This is to certify that the

thesis entitled

FOREIGN DIRECT INVESTMENT IN THE U.S. SERVICE SECTOR, 1977-1988

presented by

King Chiu Chan

has been accepted towards fulfillment
of the requirements for
MA degree in Geography and Urban Studies Programs

Sharmistha Bagchi-Sen
Major professor

Date 8-30-93

FOREIGN DIRECT INVESTMENT IN THE U.S. SERVICE SECTOR, 1977-1988

By

King Chiu Chan

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirement
for the degree of

MASTER OF ARTS

Department of Geography and Urban Affairs Programs

1993

ABSTRACT

FOREIGN DIRECT INVESTMENT IN THE U.S. SERVICE SECTOR, 1977-1988.

By

King Chiu Chan

Much of the expansion in foreign direct investment (FDI) in the United States during the 1980s is a direct result of the growth of FDI in services. As a result, employment in the U.S. affiliates of foreign service firms increased 1.2 million during the period 1977-1988. This paper studies the location patterns of FDI in wholesale and retail trade and finance, insurance and real estate (FIRE) - the two major service sectors receiving FDI. The location analysis of FDI in wholesale and retail trade is conducted at the state level for the period 1977-1982 and 1983-1988. A regression model is developed to examine the locational association of FDI in wholesale and retail sector with the domestic wholesale and retail sector, the domestic manufacturing and the foreign-owned manufacturing sectors. The location analysis of FDI in FIRE is conducted at the metropolitan level for the period 1981-1983 and 1985-1988. The association between the location of FDI in FIRE and domestic FIRE employment is examined using a regression model.

TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

Table

CHAPTER 1

INTRODUCTION

Foreign direct investment (FDI) in services in the United States has attracted considerable attention following its rapid growth in the 1980s. The literature on FDI in the U.S. service sector has concentrated mostly on its determinants (Baer, 1990; De Witt, 1987; Dunning and Norman, 1987; Exstein, 1991; Helsey and Levi, 1989; Hultman and McGee, 1989) and little attention has been paid to the spatial and temporal patterns of service FDI in the United States. The purpose of this study is to examine the spatial and temporal patterns of FDI in wholesale and retail trade, and finance, insurance and real estate sectors - the two major recipients of FDI in the United States.

1.1. Trends of FDI in Services

Services embrace a diverse set of activities with a wide range of suppliers and consumers. Several definitions of services exist. However, there is little controversy that service activities include wholesale and retail trade, transportation, communications, banking, finance, insurance, data services, professional services, community services (including education and health services) and personal services (such as repair or laundry). Service activities have certain characteristics in common, that is, most services are intangible and non-storable in nature and are produced and consumed at the same place (Gray, 1987; Grubal, 1985; Hill, 1977; Nusbaumer,

1987; Sampson and Shape, 1985; Shelp, 1981). Although the quality and variety of services vary more than that of goods, the demand for services at a given level of income is likely to be less heterogenous. This characteristic helps to explain the current trend toward the globalization of some services such as wholesale and retail trade, investment banking, insurance, hotels, advertising, and transportation.

Service activities may be delivered to foreign markets through a variety of modes. Services such as accounting, advertising, investment banking and brokerage, engineering, insurance, wholesale and retail trade are sold abroad through foreign affiliates rather than through exports. Exports of services prevail in travel, education, and legal services. Both exports and FDI appear to be important in transportation, communications, construction, health, information, consulting and software. The intangible and non-storable nature of services suggest that FDI would be the predominant mode for delivering services to customers abroad. Sectorally, "...in most home and host countries..., the dominant positions are occupied by FDI in finance-related services (banking, insurance, and other financial services) and in trade-related services (wholesale and retail trade and marketing)" (UNCTC, 1989a, p.20).

During the 1980s, FDI in services has become the most dynamic part of FDI growth in general. FDI in services constitutes approximately 50 to 60 percent of the current worldwide flows of FDI. This share represents a significant increase from the

1970s, when approximately a quarter of the world's total FDI flows was in services. During the first half of the 1980s, more than half of total investment flows of about $50 billion annually were in the services sector, of which no less than two third were in finance- and trade-related activities. The rapid increase of FDI in services is part and parcel of the general process of the internationalization of business activities. The international transactions of industrial activities through trade and FDI required and increasingly relied on supporting services such as wholesale and retail trade, finance, accounting, advertising etc. As producers globalized, their service suppliers have followed. In addition, service transnational corporations (TNCs) have followed industrial TNCs abroad and gained their experience of operating in international markets. As a consequence, service FDI has been expanding more rapidly than FDI in other sectors throughout the last decade.

Trends in the inward flow of FDI show that the five major investing countries - France, Germany, Japan, the United Kingdom, and the United States - are also the largest recipients of FDI inflow (UNCTC, 1989b). The share of total inward FDI flow into these five countries increased from 53 percent in 1981-1983 to 57 percent in 1984-1988. Inward FDI in services have grown considerably in more developed countries mirroring the growth of the outward flow of FDI (Table 1 and Table 2). By the mid-1980s, services accounted for about half of the inward flow of FDI in the United States and Germany.

Table 1: Sectoral distribution of FDI outflow for five major home countries, 1981-1984 and 1985-1989 (millions of national currency and percentage)

Country	1981-1984	1985-1989	1981-1984	1985-1989
	Average annual flows		Percentage share	
United States[1]				
Services	5981	10289	52	57
Non-services	5435	7804	48	43
Total	11416	18093	100	100
France				
Services	8031	29213	41	49
Non-services	11468	30790	59	51
Total	19498	60004	100	100
Japan[2]				
Services	5280	26723	61	73
Non-services	3448	9770	39	27
Total	8727	36493	100	100
United Kingdom[3]				
Services	1396	5699[4]	35	38
Non-services	2650	9360	65	62
Total	4046	15059	100	100
Germany[5]				
Services	8415	6160[4]	55	64
Non-services	6865	3455	45	36
Total	15280	9615	100	100

Source: United Nations Center for Transnational Corporations, 1991, pp.16.

1. Excluding outflows to the finance (except banking), insurance and real estate sectors of the Netherlands Antilles. Data for 1985-1989 exclude currency translation adjustments. Other industries have been broken into services and non-services. The petroleum industry, a portion of which includes services (for instance, trading activities) is included in the non-services category.
2. In U.S. dollars.
3. Data prior to 1984 exclude investments by oil companies.
4. Covers 1985-1988.
5. Calculated from changes in outward stocks between consecutive years.

Table 2: Inward FDI in services, selected host countries.
(value and percentage)

Country and currency	Year	Total FDI	FDI in services	Share of services in total FDI
France	1980	89.7	33.1	37
(Billions of Francs)	1985	129.0	81.7	63
Germany	1974	78.9	26.3	33
(Billions of Deutche Marks)	1980	93.9	36.4	39
	1985	112.8	50.1	44
	1986	119.1	54.9	46
Japan	1975	1.5	0.3	18
(Billions of Dollars)	1980	2.9	0.7	22
	1983	4.9	1.2	25
	1986	7.0	2.0	29
United Kingdom	1971	5.6	0.6	11
(Billions of Pounds)	1981	30.0	6.0	20
	1984	38.5	13.3	35
United States	1974	26.5	11.5	43
(Billions of Dollars)	1980	83.0	37.7	45
	1985	182.9	92.2	50
	1986	209.3	111.2	53

Source: United Nations Center for Transnational Corporations, 1989a, Table 1.4, pp.14.

The United States is now the most dominant destination for FDI, receiving approximately 40 percent of the flow generated outside its boundaries. The major providers of investment flow to the United States during the 1980s were Canada, Japan and Germany. In 1990, FDI in United States reached $403.7 million, in which the largest investing sector was services ($185.6 million). The predominance of FDI in the U.S. service sector has contributed to a rapid growth in direct investment in the United States. The role of direct investment is considered to be important in the economic restructuring process in the United States (Connaughton and Madsen, 1990; Goe, 1991; Noyelle, 1983). Furthermore, the potential role of FDI in services could affect technology transfer (embodied in plant and equipment or 'hard technology' and in the form of knowledge and skills or 'soft technology'), level of employment, trade patterns, and linkages with other economic sectors within the United States (UNCTC, 1989). The following section discusses why firms invest directly rather than export services to the United States.

1.2. Determinants of FDI in Services

The pioneer work in understanding foreign direct investment (FDI) is Stephen Hymer's analysis of the growing impact of U.S. direct investment in Canada and Western Europe (Hymer, 1976). In order to analyze the impact of FDI, it was necessary to understand how it was possible for U.S. firms to compete successfully abroad with the indigenous firms. According to Hymer, two conditions have to be fulfilled for the existence of FDI: (1) foreign firms must possess a countervailing

advantage over the local firms, and (2) the market for the sale of this advantage must be imperfect.

Hymer (1976) suggested that FDI could occur if the investing firm possessed a particular advantage over indigenous firms. In his view, indigenous firms have a better understanding of the local business environment, the nature of local markets, business customs and legislation. In contrast, foreign firms lack such knowledge, at least initially. Therefore, transnational corporation (TNC) must possess some compensating advantages in order to compete in the overseas market. Such advantages are considered to be technology or knowledge (intangible asset), the ability of firms to differentiate their products by quality or variety, and to create a distinctive brand image or trade mark (Caves, 1974; Johnson, 1970; Magee, 1977).

Another question considered by Hymer was why U.S. managers did not transfer technology by licensing to indigenous firms. Hymer's answer was that the market for knowledge was not perfectly competitive. However, Hymer did not clearly distinguish between various types of market imperfections. Kindleberger (1969) later suggested the following classification of market imperfections: imperfections in goods markets, imperfections in factor markets, scale economies, and government-imposed disruption. The Hymer-Kindleberger school of thought found its roots in the traditional theory of the market; it dealt with market imperfections in a partial equilibrium setting and emphasized the monopolistic nature of TNCs.

Johnson (1970) attempted to go beyond the Hymer-Kindleberger framework by investigating the welfare implications of the international transfer of knowledge. Johnson placed the FDI issue "...in a broader and more fundamental perspective by relating it to the welfare economics of technological and managerial knowledge as a factor of production" (Johnson, 1970, p.36). Although the cost of producing knowledge is very high, the cost in transferring the knowledge is relatively lower. Therefore, it is profitable for a firm to set up a subsidiary abroad by transferring knowledge from the headquarters.

Hymer and Rowthorn (1970), Knickerbocker (1973) and Vernon (1974) argued that the extent of FDI depended on the form of oligopolistic interdependence among existing firms. In a oligopolistic competition, firms recognize their interdependence with their rivals but lack sufficient mutual understanding to co-ordinate their activities. They are, therefore, likely to adopt simple patterns of imitative behaviors; that is, to follow the leader. For example, the price leader raises the price, and others follow; another may expand capacity, and the rivals imitate. Knickerbocker (1973) suggested that this "follow the leader" behavior could occur in FDI. For instance, rival A establishes a subsidiary in the United States. If the FDI of the first-mover proves successful, rivals B and C are likely to undertake FDI in the United States.

Others including Brown (1976), Buckley and Casson (1976), Hennart (1982), McManus (1972), and Swedenborg (1979), used the internalization approach in explaining FDI. These writers believe that the transaction cost incurred in intermediate product markets could be reduced by internalizing these markets within the firm. Since the intermediate product markets, including marketing, research and development (R & D), and training of labor are difficult to organize due to their imperfections, a firm may prefer to bring these activities under common ownership and control through FDI (Buckley and Casson, 1976). An example is the internalization of knowledge. Many firms, especially in high-technology industries, spend a significant portion of investment on research and development. To ensure a satisfactory return on such investment, firms have a strong incentive to retain the technology within their own production facilities rather than sell or lease it to other firms overseas (Magee, 1976). Thus, there is a reason for believing that internalization of the knowledge market will generate a high degree of multinationality among firms. Because knowledge is a public good which is easily transmitted across national boundaries, its exploitation is logically an international operation. Therefore, "...unless comparative advantage or other factors restrict production to a single country, internalization of knowledge will require each firm to operate a network of plants on a world-wide basis" (Buckley and Casson, 1976, p.45). Firms must not only possess superior resources as in Hymer's argument, they should also have the desire and ability to internalize the advantages which trigger off their FDI.

Dunning proposed the eclectic paradigm to explain the role of TNCs and the growth of FDI (Dunning, 1979, 1988, 1989). The paradigm incorporates:

> "...the traditional theory of factor endowments which explains how country specific endowments might create the origin of some competitive advantages and where these advantages are exploited, and the theory of economic organization which explains how such advantages become the privileged property of firms" (Dunning, 1988, p.57).

The greater the competitive advantages of firms over the others, the more they are willing to combine these advantages with foreign endowments. Moreover, the greater the transaction costs in intermediate product markets, the greater the incentive for firms to bypass them by internalizing the activities under common ownership.

According to the eclectic paradigm, the configuration of value-adding activities undertaken by TNCs outside their national boundaries are governed by three variables - ownership-specific advantages of TNCs, location-specific advantages of countries, and market internalization advantages. The configuration of these three advantages and the response to them by firms varies according to industry, country and region, and firm-specific characteristics. The configuration also varies over time. Change in technology and the entrepreneurial and economic development may affect the competitive position of corporations and the location of their value-adding activities.

Ownership-specific advantages of TNCs refer to the extent and nature of the technological, managerial and marketing advantages of TNCs vis-a-vis indigenous firms in the country in which they are producing. The principal competitive

advantages possessed by TNCs are the ability to create and sustain a successful brand name, the capability of TNCs to monitor quality, economies of scope, economies of scale and specialization, availability of technology and information, and accessibility to inputs and markets.

Market internalization advantages are the advantages of controlling and co-ordinating cross-border production within a TNC hierarchy, rather than selling the right to use those advantages to indigenous firms in the country of production. The way in which a TNC internalize its competitive advantages may vary be affected by the nature of the production activity, the organization structure of the firm, and the market conditions specific to the countries engaged in transactions.

Location-specific advantages of countries apply to the benefits of combining ownership-specific advantages with immobile factor endowments in a foreign country to undertake value-adding activities. A variety of factors may influence the location choice of a service TNC. Generally, the size and character of markets, the availability of human and natural resources as well as real wage rates, agglomerative and linkage-related economies of being close to competitors, suppliers and customers, the role of government, and infrastructure provisions exert locational pull toward TNCs.

Dunning's eclectic paradigm has been mostly used to understand the growth of FDI in the service sector. The eclectic paradigm has been adopted in explaining the location of international tourism activities, hotel and restaurants, international banking, and the location of international office activities (Dunning and McQueen, 1982, 1971; Dunning and Norman, 1979; Yannopolous, 1983). The eclectic paradigm emphasizes not only the initiative of foreign firms to engage in international transactions of services, but also the importance of location factors within host countries. Location factors refer to "...those which are available, on the same terms, to all firms whatever their size and nationality, but which are specific in origin to particular locations and have to be used in those locations" (Dunning, 1980, p.9). Service firms possessing ownership-specific advantages usually have a choice of where they engage in value-adding activities. Since most competitive advantages are mobile across national boundaries, the question is where they can be most profitably combined with country-specific endowments.

Some of the location-specific variables which influence FDI in services are listed in Table 3. To what extent are these location variables significant in the United States? While cross-border transport cost is not as important a factor in services as in other production sectors to determine the location choice in the United States, nearness to customers and adapting a service to customer needs become more important. The size and character of U.S. domestic markets, as well as real wages, are also significant in influencing the location of FDI in service industries, especially

Table 3: Factors affecting the location of service transnational corporations.

. Psychic distance (language, cultural, business, customs differences).
. Spatial distribution of natural and created resource endowments and markets.
. Input prices, quality and productivity, e.g. labor, energy, materials, components, and semi-finished goods.
. Economies of centralization of information-intensive activities.
. Artificial barriers (e.g. import controls) to trade in services, particularly government regulations.
. Economic system and policies of government; the societal and institutional framework for resource allocation.

Source: United Nations Center for Transnational Corporations, 1989a, pp.93.

intermediate services and tourist-related activities. The availability of human and national resources in the United States is crucial in business and professional services, restaurants, and medical and educational services. There are also agglomeration and linkage-related economies of being close to competitors, suppliers, and customers. Security and financial companies, foreign exchange, and commodity markets are highly concentrated in major U.S. metropolitan areas, such as Los Angeles, Chicago, and New York. In addition, the role of the Federal Government in influencing the location of service activities is significant. There has been deregulation of FDI in telecommunications, finance, insurance, and real estate which stimulated FDI in these activities. Very often, regulations require a local presence if service activities such as banking, security, insurance, wholesale and retail trade are to be sold in the United States.

Dunning (1989) identified six types of services in which FDI is the predominant delivery mode to foreign markets. These are as follows: (1) those services for which the sales of which are dependent upon the presence of people, goods, or other services in the destination country. These include hotel and most local tourist facilities, restaurants, car rental, construction development, motion picture, real estate, and news agencies; (2) transport facilities; (3) telecommunications and public utility services; (4) warehousing, wholesale and retail services, including repair and maintenance services; (5) most forms of public administration and social and related community services (e.g. libraries); (6) services which require a face-to-

face contact between buyer and seller, such as finance, banking, insurance, and real estate (Dunning, 1989, p.18). Among these services, wholesale and retail trade and finance, insurance and real estate have received nearly two third of FDI in services in the United States during the 1980s. With reference to the eclectic theory, the location pattern of FDI in wholesale and retail trade may vary from that in finance, insurance and real estate since these two types of services are influenced by different configuration of factors (see Table 4). The location choice of FDI in consumption services, especially retailing and trade-related activities is affected by factors such as close contact with suppliers and customers, the need for local sales office and supporting transportation facilities, and adaption to local customer needs. The proximity to customers, suppliers, and competitors are, therefore, important determinants in the location of FDI in trade-related activities. On the other hand, location advantages such as the need for person-to-person contact, government regulations prohibiting direct imports, lower costs of foreign operations, oligopolistic strategies among large firms, and economies of concentration explain FDI in finance, insurance and real estate.

Studies in FDI in the United States mostly addressed the question of why foreign firms are investing in the United States (Coughlin, Terza and Arromdee, 1990; Glickman and Woodward, 1989; Kahley, 1987; O'hUallachain and Reid, 1992; Warf, 1988). Although the eclectic paradigm does not go into detail in explaining the location pattern of service FDI within the host country, the spatial distribution of FDI

Table 4: Ownership, location, and internalization advantages for service FDI

Industry	Ownership (Competitive advantages)	Location (Country advantages)	Internalization (Co-ordinating advantages)
Commercial banking, financial services	. Access to transnational clients, foreign abroad . Professional expertise . Access to international capital and financial markets . Economies of size and scope . Intrinsic value of reserve currencies . Control over transnational computer communication networks	. Person to person contact required . Government regulations . High-value activities often centralized . Lower costs of foreign operations	. Quality control . Economies of scope . Economies of co-ordinating capital flows . Importance of international arbitraging
Insurance	. Reputation of insurer, image (e.g. Lloyds of London) . Economies of scale and scope; sometimes specialized expertise (for example, marine insurance) . Access to transnational clients	. Needs to be in close touch with insured (e.g. life insurance and related services shipping finance . Oligopolistic strategies among larger insurers . Governments prohibit direct imports; regulatory provisions . Economies of concentration (in reinsurance)	. Economies of portfolio risk-spreading . Tacit knowledge . Need for sharing of large scale risks (reinsurance syndication) . Government requirements for local participation
Investment banking (brokerage)	. Reputation and professional skills . Substantial capital base . Knowledge of and interaction with international capital markets . Financial innovations	. Need to be close to clients . Need to be close to international capital/ finance markets, and also main competitors . Availability of skilled labor	. Complex and organic character of services provided . Protection against exchange/political risks . Need to be pursue global investment strategy . Quality control
Trade and distribution	. Products to distribute	. Local markets . Need to be near customers . After-sales servicing	. Need to ensure sales outlets and to protect company's name

Source: Dunning, 1980, Table 1 and United Nations Center for Transnational Corporations, 1989a, pp.99-102.

in services is expected to be affected by the location-specific variables discussed in Table 4. It is expected that the location pattern of FDI in services will resemble the spatial distribution of domestic services.

1.3. Study Objectives

The purpose of this study is to analyze the location pattern of FDI in two major service categories - wholesale and retail trade and finance, insurance and real estate - between 1977 and 1988. First, this study will examine the location pattern of FDI in wholesale and retail trade in association with domestic wholesale and retail sector, and foreign-owned and domestic manufacturing sector in the United States. Then, the analysis will focus on the association between the location pattern of FDI in FIRE and the domestic FIRE sector in the United States. Spatial and temporal variations in these associations will also be estimated. It is expected that these associations will vary from region to region and over time given the temporal variation in the regional economic structure within the United States.

The location analysis of FDI in the wholesale and retail sector is conducted at the state level. The percentage growth rate of employment is used to illustrate the growth of FDI in wholesale and retail sector. The location pattern of domestic wholesale and retail sector, foreign-owned and domestic manufacturing sector are surrogates of supply and demand side factors affecting service location. Foreign wholesale and retail companies tend to follow their domestic competitors for exploring

agglomeration economies. It is expected that the location of FDI in wholesale and retail trade will follow the spatial distribution of domestic wholesale and retail firms. Since the wholesale and retail sector is dominated by retailing - a market oriented industry, proximity to customers and providing service to the local market is considered to be important. Spatial variation in the above association will be examined across the four U.S. Census regions (Northeast, North Central, South, and West) between the period 1977-1982 and 1983-1988. Temporal variation in the above association will be analyzed for the period 1977-1988 to determine whether or not the association between service FDI and its determinants is temporally stable.

The location analysis of FDI in FIRE is conducted at the metropolitan level. Foreign direct investment transaction is used to measure the level of FDI in FIRE. Sixty-three metropolitan areas with a population size over one million as of October 1986 are selected for the study. Metropolitan areas with well-developed localization economies (agglomeration economies, high local income, proximity to clients) act as centers of business innovation and employment growth. It is expected that FDI in FIRE will locate near their domestic counterparts in order to access localization economies. Spatial variation in the location of FDI in FIRE will be examined across four U.S. Census regions for the period 1981-1983 and 1985-1988. Temporal variation in the association will be analyzed to determine whether or not the locational association between FDI in FIRE and domestic FIRE is temporally stable between the two period, 1981-1983 and 1985-1988.

1.4. Research Outline

The next three chapters are organized as follows. The second chapter discusses the determinants and location of service industries in the United States. The topics included in this chapter are: (1) determinants of services growth; (2) the location of services in the United States; and (3) FDI in services in the United States. Chapter three describes the research methodology used in this study. The results of regression models are presented and discussed in this chapter. Finally, chapter four provides the conclusion of this study.

CHAPTER II

DETERMINANTS AND LOCATION OF SERVICE INDUSTRIES IN THE UNITED STATES

Over the past two decades, the service sector has recorded an above average annual growth rate and became the largest sector in the United States (Carey and Franklin, 1991). While the real GNP in the United States increased at an average annual rate of 2.8 percent between 1975 and 1990, the service component increased at a rate of 3.1 percent. During the same period, the share of services in the GNP increased from 51.6 percent in 1975 to 54.0 percent in 1990. A growing literature has focused on the importance of services in U.S. economic restructuring (Beyers, Alvine and Johnson, 1985a, 1985b; Gillis, 1987; Groshen, 1987; Hansen, 1990; Illeris, 1989; Kirn, 1987; Kutscher, 1987; Noyelle and Stanback, 1984; O'hUallachain, 1989; O'hUallachain and Reid, 1991; Ott, 1987; Quinn, 1988; Stabler, Jack and Howe, 1988). Studies on services sector in the United States indicate that the growth in the share of services in GNP has resulted from a combination of both changes in the pattern of demand for services and changes in the supply of factors of services production.

2.1. Determinants of the Growth in the Service Sector

The growth in the demand for a specific service is a function of the growth in consumer income, the growth in intermediate services, changes in business practice,

and innovation in services provision. First, the demand for services has grown because of the growth in demand for consumer services resulting from a rise in real income per capita in the United States. Tschetter (1987) suggested that in the United States "...over the 1972-1985 period, the composition of final demand changed modestly" (Tschetter, 1987, p.33). While the U.S. economy grew 2.6 percent per year during 1972-1985, the expenditures allocated for services expanded rapidly. In 1972, expenditures for durable goods accounted for approximately 8 percent of total GNP, compared with 10 percent in 1985. Expenditures for services accounted for 29 percent of GNP in 1972, and increased to 32 percent in 1985. While the share of consumer spending allocated to goods has declined, the share allocated to services has increased in the 1980s. As income increased, the demand for recreational and cultural services (including motion picture, radio and television broadcasting, entertainment and recreational services), and personal and household services (including laundry and cleaning, social escort services and shopping services) have grown correspondingly. In part, this shift of final demand toward services as a response to higher income reflects a shift in emphasis from quantity to quality of life (Kirn, 1987).

The growth of service consumption, especially the consumption of producer services, is also stimulated by the increasing externalization of service activities from corporate enterprises to independent service firms. Externalization refers to "...a reduction or elimination of the internal provision of indirect production activities by

businesses coupled with the transfer of provision to independent firms who specialize in those activities" (Goe, 1990, p.330). The externalization of service activities is motivated by the desire to reduce costs and the overhead costs for specialized knowledge regarding particular service activities. The specialized knowledge provided by producer service industries is often needed to help business firms adapting more easily to changing economic conditions. Kirn (1987) and O'hUallachain and Reid (1991) suggested that the increased consumption of services by the producers is partly due to firms externalizing service functions that previously had been performed internally. In fact, the externalization of service provides greater flexibility for firms contracting out for service activities. Specialized service firms therefore "... play a buffering role in the economy by facilitating adaptation to the changing conditions and complexities of the global economy" (Goe, 1991, p.330).

Changes in business practice is another reason for the growth of services (Tschetter 1987). Companies are concerned with the inputs that are required to assemble and deliver their products. For example, companies require material inputs such as plastics, steel, glass and packaging materials. They also need service inputs such as transportation, financial, communications, maintenance, and repair. In order to compete in an increasingly complex business environment, firms have expanded their efforts to marketing, distribution and after-sale maintenance. Consequently, these subdivisions create further expansion of the demand for services, especially trade-related and financial services.

Innovation in service provision has been identified as a basis for the expansion of services. Telecommunications, previously based on simple electro-mechanical technology, have become a sophisticated set of activities, and are closely linked to computers, micro-electronics, fibre optics and satellite. Telecommunications are now more widely in demand. Increasing demand for information processing and telecommunications have expanded service employment in operating telecommunication networks (Beyers, 1989; Hepworth 1990; Howells and Green, 1988; Ochel and Wegner, 1988).

On the supply side, the expansion of services could occur through import substitution process, with local supply replacing prior imports (Beyers, 1989). Although most services are inherently non-storable, some services can be imported to U.S. local markets through trade. Importing services prevail in travel, education, legal services, engineering, marketing, and investment consultancy. The competitive advantages of foreign TNCs seeking to establish a local presence in these services are not as great as those of domestic companies. In addition, government regulations exert controls over the extent and form of FDI in strategically sensitive industries such as transportation, telecommunications, and community services. Once the markets of these service industries expand, there is room for foreign competitors to join the market. As a consequence, increasing number of foreign investors in telecommunications brings in more service outputs.

Furthermore, the growing importance of service outputs is based on the observation of a differential rate of labor productivity growth in the services and other production sectors (Fuchs, 1968; Gershuny and Miles, 1983; Kutscher, 1988). Labor productivity growth has grown more slowly in the services sector in comparison to the manufacturing and primary sectors. This difference is a result of difficulties in standardizing the production of many service outputs without significant loss in product quality, and the perceived lower rate of technological advancement in the services sector. With lower than average productivity growth in the services sector, average service production costs and output prices will be higher than those in other production sectors. Given the observation that "...services have an income elasticity of demand greater than unity" (O'hUallachain and Reid, 1991, p.256), as the U.S. economy grows, the share of total expenditures on services will expand. The larger share of services expenditures implies that the profit margin of existing service firms has also been increased. More service companies, therefore, will compete for the surplus profit margins.

The growth in the share of services in the GNP of the United States during the last two decades reflects the effect of both demand and supply-led forces. The growth of services is mainly driven by the size and growth of the U.S. economy. Understanding the location of demand should lead to an explanation of the location of services. The location theories of services and the location factors that characterize the spatial distribution of individual service activity are discussed in next section.

2.2. Theoretical Explanations of the Location of Service Industries

Dunning's electic paradigm provides a theoretical explanation for understanding the growth of FDI in services. The paradigm, however, does not account for the location pattern of service FDI within a host country. Therefore, it is necessary to understand location theories which are used to explain the location and spatial distribution of services. The central place theory has provided a theoretical basis for understanding the location and frequency of services, especially consumer services. One of the limitations is that the central place theory does not make any reference to producer services. Other location theories, such as bid-rent theory, equilibrium models of office locations, have been used to understand the location pattern of producer services.

The central place theory: Christaller (1933) developed the central place theory to account for regularities in the size and spacing of settlements in southern Germany. He found that these regularities were explicit among those settlements which provided goods and services for their own residents as well as for those in the surrounding areas. Such settlements were defined as central places and Christaller identified their relationship by reference to the tertiary services, especially retailing. It is assumed that the suppliers of goods and services make their location decisions on an isotropic plain over which a rural population with equal levels of purchasing power is uniformly distributed. In order to flourish, each firm must establish a market, and the size of the this market will be determined by several factors. First, there must be

a minimum number of potential consumers whom will obtain a service at sufficiently frequent intervals to make a firm viable. Second, each firm must take advantage of economics of scale in the production process. Large service firms, such as department stores and supermarkets, command more extensive markets in order to have sufficient potential customers. Third, market areas will be determined by transportation costs, which comprise delivery cost for the seller and travel costs to the place of consumption of a service for the consumer. For any particular service, there will be a maximum distance which an individual will travel to obtain it. The location of services is, therefore, the result of a minimum size of market or threshold for each firm with the size of the market determined by the above factors.

Services with low market thresholds, such as grocery stores, bars, post offices, and laundries, will occur frequently and tend to be associated with the smallest (lowest-order) settlements. Those with much larger market thresholds, such as hotels, department stores, or jeweller stores will occur less frequently and will be located in fewer settlements. Some of the lower-order settlements will also act as locations for higher-order services, thus creating a hierarchy of settlements in which there is a limited number of centers with full range of retail and consumer services, and a large number of centers with limited number of services. Complex and specialized services are more likely to be found in the largest central places where the service firm can gain access to a market of sufficient size. All these larger central places will incorporate all of the services found in the lower-order central places.

Central place theory is relevant to an interpretation of the location and spatial distribution of consumer services, especially retailing (Berry, 1967; Everson and Fitzgerald, 1969; Johnson, 1964; King, 1962; Marshall, 1969). The theory, however, does not make any references to producer services. In common with consumer services, some producer services are subject to the same hierarchical influences on location frequency. The notions of threshold, market range, and centrality will be relevant in explaining the spatial distribution of producer services. Computer consultants, share brokers, and investment analysts all require extensive market areas to provide their services; therefore, there are relatively few of them. While low-order producer services such as local banking, insurance, and real estate require smaller markets; they are distributed in a greater number of locations. There are, however, other variables such as localization and urbanization economies which affect the location of producer services.

Agglomeration confers economies resulting from locational association between a service firm and a number of similar or totally different production units. The clustering of firms at one location assumes that they will all benefit in a similar way from that agglomeration. By choosing locations near to competitors or to external services, new producers minimize the risk involved in starting up a business. Such risks will be greatest for small firms and will be higher as the distance from their market increases. Large firms will require to be in locations offering a large enough market, so that the combined effect is the promotion of agglomeration in urban

centers. The economies accruing to individual service activities will increase as the size of an agglomeration increases.

Linkages are the key element of service firms to agglomerate. A producer service firm, such as advertising agency, will have a number of different linkages. It will have links with the suppliers of the services that it needs to assemble its own services, such as printers, market researchers, and financial services. Secondly, it will have links with the purchasers of its advertising copy and advice. Thirdly, the advertising agency will have links with other agencies either as a subcontractor or through cooperation. Fourthly, it will have links with the media which carry advertising. Finally, the agency may have links with government which regulate the quality, timing, and content of advertising. The potential to use these linkages is greatest when service firms are located close to their clients, competitors, and suppliers. Agglomerations also create demand for labor (both skilled and non-skilled), public and private transport facilities, and other infra-structures such as telecommunication networks, postal services, electricity and gas supplies.

Equilibrium models of office location: The location of producer services and corporate headquarters in large metropolitan areas is a response to agglomeration economies. Studies have been made to devise intra-urban models of office location in which spatial distribution and agglomeration economies are determined simultaneously (Clapp, 1980, 1983; O'Hara, 1977; Tauchen and Witte, 1983, 1984;). It is assumed

that the location is determined by firms making profit-maximizing decisions which in turn will have an impact on land values. In addition, all firms are located within a central business district (CBD) and only have contacts with other CBD firms. The cost of providing office space is assumed to be increasing over time. Each firm has zero economic profit and the office rent at each location is the marginal cost of providing the floorspace. Tauchen and Witte (1983) addressed the importance of agglomeration by adopting linear curves for the functions describing contact benefit and facility cost. Since firms are assumed to have contacts throughout the CBD, the contact-expense curve rise as a firm moves further from the center, partly because of the higher cost of contact and because of the more limited contact opportunities among firms. The steady increase in cost disadvantage with distance from the center of the CBD means that firms will lower rents as distance increase.

Bid-rent theory: Alonso (1960) also adopted the land rent concept in explaining the location of individual service activities within urban areas. He proposed a model for the location of activities in which they can offset declining revenue and higher operating costs (including transportation costs) by lower site rent at locations increasingly distant from some central point. The bid rent refers to the amount of rent each service firm is willing to pay for competing a production site. The equilibrium location for an activity occurs where the bid rent matches the rent determined by the market at a site.

Alonso hypothesized a perfect market in which all potential users are fully informed about all the available sites. In this hypothetical city, accessibility declines uniformly in all directions, and the utility of firms depends upon accessibility. Bid-rent functions are different for each type of service activity. Some services will obtain more central locations than others because their steeper bid-rent curves will be associated with a willingness to pay more for a central site than services with flatter bid-rent curves. The rent which each service activity is prepared to pay reflects the utility it will receive from occupying the site; the higher the utility, the higher the rent it will be prepared to pay.

The bid-rent theory has an application to the location of producer services. Most producer services are willing to pay high rent for locating their businesses within the CBD of metropolitan areas. Since information and knowledge are the essential elements for the operation of many producer services, their locations can be interpreted within the context of the demand for information, the way it circulates and exchanges. The diffusion of the information available to decision-makers is spatially biased. The majority of corporate decision-makers are likely to seek information from existing contacts near to them. This reinforces the prospects for the growth of producer services at large metropolitan areas because it minimizes the need to identify alternative suppliers. As many corporate headquarters have been clustered around the CBD of large metropolitan areas, the agglomeration creates local markets for producer services such as management consultancy, advertising, insurance, financial

management agencies. As a consequence, many producer service firms offer high land rent for central locations.

2.3. The Location of Service Industries in the United States

Location analyses of services in the United States suggest that services are becoming an important part of the basic sector of metropolitan areas. Service industries are concentrated in large U.S. metropolitan areas (Beyers, Alvine and Johnson, 1985; Clark, 1985; Kirn, 1987). Many fast-growing service industries have been "disproportionately located in the new service-based metropolitan areas in the U.S. Sunbelt, and have been increasingly Sunbelt-oriented during the 1980s" (Wheeler, 1990, p.433). O'hUallachain (1989) suggested that the spatial concentration of many service industries stems from a combination of forces. These forces "include (a) a market penetration effect causing large cities to experience the largest absolute job growth, (b) rapid technological change in products and processes leading to a reassertion of the product life cycle emphasis on agglomeration due to demand for skilled labor, (c) a business climate of government deregulation that has created market uncertainty and increased reliance on external economies of scale, (d) institutional and infrastructure constraints that favor established industry locations, (e) increasing efficiency in communication systems allowing markets to be served at increasing distance, and (f) the emergence of many specialized small service enterprises that rely on external economies generated in large urban areas" (O'hUallachain, 1989, p.34). The process of service agglomeration arises from

localization effects. For many service industries, centralization is a response to rapid technical changes and aimed at reducing the cost of searching for personnel, services, suppliers, and distributors. Finding market niches and new opportunities may also lead to agglomeration of growing services. The delivery cost of inputs to agglomerated producers of services may be lowered if suppliers can more easily identify rapid changing needs, find larger markets for increasingly specialized outputs, and sell new products that require face-to-face contact between buyer and seller.

The treatment of service industries as a homogeneous sector with identical locational pattern is erroneous since the combination of location determinants of each service industry is different. Service industries include a broad range of activities. From the viewpoint of consumption, services might be sold to final consumers (consumer services), or they might be sold to other firms for further value-adding activities (intermediate services).

For consumer services, proximity to customers remains important since the service production normally requires the service producer and service user to be present at the same time and place. Consumer services, especially retail services, tend to follow the distribution of population. The concepts of threshold and range of services from the central place theory are useful in explaining the spatial distribution of retail services. Threshold is the minimum amount of demand needed to ensure the offering of a service. A service in a rural area may serve just the threshold

population, while the same service in a densely populated region may serve many times the threshold population. The range of a service measures the farthest distance which the dispersed population is willing to travel in order to obtain a service. The more expansive the service (e.g. insurance, advertising, engineering consultancy), the greater the willingness of customers to travel longer distance. For more frequently consumed services (e.g. laundry and cleaning, haircut, repair services), the range would be smaller. The location of retail services can be explained by the distribution of households, weighted by purchasing powers. The absence of high-priced service activities in rural regions and corresponding over-concentration in large cities may be explained by reference to central place theory. The sparsely distributed rural population must travel to the closest central place in order to avail itself to these services (Coffey and McRae, 1989; Illeris, 1989).

Studies show that another major category of services - producer services - is mainly a metropolitan phenomenon (Beyers, 1989; Hansen, 1990; Howland, 1991; Kirn, 1987; Noyelle, 1983; O'hUallachain, 1989; O'hUallachain and Reid, 1991; Wheeler, 1988; Warf, 1988). Producer services are defined as those activities which produce intermediate and intangible outputs that are used as inputs by other businesses or by government (Harrington and Lombard, 1989). Examples of producer services include activities, such as finance, insurance and real estate; legal services; transportation and communications; accounting; advertising and marketing; research and development; data processing; and management training (Hansen 1990). Noyelle

(1983) suggested that U.S. cities with strong producer services, especially finance, insurance and real estate, enjoyed favorable growth prospects because future job growth would be concentrated in producer services and because advanced service centers held increasingly greater control over the diffusion of innovation and the flows of investment.

The location of corporate headquarters imposes economies of centralization influence upon the location of producer services (Coffey and Polese, 1987; Marshall, et.al., 1987; Noyelle and Stanback, et.al., 1981; Van Dinteren, 1987; Wheeler, 1988). Headquarters and regional offices of large corporations have a high propensity to purchase producer services. As corporate head- quarters tend to be highly concentrated in a small number of U.S. large metropolitan areas, the demand for these intermediate services will be similarly concentrated.

Coffey and Polese (1987) proposed a location model which posited that "...a producer service firm will seek to minimize a production cost function involving three factor inputs: complementary intermediate demand services, human resources, and the cost of delivering its output" (Coffey and Polese, 1987, p.72). Each producer service establishment is subjected to three locational pulls: toward urban centers characterized by the availability of diversified complementary producer services; toward centers with specialized pools of skilled labor; and toward the market for its output. Certain locations, such as New York, Chicago, and Los Angeles may combine two or more

of these attributes and thus will enjoy a major advantage in attracting and retaining producer service firms.

Other factors varying from place to place may affect the location of producer services. Infrastructure such as transportation and communications networks; regional and local economic policies; input costs such as wages; the availability of skilled labor are not distributed equally across space. In addition, independent enterprises and local governments form distinctive markets for producer services (O'hUallachain and Reid 1991). Goe (1991) demonstrated that the agglomeration of producer service firms within metropolitan areas depended upon local market linkages between producer service firms and corporate offices which required close physical proximity. The findings from Goe's survey suggested that:

> "...the primary role of producer service industries in each metropolitan area is to provide their products of labor to other industries... Additionally, producer services industries in each metropolitan area are characterized by a dual structure: (1) a larger tier of establishment that is primarily dependent upon local markets and linked into local corporate complex agglomerations; and (2) a smaller tier of establishment that is primarily dependent upon export markets and linked into the broader spatial division of labor" (Goe, 1991, p.328).

Moreover, the high wage paid to workers in government-related services has an income effect that induces additional growth of services. Specialized services, such as political analysts, legal services and consultancy, and welfare services tend to be agglomerated near government offices.

Wheeler (1988) argued that dramatic growth of services occurred in large metropolitan areas such as New York, Chicago, and Los Angeles. The concentration of intermediate services in a few large cities enables the transaction costs associated with the production and delivery of such services to be minimized. In particular, it is the cost of maintaining face-to-face contact between the producers and the consumers of these services that is the most expensive element of producer services, and the expanse can be mostly reduced in spatial agglomerations (O'hUallachain, 1989). Large urban centers such as New York therefore continue to reap the rewards of comparative advantage for services location (Warf, 1988).

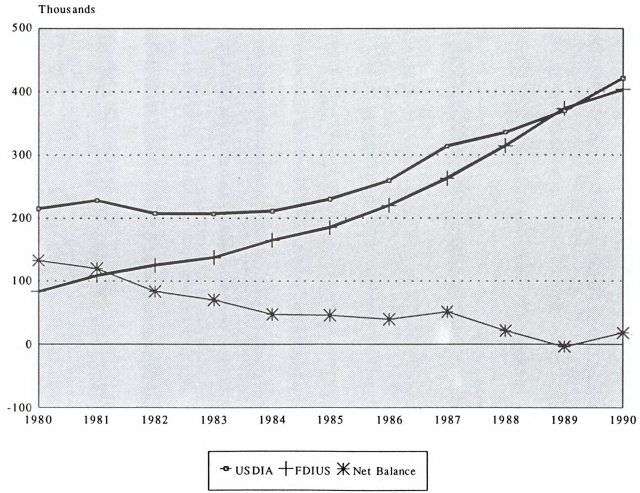
New information and communications technologies have contributed to the growing centralization of office-based activities in a small number of metropolitan areas, while at the same time permitting the decentralization of back office activities into areas characterized by lower factor costs (Hepworth, 1987; Langdale, 1989; Wheeler and Mitchelson, 1989;). Howlands (1991) described a clear pattern of service decentralization to the suburban counties of metropolitan areas and the medium-size cities. Although producer services are decentralizing, they are not following manufacturing jobs to rural communities. Beyers (1991) argued that there was no strong evidence of downfiltering in the distribution of producer service employment. Although producer services became a more important component of the medium size cities and large suburban communities, the share of the total producer service employment found in non-metropolitan areas remained constant.

In summary, the growth of services in the United States is mainly driven by the size and the growth of the U.S. economy. The location of consumer services, especially retail services are mainly influenced by the proximity to local markets, competitors, and suppliers. Localization becomes the dominant factor that determines the spatial concentration of producer services, specifically finance, insurance and real estate industries among U.S. metropolitan areas. Given the fact that the location choices of FDI in services require the adaption to local customer needs and the demand for services is less heterogeneous within a local economy, the foreign service firms are expected to follow the location pattern of domestic service firms within the United States. The following section describes the location of FDI in services in the United States. Service employment in U.S. affiliates of foreign firms is used as an indicator of the level of FDI in services.

2.4. FDI in the Service Sector in the United States

The United States has become the leading recipient of FDI during the 1980s, receiving of nearly 60 percent of all FDI flows from other countries (UNCTC, 1989a). By far the largest host country for service FDI is also the United States, with over $185 million of inward stock in services in 1990. Inward flows of FDI to the United States (FDIUS) increased three times from $83 million in 1980 to $403 million in 1990 (USDOC, 1992). The rapid increase of FDIUS had brought down the net balance between FDIUS and the outward flows of FDI from the United States (USDIA) from $132 million in 1980 to $17.8 million in 1990 (Figure 1). Statistics

Figure 1: U.S. Direct Investment Abroad and Foreign Direct Investment in the U.S., 1980-1990.



A historical-cost basis, in million dollars.

on the composition of FDIUS show that inward FDI in services remains the dominant component of FDIUS (Table 5). The percentage share of service FDI in the United States increased gradually from 40.7 percent in 1981 to 46.0 percent in 1990, compared to the second largest sector - manufacturing, having 37.3 percent in 1980 and 39.6 percent in 1990. The difference between FDI in services and in manufacturing was widened during 1984 to 1988 when FDIUS experienced rapid growth (Figure 2).

Statistics on the composition of FDI in services in the United States illustrate that the dominant positions are occupied by FDI in finance-related services (finance, insurance and real estate) and trade-related services (wholesale and retail trade). More than 60 percent of the transactions during 1981-1983 and over 50 percent between 1985 and 1988 are in finance, insurance and real estate (FIRE) and wholesale and retail trade (see Table 6). Within the wholesale and retail trade category, most of the transactions are in retail trade. The FDI transactions in FIRE and wholesale and retail trade vary across regions during 1981 to 1988. Northeast region favors FDI in both FIRE and wholesale and retail trade. Most FDI in FIRE have the tendency to gravitate toward the large metropolitan areas such as New York for agglomeration economies.

Table 5: Foreign direct investment in the United States, 1981-1990.
(Historical costs)

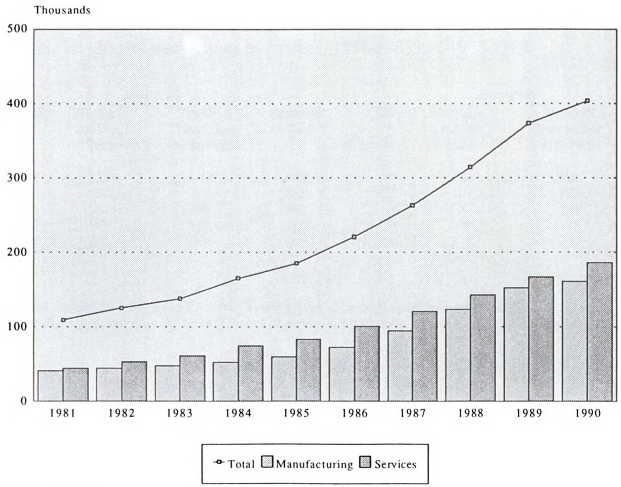
Year	FDI in services1	%	FDI in Manufacturing2	%	Total FDI
1981	44249	40.7	40533	37.3	108714
1982	53057	42.6	44065	35.3	124677
1983	60780	44.3	47665	34.8	137061
1984	73861	44.9	51802	31.5	164583
1985	82704	44.8	59584	32.5	184615
1986	100410	45.6	71963	32.6	220414
1987	120393	45.7	93865	35.6	263394
1988	142515	45.3	122582	38.9	314754
1989	166121	44.4	151820	40.6	373763
1990	185595	46.0	159998	39.6	403735

Source: Calculated from the Bureau of Economic Analysis, Survey of Current Business, 1981-1990.

1. Services include production activities from SIC 40 to 89.
2. Manufacturing activities include SIC 20-39.

Figure 2: FDIUS in Manufacturing and Services

All Countries



A historical-cost basis in million dollars.

Table 6: Foreign direct investment transactions in services, 1981-1983 and 1985-1988.

Region[1]	1981-1983 FIRE	Wholesale and Retail Trade	Total FDI Transactions in Services	Combined % Share[2]	1985-1988 FIRE	Wholesale and Retail Trade	Total FDI Transactions in Services	Combined % Share
Northcentral	16	35	75	68.0	19	51	106	66.0
Northeast	95	68	244	68.8	55	107	296	54.7
South	41	63	190	54.7	14	81	194	49.0
West	50	49	138	71.7	23	70	192	48.4
All Regions	202	215	647	64.5	111	309	788	53.3

1. The metropolitan level FDI transactions are combined into four Census regions according to their regional affiliation.
2. Combined % share is calculated by adding transactions in FIRE and wholesale and retail trade, divided by the total FDI transactions in services.

The rapid increase in FDIUS in services during the 1980s has boosted the growth of service employment in the U.S. affiliates of foreign firms (Table 7). Total employment in the U.S. affiliates of foreign firms doubled its size from 1.2 million in 1977 to 2.4 million in 1982, and increased another 1.3 million between 1983 and 1988. The percentage share of service employment in U.S. affiliates increased 15 percent to 43.2 percent in 1988. During 1977 to 1982, service employment in U.S. affiliates had increased rapidly in North Central and South region. At the same time, many manufacturing jobs in foreign firms were lost in South and West region. Between 1983 and 1988, service employment in U.S. affiliates increased dramatically in Northeast and West region. Both regions experienced over 12 percent increment in the percentage share of employment in U.S. affiliates.

Figure 3 and 4 show the percentage growth rate of wholesale and retail employment in the U.S. affiliates of foreign firms during 1977-1982 and 1983-1988, respectively. Between 1977 and 1982, Arizona, Louisiana, Rhode Island, West Virginia, Wisconsin, and Wyoming experience above average growth rate (greater than plus two standard deviations). Only South Dakota had above average growth rate (smaller than plus two, but greater than plus one standard deviation). While most of the states having average growth rate (within plus and minus one standard deviation) were in South region, many states in North Central and Northeast region had below average growth rate (smaller than minus one but greater than minus two standard deviations). Kentucky and Nebraska were states having much below average

Table 7: Employment in the U.S. affiliates of foreign firms by regions, 1977-1982 and 1983-1988. (thousand of workers and percentage)

	1977			1982			1983			1988		
Regions	All FDI	Services	Manufacturing	All FDI	Services	Manufacturing	All FDI	Services	Manufacturing	All FDI	Services	Manufacturing
Northwest	346.5	118.1	193.8	626.9	226.6	321.5	646.3	240.9	334.1	975.2	484.8	434.7
%	100	34.1	55.9	100	36.1	51.3	100	37.3	51.7	100	49.7	44.6
Northcentral	293.5	57.6	176.2	521.6	149.6	289.4	538.9	151.7	306.0	840.1	283.9	470.9
%	100	19.6	60.0	100	28.7	55.5	100	28.1	56.8	100	33.8	56.1
South	369.1	85.8	218.5	880.0	273.2	454.1	926.3	297.9	493.8	1337.1	557.5	652.2
%	100	23.2	59.2	100	31.0	51.6	100	32.2	53.3	100	41.7	48.8
West	191.5	59.8	94.7	405.1	131.9	170.9	419.8	145.5	180.1	670.1	318.0	262.0
%	100	31.2	49.5	100	32.6	42.2	100	34.7	42.9	100	47.5	39.1
All regions	1218.7	345.9	385.6	2448.1	799.9	1241.6	2546.5	820.9	1321.5	3844.2	1658.8	1828.6
%	100	28.4	56.3	100	32.7	50.7	100	32.2	51.9	100	43.2	47.6

Source: Calculated from U.S. Department of Commerce, Foreign Direct Investment in the United States. Operations of U.S. Affiliates of Foreign Companies, Revised 1985a, 1985b, 1986, 1991 Estimates.

Figure 3: Percentage growth rate of wholesale and retail employment in the U.S. affiliates of foreign firms, 1977-1982.

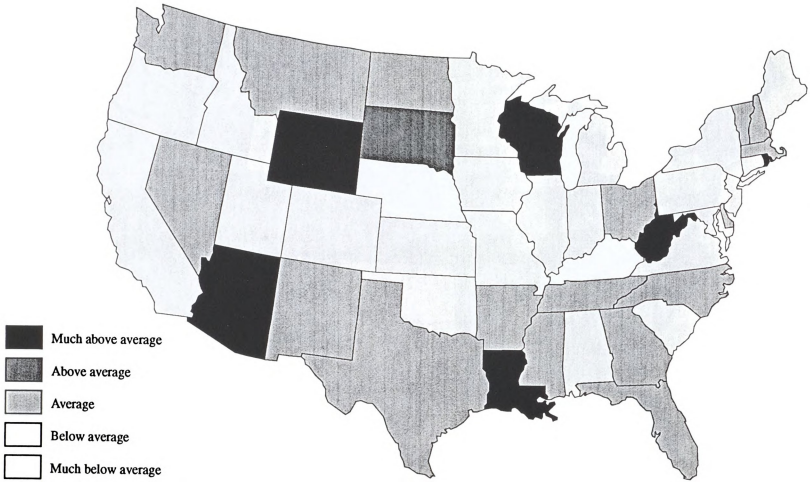
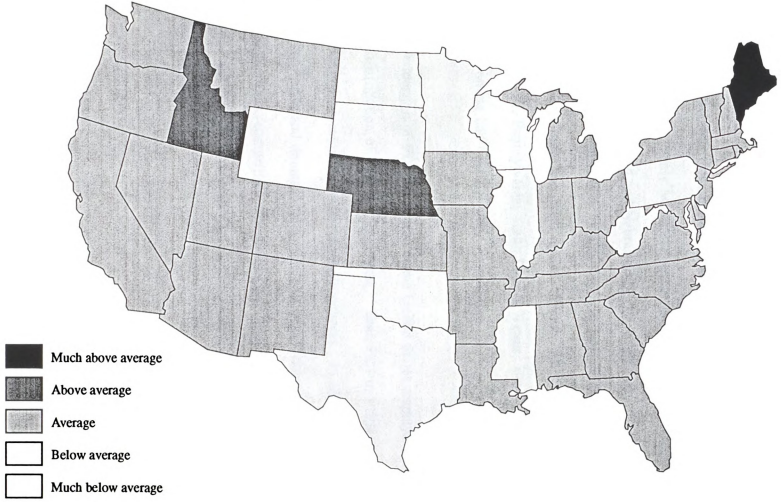


Figure 4: Percentage growth rate of wholesale and retail employment in the U.S. affiliates of foreign firms, 1983-1988.



growth rate (smaller than minus two standard deviations). During the period 1983-1988, the spatial distribution of foreign wholesale and retail employment growth showed that wholesale and retail industries were distributed in relation to population more evenly between regions. Only Maine had above average growth greater than plus two standard deviation. Idaho and Nebraska had above average growth rate greater than plus one standard deviation. States with average growth rate were concentrated in Northeast, South, and West region. Illinois, Minnesota, Mississippi, North Dakota, Oklahoma, Pennsylvania, South Dakota, Texas, West Virginia, Wisconsin, and Wyoming had below average growth rate.

Clearly the location of FDI in services in the United States displays similar pattern of spatial distribution of U.S. services sector. Both FDI in FIRE and domestic FIRE favor the location of large metropolitan areas. In addition, FDI in wholesale and retail trade and domestic wholesale and retail firms are influenced by the proximity to suppliers, competitors, and customers. The locational variation of FDI in wholesale and retail trade and in FIRE is further analyzed in the next chapter using regression models.

CHAPTER III

LOCATION ANALYSES OF FDI IN SERVICES

This chapter presents the location analyses of FDI in wholesale and retail trade and FIRE in the United States, respectively. Wholesale and retail sector and FIRE are examined separately since the location pattern of FDI in wholesale and retail sector may vary from that in FIRE. The growth rate of wholesale and retail trade employment is a surrogate representing the growth of FDI in wholesale and retail sector. It is expected that foreign-owned wholesale and retail sector will locate near their domestic counterparts, and near the manufacturing sector, both foreign and domestic firms within the United States. Foreign direct investment transactions in FIRE is used to measure the level of FDI in FIRE. The location of foreign direct investment transactions in FIRE is also expected to locate near their domestic counterparts. Spatial and temporal changes in these associations are also estimated.

3.1. Location Model of FDI in Wholesale and Retail Sector

The location of foreign-owned wholesale and retail industries is analyzed at the state-level. The model is specified as follows:

$$FW = a + bTW + cFM + dDM + e \qquad (1)$$

where the dependent variable FW is the percentage growth rate of wholesale and retail trade employment in the U.S. affiliates of foreign firms between 1977-1982 and 1983-1988. TW is the growth rate of total domestic wholesale and retail trade

employment between 1977-1982 and 1983-1988; and FM and DM are the growth rates of manufacturing employment in the U.S. affiliates of foreign firms and the domestic sector between 1977-1982 and 1983-1988, respectively. Coefficient "a" is the intercept; "b","c", and "d" are the regression coefficients and "e" is the error term. Equation (1) is estimated using ordinary least squares (OLS) multiple regression for the two time periods 1977-1982 and 1983-1988, respectively.

Data on manufacturing and wholesale and retail trade employment in the U.S. affiliates of foreign firms are obtained from *Foreign Direct Investment in the United States, Operations of U.S. Affiliates of Foreign Companies* (U.S. Department of Commerce, 1985a, 1985b, 1986, 1991). Data are collected for the year 1977, 1982, 1983, and 1988 for computing the percentage growth for the two time periods 1977-1982 and 1983-1988. The total domestic employment data in manufacturing and wholesale and retail trade are obtained from *Employment and Earnings* for the same years (U.S. Department of Labor, 1979, 1984, 1984, 1990).

Pearson correlation coefficients between variables in Equation (1) for the period 1977-1982 are listed in Table 8. There is a high correlation between the independent variable TW and DM (0.79838). Such high correlation creates the problem of multicollinearity between explanatory variables and results in biased estimates. Therefore, the model for the first time period for the wholesale and retail sector is not presented here. Pearson correlation coefficients of the variables in

Table 8: Pearson Correlation Coefficients: Wholesale and Retail Trade Sector, 1977-1982.

	FW	TW	FM	DM
FW	1.000	0.299	0.299	0.370
TW		1.000	0.259	0.798
FM			1.000	0.036
DM				1.000

Equation (1) for the second time period (1983-1988) showed that the multicollinearity problem did not exist for the second time period (see Table 9). The highest correlation coefficient between independent variables FM and DM was 0.34167. The level is acceptable for estimating the parameters of Equation (1) using OLS multiple regression. An examination of the correlation coeficients for the time period 1977-1988 showed the existence of multicollinearity. Therefore, temporal changes in the association indicated in Equation (1) is not estimated.

The OLS estimates of the parameters in Equation (1) in the second time period are presented below with t-values indicated in parentheses:

1983-1988

$$FW = 111.219 + 8.651TW - 3.524FM - 0.787DM \quad (2)$$
$$(0.924)\ (2.188)\ (-2.263)\ (-0.153)$$

$R^2 = 0.1829$ $F = 3.507$

The results show that the two significant predictors are TW and FM. The effect of domestic manufacturing (DM) is negative but not statistically significant. High levels of employment growth in wholesale and retail sector in the U.S. affiliates of foreign firms is associated with high levels of employment growth in the domestic wholesale and retail sector. However, high levels of employment growth in the foreign-owned wholesale and retail sector is associated with lower levels of employment growth in the U.S. manufacturing affiliates of foreign firms. The results

Table 9: Pearson Correlation Matrix: Wholesale and Retail Trade Sector, 1983-1988.

	FW	TW	FM	DM
FW	1.000	0.278	-0.312	-0.060
TW		1.000	0.046	0.238
FM			1.000	0.342
DM				1.000

illustrate that there is a tendency for foreign investors in wholesale and retail sector to locate close to their domestic counterparts. The economies of agglomeration significantly attract foreign investment in the wholesale and retail sector. In addition, the agglomeration effect generates lower costs between suppliers and customers, access to market and skilled and unskilled labor. The size of the domestic sector also suggests the presence of localization economies. Therefore, for new investors, these locations/existing spaces are attractive as potential niches in the U.S. market. On the other hand, the association between foreign-owned manufacturing sector and FDI in wholesale and retail trade indicates that a growth of employment in foreign-owned manufacturing sector is not necessarily stimulating the growth of FDI in the wholesale and retail sector. The foreign-owned wholesale and retail sector is dominated by retailing - a market oriented industrial sector. However, manufacturing investment by foreign firms has been dispersing away from major population centers, for examples Chicago, Detroit, and Pittsburgh. The initial association indicates that FDI in retailing and wholesaling is following the market and not the distribution of the manufacturing sector.

Spatial variation: The above analysis demonstrated the locational association of the foreign-owned wholesale and retail sector *vis-a-vis* domestic wholesale and retail sector, domestic manufacturing sector, and the foreign-owned manufacturing sector. Similarities and differences in this association in the U.S. regions are examined in this section. The regional variation in the association shown in Equation

(1) is examined using regional dummy variables (D1, D2, and D3) representing four U.S. Census regions (Figure 5). These dummy variables have a value of either 0 or 1 depending on the regional affiliation of a state. The dummy variables are specified as follows:

Region	D1	D2	D3
Northeast	0	0	0
North Central	1	0	0
South	0	1	0
West	0	0	1

The parameters of Equation (1) are redefined as linear functions of dummy variables, D1, D2, D3:

$$a = a_0 + a_1D1 + a_2D2 + a_3D3 \quad (3)$$

$$b = b_0 + b_1D1 + b_2D2 + b_3D3 \quad (4)$$

$$c = c_0 + c_1D1 + c_2D2 + c_3D3 \quad (5)$$

$$d = d_0 + d_1D1 + d_2D2 + d_3D3 \quad (6)$$

Substituting Equation (3) through (6) in Equation (1), the spatial model is obtained as follows:

$$FW = a_0 + a_1D1 + a_2D2 + a_3D3 + b_0TW + b_1D1.TW + b_2D2.TW + b_3D3.TW + \ldots + d_3D3.DM + e \quad (7)$$

Equation (7) is estimated using stepwise regression procedure which selects significant explanatory variables that best predict the variation in the dependent variable.

The results from the stepwise regression are as follows (F-values are shown in parentheses):

1983-1988

$$FW = \underset{}{97.481} + \underset{(1.72)}{29.029TW} - \underset{(74.78)}{21.899FM} - \underset{(78.39)}{32.321D1.TW} - \underset{(13.47)}{29.053D2.TW} - \underset{(49.54)}{28.832D3.TW} + \underset{(32.87)}{22.483D1.FM} + \underset{(46.75)}{21.405D2.FM} + \underset{(57.11)}{21.528D3.FM} \quad (8)$$
$$(60.38)$$

$R^2 = 0.7268 \quad F = 13.97$

Regional variations are noted in the association between the foreign-owned wholesale and retail sector and the domestic wholesale and retail sector (TW) and foreign-owned manufacturing sector (FM) (see Table 10). The results indicate that high levels of employment growth in the foreign-owned wholesale and retail sector is associated with high levels of employment growth in the domestic wholesale and retail sector in the Northeast and West regions, and is associated with low levels of employment growth in the domestic wholesale and retail sector in North Central and South regions. Foreign investors tend to concentrate near their competitors in sharing the large domestic market, especially large metropolitan areas such as New York, and Los Angeles. In addition, international seaports such as Boston and New York in Northeast region; Los Angeles, San Francisco, and Seattle in West region are gateways for foreign wholesale and retail firms in distributing their products to the U.S. market.

Table 10: Regression Results: Location Model of Wholesale and Retail Trade Sectors.

Coefficient	Northeast	North Central	South	West
Intercept	97.481	97.481	97.481	97.481
TW	29.029	-3.292	-0.024	0.197
FM	21.899	0.584	-0.494	-0.316

The results also indicate that in the Northeast and North Central region, high levels of employment growth in the foreign-owned wholesale and retail sector is associated with high levels of employment growth in the foreign-owned manufacturing sector. However, in the South and West regions, high levels of employment growth in the foreign wholesale and retail sector is associated with low levels of employment growth in the foreign-owned manufacturing sector. The foreign-owned manufacturing sector in fact represents partly the foreign investment in the United States. The locational association of foreign wholesale and retail firms with foreign manufacturing firms indicates the client following strategy of foreign direct investors. The growth of Japanese investment in auto industries in the North Central region during the mid-1980s may have stimulated the growth of Japanese FDI in other industrial sectors.

3.2. Location Model of FDI in Finance, Insurance and Real Estate

The location of foreign direct investment transactions in FIRE is analyzed at the metropolitan level. The model is specified as follows:

$$FF = p + qDF + e \qquad (9)$$

where FF indicates the total number of foreign investment transactions in FIRE in 1981-1983 and 1985-1988. DF is the mid-year employment level of domestic FIRE, 1982 for the first time period and 1986 for the second time period. Coefficient "p" is the intercept, "q" is the regression coefficient, and "e" is the error term. Equation (9) is estimated using OLS regression method.

Data on FDI transactions are collected from *Foreign Direct Investment in the United States, Completed Transactions, 1974-1983* (U.S. Department of Commerce, 1985b) and *Foreign Direct Investment in the United States, 1985, 1986, 1987, and 1988* (U.S. Department of Commerce, 1986, 1987, 1988, 1989). In 1984, FDI transactions were not reported for metropolitan areas, therefore, the first time period does not include 1984 data. Mid-year employment data of domestic FIRE are obtained from the Bureau of Labor Statistics publication - *Employment and Earnings* (U.S. Department of Labor, 1984, 1988).

The results of the OLS estimation of Equation (9) for the period 1981-1983 and 1985-1988 are presented below (t-values are indicated in parentheses):

<u>1981-1983</u>

$$FF = \underset{(-0.933)}{-2.612} + \underset{(8.593)}{0.260}DF \qquad (10)$$

$R^2 = 0.8329 \quad F = 299.011$

<u>1985-1988</u>

$$FF = \underset{(-4.722)}{-3.817} + \underset{(17.292)}{0.136}DF \qquad (11)$$

$R^2 = 0.5476 \quad F = 73.846$

The R^2-value decreases from .8329 during 1981-1983 to .5476 during 1985-1988. This result suggests that the association between the foreign-owned FIRE sector (FF) and the domestic FIRE sector (DF) is less strong in the second time period. The results show that DF is statistically significant for the two periods. High levels of foreign investment transactions in FIRE is associated with high levels of domestic FIRE employment in sixty-three U.S. metropolitan areas. The strong association of FF with DF suggests that not only domestic FIRE firms, but also foreign-owned FIRE companies are favoring large metropolitan areas for investment. As Coffey and Polese (1989, p.60) noted, "...each producer service establishment is subjected to three locational pulls: toward urban centers characterized by the availability of diversified complementary producer services; toward centers with specialized pools of skilled labor; and toward the market for its output". Large metropolitan areas such as Chicago, Los Angeles, and New York combine these attributes and therefore, enjoy a major advantage in attracting FIRE firms. In addition, the agglomeration of foreign-owned FIRE firms toward domestic competitors not only saves foreign investors' time and efforts in searching local markets, but also offers instant supply of skilled labors.

Spatial variation: In this section, the regional variation in the association shown in Equation (9) is examined using regional dummy variables (D1, D2, and D3). The sixty-three metropolitan areas with their corresponding states and affiliates regions are listed in Table 11. The assignment of the three dummy variables (D1,

Table 11: Sixty-three selected metropolitan areas, corresponding state and Census regions.

Metropolitan areas	State	Census region
Akron	OH	NC
Albany	NY	NE
Allentown	PA	NE
Anaheim	CA	W
Atlanta	GA	S
Baltimore	MD	S
Birminghan	AL	S
Boston	MA	NE
Charlotte	NC	S
Chicago	IL	NC
Cincinatti	OH	NC
Cleveland	OH	NC
Columbus	OH	NC
Dallas	TX	S
Dayton	OH	NC
Denver	CO	W
Detroit	MI	NC
Fort Lauderdale	FL	S
Greenboro	NC	S
Houston	TX	S
Indianapolis	IN	NC
Jacksonville	FL	S
Jersey City	NJ	NE
Kansas City	MO	NC
Los Angeles	CA	W
Louisville	KY	S
Memphis	TN	S
Miami	FL	S
Milwaukee	WI	NC
Nashville	TN	S
New Brunswick	NJ	NE
New Orleans	LA	S
New York	NY	NE
Newark	NJ	NE
Norfolk	VA	S
Oklahoma City	OK	S
Omaha	NE	NC
Orlando	FL	S
Philadelphia	PA	NE
Phoenix	AZ	W
Pittsburgh	PA	NE
Protland	OR	W
Providence	RI	NE
Richmond	VA	S
Riverside	CA	W
Rochester	NY	NE

Table 11: Continued.

Metropolitan areas	State	Census region
Sacramento	CA	W
Salt Lake City	UT	W
San Antonio	TX	S
San Diego	CA	W
San Francisco	CA	W
San Jose	CA	W
Seattle	WA	W
Springfield	MA	NE
St. Louis	MO	NC
Syracuse	NY	NE
Tampa	FL	S
Toledo	OH	NC
Tulsa	OK	S
Washington	DC	S
Wilmington	DE	S
Worcester	MA	NE
Youngstown	OH	NC

1. Four census regions are North Central (NC), Northeast (NE), South (S), and West (W).

D2, and D3) is based on the spatial variation model of the wholesale and retail sector. The parameters of Equation (9) are redefined as linear functions of dummy variables, D1, D2, and D3:

$$p = p_0 + p_1D1 + p_2D2 + p_3D3 \qquad (12)$$

$$q = q_0 + q_1D1 + q_2D2 + q_3D3 \qquad (13)$$

Substituting Equation (12) and (13) in Equation (9), the spatial model is expressed as follows:

$$FF = p_0 + p_1D1 + p_2D2 + p_3D3 + q_0DF + q_1D1.DF + q_2D2.DF + q_3D3.DF + e \qquad (14)$$

Equation (14) is estimated using stepwise regression procedure for the two time periods in order to select significant variables that best explain variations in the dependent variable.

The results from the stepwise regression are presented below (F-values are indicated in parentheses):

<u>1981-1983</u>

$$FF = \underset{}{-5.163} + \underset{(90.04)}{0.273DF} - \underset{(4.11)}{0.129D1.DF} + \underset{(7.95)}{0.227D2.DF} \qquad (15)$$
$$\quad\;\; (3.38)$$

$R^2 = 0.8613 \quad F = 120.08$

1985-1988

$$FF = -3.350 + 0.146DF - 0.055D1.DF - 0.028D3.DF \quad (16)$$
$$(19.35) \quad (336.35) \quad (10.45) \quad (3.40)$$

$R^2 = 0.6393 \quad F = 34.86$

The results indicate that the models vary spatially, as in each time period, two spatial variables (D1.DF, D2.DF, and D1.DF and D3.DF) are statistically significant in the stepwise regression Regional variations are noted in the association of foreign direct investment transactions in FIRE with domestic FIRE employment during 1981-1983 and 1985-1988 (Table 12). The results for the first time period show that high levels of foreign direct investment transactions of FIRE is associated with high levels of domestic FIRE employment in Northeast, North Central, and South region. Boston, New York, and Philadelphia in Northeast region; and Chicago, Cleveland, Detroit in North-Central region are major metropolitan areas where headquarters and and regional offices of business enterprises are located. The proximity to clients and nearness to their domestic competitors bring foreign-owned FIRE firms to Northeast and North Central region. Metropolitan areas in South region, such as Houston, Kansas City, and Miami, received foreign direct investment transactions in FIRE in the form of real estate during 1981-1983. For the second time period, the stepwise regression results illustrate that high levels of foreign direct investment transactions in FIRE is associated with high levels of domestic FIRE employment in the Northeast, North Central, and West regions. Northeast and North Central regions

Table 12: Regression Results: Location Models of Finance, Insurance, and Real Estate Sectors.

1981-1983				
Coefficient	Northeast	North central	South	West
Intercept	-5.163	-5.163	-5.163	-5.163
FF	0.273	0.144	0.500	--
1985-1988				
Coefficient	Northeast	North central	South	West
Intercept	-3.350	-3.350	-3.350	-3.350
FF	0.146	0.091	--	0.118

continue to attract and retain FDI in FIRE because of the inertia effect. Since most of the headquarters and regional offices of business enterprises are location bound to major metropolitan areas, foreign investors in FIRE tend to locate their businesses close to their clients and local markets (Goe, 1991). Los Angeles, Seattle, Portland, San Francisco, and San Diego in West region received most of the foreign investment transactions in FIRE during 1985-1988 (USDOC, 1986-1989). While U.S. manufacturing firms have been relocating their production sites toward Sun-belt areas, many producer service firms have followed their clients in these regions. Moreover, population growth in Seattle, Los Angeles, and San Francisco has stimulated the demand for housing. As a consequence, the booming real estate market has attracted domestic and foreign-owned real estate firms to the West.

Temporal variation: In this section, the temporal variation in the association shown on Equation (9) is examined. The parameters of Equation (9) are redefined as functions of a temporal dummy as follows:

$$p = p_0 + p_1 t \qquad (17)$$

$$q = q_0 + q_1 t \qquad (18)$$

The dummy variable "t" is equal to zero for the first period (1981-1983), and is equal to one for the second period (1985-1988). Substituting Equation (17) and (18) in Equation (9), the temporal model is denoted as follows:

$$FF = p_0 + p_1 t + q_0 t + q_1 t.DF + e \qquad (19)$$

Equation (19) is estimated using stepwise regression.

The results show that the coefficient associated with the term "t.DF" is statistically significant. Therefore, the effect of DF on FF has changed significantly between the first and the second time periods. The results from the stepwise regression are as follows (F-values are indicated in parentheses):

$$FF = -3.198 + 0.264DF - 0.132t.DF \quad (20)$$
$$\quad\quad (4.71) \quad (169.62) \quad (29.62)$$

$$R^2 = 0.6076 \quad F = 94.47$$

The temporal change in the effect of DF on FF indicates that the association between the location of foreign direct investment transactions in FIRE with the location of domestic FIRE employment has weakened between 1981-83 and 1985-88. Foreign-owned producer service firms continue to locate in the major metropolitan areas whereas their domestic counterparts have demonstrated some decentralization toward medium sized and small metropolitan areas -hence, the relatively weaker association between the foreign and the domestic FIRE sectors over time. New information techniques and communication networks have permitted the decentralization of back office activities to medium-sized metropolitan areas, while at the same time retaining strong connections with their headquarters in the major metropolitan areas. It is expected that familiarity with the total U.S. market will eventually allow foreign producer service firms to decentralize.

CHAPTER IV

CONCLUSIONS

FDI in the U.S. service sector has come to the forefront of FDI analysis in recent years. Although the service sector received the largest share of total FDI flows into the United States throughout the 1980s, little attention has been focused on the location pattern of FDI in U.S. service industries. This study examined the changing pattern of FDI in wholesale and retail trade and FIRE sectors - the two major recipients of FDI in the U.S. service sector. Spatial and temporal variations of the location patterns were also investigated.

The location analysis of FDI in wholesale and retail trade indicates that there is a strong association of the location pattern between foreign-owned and domestic wholesale and retail sectors. The results are expected since agglomeration with domestic counterparts enables foreign-owned wholesale and retail firms to explore localization economies (O'hUallachain, 1989). The presence of domestic wholesale and retail firms suggests the existence of local markets. Therefore, foreign investors tend to locate near their domestic counterparts for competing potential niches in the U.S. market. On the other hand, the results show that high level of employment growth in the foreign-owned wholesale and retail sector is associated with lower levels of employment growth in the foreign-owned manufacturing sector. Foreign investors in wholesale and retail sector, especially retailing, prefer large metropolitan

areas for their businesses since these metropolitan areas with large population size provide potential markets for a wide range of consumer goods and services. Foreign manufacturing investment, however, has been dispersing away from metropolitan areas. The results indicate that the location pattern of foreign-owned manufacturing industries has been changing in an opposite direction from that of foreign-owned wholesale and retail sector. The results of the spatial model show that the association varied across U.S. region in 1983-1988. High levels of employment growth in the foreign-owned wholesale and retail sector associated with high levels of employment growth in the domestic wholesale and retail sector in the Northeast and West regions; and associated with lower levels of employment growth in the North Central and South regions. Foreign investors tend to locate near their competitors in sharing large domestic market, especially serving large metropolitan areas such as New York and Los Angeles.

The location analysis of FDI in FIRE indicates that foreign-owned FIRE firms follow the spatial distribution of domestic FIRE companies and cluster around major U.S. metropolitan areas. The association between the location pattern of FDI in FIRE and domestic FIRE employment suggests that both foreign-owned and domestic FIRE firms favor large metropolitan areas for investment. The location pattern of FDI in FIRE around metropolitan areas displays a strong tier of establishments that is primarily dependent upon local markets and linked into local corporate agglomerations. The results of the spatial model for the period 1981-1983 indicate

that high levels of foreign direct investment transactions in FIRE associated with high levels of domestic FIRE employment in the Northeast, North Central, and South regions. For the second period 1985-1988, high levels of foreign investment transactions in FIRE associated with high levels of domestic FIRE employment in the Northeast, North Central, and West regions. The temporal analysis results illustrate that the association between the location of foreign investment transactions in FIRE and domestic FIRE employment is temporally unstable as the association weakened between 1981-1983 and 1985-1988. The above results suggest that location determinants which affect the spatial distribution of domestic service industries may also affect the location pattern of FDI in these service industries.

LIST OF REFERENCES

LIST OF REFERENCES

Alonso, W., 1960. "A Theory of Urban Land Market", *Papers and Proceedings of the Regional Science Association*, Volume 6, pp.149-157.

Arpan, Jeffrey S., and David A. Ricks, 1987. "Foreign Direct Investment in the United States, 1974-1984", *Journal of International Business Studies*, Volume 17, Issue 3, pp.149-153.

Baer, Herbert L., 1990. "Foreign Competition in U.S. Banking Markets", *Economic Perspectives*, Volume 14, Issue 3, pp.22-29.

Berry, B.J.L., 1967. *Geography of Market Centers and Retail Distribution*, Englewood Cliffs, New Jersey: Prentice-Hall.

Beyers, William B., 1989a. *The Producer Service and Economic Development in the United States: The Last Decade*. Final Report Prepared for the Technical Assistance and Research Division, U.S. Department of Commerce Economic Development Administration.

Beyers, William B. 1989b. "Explaining the Growth of the Producer Services in the United States, 1974-1985", *A Paper Presented at the Regional Science Association Meetings*.

Beyers, William B. and Michael J. Alvine, 1985. "Export Services in Postindustrial Society", *Papers of the Regional Science Association*, Volume 57, pp.33-45.

Beyers, William B., Michael J. Alvine and Erik G. Johnson, 1985a. *The Service Economy: Export of Services in the Central Puget Sound Region*. Seattle, Washington: Central Puget Sound Economic Development District.

Beyers, William B., Michael J. Alvine and Erik G. Johnson, 1985b. "The Service Sector: A Growing Force in the Regional Export Base", *Economic Development Commentary*, Volume 9, pp.3-7.

Bhagwati, Jagdish N., 1984. "Splintering and Disembodiment of Services and Developing Nations", *The World Economy*, Volume 7, Number 2, pp.133-144.

Brown, W.B., 1976. "Islands of Conscious Power: MNCs in the Theory of the Firm", *MSU Business Topics*, Volume 24, pp.37-45.

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

Bumpass, Donald L., 1987. "Recent Trends in Foreign Direct Investment in Illinois", *Illinois Business Review*, Volume 44, Issue 1, pp.6-7.

Carey, Max L. and James C. Franklin, 1991. "Outlook: 1900-2005, Industry Output and Job Growth Continues Slow into Next Century", *Monthly Labor Review*, November 1991, pp.45-63.

Caves, R.E., 1974. "Multinational Firms, Competition, and Productivity in Host-Country Industries", *Economica*, Volume 41, May, pp.176-193.

Christaller, W., 1933. *Die Zentralen Orte in Suddeutschland*, Jena: Fischer.

Clapp, J.M., 1983. "A Model of Public Policy Toward Office Relocation", *Environment and Planning A*, Volume 15, pp.1299-1310.

Clapp, J.M., 1980. "The Intrametropolitan Location of Office Activities", *Journal of Regional Science*, Volume 2, pp.387-399.

Coffey, William J. and J. McRae, 1989. *Services Industries in Regional Development*. Halifax, Nova Scotia: The Institute for Public Policy.

Coffey, William J. and Mario Polese, 1987. "Intrafirm Trade in Business Services: Implications for the Location of Office-Based Activities", *Papers of the Regional Science Association*, Volume 62, pp.71-80.

Coughlin, Cletus C., Joseph V. Terza, and Vachira Arromdee, 1990. "State Government Effects on the Location of Foreign Direct Investment", *Regional Science Perspectives*, Volume 20, pp.194-207.

Coughlin, Cletus C., Joseph V. Terza, and Vachira Arromdee, 1987. "Determinants of the Locations of Foreign Direct Investment Within the United States", *Regional Science Perspectives*, Volume 17, pp.1-23.

Daniels, P.W., 1987. "Producer Services Research: A Lengthening Agenda", *Environment and Planning A*, Volume 19, pp.569-574.

De Witt, R. Peter, 1987. "Foreign Direct Investment in U.S. Real Estate", *Real Estate Review*, Volume 16, Issue 4, pp.66-71.

Dunning, John H., 1989. "Multinational Enterprises and the Growth of Services: Some Conceptual and Theoretical Issues", *The Service Industries Journal*, Volume 9, Number 1, pp.5-39.

Dunning, John H., 1988. "The Eclectic Paradigm of International Production: A Restatement and some possible Extensions", *Journal of International Business Studies*, Volume 19, Number 1, pp.1-32.

Dunning, John H., 1980. "Towards An Eclectic Theory of International Production: Some Empirical Tests", *Journal of International Business Studies*, Volume 11, Number 1, pp.9-31.

Dunning, John H., 1979. "Explaining Changing Patterns of International Production: In Defence of Eclectic Theory", *Oxford Bulletin of Economics and Statistics*, Volume 41, pp.269-296.

Dunning, John H., and G. Norman, 1987. "The Location Choice of Offices of International Companies", *Environment and Planning, A*, Volume 19, pp.613-631.

Elfring, T., 1989. "The Main Features and Underlying Causes of the Shift to Services", *The Service Industries Journal*, Volume 9, pp.337-346.

Evans, Michael K., 1989. "Insights Regarding Area Development", *Industry Week*, Volume 238, Issue 19, pp.39-59.

Everson, J.A. and B.P. Fitzgerald, 1969. *Settlement Patterns*, London: Longman.

Exstein, Michael B., 1991. "Foreign Investment in U.S. Retailing: An Optimistic Overview", *Retail Control*, Volume 59, Issue 1, pp.9-14.

Fuchs, V.R., 1968. *The Service Economy*. New York: National Bureau of Economic Research.

Gershuny, J.L. and I.D. Miles, 1983. *The New Service Economy*. London: Frances Printer.

Gillis, William R., 1987. "Can Service-Producing Industries Provide a Catalyst for Regional Economic Growth?", *Economic Development Quarterly*, Number 1, pp.249-256.

Glubel, H., 1986. "Direct and Embodied Trade in Services", *Service Project Discussion Paper*, Vancouver: The Fraser Institute.

Goldberg, Michael; Robert W. Helsey and Maurice D Levi, 1989. "The Location of International Financial Activity: An Interregional Analysis", *Regional Studies*, Volume 23, Number 1, pp.1-7.

Gray, H. Peter G., 1987. *International Trade in Services: Four Distinguishing Features*. New York: Rensselaer Polytechnic Institute.

Groshen, E., 1987. "Can Services be a Source of Export-Led Growth? Evidence from the Fourth District", *Economic Review (Federal Reserve Bank of Cleveland)*, Third Quarter, pp.2-15.

Hansen, Niles, 1990. "Do Producer Services Induce Regional Economic Development?", *Journal of Regional Science*, Volume 30, Number 4, pp.465-476.

Harrington, J.W. and J.R. Lombard, 1989. "Producer Service Firms in a Declining Manufacturing Region", *Environment and Planning A*, Volume 21, pp.65-79.

Hennart, J-F., 1982. *A Theory of Multinational Enterprise*, Ann Arbor: University of Michigan Press.

Hepworth, M.E., 1990. *Geography of the Information Economy*. New York: The Guilford Press.

Hepworth, M.E., 1987. "Information Technology as Spatial Systems", *Progress in Human Geography*, Volume 11, pp.157-180.

Hill, T.P., 1977. "On Goods and Services", *Review of Income and Wealth*, Volume 23, pp.317-330.

Howells, J. and A. Green, 1988. *Technological Innovation, Structural Change and Location in U.K. Services*. Aldershot, England: Gower Publishing Company.

Howland, Marie, 1991. "Producer Service", *Economic Development Commentary*, Volume 15, Number 3, pp.4-8.

Hultman, Charles W. and L. Randolph McGee, 1989. "Factors Affecting the Foreign Banking Presence in the United States", *Journal of Banking and Finance*, Volume 13, Issue 3, pp.383-396.

Hymer, S.H., 1976. *The International Operations of National Firms: A Study of Direct Investment*, Cambridge, Mass.: MIT Press.

Hymer, S.H. and R. Rowthorn, 1970. Multinational Corporations and International Oligopoly: The Non-American Challenge. In *The International Corporation*, Edited by C.P. Kindleberger, Cambridge, Mass.: MIT Press, pp.57-91.

Illeris, Sven, 1989. "Producer Services: The Key Sector for Future Economic Development?", *Entrepreneurship and Regional Development*, Volume 1, pp.267-274.

Inman, R.P., 1985. Introduction and Overview. In *Managing the Service Economy: Problems and Prospects*, Edited by R.P. Inman, New York: Cambridge University Press, pp.1-24.

Jadlow, Jauice Wickstead and Donald L. Bumpass, 1987. "Recent Trends in Foreign Direct Investment in Oklahoma", *Oklahoma Business Bulletin*, Volume 55, Issue 9, pp.13-16.

Johnson, H.G., 1970. "The Efficiency and Welfare Implications of the International Corporation", in *The International Corporation*, Edited by C.P. Kindleberger, Cambridge, Mass.: MIT Press, pp.35-56.

Johnson, R.J., 1964. "The Measurement of a Hierarchy of Central Places", *Australian Geographer*, Volume 9, pp.315-317.

Kahley, William J., 1989. "Direct Investment Activity of Foreign Firms", *Atlanta Economic Review*, pp.36-51.

Kindleberger, C.P., 1969. *American Business Abroad: Six Lectures on Direct Investment*. New Haven, CT: Yale University Press.

King, L.J., 1962. "A Quantitative Expression of the Pattern of Urban Settlements in Selected Areas of the United States", *Tijdschrift voor Economische en Sociale Geografie*, Volume 53, pp.1-7.

Kirn, Thomas J., 1987. "Growth and Change in the Service Sector of the United States: A Spatial Perspective", *Annals of the Association of American Geographers*, Volume 77, Number 3, pp.353-372.

Knickerberger, F.T., 1973. *Oligopolistic Reaction and the Multinational Enterprise*, Cambridge, Mass.: Division of Research, Graduate School of Business Administration, Harvard University.

Kutscher, Ronald E., 1988. "Growth of Services Employment in the United States", *Technology in Services: Policies for Growth, Trade and Employment*, Edited by Bruce R. Guile and James Brian Quinn, Washington D.C.: National Academy Press, pp.47-75.

Langdale, J.V., 1989. "The Geography of International Business Telecommunications: The Role of Leased Network", *Annals of the Association of American Geographers*, Volume 79, pp.501-522.

Ledward, R., 1987. *Recend Trends in U.K. Manufacturing and Services*, North Staffs Polytechnic, Department of Economics, Discussion Paper No.36.

Little, J.S., 1983. "Foreign Investors Locational Choices: An Update", *New England Economic Review*, pp.28-31.

Magee, S.P., 1977. Information and the Multinational Corporation: An Appropiability Theory of Direct Foreign Investment. In *The New International Economic Order*, Edited by J.N. Bhagwati, Cambridge, Mass.: MIT Press.

Marshall, J.N., P. Damesick and P. Wood, 1987. "Understanding the Location and Role of Producer Services in the United Kingdom", *Environment and Planning A*, Volume 19, pp.575-595.

Marshall, J.U., 1969. *The Location of Service Towns*, Toronto: University of Toronto, Department of Geography, Research Publication Number 3.

McConnell, James E., 1983. "The International Location of Manufacturing Investments: Recent Behavior of Foreign-Owned Corporations in the United States", *Spatial Analysis, Industry, and Industrial Environment, Volume 3, Regional Economics and Industrial Systems*, Edited by F.E. Ian Hamilton and G.J.R. Linge, New York: John Wiley and Sons, pp.337-358.

McManus, J.C., 1972. The Theory of the International Firm. In *The Multinational Firm and the Nation State*, Edited by G. Paquet, Toronto: Collier Macmillan.

Murray, Mathew N., 1989. "Influence of the International Sector on the Tennessee Economy", *Survey of Business*, Volume 25, Issue 2, pp.69-79.

Noyelle, Thierry J., 1983. "The Rise of Advanced Services: Some Implication for Economic Development in U.S. Cities", *Journal for the American Planning Association*, Volume 49, pp.280-290.

Noyelle, Thierry J. and T.M. Stanback, 1984. *The Economic Transformation of American Cities*. Totowa, New Jersey: Rowman and Allanheld.

Nusbaumer, Jacques, 1987. *Services in the Global Market*. Boston: Kluwer.

Ochel, W. and M. Wegner, 1988. *Services Economics in Europe: Opportunities for Growth*. Boulder: Westview Press.

O'Hara, D.J., 1977. "Location of firms Within a Square Central Business District", *Journal of Political Economy*, Volume 85, pp.1189-1207.

O'hUallachain, Breadan, 1989. "Agglomeration of Services in American Metropolitan Areas", *Growth and Change*, Volume 20, pp.34-49.

O'hUallachain, Breadan, 1985. "Spatial Patterns of Foreign Direct Investment in the United States", *Professional Geographer*, Volume 37, Number 2, pp.154-162.

O'hUallachain, Breadan and Neil Reid, 1991. "The Location and Growth of Business and Professional Services in American Metropolitan Areas, 1976-1986", *Annals of the Association of American Geographers*, Volume 81, Number 2, pp.254-270.

Ott, M., 1987. "The Growing Share of Services in the U.S. Economy, Degeneration or Evolution?", *Economic Review (Federal Reserve Bank of St. Louis)*, June/July, pp.5-22.

Quijano, Alicia M., 1990. "A Guide to BEA Statistics on Foreign Direct Investment in the United States", *Survey of Current Business*, Volume 70, Number 2, pp.28-37.

Quinn, James Brian, 1988. "Technology in Services: Past Myths and Future Challenges", *Technology in Services: Policies for Growth, Trade and Employment*, Edited by Bruce R. Guile and James Brian Quinn, Washington D.C.: National Academy Press, pp.16-46.

Quinn, James Brian, J.J. Baruch and P.C. Paquette, 1987. "Technology in Services", *Scientific American*, Volume 257, pp.50-58.

Sampson, Gary P. and Richard H. Shape, 1985. "Identifying the Issues in Trade in Services", *The World Economy*, Volume 8, pp.171-182.

Shelp, Ronald K., 1981. *Beyond Industrialization - Ascendancy of the Global Service Economy*, New York: Praeger Publishers.

Shelp, Ronald K., 1985. "Service Technology and Economic Development", *Economic Impact*, Volume 52.

Sinisalco, D., 1989. "Structural Change and the Integration Between Industry and Services", *Paper at International Symposium on Service Enterprises in Urban and Regional Development*, Barcelona.

Smith, Tim R., 1989. "Foreign Direct Investment: A Source of Jobs for Tenth District States?", *Economic Review*, Volume 74, Issue 7, pp.21-36.

Stabler, Jack C. and Eric C. Howe, 1988. " Service Exports and Regional Growth in the Post-Industrial Era", *Journal of Regional Science*, Volume 28, pp.303-316.

Stanback, T.M., P. Bearse, T.J. Noyelle and R. Karasek, 1981. *Services: The New Economy*. Totowa, New Jersey: Allanfeld, Osmun and Co.

Swedenborg, B. 1979. *Multinational Operations of Swedish Firms*, Stockholm: Almqvist and Wiksell.

Tauchen, H. and A.D. Witte, 1984. "Socially Optimal and Equilibrium Distributions of Office Activity: Models with Exogenous and Endogenous Contacts", *Journal of Urban Economics*, Volume 15, pp.66-86.

Tauchen, H. and A.D. Witte, 1983. " An Equilibrium Model of Office Location and Contact Patterns", *Environment and Planning A*, Volume 15, pp.1311-1326.

Tschetter, John, 1987. "Producer Services Industries: Why Are They Growing So Rapidly?", *Monthly Labor Review*, December 1987, pp.31-40.

United Nation Center on Transnational Corporations, 1990. *Foreign Direct Investment, Debt and Home Country Policies*, UNCTC, Current Studies, Series A, Number 20, New York: United Nation.

United Nation Center on Transnational Corporations, 1989a. *Foreign Direct Investment and Transnational Corporations in Services*, ST/CTC/94, New York: United Nation.

United Nation Center on Transnational Corporations, 1989b. *Transnational Service Corporations and Developing Countries: Impact and Policy Issues*, UNCTC Current Studies, Series A, Number 10, New York: United Nations.

U.S. Department of Commerce, 1991. *Foreign Direct Investment in the United States. Operations of U.S. Affiliates of Foreign Companies. Revised 1988 Estimates*. Washington D.C.: Bureau of Economic Analysis.

U.S. Department of Commerce, 1988. *International Direct Investment. Global Trends and U.S. Role.* Washington D.C.: International Trade Administration.

U.S. Department of Commerce, 1986. *Foreign Direct Investment in the United States. Operations of U.S. Affiliates of Foreign Companies. Revised 1983 Estimates.* Washington D.C.: Bureau of Economic Analysis.

U.S. Department of Commerce, 1985a. *Foreign Direct Investment in the United States. Operations of U.S. Affiliates of Foreign Companies, 1977-1980.* Washington D.C.: Bureau of Economic Analysis.

U.S. Department of Commerce, 1985b. *Foreign Direct Investment in the United States. Operations of U.S. Affiliates of Foreign Companies. Revised 1982 Estimates.* Washington D.C.: Bureau of Economic Analysis.

U.S. Department of Labor, 1990. *Employment and Earnings.* Washington D.C.: Bureau of Labor Statistics.

U.S. Department of Labor, 1985. *Employment and Earnings.* Washington D.C.: Bureau of Labor Statistics.

U.S. Department of Labor, 1984. *Employment and Earnings.* Washington D.C.: Bureau of Labor Statistics.

U.S. Department of Labor, 1979. *Employment and Earnings.* Washington D.C.: Bureau of Labor Statistics.

Van Dinteren, J.H.T., 1989. *Zakelyke Diensten en Middelgrote Steden.* Den Haag: CIP - Gegevens Koninklijke Bibliotheek.

Van Dinteren, J.H.T., 1987. "The Role of Business Service Offices in the Economy of Medium Size Cities", *Environment and Planning A*, Volume 19, pp.669-686.

Vernon, R., 1974. The Location of Economic Activity. In *Economic Analysis and the Multinational Enterprise*, Edited by J.H. Dunning, London: Allen and Unwin, pp.89-114.

Warf, B., 1988. "The New York Region's Renaissance", *Economic Development Commentary*, Volume 12, pp.13-17.

Wheeler, James O., 1990. "The New Corporate Landscape: America's Fastest Growing Private Companies", *The Professional Geographer*, Volume 42, Number 4, pp.433-444.

Wheeler, James O., 1988. "The Corporate Role of Large Metropolitan Areas in the United States", *Growth and Change*, Spring, pp.75-86.

Wheeler, James O. and R.L. Mitchelson, 1989. "Information Flows Among Major Metropolitan Areas in the United States", *Annals of the Association of American Geographers*, Volume 79, pp.523-543.