

**LOCATION DETERMINANTS OF FOREIGN MNCs INVESTING AT SUB-NATIONAL LEVEL AND EFFECT OF COUNTRY OF ORIGIN AND FIRM CHARACTERISTICS**

2.1 Market entry and locational strategies

Competitive paper

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## **ABSTRACT**

This paper examines the current theories of location determinants of foreign firms at sub-national level. A profile of the characteristics of foreign direct investment (FDI) in Pennsylvania is created to verify impact of factors such as the country of origin, mode of entry, magnitude, growth, and sectoral distribution of FDI on the location choice. In addition, this research compares the nature of FDI in Pennsylvania with that in the US overall and considers the role of the state government incentives in attracting FDI to the Commonwealth of Pennsylvania.

Key-words: Location determinants, firm characteristics, government incentives

## INTRODUCTION

The structure of the world economy today clearly has changed from what it was in the past. The liberalization of national economies, international trade and economic cooperation, expansion of multilateral trade agreements and technological gains in electronics and telecommunications have created greater market and production opportunities leading to a deeply integrated world economy. One of the key groups of actors in this evolving saga is comprised of those firms who have moved their operations beyond national borders. As a result of their experience gained in operating in several countries Multinational Corporations (MNCs) (or as more accurately designated in other parts of the world—Transnational Corporations) see themselves more spatially mobile than firms that have not yet engaged in Foreign Direct Investment (FDI).

Analysis of FDI at the national level has received much research attention but very few studies have been conducted at the sub-national level of an economy (Wallace, 1997). This paper is the beginning of a larger research effort that will examine the determinants and effects of inbound FDI on a sub-national unit in the Commonwealth of Pennsylvania in the United States. The aim is to advance understanding of MNC locational decision-making by examining the country of origin, mode of entry, magnitude, growth, sectoral distribution, and present stocks of FDI in Pennsylvania, as well as the history of inward-bound FDI in Pennsylvania. As part of this larger investigation, this paper seeks primarily to evaluate current theoretical and empirical literature on location determinants of foreign firms at sub-national level and create a profile of FDI in the Commonwealth, using

secondary data obtained from the US. Department of Commerce. (International Trade Administration, 1989-94). This data-set improves on that used by Aguilar (1996), who conducted a similar study, comparing the effects of FDI in the Midwest with those in the US overall. At this preliminary stage, this state profile allows us to argue that MNC locational decision-making in Pennsylvania does not reflect that for the overall United States.

After laying the theoretical framework for the present study in Section Two, Section Three will examine current policies of government of PA to attract FDI. Section Four will examine types of transactions, economic sectors, and countries of origin that describe new foreign direct investment in Pennsylvania during 1989 to 1994. The fifth section will discuss the future direction and relevance of this project.

### **EXAMINING FDI ON THE STATE LEVEL**

While the workings of the global economy have made some factors of production mobile it has increased the fixity of others in local structures. Today's MNCs need to be simultaneously globally integrated and locally responsive. Leading MNCs are those that find new ways to minimize transaction costs by reaping benefits of mobile resources and gaining access to immobile ones.

Today, economic regions are more prone to an exodus of industries and jobs attracted elsewhere by greener pastures. MNCs seeking to invest in a region for the first time have

no roots and hence their investments are locationally highly sensitive. Those already established in a location are able to relocate in competing areas with comparative ease. The intra-national distribution of inward FDI stock provides a guide to the attractiveness of a sub-national unit's resources, capabilities, and policies.

**Location Theory and FDI:** Although MNCs are constrained in their location decision by a whole set of exogenous and endogenous variable, many options exist as to where MNC activities can and may be located **(1)** (Dunning, 1993). The impact of created assets (technology, experience, organizational structure, and management competitiveness) is significant in understanding the extent and direction of FDI in the global economy. Unlike natural assets, many firm specific created assets are locationally mobile. This mobility is in contrast to the spatial immobility of many natural and country specific assets. Increasingly location specific assets themselves have become created assets (such as infrastructure and firm clusters). Created assets may be firm specific and location specific. The resultant characteristics of created assets are primarily due to technological change, but the economic agents, such as domestic firms and MNCs, market forces and the response of government also affect the created assets.

According to Mudambi (1998) multinational investment is significantly duration dependent and may be motivated by experience of a particular location. Experience in a particular location is a created asset (Dunning, 1993) that has helped a firm gain substantial learning benefits and may be substantial first movers advantages. Therefore, a firm with greater experience of a particular location is more likely to invest there than a

firm with less experience. For the same reason an investment agency is short-sighted if it seeks to attract new investors at the expense of multinationals with current operations in its jurisdiction.

Economic theory predicts that a company investing in production facilities will choose the location that minimizes total costs, the demand in local (national) markets, labor cost differentials, transportation costs, the existence of tariff and non-tariff barriers as well as government policy. The costs of doing business and controlling foreign operations are likely to be less in familiar markets. Familiar markets are defined as markets that are culturally similar to the home country or markets with which the company has previous experience (Benito, Gabriel and Gripsrud, 1992). Ethnic connections measured by population with similar ethnic background can provide a measure of cultural similarity and familiarity of market. Companies are more likely to invest in areas with local ties and ethnic connections.

**Corporate Networks and Location Choice:** A partial explanation of spatial distribution of investment is provided in a city-system approach (Pred, 1977). The relevant hypotheses from the city-system approach are

- a. Decision-makers can only choose from alternatives of which they become aware either through an information search or unintentional information acquisition.
- b. Any decision-making individual or group possessing specialized information at a given location is more likely to have actively sought or accidentally obtained from some contacts or places rather than others.

- c. The most readily accessible specialized information is almost certain to be spatially biased; most probably in the sense that it is obtained from near the decision-making unit's existing economic linkage partners and related contacts of both a direct and intermediary character.

Based on the above hypotheses Marian Geldner (Geldner, 1986) suggests that,

“this arguments holds well when applied within the domain of international trade where the role of established linkages is particularly crucial. By the reliance on the established linkages in shaping their intra-firm division of labor and corresponding pattern of foreign trade TNCs can minimize the political and economic risks of their operations and disadvantages of psychic distance with simultaneous maximization of the benefits from the established information networks and flows.

According to Geldner gravity measure is useful in finding the extent of the pattern of international trade carried on by TNCS (mother companies and their affiliates) that gravitates towards markets traditionally linked with those corporations and and/or their home economies. Later empirical research by Glickman (1997), Friedman, Gerlowski, Silberman (1989), Woodward (1992) included gravity measure of market, market potential and per capita income of state location respectively.

**Economic Geography and FDI Location:** In some industries transnational corporations are found to be geographically concentrated within countries (Dunning, 1997). More

evidence from previous research suggests that Transnational Corporations are attracted to clusters of economic activity in their own and in closely related industries and activities (Nachum, 2000). But flexible specialization is fundamental to geographic concentration and refers to small firms that produce small batches in ever changing process and product configurations and they are knit together by sub-contracting and mutual benefits from cooperation, that boundaries between them are blurred. Rather than internal advantage their success is based on the external conditions and resources external to the firms. Hence the collective ability of firms based in the same location to upgrade their collective capabilities and advantages are important to the Economic Geography theory.

According to Nachum, one limitation of the models of Economic Geography is that it deals with small and medium-sized firms with high levels of specialization and limited ties with the outside world (2). And hence the model does not provide an explanation for the choice of investment location by Transnational Corporations due to the traditional concept of TNCs (3). But the restructuring of the internal organization of TNCs has changed the nature of their external linkages that may increase the impact of localized process on competitive advantage and on their subsequent location choice.

**Incentives and FDI Location:** Immobile assets, including traditional location bound natural resources (Dunning 1988) as well as sub-national economic clusters, have become very important determinant of location choice. As these assets within sub-national units exist and are immobile, government policies and regulations are relevant and important. Government policies and regulations themselves are region-specific liabilities or assets.

Governments can and do strongly influence such activities both indirectly through their macroeconomic and macro-organizational policies and their attitude towards business, and directly through selected taxes and incentives, controls and promotions. Direct government interventions structurally distort markets by affecting costs and revenues of producing in different locations (Guisinger, 1985).

Also positive externalities or spillovers can result from economies of scale, the creation of new knowledge that is widely diffused, and upgrading the skills of workers and Individual investments can lead to sequential investment (UNCTAD-DTCI, 1995).

Investment incentives involve benefits and costs to the regional economies that grant them. They can distort the production structure, favor large over small foreign firms and imply financial and administrative costs to the community. Hence the costs for the community offering incentives should not be more than the value of the private and social benefits (UNCTAD, 1996). It is not sufficient for the state government to give incentives to attract FDI but it is also important to execute incentive measures effectively. Also incentives need to be offered based on complete understanding of their effects and not just to match incentives offered by other states.

According to Mudambi (1999), different types of support structures **(4)** have different consequences for the government as well as for the private MNE investor **(5)**, various alternatives may be combined to reduce the risk borne by MNE, the private lender and the state. The firm characteristics are strongly related to the type of investment support

obtained and hence inward investment agencies may benefit from creating more appropriately tailored support packages.

Classifying the location of FDI within the United States boundaries is somewhat arbitrary because many intrastate distances are greater than interstate distances (Wallace, 1995). Though the state boundaries may not provide a distinct break in terms of the spatial proximity of the economic activities of MNCs, they do indicate natural breaks for some of the factors that affect the choice of investment location (i.e. taxes, labor laws, education systems, and industrial and monetary incentives). Regions and states within nations exist and are important because they have governments whose policies affect the movement of goods and factors of production. In addition data sources provide statistics by state. Thus, there is a strong rationale for monitoring FDI on a state basis, and for considering the actions and policies of state governments as they relate to foreign investment. A glimpse at the policies of Pennsylvania's government is offered below.

### **POLICIES OF GOVERNMENT OF PENNSYLVANIA TO ATTRACT FDI**

As part of a larger effort to increase exports from the state, the Commonwealth of Pennsylvania actively pursues direct investment by Multinational Corporations (Vyas & Rose, 2000), with trade offices in a number of locations around the world, referred to as the LINK program. In 1996, Governor Ridge announced plans to increase the number of trade offices operated by the state Department of Commerce in foreign cities, intending to open offices in Singapore and Mexico City. Governor Ridge himself joined trade

missions to several foreign countries, including Chile and Mexico. He has continually asked the legislature for larger export promotion budgets. In 1996, the Ridge administration hired Richard Marcks, former president of Hershey International as director of international business development. (Zausner, 1996) Currently the state Department of Community and Economic Development provides a direct outreach to foreign investors, through the Office of International Development (OIBD). (DCED, 2000).

Another intriguing and apparently successful approach to attracting international business involves the designation of honorary consulars, particularly in the Pittsburgh area, who voluntarily host visitors/delegations from their home/adopted countries and connect them with business and government leaders in the state. (Thuermer, 1998) The success may be due to the fact that this strategy is coupled with a favorable cost of living status for Western Pennsylvania's largest city. In fact, a 1997 survey by the Geneva, Switzerland-based Corporate Resources Group, ranked Pittsburgh as one of the best-valued international business centers in the United States. Of the 145 major world markets, Pittsburgh ranked 124 in terms of cost of living. John Thornburgh president of Penn's Southwest Association, Downtown, cited four factors that explain why Pittsburgh has much to offer for this low price: accessibility to major US markets; high productivity of Pittsburgh's workers, extensive transportation options—airport, highways and riverways; and the personal roots of many business professionals, especially attorneys and engineers. (Mukherjee, 1997). These may be important components of the Pennsylvania-specific location decision-making of MNCs.

[Insert Table 1 here]

[Insert Figure 1 here]

### **PROFILE OF THE 1989-94 FOREIGN DIRECT INVESTMENT IN PENNSYLVANIA**

The accompanying map labeled as Figure 1, gives a good visual representation of the geographic distribution of new FDI within the state, by county. Philadelphia enjoyed the largest value of new FDI from 1989 through 1994, followed by Montgomery and Cumberland counties. Allegheny and Westmoreland counties received the next highest levels. Figures were not available in the hashed counties; and no new FDI transactions took place in this time period in counties shaded in the lightest gray. Table 1 provides the specific data for total transaction values.

[Insert Table 2 here]

[Insert Figure 2 here]

Table 2 shows the breakdown of new FDI, by year, indicating a surge in 1989 and 1990, followed by a drop-off that remained steady through the remaining years of the period under examination. This is visually apparent in Figure 2.

[Insert Table 3 here]

[Insert Figure 3 here]

There were 20 different countries of origin for the new FDI transactions in Pennsylvania during this time frame. Most of the transactions originated from Europe (with 13 different countries represented); but Japan showed the largest number of transactions from a single country with 35. Figure 3 makes this point obvious. Table 3 shows the breakdown and compares the frequency of Pennsylvania transactions to those for the US overall. Of note are the following contrasts:

- 1) The rate of FDI from Ireland to Pennsylvania was about three times higher than for the US overall;
- 2) The rate of new FDI to Pennsylvania from France and from the Netherlands was more than double that for the US overall;
- 3) The rate of new FDI from Japan to Pennsylvania was about 25% lower than for the US overall;
- 4) The rate of new FDI to Pennsylvania from Germany and from Britain was slightly higher than for the US.

[Insert Table 4 here]

[Insert Figure 4 here]

Table 4 illustrates the relative share of the value of FDI directed towards Pennsylvania from several countries. Of particular note is the fact that Pennsylvania was the destination of 22% of Sweden's FDI in the US between 1989 and 1994. Similarly, FDI to Pennsylvania from Denmark, Ireland, France, Israel, and Britain all comprised more than 10% of the national share.

Figure 4 distinctly shows that Pennsylvania is perceived as a destination for manufacturing operations of foreign firms. Table 5 corroborates this impression. While manufacturing characterized only 46% of new FDI transactions in the US overall, in Pennsylvania 67% of the transactions were in the manufacturing sector. Consequently, other sectors comprise a smaller percentage of FDI in Pennsylvania than in the US overall, except in mining, where the Pennsylvania and US rates are about equal.

[Insert Table 6, Table 7 and Table 8 here]

[Insert Figure 5 here]

When viewed from the value perspective in Table 6, the Wholesale Trade sector in Pennsylvania stands out, accounting for more than 18% of the US total.

During the period of 1989-94, there were 7 categories of investment transactions, classifying the 116 Foreign Direct Investment transactions in Pennsylvania, as indicated in Tables 7 and 8. From both the number and value of transactions perspectives, acquisitions and mergers had a greater relative presence in Pennsylvania than in the US overall. Conversely, the Pennsylvania figures appeared lower than those for the US in the areas of plant expansion, new plants, and real estate transactions. This distribution of each transaction type in Pennsylvania is also apparent from Figure 5.

## **FUTURE DIMENSIONS**

The research on location determinants, location strategies of MNCs economic geography of FDI and international and sub-national allocation of value-added activity is fragmented and needs to be updated due to current changes in the field of international business (Dunning, 1998). A step in right direction would be to have a comprehensive literature review of the theoretical and empirical research on location and multinational corporations at national and sub-national level. Primary data collection through questionnaire survey of the foreign owned firms operating in Pennsylvania may be useful to evaluate location determinants considered to be important in making location decision. Previous experience with questionnaire survey of foreign firms in the USA suggest that, to ensure a good response rate, sponsorship of the survey by a key person or organizations engaged in international operations or by an official state agency may be very useful (Vyas, 2000).

Another dimension of this study that has not yet been fully explored is the impact of FDI on the state economy, particularly at the county/local level. Therefore, subsequent research will involve the collection of income and employment data before and after the time period under consideration to examine the effectiveness of FDI in supporting the local economy.

As this study concerns FDI in the State of Pennsylvania it is relevant to all types of organizations and government agencies operating in the state dealing with the economic

and investment climate. Policy implications of this research can be useful to the organizations from an operations perspective, and they can be useful for the government in attraction and retention of inbound FDI in the state. The research would also be useful to the economic community in other states who may be looking for comprehensive explanations of FDI location decision-making.

It is important to note that the transaction data covered in current paper includes new investments from 1989-1994. It would be worth investigating transaction data for later years (1995-1999) to verify the impact of global political and economic changes on investment at the national level and state level. Potential investments may have been diverted to Mexico to take advantage of NAFTA and to Europe to be part of the EU. Also these elements may affect the type of investment transactions.

## **CONCLUSION**

Since the case can be made that the pattern of MNC location decision-making in Pennsylvania does not reflect that for the overall United States, then it could be argued there must be particular attributes of Pennsylvania that attract the types of transactions, economic sectors, and countries of origin that this profile describes. Attribute particular to Pennsylvania such as government incentives, market structure and corporate networks of Northeast USA, proximity to New York and New Jersey and other economies of agglomeration help to attract FDI in Pennsylvania. Evaluation of theory and empirical research enables us to identify the important factors affecting location choice. The firm

level data collection through questionnaire can address the issue of those location determinants, giving particular attention to the role of efforts by state government.

### NOTES

1. OLI paradigm, the determinants of MNE activity and detailed explanation of the Location-specific variables are given in *Multinational Enterprises and the Global Economy* (1993), table 4.1 page 81.
2. Nachum (2000) provides detailed sequence of the development and research in the Economic Geography Theory.
3. Traditionally TNCs are large and have wide geographic coverage and firm specific advantages are their main competitive advantage. As TNCs operate in two or more countries are potentially embedded in two or more localities and the external ties of TNCs are supplemented by internal ties with a whole network of affiliates spread across the globe.
4. Basic investment support schemes according to Mudambi (1999) include, grants, infrastructural development, tax concessions, loans and loan guarantees, interest subsidies.
5. Principle-agent relationships are important as the MNE investor attempts to put together a package. The main agents of the investment are the government, the inward investment agency, the MNE investor, the private lender. For detailed explanation of principle-agent model refer Mudambi, 1999.

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# New Foreign Direct Investment in Pennsylvania by County, 1989-1994

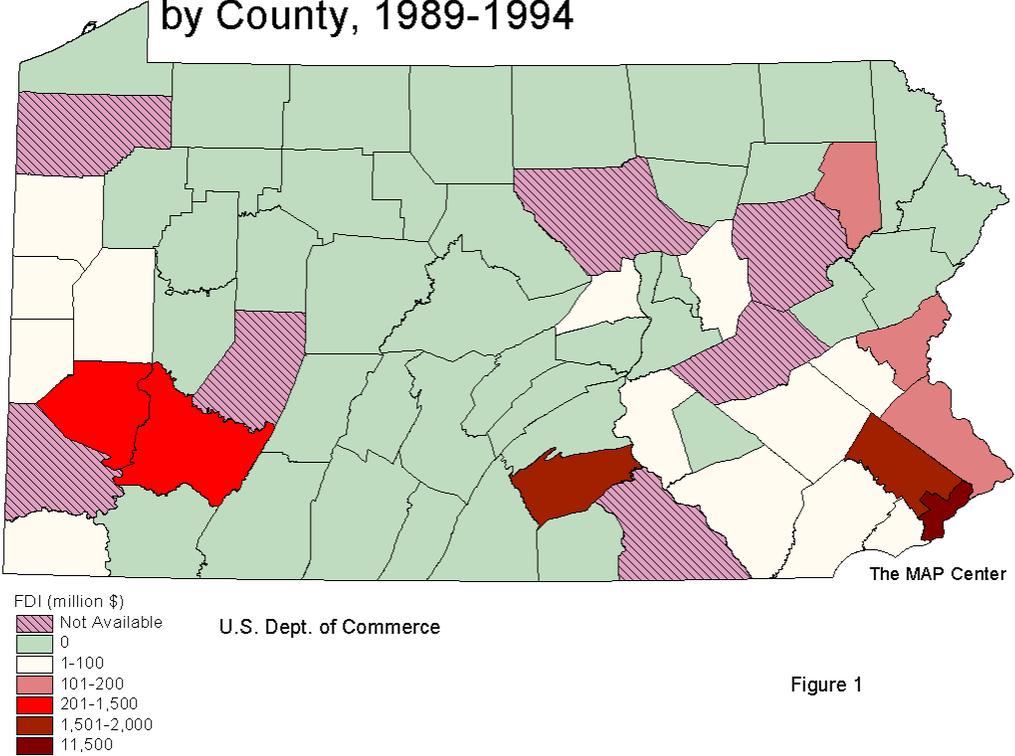


Figure 1

Table 1: Total Value of New FDI in Pennsylvania between 1989 and 1994, by County

County	FDI_value	County	FDI_value	County	FDI_value	County	FDI_value
Allegheny	1228	Crawford	Na	Lancaster	29	Northampton	103.5
Beaver	36.8	Cumberland	1700	Lawrence	1	Philadelphia	11457.2
Berks	14	Dauphin	15.7	Lehigh	0.5	Schuylkill	na
Bucks	180.3	Delaware	1.4	Luzerne	Na	Union	1.5
Butler	26	Greene	4	Lycoming	Na	Washington	na
Chester	14.9	Indiana	Na	Mercer	21	Westmoreland	820.0
Columbia	25	Lackawanna	188.6	Montgomery	1801.9	York	na

Table 2: Annual Distribution of New FDI in Pennsylvania, 1989-1994

Year	Number of Transactions	Relative Frequency
1989	32	0.276
1990	33	0.284
1991	14	0.121
1992	10	0.086
1993	13	0.112
1994	14	0.121

Figure 2: Annual Frequency of New FDI in Pennsylvania

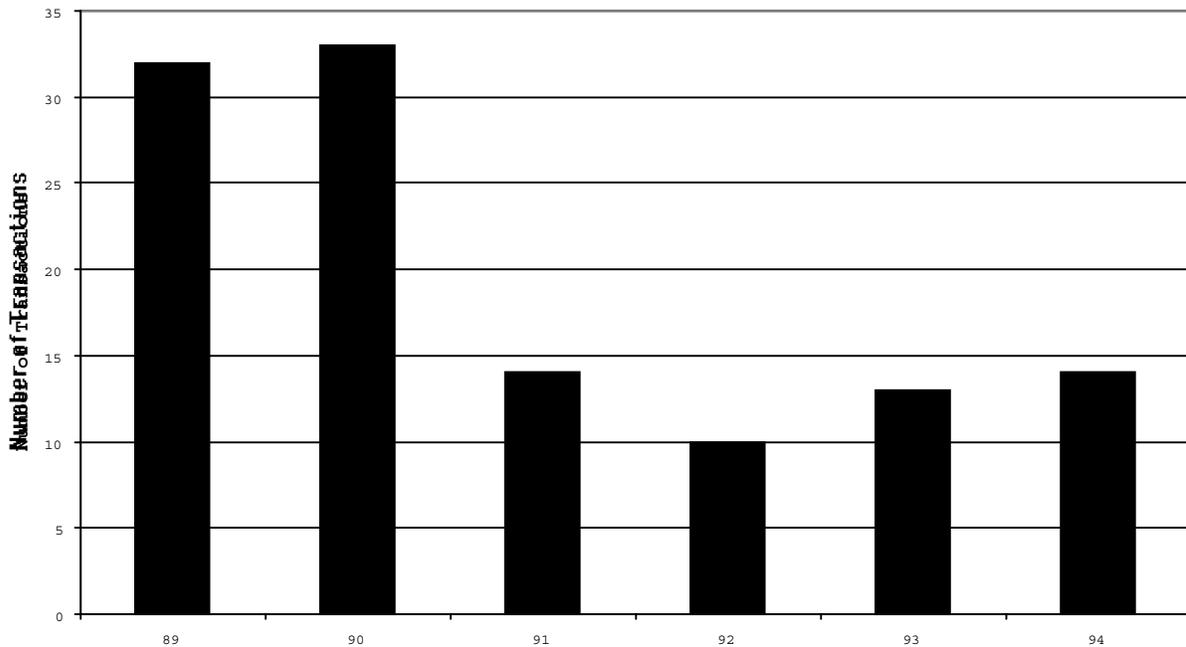


Table 3: Comparison of frequency of FDI transactions in Pennsylvania and US, by country of origin

	US Count	US rel. freq.	PA count	PA rel. freq.
Algeria	3	0.001	1	0.009
Australia	124	0.028	3	0.026
Austria	12	0.003	1	0.009
Belgium	34	0.008	1	0.009
Canada	317	0.072	8	0.069
Chile	2	0.000	1	0.009
Denmark	22	0.005	1	0.009
Eire/Ireland	23	0.005	2	0.017
Finland	26	0.006	1	0.009
France	233	0.053	14	0.121
Germany	311	0.070	10	0.086
Israel	13	0.003	1	0.009
Italy	122	0.028	4	0.034
Japan	1827	0.412	35	0.302
Netherlands	123	0.028	8	0.069
Norway	24	0.005	1	0.009
South Africa	13	0.003	1	0.009
Sweden	89	0.020	3	0.026
Switzerland	129	0.029	1	0.009
United Kingdom	542	0.122	19	0.164

Figure 3: New FDI Transactions in Pennsylvania, by Country of Origin

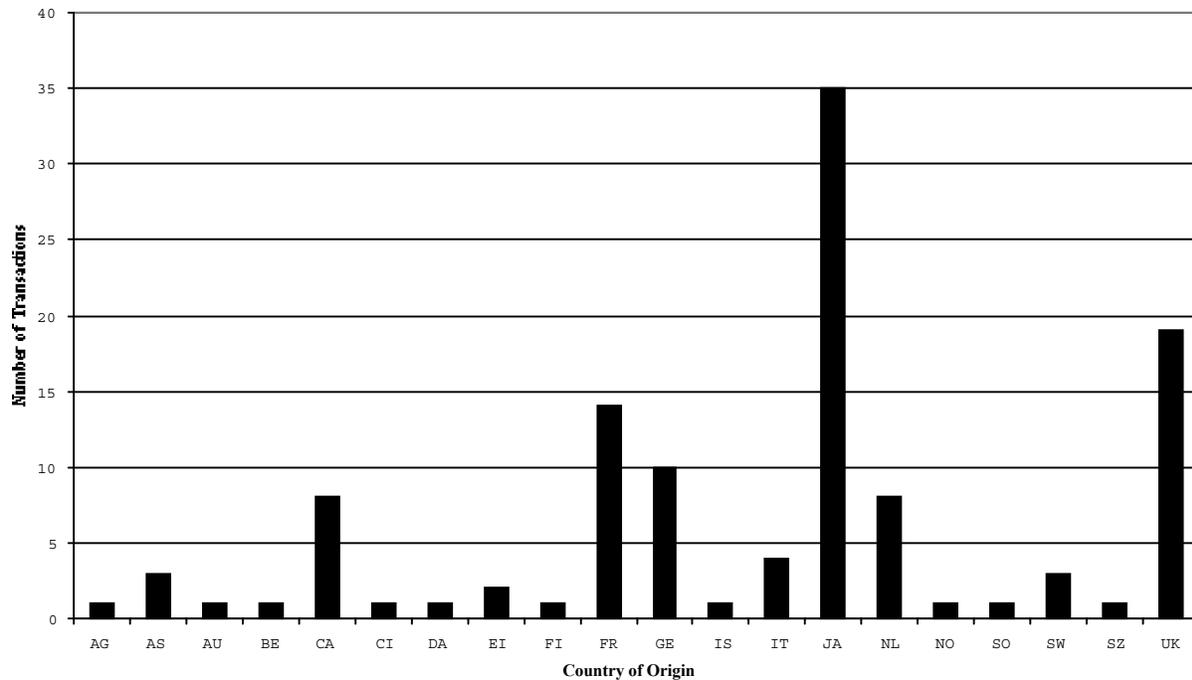


Table 4: Comparison of the Value of new FDI in Pennsylvania and US, by country of origin

	US total value	PA total value	PA as % of US total value
Algeria	554.7	12.0	0.022
Australia	4043.6	Na	na
Austria	48.7	Na	na
Belgium	1008.0	45.0	0.045
Canada	14255.3	335.0	0.024
Chile	na	Na	na
Denmark	562.5	75.0	0.133
Eire/Ireland	1294.1	130.0	0.100
Finland	494.0	Na	na
France	25823.4	3825.5	0.148
Germany	17801.1	1312.8	0.074
Israel	186.4	20.0	0.107
Italy	4032.6	13.9	0.003
Japan	60107.6	1547.2	0.026
Netherlands	10276.7	377.8	0.037
Norway	492.6	4.0	0.008
South Africa	2657.7	Na	na
Sweden	3829.6	845.0	0.221
Switzerland	14966.9	40.0	0.003
United Kingdom	67483.5	9382.6	0.139

Table 5: Comparison of frequency of FDI transactions in Pennsylvania and US, by sector

Sector	US Count	US rel freq	PA count	PA rel freq
Agriculture	16	0.004	0	0
Mining	156	0.035	4	0.034
Construction	13	0.003	0	0
Manufacturing	2023	0.456	78	0.672
Transportation, Communication, and Utilities	404	0.091	5	0.043
Wholesale Trade	356	0.080	5	0.043
Retail Trade	327	0.074	4	0.034
Finance, Insurance, and Real Estate	224	0.051	5	0.043
Services	551	0.124	9	0.078
Public Administration	23	0.005	0	0
Not available	339	0.076	6	0.052
TOTAL	4432	1.000	116	1.000

Figure 4: New FDI Transactions in Pennsylvania, by sector

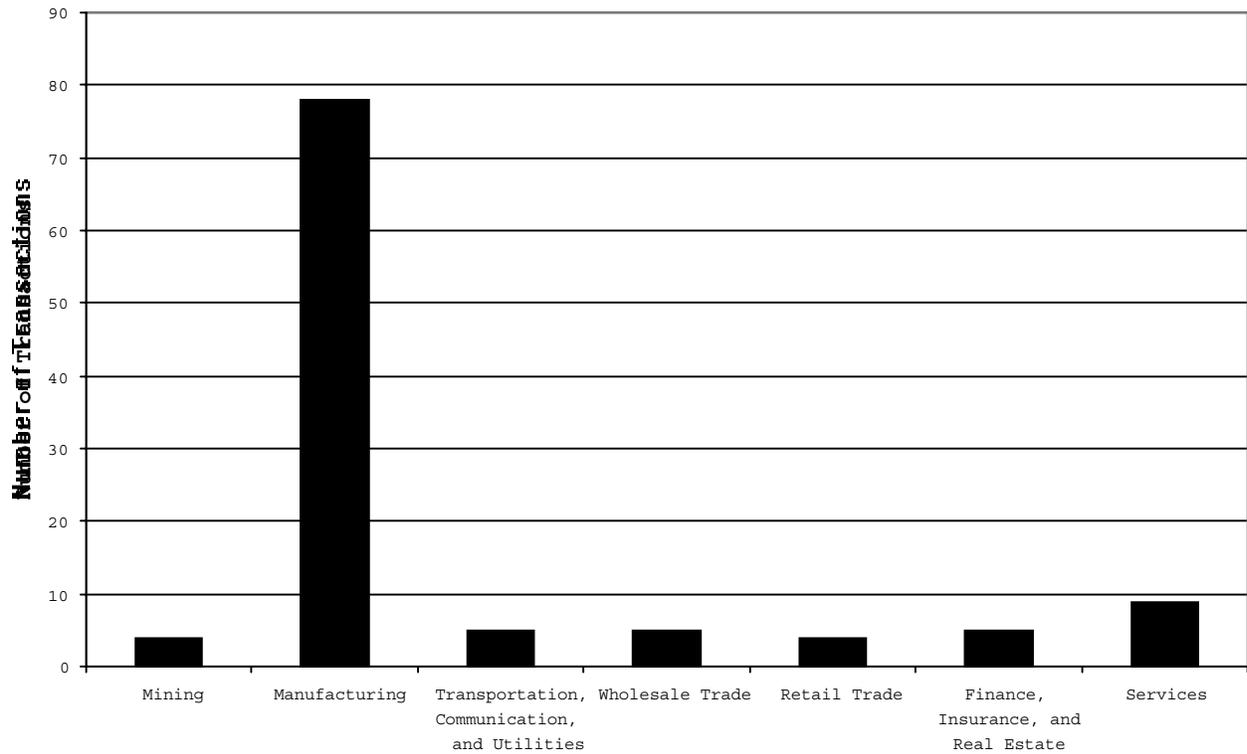


Table 6: Comparison of the Value of new FDI in Pennsylvania and the US, by sector

	US total value	PA total value	PA as % of US total value
Agriculture	73.5	0.0	0.000
Mining	14834.0	1283.0	0.086
Construction	170.4	0.0	0.000
Manufacturing	129511.2	14758.2	0.114
Transportation, etc.	16427.3	23.0	0.001
Wholesale Trade	4467.7	820.0	0.184
Retail trade	6640.6	181.0	0.027
Finance, etc.	24313.4	547.0	0.022
Services	38754.9	282.3	0.007
Public Administration	0.5	0.0	0.000
not identified	10501.8	71.3	0.007

Figure 5: New FDI Transactions in Pennsylvania, 1989-94, by Types

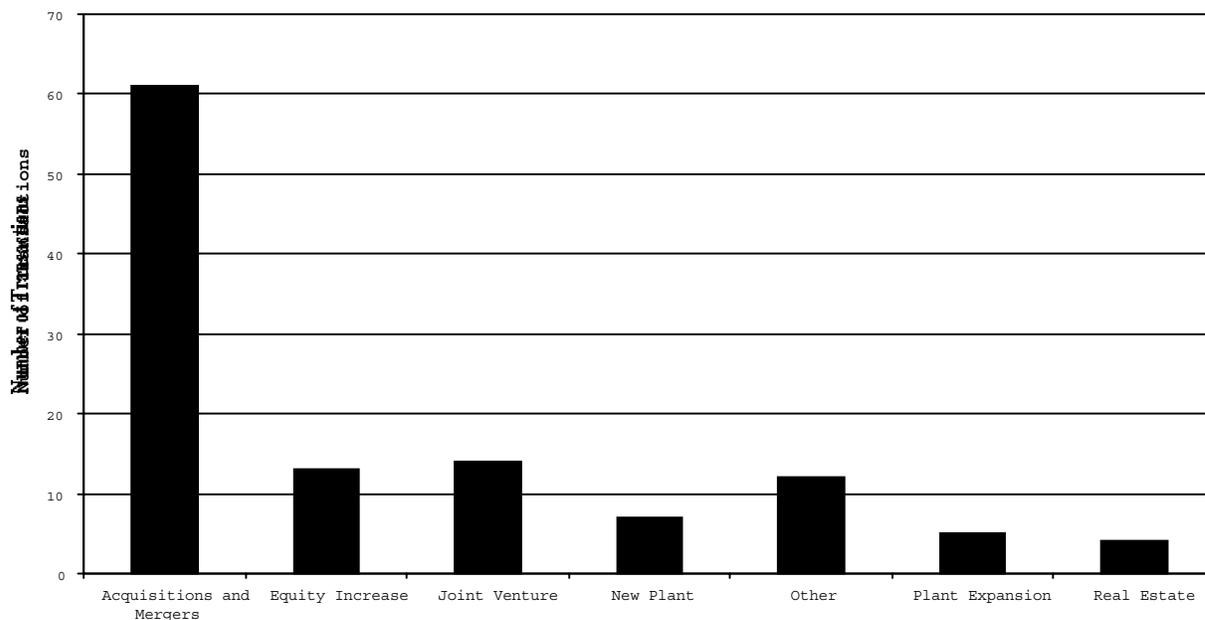


Table 7: Comparison of frequency of FDI transactions in Pennsylvania and US, by type of investment

Mode of Transaction	US count	US. rel. freq.	PA count	PA rel. freq.
Acquisitions and Mergers	1861	0.420	61	0.526
Equity Increase	212	0.048	13	0.112
Joint Venture	351	0.079	14	0.121
New Plant	438	0.099	7	0.060
Other	1049	0.237	12	0.103
Plant Expansion	342	0.077	5	0.043
Real Estate	179	0.040	4	0.034
Total	4432	1.000	116	1.000

Table 8: Comparison of the Value of new FDI in Pennsylvania and US, by type of investment

Mode of Transaction	US total value	PA total value	PA as % of US total value
Acquisitions and Mergers	180094.9	16140.3	0.090
Equity Increase	16440.5	425.4	0.026
Joint Venture	8637.4	869.5	0.101
New Plant	12544.5	78.3	0.006
Other	9634.8	396.5	0.041
Plant Expansion	12439	55.5	0.004
Real Estate	5904.2	0.3	0.000

