National Tax Journal,* 37 (4), pp. 475-488.

Heckscher, E. F., & Ohlin, B. G. (1991). Heckscher-Ohlin trade theory. *The MIT Press.*

Hu, A. G., & Jefferson, G. H. (2002). FDI impact and spillover: evidence from China's electronic and textile industries. *The World Economy*, 25(8), 1063-1076.

Jackson, S., & Markowski, S. (1995). Attractiveness of Countries to Foreign Direct Investment, *The J. World Trade*, 29, 159.

Janicki, H. P., & Wunnava, P. V. (2004). Determinants of foreign direct investment: empirical evidence from EU accession candidates. *Applied economics*, *36*(5), 505-509.

Jiatao, L. (1994). International Strategies of Service MNCs in the Asia-Pacific Region. *International Executive*, 36(3), 305-325.

Kinoshita, Y., & Mody, A. (2001). Private information for foreign investment decisions in emerging markets, *Canadian Journal of Economics* 34, 448-464.

Klich, J. (2014). Foreign Direct Investment in the Visegrad Countries after 2004: Have the Visegrad Countries' Membership in the European Union Changed Something?. *Entrepreneurial Business and Economics Review*, 2(3), 19-32.

Knickerbocker, F. (1973). Oligopolistic Reaction and Multinational Enterprise, *Harvard University Press*, Boston.

Kokko, A. (1994). Technology, market characteristics, and spillovers. *Journal of development economics*, 43(2), 279-293.

Kolstad I., & Villanger E. (2008). Determinants of foreign direct investment in services. *European Journal of Political Economy*. 24: 518-533.

Lall, S. and Streeten, P. (1977). Foreign Investment, Transnationals, and Developing Countries. *The MacMillan Press Ltd*.

Le Bas, C., & Sierra, C. (2002). 'Location versus home country advantages' in R&D activities: some further results on multinationals' locational strategies. *Research policy*, 31(4), 589-609.

Lee, I. H. I., Hong, E., & Makino, S. (2016). Location decisions of inward FDI in sub-national regions of a host country: Service versus manufacturing industries. *Asia Pacific Journal of Management*, 1-28.

Levitt, B., & March, J. G. (1988). Organizational learning. *Annual review of sociology*, 14(1), 319-338.

Li, J., & Guisinger, S. (1992). The globalization of service multinationals in the "triad" regions: Japan, Western Europe and North America. *Journal of international business studies*, 23(4), 675-696.

Lieberman, M. B., & Asaba, S. (2006). Why do firms imitate each other?. *Academy of Management Review*, 31(2), 366-385.

Lovelock, C. H., & Yip, G. S. (1996). Developing global strategies for service businesses. *California management review*, 38(2), 64-86.

Mariotti, S. and Piscitello, L. (1995). Information costs and location of FDIs within the host country: empirical evidence from Italy, *Journal of International Business Studies*. 26 (4): 815-841.

Majkgård, A., & Sharma, D. D. (1998). Client-Following and Market-Seeking Strategies in the Internationalization of Service Firms. *Journal of Business-to-Business Marketing*, 4(3), 1-41.

Markusen, J., Rutherford, T. F., & Tarr, D. (2005). Trade and direct investment in producer services and the domestic market for expertise. *Canadian Journal of Economics/Revue canadienne d'économique*, 38(3), 758-777.

McFadden, D. (1973). Conditional logit analysis of qualitative choice behavior. *Frontiers in Econometrics*, 105-142.

McKern*, B. (1996).* Transnational corporations and the exploitation of natural resources. In Transnational corporations and world development. *UNCTAD- DTCI.*

Milner, C., & Pentecost, E. (1996). Locational advantage and US foreign direct investment in UK manufacturing*. Applied Economics,* 28(5), 605-615.

Moomaw, R. L. (1983) Is population scale a worthless surrogate for business agglomeration economies. *Regional Science and Urban Economics*, 13 (4), 525–545.

Moshirian, F. (1997). Foreign direct investment in insurance services in the United States. *Journal of Multinational Financial Management*, 7(2), 159-173.

Moshirian, F. (2001). International investment in financial services. *Journal of Banking & Finance*, 25(2), 317-337.

Moura, R., & Forte, R. (2010). The effects of foreign direct investment on the host country economic growth-theory and empirical evidence. (No. 390). *Universidade do Porto, Faculdade de Economia do Porto*.

Nachum L. (2000). Economic Geography and the Location of TNCs: Financial and Professional Service FDI to the USA. *Journal of International Business Studies.* 31(3): 367-385.

Narula, R. (2002). Multinational investment and economic structure: Globalisation and competitiveness. Routledge.

Neuse, B., & Schwellnus, C. (2010). Does FDI in manufacturing cause FDI in business services? Evidence from French firm-level data. *Canadian Journal of Economics/Revue canadienne d'économique*, 43(1), 180-203.

Noorbakhsh, F., Paloni, A., & Youssef, A. (2001). Human capital and FDI inflows to developing countries: New empirical evidence. *World development*, 29(9), 1593-1610.

Organization For International Investment. (2014). Foreign Direct Investment in the United States 2014 Report. Washington DC: Organization for International Investment.

Otsuka, A., & Yamano, N. (2008). Industrial agglomeration effects on regional economic growth: A case of Japanese Regions. *Regional Economics Applications Laboratory (REAL) WP*.

Ramasamy, B., & Yeung, M. (2010). The Determinants of Foreign Direct Investment in Services. *The World Economy*, 33 (4), 573-596.

Reid, T. (1786). Essays on the Intellectual Powers of Man. *Glasgow College.* 674-675.

Schneider, F., Frey, B. (1985). Economic and Political Determinants of Foreign Direct Investment. *World Development*, 13(2), pp. 161-175.

Shamsuddin, A. F. (1994). Economic Determinants of Foreign Direct Investment in Less Developed Countries. *The Pakistan Development Review*, 33, pp. 41-51.

Shaver J., & Flyer F. (2000). Agglomeration economies, firm heterogeneity and foreign direct investment in the United States. *Strategic Management Journal*. 21(12): 1175-1193.

Shaver, J. M., Mitchell, W., & Yeung, B. (1997). The effect of own-firm and other-firm experience on foreign direct investment survival in the United States, 1987-92. *Strategic Management Journal*, 811-824.

Slater, S. F., & Narver, J. C. (1994). Does competitive environment moderate the market orientation-performance relationship?. *The Journal of Marketing*, 46-55.

Srivastava, S. (2006). The Role of Foreign Direct Investment in India's Services Exports: An Empirical Investigation. *Singapore Economic Review*, 51(2), 175-194.

Swenson, D. L. (1994). The Impact of U. S. Tax Reform on Foreign Direct Investment in the United States. *Journal of Public Economics*, 54, pp. 243-266.

Terpstra, V., & Yu, C. M. (1988). Determinants of foreign investment of US advertising agencies. *Journal of International business studies*, 19(1), 33-46.

UNCTAD (1993), World investment report. Geneva: UNCTAD.

Vandermerwe, S., & Rada, J. (1988). Servitization of business: adding value by adding s ervices. *European management journal*, 6(4), 314-324.

Van Soest, D. P., Gerking, S., & Van Oort, F. G. (2006). Spatial impacts of agglomeration externalities. *Journal of Regional Science*, 46(5), 881-899.

Wang, M. (2009). Manufacturing FDI and economic growth: evidence from Asian economies. *Applied Economics*, 41(8), 991-1002.

Wang, M. (2011). FDI and human capital in the USA: is FDI in different industries created equal?. *Applied Economics Letters*, 18(2), 163-166.

Wang, P., Alba, J. D., & Park, D. (2013). Determinants of different modes of FDI: firm-level evidence from Japanese FDI into the US. *Open Economies Review*, 24(3), 425-446.

Wei, Y., & Liu, X. (2006). Productivity spillovers from R&D, exports and FDI in China's manufacturing sector. *Journal of international business studies*, 37(4), 544-557.

Wheeler, D., & Mody, A. (1992). International investment location decisions: The case of US firms. *Journal of international economics*, 33(1), 57-76.

Wiersema, M. F., & Bowen, H. P. (2008). Corporate diversification: The impact of foreign competition, industry globalization, and product diversification. *Strategic Management Journal*, 29(2), 115-132.

Zhou, C., Delios, A., & Yang, J. Y. (2002). Locational determinants of Japanese foreign direct investment in China. *Asia Pacific journal of management*, 19(1), 63-86.

Appendix A

I.   Service Sectors

naicscode_name	Freq.	Percent	Cum.
Advertising, Public Relations, and Related Services	130	30.16	30.16
Other Professional, Scientific, and Technical Services	88	20.42	50.58
Employment Services	43	9.98	60.56
Facilities Support Services	43	9.98	70.53
Legal Services	41	9.51	80.05
Management Consulting Services	33	7.66	87.70
Architectural, Engineering, and Related Services	17	3.94	91.65
Environmental Consulting Services	17	3.94	95.59
Business Support Services	9	2.09	97.68
Accounting, Tax Preparation, Bookkeeping and Payroll Services	7	1.62	99.30
Waste Management and Remediation Services	2	0.46	99.77
Specialized Design Services	1	0.23	100.00
Total	**431**	**100.00**	

Table 4: Frequency of FDIs in Business-Services by Sector

II.   Potential Client Sectors

naics3digitsname	Freq.	Percent	Cum.
Transportation Equipment Manufacturing	342	17.67	17.67
Machinery Manufacturing	270	13.95	31.61
Chemical Manufacturing	250	12.91	44.52
Plastics and Rubber Products Manufacturing	175	9.04	53.56
Computer and Electronic Product Manufacturing	173	8.94	62.50
Electrical Equipment, Appliance, and	169	8.73	71.23
Miscellaneous Manufacturing	164	8.47	79.70
Food Manufacturing	73	3.77	83.47
Primary Metal Manufacturing	60	3.10	86.57
Fabricated Metal Product Manufacturing	59	3.05	89.62
Nonmetallic Mineral Product Manufacturing	41	2.12	91.74
Furniture and Related Product Manufacturing	34	1.76	93.49
Leather and Allied Product Manufacturing	34	1.76	95.25
Paper Manufacturing	21	1.08	96.33
Petroleum and Coal Products Manufacturing	20	1.03	97.37
Beverage and Tobacco Product Manufacturing	18	0.93	98.30
Textile Product Mills	13	0.67	98.97
Wood Product Manufacturing	8	0.41	99.38
Apparel Manufacturing	7	0.36	99.74
Printing and Related Support Activities	5	0.26	100.00
Total	**1,936**	**100.00**	

Table 5: Frequency of FDIs from 2003-2012 of Potential Business-Service Clients by Sector

Appendix B

I.   Source countries of FDI

pr_sourcecountry	Freq.	Percent	Cum.
UK	208	48.26	48.26
Canada	35	8.12	56.38
Ireland	25	5.80	62.18
France	21	4.87	67.05
Netherlands	21	4.87	71.93
Germany	17	3.94	75.87
Spain	17	3.94	79.81
China	10	2.32	82.13
Switzerland	9	2.09	84.22
Australia	8	1.86	86.08
Japan	7	1.62	87.70
Israel	6	1.39	89.10
Italy	6	1.39	90.49
Norway	5	1.16	91.65
Belgium	4	0.93	92.58
India	4	0.93	93.50
Argentina	3	0.70	94.20
Denmark	3	0.70	94.90
Sweden	3	0.70	95.59
Finland	2	0.46	96.06
Mexico	2	0.46	96.52
Philippines	2	0.46	96.98
Puerto Rico	2	0.46	97.45
Brazil	1	0.23	97.68
Czech Republic	1	0.23	97.91
Greece	1	0.23	98.14
Luxembourg	1	0.23	98.38
Malaysia	1	0.23	98.61
New Zealand	1	0.23	98.84
Poland	1	0.23	99.07
Portugal	1	0.23	99.30
Russia	1	0.23	99.54
South Africa	1	0.23	99.77
UAE	1	0.23	100.00
Total	**431**	**100.00**	

Table 6: Source Countries of FDI

II.   Distribution of Inward FDI Activities

MSA	Freq.	Percent	Cum.
35620	123	28.54	28.54
41860	35	8.12	36.66
16980	34	7.89	44.55
31100	30	6.96	51.51
14460	27	6.26	57.77
33100	22	5.10	62.88
26420	18	4.18	67.05
47900	16	3.71	70.77
12060	13	3.02	73.78
37980	10	2.32	76.10
42660	10	2.32	78.42
19100	9	2.09	80.51
12420	5	1.16	81.67
17140	5	1.16	82.83
38060	5	1.16	83.99
41940	5	1.16	85.15
19820	4	0.93	86.08
25540	4	0.93	87.01
33460	4	0.93	87.94
41740	4	0.93	88.86
16740	3	0.70	89.56
36740	3	0.70	90.26
10580	2	0.46	90.72
11260	2	0.46	91.18
12580	2	0.46	91.65
15380	2	0.46	92.11
24580	2	0.46	92.58
38900	2	0.46	93.04
40380	2	0.46	93.50
41180	2	0.46	93.97
46060	2	0.46	94.43
10420	1	0.23	94.66
13380	1	0.23	94.90
16620	1	0.23	95.13
17900	1	0.23	95.36
19740	1	0.23	95.59
20500	1	0.23	95.82
24660	1	0.23	96.06
25180	1	0.23	96.29

27260	1	0.23	96.52
29820	1	0.23	96.75
29940	1	0.23	96.98
31700	1	0.23	97.22
32820	1	0.23	97.45
33340	1	0.23	97.68
35300	1	0.23	97.91
35380	1	0.23	98.14
36540	1	0.23	98.38
39300	1	0.23	98.61
39580	1	0.23	98.84
40060	1	0.23	99.07
41500	1	0.23	99.30
41620	1	0.23	99.54
44100	1	0.23	99.77
46140	1	0.23	100.00
Total	**431**	**100.00**	

Table 7: Distribution of Inward FDI Activities

Appendix C

Industry Description Manufacturing/Service*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sawmills and wood preservation	0,0060542	0,0031567	0,0047403	0,0004990	0,0083719	0,0043583	0,0113110	0,0010729	0,0029542	0,0096312	0,0033525	0,0011428
Veneer, plywood, and engineered wood product manufacturing	0,0073751	0,0035843	0,0059752	0,0007397	0,0088461	0,0055888	0,0231250	0,0015158	0,0044472	0,0084636	0,0039568	0,0016051
Millwork	0,0096246	0,0042990	0,0059252	0,0008312	0,0089722	0,0047761	0,0157411	0,0012594	0,0041599	0,0091318	0,0045110	0,0020480
All other wood product manufacturing	0,0087830	0,0043705	0,0064807	0,0011545	0,0078652	0,0044175	0,0217694	0,0011761	0,0037491	0,0083800	0,0047697	0,0025705
Clay product and refractory manufacturing	0,0070952	0,0044912	0,0065404	0,0006534	0,0077052	0,0042080	0,0153746	0,0012801	0,0056975	0,0066289	0,0029701	0,0015276
Glass and glass product manufacturing	0,0065094	0,0092165	0,0058277	0,0010796	0,0088897	0,0043534	0,0113631	0,0012267	0,0052604	0,0072765	0,0043173	0,0025005
Cement manufacturing	0,0044096	0,0061332	0,0075727	0,0022413	0,0071961	0,0041017	0,0193172	0,0012442	0,0032725	0,0052909	0,0065390	0,0043205
Ready-mix concrete manufacturing	0,0062473	0,0100029	0,0059498	0,0010186	0,0090559	0,0046162	0,0155388	0,0013124	0,0045642	0,0085028	0,0046364	0,0019769
Concrete pipe, brick, and block manufacturing	0,0094782	0,0073456	0,0052993	0,0007653	0,0076967	0,0050713	0,0108089	0,0013433	0,0047762	0,0071068	0,0039181	0,0014604
Other concrete product manufacturing	0,0076450	0,0141025	0,0100159	0,0030754	0,0120521	0,0062149	0,0192091	0,0017159	0,0057209	0,0115157	0,0095628	0,0076729
Lime and gypsum product manufacturing	0,0047663	0,0037701	0,0067923	0,0016410	0,0081820	0,0038207	0,0219942	0,0012210	0,0038971	0,0067865	0,0055865	0,0023886
Abrasive product manufacturing	0,0048947	0,0049058	0,0036185	0,0005429	0,0061456	0,0042252	0,0065451	0,0011555	0,0037385	0,0050476	0,0024716	0,0018470
Cut stone and stone product manufacturing	0,0099474	0,0090606	0,0081500	0,0022565	0,0087029	0,0051793	0,0168905	0,0013832	0,0044482	0,0092944	0,0075844	0,0053249
Ground or treated mineral and earth manufacturing	0,0046187	0,0097302	0,0050840	0,0006525	0,0090567	0,0042502	0,0297419	0,0013759	0,0052729	0,0074150	0,0037812	0,0012277
Mineral wool manufacturing	0,0049857	0,0067764	0,0045124	0,0007606	0,0064745	0,0032003	0,0090631	0,0009509	0,0090187	0,0055269	0,0034107	0,0016688
Miscellaneous nonmetallic mineral products	0,0071805	0,0090267	0,0058388	0,0008839	0,0085022	0,0047939	0,0256163	0,0013461	0,0049642	0,0072566	0,0042910	0,0016725
Iron and steel mills and ferroalloy manufacturing	0,0047723	0,0049449	0,0060526	0,0013193	0,0072259	0,0039510	0,0147779	0,0011145	0,0184166	0,0054163	0,0046893	0,0024781
Steel product manufacturing from purchased steel	0,0049184	0,0056506	0,0059228	0,0014588	0,0061210	0,0035185	0,0101420	0,0009644	0,0089508	0,0050748	0,0048739	0,0026130
Alumina refining and primary aluminum production	0,0043859	0,0043400	0,0057032	0,0010055	0,0073716	0,0033453	0,0080322	0,0009818	0,0052575	0,0047152	0,0035727	0,0036491
Secondary smelting and alloying of aluminum	0,0058233	0,0074546	0,0080323	0,0019018	0,0085088	0,0050123	0,0093891	0,0013166	0,0168609	0,0064690	0,0066486	0,0035396
Aluminum product manufacturing from purchased aluminum	0,0050752	0,0082568	0,0059366	0,0011683	0,0068944	0,0041865	0,0087905	0,0011262	0,0070169	0,0056537	0,0045297	0,0020937
Primary smelting and refining of copper	0,0022768	0,0011471	0,0029801	0,0003650	0,0045354	0,0039127	0,0036358	0,0010177	0,0042197	0,0023386	0,0017113	0,0005499
Primary smelting and refining of nonferrous metal (except copper and aluminum)	0,0030727	0,0018584	0,0043356	0,0012911	0,0096087	0,0035924	0,0094475	0,0010489	0,0041893	0,0039101	0,0032447	0,0031714
Copper rolling, drawing, extruding and alloying	0,0032678	0,0029167	0,0035881	0,0006358	0,0039755	0,0026831	0,0039194	0,0006753	0,0049032	0,0030811	0,0025415	0,0011871
Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying	0,0040121	0,0041681	0,0043592	0,0009112	0,0053574	0,0030776	0,0060924	0,0008192	0,0062966	0,0039691	0,0032933	0,0021551
Ferrous metal foundries	0,0057831	0,0061562	0,0082386	0,0025106	0,0067998	0,0041216	0,0101991	0,0011325	0,0201260	0,0057187	0,0073474	0,0037791
Nonferrous metal foundries	0,0055587	0,0060875	0,0085060	0,0028892	0,0065071	0,0037505	0,0097159	0,0010360	0,0051751	0,0055214	0,0079874	0,0042630
All other forging, stamping, and sintering	0,0052811	0,0059985	0,0105533	0,0039489	0,0065813	0,0036992	0,0139518	0,0010340	0,0062902	0,0055102	0,0107793	0,0051782
Custom roll forming	0,0049380	0,0046901	0,0064946	0,0016258	0,0060702	0,0034869	0,0109063	0,0009498	0,0099601	0,0049646	0,0054055	0,0029467
Crown and closure manufacturing and metal stamping	0,0081269	0,0071629	0,0055567	0,0010603	0,0069422	0,0040970	0,0073578	0,0010834	0,0060219	0,0069695	0,0045137	0,0018142
Cutlery and handtool manufacturing	0,0130401	0,0072123	0,0071835	0,0018369	0,0089842	0,0051731	0,0147472	0,0013881	0,0055666	0,0076791	0,0058789	0,0043896
Plate work and fabricated structural product manufacturing	0,0063074	0,0074787	0,0134557	0,0055400	0,0073521	0,0042744	0,0142544	0,0011275	0,0061727	0,0068543	0,0147003	0,0058378
Ornamental and architectural metal products manufacturing	0,0074046	0,0081346	0,0091679	0,0028765	0,0074100	0,0042249	0,0178591	0,0011681	0,0062335	0,0075626	0,0084874	0,0047272
Power boiler and heat exchanger manufacturing	0,0053617	0,0054928	0,0058502	0,0014954	0,0067549	0,0038022	0,0093147	0,0009937	0,0039839	0,0054221	0,0048117	0,0038872

Metal tank (heavy gauge) manufacturing	0,0059202	0,0070934	0,0099147	0,0036906	0,0069374	0,0037871	0,0139914	0,0010407	0,0059696	0,0058372	0,0099561	0,0054431
Metal can, box, and other metal container (light gauge) manufacturing	0,0050529	0,0063544	0,0066578	0,0008467	0,0060906	0,0035796	0,0077054	0,0009614	0,0059562	0,0051967	0,0036070	0,0015191
Hardware manufacturing	0,0086802	0,0082283	0,0083102	0,0025405	0,0074360	0,0044082	0,0107834	0,0011885	0,0050389	0,0066020	0,0080029	0,0044310
Spring and wire product manufacturing	0,0073781	0,0070378	0,0074931	0,0021440	0,0074635	0,0040212	0,0107646	0,0011074	0,0046617	0,0063953	0,0066164	0,0042894
Machine shops	0,0069086	0,0090874	0,0079835	0,0023741	0,0075728	0,0040969	0,0115180	0,0010852	0,0043046	0,0077805	0,0074846	0,0053781
Turned product and screw, nut, and bolt manufacturing	0,0059429	0,0069730	0,0056639	0,0012265	0,0067967	0,0037546	0,0087157	0,0010246	0,0047706	0,0065750	0,0044553	0,0029785
Coating, engraving, heat treating and allied activities	0,0056450	0,0072624	0,0048212	0,0007330	0,0068120	0,0040536	0,0073237	0,0011229	0,0072355	0,0065010	0,0036006	0,0013724
Valve and fittings other than plumbing	0,0060104	0,0054524	0,0070053	0,0020761	0,0070291	0,0046451	0,0100789	0,0012364	0,0051976	0,0055179	0,0062046	0,0050096
Plumbing fixture fitting and trim manufacturing	0,0063575	0,0036753	0,0040744	0,0007208	0,0047122	0,0036140	0,0059339	0,0009551	0,0039021	0,0039666	0,0028896	0,0023343
Ball and roller bearing manufacturing	0,0043103	0,0045293	0,0069619	0,0024683	0,0046684	0,0027428	0,0074639	0,0007512	0,0036424	0,0040743	0,0066053	0,0029434
Ammunition, arms, ordnance, and accessories manufacturing	0,0072413	0,0026369	0,0076714	0,0024635	0,0052290	0,0037252	0,0072572	0,0010118	0,0029599	0,0037527	0,0068770	0,0037354
Fabricated pipe and pipe fitting manufacturing	0,0049217	0,0061182	0,0056388	0,0013962	0,0057620	0,0033453	0,0090355	0,0009087	0,0054842	0,0049975	0,0048301	0,0033704
Other fabricated metal manufacturing	0,0065030	0,0067110	0,0069437	0,0013650	0,0068961	0,0038321	0,0098124	0,0010478	0,0054273	0,0061580	0,0046961	0,0033148
Farm machinery and equipment manufacturing	0,0054340	0,0057802	0,0050600	0,0011452	0,0056500	0,0035494	0,0129171	0,0010160	0,0040549	0,0049667	0,0041732	0,0023402
Lawn and garden equipment manufacturing	0,0066597	0,0045584	0,0049204	0,0010491	0,0056574	0,0036799	0,0078152	0,0009833	0,0031527	0,0045770	0,0038372	0,0021655
Construction machinery manufacturing	0,0058344	0,0030365	0,0053317	0,0012107	0,0061636	0,0039899	0,0074152	0,0010369	0,0041427	0,0045890	0,0044147	0,0027524
Mining and oil and gas field machinery manufacturing	0,0056439	0,0043182	0,0097921	0,0034994	0,0069026	0,0042829	0,0144273	0,0011890	0,0045826	0,0054466	0,0095621	0,0056044
Other industrial machinery manufacturing	0,0086644	0,0080788	0,0070181	0,0015642	0,0093364	0,0055600	0,0107533	0,0015439	0,0041842	0,0075843	0,0056120	0,0035434
Plastics and rubber industry machinery manufacturing	0,0097496	0,0071732	0,0083617	0,0023472	0,0096309	0,0051928	0,0103481	0,0014994	0,0045232	0,0070706	0,0070971	0,0049629
Semiconductor machinery manufacturing	0,0076460	0,0089842	0,0080488	0,0010759	0,0200716	0,0182850	0,0089138	0,0049520	0,0035827	0,0098693	0,0061549	0,0016609
Vending, commercial laundry, and other commercial and service industry machinery manufacturing	0,0075464	0,0065499	0,0046883	0,0007888	0,0071762	0,0040855	0,0071821	0,0012119	0,0031588	0,0056535	0,0033783	0,0012307
Office machinery manufacturing	0,0082248	0,0083426	0,0049097	0,0009896	0,0070801	0,0058158	0,0068153	0,0016538	0,0028756	0,0045520	0,0039147	0,0027410
Optical instrument and lens manufacturing	0,0089480	0,0049015	0,0087130	0,0030247	0,0074433	0,0051712	0,0105076	0,0015097	0,0028172	0,0063579	0,0086882	0,0057874
Photographic and photocopying equipment manufacturing	0,0059778	0,0015386	0,0080516	0,0004716	0,0049212	0,0025566	0,0032156	0,0006359	0,0021290	0,0039848	0,0019946	0,0008117
Air purification and ventilation equipment manufacturing	0,0055192	0,0040907	0,0040103	0,0006920	0,0063725	0,0036399	0,0053738	0,0010368	0,0034651	0,0048750	0,0028723	0,0010917
Heating equipment (except warm air furnaces) manufacturing	0,0093729	0,0100451	0,0064445	0,0010869	0,0119190	0,0064094	0,0133580	0,0018849	0,0048053	0,0092665	0,0052524	0,0023995
Air conditioning, refrigeration, and warm air heating equipment manufacturing	0,0062121	0,0056651	0,0045900	0,0007434	0,0064532	0,0043060	0,0053741	0,0011679	0,0034079	0,0051435	0,0034343	0,0012154
Industrial mold manufacturing	0,0071037	0,0060831	0,0046197	0,0007511	0,0066239	0,0036567	0,0059602	0,0010721	0,0038326	0,0061347	0,0030152	0,0011608
Metal cutting and forming machine tool manufacturing	0,0093542	0,0071901	0,0056259	0,0011024	0,0093410	0,0049322	0,0068763	0,0015332	0,0038078	0,0071007	0,0043810	0,0020916
Special tool, die, jig, and fixture manufacturing	0,0080759	0,0061155	0,0050497	0,0007693	0,0080724	0,0053441	0,0052224	0,0015089	0,0042769	0,0083510	0,0033851	0,0012031
Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	0,0081507	0,0066279	0,0056028	0,0010665	0,0083515	0,0050201	0,0074993	0,0014038	0,0040266	0,0067451	0,0040752	0,0019710
Turbine and turbine generator set units manufacturing	0,0051256	0,0029696	0,0076134	0,0026446	0,0063964	0,0033954	0,0092994	0,0009022	0,0048558	0,0043588	0,0073785	0,0043660

Speed changer, industrial high-speed drive, and gear manufacturing	0,0055164	0,0042579	0,0076101	0,0025665	0,0055064	0,0034155	0,0097676	0,0009126	0,0035288	0,0044832	0,0067591	0,0040221
Mechanical power transmission equipment manufacturing	0,0062808	0,0068551	0,0067613	0,0009730	0,0073858	0,0050162	0,0156411	0,0013719	0,0046631	0,0061893	0,0041814	0,0015721
Other engine equipment manufacturing	0,0060941	0,0057273	0,0062121	0,0013916	0,0085841	0,0054593	0,0087326	0,0015007	0,0042994	0,0057943	0,0052995	0,0030937
Pump and pumping equipment manufacturing	0,0063798	0,0063873	0,0050098	0,0009323	0,0066764	0,0053958	0,0068204	0,0015229	0,0038515	0,0053452	0,0036746	0,0015276
Air and gas compressor manufacturing	0,0077416	0,0050171	0,0058891	0,0014465	0,0068129	0,0048988	0,0084645	0,0013235	0,0036093	0,0052269	0,0049074	0,0036492
Material handling equipment manufacturing	0,0065892	0,0060630	0,0059025	0,0013746	0,0071707	0,0039768	0,0094250	0,0010899	0,0038837	0,0056097	0,0047365	0,0030816
Power-driven handtool manufacturing	0,0051376	0,0022015	0,0048318	0,0014201	0,0041323	0,0026433	0,0050505	0,0007128	0,0029862	0,0032398	0,0041823	0,0021725
Other general purpose machinery manufacturing	0,0076796	0,0073580	0,0060129	0,0011826	0,0094563	0,0054691	0,0097915	0,0015200	0,0044899	0,0071222	0,0045887	0,0028290
Packaging machinery manufacturing	0,0082602	0,0061449	0,0052037	0,0008271	0,0105042	0,0058006	0,0075423	0,0017236	0,0030274	0,0090172	0,0039246	0,0013459
Industrial process furnace and oven manufacturing	0,0062963	0,0038997	0,0042123	0,0006681	0,0070364	0,0042704	0,0086312	0,0012470	0,0039741	0,0052363	0,0028947	0,0011308
Fluid power process machinery	0,0063981	0,0070470	0,0053708	0,0009883	0,0069855	0,0050546	0,0104544	0,0015858	0,0045206	0,0059593	0,0038256	0,0017661
Electronic computer manufacturing	0,0039217	0,0009192	0,0026863	0,0004744	0,0054065	0,0031097	0,0022061	0,0007802	0,0011960	0,0033022	0,0019701	0,0008789
Computer storage device manufacturing	0,0048663	0,0012601	0,0043375	0,0012199	0,0037237	0,0029127	0,0037038	0,0007584	0,0016054	0,0028564	0,0036600	0,0020082
Computer terminals and other computer peripheral equipment manufacturing	0,0076698	0,0021390	0,0045408	0,0009061	0,0073080	0,0048453	0,0048239	0,0012691	0,0022897	0,0046538	0,0032894	0,0020268
Telephone apparatus manufacturing	0,0067157	0,0015701	0,0055955	0,0015300	0,0060043	0,0045734	0,0052733	0,0012133	0,0017371	0,0042339	0,0045770	0,0028917
Broadcast and wireless communications equipment	0,0055297	0,0017038	0,0092017	0,0039111	0,0045669	0,0033620	0,0069234	0,0008833	0,0015395	0,0035733	0,0098899	0,0041719
Other communications equipment manufacturing	0,0082495	0,0026425	0,0056483	0,0016073	0,0054398	0,0036496	0,0062292	0,0009977	0,0026841	0,0044409	0,0049855	0,0021763
Audio and video equipment manufacturing	0,0077268	0,0017311	0,0036092	0,0005311	0,0049243	0,0035238	0,0032442	0,0009161	0,0020204	0,0034070	0,0022126	0,0011647
Other electronic component manufacturing	0,0050694	0,0022265	0,0047843	0,0014068	0,0046537	0,0032637	0,0055440	0,0008928	0,0031162	0,0036972	0,0042324	0,0020000
Semiconductor and related device manufacturing	0,0053584	0,0015056	0,0065377	0,0025621	0,0061962	0,0040611	0,0075534	0,0010240	0,0023724	0,0028414	0,0066994	0,0051112
Printed circuit assembly (electronic assembly) manufacturing	0,0069547	0,0017631	0,0043330	0,0008692	0,0067979	0,0043030	0,0043561	0,0011234	0,0026340	0,0047823	0,0032180	0,0017008
Electromedical and electrotherapeutic apparatus manufacturing	0,0090984	0,0036030	0,0053283	0,0012315	0,0089093	0,0078992	0,0092431	0,0021397	0,0025465	0,0057398	0,0043488	0,0047244
Search, detection, and navigation instruments manufacturing	0,0085666	0,0029384	0,0105000	0,0045229	0,0070768	0,0041100	0,0113178	0,0011523	0,0027558	0,0047901	0,0114390	0,0058926
Automatic environmental control manufacturing	0,0057471	0,0025313	0,0052165	0,0013037	0,0047010	0,0046798	0,0076722	0,0012507	0,0031442	0,0038181	0,0043219	0,0029533
Industrial process variable instruments manufacturing	0,0077638	0,0041315	0,0050335	0,0011963	0,0072959	0,0044481	0,0103175	0,0012711	0,0030703	0,0055516	0,0039216	0,0016702
Totalizing fluid meter and counting device manufacturing	0,0058166	0,0030905	0,0048158	0,0012288	0,0063343	0,0038088	0,0070622	0,0010296	0,0024587	0,0047107	0,0041318	0,0021326
Electricity and signal testing instruments manufacturing	0,0132225	0,0055628	0,0067261	0,0012892	0,0108780	0,0080814	0,0119087	0,0022437	0,0027369	0,0101959	0,0056701	0,0012400
Analytical laboratory instrument manufacturing	0,0077527	0,0044043	0,0058073	0,0013528	0,0093641	0,0083565	0,0112565	0,0023096	0,0027284	0,0064661	0,0047307	0,0020902
Irradiation apparatus manufacturing	0,0085969	0,0047793	0,0060273	0,0011829	0,0113733	0,0054762	0,0085529	0,0014641	0,0031026	0,0068904	0,0043564	0,0016664
Watch, clock, and other measuring and controlling device manufacturing	0,0067856	0,0043631	0,0055568	0,0014199	0,0099280	0,0052843	0,0116711	0,0014862	0,0024597	0,0068281	0,0046692	0,0026435
Manufacturing and reproducing magnetic and optical media	0,0064949	0,0027213	0,0097031	0,0040169	0,0056929	0,0051177	0,0106966	0,0014641	0,0027792	0,0044457	0,0097774	0,0067592
Electric lamp bulb and part manufacturing	0,0093084	0,0054561	0,0064791	0,0009430	0,0075258	0,0057749	0,0076754	0,0016748	0,0033124	0,0060415	0,0042302	0,0060714
Lighting fixture manufacturing	0,0092138	0,0044851	0,0060671	0,0012158	0,0076519	0,0039106	0,0096514	0,0010681	0,0032361	0,0055430	0,0041217	0,0062047

Small electrical appliance manufacturing	0,0105787	0,0025448	0,0058824	0,0009694	0,0072007	0,0038109	0,0078246	0,0010140	0,0033060	0,0052021	0,0035221	0,0037074
Household cooking appliance manufacturing	0,0074694	0,0036068	0,0067666	0,0021326	0,0054651	0,0035697	0,0084487	0,0009798	0,0051701	0,0045494	0,0062575	0,0041780
Household refrigerator and home freezer manufacturing	0,0047056	0,0027009	0,0036384	0,0005923	0,0044599	0,0031447	0,0047086	0,0008253	0,0036117	0,0035714	0,0025523	0,0012850
Household laundry equipment manufacturing	0,0052882	0,0026002	0,0103796	0,0040667	0,0051978	0,0034050	0,0057190	0,0008909	0,0049612	0,0041677	0,0097525	0,0015855
Other major household appliance manufacturing	0,0051960	0,0025790	0,0048559	0,0013721	0,0041465	0,0028985	0,0062272	0,0007679	0,0043746	0,0034270	0,0040966	0,0025597
Power, distribution, and specialty transformer manufacturing	0,0043217	0,0026028	0,0049820	0,0013740	0,0048925	0,0033350	0,0063140	0,0008974	0,0032893	0,0039009	0,0042207	0,0028843
Motor and generator manufacturing	0,0054272	0,0023226	0,0039431	0,0006456	0,0049035	0,0036109	0,0043092	0,0009517	0,0029396	0,0039834	0,0027703	0,0011319
Switchgear and switchboard apparatus manufacturing	0,0051647	0,0032513	0,0040613	0,0007044	0,0050488	0,0041900	0,0054557	0,0010922	0,0032078	0,0041162	0,0028828	0,0010785
Relay and industrial control manufacturing	0,0063693	0,0023847	0,0039212	0,0005764	0,0056093	0,0040156	0,0035759	0,0010122	0,0021659	0,0042725	0,0025588	0,0009859
Storage battery manufacturing	0,0036116	0,0030753	0,0034287	0,0006171	0,0043913	0,0028975	0,0066591	0,0008553	0,0035213	0,0033131	0,0024059	0,0012675
Primary battery manufacturing	0,0038853	0,0024724	0,0035029	0,0007033	0,0041023	0,0025083	0,0050326	0,0006703	0,0042786	0,0034076	0,0025698	0,0013544
Communication and energy wire and cable manufacturing	0,0046200	0,0034934	0,0041991	0,0007013	0,0051532	0,0033983	0,0065048	0,0008668	0,0036425	0,0040212	0,0030232	0,0013968
Wiring device manufacturing	0,0050205	0,0030379	0,0048513	0,0013481	0,0052080	0,0032885	0,0078992	0,0009188	0,0052274	0,0037613	0,0041224	0,0029449
Carbon and graphite product manufacturing	0,0046995	0,0031843	0,0051004	0,0011247	0,0059777	0,0035029	0,0095112	0,0010369	0,0039101	0,0044419	0,0038992	0,0022510
All other miscellaneous electrical equipment and component manufacturing	0,0081800	0,0079253	0,0061088	0,0012694	0,0095806	0,0066618	0,0168370	0,0026604	0,0036092	0,0072598	0,0048458	0,0025500
Automobile manufacturing	0,0053637	0,0027196	0,0041598	0,0007186	0,0049819	0,0036707	0,0046579	0,0009521	0,0031089	0,0041180	0,0030999	0,0013945
Light truck and utility vehicle manufacturing	0,0057386	0,0029191	0,0045210	0,0007925	0,0055753	0,0042749	0,0052947	0,0011068	0,0030314	0,0042968	0,0033017	0,0015715
Heavy duty truck manufacturing	0,0057996	0,0031802	0,0065529	0,0018348	0,0057897	0,0041212	0,0072425	0,0010705	0,0030653	0,0046638	0,0057203	0,0027163
Motor vehicle body manufacturing	0,0074056	0,0059067	0,0053395	0,0009667	0,0074282	0,0045622	0,0124076	0,0012482	0,0034141	0,0061037	0,0039669	0,0051772
Truck trailer manufacturing	0,0055697	0,0043105	0,0049909	0,0010296	0,0070036	0,0040101	0,0073501	0,0010471	0,0038475	0,0058365	0,0038847	0,0022885
Motor home manufacturing	0,0080833	0,0031435	0,0054320	0,0016001	0,0070964	0,0039698	0,0098638	0,0010744	0,0029859	0,0054861	0,0044039	0,0036167
Travel trailer and camper manufacturing	0,0074066	0,0068970	0,0069105	0,0019014	0,0066478	0,0040675	0,0158402	0,0011274	0,0042995	0,0059815	0,0061067	0,0030536
Motor vehicle gasoline engine and engine parts manufacturing	0,0074198	0,0043220	0,0063917	0,0014912	0,0071671	0,0049244	0,0073179	0,0013261	0,0043824	0,0057885	0,0050119	0,0025317
Motor vehicle electrical and electronic equipment manufacturing	0,0079591	0,0073052	0,0077844	0,0021048	0,0088972	0,0064697	0,0087455	0,0017779	0,0037792	0,0074127	0,0065450	0,0039441
Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	0,0070970	0,0065278	0,0068812	0,0017003	0,0076113	0,0052743	0,0107679	0,0014470	0,0055842	0,0064632	0,0056601	0,0032267
Motor vehicle transmission and power train parts manufacturing	0,0066160	0,0042879	0,0060670	0,0013709	0,0073701	0,0048979	0,0092354	0,0013407	0,0055472	0,0061656	0,0047253	0,0025644
Motor vehicle seating and interior trim manufacturing	0,0068955	0,0052973	0,0056931	0,0011517	0,0065512	0,0043068	0,0070071	0,0011404	0,0034488	0,0057613	0,0043412	0,0020689
Motor vehicle metal stamping	0,0064629	0,0032691	0,0052065	0,0010205	0,0067435	0,0045128	0,0076872	0,0012391	0,0065719	0,0055339	0,0037907	0,0021498
Other motor vehicle parts manufacturing	0,0067422	0,0055526	0,0062423	0,0015031	0,0069229	0,0046313	0,0078816	0,0012572	0,0047782	0,0059425	0,0051820	0,0027461
Aircraft manufacturing	0,0058245	0,0026868	0,0064206	0,0022475	0,0052664	0,0032119	0,0068168	0,0008870	0,0020368	0,0037836	0,0060411	0,0042642
Aircraft engine and engine parts manufacturing	0,0045173	0,0025206	0,0085389	0,0038688	0,0045190	0,0031127	0,0066477	0,0008580	0,0027278	0,0033759	0,0096726	0,0039742
Other aircraft parts and auxiliary equipment manufacturing	0,0062409	0,0027561	0,0109275	0,0046250	0,0054969	0,0035707	0,0090546	0,0009825	0,0042096	0,0041416	0,0122252	0,0045926
Guided missile and space vehicle manufacturing	0,0034337	0,0013516	0,0098075	0,0047350	0,0029006	0,0020371	0,0040467	0,0005485	0,0013701	0,0023083	0,0112237	0,0022351
Propulsion units and parts for space vehicles and guided missiles	0,0050350	0,0015641	0,0075267	0,0029825	0,0044999	0,0029089	0,0053095	0,0007965	0,0030203	0,0032565	0,0074849	0,0031535
Railroad rolling stock manufacturing	0,0067306	0,0046273	0,0081486	0,0015964	0,0151353	0,0090600	0,0327188	0,0026243	0,0073756	0,0113286	0,0070062	0,0022182

Ship building and repairing	0,0073207	0,0104526	0,0150423	0,0057909	0,0091087	0,0055971	0,0294167	0,0015350	0,0049056	0,0092979	0,0161024	0,0053820
Boat building	0,0127614	0,0083758	0,0060665	0,0011498	0,0091801	0,0051252	0,0076267	0,0014034	0,0038089	0,0072602	0,0045594	0,0019537
Motorcycle, bicycle, and parts manufacturing	0,0063059	0,0033279	0,0063081	0,0016026	0,0070024	0,0042523	0,0224187	0,0011951	0,0039705	0,0060876	0,0052065	0,0025787
Military armored vehicle, tank, and tank component manufacturing	0,0029674	0,0016809	0,0044908	0,0016845	0,0029059	0,0022849	0,0051325	0,0006096	0,0040243	0,0022801	0,0041835	0,0027041
All other transportation equipment manufacturing	0,0078228	0,0035494	0,0053065	0,0011717	0,0064444	0,0040366	0,0072114	0,0010635	0,0041572	0,0046465	0,0041123	0,0023004
Wood kitchen cabinet and countertop manufacturing	0,0092120	0,0151338	0,0057656	0,0006811	0,0082602	0,0048497	0,0107207	0,0012306	0,0057851	0,0106937	0,0044612	0,0016038
Upholstered household furniture manufacturing	0,0094919	0,0059296	0,0053150	0,0006924	0,0070178	0,0044132	0,0070259	0,0011571	0,0029480	0,0067136	0,0031236	0,0050450
Nonupholstered wood household furniture manufacturing	0,0135647	0,0043609	0,0051917	0,0005698	0,0081924	0,0048928	0,0074442	0,0012655	0,0034311	0,0082250	0,0029574	0,0036234
Other household nonupholstered furniture	0,0126484	0,0081860	0,0072046	0,0014151	0,0083319	0,0060096	0,0154908	0,0015513	0,0059203	0,0069099	0,0056783	0,0099509
Institutional furniture manufacturing	0,0107597	0,0113022	0,0062746	0,0008008	0,0087548	0,0057933	0,0091347	0,0015512	0,0041851	0,0087153	0,0044378	0,0016789
Office furniture and custom architectural woodwork and millwork manufacturing	0,0070630	0,0073590	0,0054253	0,0006072	0,0076334	0,0045323	0,0079230	0,0011875	0,0043846	0,0066434	0,0032589	0,0041011
Showcase, partition, shelving, and locker manufacturing	0,0079922	0,0064481	0,0053111	0,0007480	0,0078413	0,0043577	0,0092546	0,0011348	0,0052088	0,0075494	0,0036166	0,0015216
Other furniture related product manufacturing	0,0166251	0,0070673	0,0055125	0,0008121	0,0066948	0,0040842	0,0093147	0,0010518	0,0032686	0,0065556	0,0039578	0,0017383
Surgical and medical instrument manufacturing	0,0090725	0,0058642	0,0052488	0,0008802	0,0128443	0,0070874	0,0071385	0,0019004	0,0028354	0,0071937	0,0038219	0,0069505
Surgical appliance and supplies manufacturing	0,0109989	0,0072515	0,0057704	0,0008143	0,0127484	0,0087763	0,0073839	0,0023547	0,0030002	0,0082694	0,0049055	0,0015139
Dental equipment and supplies manufacturing	0,0130573	0,0072102	0,0060385	0,0008756	0,0134627	0,0092678	0,0204481	0,0025290	0,0029096	0,0100621	0,0040594	0,0017504
Ophthalmic goods manufacturing	0,0330789	0,0039851	0,0069419	0,0006958	0,0087557	0,0073565	0,0052096	0,0018231	0,0029803	0,0076603	0,0030567	0,0013801
Dental laboratories	0,0150691	0,0062920	0,0083136	0,0024287	0,0084067	0,0052318	0,0087086	0,0014464	0,0021599	0,0098751	0,0071672	0,0043325
Jewelry and silverware manufacturing	0,0072634	0,0030041	0,0045661	0,0011986	0,0049489	0,0029281	0,0053155	0,0007631	0,0015478	0,0042088	0,0038317	0,0023886
Sporting and athletic goods manufacturing	0,0246000	0,0110865	0,0069156	0,0009879	0,0116743	0,0064220	0,0089444	0,0017040	0,0040189	0,0094275	0,0044271	0,0078387
Doll, toy, and game manufacturing	0,0169591	0,0071219	0,0073660	0,0014881	0,0116266	0,0060888	0,0106034	0,0016973	0,0037027	0,0084610	0,0053536	0,0089347
Office supplies (except paper) manufacturing	0,0129814	0,0053228	0,0052524	0,0007863	0,0080507	0,0052106	0,0146760	0,0014642	0,0042095	0,0069506	0,0032827	0,0022764
Sign manufacturing	0,0132219	0,0072096	0,0061033	0,0009081	0,0091383	0,0053355	0,0087650	0,0014832	0,0046766	0,0118961	0,0042120	0,0015149
All other miscellaneous manufacturing	0,0112424	0,0092093	0,0071136	0,0015047	0,0127269	0,0070515	0,0128848	0,0019783	0,0047535	0,0097483	0,0054854	0,0030892
Dog and cat food manufacturing	0,0066170	0,0043859	0,0069627	0,0017038	0,0067040	0,0042501	0,0150173	0,0011563	0,0040925	0,0059900	0,0053894	0,0032536
Other animal food manufacturing	0,0070272	0,0043772	0,0066201	0,0008554	0,0084204	0,0044777	0,0119718	0,0011739	0,0044112	0,0075295	0,0040446	0,0014686
Flour milling and malt manufacturing	0,0074235	0,0070933	0,0075855	0,0009138	0,0103749	0,0049888	0,0143013	0,0013721	0,0059769	0,0091757	0,0039550	0,0013309
Wet corn milling	0,0063615	0,0058075	0,0078550	0,0013145	0,0098599	0,0056163	0,0106715	0,0015716	0,0111235	0,0081677	0,0049709	0,0027827
Soybean and other oilseed processing	0,0050058	0,0022861	0,0052693	0,0006183	0,0058558	0,0033663	0,0069941	0,0008297	0,0029729	0,0063518	0,0029448	0,0010008
Fats and oils refining and blending	0,0058401	0,0029801	0,0056179	0,0007006	0,0063726	0,0038234	0,0078596	0,0009268	0,0040076	0,0062757	0,0034081	0,0012847
Breakfast cereal manufacturing	0,0057885	0,0037903	0,0042616	0,0006752	0,0055689	0,0033711	0,0102487	0,0008989	0,0033927	0,0048940	0,0027401	0,0013395
Sugar and confectionery product manufacturing	0,0102762	0,0043772	0,0051843	0,0007159	0,0075390	0,0050218	0,0075555	0,0011896	0,0047844	0,0063866	0,0032744	0,0013164
Frozen food manufacturing	0,0079522	0,0051114	0,0063432	0,0008716	0,0081514	0,0049748	0,0082336	0,0012914	0,0058853	0,0072040	0,0039567	0,0018772
Fruit and vegetable canning, pickling, and drying	0,0098527	0,0078710	0,0058027	0,0007434	0,0082471	0,0047320	0,0116793	0,0012655	0,0052998	0,0077917	0,0037038	0,0013558
Fluid milk and butter manufacturing	0,0072364	0,0041847	0,0063311	0,0006591	0,0073239	0,0038329	0,0061828	0,0009673	0,0036573	0,0085938	0,0033738	0,0012244
Cheese manufacturing	0,0064948	0,0032971	0,0068511	0,0007531	0,0071222	0,0039053	0,0096883	0,0009690	0,0035584	0,0086850	0,0036748	0,0013682
Dry, condensed, and evaporated dairy product manufacturing	0,0062048	0,0041678	0,0064222	0,0007430	0,0072441	0,0039983	0,0093827	0,0010241	0,0037549	0,0078847	0,0034939	0,0014486
Ice cream and frozen dessert manufacturing	0,0107015	0,0042859	0,0058132	0,0006136	0,0062098	0,0050716	0,0095331	0,0013442	0,0053167	0,0059615	0,0030651	0,0011192

Animal (except poultry) slaughtering, rendering, and processing	0,0043057	0,0037349	0,0044754	0,0005246	0,0059281	0,0028589	0,0067367	0,0007736	0,0028840	0,0049812	0,0023786	0,0008209
Poultry processing	0,0068124	0,0039301	0,0056433	0,0007046	0,0097476	0,0040891	0,0069977	0,0010939	0,0060352	0,0080682	0,0035851	0,0011176
Seafood product preparation and packaging	0,0052873	0,0079949	0,0043455	0,0005132	0,0061267	0,0042280	0,0213072	0,0012029	0,0030546	0,0056622	0,0023742	0,0007669
Bread and bakery product manufacturing	0,0091748	0,0148770	0,0061746	0,0010049	0,0098972	0,0054068	0,0099856	0,0014939	0,0042319	0,0093889	0,0043573	0,0019436
Cookie, cracker, pasta, and tortilla manufacturing	0,0078500	0,0094809	0,0058894	0,0007675	0,0080195	0,0046837	0,0116406	0,0012297	0,0042485	0,0072780	0,0040074	0,0017603
Snack food manufacturing	0,0077799	0,0028474	0,0042655	0,0006454	0,0052617	0,0033465	0,0075570	0,0008837	0,0031409	0,0046004	0,0027479	0,0016216
Coffee and tea manufacturing	0,0082386	0,0099396	0,0053147	0,0007157	0,0078695	0,0045046	0,0249904	0,0012077	0,0033997	0,0072878	0,0035301	0,0018196
Flavoring syrup and concentrate manufacturing	0,0053280	0,0015465	0,0026966	0,0003764	0,0042080	0,0023559	0,0032926	0,0006791	0,0030259	0,0029608	0,0024722	0,0007858
Seasoning and dressing manufacturing	0,0090537	0,0071357	0,0054089	0,0007809	0,0075493	0,0048210	0,0144359	0,0012781	0,0045184	0,0067896	0,0036388	0,0017589
All other food manufacturing	0,0095348	0,0069997	0,0063942	0,0010726	0,0081298	0,0047603	0,0102234	0,0012254	0,0064834	0,0078092	0,0043990	0,0022621
Soft drink and ice manufacturing	0,0075614	0,0074911	0,0061279	0,0012509	0,0085388	0,0048228	0,0119602	0,0013990	0,0056440	0,0075216	0,0053426	0,0019269
Breweries	0,0061084	0,0040272	0,0047194	0,0007328	0,0064172	0,0042187	0,0055294	0,0011861	0,0053724	0,0054421	0,0030775	0,0010336
Wineries	0,0130848	0,0040989	0,0061081	0,0010663	0,0096415	0,0063837	0,0113429	0,0017975	0,0065794	0,0089029	0,0044785	0,0014942
Distilleries	0,0066187	0,0014289	0,0034675	0,0003064	0,0032480	0,0020917	0,0027045	0,0005757	0,0018495	0,0035960	0,0014265	0,0005424
Tobacco product manufacturing	0,0031187	0,0009895	0,0020274	0,0002364	0,0031151	0,0038285	0,0021822	0,0010262	0,0010298	0,0020488	0,0012773	0,0003604
Fiber, yarn, and thread mills	0,0061667	0,0063797	0,0049948	0,0007948	0,0070761	0,0036475	0,0069915	0,0010449	0,0046314	0,0063178	0,0032481	0,0015599
Fabric mills	0,0081014	0,0075501	0,0069738	0,0016707	0,0084320	0,0050256	0,0142058	0,0014377	0,0053768	0,0070387	0,0054065	0,0020736
Textile and fabric finishing and fabric coating mills	0,0078557	0,0077087	0,0065990	0,0014996	0,0087978	0,0044487	0,0112466	0,0012633	0,0070168	0,0072806	0,0051574	0,0029179
Carpet and rug mills	0,0058557	0,0038598	0,0047105	0,0007397	0,0065886	0,0036502	0,0071147	0,0010151	0,0053211	0,0057377	0,0030234	0,0012430
Curtain and linen mills	0,0074480	0,0056136	0,0050881	0,0008257	0,0059785	0,0037614	0,0095291	0,0009936	0,0037822	0,0059020	0,0030808	0,0020480
Other textile product mills	0,0112660	0,0076829	0,0065600	0,0008598	0,0077116	0,0041891	0,0104629	0,0011248	0,0044700	0,0072898	0,0035971	0,0020788
Apparel manufacturing	0,0108778	0,0052911	0,0096527	0,0041897	0,0078201	0,0044959	0,0161644	0,0012275	0,0028947	0,0068222	0,0119754	0,0052830
Leather and allied product manufacturing	0,0129841	0,0066622	0,0096923	0,0016436	0,0089499	0,0057800	0,0193881	0,0015512	0,0039487	0,0076325	0,0057738	0,0043873
Pulp mills	0,0050868	0,0034348	0,0072584	0,0019310	0,0087579	0,0050437	0,0135059	0,0014307	0,0050032	0,0077177	0,0071846	0,0046174
Paper mills	0,0060385	0,0029197	0,0058585	0,0012767	0,0066991	0,0045309	0,0140462	0,0012948	0,0058005	0,0055209	0,0045707	0,0027738
Paperboard mills	0,0052957	0,0029243	0,0058940	0,0011918	0,0073034	0,0042153	0,0142049	0,0012359	0,0077768	0,0056670	0,0043097	0,0025190
Paperboard container manufacturing	0,0066283	0,0034611	0,0064738	0,0011890	0,0085878	0,0046766	0,0186020	0,0013221	0,0051371	0,0079517	0,0051877	0,0026719
Paper bag and coated and treated paper manufacturing	0,0058613	0,0032632	0,0056763	0,0010038	0,0069395	0,0040337	0,0115608	0,0011325	0,0045896	0,0062054	0,0040173	0,0021613
Stationery product manufacturing	0,0075216	0,0035779	0,0066776	0,0010087	0,0069486	0,0041695	0,0119742	0,0011210	0,0046799	0,0068301	0,0041763	0,0025773
Sanitary paper product manufacturing	0,0045547	0,0028589	0,0040571	0,0007852	0,0059616	0,0030579	0,0079521	0,0008673	0,0031645	0,0051823	0,0030920	0,0015281
All other converted paper product manufacturing	0,0084406	0,0031024	0,0064578	0,0013575	0,0082366	0,0045996	0,0126124	0,0012477	0,0059024	0,0080524	0,0051776	0,0029237
Printing	0,0081290	0,0034502	0,0119902	0,0040058	0,0075147	0,0055612	0,0161911	0,0014053	0,0038684	0,0075076	0,0113032	0,0053815
Support activities for printing	0,0071715	0,0022610	0,0163404	0,0069059	0,0063180	0,0039113	0,0175042	0,0010828	0,0025644	0,0058251	0,0174129	0,0062747
Petroleum refineries	0,0010812	0,0007032	0,0012037	0,0001813	0,0018279	0,0009721	0,0029896	0,0006173	0,0012773	0,0014224	0,0007405	0,0003224
Asphalt paving mixture and block manufacturing	0,0037206	0,0030798	0,0040383	0,0003839	0,0052328	0,0028969	0,0074035	0,0009570	0,0024591	0,0044634	0,0019395	0,0006295
Asphalt shingle and coating materials manufacturing	0,0048984	0,0049638	0,0038050	0,0005342	0,0063016	0,0037975	0,0092623	0,0011754	0,0047613	0,0053818	0,0025800	0,0010282
Other petroleum and coal products manufacturing	0,0030686	0,0016743	0,0024584	0,0004150	0,0034652	0,0021568	0,0041237	0,0007347	0,0027965	0,0026822	0,0016146	0,0007323
Petrochemical manufacturing	0,0030929	0,0019319	0,0031307	0,0003992	0,0041581	0,0025901	0,0065336	0,0009081	0,0047373	0,0032620	0,0018904	0,0007501
Industrial gas manufacturing	0,0038294	0,0026839	0,0035664	0,0004627	0,0051356	0,0034942	0,0059406	0,0010373	0,0080810	0,0033870	0,0021499	0,0009004
Synthetic dye and pigment manufacturing	0,0058119	0,0045492	0,0051211	0,0010985	0,0075365	0,0044353	0,0135618	0,0013564	0,0059638	0,0056667	0,0039701	0,0022982
Other basic inorganic chemical manufacturing	0,0047158	0,0049147	0,0056587	0,0013578	0,0069623	0,0044892	0,0143567	0,0013674	0,0057499	0,0053188	0,0046844	0,0026283

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Other basic organic chemical manufacturing	0,0052077	0,0034390	0,0050934	0,0007959	0,0067672	0,0047948	0,0126787	0,0014590	0,0162286	0,0053103	0,0035432	0,0013974
Plastics material and resin manufacturing	0,0054352	0,0037002	0,0045858	0,0008045	0,0070041	0,0040891	0,0092031	0,0012543	0,0081316	0,0049904	0,0034533	0,0014925
Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	0,0060936	0,0035815	0,0052495	0,0010623	0,0070127	0,0045855	0,0098216	0,0013958	0,0060325	0,0053853	0,0039125	0,0019114
Fertilizer manufacturing	0,0048926	0,0045580	0,0066304	0,0017699	0,0072951	0,0036804	0,0097119	0,0012880	0,0027593	0,0057471	0,0055945	0,0021115
Pesticide and other agricultural chemical manufacturing	0,0056181	0,0022372	0,0035627	0,0005485	0,0055759	0,0039079	0,0056960	0,0011276	0,0053457	0,0040709	0,0023773	0,0012477
Medicinal and botanical manufacturing	0,0065584	0,0015525	0,0042013	0,0007419	0,0052729	0,0043435	0,0036259	0,0011642	0,0055423	0,0038482	0,0029665	0,0010979
Pharmaceutical preparation manufacturing	0,0136800	0,0017442	0,0044277	0,0004775	0,0086871	0,0091021	0,0031562	0,0023030	0,0032925	0,0047842	0,0025944	0,0008141
In-vitro diagnostic substance manufacturing	0,0118472	0,0123203	0,0073625	0,0015454	0,0125547	0,0125001	0,0079981	0,0034824	0,0035136	0,0092323	0,0063006	0,0017216
Biological product (except diagnostic) manufacturing	0,0045278	0,0011788	0,0029020	0,0003656	0,0035204	0,0050099	0,0021482	0,0013107	0,0025597	0,0025305	0,0019122	0,0006728
Paint and coating manufacturing	0,0068633	0,0043582	0,0046859	0,0008486	0,0074416	0,0047367	0,0074412	0,0013818	0,0050217	0,0059681	0,0033729	0,0011670
Adhesive manufacturing	0,0070544	0,0052531	0,0060628	0,0014737	0,0078574	0,0050847	0,0157946	0,0015207	0,0065205	0,0063530	0,0051259	0,0025463
Soap and cleaning compound manufacturing	0,0051466	0,0026486	0,0037238	0,0006378	0,0058990	0,0043736	0,0056948	0,0011997	0,0031044	0,0048452	0,0028200	0,0013063
Toilet preparation manufacturing	0,0122526	0,0021767	0,0041084	0,0006327	0,0079201	0,0044147	0,0046904	0,0012184	0,0025118	0,0045203	0,0025633	0,0016096
Printing ink manufacturing	0,0076080	0,0027284	0,0049383	0,0008441	0,0075363	0,0060119	0,0081995	0,0017591	0,0036710	0,0061923	0,0033891	0,0020054
All other chemical product and preparation manufacturing	0,0082192	0,0047950	0,0056053	0,0008852	0,0093182	0,0067124	0,0090916	0,0019276	0,0056211	0,0071224	0,0038926	0,0012568
Plastics packaging materials and unlaminated film and sheet manufacturing	0,0056373	0,0082311	0,0051455	0,0009980	0,0073605	0,0039435	0,0101027	0,0011117	0,0053640	0,0061679	0,0043651	0,0023032
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	0,0055948	0,0075916	0,0062500	0,0017263	0,0068735	0,0037536	0,0097073	0,0010570	0,0051569	0,0059224	0,0053984	0,0025836
Laminated plastics plate, sheet (except packaging), and shape manufacturing	0,0058895	0,0046720	0,0045437	0,0008865	0,0053209	0,0031582	0,0081891	0,0008785	0,0044679	0,0045680	0,0033132	0,0020984
Polystyrene foam product manufacturing	0,0057218	0,0036862	0,0076586	0,0007994	0,0059919	0,0056745	0,0091289	0,0016349	0,0048208	0,0050737	0,0084430	0,0017154
Urethane and other foam product (except polystyrene) manufacturing	0,0057343	0,0087221	0,0049056	0,0008100	0,0068560	0,0039650	0,0104882	0,0011109	0,0044122	0,0061681	0,0037816	0,0019436
Plastics bottle manufacturing	0,0046157	0,0035953	0,0045279	0,0006390	0,0066877	0,0035331	0,0183666	0,0010373	0,0044135	0,0057030	0,0029663	0,0011802
Other plastics product manufacturing	0,0081872	0,0105806	0,0059714	0,0010625	0,0089548	0,0048900	0,0114642	0,0013170	0,0056040	0,0085225	0,0046880	0,0026834
Tire manufacturing	0,0059744	0,0062131	0,0047471	0,0007182	0,0062270	0,0040604	0,0079537	0,0011195	0,0051497	0,0065018	0,0034266	0,0018111
Rubber and plastics hoses and belting manufacturing	0,0058342	0,0086520	0,0056629	0,0012963	0,0065031	0,0038789	0,0172847	0,0010692	0,0041152	0,0058648	0,0047273	0,0026296
Other rubber product manufacturing	0,0067085	0,0080774	0,0056804	0,0011760	0,0079957	0,0042868	0,0143507	0,0011714	0,0048598	0,0066278	0,0043829	0,0028307

* (1) Advertising, Public Relations, and Related Services, (2) Other Professional, Scientific, and Technical Services, (3) Employment Services, (4) Facilities Support Services, (5) Legal Services, (6) Management Consulting Services, (7) Architectural, Engineering, and Related Services, (8) Environmental Consulting Services, (9) Waste Management and Remediation Services, (10) Accounting, Tax Preparation, Bookkeeping & Payroll Services, (11) Business Support Services, (12) Specialized Design Services

Table 8: Weights of Potential Client Firms per Sector