MINNESOTA AS A HOST FOR FOREIGN DIRECT INVESTMENT: A COMPARISON WITH OTHER STATES

by

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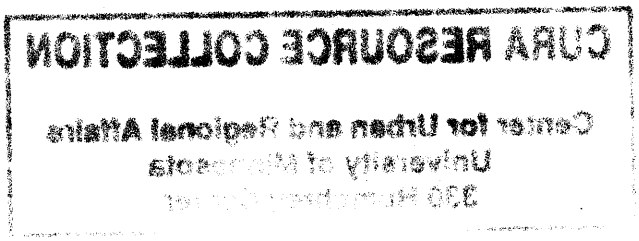

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For several decades following the Second World War, the term "multinational corporation" was virtually synonymous with overseas activity by U.S. firms. Not until the late 1960s and early 1970s did most European and Japanese firms move really aggressively into foreign operations. Until quite recently, some writing referred to foreign investment in the United States as "reverse investment," thereby suggesting its novelty in the post-war period.[1]

Many writers use the terms "multinational corporation" and "foreign direct investment" (FDI)[2] interchangeably because the latter term tries to identify foreign capital that plays an ownership role. As late as 1977, the share of foreign affiliate output in the gross product of the private American economy was 2.3 percent; by 1991, it had reached 5.9 percent, and it has not moved from that level by more than a tenth of a percentage point in the period since (Fahim-Nader and Zeile, 1998: 39). Using another measure, total employment, the share of workers employed by foreign affiliates fell slightly but steadily over the 1990s, from 5.3 percent in 1991 to 4.8 percent in 1996 (Fahim-Nader and Zeile, 1998: 51).

Although FDI may expand in the future, the current level leaves the United States with a considerably lower level of foreign activity than any other major modern economy except Japan, where the estimated stock of direct investment divided by GDP was .3 percent in 1995 by comparison with 7.7 percent in the U.S. The EU (European Union) average was 12.2. (UNCTAD, 1997: 338-339).

[1] For a sketch of the often substantial role that incoming direct investment played prior to the late 1970s, see Glickman and Woodward, 1989, pp. 27-32.

MEASURING DIRECT INVESTMENT

How is direct investment measured? Alternative approaches differ markedly from each other and paint different pictures of the role of direct investment in the United States. The most important current data on FDI comes from the Bureau of Economic Analysis of the Department of Commerce; BEA presents estimates of both the measured amount of direct investment in the United States and the volume and character of the total activity that foreigners control. Commerce's International Trade Administration (ITA) also published some annual data on FDI until 1995.

Both BEA series are culled from mandatory reporting forms provided by U.S. firms, but they differ markedly in concept. The *balance of payments* data attempt to capture the net book value of foreigners' holdings and net outstanding loans to their U.S. affiliates along with year-to-year changes in these measures. Investment is considered "direct", i.e. controlling, if 10 percent or more of a U.S. affiliate is owned by a single foreign entity.

BEA also publishes a quite different set of FDI data concerning *financial and operating measures*—including gross capital stock and employment. By contrast with the first category, these measures are provided at both the national and the state level. Perhaps the most important distinction from the first set of measures lies in the fact that once the common 10 percent threshold of "ownership" is met, the entire controlled investment is counted as FDI, and expansion or contraction for the entire investment appears in the data.

A simple example illustrates this major difference between investment figures in the two BEA data sets. Suppose a British firm owned 15 percent of a U.S. firm with total assets of $1

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[2] Much writing on this subject uses the terms incoming direct investment (IFDI) to distinguish it from outgoing direct investment (OFDI). Because flows into the United States are the entire focus of this study, the simpler term can be used without ambiguity.

million in 1996. It would be recorded as a direct investment in both data sets, but in one the foreign firm's stake will appear as $150,000 while in the other it will be recorded as $1 million. Just as important, if in 1997 the foreign firm increased its ownership to 25 percent while the total capital of the acquired firms stayed the same, the balance of payments data would show an increase in FDI of $100,000 while the other series would indicate no change. In sharp contrast, if, in the next year, either by expansion of domestic equity or debt, the assets of the acquired firm doubled, then the financial and operating data would show a doubling in FDI while the balance of payments data would show no change in all.

Another distinction between the two data sets is essential for understanding the usefulness of data for the several states. If one is concerned with the impact of investment on state level activity, physical assets and employment in the state—and not all assets held by a foreign firm located in the state—are what count.

The first four columns of Table 1 show alternative measures of foreign direct investment in the United States. Column 1 gives the investment position data derived from balance of payments accounts, while Column 2 provides an estimate of asset control. Not surprisingly, 2 is several times the size of 1, suggesting how foreign equity is leveraged into much greater asset control. The third and fourth columns provide national estimates of measures that will be used at the state level in the discussion that follows this introduction. Column 3 differs from 2 by removing all investment not directly related to firm operations. The employment connected with those operations is presented in Column 4. It will be noted that the increase in 3 over time greatly exceeds the rise in 4 (e.g. the ratio of 1996 to 1980 in 3 is 6.24, while in 4, the ratio is only 2.44). Part of this difference results from inflation and the failure of book value adequately to reflect the replacement value of the assets involved.

Table 1: Some Measures of Foreign Direct Investment in the United States

	1 FDIUS (billions US$)	2 Total Assets of US Non-bank Affiliates (billions US$)	3 Gross Book Value of Property, Plant & Equipment (billions US$)	4 Employment (thousands)	5 Total Outlays on Newly Acquired Affiliates (billions US$)	6 U.S. Outlays on Businesses Acquired (billions US$)	7 U.S. Outlays on Businesses Established (billions US$)	8 Employment of New Affiliates (thousands US$)
1977	-	143.5	66.8	1,218.7	-	-	-	-
1978	-	181.2	80.7	1,429.9	-	-	-	-
1979	-	228.6	101.2	1,753.2	-	-	-	-
1980	83.0	291.3	127.8	2,033.9	12.2	9.0	3.2	292.5
1981	108.7	407.0	188.0	2,416.6	23.2	18.2	5.1	442.8
1982	124.7	476.4	225.2	2,448.1	10.8	6.6	4.3	233.8
1983	137.1	531.7	244.0	2,546.5	8.1	4.8	3.2	108.1
1984	164.6	602.5	269.5	2,714.3	15.2	11.8	3.4	172.5
1985	184.6	741.1	295.2	2,862.2	23.1	20.1	3.0	275.5
1986	220.4	838.0	320.2	2,937.9	39.2	31.5	7.7	438.0
1987	263.4	943.7	353.3	3,224.3	40.3	33.9	6.4	394.1
1988	314.8	1,200.8	418.1	3,844.2	72.7	64.9	7.8	736.3
1989	368.9	1,431.3	489.5	4,511.5	71.2	59.7	11.5	722.0
1990	394.9	1,550.2	578.4	4,734.5	65.9	55.3	10.6	474.3
1991	419.1	1,752.6	640.1	4,871.9	25.5	17.8	7.7	249.0
1992	423.1	1,825.2	660.8	4,715.4	15.3	10.6	4.7	141.5
1993	467.4	2,065.8	705.7	4,765.6	26.2	21.8	4.5	289.1
1994	480.7	2,206.7	754.4	4,840.5	45.6	38.8	6.9	289.3
1995	535.6	2,388.7	769.5	4,941.8	57.2	47.2	10.0	312.9
1996	594.1	2,614.0	797.6	4,977.5	79.9	68.7	11.2	436.9
1997	681.7	-	-	-	70.8	64.3	6.5	297.6

Source for years 1980-90: Bureau of Economic Analysis, *Investment Outlays by Country of Each Ultimate Beneficial Owner*.

Source for years 1991-97: Bureau of Economic Analysis, *Survey of Current Business*, June 1998, pp. 42, http://www.bea.doc.gov/bea/pubs.htm.

This BEA source also garners data on the situation of investments, i.e. new reporting entities, in a given year, both nationally and by state. Columns 5 - 8 of Table 1 show those data at the national level, distinguishing between the start of foreign activity through the acquisition of an established entity and market entry accomplished through an entirely new or "greenfield" investment.

A third set of available data has been gathered solely from secondary sources, mainly newspapers, magazines, press releases, and information provided directly by investing firms or other parties to the gathering agency. From such information, the International Trade Administration published a list of major increases in foreign activity in the United States including new businesses, acquisitions, expansions, and equity increases through 1995. Although this information has not been published since that time, it is apparently still being collected. Available data are shown in columns 4-9 of Table 2 and, for comparison, the first three columns give the BEA count of its recorded enterprises.

ITA's activity served as a check on the completeness of BEA's data by sometimes identifying entities that should be reporting but were not. Nonetheless, ITA has always admitted that its transaction compilation could not be as comprehensive as that of the BEA. In addition, ITA value figures, when available (not shown), may be inaccurate—only the very fact of the transaction was frequently recorded. Another major problem with the ITA data set lies in its asymmetry: increasing activity is recorded but diminished activity is not (just as with the BEA data in columns 1-3 in Table 2). While this characteristic has given those data special appeal for the study of entry into the U.S. market (Caves, 1989) the data obviously provide no guide to net FDI change.

Table 2: Counts of New Foreign Activity in the U.S. (BEA and ITA Data)

	1 BEA Number of Entrants Total	2 BEA Number of U.S. Businesses Established	3 BEA Number of U.S. Businesses Acquired	4 ITA Number of Acquisitions/ Mergers	5 ITA Number of Equity Increases	6 ITA Number of Joint Ventures	7 ITA Number of New Plants/ Plant Expansions	8 ITA Number of Major Real Estate Purchased	9 ITA Other
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	225	36	26	85	149	156
1979	-	-	-	344	39	35	153	269	195
1980	1,659	938	721	344	47	41	199	350	218
1981	1,333	871	462	291	39	47	129	510	187
1982	1,108	713	395	231	42	50	99	298	193
1983	775	493	282	192	39	38	125	161	196
1984	764	449	315	245	43	50	170	126	272
1985	753	363	390	367	33	49	112	100	248
1986	1,040	485	555	420	51	57	161	121	239
1987	978	435	543	547	63	99	231	108	280
1988	1,424	555	869	476	61	91	162	93	200
1989	1,580	743	837	512	50	65	111	75	196
1990	1,617	778	839	486	46	78	147	14	247
1991	1,091	530	561	322	41	66	122	5	169
1992	941	478	463	186	18	50	100	0	158
1993	980	426	554	161	25	48	78	49	130
1994	1,036	431	605	193	30	44	147	22	148
1995	1,124	480	644	-	-	-	-	-	-
1996	1,155	469	686	-	-	-	-	-	-
1997	1,050	437	613	-	-	-	-	-	-

Source: Bureau of Economic Analysis, *Survey of Current Business*, June 1998, pp. 39, 42, and 45.

Source for ITA data: *Foreign Direct Investment in the United States Series* (1989 - missing volume).

Like the balance of payments data, the financial and operating data are classified by the main industrial sector of the affiliate. Table 3 shows sectoral investment at the national level with several associated measures, some of which are also available for the states. These sectors will be examined in some detail at the state level later in this study, but one interesting fact stands out in the national data. The manufacturing sector, which in the overall U.S. economy accounts for only about 20 percent of total output, looms much larger in FDI. The manufacturing share of Gross Property Plant and Equipment has been very stable: it was 36.2 percent in 1977, 36.8 percent in 1987, and 35.9 percent in 1996. The share of manufacturing FDI employment has been even larger in relation to the whole, although it has fallen somewhat: it was 54.3 percent in 1980, 47.8 percent in 1987, and 44.5 percent in 1996.

One explanation for the large manufacturing role relates to the very nature of direct investment. Direct investors are frequently firms that have long familiarity with the host country as exporters, and they see greater opportunities for market expansion if they increase their local presence. Because goods are far more heavily traded by the U.S. than services — despite the rapid growth of service trade, services comprised only 28 percent of exports and 18 percent of imports in 1990—an unusually large role for manufacturing may not be unexpected. While FDI is essential for some service trade, there may be greater economies of scale and international standardization in goods than in services, cultural barriers including language could act as a barrier to service trade, and far more services than goods remain subject to foreign investment restrictions—mainly maximum ownership percentages of individual firms.

Table 3: Selected Data of Nonbank U.S. Affiliates of Foreign Firms by Industry of Affiliate, 1996

		Millions of dollars				Thousands of employees	Millions of dollars		
		Gross product	Sales	Net income	Compensation of employees		Total assets	Gross property, plant, and equipment	
								Total	Of which: Commercial property
All Industries		**339,485**	**1,596,022**	**21,110**	**210,378**	**4,977.50**	**2,613,985**	**797,647**	**166,807**
Petroleum		**32,733**	**152,832**	**5,586**	**6,525**	**111.8**	**114,735**	**118,588**	**7,040**
	Petroleum and coal products manufacturing	23,099	73,358	3,725	4,015	67.2	70,418	89,907	5,335
	Other	9,634	79,474	1,861	2,510	44.5	44,317	28,681	1,706
Manufacturing		**156,354**	**552,023**	**7,153**	**104,004**	**2,213.60**	**578,886**	**286,029**	**9,409**
	Food and kindred products	11,783	49,562	3,591	6,623	205.4	58,624	21,764	2,016
	Chemicals and allied products	42,095	134,451	549	24,633	409.8	180,996	91,005	1,942
	Primary and fabricated metals	16,079	62,902	1,010	10,969	233.3	60,804	35,123	833
	Machinery	31,863	124,066	-737	25,279	536.8	95,234	40,900	1,199
	Other manufacturing	54,534	181,042	2,738	36,501	828.4	183,228	97,237	3,419
Wholesale trade		**41,973**	**466,700**	**2,839**	**24,338**	**488.6**	**233,829**	**86,757**	**8,609**
	Motor vehicles and equipment	9,350	101,416	409	4,033	68.9	79,527	46,319	3,650
	Professional and commercial	4,560	33,122	-149	3,270	66	17,687	4,838	401
	Metals and minerals, except petroleum	2,811	55,492	418	1,667	28.4	22,988	4,478	453
	Electrical goods	8,437	68,507	257	5,456	107.2	37,415	12,369	1,948
	Machinery, equipment, and supplies	3,245	41,448	365	1,925	39.7	19,853	3,253	344
	Other durable goods	3,362	58,566	-302	2,536	57.6	14,256	4,456	687

Table 3: Continued

		Millions of dollars				Thousands of employees	Millions of dollars		
		Gross product	Sales	Net income	Compensation of employees		Total assets	Gross property, plant, and equipment	
								Total	Of which: Commercial property
Wholesale trade continued	Groceries and related products	1,729	30,459	38	1,308	36.3	8,119	1,870	576
	Farm-product raw materials	1,085	34,508	244	650	18.1	8,668	2,143	130
	Other nondurable goods	7,395	43,181	1,559	3,493	66.4	25,317	7,030	419
Retail trade		**24,544**	**94,028**	**377**	**15,094**	**821**	**50,063**	**31,500**	**15,881**
	General merchandise stores	563	1,811	-15	359	21.9	1,999	672	211
	Food stores	14,452	60,115	834	8,250	441.7	26,252	20,194	11,399
	Apparel and accessory stores	2,376	8,524	-201	1,534	83.8	5,157	3,837	1,705
	Other	7,153	23,579	-241	4,951	273.6	16,656	6,797	2,566
Finance, except depository institutions		**6,001**	**58,230**	**64**	**8,018**	**49.3**	**705,181**	**8,337**	**2,854**
Insurance		**10,658**	**89,625**	**5,306**	**9,167**	**152**	**575,947**	**28,956**	**9,278**
Real estate		**4,984**	**13,903**	**-1,718**	**1,006**	**27.1**	**100,549**	**90,180**	**79,342**

Table 3: Continued

		Millions of dollars				Thousands of employees	Millions of dollars		
		Gross product	Sales	Net income	Compensation of employees		Total assets	Total	Of which: Commercial property
Services		**21,840**	**56,247**	**-3,402**	**18,801**	**633.8**	**105,297**	**51,789**	**28,881**
	Hotels and other lodging places	4,019	8,033	-678	2,453	109.9	31,041	25,142	20,760
	Accounting,	1,164	3,902	-106	1,105	21.2	5,095	2,259	894
	Health services	2,704	5,999	-368	2,351	85.8	8,721	2,558	56
	Other services	1,830	4,819	-273	1,503	65	11,573	6,918	3,87
Other industries		**40,398**	**112,434**	**4,907**	**23,424**	**480**	**149,497**	**95,512**	**5,512**
	Agriculture, forestry, and	667	2,204	-84	502	17.7	5,413	4,193	345
	Mining	5,486	11,802	769	2,618	41.6	28,032	23,707	153
	Construction	3,228	17,227	-516	3,278	69.1	10,675	4,886	2,081
	Transportation	11,533	32,884	667	9,208	170.1	27,667	10,058	2,022
	Communication and public utilities	19,485	48,317	4,072	7,818	181.8	77,711	52,667	911

Source: Bureau of Economic Analysis, Survey of Current Business, June 1998, http://www.bea.doc gov/bea/pubs.htm.

A detailed examination of the source countries of FDI in the U.S. lies beyond the scope of this study. Only a few countries are responsible for most of it, however. In 1996, seven countries accounted for 80 percent of the gross product of all affiliates in the U.S. (yet another measure of affiliate activity). In descending order of importance, they were the United Kingdom (21.8 percent), Japan (16.1 percent), Germany (11.9 percent), France (9.6), Canada (8.8 percent), the Netherlands (8.6 percent), and Switzerland (5.7 percent). These rankings change over the years, sometimes substantially. For example, France increased its share by one-third between 1995 and 1996, moving ahead of Canada (Fahim-Nader and Zeile, 1998: 48-49). Such shifts reflect that the lion's share of many home countries' investments are in the hands of only a few firms—sometimes only one or two—and the changing fortunes and strategies of those firms can shift source countries' shares substantially.

DIRECT INVESTMENT AND PUBLIC POLICY

Although some have questioned whether the increased role of FDI was altogether a positive development for the United States (Tolchin and Tolchin, 1987), official U.S. policy has remained positive about FDI throughout, and state governments in the 1980s eagerly sought foreign investment as they also attempted to expand exports. Both measures were rightly regarded as means whereby overall state wealth, and its imperfect but politically salient correlate, "jobs," could be encouraged. By 1987 all but two states had identifiable parts of state government engaged in some kind of international business development, and nearly all states claimed to be actively recruiting foreign investors. Although foreign investors have been subject to certain controls, especially in agricultural land, finance, and insurance, the author knows of no attempt to discourage investment outside of statutorily restricted areas.

The 1980s were a time of struggle for the states. The federal government cut federal taxes while reducing revenue passthrough to the states, thus substantially increasing the service burden placed upon them. Until late in the decade, this problem was dramatically exacerbated by the rapid contraction of a range of industries blasted by foreign competition greatly sharpened by the ascendant dollar.

Minnesota shared in the national enthusiasm for international business development. The Perpich administration began in 1981 with very public behavior aimed at broadening state business horizons. The Governor made a series of highly publicized international trips, he began the Minnesota Trade Office, and he chose a commission that recommended the site for the World Trade Center (Kudrle and Kite, 1988). The World Trade Center was completed in 1984.

Table 4 shows the employment generated by FDI in 1996 by state and sector as well as the size of that employment in relation to that sector's total employment in the state. From these data, Minnesota scarcely stands out as a host to foreign direct investment. Its FDI-controlled share of private employment was slightly below the simple national average of all of the states for total investment—3.5 versus 3.6 percent—and below each of the sectoral subcategories except Real Estate and "Other Industries." From a policy standpoint, however, we want to know how well Minnesota is doing by comparison with its potential. If we knew, for example, that states with warm winters were drawing hugely disproportionate shares of FDI, the Minnesota performance might appear impressive.

Table 4: Sector Employment from FDI by State and in Relation to Total State Sectoral Employment, 1996

	All Industries		Manufac-turing		Wholesale		Retail		Finance, except Depository Institutions		Insurance		Real Estate		Services		Other Industries	
Alabama	61,400	3.2%	37,900	9.8%	8,800	9.3%	3,200	1.0%	0	0.0%	600	2.5%	0	0.0%	6,600	1.5%	3,000	0.5%
Arizona	56,700	2.8%	17,900	8.9%	4,000	3.9%	14,300	3.8%	250	0.5%	1,750	5.5%	300	0.9%	8,900	1.5%	5,500	0.9%
Arkansas	35,100	3.0%	22,900	9.0%	3,500	7.1%	3,200	1.6%	0	0.0%	600	5.3%	100	1.1%	2,500	1.0%	1,500	0.4%
California	545,300	3.9%	194,500	10.5%	93,200	12.3%	65,300	2.8%	4,300	1.6%	17,200	7.9%	6,300	3.3%	109,600	2.5%	49,500	1.2%
Colorado	69,800	3.4%	19,400	9.8%	6,300	6.3%	14,100	3.7%	700	1.9%	4,400	12.4%	400	1.3%	10,200	1.7%	12,600	1.9%
Connecticut	83,300	5.0%	35,800	12.9%	9,000	11.0%	24,600	8.9%	600	1.9%	2,400	3.3%	300	1.9%	6,300	1.2%	3,200	0.8%
Delaware	15,400	3.9%	7,500	12.9%	300	2.1%	3,000	4.2%	0	0.0%	1,750	24.0%	0	0.0%	1,600	1.5%	250	0.2%
Florida	214,400	3.2%	64,600	13.1%	17,800	5.3%	47,400	3.6%	600	0.4%	5,300	4.3%	2,800	2.5%	42,500	1.9%	30,100	1.6%
Georgia	185,900	4.9%	87,900	15.0%	22,200	9.3%	19,700	2.9%	1,000	1.4%	7,600	12.1%	1,100	2.9%	24,300	2.5%	20,300	1.8%
Idaho	11,700	2.2%	3,100	4.2%	1,000	3.4%	5,500	5.5%	0	0.0%	400	6.1%	0	0.0%	900	0.7%	700	0.4%
Illinois	229,700	3.9%	117,500	12.1%	27,000	7.8%	19,400	2.0%	4,300	3.1%	9,100	6.5%	400	0.7%	25,800	1.5%	20,000	1.3%
Indiana	124,900	4.3%	90,400	13.3%	9,600	6.8%	9,100	1.6%	200	0.4%	2,200	4.6%	0	0.0%	7,700	1.1%	4,700	0.6%
Iowa	36,300	2.5%	23,200	9.3%	1,600	1.9%	1,800	0.7%	0	0.0%	2,700	7.1%	0	0.0%	1,400	0.4%	5,500	1.4%
Kansas	41,300	3.1%	16,200	8.2%	6,300	8.3%	2,900	1.2%	100	0.4%	2,200	9.8%	0	0.0%	2,300	0.7%	10,000	2.3%
Kentucky	84,100	4.7%	55,600	17.7%	12,800	15.5%	3,600	1.1%	100	0.3%	500	2.5%	0	0.0%	6,100	1.4%	4,800	0.9%
Louisiana	54,400	2.8%	17,300	9.1%	3,200	3.4%	8,800	2.6%	0	0.0%	1,100	4.2%	0	0.0%	8,000	1.5%	5,400	0.8%
Maine	30,600	5.3%	11,900	13.4%	1,300	5.0%	12,700	11.1%	0	0.0%	500	4.4%	0	0.0%	1,300	0.8%	750	0.4%
Maryland	94,500	4.0%	30,500	17.4%	5,700	5.2%	33,600	7.7%	500	1.1%	4,300	11.0%	300	0.8%	9,500	1.2%	8,600	1.1%
Massachusetts	163,200	5.1%	60,300	13.5%	9,000	5.3%	54,500	10.0%	1,000	1.5%	7,200	9.9%	600	2.0%	23,000	2.0%	7,100	1.0%
Michigan	157,300	3.5%	80,400	8.2%	13,900	6.3%	18,900	2.3%	700	0.8%	2,800	4.1%	200	0.5%	19,100	1.5%	17,200	1.6%
Minnesota	88,900	3.5%	46,500	10.8%	3,500	2.3%	4,400	1.0%	300	0.7%	2,900	5.1%	500	2.0%	5,700	0.8%	25,000	3.8%
Mississippi	21,600	1.8%	12,400	5.0%	2,400	5.3%	2,000	1.0%	0	0.0%	400	3.2%	0	0.0%	2,700	1.0%	1,300	0.3%
Missouri	83,600	3.1%	45,300	10.8%	9,800	6.6%	5,700	1.2%	1,750	3.1%	3,700	8.0%	300	1.1%	5,300	0.7%	10,800	1.4%
Montana	4,200	1.1%	800	3.3%	100	0.5%	1,200	1.5%	0	0.0%	0	0.0%	0	0.0%	500	0.5%	1,500	1.1%
Nebraska	18,100	2.0%	9,000	7.9%	900	1.7%	1,700	1.1%	0	0.0%	700	2.9%	0	0.0%	4,400	1.9%	1,300	0.5%
Nevada .	25,000	2.8%	6,000	15.3%	1,200	3.6%	4,800	3.4%	0	0.0%	100	1.1%	300	2.0%	2,600	0.7%	9,300	3.6%
New Hampshire	30,200	5.3%	17,100	16.3%	1,000	3.7%	8,600	7.2%	0	0.0%	1,000	7.5%	0	0.0%	600	0.4%	750	0.5%
New Jersey	206,500	5.5%	94,300	19.5%	32,400	11.9%	29,900	5.0%	3,300	4.8%	8,300	9.6%	600	1.6%	23,700	2.0%	12,900	1.2%
New Mexico	15,400	2.1%	4,300	9.4%	800	2.9%	3,500	2.5%	0	0.0%	100	1.3%	100	1.3%	1,700	0.8%	3,600	1.2%
New York	345,400	4.2%	105,400	11.3%	35,200	8.2%	75,500	6.1%	24,200	10.8%	24,100	13.1%	5,400	3.5%	48,800	1.7%	25,000	1.1%

Table 4: Continued

	All Industries		Manufac-turing		Wholesale		Retail		Finance, except Depository Institutions		Insurance		Real Estate		Services		Other Industries	
North Carolina	225,800	5.9%	120,300	14.2%	16,700	9.2%	45,400	7.0%	300	0.4%	4,100	8.9%	300	1.0%	13,000	1.5%	25,100	2.2%
North Dakota	4,800	1.5%	2,200	10.0%	200	0.9%	200	0.3%	0	0.0%	300	6.2%	0	0.0%	1,600	1.7%	200	0.2%
Ohio	223,600	4.0%	136,700	12.4%	13,400	4.7%	31,200	3.0%	100	0.1%	3,000	3.2%	100	0.2%	18,400	1.2%	10,700	0.8%
Oklahoma	35,000	2.4%	17,200	9.8%	3,700	5.6%	4,400	1.7%	300	1.1%	700	3.5%	100	0.7%	4,200	1.1%	1,200	0.2%
Oregon	49,100	3.1%	18,500	7.8%	9,600	10.7%	9,900	3.5%	300	1.0%	1,500	6.1%	200	0.9%	5,100	1.2%	3,800	0.8%
Pennsylvania	234,300	4.2%	118,900	12.7%	16,800	6.4%	37,800	3.9%	900	0.8%	5,700	4.5%	200	0.4%	18,500	1.1%	34,200	2.5%
Rhode Island	19,300	4.1%	8,100	9.8%	1,500	8.0%	6,600	8.1%	0	0.0%	300	3.1%	0	0.0%	1,800	1.2%	900	0.8%
South Carolina	116,000	6.4%	68,500	18.6%	7,000	10.3%	23,600	6.9%	0	0.0%	1,750	7.5%	200	1.1%	7,900	1.9%	6,100	1.1%
South Dakota	5,200	1.4%	2,900	6.0%	300	1.5%	800	1.1%	0	0.0%	200	4.0%	0	0.0%	400	0.4%	700	0.6%
Tennessee	133,600	5.0%	80,600	15.5%	13,700	9.6%	13,700	2.9%	0	0.0%	2,600	7.0%	100	0.5%	13,800	2.0%	8,300	1.2%
Texas	316,900	3.6%	128,000	12.1%	30,900	6.4%	40,000	2.6%	1,100	0.7%	6,600	4.5%	1,800	1.6%	52,300	2.2%	25,800	0.9%
Utah	32,900	3.3%	10,800	8.4%	1,200	2.5%	7,800	4.2%	0	0.0%	300	2.0%	0	0.0%	8,200	3.0%	4,400	1.4%
Vermont	9,800	3.4%	3,400	7.3%	2,100	16.5%	2,300	4.3%	0	0.0%	0	0.0%	0	0.0%	1,400	1.6%	500	0.6%
Virginia	141,200	4.1%	50,000	12.4%	9,500	6.5%	46,300	7.9%	500	0.7%	1,100	2.5%	200	0.5%	14,000	1.5%	18,900	1.6%
Washington	86,000	3.3%	30,700	8.9%	7,500	5.1%	20,200	4.4%	200	0.5%	2,800	6.8%	400	1.2%	13,200	1.9%	10,400	1.2%
West Virginia	26,300	3.7%	11,400	13.8%	2,200	7.2%	3,800	2.8%	0	0.0%	100	1.3%	0	0.0%	2,600	1.4%	5,300	2.1%
Wisconsin	70,700	2.6%	46,000	7.6%	3,300	2.5%	6,600	1.4%	0	0.0%	3,200	5.2%	0	0.0%	6,600	1.0%	4,200	0.6%
Wyoming	6,100	2.6%	2,500	23.0%	300	4.0%	1,300	2.8%	0	0.0%	100	4.1%	0	0.0%	400	0.8%	1,200	1.1%
Average %		3.6%		11.4%		6.2%		3.7%		0.8%		5.8%		0.8%		1.4%		1.2%

Source: Bureau of Economic Analysis, Operations of U.S. Affiliates of Foreign Companies, Table G7, http://www.bea.doc.gov/bea/uguide.htm#_1_23.

Common sense suggests perhaps three broad categories of possible state level determinants of FDI. First, there are elements that stand essentially as parameters of the state's appeal. Minnesotans can do little about their weather or their geographic location, for example. A second category concerns developments with a long timeframe such as the age and educational structure of the population and the overall pattern of economic activity in the state; they may be influenced by policy, but change is slow. A third category receives the most attention. This relates to the constituent elements of what is usually referred to as the state's "business climate." Issues such as taxes, the structure of public expenditures, and labor legislation are included here. Some such measures can be considerably adjusted even in the short run. Equally apparent, however, is the possibility of policy reversal. A shift in the public mood and a new set of politicians could undo tomorrow measures that are taken today. This reduces the appeal of more attractive policies unless they have been in place for a long time or the stability of which can otherwise be persuasively argued.

WHAT DETERMINES THE STATE LOCATION OF FOREIGN DIRECT INVESTMENT?

Whatever the relative importance of the factors determining foreign investment, statistical analysis could clearly be useful. From the beginning of the surge of FDI in the late 1970s, analysts in geography and regional economics have attempted to pin down the determinants of state—and sometimes regional or county level—locational choice. There have been many substantial studies over the years, most of them concentrating on the manufacturing sector, which, as noted earlier, has accounted for nearly half of FDI employment over the entire period under consideration. No attempt will be made here to summarize their findings in detail—indeed, the sheer passage of time has rendered some early results outdated. Our purpose in

considering certain elements of previous work, however, is twofold. First, they can serve as a guide to variables that should be explored in the present study. Second, because, as explained later, the approach used here will severely limit the ability to identify significant variables, the results of other studies might provide important complementary information for the present work. And so too might be results of studies aimed at the determinants of interstate differences in overall economic growth. Some studies attempt to compare and contrast the determinants of FDI with those for domestically-owned activity (e.g., Glickman and Woodward, 1987).

Although the following categories have apparently not been used before, it appears that previous work sees the state level determinants of direct investment as falling into four major categories: location, size, economic structure and factor availability, and policy issues.

Location

State location is certain to be a factor in the siting of FDI for four broad sets of reasons. First, before the surge of the late 1970s, FDI in the U.S. was mainly in the states of the Northeast. The most obvious interpretation for that pattern stems from the familiarity of Canadians and Europeans with that part of the country. These areas had traditionally served as their *entrepot* for sales into the U.S. market, and some directly-owned import-substituting activity was already in place.

The dominant industrial organization approach to the determinants of direct investment (Caves, 1971)[3] sees overseas activities by firms as a net of special advantages and disadvantages. One of the special disadvantages is not "knowing the territory." America is a large country, both

[3] The industrial organization approach, one that stresses imperfections in specific goods and services markets, has largely displaced other emphases, notably international differences in the cost of capital. For a discussion, see Graham and Krugman, 1995, Appendix B.

legally and culturally; this poses problems of fixed information costs to incoming firms. These costs can be cut both by locating where the firm has previous activity, i.e. importing, and perhaps where other foreigners, especially from the same country, have experience working in the local milieu. This suggests the possibility that in both the early days of substantial FDI and later as well, some kinds of economies of agglomeration and path dependence for foreign firms might be at work. The clustering of many German-owned firms in South Carolina is sometimes cited as an example. Glickman and Woodward's model of the distribution of FDI in the United States in the 1970s (and for some years thereafter) includes a variable called "bordercoast" that includes the coastal states of the northern manufacturing belt along with Maine, Vermont, and New Hampshire (Glickman and Woodward, 1987: 56) to capture the possible tendency of FDI to grow where it was historically planted.

Proximity to other markets provides a second reason for the importance of location. Some of this is based on sheer distance and some on the extent to which infrastructural investments have been made that increase the locational advantage of a state.[4] Established domestic industry, of course, also may draw foreign suppliers, customers, competitors, and acquirers, but this factor is probably more usefully regarded as an element of the economic structure of the state.

Tennessee and Kentucky provide examples of state locational advantage for heavy industry. They are close to large sales markets, they are well served by both rail and highway transport, and, to use a specific but very important instance, they are quite close to nearly all elements of the automobile industry.

[4] Infrastructural expenditure has, in general, been hard to identify as a source of general growth (Munnell, 1990; Crandall, 1993: 38). This may result from some combination of infrastructural expenditures based on political rather than economic payout and the great heterogeneity of expenditures that are classified in that category.

Some statistical models have attempted to isolate the importance of location by including a variable for the distance of a state from the country's prime manufacturing area (Wheat, 1973). This approach grows from a preoccupation with manufacturing, and its usefulness elsewhere has remained largely unexplored.

A state's natural climate provides yet another location-specific advantage. Before the Second World War, the heat and humidity of the South muted its attraction, but air-conditioning appears to have allowed the South and Southwest to be seen as an unambiguously more attractive place to live for many Americans than the Northeast, the Great Lakes, and the Upper Midwest[5] (along with many social changes that were made in part to attract outsiders and were subsequently accelerated by their presence). In an open economy, people tend to go where jobs are, but the process is mutually causal, and people will work for lower money incomes in places where they would rather live, all else equal. The period of greatest FDI expansion in the U.S. also saw substantial migration of domestically-owned manufacturing industry southward and westward—away from what became known as the Rustbelt (Glickman and Woodward, 1987, 1989; Crandall, 1993). In recognition of the attractions of the newly popular areas, some measure of climate, such as mean January temperature, is often included in statistical analysis (see, for example, Crandall, 1993:29-41).

A final locational variable is energy costs. Some states have, or are close to, cheap sources of energy, which are posited to be a critical concern in much of manufacturing. Some studies have found state energy costs to be a statistically significant, if not always substantially important, apparent determinant of interstate variation in manufacturing location. Other recent studies, however, have found significance with the "wrong" sign, and no explanation has yet

been discovered, suggesting that the correlation may be spurious. (Ondrich and Waslyenko, 1993:90-95; Crandall, 1993: 37).

Other resource determinants of direct investment are so obviously site-specific that they are usually ignored in the analysis of direct investment. For example, there is, as far as the author knows, no serious attempt to explain interstate variation in petroleum extraction. Only a few states are in the running, and statistical analysis would be very difficult. The same argument applies to various categories of mining.

Size

The economic size of a state provides perhaps the most obvious variable to employ for explaining variations among the states in FDI. Yet a couple of early studies did not attempt to control for it (Little, 1978; McConnell, 1980), assuming perhaps that, whatever its importance when other factors were held constant, it was simply too far down on the list of probable real world determinants to be worth bothering with. The overwhelming majority of studies of state level investment do include some measure of a state's economic size, however. Size is measured variously by population, personal income, or gross state product. The growth of a state's total activity could be important, as well. If two states have the same total economic size, but one is growing while the other is stagnant or falling, the former state should be more attractive to foreign (and domestic) investors as a sales market.

[5] For a brief discussion of the internal migration of people and industry in postwar America, see Crandall, 1993; Chapter 1.

Economic Structure and Factor Availability

FDI in essence "latches on" to state economies that are invariably and overwhelmingly determined by non-FDI activity. After all, even the heaviest level of FDI, that in South Carolina, only accounted for 6.4 percent of total employment in 1996. The economic structure of the state may matter a great deal for incoming investors. On *a priori* grounds, critical factors could be expected to differ greatly by sector, however. Once again, by far the greater part of existing research has focused on manufacturing. A variable employed by Plaut and Pluta (1983) for general manufacturing investment was also found by Glickman and Woodward to correlate quite strongly with manufacturing FDI in the early 1980s. The variable attempts to capture a supply-demand imbalance by devising a ratio variable. The "top" of the ratio is a sum of terms, each of which is the personal income of another state divided by the squared distance of the center of the state being considered to the center of that other state squared (the distance of the state to itself is one half of the average radius of the state). The "bottom" of the ratio involves similar expressions but with manufacturing employment in the numerator. The greater the ratio is, the greater is the "deficit" of manufacturing activity in the state and hence presumably the greater the attraction of the state for foreign investors.

Although the ratio variable appears to "work," for manufacturing FDI in the early 1980s, as Glickman and Woodward acknowledge, one might have doubts about its applicability even on *a priori* grounds. Except for some distribution and transportation costs savings, it is hard to see why the supply and demand for manufactures should closely match at the state level. On the other hand, it is even harder to see any usefulness for the approach in explaining service activity that requires proximate delivery. In such sectors, significant imbalance would not be expected to emerge at all, so there would be no gap for FDI to fill.

The apparent success of the imbalance variable could be attributable at least in part to the fact that lower wages were attracting investment to the same places that were growing rapidly because people wanted to live there, perhaps in some cases at lower real wages than in the areas they left.

Wheat (1986) rejects the supply-demand imbalance variable just discussed on both empirical and theoretical grounds. He concludes that, whether the variable correlates with direct investment or not, it combines factors in a way that makes meaningful interpretation impossible. Instead, he suggests dividing the examination of the role of geography in manufacturing location into two separate considerations: 1) state level, i.e. local, supply-demand imbalance and 2) distance from the traditional manufacturing areas of the country. He multiplies a measure of imbalance against integer values of the distance from Pittsburgh ("ZONE") for a variable he calls "demand," which is intended to identify attractive investment opportunities (its expected sign is positive).

THE APPROACH OF THIS STUDY

This study's ultimate purpose is to see how well Minnesota has fared in attracting direct investment. The approach taken will try to emphasize "the big picture" and to place the results in an easily understood context. In so doing, both the statistical and the narrative approach will be quite straightforward. This contrasts sharply with some recent research. Coughlin et al (1991) and Ondrich and Wasylenko (1993), for example, provide highly complex models of manufacturing plant location. These models attempt to isolate the contributions of various factors to a location decision, holding other factors constant, but the results are not always consistent among studies (or perhaps stable over time) and do not deal at all with the 60 percent of direct

investment that is not in manufacturing. Moreover, in their understandable desire to reach beyond the limitations of a simple single equation model of a state's FDI position—a problem to be discussed in a moment—how much that overall position differs from other states and the reasons for those differences may be completely lost. In general, there appears to be a gap in the literature between purely descriptive writing about state performance and highly specialized studies of certain kinds of investment. Therefore, despite some innate limitations, this study takes the opposite tack. This work will look at Minnesota in the context of the performance of all forty-eight contiguous other states and will do so for eight sectors as well as for total investment.

Alaska and Hawaii are not considered here or in most other studies. In addition to their lack of direct physical connection to the other states, a factor that alone would make their consideration difficult, each has unique attractions as a host for FDI related to its natural resource endowment. Alaska is host to much of the country's petroleum investment while Hawaii is a vacation paradise relatively close to the Far East and has therefore drawn very high levels of foreign real estate investment, mainly from Japan. Both states attract high levels of FDI but for reasons that are largely insensitive to conditions in other states.

This investigation will follow the lead of the BEA and put most emphasis on employment figures in exploring the various sectors of FDI. Although both state gross property plant and equipment and employment both have good claims on attention, the latter data are classified among sectors more accurately because employment can be assigned on the basis of industry of sales rather than the industry of affiliate. For example, many major foreign automobile affiliates have all of their gross property plant and equipment classified as "manufacturing" because that is the primary activity of the affiliate even though a large part of their activity is in fact in wholesaling. The state employment data generally make the appropriate distribution while the

physical capital measures do not. Gross product estimates are similarly limited (for more information, see Fahim-Nader and Zeile, 1998: 52).

This study will first look at specific sectors of investment: manufacturing, retail, wholesale, financial, insurance, real estate, services, and other investment. These are the categories broken out by the Bureau of Economic Analysis. This is followed by an attempt to explain total investment.

This analysis looks at the entire accumulation of FDI activity across the states for the year 1996. The great rush to increase investment into the U.S. that began in the late 1970s was largely spent by the early 1990s. In other words, the spurt that increased FDI from 2.7 percent in 1980 to a high water mark of 5.3 percent of private employment in 1991 took place over only a decade. The period since has mainly seen consolidation with employment varying slightly around 5.0 percent over the ensuing years through 1996.

The use of accumulated investment activity results in part from a desire to maximize the number of observations. For many states and many sectors, there is little change in employment or investment from year to year. Far more importantly, the short period changes that are observed are often generated by temporary economic conditions (including those in the home country of the investing firm) [6] or firm-specific short-term behavior that have little if anything to do with a state's fundamental attractiveness as a site for FDI.

The values of specific variables used to explain the accumulated stock across the states are typically drawn from the early or mid-1990s. The use of values for some earlier time, perhaps the very beginning of the period, might strike some as more appropriate. The choice made here can be defended. In very few states has direct investment itself had a large effect on the state's

overall economic fortunes. Thus, the chain of causation is almost entirely from observed state characteristics to the state's attractiveness to direct investors, and the relative economic conditions of a state can be forecast with some accuracy for a number of years in advance. If the really unexpected transpires, investment activity can usually be expanded or contracted over a fairly short period of time. We therefore expect that the total volume of investment in a state in a given year should quite closely match the state's attractiveness in that year.

Important limitations flow from the use of the state as the unit of analysis. Forty-eight is quite a small number for statistical analysis. The small size makes it difficult to isolate the contributions of variables, particularly when their own variation is small or when their movements are correlated with each other. And each additional variable increases the seriousness of this problem. To maximize the usefulness of the study, an attempt will be made to exclude independent variables that have high levels of correlation with variables included.

The earlier discussion stressed the possible importance of at least four broad categories of determinant, and this project has explored dozens of variables identified from previous studies. In general, these variables have not showed a high and robust level of correlation with alternative measures of accumulated foreign activity in various sectors. Even the most formal "trawling" approach, stepwise regression, produces very few significant associations and fewer still that are likely to result from other than spurious correlation. Some variables, however, have both important theoretical foundation for the study and also show some life in multiple regression. In each of the following sections several regressions will be shown. A central objective is to discover how Minnesota is doing by looking at its distance above or below the regression plane: what is unexplained by those factors included in the equation. Although all of the residuals will

[6] As noted, the home country determinants of FDI in the U.S. lie beyond this study. A brief look at differences in

be derived from just one equation, these residuals are not highly sensitive to the precise specification.

From the plethora of possible explanatory variables, some appear more promising on theoretical grounds than others, and each *a priori* important dimension of a state's attractiveness will be considered. Gross state product provides the most comprehensive measure of a state's total economic activity. If foreign investment were attracted equally by state economic activity of all kinds, this variable would explain all of it. While that extreme assumption cannot be expected to hold, total size measured by GSP is expected to have a strong and positive influence on investment.

It also makes sense that, for any given size of state, investment might be larger in anticipation of future demand from within that state. The second variable included in the equation is a measure of the rate of growth of GSP between 1980 and 1996.

This study also hypothesizes the importance of the economic structure of the state. For example, if a state has a high level of manufacturing activity, it might be expected to provide fertile soil for foreign activity in that sector, again holding all else equal. More important, because 80-90 percent of all entering FDI takes place through acquisition, the size of the sector roughly indexes the opportunity for such acquisition (the acquisition figure is for all total investment, however, and is not broken down to the sector level).

Variables concerning a state's location are also considered. One is related to the historical argument made by Glickman and Woodward about entry into the United States: Europeans traditionally entered and gained experience through the Northeast. This might be complemented by the recognition that investment from the Far East and especially Japan, frequently began with

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aggregate investment by area will be made at the end of this report, however.

activity on the West Coast. Hence, at various points in this analysis two "border" variables are employed: one to try to trace the roots of investment back to the 1970s: Border1; and the other to recognize the more varied range of sources in the 1980s and later: Border2 (Glickman and Woodward's measure augmented by the three West Coast states). At least for manufacturing, one also wants to test Wheat's hypothesis about the separate contribution of local supply and demand imbalance and the distance of that imbalance from the traditional manufacturing center (Pittsburgh).

Finally, some variables are explored that reflect public policy and have been found important in other recent, well designed studies. One is the level of unionization of the work force. While a state does not determine whether a worker joins a union or not, so-called "right to work" legislation, now in force in twenty states, effectively diminishes union power by removing the requirement of a person's union membership (or the payment of a compensatory fee) as a condition of continuing employment at a particular workplace. Because unionization is positively correlated with average pay (.65), that variable is also used to compare its performance with that of unionization. Two other policy variables have received much attention in recent work (see especially Ondrich and Waslyenko, 1993: 143): state expenditure on higher education and state corporate income taxes; both of these are entered on a per capita basis.

For all of the variables employed in this study, see Table 5.

Table 5: Regression Variables

Variable Name	Description	Source
MAN__SIZ	Manufacturing sector size by percentage of total employment for 1980, '87, or '9	BEA: Survey of Current Business
WS__SIZ	Wholesale sector by percentage of total employment size for 1980, '87, or '96	BEA: Survey of Current Business
RET__SIZ	Retail sector size by percentage of total employment for 1980, '87, or '96	BEA: Survey of Current Business
FIN__SIZ	Finance sector size by percentage of total employment for 1980, '87, or '96	BEA: Survey of Current Business
INS__SIZ	Insurance sector size by percentage of total employment for 1980, '87, or '96	BEA: Survey of Current Business
RE__SIZ	Real Estate sector size by percentage of total employment for 1980, '87, or '96	BEA: Survey of Current Business
SRV__SIZ	Service sector size by percentage of total employment for 1980, and '87, or '96	BEA: Survey of Current Business
GSP__	Gross State Product for 1980, '87, or '96	BEA: Survey of Current Business
GSPGR	Growth in Gross State Product	BEA: Survey of Current Business
BORDER1	Glickman and Woodward's "bordercoast" variable	Glickman and Woodward (1987)
BORDER2	Glickman and Woodward's "bordercoast" variable plus Pacific Coast states	
UNION	Union membership as percentage of workers in 1995	The Bureau of National Affairs - Union Membership and Earnings Data Book
ZONE	Measure of distance from manufacturing belt	Wheat (1986)
CORPER	State corporate income tax rate	Federation of Tax Administrators (www.taxadmin.org)
HEXPER	Higher education expenditures	The National Center for Education Statistics - Digest of Education Statistics
AVEPAY	Average hourly wage rate	U.S. Bureau of Labor Statistics - Employment and Earnings
MANEMP__	Total manufacturing employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
WSEMP__	Total wholesale employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
RETEMP__	Total retail employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
FINEMP__	Total finance employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
INSEMP__	Total insurance employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
REEMP__	Total real estate employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
SRVEMP__	Total service employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
OTHEMP__	Total other employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
TOTEMP__	Total employment in 1980, '87, or '96 due to FDI	BEA: Survey of Current Business
XEN	Laws against foreign ownership	Laband (1984)
CORP	Laws proposed and in place against corporate ownership	Laband (1984)

INVESTMENT BY SECTOR

Manufacturing Investment

This study rests on the assumption that all categories of direct investment should not be motivated similarly by the same state level variables. Thus, it makes sense to start with sectoral investment before considering higher levels of aggregation.

The most natural place to begin the analysis is with manufacturing, which has received the highest level of past attention. Table M1 shows some straightforward multiple regression equations employing the variables just described. As hypothesized, the size of the state apparently has a strong and positive impact on foreign manufacturing investment, as does the relative size of the state's manufacturing sector. State product is entered in thousands of dollars and the size of the state sector as a decimal fraction, while our variable of concern, employment related to FDI, is in thousands. Thus, the results suggest that, all else equal, an additional million dollars of state product will be associated with an additional FDI manufacturing employment of between 211 and 256 persons. Holding the gross product of the state (and everything else) constant, a one percentage point increase in manufacturing's share in state employment will raise FDI manufacturing employment by between 2,600 and over 3,000 persons.

Neither the growth rate nor the level of unionization apparently has any effect, and average pay is positive at a very low level of significance. Surprisingly in light of the earlier discussion, both location measures shown take an unexpected sign and yet are quite significant (the significance levels for all variables are reported as two-tailed tests). ZONE is the distance from Pittsburgh that Wheat uses to magnify—on the assumption of greater physical isolation—state level supply and demand imbalance in manufacturing, but that cannot happen if it takes the wrong sign. In fact, ZONE was used in these regressions after it was determined that Wheat's

combination "demand" variable did not produce the expected sign and in light of Crandall's use of ZONE standing alone (1993: 36-60).

ZONE could be entered with a different *a priori* expectation from that given by Wheat, and that is the one apparently supported here: Distance from the manufacturing belt makes manufacturing foreign investment *less* likely. The discrepancy between this finding and those of Wheat and Crandall, who find new manufacturing investment filling unmet needs, could be attributed to a greater dependence on previous manufacturing investment by foreign investors in comparison with all new manufacturing activity, the focus of their research. This is especially likely given the overwhelming importance of entry through acquisition.

The negative sign for Border2, which will be seen in other sectors (typically to increase the foreign investment role), does not imply that having an ocean coastline somehow deters manufacturing investment. It means merely that the factors leading to manufacturing activity have not generally attached to coastal states and do not do so for FDI either.

The other variables in the equations, CORPER and HEXPER, do not signify. These results, and similar results presented later for other sectors, do not refute the possible importance of these variables but may simply stem from the lack of power of the statistical approach taken here. The equations explain over 85 percent of all of the variation in manufacturing FDI employment among the forty-eight states with 75 percent explained by the size of the state alone.

Despite the preference of this study for an emphasis on employment, a brief comparison will be made between the employment results and those for the total value of property plant and equipment for each sector. In this and all of the other results shown in later sections, Gross Property, Plant and Equipment values are measured in millions of current dollars.

Table M2 shows one representative result; the variables appear to have broadly the same impact for value as for employment. Total size of the state and the relative size of the manufacturing sector dominate the explanation, and FDI activity drops off with distance from the traditional manufacturing centers. About three-quarters of total variation is explained.

Another issue of interest is in the change or stability of the determinants of FDI employment over time. The results are shown in Table M3. This is far easier to track for the largest sectors, such as manufacturing, than for smaller ones because moving back in time does not cause as many states to drop out of the analysis. There is a change in sign of the original (Old Northeast) Border1 variable, but, as pointed out for Border2, this can only be interpreted as spurious correlation anyway. The shift in the focus of activity that the Border1 reflects rather than causes, however, is manifest in the relative sector size variable: it went up rapidly between 1980 and 1987 and especially during the period between 1987 and 1996 while the determining role of state size alone seems to have diminished. There is little change in the overall fit the equation over time.

A straightforward means of considering Minnesota's relative performance is employed here. Correcting for the factors presented in the equation shown in Table M1:1, Minnesota's shortfall from the expected value of FDI employment for the state is 3,542 persons. In other words, characteristics of the state other than those included in the equation are causing many fewer persons to be employed by foreign investors (as defined by the Department of Commerce) than would have been expected. This amounts, however, to less than one percent of the state's manufacturing labor force. See Figure M1.

Table M1: Manufacturing FDI

		GSP96	MAN96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	b	0.223	293.201	1.885	-11.221	0.152					0.862	0.845
	t	(14.450)	(5.546)	(0.389)	(-1.628)	(0.277)						
	Significance	0.000	0.000	0.700	0.111	0.783						
1996 2	b	0.226	255.095	2.641	-13.627	-0.037	-2.401				0.876	0.858
	t	(15.222)	(4.772)	(0.567)	(-2.038)	(-0.070)	(-2.207)					
	Significance	0.000	0.000	0.574	0.048	0.944	0.033					
1996 3	b	0.221	302.936	0.985	-11.425	0.169		-0.805	-212.005		0.863	0.839
	t	(11.529)	(5.307)	(0.169)	(-1.563)	(0.295)		(-0.552)	(-0.245)			
	Significance	0.000	0.000	0.867	0.126	0.770		0.584	0.807			
1996 4	b	0.211	293.078	-0.285	-13.193					0.001	0.866	0.850
	t	(11.236)	(5.629)	(-0.057)	(-2.059)					(1.160)		
	Significance	0.000	0.000	0.955	0.046					0.253		

Table M2: Manufacturing FDI by Value

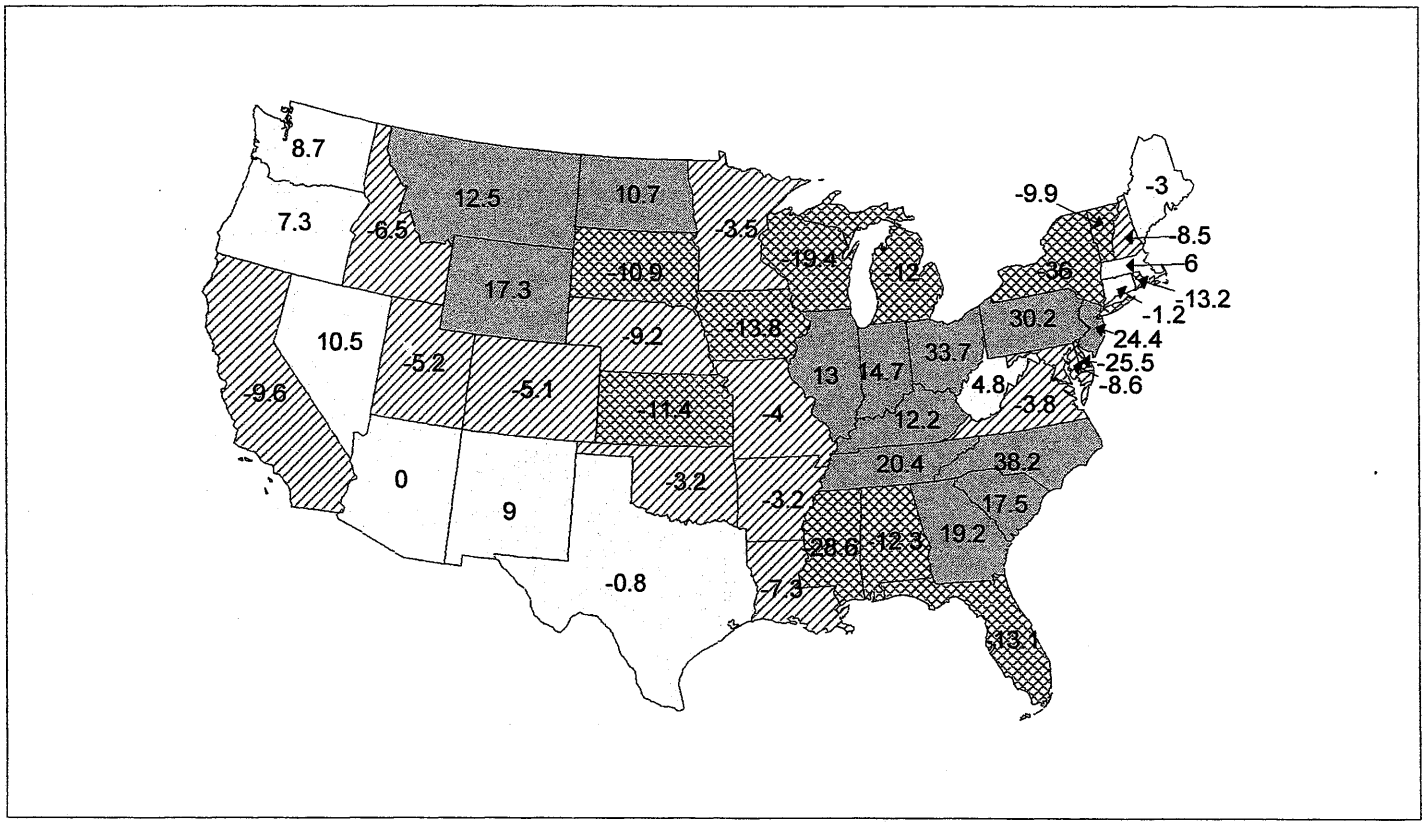
		GSP96	MAN96SIZ	GSPGR	BORDER2	UNION	ZONE	R^2	Adjusted R^2
1996	b	0.028	32563.942	-952.022	-2341.888	-37.983	-276.504	0.742	0.704
	t	(9.845)	(3.196)	(-1.073)	(-1.837)	(-0.374)	(-1.333)		
	Significance	0.000	0.003	0.290	0.073	0.710	0.190		

Table M3: Manufacturing FDI Over Time

		GSP	MANSIZ	BORDER1	R^2	Adjusted R^2	
1996	b	0.220	295.321	-5.615	0.854	0.844	N=48
	t	(14.952)	(5.545)	(-0.838)			
	Significance	0.000	0.000	0.406			
1987	b	0.255	135.820	0.095	0.857	0.847	N=48
	t	(15.184)	(4.181)	(0.019)			
	Significance	0.000	0.000	0.985			
1980	b	0.353	75.962	1.231	0.891	0.883	N=48
	t	(17.545)	(4.062)	(0.354)			
	Significance	0.000	0.000	0.725			

Figure M1: Manufacturing Investment

Residuals from Equation M1:1



Residual (# of states)
(values in 1000s)

- 10.7 to 38.2 (13)
- -3 to 10.7 (10)
- -9.6 to -3 (13)
- -36 to -9.6 (12)

Wholesale Trade

Wholesale trade accounted for 9.8 percent of FDI employment in 1996, about one percentage point lower than it had been in 1980. On theoretical grounds, we would expect the determinants of wholesaling to be quite different from those in manufacturing. Wholesaling, by its very nature, is not necessarily tied to the place of production; nor, of course, is it tightly bound geographically to the place of final sales.

Initial Equivalent Equation (IEE) for Wholesale Trade

		GSP 96	WS96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.000	110.184	0.445	3.536	-0.252	0.889	0.875
	t	(16.427)	(1.099)	(0.307)	(1.714)	(-1.520)		
	Significance	0.323	0.278	0.761	0.094	0.136		

The above equation confirms this result; the relative size of wholesaling employment does not appear to be a significant determinant of wholesaling FDI; there is also some indication that initial investor experience with east and west coast border states continued to play a role in wholesaling investment over time. Finally, there is a hint that unionization may be deterring FDI in wholesaling.

As interesting as these results are, this equation (IEE) unfortunately provides unreliable information as it stands. When the dependent variable (in this case the total amount of foreign investment in wholesaling), varies so much across the states (100 persons employed in Montana versus 93,200 in California), an estimation problem called heteroskedasticity typically arises.[7] Ordinary least squares regression, the technique employed to estimate the IEE, assumes that the errors across observations have the same variance. When the dependent variable varies widely in

[7] In fact, cross state regression of many measures typically provides the example of the heteroskedasticity problem in American textbooks. See, for example, Studenmund 1997, pp. 392-398.

size, however, larger observations are likely to be attended by larger errors. This means that the larger observations are absolutely less accurate and hence less useful in calculating the coefficients. Tests reveal that this situation obtains in all of the regressions in this study except manufacturing; hence, from this point forward, all results will be reported based on coefficient and standard error estimates after correction for heteroskedasticity.[8]

Table W1, with correction for heteroskedasticity, shows considerable difference from the IEE—the table's first equation includes the same variables as the IEE. The significance of the negative impact of unionization has increased considerably, although the magnitude of the coefficient has decreased by over 50 percent. If one takes the result at face value, it implies that a one percentage point increase in the unionization of the labor force decreases wholesale FDI by 105 workers.

The significance of the border variable has also much increased while the magnitude of the coefficient dropped by half. Being one of the thirteen Border2 states implies an average increment of nearly 1,880 jobs in wholesaling, which is nearly 18 percent of the average value FDI wholesale employment for all of the states.

The lack of performance by the ZONE variable stands in sharp contrast to the case with manufacturing. Adding the tax and expenditure variables reduces the significance of unionization, but does nothing otherwise. The result of average pay is consistent with that for unionization, but much weaker.

The equations in Table W1 explain between three-quarters and four-fifths of the total variation in wholesale investment among the states.

[8] The divisor for weighted least squares was state GSP.

Table W2 shows the results for gross property plant and equipment investment using the same variables as shown in Table W1:1. The results are broadly similar except that the previous negative impact of unionization seems to melt away. The result may be due to some unknown combination of greater capital per worker where unionization is stronger and the greater extent of output misclassification in the value series. The border variable is also much less significant. Only about half of all variation is explained.

Turning to the three historical comparisons in Table W3, the "old" border variable first fades and then comes back strongly in significance and to a much higher value. The ability of the equation to account for variation in the independent variable moves from just over half in 1980 to nearly three-quarters in 1996 with all states in the equation throughout.

Using the same approach as reported for the manufacturing sector, Minnesota once again has a shortfall: the magnitude, at 3,887, somewhat exceeds that estimated for manufacturing, but is a considerably higher proportion of the estimated size of the state wholesale sector: 2.6 percent. See Figure W1.

Table W1: Wholesale FDI

		GSP96	WS96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	b	0.068	1.605	-0.369	1.793	-0.105					0.777	0.750
	t	(11.452)	(0.096)	(-1.246)	(4.392)	(-2.116)						
	Significance	0.000	0.924	0.220	0.000	0.040						
1996 2	b	0.068	0.737	-0.350	1.869	-0.106	0.023				0.777	0.745
	t	(11.322)	(0.042)	(-1.115)	(3.381)	(-2.096)	(0.206)					
	Significance	0.000	0.966	0.271	0.002	0.042	0.838					
1996 3	b	0.069	7.623	-0.194	1.765	-0.082		-0.073	21.278		0.780	0.742
	t	(11.200)	(0.379)	(-0.494)	(4.230)	(-1.368)		(-0.721)	(0.512)			
	Significance	0.000	0.707	0.624	0.000	0.179		0.475	0.612			
1996 4	b	0.069	-3.368	-0.044	1.689					-0.124	0.760	0.731
	t	(10.139)	(-0.165)	(-0.127)	(3.930)					(-1.057)		
	Significance	0.000	0.870	0.899	0.000					0.296		

Table W2: Wholesale FDI by Value

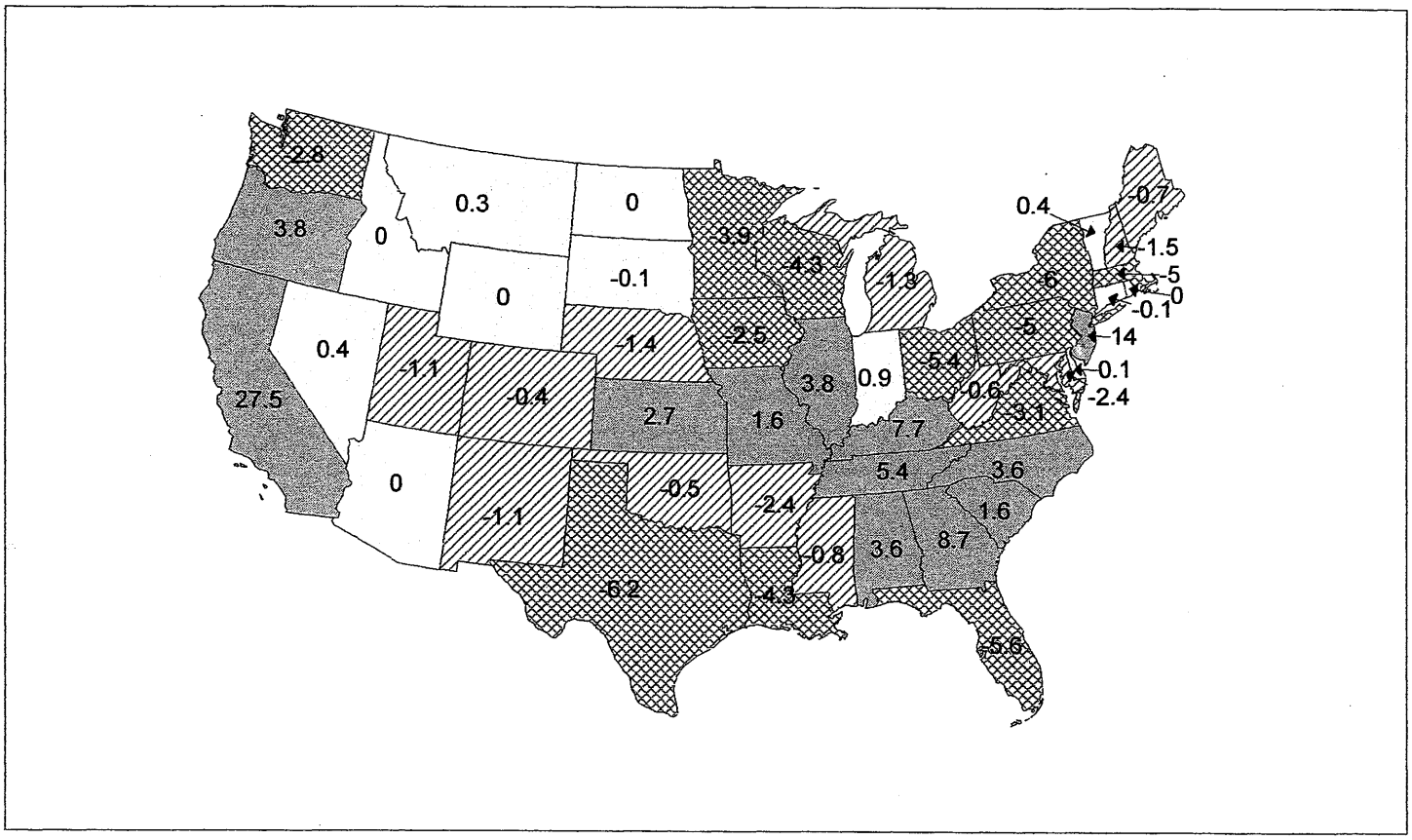
		GSP 96	WS96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.113	-1826.465	-83.863	184.005	-6.200	0.563	0.511
	t	(7.137)	(-0.659)	(-1.066)	(1.712)	(-0.467)		
	Significance	0.000	0.514	0.293	0.094	0.643		

Table W3: Wholesale FDI Over Time

		GSP	WSSIZ	BORDER1	R^2	Adjusted R^2	
1996	b	0.065	6.482	1.377	0.741	0.723	N=48
	t	(10.992)	(0.378)	(3.537)			
	Significance	0.000	0.707	0.001			
1987	b	0.075	3.753	0.205	0.689	0.668	N=48
	t	(9.872)	(0.324)	(0.642)			
	Significance	0.000	0.748	0.525			
1980	b	0.083	-4.145	0.522	0.555	0.525	N=48
	t	(7.342)	(-0.403)	(1.648)			
	Significance	0.000	0.689	0.107			

Figure W1: Wholesale Trade

Residuals from Equation W1:1



Residuals (# of states)
(values in 1000s)

- 1.6 to 27.5 (12)
- -0.1 to 1.6 (12)
- -2.4 to -0.1 (12)
- -6.2 to -2.4 (12)

Retail Trade

Retail trade, which now accounts for about 16.5 percent of total FDI employment, presents a set of sectoral characteristics quite different from the previous two. Despite the phenomena of Internet and mail order shopping and the jurisdictional mismatch in some areas between the states where people shop and where they live, one would expect a very high correlation between total retail FDI employment and personal income. Personal income, however, correlates with GSP at .99, and one therefore scarcely anticipates a discernable independent role for retailing even if there were some reason to believe that foreign investors thrive in the overall environment of established retail (as is apparently the case with manufacturing). It would also be surprising if unionization were important. Retail trade is not highly unionized in any state, and the local character of the market means that all firms must go where the customers are to participate at all. This characteristic also suggests the likelihood that the growth rate of demand could be important—or at least significant.

Table R1 provides some confirmation for these hunches. Although the relative size of retail employment in the state never attains a high level of significance, the growth rate of the state has a high and quite consistent magnitude at levels of significance between weak and fairly high. The coefficients on GSP growth over the period 1980-1996 suggest that each point added roughly 2,000-2,500 FDI retail employees, all else constant. The significance of the negative unionization variable is consistently quite low, while average pay is very weakly positive (the unexpected sign). The tax and expenditure variables do nothing, as is also the case with ZONE. The Border2 variable that captures the attraction of familiar territory is consistently very significant and the most strongly correlated after state size, suggested a border fillip for FDI

retail jobs of between 3,300 and over 4,800. Each of the equations explains about 70 percent of the variation in employment.

The Gross Property, Plant, and Equipment results shown in Table R2 provide qualitatively similar results for all variables except the relative size of the retail sector, which in these data takes negative sign at a low level of significance. Both growth and the border effect are much less significant than in the case of employment. The percentage of variation in the data explained is a few points higher than for the employment equations.

Table R3 shows the three time slice results. Those for 1987 closely resemble those for 1996; the magnitude of the coefficients, their significance, and the total amount of variation explained are quite similar. Both GSP and Border1 contributed strongly to employment from the inflow of retail investment while the relative size of the sector appears irrelevant. The 1980 results, however, differ greatly. Only thirty-eight states had useable data for that year—hence that regression is not really comparable to the others (this does not mean that the true reported number for the other states was zero, but the data were simply suppressed to avoid revealing the identity of specific firm activity).

The Minnesota residual for retailing is again negative: 7,801. This is a bit over 1.7 percent of sectoral employment in the state. See Figure R1.

Table R1: Retail FDI

		GSP96	RET96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	b	0.106	84.114	2.486	4.841	-0.213					0.700	0.664
	t	(8.809)	(1.090)	(1.722)	(2.332)	(-0.988)						
	Significance	0.000	0.282	0.093	0.025	0.329						
1996 2	b	0.106	87.199	2.447	4.399	-0.210	-0.144				0.701	0.657
	t	(8.697)	(1.110)	(1.671)	(1.780)	(-0.967)	(-0.339)					
	Significance	0.000	0.274	0.102	0.083	0.339	0.737					
1996 3	b	0.104	74.448	2.068	4.768	-0.246		-0.170	-110.776		0.704	0.652
	t	(7.832)	(0.885)	(1.110)	(2.240)	(-1.057)		(-0.388)	(-0.472)			
	Significance	0.000	0.382	0.274	0.031	0.297		0.700	0.639			
1996 4	b	0.098	97.952	2.024	3.285					0.384	0.698	0.662
	t	(7.112)	(1.234)	(1.255)	(1.601)					(0.831)		
	Significance	0.000	0.224	0.216	0.117					0.410		

Table R2: Retail FDI by Value

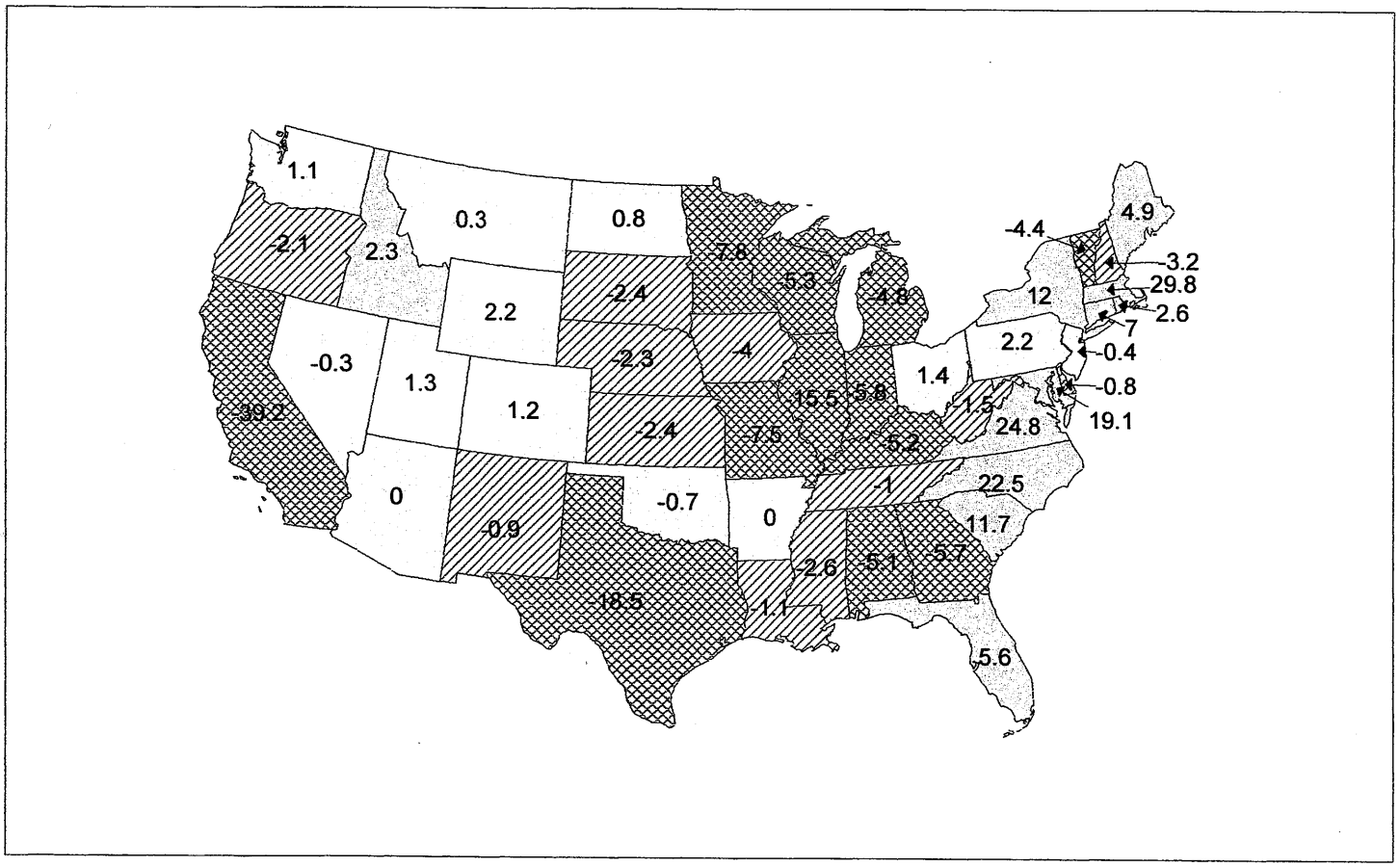
		GSP96	RET96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.004	-1799.463	55.957	110.975	-6.190	0.742	0.711
	t	(10.260)	(-0.923)	(1.196)	(1.530)	(-0.835)		
	Significance	0.000	0.362	0.238	0.134	0.409		

Table R3: Retail FDI Over Time

		GSP	RETSIZ	BORDER1	R^2	Adjusted R^2	
1996	b	0.107	40.654	5.611	0.681	0.659	N=48
	t	(9.068)	(0.546)	(2.817)			
	Significance	0.000	0.588	0.007			
1987	b	0.119	28.204	3.001	0.699	0.678	N=48
	t	(9.793)	(0.502)	(2.198)			
	Significance	0.000	0.618	0.033			
1980	b	0.107	-60.915	0.097	0.607	0.572	N=38
	t	(6.663)	(-1.544)	(0.076)			
	Significance	0.000	0.132	0.940			

Figure R1: Retail Trade

Residuals from Equation R1:1



Finance

Finance is a very small direct investment sector, accounting for only about one percent of total employment in 1996. This figure does not include depository institutions, for which state level data are not available. It is difficult to know what *a priori* expectations to bring to a consideration of the sector. While it is technically footloose, acquisition must involve previous activity. Moreover, greenfield investors might well find better labor markets in areas where domestic finance is particularly well established.

Table F1 shows several results that confirm the difficulty of pinning the sector down. The equations never succeed in capturing more than about a third of the variation in the data, and the only variable that shows a strong correlation with total financial sector investment is the gross economic size of the state. The relative size of the financial sector is consistently large in magnitude but lacks significance.

Table F2, not surprisingly, shows that only GSP correlates strongly with the value figure as well. A slightly higher percentage of total variation is explained, and there is a suggestion of a positive influence of other financial activity in the state.

Table F3 puts the problem into historical perspective. The 1987 results, which include all of the states, generally resemble those for 1996 except for a higher but still very meager significance level for relative financial size—at about the same level as a low magnitude Border1 shows for both 1996 and 1987—and a somewhat higher percentage of variation is explained. In 1980 only half the states that had useable observations, and both the higher R^2 and the apparently greater role for the relative size of state financial industry in that year, must therefore be interpreted with caution.

Table F1: Finance FDI

		GSP96	FIN96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	β	0.009	11.816	-0.243	0.274	0.018					0.339	0.260
	t	(4.267)	(0.818)	(-0.915)	(0.730)	(0.472)						
	Significance	0.000	0.418	0.365	0.470	0.640						
1996 2	β	0.009	14.438	-0.255	0.363	0.017	0.022				0.340	0.243
	t	(4.171)	(0.801)	(-0.935)	(0.696)	(0.434)	(0.249)					
	Significance	0.000	0.428	0.355	0.490	0.667	0.805					
1996 3	β	0.009	12.620	-0.190	0.301	0.022		-0.023	12.793		0.341	0.226
	t	(4.121)	(0.766)	(-0.585)	(0.766)	(0.542)		(-0.282)	(0.331)			
	Significance	0.000	0.448	0.562	0.448	0.591		0.779	0.742			
1996 4	β	0.009	11.836	-0.273	0.330					0.010	0.335	0.256
	t	(3.463)	(0.755)	(-0.967)	(0.856)					(0.121)		
	Significance	0.001	0.455	0.339	0.397					0.904		

Table F2: Finance FDI By Value

		GSP96	FIN96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.001	514.178	-34.143	47.462	-0.315	0.366	0.288
	t	(4.607)	(1.299)	(-1.068)	(1.038)	(-0.070)		
	Significance	0.000	0.201	0.292	0.305	0.945		

Table F3: Finance FDI Over Time

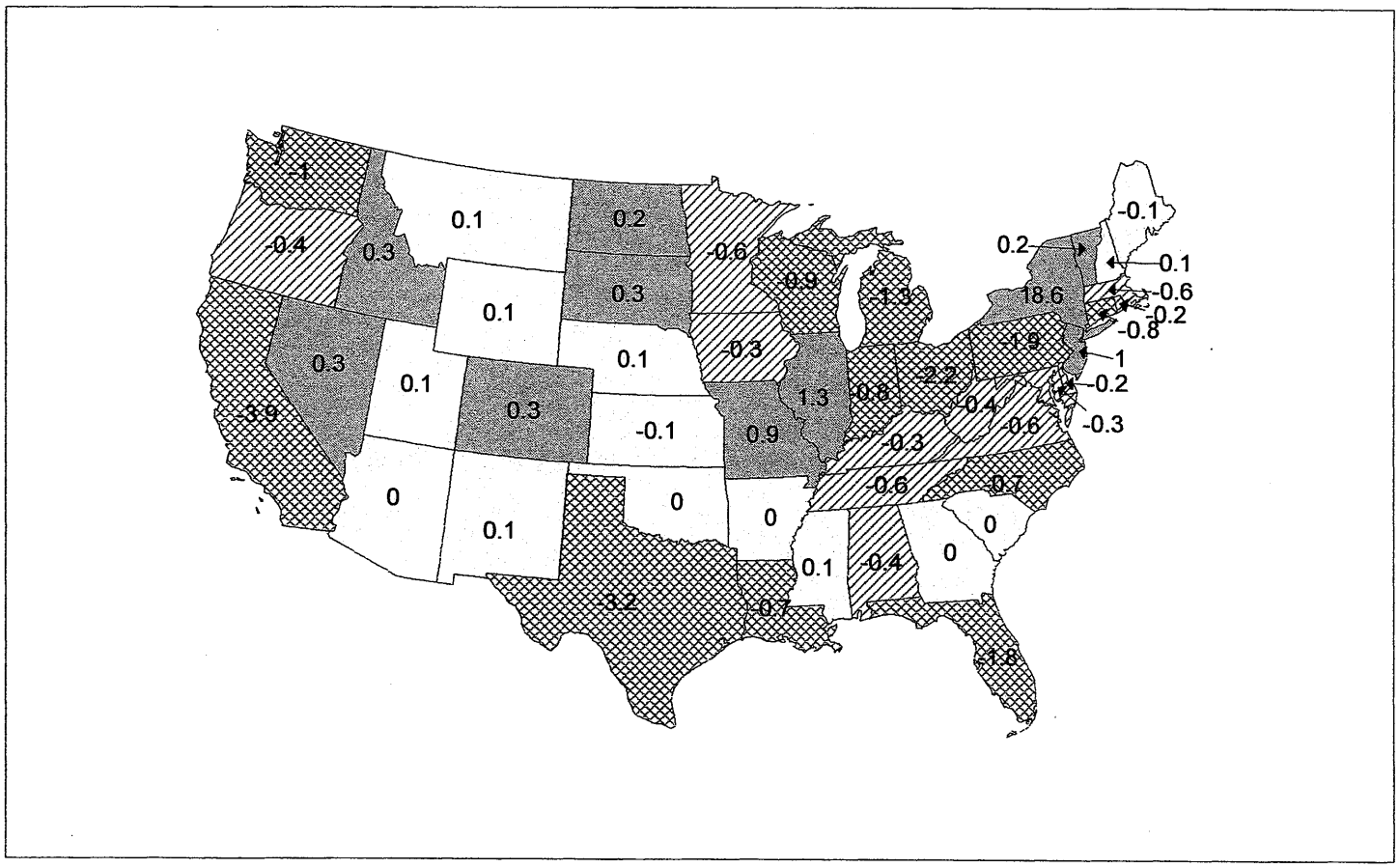
		GSP	FINSIZ	BORDER1	R^2	Adjusted R^2	
1996	β	0.009	6.817	0.360	0.327	0.281	N=48
	t	(4.575)	(0.534)	(1.052)			
	Significance	0.000	0.596	0.298			
1987	β	0.024	34.192	0.522	0.414	0.374	N=48
	t	(5.486)	(1.042)	(1.066)			
	Significance	0.000	0.303	0.292			
1980	β	0.011	180.519	0.727	0.545	0.480	N=25
	t	(3.442)	(2.717)	(2.354)			
	Significance	0.002	0.013	0.028			

The growth of FDI in financial services in the United States has been retarded, as has insurance investment, by a history of state regulation. This has always led to greater expense and complexity of entry into a state, and, especially in early years, some states discriminated against foreign financial service investors. Financial services liberalization under WTO auspices is removing the last vestiges of protectionism (European Commission, 1998: 48-50).

Minnesota's performance as a host to financial service investment is again indexed with a negative residual: 564, which is about 1.24 percent of the sector's employment in the state. See Figure F1.

Figure F1: Finance

Residuals from Equation F1:1



Residual (# of states)
(values in 1000s)

- 0.2 to 18.6 (10)
- -0.1 to 0.2 (14)
- -0.6 to -0.1 (12)
- -3.9 to -0.6 (12)

Insurance

Although its total foreign employment size is about three times that of finance, insurance presents many of the same problems for forming *a priori* expectations. One could not confidently predict the location of the main U.S. offices of firms entering from abroad, and the distribution of employment of those firms need not be closely tied to final sales in part because of the potential for use of independent sales agents. At least as much as in finance, however, one might expect some "huddling" in well-established insurance centers where targets of acquisition will also be concentrated.

Table I1 suggests that in addition to the usual strongest showing for state size, the relative size of the insurance market in the state is an important determinant of location. The strongly significant coefficient suggests that for every one percent increase in the relative size of the insurance industry in the state, the level of employment by foreign insurance companies goes up by between 715 and 850. The negative coefficient on Border2 is both small and of low significance. Especially in light of Connecticut's role as both a Border2 state and the state with the highest level of overall relative insurance employment in the country, this finding must stand as an anomaly (the simple correlation between the relative size of the insurance industry in a state and Border2 in 1996 is only .33; with Border1, it is only .26). None of the other variables is significant by most standards with the exception of average pay, which just misses the 5 percent significance level, but the unexpected sign suggests spurious correlation.

The fit of the insurance equations provides a sharp contrast with finance; between three-quarters and 80 percent of the variation in the data is explained.

Table I2 in value terms can be compared with those in Table I1. All variables except state size are very insignificant.

The equations for comparison over time, Table I3, lose only one observation for 1987, but the observations drop to 39 for 1980. Although this means the comparison—and particularly the early one—must be considered tentative, it is interesting that the border coefficient declines in both size and significance between 1980 and 1987 and then essentially disappears as an explanatory variable. The insurance industry appears to have dispersed strongly away from the states of original entry, although the reason is not apparent.

Minnesota once again has a negative residual: 480, which is .84 percent of the state's sectoral work force. See Figure I1.

Table I1: Insurance FDI

		GSP96	INS96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	β	0.020	85.010	0.051	-0.186	0.008					0.777	0.750
	t	(10.401)	(2.395)	(0.215)	(-0.519)	(0.215)						
	Significance	0.000	0.021	0.831	0.607	0.831						
1996 2	β	0.020	72.776	0.036	-0.392	0.011	-0.079				0.783	0.751
	t	(10.396)	(1.960)	(0.155)	(-0.972)	(0.295)	(-1.095)					
	Significance	0.000	0.057	0.878	0.337	0.770	0.280					
1996 3	β	0.020	80.318	0.087	-0.168	0.012		0.044	12.145		0.780	0.741
	t	(9.924)	(2.185)	(0.307)	(-0.459)	(0.302)		(0.609)	(0.333)			
	Significance	0.000	0.035	0.761	0.649	0.764		0.546	0.741			
1996 4	β	0.018	71.507	-0.193	-0.354					0.144	0.796	0.771
	t	(8.354)	(2.076)	(-0.763)	(-1.064)					(1.983)		
	Significance	0.000	0.044	0.450	0.294					0.054		

Table I2: Insurance FDI By Value

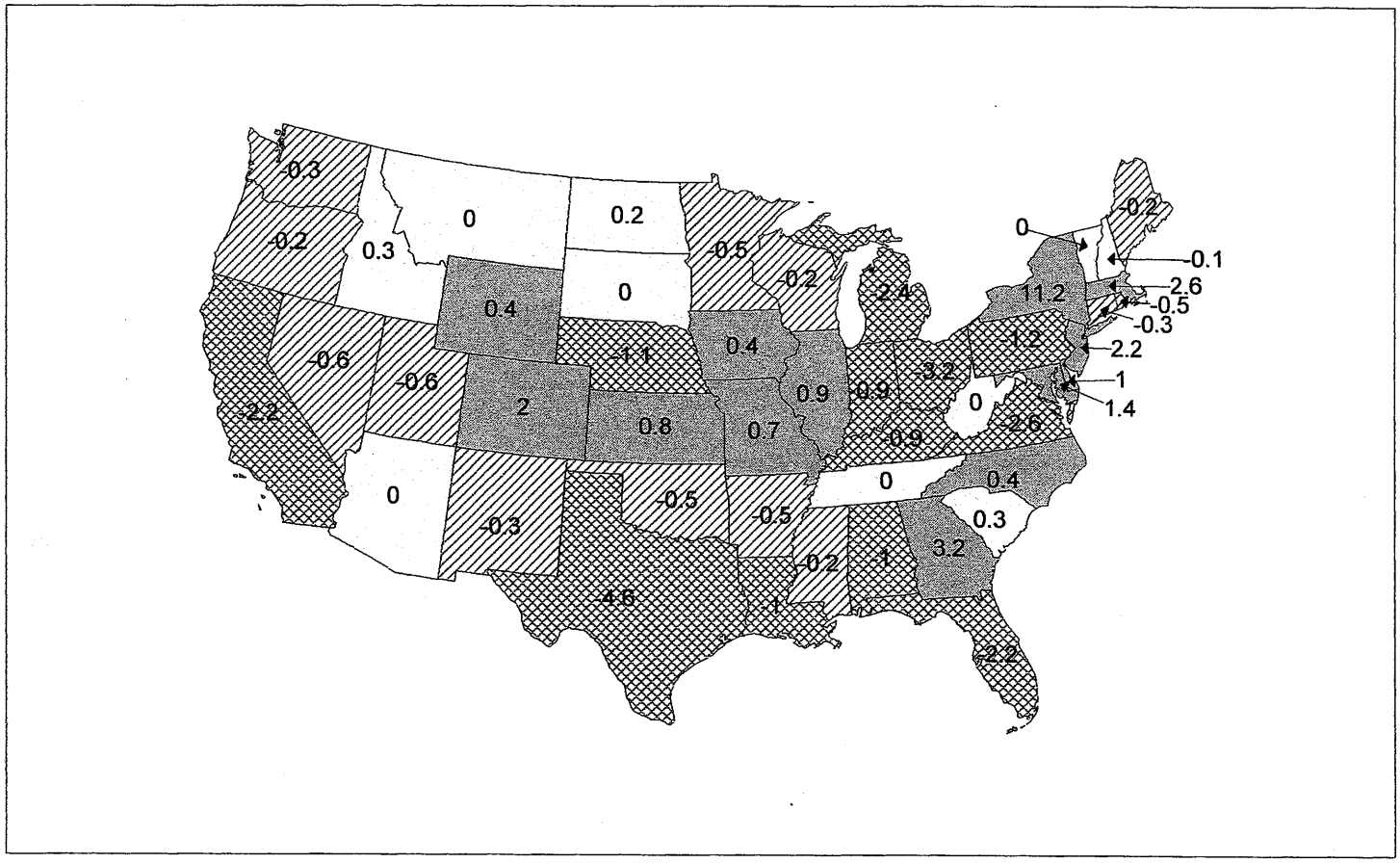
		GSP96	INS96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.002	1688.223	-9.897	11.181	-0.123	0.663	0.623
	t	(8.353)	(0.592)	(-0.386)	(0.276)	(-0.031)		
	Significance	0.000	0.557	0.701	0.784	0.975		

Table I3: Insurance FDI Over Time

		GSP	INSSIZ	BORDER1	R^2	Adjusted R^2	
1996	β	0.020	85.902	-0.097	0.775	0.760	N=48
	t	(10.922)	(2.389)	(-0.262)			
	Significance	0.000	0.021	0.795			
1987	β	0.018	14.995	0.349	0.638	0.613	N=48
	t	(7.888)	(0.742)	(1.271)			
	Significance	0.000	0.462	0.211			
1980	β	0.023	17.608	1.254	0.602	0.568	N=39
	t	(5.536)	(0.676)	(3.231)			
	Significance	0.000	0.503	0.003			

Figure I1: Insurance

Residuals from Equation I1:1



Residual (# of states)
(values in 1000s)

- 0.4 to 11.2 (13)
- -0.1 to 0.4 (10)
- -0.6 to -0.1 (13)
- -4.6 to -0.6 (12)

Real Estate

The real estate category in the direct investment data refers to firms that actively participate in the real estate business. The data do not treat real estate acquisition that is incidental to a firm's main business, whether that is merely the real estate used directly in that business or acquired as a (perhaps partly speculative) investment. Foreign real estate employment is the smallest of any of the sectors studied: a mere 27,000 employees in 1996, only about one-half the size of total foreign financial sector employment.

While many states have had restrictions on the foreign ownership of agricultural land over the entire post war period, much of that real estate is located in areas in which the foreign real estate firms would have suffered from a competitive market knowledge deficit anyway. On the other hand, urban real estate, which one assumes would be more likely to afford scope for the application of valuation techniques partly acquired abroad, have been generally open to foreign participation in all states.

Table RE1 shows the results of regressions similar to those of previous sections with two previously unseen variables. The possibility that restrictions on either foreign ownership of agricultural land or on corporate ownership of land could negatively affect the interest of foreigners in building real estate businesses is examined.

The variable "XEN" is used to indicate those states that had major restrictions on the foreign ownership of agricultural land in the early 1980s while those states that either had or were actively contemplating restrictions on corporate ownership of farmland during the same period are designated "CORP." These two variables provide exceptions to this study's use of values from much later in the period. The reasoning rests on what such legislation (or pending legislation) indicates about the state's policy climate towards foreigners. The hunch is that,

whether the laws are in force or not, if restrictions are supported by a large part of the state legislature, there could be a deterrent effect.

The regression results suggest that neither restrictions on agricultural land nor corporate farming has an effect on foreign real estate operations. As in the case of insurance (and possibly finance as well), there is a highly significant positive coefficient on the size of the real estate sector in the state, suggesting some mix of acquisition targets and well developed labor expertise. Given the frequent proximity of real estate firms to the assets they deal with, it might be thought that they would be drawn to the dynamic real estate markets that are often associated with rapid economic growth. In fact, however, the relative size of a state's real estate sector and state growth have a positive correlation of only a modest .5. This datum takes the shock out of the negative but insignificant coefficient on growth found here, but both facts are somewhat puzzling.

Border2 has a consistently moderate level of significance but very modest magnitude, even considering the sector's size. Of the remaining coefficients, average pay is significant, but its magnitude is negligible. The overall fit is quite modest at about two-thirds.

The value regression presented in Table RE2 suggests a broadly similar result. GSP is a very significant determinant, but the relative size of the real estate industry is significant at only the 10 percent level. Border2 is a bit less significant still. The percentage variation explained is about 6 points higher than in the employment regression.

The historical record shown in Table RE3 draws on a complete set of observations for 1996 and 1987, but the number drops sharply to 29 for 1980. The story told is consistent, however. The relative size of the sector diminishes in both coefficient magnitude and

significance over time, but it stills shows quite strongly at the end of the period. The fit rises slightly from .60 to .64.

The real estate residual for Minnesota is the only one yet found that is positive. Two hundred eleven more people are employed in foreign-owned real estate here than is predicted by the equation shown in Table RE1: 1. See Figure RE1.

Table RE1: Real Estate FDI

		GSP96	RE96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	XEN	CORP	R^2	Adjusted R^2
1996 1	β	0.004	51.374	-0.085	0.158	-0.015							0.657	0.616
	t	(7.318)	(2.367)	(-1.158)	(1.630)	(-1.406)								
	Significance	0.000	0.023	0.253	0.111	0.167								
1996 2	β	0.004	44.312	-0.067	0.181	-0.013	0.012						0.660	0.610
	t	(7.185)	(1.746)	(-0.821)	(1.703)	(-1.233)	(0.549)							
	Significance	0.000	0.088	0.416	0.096	0.225	0.586							
1996 3	β	0.004	52.092	-0.072	0.164	-0.013		0.001	3.857				0.659	0.599
	t	(6.902)	(2.204)	(-0.803)	(1.634)	(-1.183)		(0.067)	(0.404)					
	Significance	0.000	0.033	0.427	0.110	0.244		0.947	0.688					
1996 4	β	0.004	47.221	0.002	0.161					-0.039			0.673	0.634
	t	(7.403)	(2.420)	(0.026)	(1.819)					(-2.024)				
	Significance	0.000	0.020	0.979	0.076					0.049				
1996 5	β	0.004	37.188	-0.035	0.131						0.074		0.646	0.603
	t	(7.043)	(1.887)	(-0.482)	(1.271)						(0.747)			
	Significance	0.000	0.066	0.632	0.211						0.459			
1996 6	β	0.004	36.208	-0.053	0.075							-0.038	0.643	0.600
	t	(7.068)	(1.810)	(-0.754)	(0.865)							(-0.47)		
	Significance	0.000	0.078	0.455	0.392							0.641		

Table RE2: Real Estate FDI By Value

		GSP96	RE96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.014	109815.513	-219.989	445.200	-40.612	0.720	0.686
	t	(9.062)	(1.680)	(-0.996)	(1.524)	(-1.298)		
	Significance	0.000	0.100	0.325	0.135	0.201		

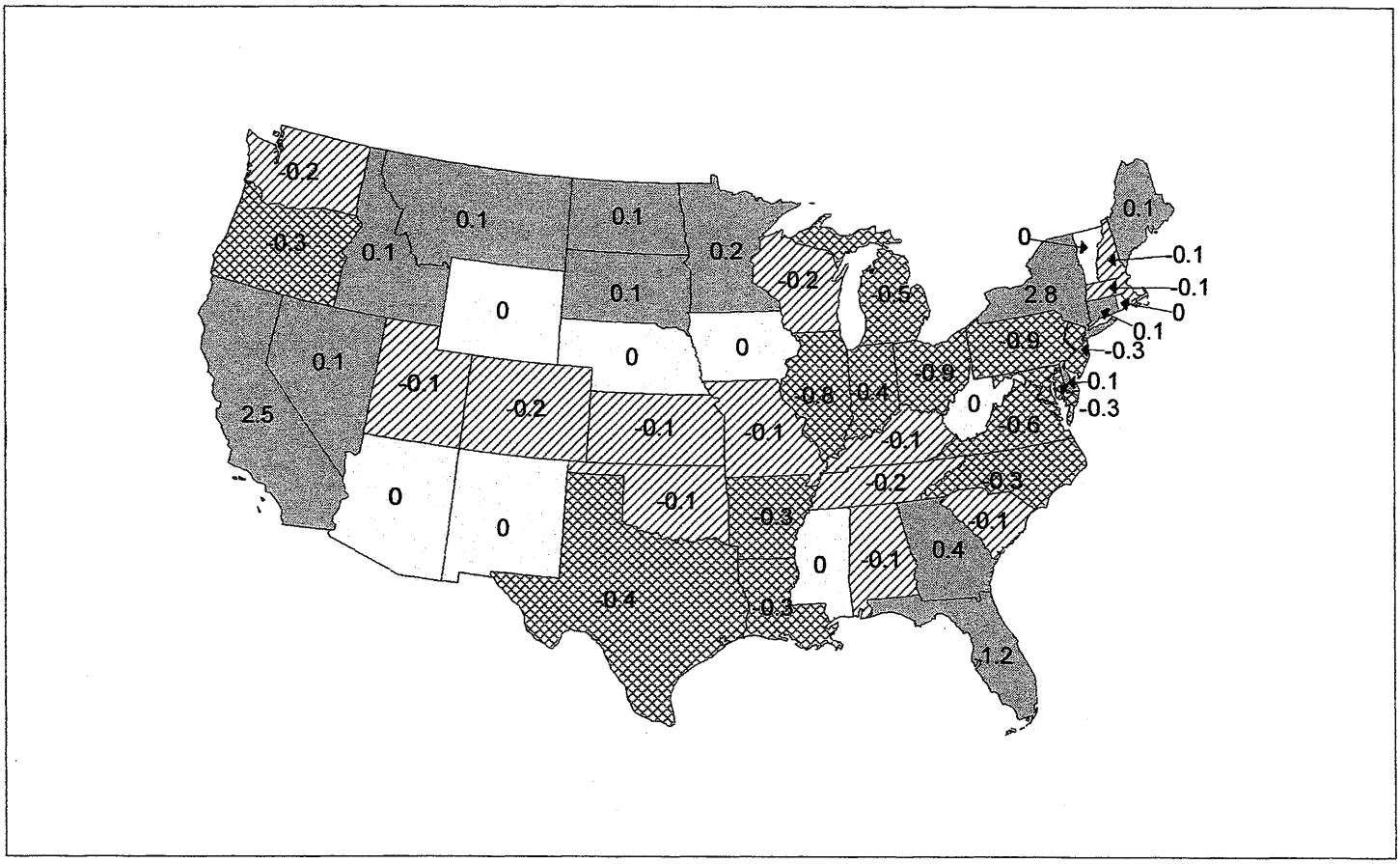
Table RE3: Real Estate FDI Over Time

		GSP	RESIZ	BORDER1	R^2	Adjusted R^2	
1996	β	0.004	31.045	0.078	0.637	0.612	N=48
	t	(7.231)	(1.846)	(0.899)			
	Significance	0.000	0.072	0.374			
1987	β	0.007	37.420	-0.071	0.627	0.602	N=48
	t	(6.986)	(2.185)	(-0.659)			
	Significance	0.000	0.034	0.513			
1980	β	0.007	53.259	-0.062	0.596	0.548	N=29
	t	(3.712)	(3.246)	(-0.34)			
	Significance	0.001	0.003	0.737			

Source for XEN and CORP: David N. Laband, *Foreign Ownership of U.S. Farmland*, Lexington, Massachusetts: Lexington Books, 1984, pp.113.

Figure RE1: Real Estate

Residuals from Equation RE1:1



Residual (# of states)
(values in 1000s)

- 0.1 to 2.8 (13)
- 0 to 0.1 (9)
- -0.2 to 0 (13)
- -0.9 to -0.2 (13)

Services

Services is a heterogeneous category in the BEA data, but it actually results from an attempt to provide more useful information. Prior to 1987, state level activities in this category were included in the "Other Industries" category, to be examined in the following section. And the data adjustment is important, because the sector includes a substantial part of total employment from direct investment: 12.7 percent in 1996.

The discrete categories included in the national tabulations (but not the state data) include: hotels; business services; motion pictures; engineering, architectural, and surveying services; accounting, research, management, and related services; health services; and "other" services. One is hard pressed to come up with *a priori* predictions in such a mixed group. For example, it would be surprising if the relative size of such a heterogeneous sector correlated strongly with direct investment activity.

Table S1 presents some surprises. Relative service sector size performs well in every equation except the one with average pay, which suggests that, however heterogeneous the services included, some proxying for acquisition targets is being captured and perhaps that same state level forces that are drawing domestic activity are drawing foreigners as well. Border2 comes through less strongly than for many other sectors. On the other hand, both of the labor cost variables, union strength and average pay, make some showing. While the average pay coefficient is of negligible size, the union variable is both larger and more significant than in any other sector. It implies that every point of lower unionization is associated with 255 to 291 more FDI service jobs. Overall, one might venture that "Services" as a whole are less determined by historical familiarity and more by a low cost and flexible labor force than any other sector.

Moreover, the variables we look at produce among the highest levels of association with total variation in employment due to foreign investment: over 90 percent.

Table S2 shows little of interest; the coefficients are of the same sign as in the employment equations, but only state economic size is significant. In particular, the strong negative showing by the union variable in the employment equations signifies here only at the 25 percent level. A considerably lower level of variation is explained than in the previous case: only about three-quarters of the total.

This category has a shorter history than the others do; hence Table S3 shows only 1996 and 1987, the first year for which the state service breakout is available.[9] In this simple specification, service sector size does not come through as an important determinant in 1996, as it does in Table S1; on the other hand, relative size is clearly important in 1987. The historic border measure does nothing in either period.

The Minnesota residual for the service category is –3,135. About three thousand fewer persons worked for foreign service firms in the state in 1996 than would have been the case if the state had been at the mean level of FDI employment after taking into account the variables shown in Table S1:1. See Figure S1.

[9] In 1987, the service category in national investment was only 4.2 percent of employment; by 1987, it had grown to 9.0 percent. This suggests that, while the 1980 data for all other categories considered in our previous historical tables is distorted by the inclusion of data that are removed in the two later years, the problem may not be too serious.

Table S1: Service FDI

		GSP96	SRV96SIZ	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	β	0.090	24.183	-0.654	1.034	-0.291					0.909	0.898
	t	(19.860)	(2.009)	(-1.02)	(1.268)	(-3.024)						
	Significance	0.000	0.051	0.314	0.212	0.004						
1996 2	β	0.091	22.999	-0.564	1.479	-0.289	0.144				0.910	0.897
	t	(19.819)	(1.893)	(-0.867)	(1.534)	(-2.99)	(0.872)					
	Significance	0.000	0.065	0.391	0.133	0.005	0.388					
1996 3	β	0.092	22.606	-0.252	1.151	-0.255		-0.011	89.637		0.911	0.896
	t	(19.199)	(1.807)	(-0.324)	(1.378)	(-2.432)		(-0.064)	(1.035)			
	Significance	0.000	0.078	0.748	0.176	0.020		0.949	0.307			
1996 4	β	0.091	7.763	0.460	0.688					-0.280	0.894	0.882
	t	(15.994)	(0.684)	(0.638)	(0.779)					(-1.48)		
	Significance	0.000	0.498	0.527	0.441					0.146		

Table S2: Service FDI By Value

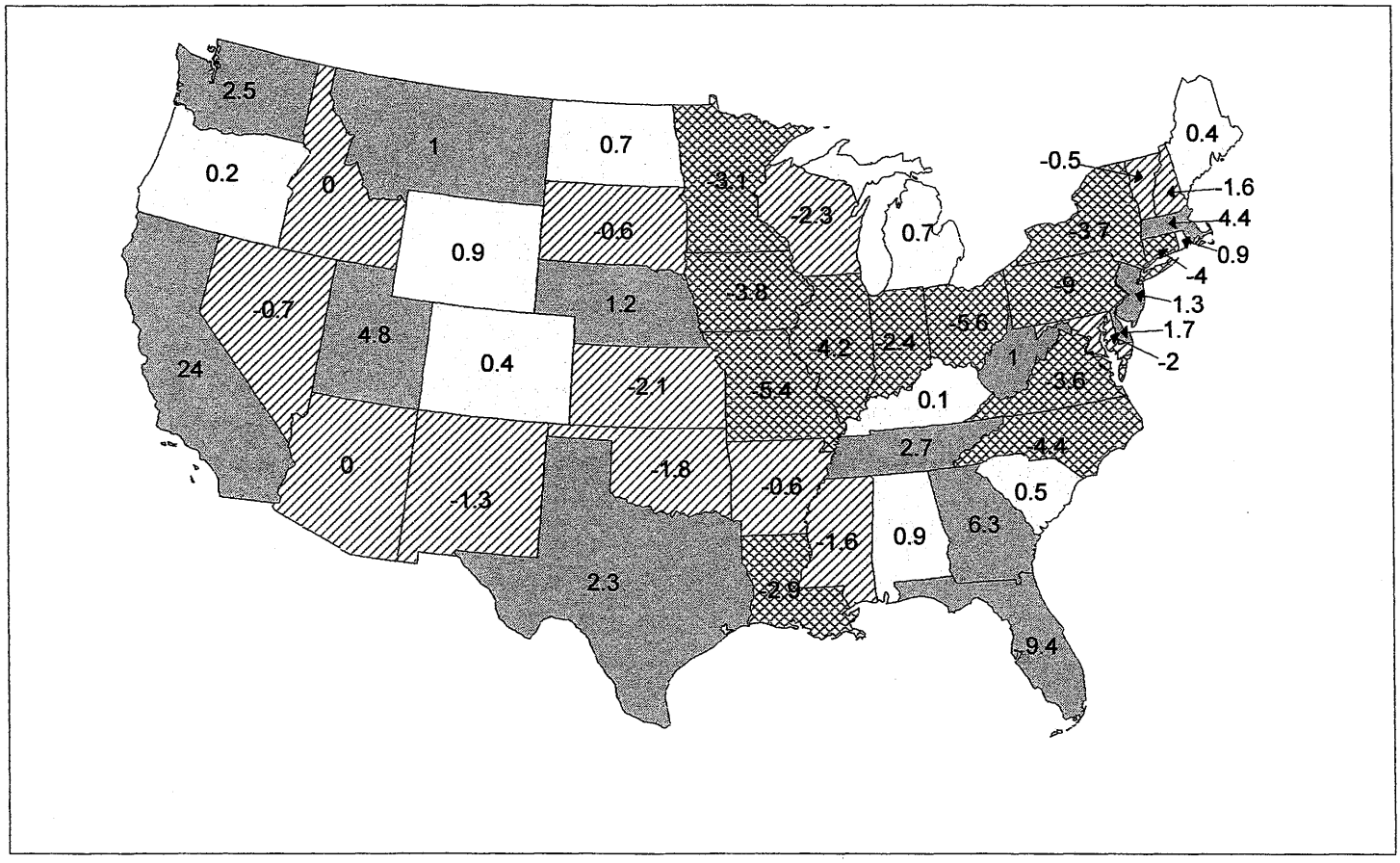
		GSP96	SRV96SIZ	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.006	849.241	-12.484	118.381	-14.640	0.746	0.715
	t	(10.637)	(0.533)	(-0.134)	(1.094)	(-1.163)		
	Significance	0.000	0.597	0.894	0.280	0.251		

Table S3: Service FDI Over Time

		GSP	SRVSIZ	BORDER1	R^2	Adjusted R^2	
1996	β	0.086	7.422	0.025	0.889	0.881	N=48
	t	(18.426)	(0.709)	(0.027)			
	Significance	0.000	0.482	0.978			
1987	β	0.068	8.948	0.473	0.863	0.854	N=48
	t	(16.462)	(2.098)	(1.012)			
	Significance	0.000	0.042	0.317			

Figure S1: Services

Residuals from Equation S1:1



Residual (# of states)
(values in 1000s)

- 1 to 24 (13)
- 0.1 to 1 (10)
- -2.3 to 0.1 (13)
- -9 to -2.3 (12)

Other Industries

The "Other Industries" category in BEA data is indeed a grab-bag "not elsewhere classified," but it covers some very important activities. Specifically, it includes agriculture, forestry, and fishing; mining; construction; transportation; and communication and public utilities. Together they accounted for about 9.6 percent of FDI employment in 1996.

Despite the heterogeneity of the sector, one characteristic attaches to many of its components: government regulation. Although only foreign agricultural land ownership is regulated at the state level, and foreign-owned firms are presumably free everywhere to actually control production on such land, state restrictions undoubtedly affect some agricultural activity. Federal law is far more important. While telecommunications has been recently liberalized, both that sector and broadcasting have historically had a 20 percent foreign ownership cap (the FCC could grant exceptions, but they were rare). Similarly, in domestic air transport, there has been a 25 percent cap, subject to discretionary waiver by the Secretary of Transportation who has used it to bargain with specific foreign governments for concessions to U.S. airlines. In some natural resource exploitation, the federal government either blocks foreign activity (e.g. uranium mining), grants access on a reciprocal basis (e.g. gas pipelines), or requires ownership in certain legal forms (e.g. some hydroelectric power generation).

Given the large number of restricted foreign ownership activities in the "Other Industries" sector, one is particularly likely to get odd results from the Department of Commerce rule making 10 percent ownership sufficient for all of a firm's activities to count as "foreign investment." BEA data for the 1970s suggested that over three-quarters of the equity of an average affiliate was held by foreigners and that changing the rule from 10 to 20 or even 50 percent would not change the overall FDI picture very much (Graham and Krugman, 1995: 10-

11). Nonetheless, the rule necessarily distorts most in sectors in which a 10 percent or greater stake *cannot* mean complete ownership. For example, all transportation and broadcasting activities in which the maximum minority stake is in fact taken will be carried by the BEA as totally foreign investments and in that way will misreport the control situation in every case.

No confidently held *a priori* assumptions can be suggested about this sector. Given its heterogeneity, no attempt was made to discover what part of the state's economy the activities represent. Moreover, the importing or import-substitution activity that typically provides some punch for the Border2 variable might not importantly affect investment of this kind. Finally, several of the sectors involved are so heavily unionized that state level unionization could not be expected to affect the overall results. The explanatory quandary is consistent with the results shown in Table O1. As has been the case so far only with the Finance sector, which is about one tenth "Other Industries" size, only the GSP variable is significant in any of the specifications. Unsurprisingly, fewer than 70 percent of total variation is explained in all of the equations.

Table O2 presents results that are more sharply at variance with the employment equations that for any of the well-defined sectors. The great disparity between the employment and value figures may result partly from the high capital intensity of several of the subsectors. For "Other Industries," the Gross Property Plant and Equipment value is about $200,000 per worker compared to $160,000 per worker for all U.S. foreign direct investment. The equation explains 42 percent of total variation in the dependent variable.

The Union variable takes the unexpected sign with a very high level of significance, and this is indeed an anomaly. It is one thing to argue, as was just done, that the general unionization of a state would not affect the level of "Other Industries" FDI employment. It is more puzzling

that it should be strongly and positively associated with it. The level of unionization in natural resource extraction may be part of the explanation.

Looking historically with Table O3, 1987 looks very much like 1996 with none of the variables except GSP showing significance. Moving from 1987 to 1980 takes the sample from forty-four states down to thirty-one, so the later result in particular should be used with caution. Nonetheless, it does indicate a positive and significant early role for familiar territory—not something that might be thought as likely as in many other sectors.

The Minnesota story for "Other Industries" is more interesting than that for any of the other sectors and provides an important reminder about the characteristics of the data. The positive residual for Minnesota is 15,219 employees, a very impressive positive showing for the state and one of only two positive residuals. See Figure O1.

This study has had little to say about home countries because that factor cannot be considered simultaneously with our concerns. If the data were sorted out by sector, state, and home country, many states would have at best one firm from any one country per sector. So even if the BEA made such data available, it would be of limited use because the BEA cannot report in a way that reveals firms' identities. Nonetheless, looking at the home country data is very instructive for interpreting the "Other Industries" category for Minnesota. The BEA reports that there were a total of 22,500 employees Minnesota working for Dutch firms in 1996. Because there are apparently no large Dutch investments in Minnesota outside of the airline industry, one has to assume that virtually all of this number reflects the operations of Northwest Airlines. This, of course, resulted from KLM's 19.6 percent ownership share in Northwest. So the major direct investment in Minnesota's Other Industries category was a minority stake in a firm that was here all of the time!

In addition, there appears to have been somewhat more than 2,000 mining jobs in the Arrowhead Region in 1996 accounted for by firms that had at least a 10 percent foreign share (Minnesota Department of Revenue, 1997). The airline and mining employment together appear to leave no more than about 500 jobs in the Minnesota's "Other Industries" FDI investment.

Table O1: Other FDI

		GSP96	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	β	0.061	0.845	-0.896	0.145					0.687	0.657
	t	(8.662)	(0.994)	(-0.705)	(1.097)						
	Significance	0.000	0.326	0.484	0.279						
1996 2	β	0.062	0.949	-0.076	0.141	0.271				0.693	0.650
	t	(8.729)	(1.111)	(-0.051)	(1.066)	(1.057)					
	Significance	0.000	0.273	0.960	0.293	0.297					
1996 3	β	0.061	0.907	-0.862	0.147		-0.165	-1.177		0.694	0.641
	t	(8.158)	(0.877)	(-0.659)	(1.035)		(-0.625)	(-0.009)			
	Significance	0.000	0.385	0.513	0.307		0.536	0.993			
1996 4	β	0.063	0.677	-0.367					0.000	0.682	0.644
	t	(7.437)	(0.685)	(-0.292)					(0.145)		
	Significance	0.000	0.497	0.772					0.885		

Table O2: Other FDI By Value

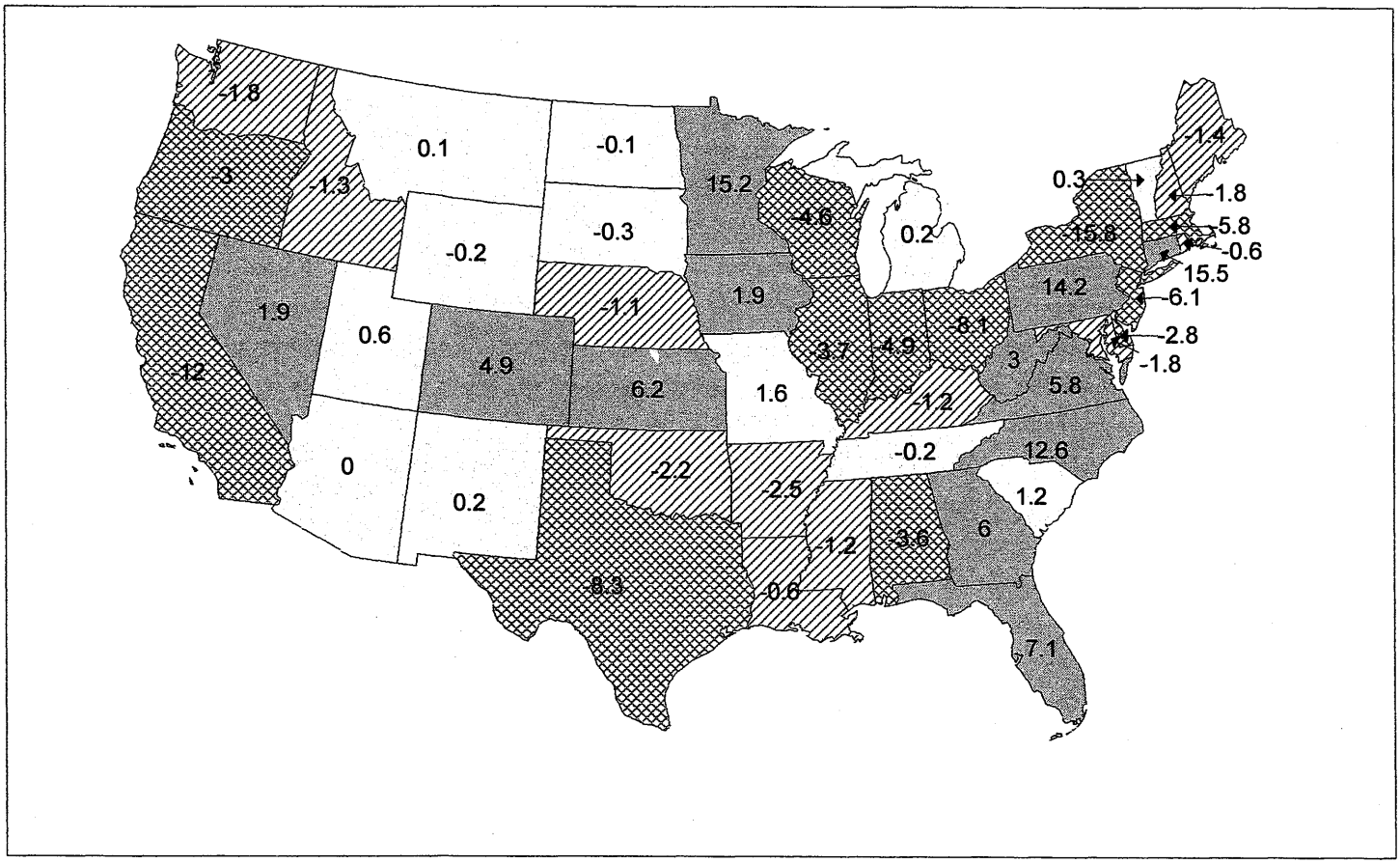
		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.006	327.235	-533.481	103.350	0.423	0.369
	t	(3.375)	(1.478)	(-1.611)	(3.004)		
	Significance	0.002	0.147	0.115	0.004		

Table O3: Other FDI Over Time

		GSP	BORDER1	R^2	Adjusted R^2	
1996	β	0.064	-0.420	0.672	0.650	N=48
	t	(9.538)	(-0.347)			
	Significance	0.000	0.731			
1987	β	0.039	-0.571	0.706	0.684	N=44
	t	(9.689)	(-1.326)			
	Significance	0.000	0.192			
1980	β	0.068	0.718	0.860	0.844	N=31
	t	(11.834)	(2.343)			
	Significance	0.000	0.026			

Figure O1: Other Industries

Residuals from Equation O1:1



Residual (# of states)
(values in 1000s)

- 1.9 to 15.5 (12)
- -0.3 to 1.9 (12)
- -2.5 to -0.3 (12)
- -15.8 to -2.5 (12)

Total Investment

The preceding analysis demonstrates enough diversity among apparent causal variables and fit to cast doubt on the wisdom of routinely discussing all of FDI together. Nonetheless, many descriptions of FDI rank states by their overall draw of investment or the employment attached to it, and a brief look at aggregate data may be useful.

Table T1 shows the same set of regressions as have been reported by sector, once again, as with the Other Industries sector, dispensing with a relative size variable. As in the case of all previous results, GSP is by far the most significant single determinant of total FDI, implying that every million dollars of additional state product is associated with between 652 and 664 additional FDI jobs. There is rather little else to report. Only the ZONE variable makes a significant showing, reflecting its importance in manufacturing and the nearly 45 percent share of that sector in total FDI employment. The union variable is negative but only at a modest level of significance. The Border2 variable is positive with about the same level of significance in the three equations not including ZONE. GSP growth has a consistently very large coefficient but a level of significance lower than for the negative effect of unionization. Over 90 percent of total variation is explained.

Table T2 shows that value is strongly and significantly linked to total state size; the other variables have negligible significance except for the growth which has an unexpected sign but is "significant" at only the 20 percent level. The total variation explained is about five and one half points lower than in the comparable employment equation.

The historical picture from Table T2 provides little insight into the development of total FDI. The coefficient on the "old" border variable increases in magnitude over time, but that growth in importance must be treated with skepticism because the coefficient is significant by

most standards in 1980. The total proportion of variation explained rose from 87 percent in 1990 to 92 percent in 1996.

The Minnesota residual for total investment is 5,216, but qualifications for this apparently strong showing have already been noted. The Northwest-KLM venture was fraught with conflict nearly from its inception in 1989 (Tully, 1996, 64ff), and KLM divested its Northwest stock in two steps: September of 1997 and May of 1998 (Steenland, 1999). Hence, the Minnesota residual in "Other Industries" for the period since has presumably been strongly negative, and this implies a substantial negative residual for total investment as well. See Figure T1.

Some other states' positions in the overall FDI pecking order may be just as tenuously dependent on one firm's behavior as Minnesota's was, but there is an additional point: No one could seriously claim that the KLM investment tranche had much, if anything, directly to do with any attractions of the State of Minnesota.

Table T1: Total FDI

		GSP96	GSPGR	BORDER2	UNION	ZONE	CORPER	HEXPER	AVEPAY	R^2	Adjusted R^2
1996 1	β	0.664	4.035	7.788	-0.731					0.923	0.916
	t	(21.673)	(1.098)	(1.416)	(-1.28)						
	Significance	0.000	0.278	0.164	0.207						
1996 2	β	0.659	3.201	1.232	-0.697	-2.164				0.930	0.922
	t	(22.218)	(0.895)	(0.198)	(-1.263)	(-2.017)					
	Significance	0.000	0.376	0.844	0.214	0.050					
1996 3	β	0.659	2.742	7.372	-0.835		0.356	-292.547		0.924	0.913
	t	(20.210)	(0.612)	(1.302)	(-1.354)		(0.311)	(-0.5)			
	Significance	0.000	0.544	0.200	0.183		0.758	0.620			
1996 4	β	0.652	4.414	4.661					0.000	0.920	0.913
	t	(17.818)	(1.027)	(0.853)					(0.051)		
	Significance	0.000	0.310	0.398					0.960		

Table T2: Total FDI By Value

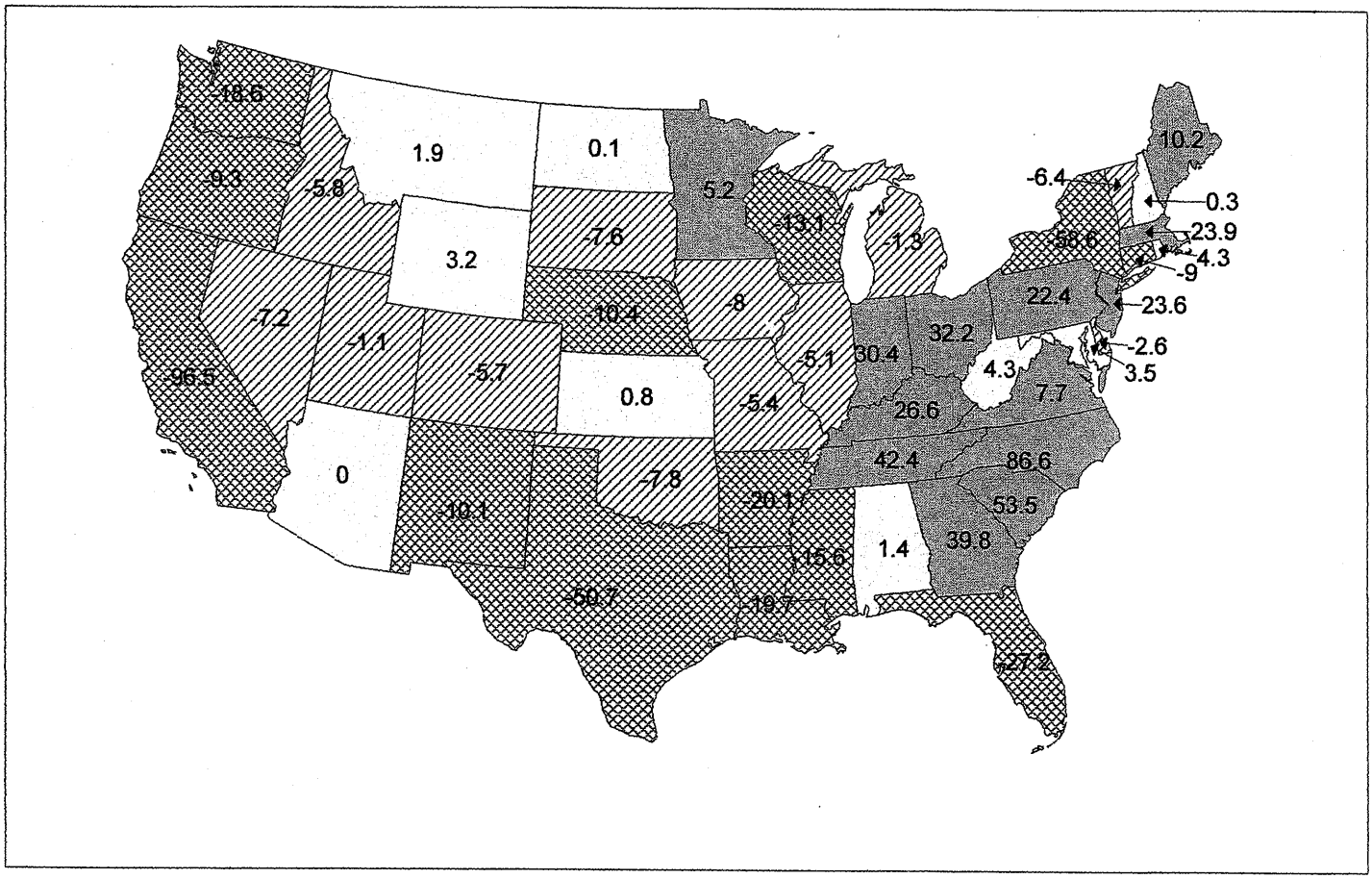
		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	β	0.092	-878.548	165.702	-17.112	0.869	0.857
	t	(16.280)	(-1.294)	(0.163)	(-0.162)		
	Significance	0.000	0.203	0.871	0.872		

Table T3: Total FDI Over Time

		GSP	BORDER1	R^2	Adjusted R^2	
1996	β	0.663	8.169	0.919	0.916	N=48
	t	(22.665)	(1.553)			
	Significance	0.000	0.127			
1987	β	0.700	4.166	0.877	0.872	N=48
	t	(17.939)	(0.954)			
	Significance	0.000	0.345			
1980	β	771.613	6699.425	0.868	0.862	N=48
	t	(17.209)	(2.399)			
	Significance	0.000	0.021			

Figure T1: Total Investment

Residuals from Equation T1:1



Residual (# of states)
(values in 1000s)

- 5 to 87 (13)
- -1 to 5 (10)
- -8 to -1 (12)
- -97 to -8 (13)

MINNESOTA'S RESIDUALS ACROSS SECTORS

To clarify the importance of the Other Industries category in Minnesota's 1996 performance, the last row in Table 6, which summarizes all of the state residuals, also shows the residual with the KLM (Northwest) estimated employment removed. The residual becomes -16,784, although that was only about .64 of one percent of the total 1996 work force.

Table 6: Minnesota Residuals

	1996 Employment Residuals	Percent of Sector Employment
Manufacturing	-3,541.61	-0.82%
Wholesale	-3,886.62	-2.58%
Retail	-7,801.38	-1.71%
Finance	-563.62	-1.24%
Insurance	-479.55	-0.84%
Real Estate	211.34	0.83%
Service	-3,134.89	-0.43%
Other	15,218.67	2.33%
Total	5,216.30	0.20%
Total minus KLM	-16,784.00	-0.64%

TOTAL INVESTMENT BY HOME COUNTRY OR REGION

Tables H1-H3 show regressions attempting to find differences in the explanatory power of the key variables used in this study by the source of investment: Canada, Europe and Japan. Given the somewhat disappointing results for the regressions for total investment without regard to source, the results do not surprise. GSP variation dominates the other variables in all three equations, and it is the only significant variable for Europe and Japan, although in the European regression there is a suggestion of union avoidance. France accounts for at least some of that tendency. Canadian investment is positively affected by state growth rates and by Border2 at above 10 percent significance levels.

Table H1:Canadian FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.073	1.266	2.047	0.013	0.812	0.795
	t	(12.340)	(1.791)	(1.936)	(0.118)		
	Significanc	0.000	0.080	0.059	0.907		

Table H2:European FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.417	2.406	4.432	-0.530	0.858	0.844
	t	(15.359)	(0.739)	(0.910)	(-1.047)		
	Significanc	0.000	0.464	0.368	0.301		

Table H2A:German FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.079	0.467	0.848	-0.944	0.760	0.738
	t	(11.127)	(0.547)	(0.664)	-(0.711)		
	Significanc	0.000	0.587	0.510	0.971		

Table H2B: French FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.002	-0.082	0.639	-0.168	0.771	0.750
	t	(11.714)	(-0.143)	(0.276)	(-1.875)		
	Significanc	0.000	0.887	0.999	0.676		

Table H2C:British FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.127	1.060	1.194	-0.077	0.811	0.793
	t	(12.790)	(0.887)	(0.668)	(-0.414)		
	Significanc	0.000	0.380	0.508	0.681		

Table H3:Japanese FDI

		GSP96	GSPGR	BORDER2	UNION	R^2	Adjusted R^2
1996	b	0.109	0.102	0.233	-0.034	0.743	0.719
	t	(10.625)	(0.083)	(0.126)	(-0.177)		
	Significanc	0.000	0.934	0.900	0.860		

CONCLUDING COMMENTS

It has long been known that the efforts begun with such fanfare under the Perpich administration to attract foreign investment to Minnesota have met with only modest success. But what difference does it make? The original justification for encouraging FDI was the same as for promoting exports and for most "economic development" schemes more broadly: to create jobs in the 1980s. From the perspective of late 1999, that objective might seem odd given the state's nation-leading employment rates and complaints from leaders all over the state about labor shortages. While many would caution that such high levels of activity have not persisted for a long time in the past and are unlikely to do so in the future, only FDI particularly linked to foreign markets and not highly correlated with U.S. domestic demand would be effectively countercyclical.

An assessment of the importance of direct investment for Minnesota and its significance for public policy suggests a few key points. First, the data used in this study include both acquisitions and greenfield investments, with the latter only about 5 to 10 percent of the total. Thus, a drive to bring most available FDI to Minnesota would involve a lot of what would amount to brokerage. Can state policy really do much to improve foreign intelligence about Minnesota firms that might be ripe targets for takeover? And, even if it made economic sense, would such a strategy be politically salable? A negative answer to that question probably underlies a secularly increasing emphasis within the Minnesota Trade Office towards export assistance and away from attempts to lure more FDI. The precise time pattern of resource allocation has not been recorded, but information for 1986 suggested that resources devoted to export promotion exceeded that for FDI encouragement by only about 60 percent (Kudrle and Kite, 1988: 6). By the early 1990s resources earmarked exclusively for FDI had virtually

disappeared. The *prima facie* case that this was a wise reordering of priorities appears very strong, although little is known about the efficacy of the export-oriented activity.

Some would claim that FDI contributes to employment only when greenfield investment takes place, but that is an oversimplification. Foreigners can typically make the best acquisition bid for a firm when they have superior production or marketing strength. One can imagine a situation in which a takeover cuts employment by improving productivity without improving market penetration. But this will not be the typical case. Stronger firms usually improve their market position, and that will typically lead to increases in employment, although that employment increase may not all take place in the state where the main activity is located. And greenfield investments can reduce employment in competing firms, although that won't happen if the new firm is the only state firm in that industry.

Greenfield investments have other characteristics that make their employment impact uncertain. Even in periods of high unemployment, most new operations do not draw heavily on unemployed workers. Instead, they find workers in a wide array of local, state, regional, and national labor markets, often yielding a very modest impact on local unemployment. In other words, it would be coincidental if the new activity fit well with the pattern of local unemployment. And business expansion in times of high employment can create labor market difficulties for other firms that might cause them to relocate. Hence, the impact of greenfield investment, not only on local employment but also on the tax base, may often not be more confidently predicted than the impact of an acquisition.

In general, of course, there is a presumption of increased economic activity from both kinds of direct investment. This, in turn, is expected to have an uncertain but positive impact on both employment and the fiscal situation of the immediate jurisdiction (assuming that not too

much revenue has been foregone to lure the activity in the first place). Most of this argument applies equally to other types of business development, however. In the case of direct investment, the uncertain net effect has to be considered in light of modest size of the initial gross impact. Moreover, this study has established that overall state size and the existing structure of the state's economy are overwhelmingly strong factors in determining a state's FDI. The second factor is certainly driven by some combination of takeover targets for acquirers and appropriate personnel for both acquirers and greenfield investors.

The broad picture of FDI determinants presented in this study suggests that Minnesota's best approach to FDI policy is indirect. It should establish a favorable climate for the attraction, retention, and growth of economic activities that it regards as desirable. FDI is likely to play some positive role in that larger picture, largely of its own accord.

REFERENCES

Coughlin, Cletus C., Joseph V. Terza, and Vachira Arromdee. 1991. "State Characteristics and the Location of Foreign Direct Investment Within the United States." *The Review of Economics and Statistics,* 675-683.

Caves, Richard E. 1989. "Exchange Rate Movements and Foreign Direct Investment in the United States," in David B. Audretsch and Michael P. Claudon, eds., *The Internationalization of U.S. Markets* (New York: University Press).

Caves: Richard E. 1971. "International Corporations: The Industrial Economics of Foreign Investment." *Economics* Feb. 1971: 1-27.

Crandall, Robert W. 1993. *Manufacturing on the Move*. Washington, D.C.: The Brookings Institution.

European Commission. *Report on United States Barriers to Trade and Investment*. October 28, 1998

Fahim-Nader, Mahnaz and William J. Zeile. 1998. "Foreign Direct Investment in the United States," *Survey of Current Business*, June 1998: 39.

Glickman, Norman J. and Douglas P. Woodward. 1989. *The New Competitors: How Foreign Investors are Changing the U.S. Economy*. New York: Basic Books.

Glickman, Norman J. and Douglas P. Woodward. 1987. "Regional Patterns of Manufacturing Foreign Direct Investment in the United States," manuscript. (Washington, DC: U.S. Department of Commerce, Economic Development Administration, Research and Evaluation Division).

Graham, Edward M. and Paul R. Krugman. 1995. *Foreign Direct Investment in the United States* (Washington, D.C.: Institute for International Economics).

Kudrle, Robert T. and Cynthia M. Kite. 1988. "State Evaluation of Foreign Affairs Efforts," manuscript. (Minneapolis, MN: Center for Urban and Regional Affairs Publication No. CURA 88-5).

Laband, David N. 1984. *Foreign Ownership of U.S. Farmland: An Economic Analysis of Regulation*. Lexington, MA: Lexington Books.

Little, Jane S. 1978. "Location Decisions of Foreign Investors in the United States," *New England Economic Review*, July/August: 43-63.

McConnell, James E. 1980. "Foreign Direct Investment in the United States," *Annals of the Association of American Geographers* 7- (2): 259-270.

Minnesota Department of Revenue. *Minnesota Mining Tax Guide*, October, 1997.

Munnell, Alicia H. 1990. "How Does Public Infrastructure Affect Regional Economic Performance?" *New England Economic Review*. Sept-Oct, 1990: 11-32.

Ondrich, Jan and Michael Wasylenko. 1993. *Foreign Direct Investment in the United States.* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Plaut, Thomas R. and Joseph E. Pluta. "Business Climate, Taxes and Expenditures, and State Industrial Growth in the United States," *Business Climate and State Industrial Growth.*

Steenland, Douglas, Northwest Airlines, personal communication, December 30, 1999.

Studenmund, A.H. 1997. *Using Econometrics: A Practical Guide*, Third Edition. New York: Addison-Wesley.

Tolchin, Martin and Susan. 1988. *Buying into America.* (New York, NY: Berkeley Books).

Tully, Shawn. 1996 "The Alliance from Hell". *Fortune*, June 24, 1996: 1-6.

United Nations Conference on Trade and Development. 1997. *World Investment Report 1997: Transnational Corporations, Market Structure and Competition Policy.*

Wheat, Leonard F. 1973. *Regional Growth and Industrial Location: An Empirical Viewpoint* (Lexington, MA: D.C. Heath).

Wheat, Leonard F. 1986. "The Determinants of 1963-77 Regional Manufacturing Growth: Why the South and West Grow, *Journal of Regional Science:* 26: 63-660.