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# NEW HAMPSHIRE FOREIGN DIRECT INVESTMENT REPORT

Presence and Contributions  
to State and County Economies

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# Table of Contents

3	<b>Introduction</b>
4	<b>Executive Summary</b>
6	<b>Highlights:</b> Foreign Subsidiaries Have a Notable Presence in New Hampshire
22	<b>Industry Analysis:</b> Foreign Direct Investment Contributes to Growth of New Hampshire's Economic Output
28	<b>Sector Analysis:</b> Foreign Firms Determine Value to Buyers in Key Segments of New Hampshire's Economy
30	<b>County Analysis:</b> Foreign Firms Add Opportunities for Development and Innovation across New Hampshire
50	<b>Manufacturing:</b> Foreign Manufacturers Influence New Hampshire's Competitiveness
58	<b>High-Tech:</b> Foreign Firms Endorse Industries with the Highest Concentration of Science, Engineering, and Technician Occupations
66	<b>Employment:</b> Most Foreign Employers in New Hampshire Are Small
74	<b>Origin Analysis:</b> Europe, Canada and East Asia Drive the Foreign Direct Investment in New Hampshire
80	<b>Country of Origin Analysis:</b> Impact on New Hampshire Economy
88	<b>Country of Origin Analysis:</b> New Hampshire Counties
94	<b>Conclusions:</b> Mapping the Future of Foreign Direct Investment in New Hampshire
98	<b>Terminology</b>
100	<b>About the authors</b>
101	<b>Acknowledgments</b>
	<b>Disclaimer</b>

# Introduction

According to the U.S. Department of Commerce[i], “the United States remains an attractive foreign direct investment (FDI) destination”. Our report examines foreign direct investment in New Hampshire from the perspective of presence of foreign subsidiaries. The distributions of foreign subsidiaries are analyzed across counties and industries in New Hampshire, with accompanying inferences on contributions that foreign firms make to the state. The analysis[ii] is based on a sample of 447 subsidiaries of foreign firms.[iii]

The study is unique in its analysis of the distributions of foreign subsidiaries at the level of counties, sectors and industries, in addition to the explorations into firm size and presence in manufacturing and high-tech industries. It is also nuanced in terms of mapping the countries of origin for FDI in various aspects of New Hampshire economy. The results are meaningful for understanding the kinds of foreign firms that operate in New Hampshire, where such firms are located, where the investments come from, and what types of contributions they make to growth and development.

The information included in the report holds value for identifying the sources and geography of foreign presence in the New Hampshire business setting, the scale and main value chain activities of foreign firms, the sectors and industries where foreign firms add jobs and the extent to which foreign firms drive innovation. The report concludes on strategic aspects of FDI.

## Data Sources and References [iv]:

Uniworld Online database (<https://uniworldonline.com/>)

Amfibi business directory (<http://www.amfibi.com>)

FindTheCompany database (<http://listings.findthecompany.com/>)

Bureau of Labor Statistics (<https://www.bls.gov/bdm/bdmfirmsize.htm>)

Census Bureau (<https://www.census.gov/eos/www/naics/>)

SelectUSA (<https://www.selectusa.gov/resources>)

fDi Markets (<https://www.fdimarkets.com/>)

## Endnotes

[i] U.S. Department of Commerce, Economics and Statistics Administration -Office of the Chief Economist, Foreign Direct Investment in the United States, October 3, 2017. <https://www.esa.gov/sites/default/files/FDIUS2017update.pdf>.

[ii] Methodology is described in various sections of the report. All analysis and results are in the context of the samples used for the study.

[iii] The sample for the analysis presented in the three chapters of origin analysis contains a total of 453 foreign subsidiaries. This varies slightly from the foreign subsidiaries’ sample which contains 447 subsidiaries in other parts of the report, as more data was collected for the purpose of origin investigation.

[iv] Specific references are included inside sections of the report.

# Executive Summary

New Hampshire attracts foreign direct investment from 24 overseas countries in Europe, East Asia, Middle East and Australia. Foreign firms have an important presence in New Hampshire and make positive contributions to economic output and overall development. By presence, foreign firms are represented in many industries in the state. A relative higher concentration of foreign firms is in finance and insurance. A top 10 of the sectors where foreign subsidiaries operate shows hospitality in the last place. The geographical distributions of foreign firms identifies a clustering in the southern counties along New Hampshire-Massachusetts border within the economic metropolitan area centered on Boston, and agglomeration spillover towards the inner center of the state. The present report recognizes that foreign subsidiaries play a vital role in employment and adds detail to the picture of how foreign direct investment supports jobs in the state. The majority of foreign firms are very small. Foreign direct investment in New Hampshire supports jobs in every county and across various industries. Jobs are supported by foreign firms in service, distribution and manufacturing, and in non-high-tech and high-tech industries.

Almost a quarter of New Hampshire foreign firms are in manufacturing. In the US, the manufacturing sector is a significant driver of economic growth, with a higher gross output than any other private sector industry. The manufacturing sector in the United States has consistently been the largest recipient of FDI[i]. There is likely additional potential of this sector to generate growth and to support jobs in New Hampshire.

Foreign firms contribute to New Hampshire's high-tech sector. Advanced industries are important drivers of growth for the US economy[ii]. Business activity in these industries involves new technologies, employs and trains skilled workers, and contributes to the development of communities. Companies in high-tech industries bring innovations to the state's economy. The state competitiveness benefits from advanced industries. A relative low proportion of foreign firms operate in high-tech industries in New Hampshire. There is further potential to attract foreign investment in the state's advanced industries.

# Headline Figures

- 46 industries<sup>[iii]</sup> have foreign firms' presence.
- 1/2 of the industries<sup>[iv]</sup> in which foreign subsidiaries operate have fewer than 3 foreign firms.
- 44% of all foreign subsidiaries are service providers, of which 45% have Canadian parent companies.
- 29% of foreign firms are in finance and insurance.
- 58% of foreign firms in finance and insurance are subsidiaries of Canadian financial institutions.
- #10 is the ranking of the hospitality sector<sup>[v]</sup> in terms of foreign firms' representation.
- 22% of foreign firms are in manufacturing.
- 28% of foreign manufacturing firms have Germany as country of origin.
- 1/4 of foreign manufacturers are in the computer, electronic, electrical and communications equipment and instruments sector.
- 13 countries across Pacific-Asia, Europe and North America operate subsidiaries in the sector of computer, electronic, electrical, and communication equipment and instruments.
- 40% of foreign firms are in Hillsborough County.
- 21 countries in Europe, East Asia, Middle East and Australia have subsidiaries in Hillsborough County.
- 13 countries have subsidiaries in Rockingham County, led by Canada and Germany.
- 70% of foreign firms are in the three southernmost counties.
- 2% of foreign firms are in the northernmost county.
- 5 countries of origin for FDI in Coos County are Canada, United Kingdom, France, Ireland and Japan.
- 12 distinct advanced industries have foreign firms' presence.
- Under 20% of foreign firms are high-tech.
- 40% is combined share of Germany and United Kingdom in high-tech foreign subsidiaries.
- 6% of foreign subsidiaries have more than 250 employees.
- 19 employees or fewer reflects the size of most foreign subsidiaries.
- 24 countries have parent companies who have subsidiaries in New Hampshire
- 674.9 is the FDI Origin Index for Germany which leads all countries of origin for likelihood to have FDI in New Hampshire.
- 32,149 is the FDI Employment Impact Index for Germany which leads all countries of origin for the estimated potential to support jobs in New Hampshire.
- \$9.15 billion is the estimated Gross State Product (GSP) of New Hampshire that could be potentially realized by FDI from Germany, which leads all countries of origin, based on the FDI GSP Impact Index.

## Endnotes

[i] SelectUSA, FDI in Manufacturing, Advancing U.S. Competitiveness in a Global Economy, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000gKi>.

[ii] SelectUSA, High-Tech Industries, The Role of FDI in Driving Innovation and Growth, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE>.

[iii] Number of industries as represented at the 3-digit level of The North American Industry Classification System (NAICS) codes.

[iv] Industries as represented at the 3-digit level of The North American Industry Classification System (NAICS) codes.

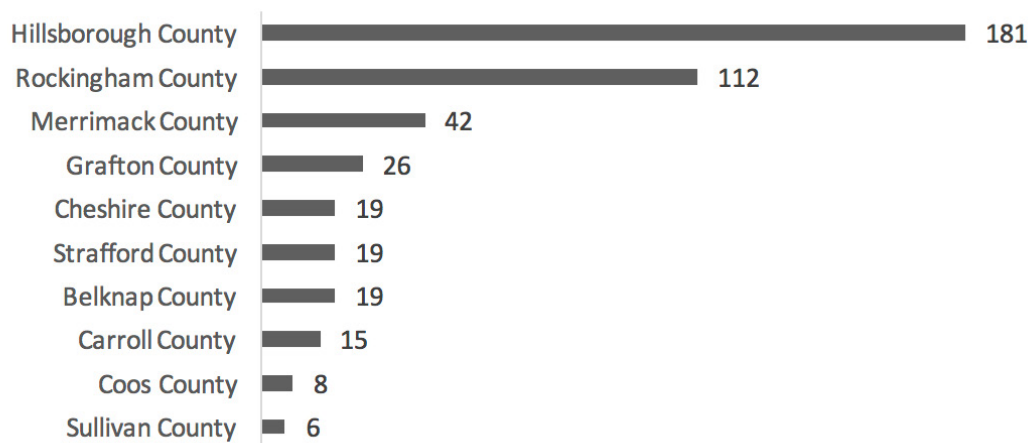
[v] Sectors are created by the authors.

# FDI Highlights

## Foreign Subsidiaries Have a Notable Presence in New Hampshire

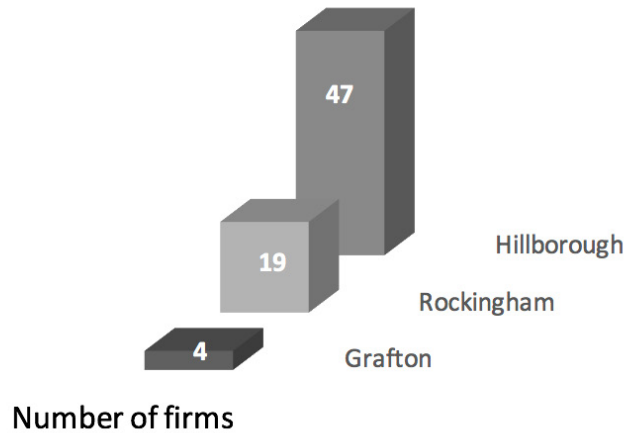
The present study analyzes the distribution of foreign subsidiaries[i] (i.e., firms that are part of companies with headquarters in a country other than US) in New Hampshire. A unique feature of the research is the examination of the presence of foreign firms across counties. Based on the sample of firms included in the study, most foreign firms operate in Hillsborough County, followed by Rockingham and Merrimack Counties. Sullivan, Coos and Carroll are counties where the lowest numbers of foreign subsidiaries can be found. Total number of firms in Hillsborough and Rockingham counties is almost double the total number of foreign subsidiaries in all other New Hampshire counties.

Distribution of Foreign Subsidiaries across NH Counties



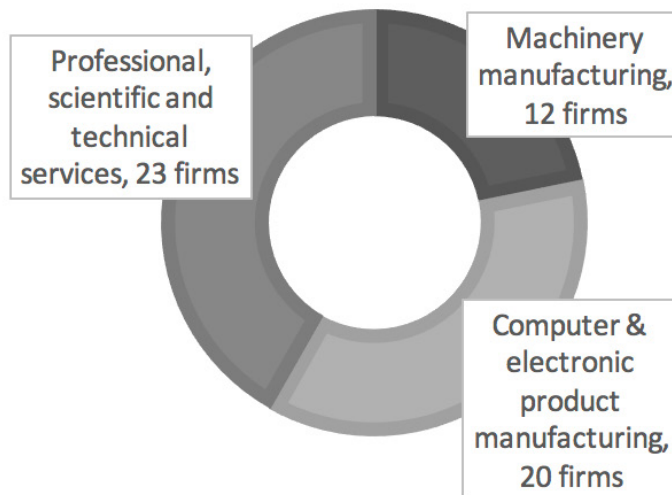
Hillsborough and Rockingham not only have the highest numbers of foreign firms but also the highest numbers of high-tech foreign firms. In a 2017 report[ii], SelectUSA of the US Department of Commerce found that foreign direct investment is a significant contributor to the competitiveness of the US high-tech sector (also referred to as advanced industries). According to SelectUSA, “high-tech industries are important drivers of growth for the U.S. economy. These industries advance innovation, employ millions of highly skilled and highly educated workers, further U.S. competitiveness in an increasingly globalized world, and contribute to greater prosperity in our communities.” Following the methodology used by SelectUSA, the present report for New Hampshire identifies the distribution of high-tech foreign subsidiaries across counties. The largest number of high-tech foreign subsidiaries are in Hillsborough County. Rockingham and Grafton Counties have the second and third numbers of high-tech foreign subsidiaries.

## Location of Choice for High-Tech Foreign Subsidiaries



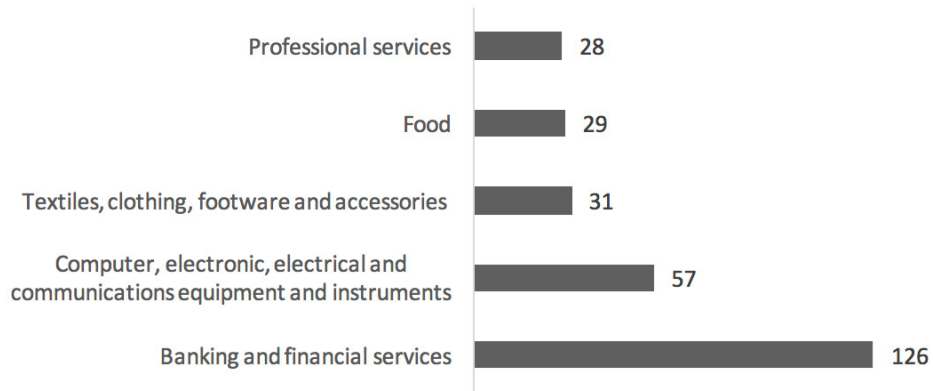
Considering the distribution of high-tech foreign firms across industries[iii], the present report finds that most high-tech foreign subsidiaries offer professional, scientific and technical services. A slightly lower number of foreign firms operate in the high-tech industry of computer and electronic product manufacturing. Machinery manufacturing is the next represented high-tech industry.

## KEY NEW HAMPSHIRE HIGH-TECH INDUSTRIES FOR FOREIGN SUBSIDIARIES



For the purpose of understanding more about foreign firms' representation in our state, 20 industry sectors were created. The distribution of foreign subsidiaries across these sectors identifies banking and financial services as the sector with most foreign subsidiaries. Computer, electronics, electrical and communications equipment and instruments is the second represented sector, with about half the foreign firms as compared with the number of foreign firms in the top sector.

## Top 5 Industry Sectors in which Foreign Subsidiaries Operate



The diversity of industries<sup>[iv]</sup> where foreign subsidiaries operate in New Hampshire is interesting. While these firms operate in a variety of industries, a relatively large number are present in the credit intermediation and related activities industry. The distribution shows the predominance of this industry and second highest number of foreign subsidiaries that are merchant wholesalers of durable goods. Lower numbers of foreign firms follow in the rankings and represent professional, scientific and technical services firms; food and beverage stores; clothing and clothing accessories stores; and computer and electronic product manufacturing firms. The least represented industries in the ranking have only one foreign subsidiary each<sup>[v]</sup>.



## Distribution of Foreign Subsidiaries by Industry



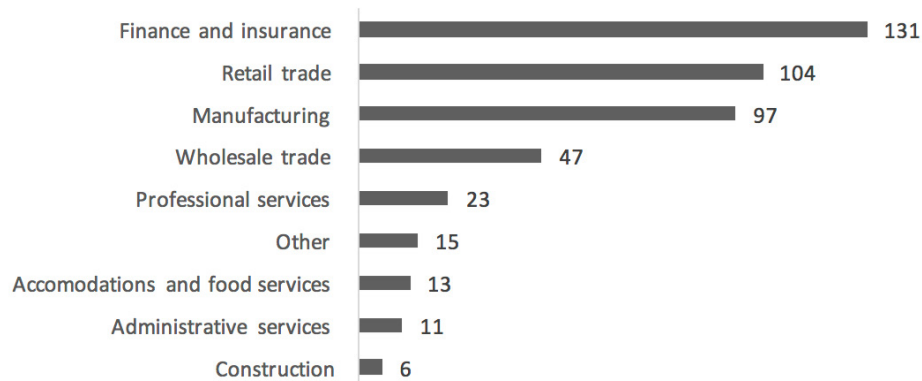
To add detail to the visualization above, the top industries by number of foreign firms are shown below with the accompanying number of firms in each.

### Top 6 Industries in which Foreign Subsidiaries Operate



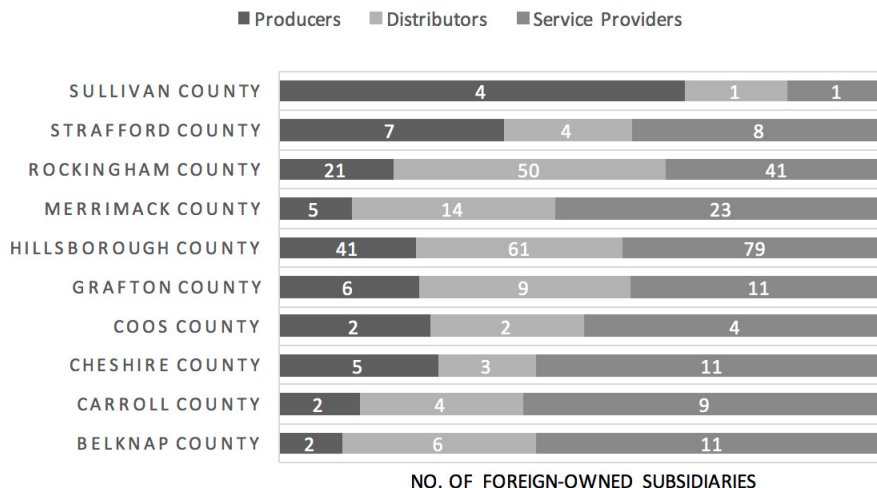
The aggregation at a more general industry level[vi] identifies that retail trade and manufacturing follow finance and insurance in terms of industries where foreign firms operate in New Hampshire. In this more general classification, construction, administrative services and accommodations and food services have low numbers of foreign subsidiaries, whilst professional services and wholesale trade trail behind the top 3 activities.

### Ranking of General Industries by Number of Foreign Subsidiaries



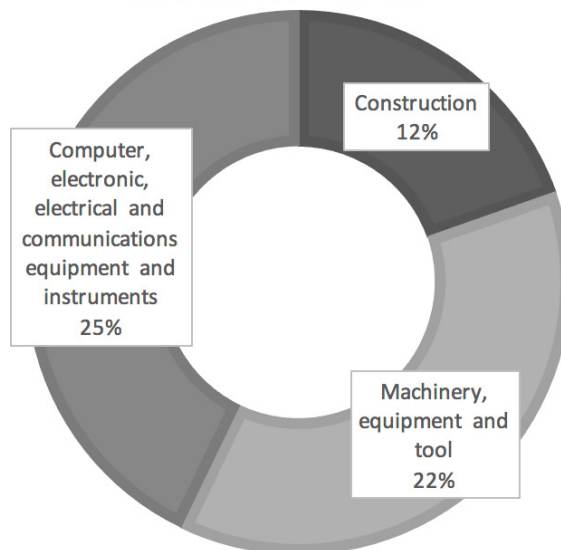
The main value chain activity has been used in this study to categorize foreign subsidiaries as producers, distributors or service providers. The analysis identifies a predominance of service providers in New Hampshire counties, with the exception of Rockingham and Sullivan. The representation of producers varies by county. In relative county-level numbers, producers are more prevalent in Sullivan, and come second as representation in Strafford and Cheshire. Distributors have the most representation by numbers in Rockingham, and come second in Merrimack, Hillsborough, Grafton, Carroll and Belknap counties. By absolute numbers, foreign service providers are present in higher numbers than foreign producers and distributors. Producers foreign subsidiaries are roughly about half of the number of service providers.

## MAIN VALUE CHAIN ACTIVITY OF FOREIGN FIRMS BY COUNTY



A ranking of the New Hampshire sectors by number of foreign manufacturers reveals that most of these companies are in the computer, electronic, electrical and communications equipment and instruments sector, with an almost similar number of foreign manufacturers in the machinery, equipment and tool sector. The representation in the next sector – construction – is halved, comparatively.

## KEY NEW HAMPSHIRE SECTORS FOR FOREIGN MANUFACTURERS\*

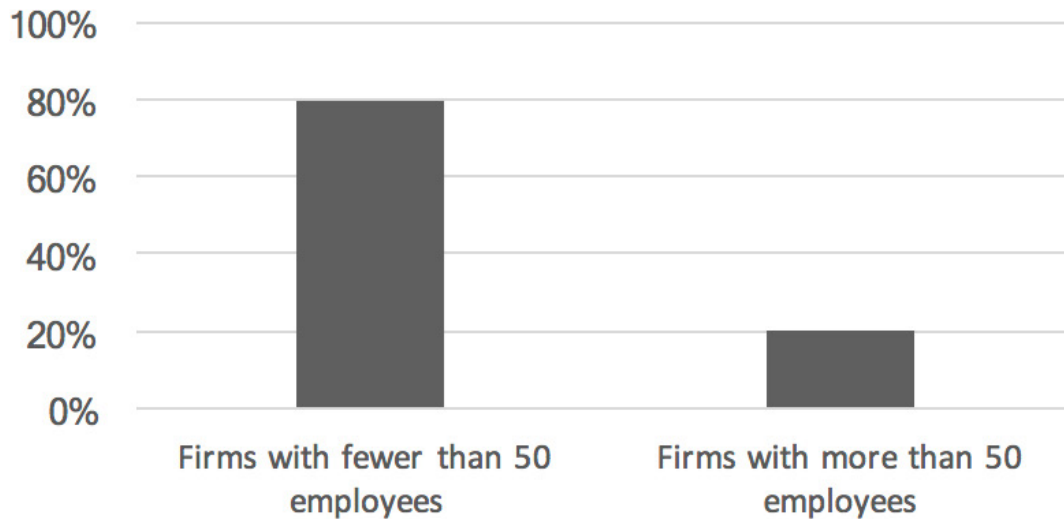


\*Percentage of manufacturing foreign subsidiaries in total number of manufacturing foreign subsidiaries across all sectors.

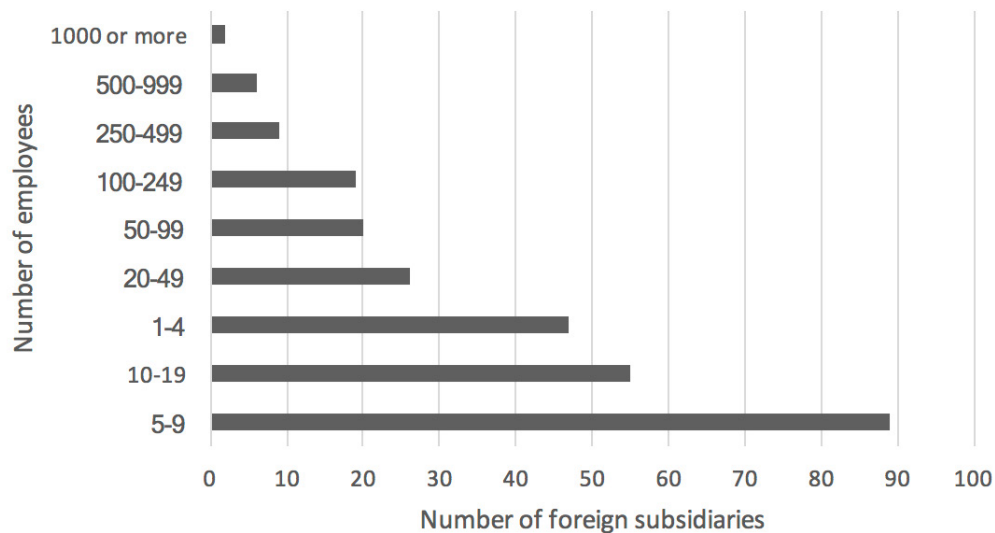
It is mostly small foreign firms that are employers in New Hampshire[vii]. According to a reduced sample[viii] of firms for which employment data was available from public sources, 70% of foreign subsidiaries have fewer than 20 employees and only 1% of companies are large, with over 1000 employees.

The analysis[ix] of this reduced sample indicates that foreign subsidiaries that hire employees in New Hampshire are predominantly firms with fewer than 50 employees. More specifically, most foreign subsidiaries employ 5-9 employees, with 2nd and 3rd representations by subsidiaries employing 10-19 individuals and subsidiaries employing 1-4 individuals, respectively. At the other end of the range, the number of firms employing more than 250 employees is relatively low, with foreign subsidiaries representations decreasing in each category of firm size as size increases over 100 employees.

## Sources of FDI Jobs by Firm Size



## New Hampshire Jobs Supported by FDI



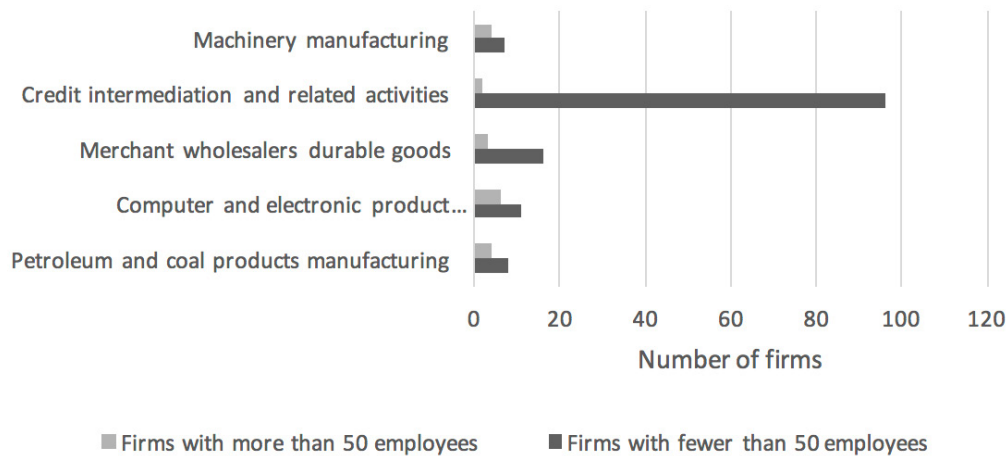
A more detailed analysis across industries[x] of the foreign firms with 5-9 employees identifies the fact that most of these firms operate in the largest overall represented industry of credit intermediation. By number of foreign subsidiaries, merchant wholesalers of durable goods follow but with much fewer firms, tracked closely by electronics and appliance stores and clothing and clothing accessories stores.

### Distribution by Industry of Foreign Subsidiaries with 5-9 Employees

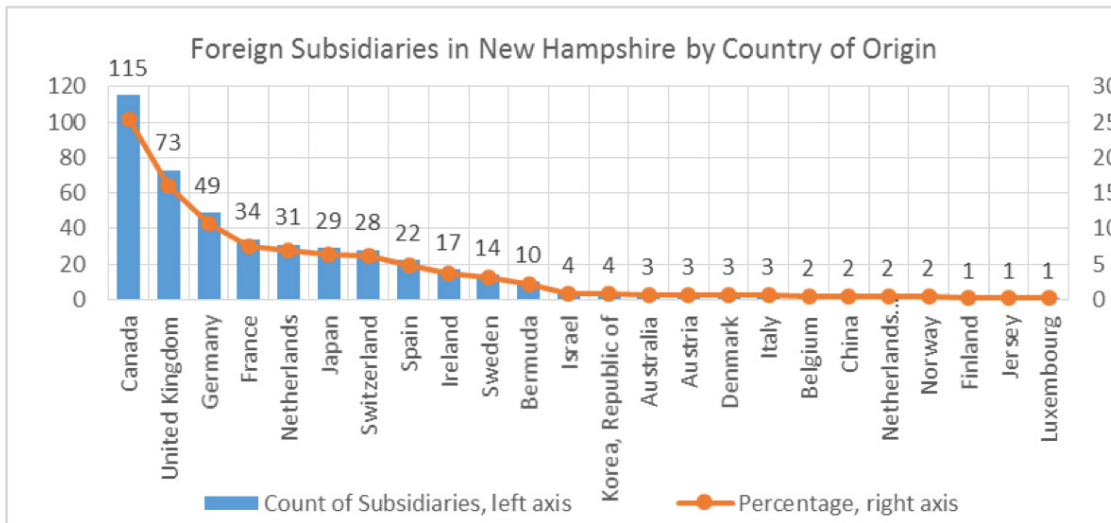


The fact that most foreign subsidiaries are very small across New Hampshire industries is evidenced by the noteworthy difference between the number of foreign firms with fewer than 50 employees and the number of foreign firms with more than 50 employees. In comparing selected industries, this difference is larger in credit intermediation and merchant wholesalers of durable goods when compared to the difference in the context of manufacturers of machinery, computer and electronic products, and petroleum and coal.

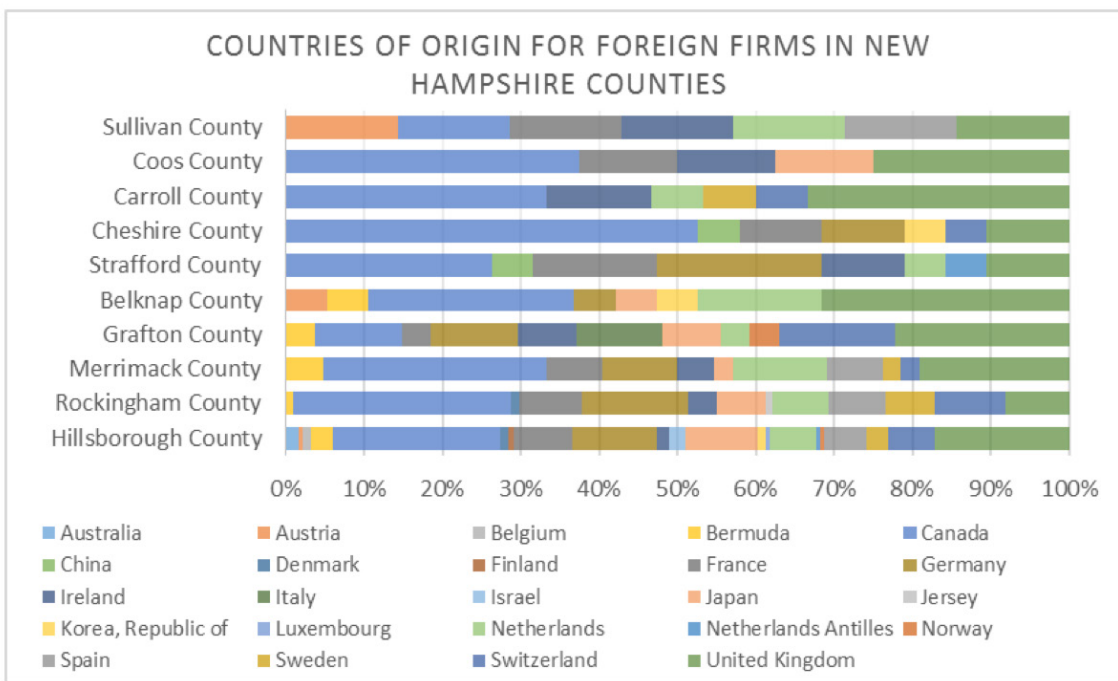
### New Hampshire Jobs Supported by FDI in Selected Industries (3-digit NAICS)



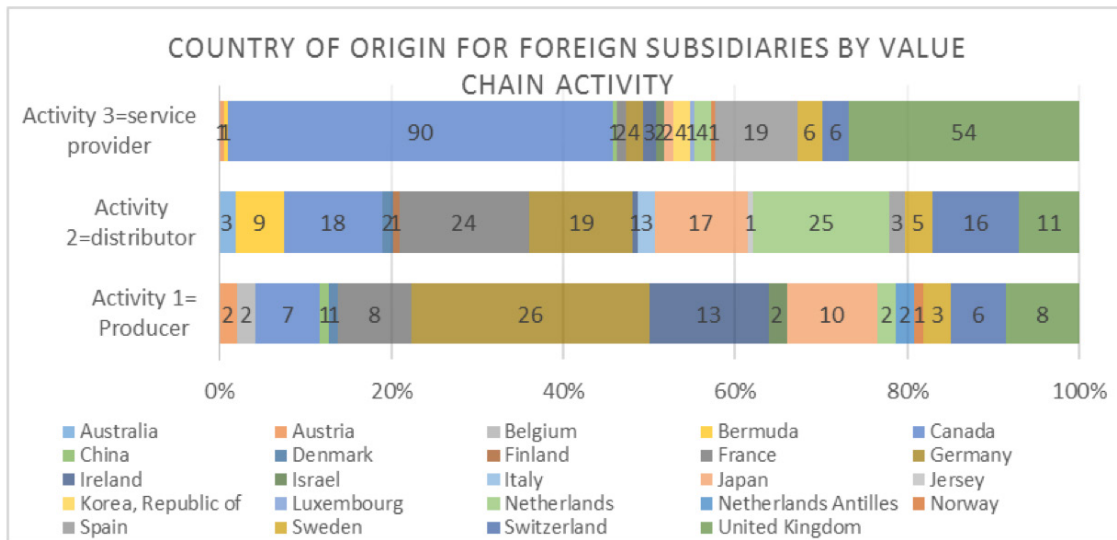
The present study provides a nuanced scrutiny of the countries of origin for foreign subsidiaries across counties and industries of New Hampshire. Understanding the sources of FDI is informative to policy makers and Economic Development Agencies (EDA) who are interested in attracting and promoting FDI. According to our sample, the Granite State attracts FDI from a total of 24 countries in Europe, North America, East Asia, Middle East, and Australia. As shown below, Canada, United Kingdom and Germany lead the countries of origin and capture a combined share of 52 percent of all foreign subsidiaries.



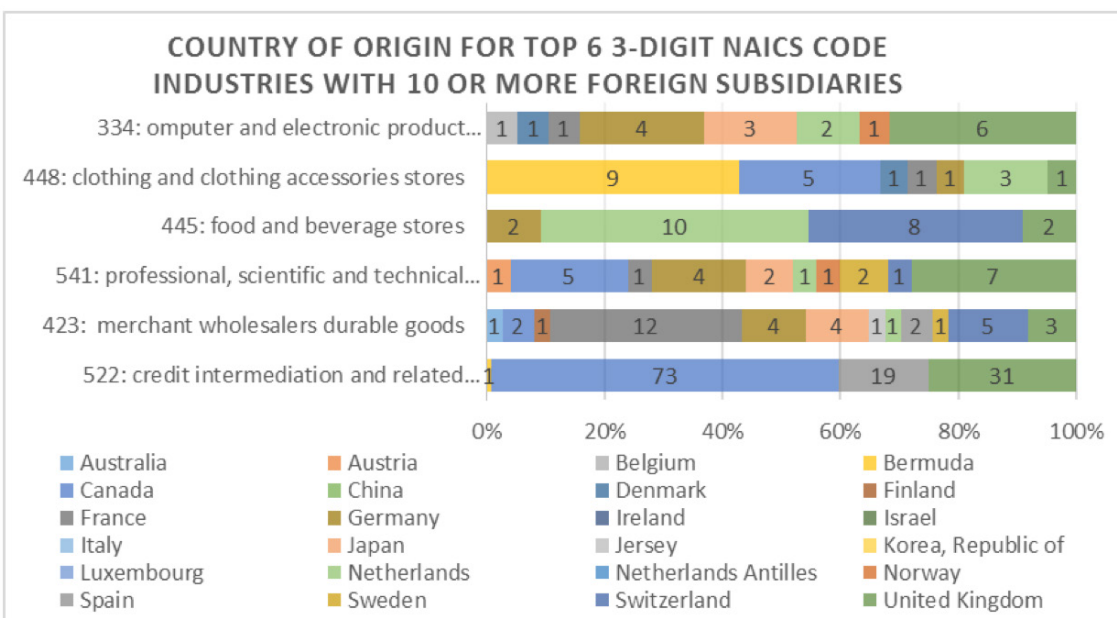
FDI in Hillsborough County are from 21 countries of origin, led by Canada, United Kingdom, Germany and Japan. FDI in Rockingham County has 13 countries of origin, led by Canada and 4 European countries, namely Germany, Switzerland, France and United Kingdom.



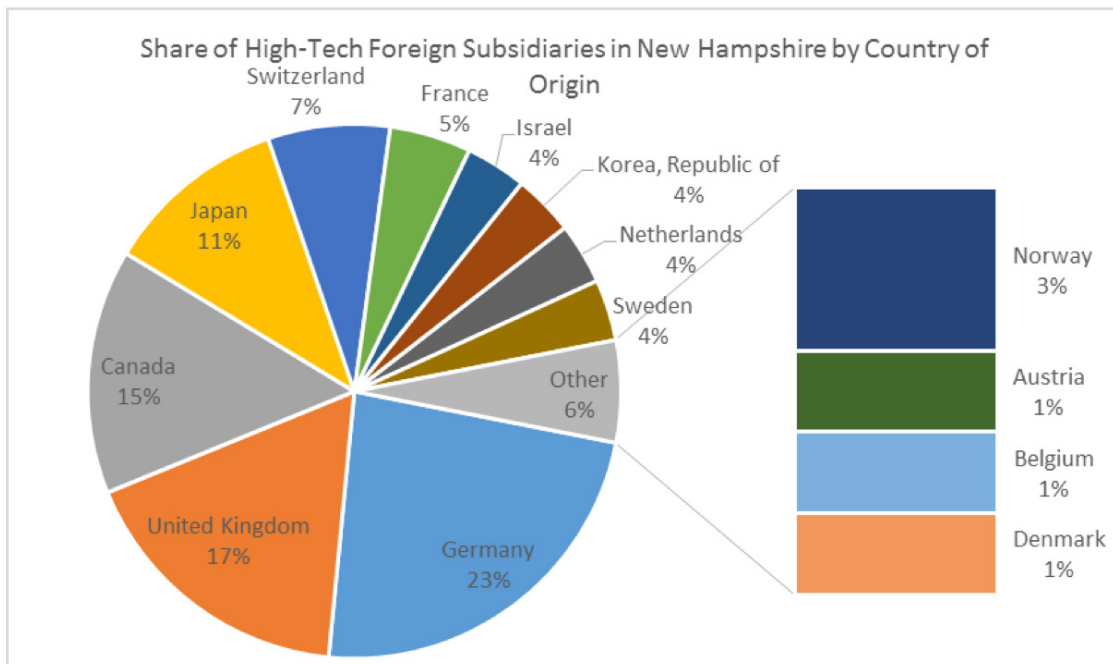
44 percent of all foreign subsidiaries in New Hampshire are service providers, followed by distributors (35 percent) and producers (21 percent). The service activity embraces FDI from 17 countries, but the top three countries of origin, namely Canada, United Kingdom and Spain, account for 81 percent of all foreign service providers in the state. Multinational manufacturers from 16 countries operate subsidiaries in New Hampshire. Germany leads other countries of origin in terms of number of foreign manufacturing firms, followed by Ireland and Japan.



FDI made its appearance in 47 3-digit NAICS code industries across many important aspects of the New Hampshire economy including construction, manufacturing, retail, wholesale, services, lodging and food, etc. As illustrated below, 15 out of the 47 industries have 10 or more foreign subsidiaries. Credit intermediation and related activities (NAICS code 522) ranks predominately Number 1 with over a quarter of all foreign subsidiaries. Within this industry, Canada dominates, in terms of count of foreign firms, followed by United Kingdom and Spain. Merchant wholesalers durable goods (NAICS code 423) embraces FDI from 12 countries in which France leads this group with a share of near one third. The third ranked industry is professional, scientific and technical services (NAICS code 541), which attracts FDI from 10 foreign countries led by United Kingdom.

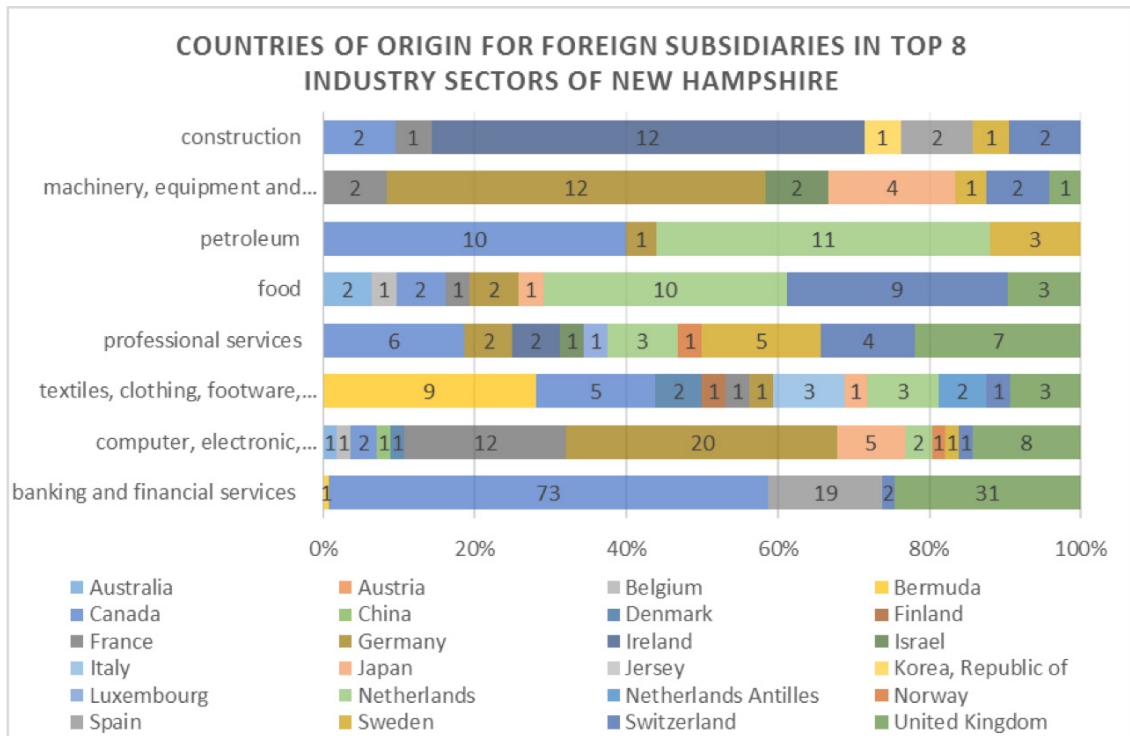


18 percent of all foreign subsidiaries in New Hampshire are in the high-tech industries. Europe is the predominant driving power for high-tech FDI, and East Asia is the other important source. Specifically, two European countries, Germany and United Kingdom, contribute 40 percent of high-tech foreign subsidiaries in combination. Two Asian countries, Japan and Korea, account for 15 percent combined.



The authors integrate the NAICS industries where foreign firms operate into 20 sectors based on the markets of product and service. About two thirds of these sectors embraces 10 or more foreign subsidiaries. Banking and financial services ranks Number 1 in terms of number of foreign subsidiaries, and is concentrated among Canadian, British and Spanish financial institutions. Although sector of computer, electronic, electrical, and communication equipment and instruments ranks the second, it is the most international with FDI from 13 countries across Pacific-Asia, Europe and North America. Germany, France and United Kingdom lead other countries of origin in this sector. The sector of textiles, clothing, footwear and accessories, and the sector of professional services both rank in the third place. In the former, Bermuda and Canada lead the all 12 countries, while United Kingdom and Canada lead the all 10 countries of origin in the latter.



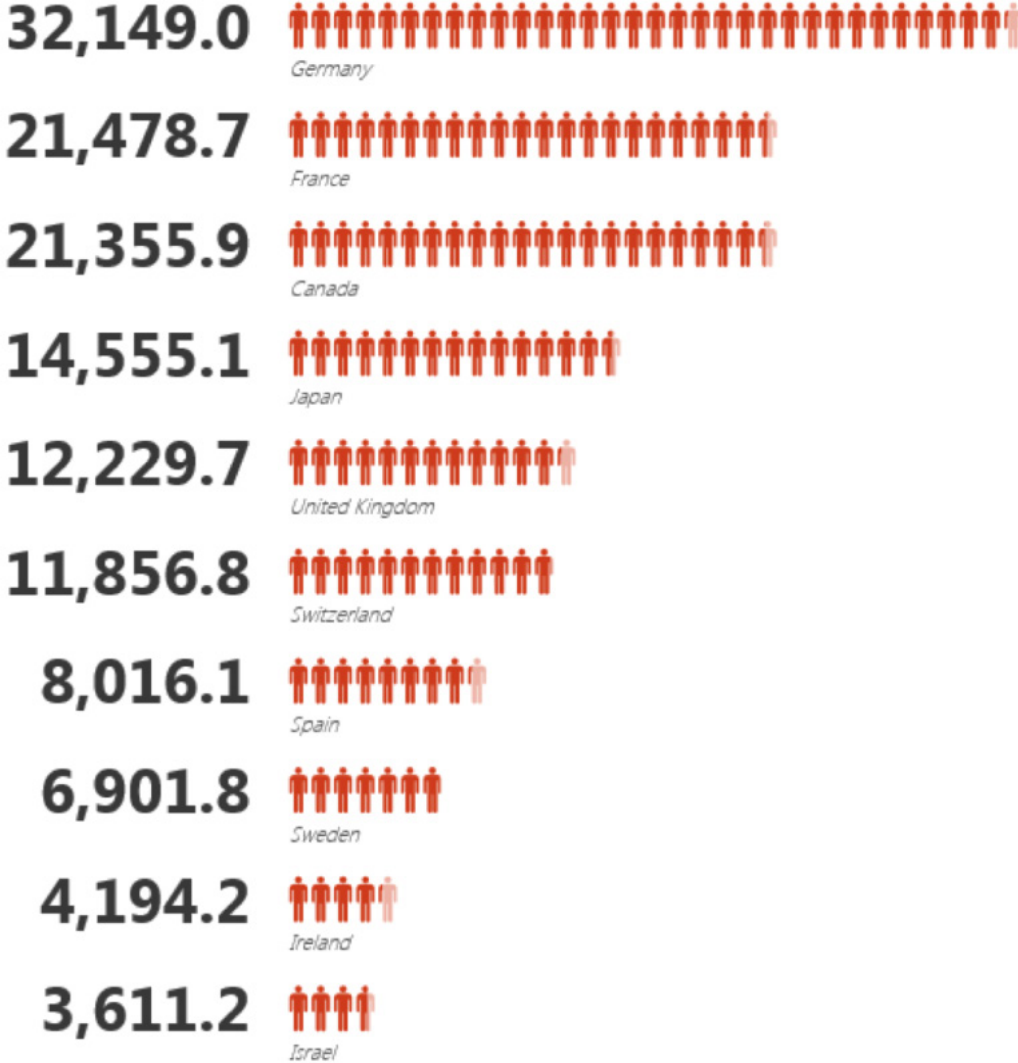


The authors constructed FDI Origin Index to measure and compare the level of desire for parent companies in different origins to invest in New Hampshire.[xi] This index provides useful information for the state policy-makers and EDA in regards to strategically allocating their resources in attracting FDI from various countries of origin. Mapping the countries of origin reveals a dominating desire to invest in New Hampshire from European countries, with other origins (by investment desire) scattering in North America, East Asia, Middle East and Australia. The following table shows Top 10 countries of origin ranked by FDI Origin Index.

Country of Origin	FDI Origin Index
Germany	674.9
Canada	276.4
Switzerland	256.4
France	231.5
Italy	200
Netherlands	173.7
Sweden	169.4
Norway	133.3
Japan	121.8
Ireland	114.1

FDI adds to the employment of local economies in New Hampshire. The present study creates FDI Employment Impact Index to indicate the estimated employment in New Hampshire that could potentially be supported by parent companies headquartered in a country of origin. The following figure ranks countries of origin by FDI Employment Impact Index for the 10 leading countries. The ranking highlights the importance of European countries, among which Germany, France and United Kingdom are all ranked in Top 5. Other top FDI employment driving sources include Canada and Japan. [xii]

**FDI Employment Index for Top 10 Countries of Origin**



The inward FDI also contributes to the Gross State Products (GSP) of New Hampshire, realized through revenues of foreign subsidiaries. The GSP Impact Index is computed to indicate the estimated GSP that could be potentially realized by foreign subsidiaries headquartered in a foreign country. The ensuing figure illustrates the estimated GSP impact (in \$million) on the New Hampshire economy of FDI for the Top 10 countries of origin. Germany and Canada are ranked Top 2 and significantly outperform France, Japan and United Kingdom who are also among Top 5 in the list.

**FDI GSP Impact Index for Top 10 Countries of Origin**



## Endnotes

[i] For readability, this report used the terms “foreign subsidiaries” and “foreign firms” interchangeably. “Firms” are used to signify the same, as understood in the context of the study.

[ii] Investment Analysis SelectUSA, “High-Tech Industries The Role of FDI in Driving Innovation and Growth 2017”. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t000000U1eE>.

[iii] Industries for this analysis were based on SelectUSA’s identification of high-tech industries at the 3-digit level of The North American Industry Classification System (NAICS) codes.

[iv] Industries at the 3-digits level of The North American Industry Classification System (NAICS) codes.

[v] The chart included here is designed to be a visual aid only - more specific analysis is presented in the chapter addressing industries.

[vi] Industries at the 2-digits level of The North American Industry Classification System (NAICS) codes, combined.

[vii] By number of firms as employers, not by number of jobs.

[viii] Explanations are included in the Employment chapter.

[ix] The graphics included in this section are designed to give visual comparisons and representations only and no actual number of the companies was included since data in this sample is reduced as compared to our initial sample (employment data were found for 61% of the firms in the initial sample).

[x] Idem iv.

[xi] More specific analysis is presented in the chapter addressing FDI indices.

[xii] Please be noticed that the FDI Employment Impact index indicates the potential to support jobs; it is not the number of employment actually supported by foreign subsidiaries. So, the authors suggest to use this index in conjunction with the data on the realized employment from other sources.



# Industry Analysis

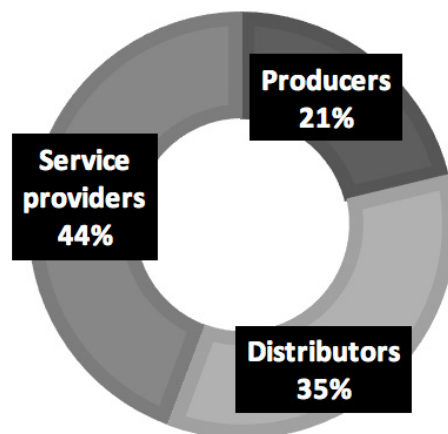
## Foreign Direct Investment Contributes to Growth of New Hampshire's Economic Output

According to the most recent study[i] published by the Bureau of Economic Analysis, New Hampshire's economic output grew by 3 percent in 2016, the fourth highest rate in the country. The state's finance and insurance sector helped fuel that performance, along with gains in retail and durable goods manufacturing. The publication noted that the largest industry in New Hampshire was finance, insurance, real estate, rental, and leasing. This industry accounted for almost a quarter of New Hampshire GDP (the market value of all goods and services produced) and had 2.5 percent real growth. The second largest industry was professional and business services.

The present report finds that foreign firms have the strongest presence in New Hampshire's finance and insurance industry, relative to their presence in all other industries. The subsequent industries where foreign subsidiaries operate by numbers are retail trade and manufacturing, showcasing that foreign direct investment has been playing a role in the state's growth.

The analysis presented in this section identifies how foreign firms participate in business activity. Most New Hampshire foreign subsidiaries are service providers. In terms of presence (number of firms), distributors rank in the middle, whilst producers are the lowest percentage, comparatively.

### Subsidiaries Representation by Main Value Chain Activity



Companies providing services do so across a diverse set of industries. Services are represented by large financial companies such as The Royal Bank of Scotland Group, the Canadian TD Bank Financial Group and Banco Santander of the Spanish Santander Group, as well as by other global companies such as the Canadian High Liner Foods, the Dutch TomTom, and the UK based InterContinental Hotels Group. Some foreign firms may have more focus in services in New Hampshire than globally, such as the Shanghai Electric Printing and Packaging Machinery Group. Foreign retailers are represented by some large, well-known parent companies, like, for instance, the French multinational Air Liquide, Deutsche Telekom, and the Dutch international retailer Ahold. Royal Dutch Shell and the Canadian Irving Oil are represented. Other known foreign names operating in the state are the German Siemens, the Japanese Bridgestone and Sumitomo Corporations, the Swedish Axle Johnson, the French group Rexel, the French Sonepar, the UK-based Rotork, the Canadian Gaz Métro, the Spanish Fomento de Construcciones y Contratas, the Australian Braemar Pty and Novocure from the Channel Island Jersey.

Multinational manufacturers present in New Hampshire include the Irish Medtronic and CRH, the Swiss Lonza, the British BAE Systems, the German Freudenberg and Osram, the French Saint-Gobain, the Japanese Minebea and the Dutch Velcro. Food and beverages multinationals operating in the state include the French Groupe Danone, the Belgian Anheuser-Busch InBev and the Swiss chocolatier Lindt & Sprüngli. The company names mentioned here are not meant to be all inclusive and they are used only to give some examples of representation across countries, objects of activity and industries.

Most industries<sup>[ii]</sup> attracting foreign direct investment (by number of foreign subsidiaries) in New Hampshire are financial services and retail trade. The largest number of foreign firms in New Hampshire are in finance and insurance. Specifically, depository credit intermediation is the industry of most foreign firms in the state overall. This industry has the highest representation of foreign subsidiaries in each of the counties as well, with the exception of Sullivan County, where most foreign subsidiaries are in manufacturing. Construction is the industry with the fewest foreign firms.

### **Summary Distribution of Business Activity (2-digit NAICS codes combined)**

<b>Industry</b>	<b>No. of Companies</b>	<b>Percentages</b>
Finance and insurance	131	29%
Retail trade	104	23%
Manufacturing	97	22%
Wholesale trade	47	11%
Professional services	23	5%
Other	15	3%
Accommodations and food services	13	3%
Administrative services	11	2%
Construction	6	1%

## Top Industries of Foreign Subsidiaries across New Hampshire Counties

County	Industry in which most subsidiaries operate	2nd industry with largest representation of foreign subsidiaries
Belknap	Finance and insurance	Retail trade
Carroll	Finance and insurance	Retail trade
Cheshire	Finance and insurance	Manufacturing
Coos	Finance and insurance	Utilities
Grafton	Finance and insurance	Manufacturing
Hillsborough	Finance and insurance	Retail trade
Merrimack	Finance and insurance	Retail trade
Rockingham	Finance and insurance	Retail trade
Strafford	Finance and insurance	Manufacturing
Sullivan	Manufacturing	n/a

Half of foreign subsidiaries in New Hampshire are in retail trade and manufacturing combined. Retailers are almost double in numbers as compared to wholesalers. Nevertheless, wholesale is a relatively highly represented object of activity of foreign firms. Trade in general represents the object of activity of 34% of the firms. Comparatively, a low number of firms are in services outside finance and sales. Professional, scientific and technical services is ranked behind financial services, trade and manufacturing.

### Distribution of Business Activity

No. of firms	2-digit NAICS code	NAICS code description
131	52	Finance and insurance
87	44	Retail trade
61	33	Manufacturing
47	42	Wholesale trade
28	32	Manufacturing
23	54	Professional, scientific and technical services
17	45	Retail trade
13	72	Accommodations and food services
11	56	Administrative, support and waste management/ remediation services
8	31	Manufacturing
6	23	Construction
3	22	Utilities
3	48	Transportation and warehousing
3	55	Management of companies and enterprises
2	51	Information (including telecommunications)
2	81	Other services
2	53	Real estate and rental and leasing



Foreign companies have a presence in most industries in our state. Our sample does not include foreign subsidiaries in the following industries (data was not found): agriculture, forestry, fishing and hunting (NAICS code 11); education services (NAICS code 61); healthcare and social assistance (NAICS code 62); arts, entertainment and recreation (NAICS code 71); public administration (NAICS code 92).

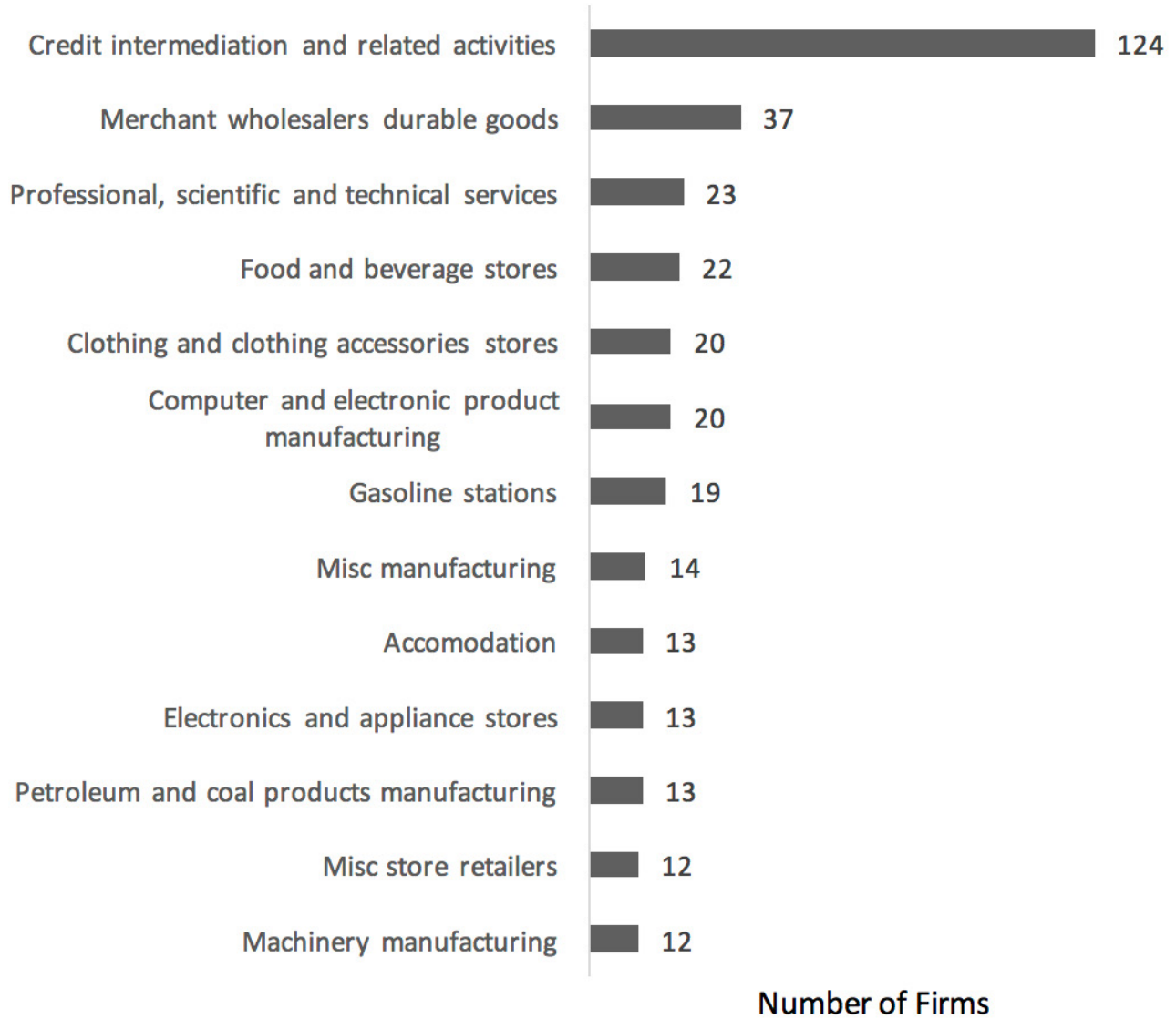
The FDI Highlights section visualizes the distribution of foreign firms across industries identified at the 3-digit NAICS code level. New Hampshire foreign subsidiaries operate in about half of the total number of 3-digit NAICS codes identifying industries in the United States. The representation below includes New Hampshire industries that have 5 or more foreign firms each.

### **Foreign Firms Representation across Industries**

Proportion of firms in total sample	3-digit NAICS code	NAICS code description
28%	522	Credit intermediation and related activities
8%	423	Merchant wholesalers durable goods
5%	541	Professional, scientific and technical services
5%	445	Food and beverage stores
4%	334	Computer and electronic product manufacturing
4%	448	Clothing and clothing accessories stores
4%	447	Gasoline stations
3%	339	Misc. manufacturing
3%	324	Petroleum and coal products manufacturing
3%	443	Electronics and appliance stores
3%	721	Accommodation
3%	333	Machinery manufacturing
3%	453	Misc. store retailers
2%	424	Merchant wholesalers nondurable goods
2%	561	Administrative and support services
2%	441	Motor vehicle and parts dealers
1%	326	Plastics and rubber products manufacturing
1%	332	Fabricated metal product manufacturing
1%	325	Chemical manufacturing
1%	336	Transportation equipment manufacturing

Credit intermediation and related activities is the New Hampshire industry most represented by foreign subsidiaries. The subsequently ranking industries each have a number of foreign firms that is a single figure proportion of the total number of foreign firms.

## Top Industries where Foreign Subsidiaries Operate in New Hampshire (3 digit NAICS code)



Almost 60% of the New Hampshire industries in which foreign firms operate have fewer than 5 firms. Each of these industries (listed in the table below) have a number of firms that represents less than 1% of the total sample. Overall, the distribution of foreign firms across industries shows diversity but also some concentration of firms (by numbers) in a few industries and particularly in credit intermediation.

### **Industries with Low Numbers of Foreign Firms**

<b>3-digit NAICS code</b>	<b>NAICS code description</b>
311	Food manufacturing
335	Electrical equipment, appliance and component manufacturing
221	Utilities
238	Specialty trade contractors
446	Health and personal care stores
523	Securities, commodities contracts, and other financial investments
524	Insurance carriers and related activities
551	Management of companies and enterprise
236	Construction of buildings
312	Beverage and tobacco product manufacturing
313	Textile mills
321	Wood product manufacturing
451	Sporting goods, hobby, musical instrument and book stores
454	Nonstore retailers
485	Transit and ground passenger transportation
531	Real estate
811	Repair and maintenance
237	Heavy and civil engineering construction
323	Printing and related support activities
327	Nonmetallic mineral product manufacturing
442	Furniture and home furnishings stores
452	General merchandise stores
486	Pipeline transportation
517	Telecommunications
519	Other information services
562	Waste management and remediation services

### **Endnotes**

[i] <https://www.bea.gov/regional/bearfacts/pdf.cfm?fips=33000&areatype=STATE&geotype=3>.

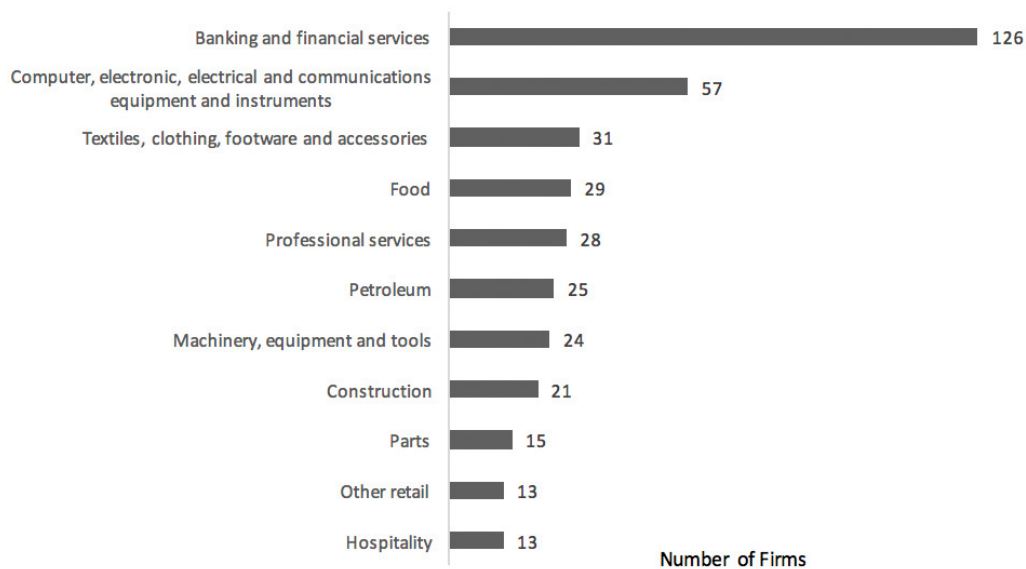
[ii] Industries are considered in this report with the use of The North American Industry Classification System (NAICS). The NAICS industry codes define establishments based on the activities in which they are primarily engaged. Information on NAICS and NAICS codes can be found at <https://www.census.gov/eos/www/naics/>.

# Sector Analysis

## Foreign Firms Determine Value to Buyers in Key Segments of New Hampshire's Economy

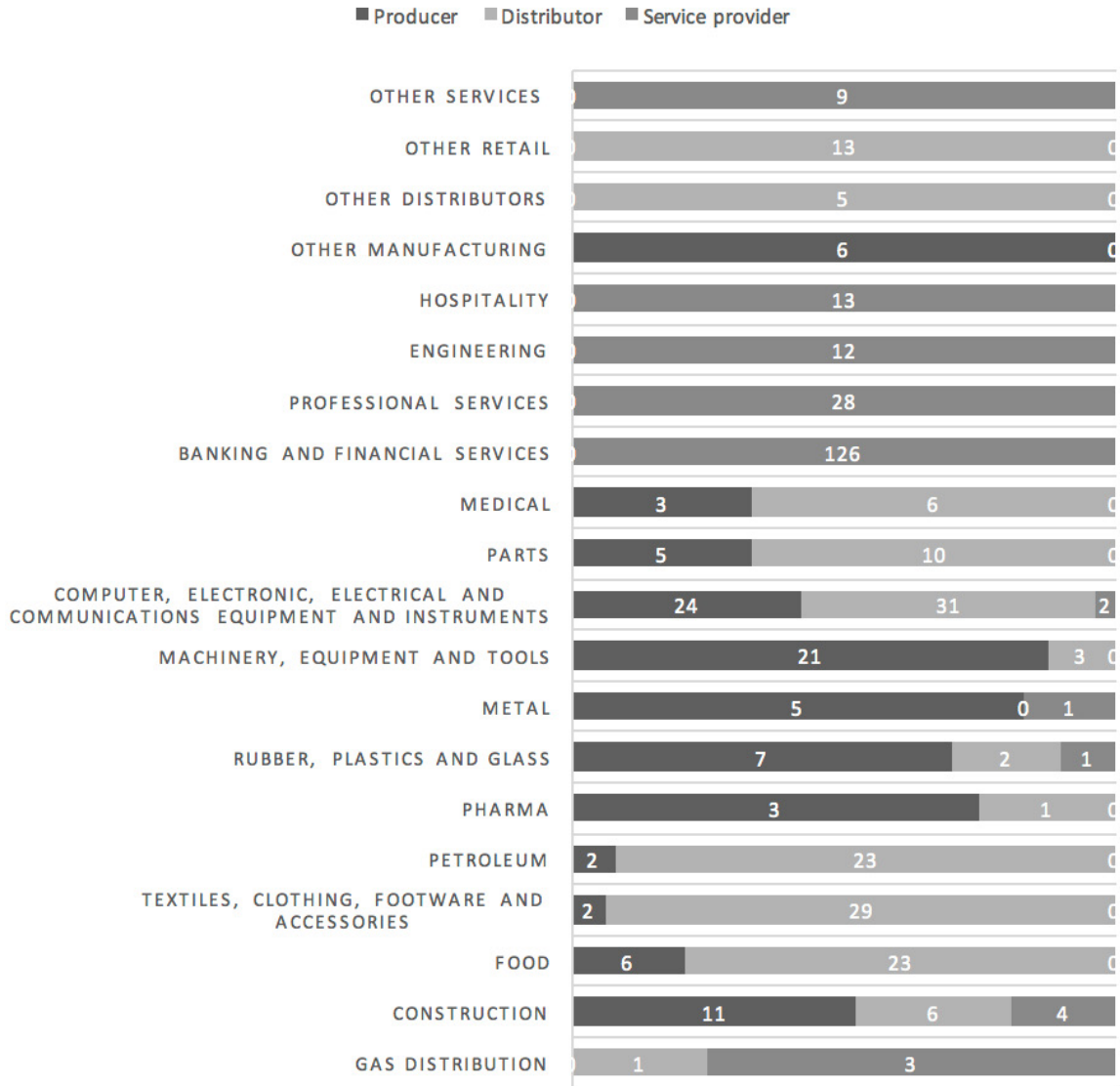
For allowing more possibilities for analysis, 20 sectors were created by the authors. The distribution of foreign firms across these sectors identifies the banking and financial services sector as the most populated. The sector that ranks next - computer, electronic, electrical and communications equipment and instruments - has about half the foreign firms. The subsequent sectors by number of foreign subsidiaries have single digit proportions of the entire sample of firms. Sectors not included in the visual representation below have 12 and under foreign firms each. The gas distribution and pharma sectors only have a few foreign subsidiaries each.

Top Sectors where Foreign Subsidiaries Operate in New Hampshire



The visualization of the overlap of sectors and main value chain activities shown as follows recognizes the number of firms operating in sectors that are pure service, distribution or manufacturing. The relative distribution of value chain activities in other sectors reveals how foreign firms contribute to the value of products to the final users and consumers in New Hampshire. In 9 of the 20 sectors, foreign subsidiaries are represented with two main value chain activities. In 3 sectors, foreign firms are in all 3 of the general value chain activities considered. This may indicate that three sectors in New Hampshire have high potential for future investments, as foreign firms would find home-owned or international partners across the value chain: computer, electronic, electrical and communications equipment and instruments; rubber, plastics and glass; and construction. These sectors are also where foreign firms make most contributions across value chains in New Hampshire. Foreign subsidiaries play a relatively more important role in shaping products and in determining the value the ultimate buyers get from products in these sectors.

## Sector and Value Chain Activity Distribution Of Foreign Firms



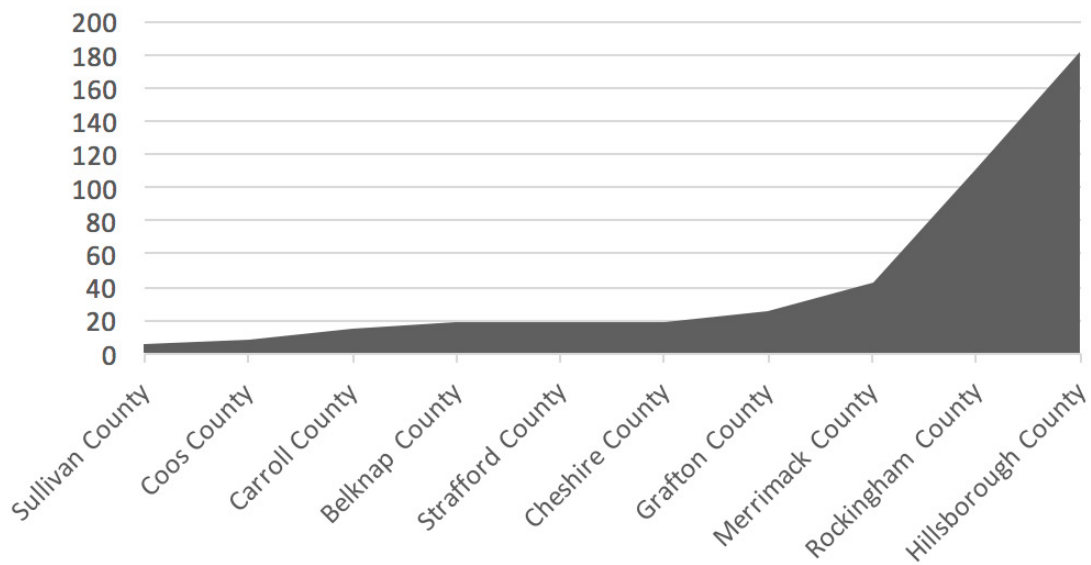
# County Analysis

## Foreign Firms Add Opportunities for Development and Innovation across New Hampshire

Location is a key consideration for domestic and foreign companies and their growth. The present report investigates location choices of foreign firms in New Hampshire. A special feature of the analysis is the mapping of activities across counties. The study identifies where production takes place and where service providers and distributors are located. In addition, foreign firms' representation across sectors[i] and industries in each county is also recognized.

The number of foreign firms across counties identifies clustering in Hillsborough and Rockingham. Merrimack has the third significant number, although the difference in the presence of foreign subsidiaries is notable. The fewest foreign firms are in Coos and Sullivan counties.

### Presence of Foreign Firms Across NH Counties



The top 5 sectors by presence of foreign firms in New Hampshire and the numbers of foreign firms in each county are showed below. Notably, none of these sectors have foreign subsidiaries presence in all counties.

### Top 5 Sectors Distribution of Foreign-owned Subsidiaries across Counties

No. of firms	#1 Banking and financial services	#2 Computer, electronic, electrical and communications equipment and instruments	#3 Textiles, clothing, footwear and accessories	#4 Food	#5 Professional services
Rockingham	24	19	5	9	6
Hillsborough	44	31	14	12	16
Coos	2	0	0	0	0
Merrimack	20	4	2	3	2
Carroll	8	0	2	1	0
Grafton	8	0	4	1	2
Belknap	7	0	3	2	0
Strafford	5	2	1	1	0
Cheshire	8	1	0	0	1
Sullivan	0	0	0	0	1
Total	126	57	31	29	28

Foreign firms make a significant positive impact to the New Hampshire counties' employment and economies through their noteworthy presence in banking and financial services. The New England Council 2017 study<sup>[ii]</sup> concluded that “the financial services sector is one of our region’s strongest job-generating, growth-producing industries [..]. In no state does financial services account for less than 5 percent of that state’s jobs [..]. Additionally, a hallmark of financial services jobs in New England is that they are high-wage jobs, featuring an impressive array of benefits for the hundreds of thousands of individuals who make up the region’s workforce.”

Foreign banks have significant presence across counties, with subsidiaries from parent companies such as The Royal Bank of Scotland Group, the Canadian TD Bank Financial Group and Banco Santander of the Spanish Santander Group. In a WMUR interview<sup>[iii]</sup> last year, New Hampshire Banking Commissioner Jerry Little noted that there are fewer banks in the state than there were a few decades ago. He stated that the driving trends in the sector are consolidation and financial technology as computer power is applied to the delivery of financial products and services. The Commissioner observed that there are a lot of services that are competitively priced and good for the economy and the consumers. Building on these aspects, it can be inferred that the presence of foreign banks and other financial organizations adds to the numbers in the sector and provides global interconnectivity and access to technology. Thus, the strong presence of foreign banks in our state brings meaningful contributions across most counties.

The second represented sector in terms of foreign firms' presence is computer, electronic, electrical and communications equipment and instruments. Like in most sectors, foreign subsidiaries in this sector are concentrated in Hillsborough and Rockingham counties. The sector produces new innovations and developments in telecommunications, robotics, computing hardware, and power and electrical equipment. It also encourages education and training in a mix of science, information technology and mathematics disciplines. The sector entails and supports scientific research and advanced manufacturing. Thus, the positive impact of foreign firms' presence in this sector is undeniable. Half of the New Hampshire counties benefit from foreign firms operating in the field of computer, electronic, electrical and communications equipment and instruments.

The mapping of foreign firms across counties and main value chain activities indicates opportunities for increasing presence in counties in central and northern New Hampshire.

### **Distribution of Foreign-owned Subsidiaries by County and Main Value Chain Activity**

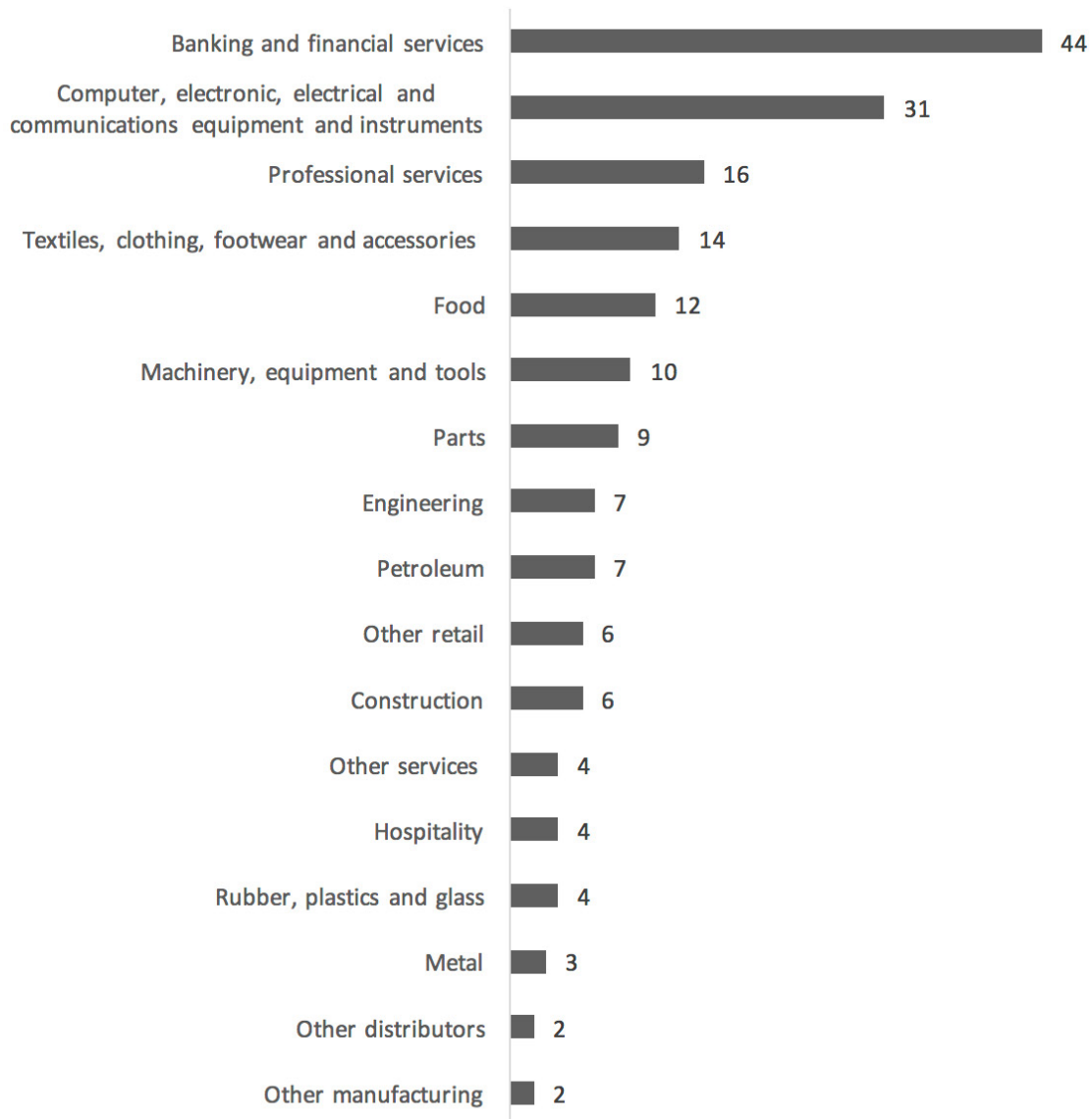
<b>County</b>	<b>Producers</b>	<b>Distributors</b>	<b>Service Providers</b>
Belknap County	2	6	11
Carroll County	2	4	9
Cheshire County	5	3	11
Coos County	2	2	4
Grafton County	6	9	11
Hillsborough County	41	61	79
Merrimack County	5	14	23
Rockingham County	21	50	41
Strafford County	7	4	8
Sullivan County	4	1	1
<b>Total</b>	<b>95</b>	<b>154</b>	<b>198</b>

The analysis reported here shows the predominance of foreign service providers, followed by distributors and producers. Retail trade or wholesale trade are represented in the top 5 industries where foreign firms operate in each of the 10 New Hampshire counties. In half of the counties, the merchant wholesalers of durable goods rank high as relative number of foreign subsidiaries. Foreign distributors enhance market coverage and may inspire expansion of other foreign firms. Improving distribution from foreign subsidiaries may encourage other foreign companies to invest in our state.

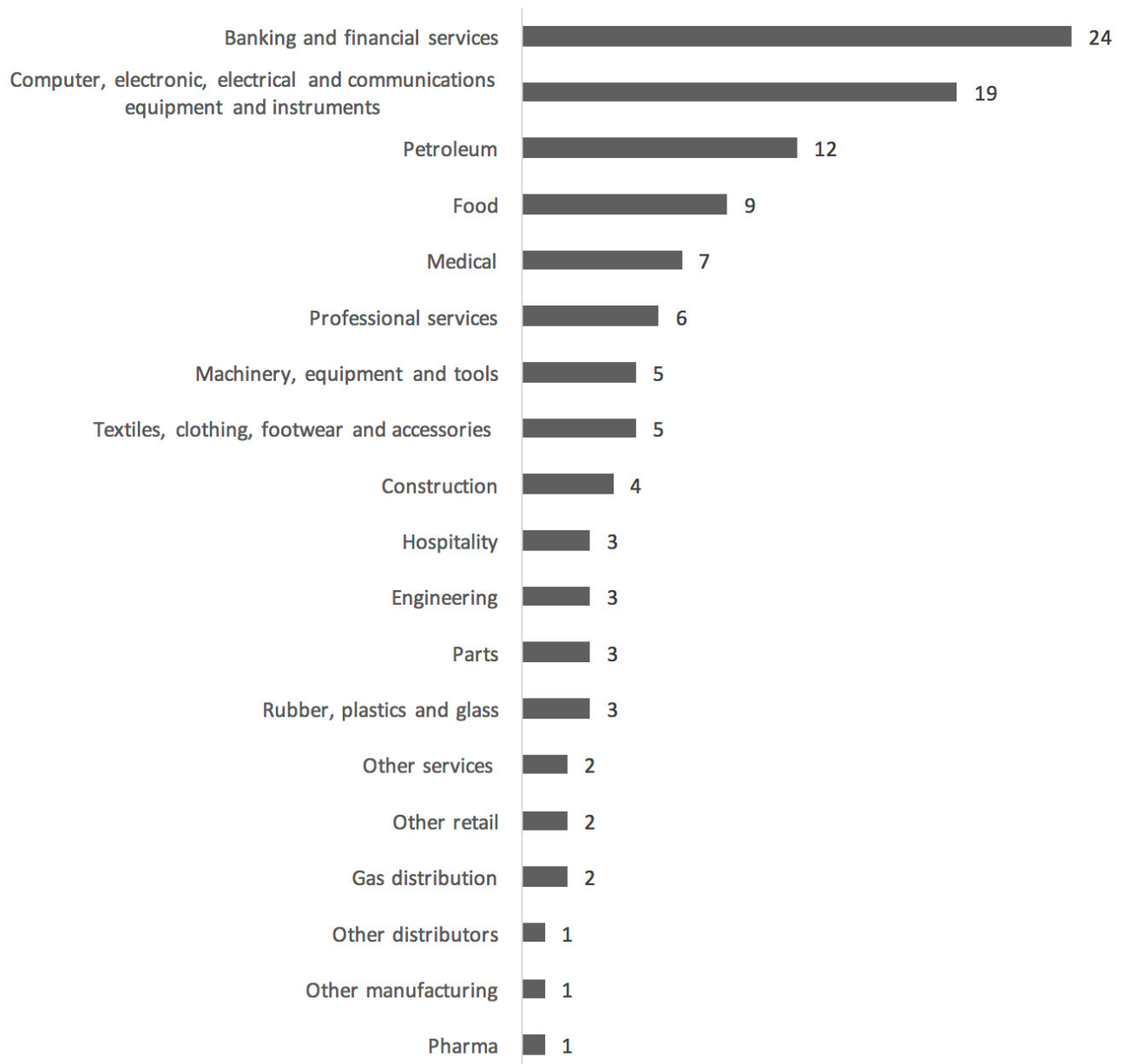


As noted earlier, foreign firms presence in most counties is mainly in banking and financial services. Hillsborough and Rockingham counties have foreign subsidiaries in a variety of industries. In these counties, the computer, electronic, electrical and communications equipment and instruments follows the banking and financial services sector in foreign firms' representation. The same distribution can be seen in Merrimack, although the number of firms and the number of industries where they operate are lower.

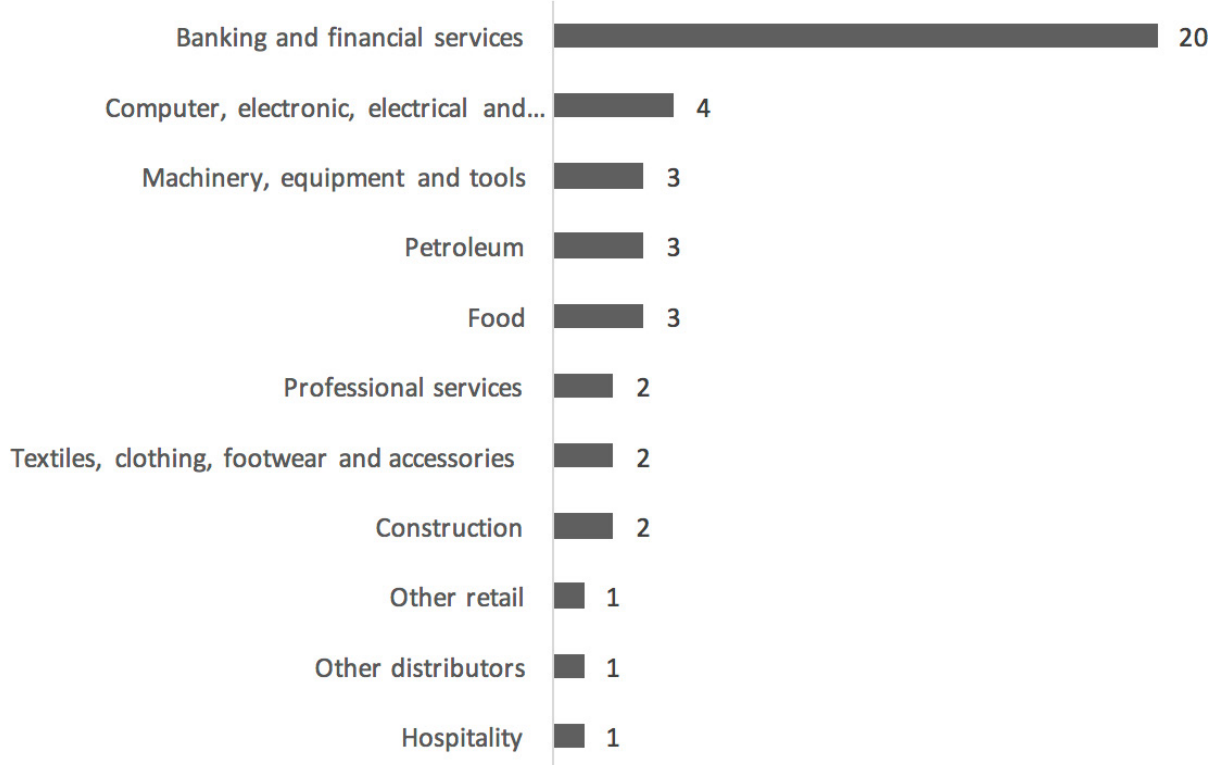
### Presence of Foreign Subsidiaries across Sectors in Hillsborough County



## Presence of Foreign Subsidiaries across Sectors in Rockingham County

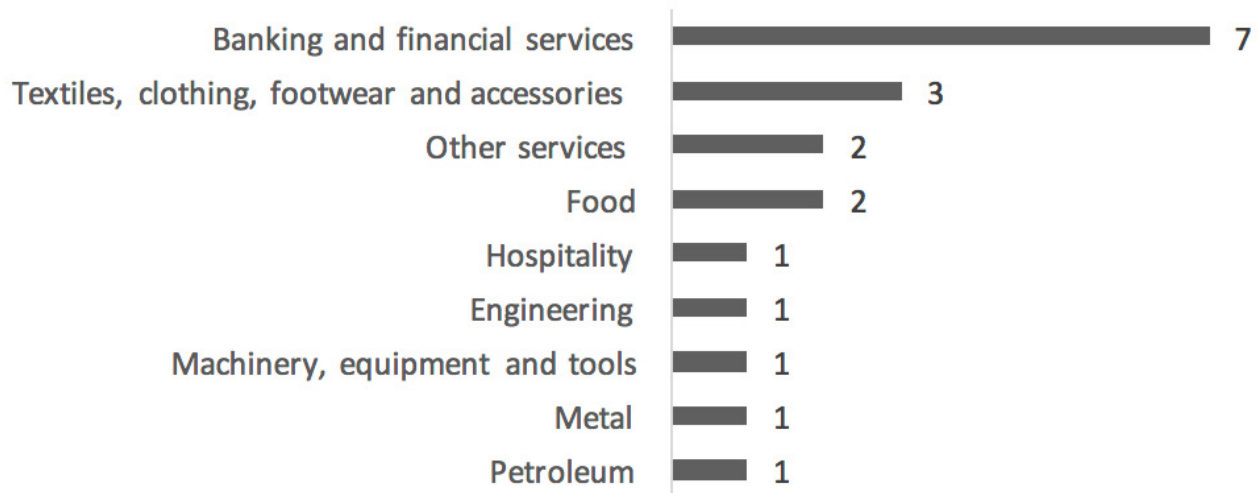


## Presence of Foreign Subsidiaries across Sectors in Merrimack County

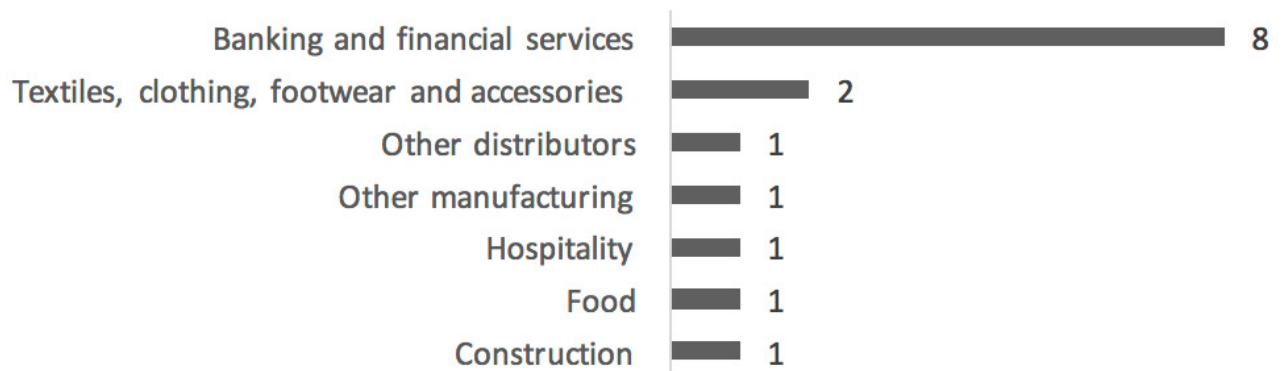


Banking and financial services also have the highest representation of foreign subsidiaries in Belknap and Carroll counties, followed by textiles, clothing, footwear and accessories. The foreign firms' representation is lower in these counties. The other sectors have only 1-2 foreign firms. The food and hospitality sectors are represented in both of these counties.

## Presence of Foreign Subsidiaries across Sectors in Belknap County

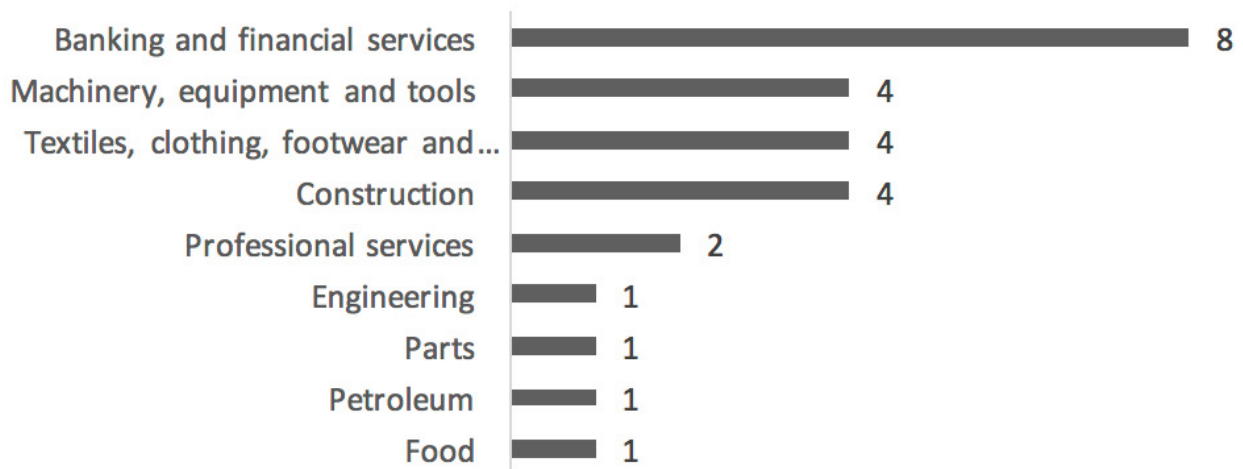


## Presence of Foreign Subsidiaries across Sectors in Carroll County



Grafton county foreign firms are again mostly in the banking and financial services sector, followed by equal representations in the second ranking sectors. Relative to total number of foreign firms in this county, machinery and construction are sectors that rank higher for subsidiaries representation, comparative to how they rank in other counties.

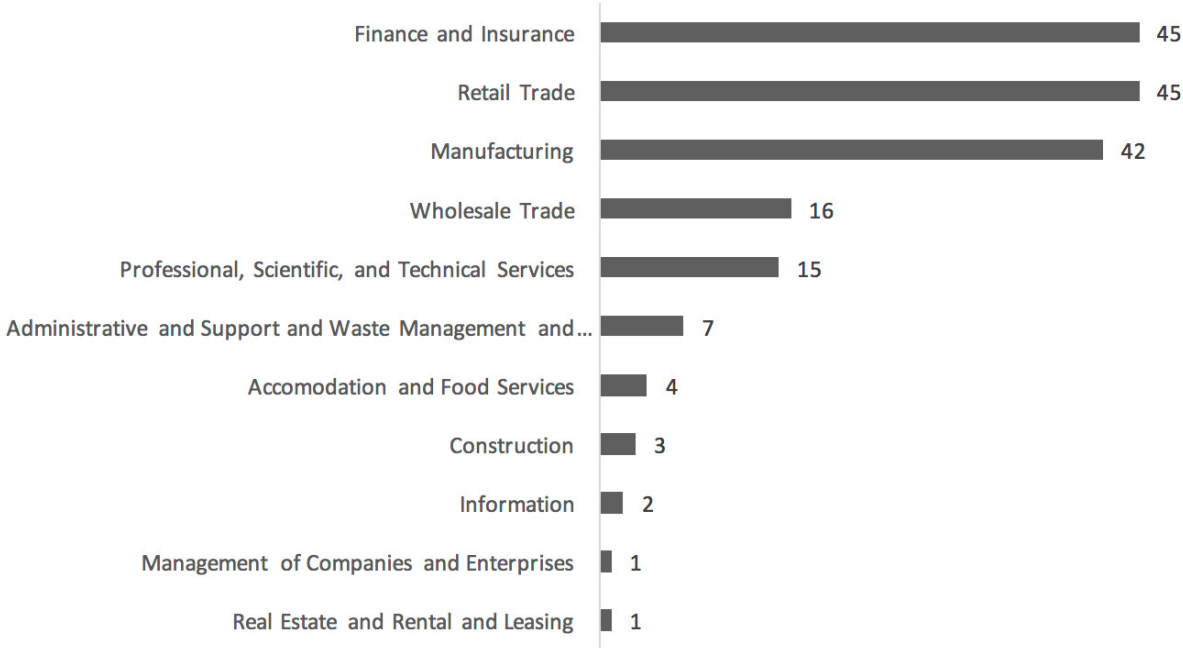
## Presence of Foreign-owned Subsidiaries across Sectors in Grafton County



The distribution of foreign firms in the rest of New Hampshire counties is less rich and was hence not illustrated visually. A ranking by numbers of foreign firms in Strafford has the banking and financial services sector at the top, followed with equal low numbers each by hospitality; computer and electronic equipment sector; rubber, plastics and glass; and construction sectors. Only one firm operates in each of the third represented sectors of medical, parts, pharma, textiles, food and other retail. In Cheshire County, 11 sectors have only one foreign subsidiary operating in each, while the banking and financial services sector has eight foreign firms. The 11 sectors are: petroleum; pharma; rubber, plastics and glass; metal; machinery, equipment and tools; computer, electronic, electrical and communications equipment and instruments; medical; professional services; hospitality; other retail and other services. In Coos County, only two foreign subsidiaries operate in each banking and financial services sector and the gas distribution sector. Only one foreign firm is present in each sector in construction, pharma and in other retail and other manufacturing. This is indicative of very weak representation of foreign firms in the northern New Hampshire. In Sullivan, the 6 foreign subsidiaries are distributed across professional services, parts, metal, construction and other manufacturing and other retail sectors.

From another perspective, foreign subsidiaries operate across many industries in New Hampshire. Hillsborough County has a relatively strong number of foreign manufacturers, almost the same as the number of foreign retailers and the number of foreign firms in finance and insurance. The more detailed industry representation[iv] identifies the variety of industries[v] in which foreign subsidiaries operate in this county. The Royal Bank of Scotland has a sizeable presence in Hillsborough County. BAE Systems PLC is a large employer in the county. Osram Licht AG, CRH PLC, Compagnie De Saint-Gobain SA and Velcro Industries NV also have a presence.

### Number of Foreign Subsidiaries in Hillborough County by Overall Industry (2-digit NAICS code)

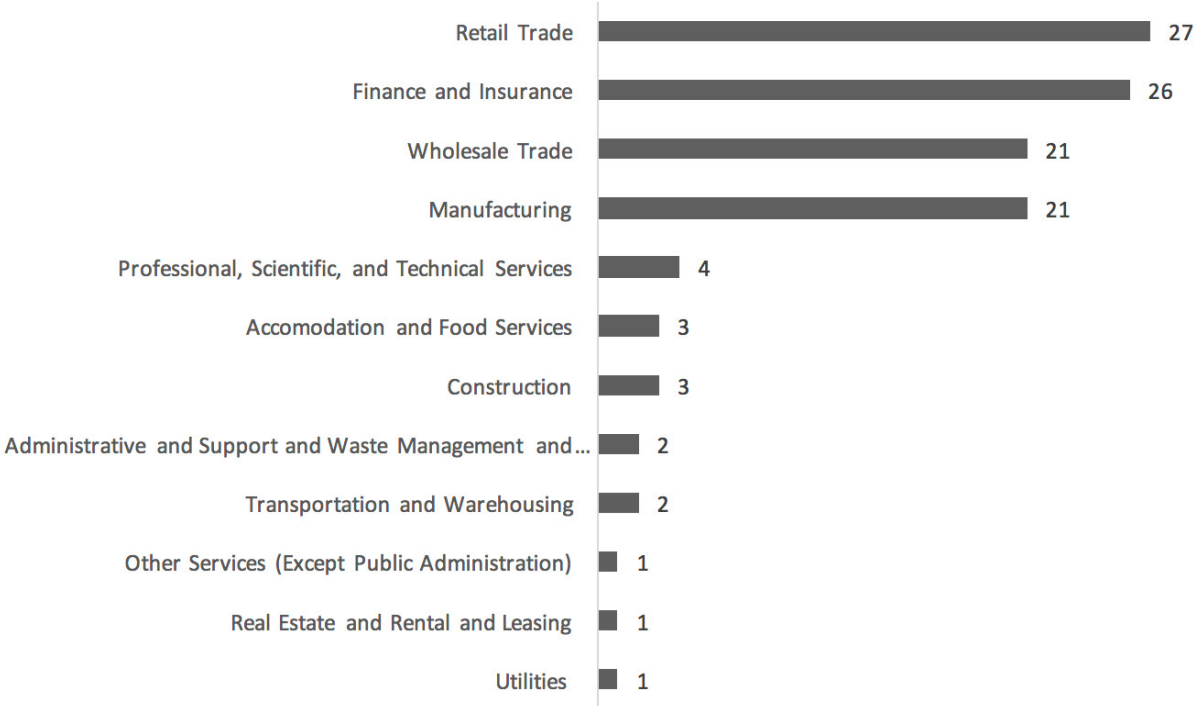


## Number of Foreign Subsidiaries in Hillsborough County by Industry (3-digit NAICS code)



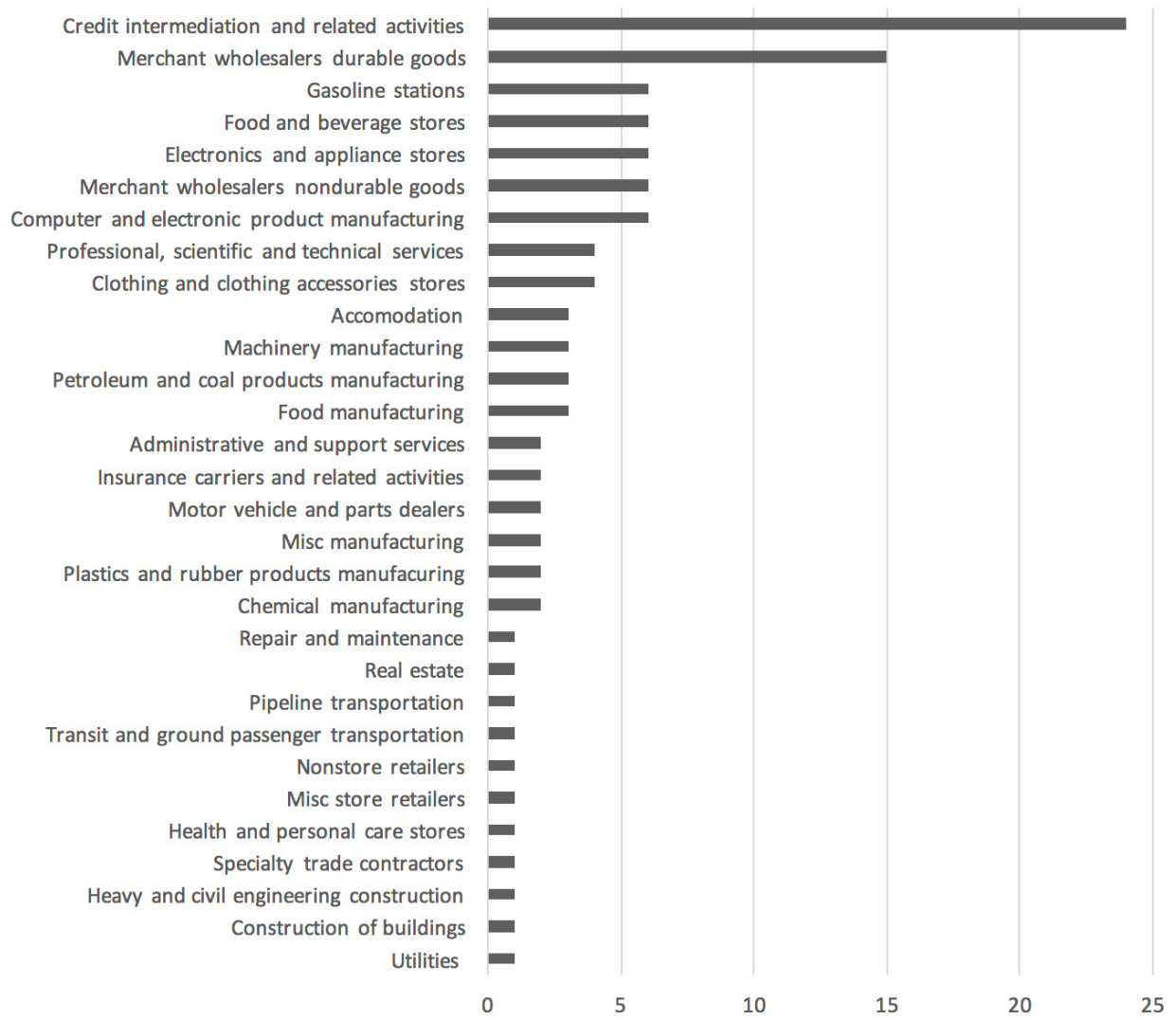
The variety of industries by foreign firms' presence can be concluded for Rockingham County, although the industries are less varied than in Hillsborough County. Foreign firms have strong representation in retail trade. Firms like Ahold NV and Deutsche Telekom AG have relative good coverage in retail in Rockingham County. A number of stores from multinational retailers add to the presence of foreign firms in retail trade. Lonza Group LTD., Chocoladefabriken Lindt & Spruengli AG, Groupe Danone, High Liner Foods Inc., and Hutchinson SA are foreign manufacturers in this county.

### Number of Foreign Subsidiaries in Rockingham County by Overall Industry (2-digit NAICS code)





## Number of Foreign Subsidiaries in Rockingham County by Industry (3-digit NAICS code)

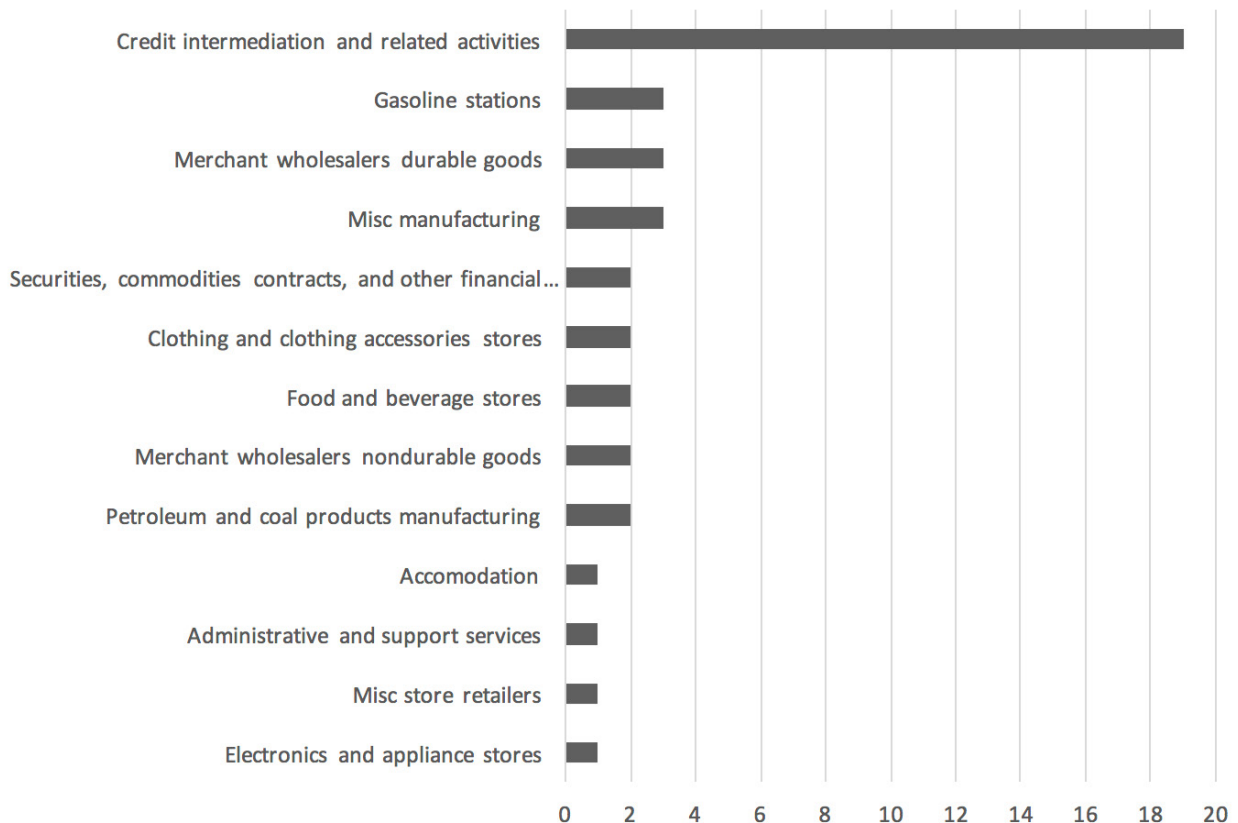


Aside from firms in finance and insurance, Merrimack County benefits from the presence of foreign retailers, as well as, to a lesser extent, wholesalers and manufacturers. Most foreign subsidiaries in this county are in credit intermediation and securities (the large multinational banks are represented in this county). Firms in securities brokerage (UBS AG) and portfolio management - insurance / retirement (Great-West Lifeco Inc.) are also present. The retail is mainly represented by stores, including clothing and food stores, such as Ahold NV. The foreign manufacturers in this county have a somewhat diverse object of activity. Freudenberg & Co. LLP has a presence in Merrimack County.

### Number of Foreign Subsidiaries in Merrimack County by Overall Industry (2-digit NAICS code)



### Number of Foreign Subsidiaries in Merrimack County by Industry (3-digit NAICS code)

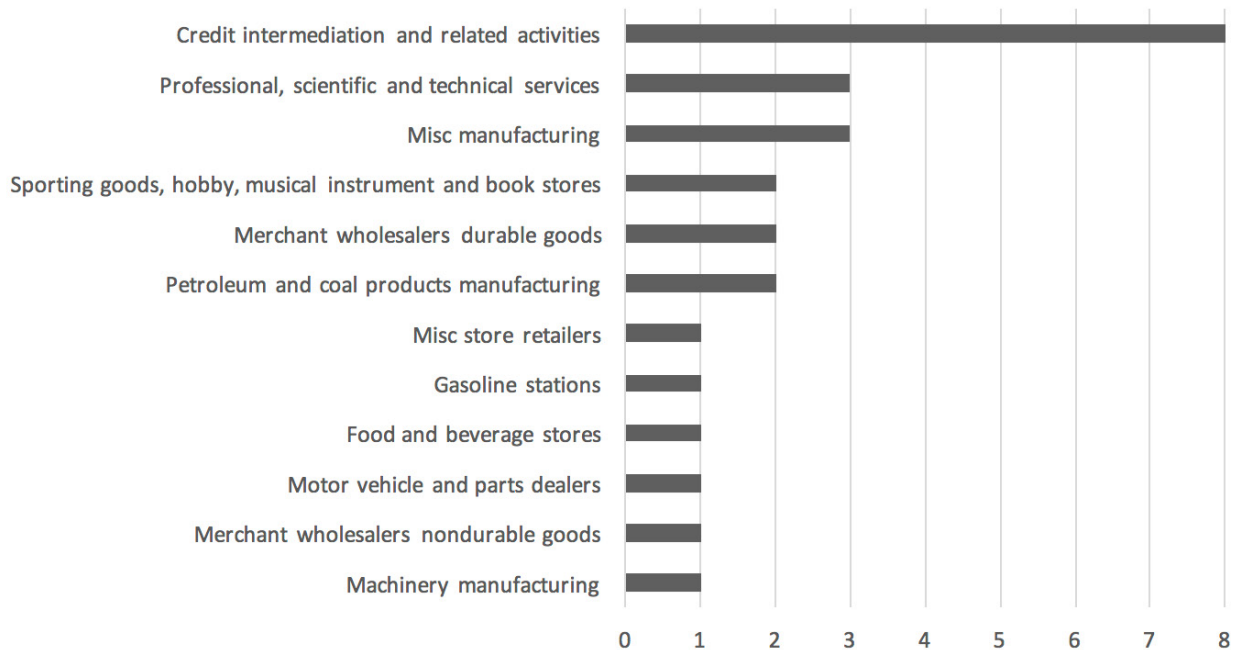


As in Merrimack, Grafton County has a somewhat similar distribution of foreign firms across the top represented industries. Professional, scientific and technical services are a relatively well represented industry. The types of stores are to some degree different from those in Merrimack. Foreign manufacturers operate in a variety of industry segments. Freudenberg & Co. LLP is an important manufacturer. Fujifilm and CRH PLC also have a presence in this county.

### Number of Foreign Subsidiaries in Grafton County by Overall Industry (2-digit NAICS code)



### Number of Foreign Subsidiaries in Grafton County by Industry (3-digit NAICS code)



The presence of foreign subsidiaries in Belknap County follows a similar top 3 main industry ranking by numbers as in Grafton, Hillsborough and Carroll counties. At a more detailed industry level, a variety of service providers and retailers operate in Belknap and Carroll counties. Freudenberg & Co. LLP and Minebea Co. LTD. are significant manufacturers in Belknap County. NEFAB AB and CRH PLC are in Carroll County.

### Number of Foreign Subsidiaries in Belknap County by Overall Industry (2-digit NAICS code)



### Number of Foreign Subsidiaries in Belknap County by Industry (3-digit NAICS code)



## Number of Foreign Subsidiaries in Carroll County by Overall Industry (2-digit NAICS code)



## Number of Foreign Subsidiaries in Carroll County by Industry (3-digit NAICS code)

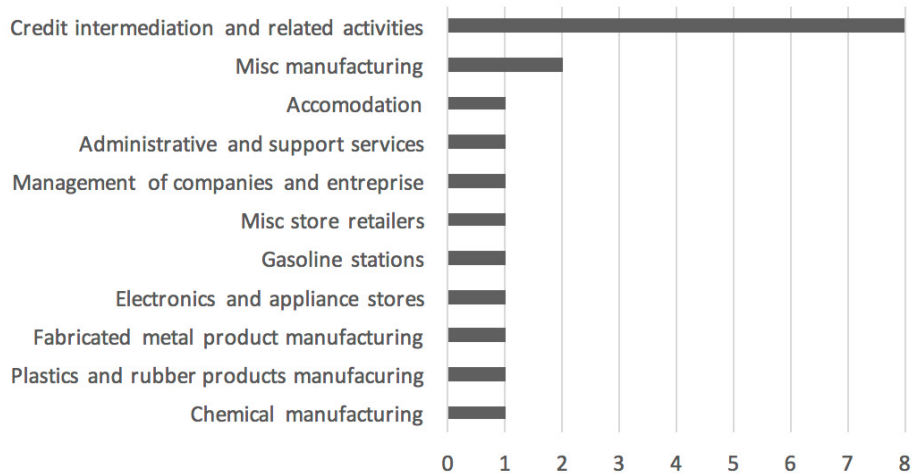


Foreign firms in Cheshire are mainly in finance, followed by manufacturing. Some foreign retailers operate in this county. Foreign firms are also present in services. HCP Packaging (Shanghai) Co. is present in this county.

### Number of Foreign Subsidiaries in Cheshire County by Overall Industry (2-digit NAICS code)

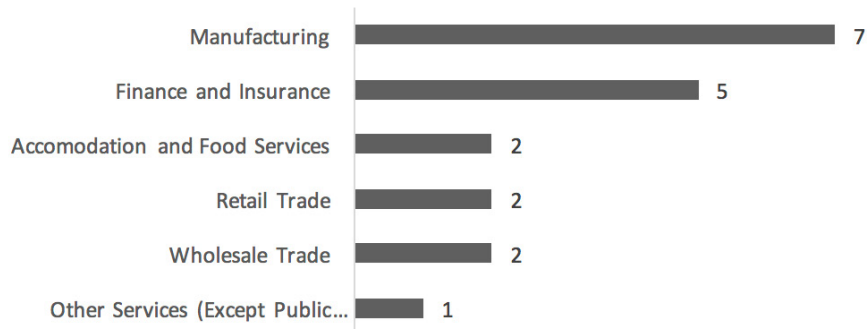


### Number of Foreign Subsidiaries in Cheshire County by Industry (3-digit NAICS code)



Strafford County benefits from a relatively higher representation of foreign manufacturers, when industries are compiled at a more general level. Shanghai Electric Printing And Packaging Machinery Group has a presence in Strafford County, as well as Contitech AG, CRH PLC and Velcro Industries. When detail is added to the industry analysis, credit intermediation is the industry of preference for foreign firms, trailed by accommodation, durable good wholesalers and manufacturing of plastics and petroleum products.

### Number of Foreign Subsidiaries in Strafford County by Overall Industry (2-digit NAICS code)



### Number of Foreign Subsidiaries in Strafford County by Industry (3-digit NAICS code)



Foreign firms in Sullivan County are mainly manufacturers. The sample shows one manufacturer in each of the industries of transportation equipment, fabricated metal, petroleum and wood manufacturing. GKN Aerospace is present in this county. Danzer AG has a subsidiary in Sullivan County. Manufacturing is also the general industry of most foreign firms in Coos County, with companies in miscellaneous, chemical and petroleum manufacturing. Credit intermediation and utilities are also represented. Trividia Health, Godin Guitars and CRH PLC have presence in this county.

## Endnotes

[i] Sectors were created by authors.

[ii] “The New England Financial Services Industry: Around the Corner and Around the World”, available at <http://newenglandcouncil.com/assets/NEC-Financial-Services-Report-Jan-2017-FINAL.pdf>.

[iii] Future of banking in New Hampshire, Aug 13, 2017, available at <http://www.wmur.com/article/future-of-banking-in-new-hampshire/12004286>.

[iv] For readability, actual number of foreign firms have not been included in the 3-digit NAICS code industry charts. These charts are only designed to illustrate variety and representation of industries.

[v] “Electrical equipment, appliance and component...” represents “Electrical equipment, appliance and component manufacturing”; “Securities, commodities contracts, and other financial...” represents “Securities, commodities contracts, and other financial investments and related activities”.





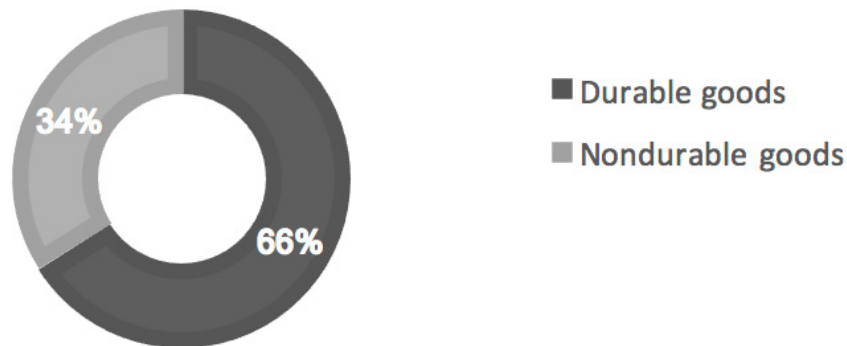
# Manufacturing

## Foreign Manufacturers Influence New Hampshire's Competitiveness

According to a recent report by SelectUSA[i], “the manufacturing sector in the United States has consistently been the largest recipient of FDI, attracting more FDI in the past 10 years than any other U.S. sector.” New Hampshire stands to benefit greatly from attracting more foreign manufacturers to establish operations in the state. The percentage of foreign manufacturers in the total number of foreign firms in New Hampshire is just over 20%. By numbers, manufacturers rank third as representation, behind finance and insurance, and retail trade. The presence of foreign manufacturers in many industries brings opportunities for further investments and new partnerships and business ventures.

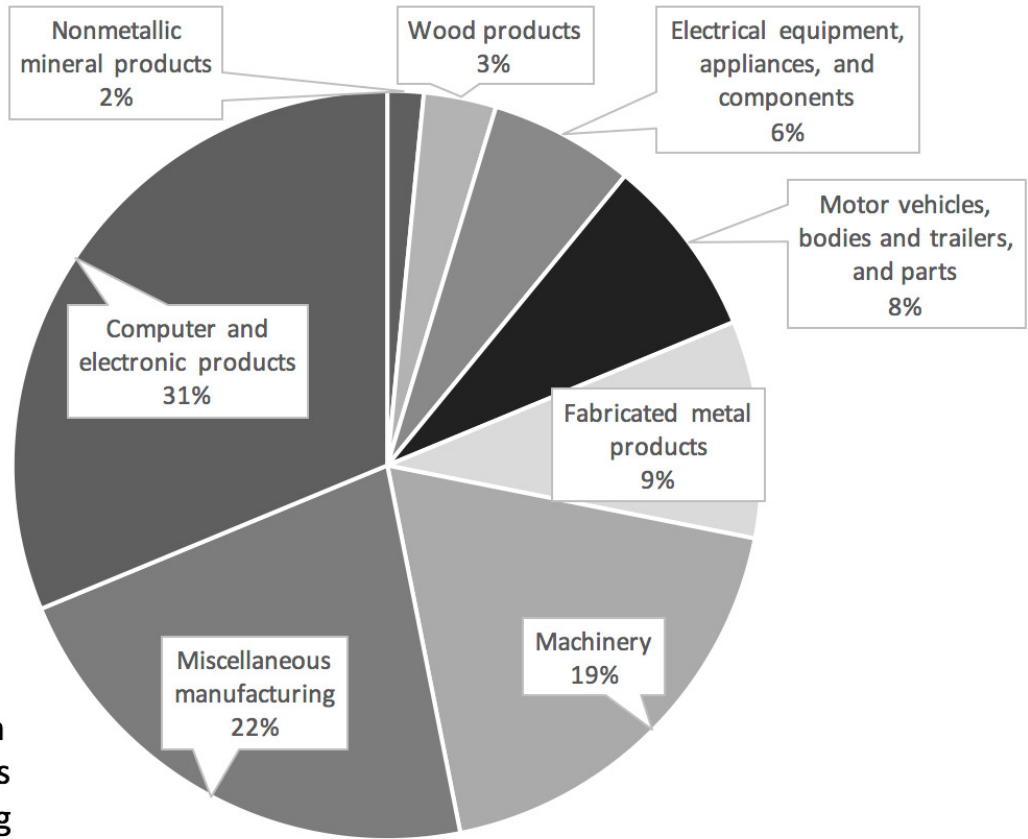
Replicating the manufacturing industry classification[ii] by the Bureau of Economic Analysis, the present analysis shows that the majority of foreign manufacturers in New Hampshire make durable goods.

### MAIN INDUSTRY CATEGORY OF FOREIGN MANUFACTURERS

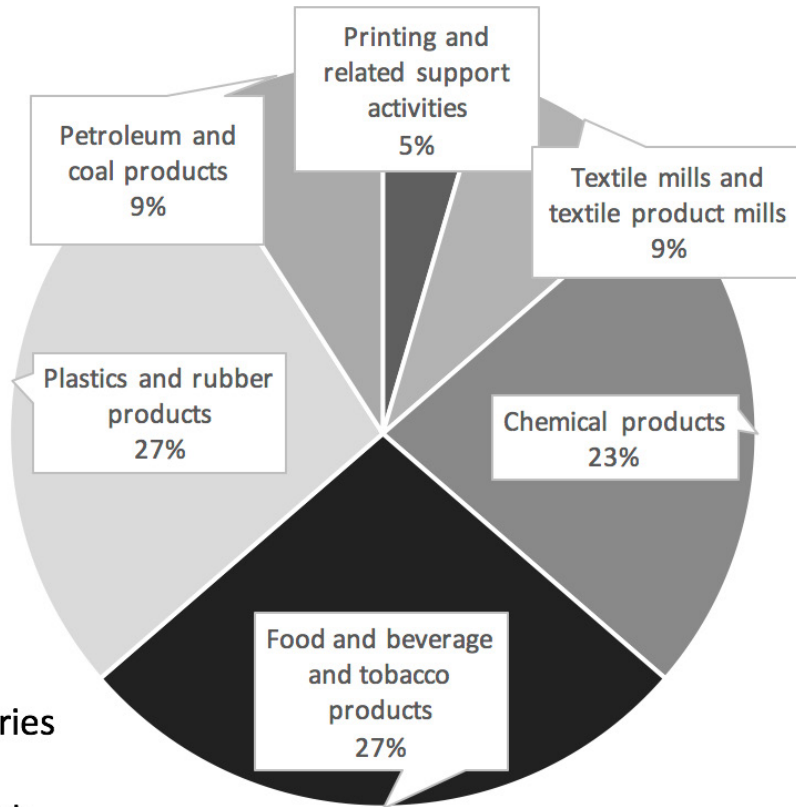


Most durable goods manufacturers are producing computer and electronic products. Miscellaneous manufacturing also makes up for a relative large proportion, followed by machinery manufacturing. 8 durable goods industries are represented. Nondurable goods foreign manufacturers are in 6 industries in New Hampshire, with the largest presence in plastics and rubber products manufacturing, and in food and beverage and tobacco products manufacturing. The number of foreign manufacturers of chemical products is also relatively notable.

Foreign Subsidiaries Distribution in Durable Goods Manufacturing

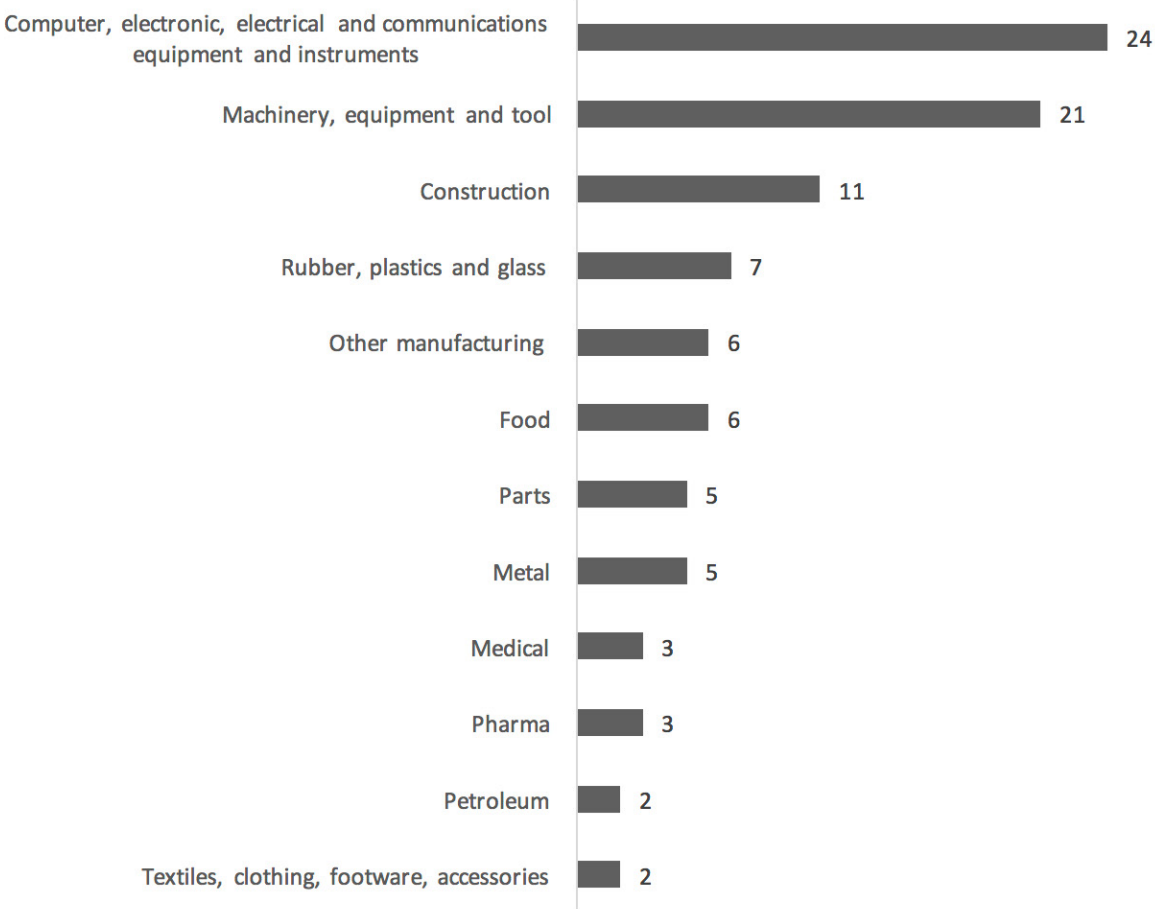


Foreign Subsidiaries Distribution in Nondurable Goods Manufacturing



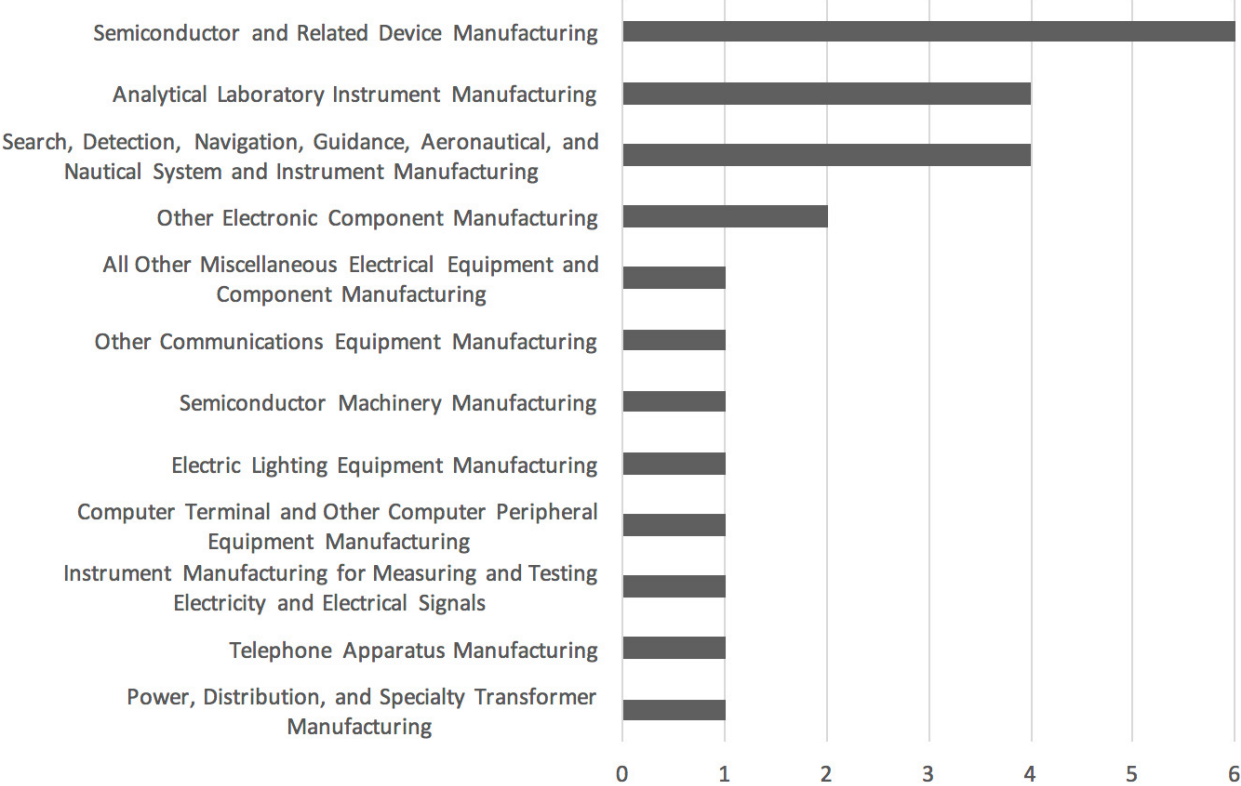
As noted in other parts of this report, 20 sectors were created by the authors. Computer, electronic, electrical and communications equipment and instruments is the sector of choice for most foreign manufacturers. About a quarter of manufacturing foreign firms operate in this sector.

### NH Sectors Ranked by Number of Foreign Manufacturers



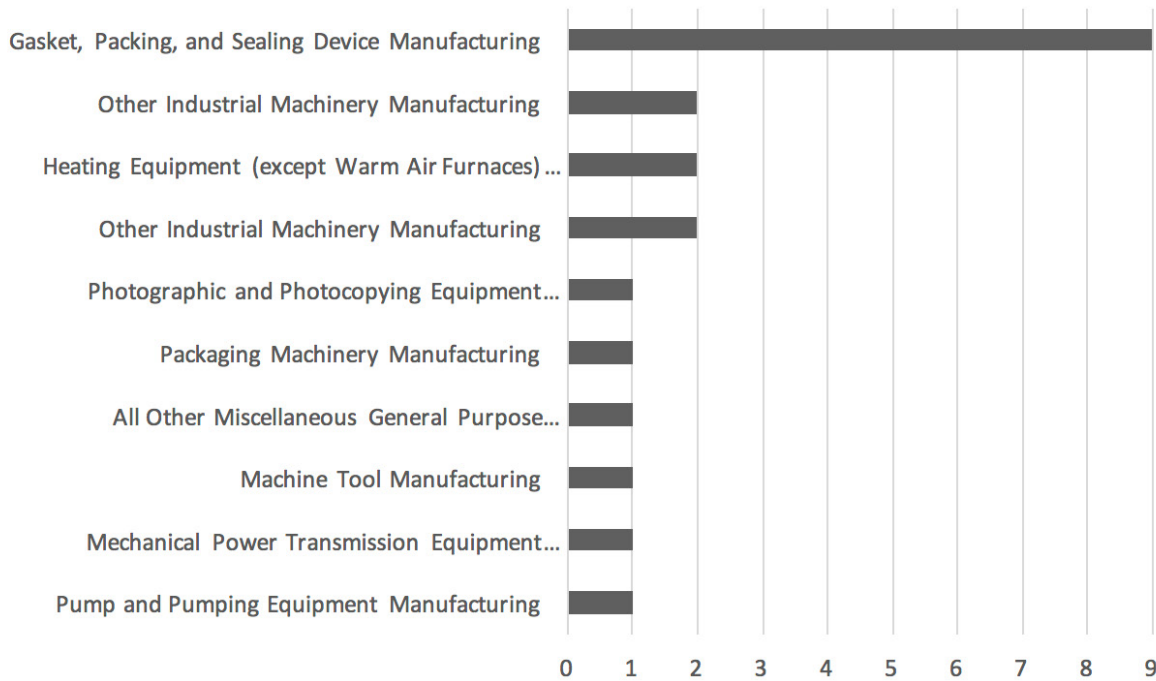
The breakdown of the sector[iii] where most manufacturers operate identifies the relative strong representation in semiconductor and related device manufacturing. BAE SYSTEMS PLC subsidiaries presence dominates the industry of search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing. By representation across industries, the sector shows diversity.

### Distribution of Foreign Manufacturers Accross the Top Represented Sector: Computer, Electronic, Electrical and Communications Equipment and Instruments



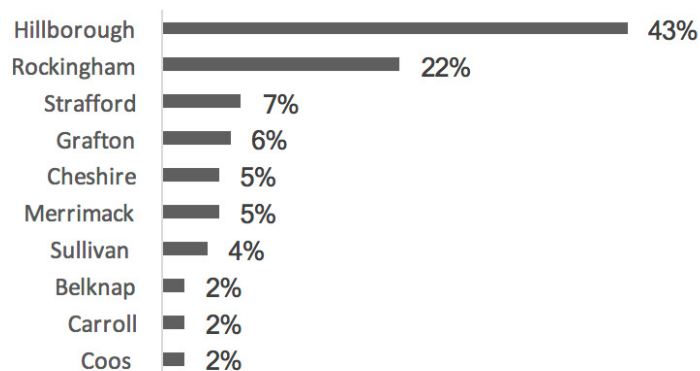
The distribution in the second represented manufacturing sector, also shows diversity with low numbers of foreign firms across 10 industries. FREUDENBERG & CO. LLP subsidiaries have a sizeable presence.

### Distribution of Foreign Manufacturers Across the 2nd Represented Sector: Machinery, Equipment and Tools



As is the distribution of all foreign firms across New Hampshire counties, the highest number of foreign firms in manufacturing is in Hillsborough County, followed by Rockingham County. The differences in the numbers of firms across the top three represented counties are relatively high. The fewest manufacturers can be found in Belknap, Carroll and Coos.

### Foreign Manufacturers Distribution across NH Counties



Manufacturing may have a lot of realized and unrealized potential in New Hampshire. According to the Bureau of Labor Statistics[iv], manufacturing employment in the US has increased in the past year. SelectUSA states that “the manufacturing sector continues to receive the largest share of FDI-supported jobs in the United States”[v]. As indicated by the Office of the Chief Economist[vi], manufacturing compensation is higher than non-manufacturing compensation for foreign subsidiaries. In a recent interview[vii], local economist Russ Thibeault (Applied Economic Research) noted that New Hampshire has lost manufacturing jobs in recent years, but there is a recent increase in such jobs. He concluded that skilled labor is the draw for new manufacturing in the state.

The Office of the Chief Economist reports that the bulk of the R&D investments are in the manufacturing sector. As SelectUSA affirms[viii], “FDI in manufacturing greatly impacts the economy through its contributions to U.S. output and innovation. [...] This investment in R&D drives innovation, improvements in products and processes, and increased productivity gains.” Foreign manufacturers contribute to these aspects in our state, and to innovation and demand for highly skilled employees, particularly given that about half the manufacturing firms are in advanced industries.

Small foreign firms make an impact on many New Hampshire manufacturing industries. According to our sample[ix], most foreign manufacturers are small firms. Only 8% of firms have more than 500 employees. Like in many other sectors in the state, foreign manufacturers are entrepreneurial, and large foreign manufacturers make a significant impact on employment in the counties and industries where they operate.

### **Frequency of Scale of Foreign Manufacturers in New Hampshire**

	Percentage in total number of foreign manufacturers in NH
Size class 1 (1 to 4 employees)	20%
Size class 6 (100 to 249 employees)	17%
Size class 4 (20 to 49 employees)	14%
Size class 5 (50 to 99 employees)	13%
Size class 2 (5 to 9 employees)	11%
Size class 7 (250 to 499 employees)	11%
Size class 3 (10 to 19 employees)	7%
Size class 8 (500 to 999 employees)	5%
Size class 9 (1,000 or more employees)	3%

## Endnotes

- [i] SelectUSA, FDI in Manufacturing, Advancing U.S. Competitiveness in a Global Economy, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t00000000gKi>.
- [ii] 3-digit level codes of The North American Industry Classification System (NAICS) as identified in [https://www.bea.gov/industry/xls/GDPbyInd\\_VA\\_NAICS\\_1998-2009.xls](https://www.bea.gov/industry/xls/GDPbyInd_VA_NAICS_1998-2009.xls).
- [iii] Industries represented at the 6-digit level of The North American Industry Classification System (NAICS) codes, with descriptions from the classification.
- [iv] Bureau of Labor Statistics, The Employment Situation —November 2017, <https://www.bls.gov/news.release/pdf/empst.pdf>.
- [v] Idem ii.
- [vi] U.S. Department of Commerce Economics and Statistics Administration, Office of the Chief Economist, “Foreign Direct Investment in the United States”, October 3, 2017, <https://www.esa.gov/sites/default/files/FDIUS2017update.pdf>.
- [vii] NH manufacturing on a roll again, WMUR Interview, Nov 26, 2017, <http://www.wmur.com/article/nh-manufacturing-on-a-roll-again/13928660>.
- [viii] Idem ii.
- [ix] A reduced sample includes employment data.
- [x] Scale is identified as firm size class, as defined by the Bureau of Labor Statistics, <https://www.bls.gov/bdm/bdmfirmsize.htm>.





# High-Tech

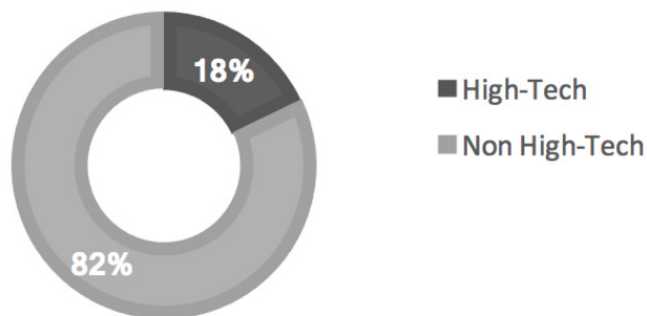
## Foreign Firms Endorse Industries with the Highest Concentration of Science, Engineering, and Technician Occupations

SelectUSA emphasizes that high-tech industries accounted for nearly a quarter of the total US economic output in 2016. FDI plays a significant role, making up for about 10% of the total value added to the US economy in the high-tech sector. The FDI value-added in high-tech industries “has been growing at a faster rate than that of domestic high-tech industries for the past seven years.”<sup>[i]</sup>

The NH High Tech Council asserts<sup>[ii]</sup> the important contributions of the New Hampshire high-tech sector to the state’s economy, with “nearly \$3 billion to the state’s GDP in salaries alone due to the higher than average pay in the sector.” The Council quotes the NH Center for Public Policy, which states that “advanced manufacturing and high technology businesses are the leading drivers of New Hampshire’s economy. Jobs in this sector pay higher wages and export products from the state to other areas of the nation and the world, effectively transferring outside money into the state’s economy. For these reasons, this sector is the strongest engine of economic activity in New Hampshire.” A survey described by the NH High Tech Council, finds that the Northeast is a strong location for high tech startups. New Hampshire does not rank as highly but is an attractive investment location due to the quality of life and the entrepreneurship/innovation ecosystem, which are both above national levels.

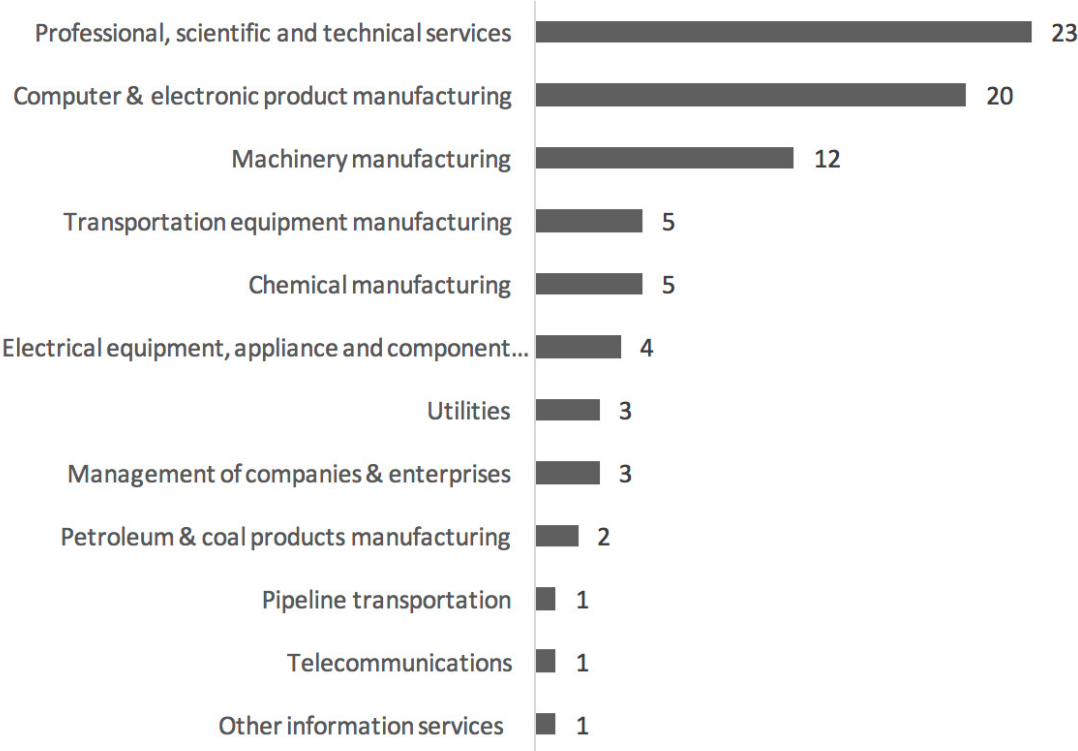
The growth expectation for NH in the tech sector is 6% over the next five years. The NH High Tech Council expects near term growth to come particularly from software and application development, advanced manufacturing, energy technology/clean-tech and cybersecurity. There are opportunities to attract more foreign firms to these industries and to the high-tech sector in general. The present study finds that just under 20% of foreign subsidiaries in New Hampshire are in high-tech industries<sup>[iii]</sup>.

### FOREIGN SUBSIDIARIES REPRESENTATION IN NH HIGH-TECH INDUSTRIES



Currently, most high-tech foreign investment as subsidiary operation occurs in professional, scientific and technical services. The industry distribution presented below uses the SelectUSA definition and methodology of the high-tech sector[iv]. SelectUSA noted that the professional, scientific and technical services industry is large in the US, with millions of jobs supported by this industry in STEM[v] and other occupations. By this cataloging of high-tech industries, manufacturing follows the top ranking services as number of foreign firms. This distribution may indicate that the New Hampshire foreign high-tech firms are poised for growth.

### Distribution of High-tech Foreign Subsidiaries by Industry



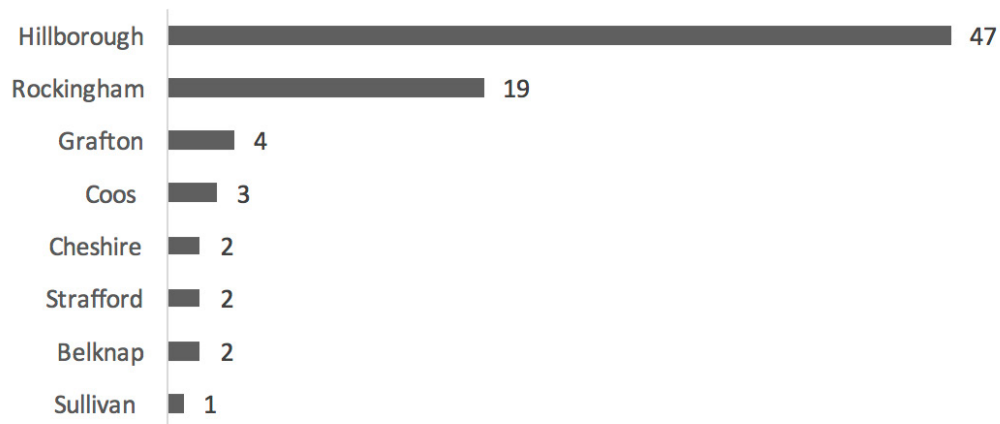
The number of employees in the NH high-tech sector is 9% above the national average. The NH High Tech Council observes that NH high-tech companies typically are smaller in size, with 61% under 50 employees compared to 46% nationally. In our reduced sample for which employment data were found (as described in other sections of this report), about 67% of high-tech foreign firms have fewer than 50 employees.

## Distribution by Size of Foreign Firms in High-Tech Industries

Firm size class	Percentage of Companies in Each Firm Size Class: High-Tech Foreign Subsidiaries Only
Size class 1 (1 to 4 employees)	30%
Size class 2 (5 to 9 employees)	11%
Size class 3 (10 to 19 employees)	9%
Size class 4 (20 to 49 employees)	17%
Size class 5 (50 to 99 employees)	17%
Size class 6 (100 to 249 employees)	6%
Size class 7 (250 to 499 employees)	6%
Size class 8 (500 to 999 employees)	4%
Size class 9 (1,000 or more employees)	0%

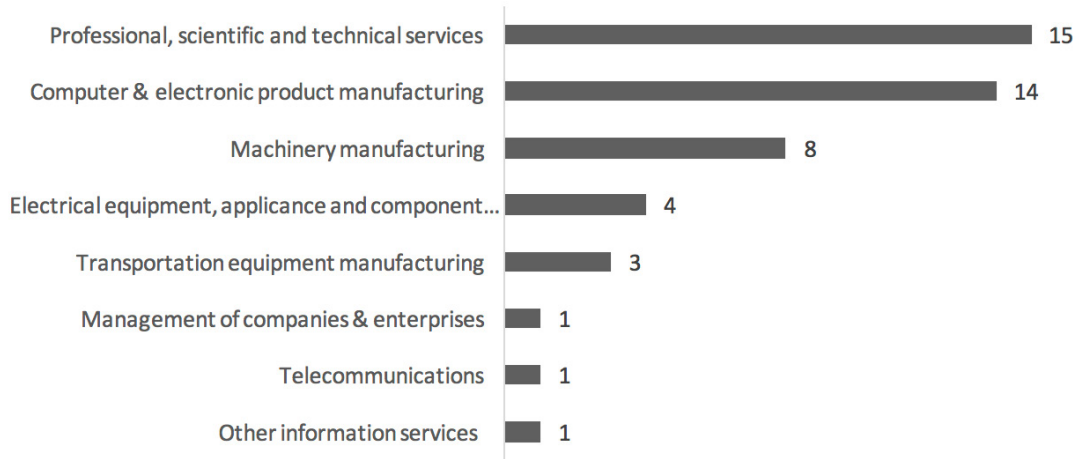
The presence of high-tech foreign subsidiaries across counties identifies the same two top ranking counties as for the overall distribution of foreign subsidiaries in New Hampshire. Hillsborough County has more than double the number of firms as Rockingham County. The remaining counties each have low numbers of high-tech foreign subsidiaries.

### Presence of High-Tech Foreign Subsidiaries in NH Counties

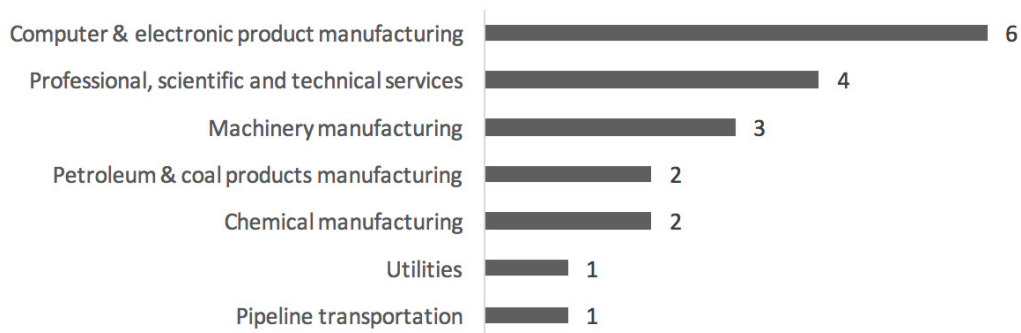


The distribution of high-tech foreign firms in Hillsborough County identifies the relative strong representation in the professional, scientific and technical services, and in the computer and electronic product manufacturing. Foreign subsidiaries in machinery manufacturing complete the top 3 high-tech industries by foreign firms' presence. Rockingham County has the same top 3 industries, with the computer and electronic product manufacturing ranking first.

### Presence of Foreign Subsidiaries in High-Tech Industries in Hillsborough County



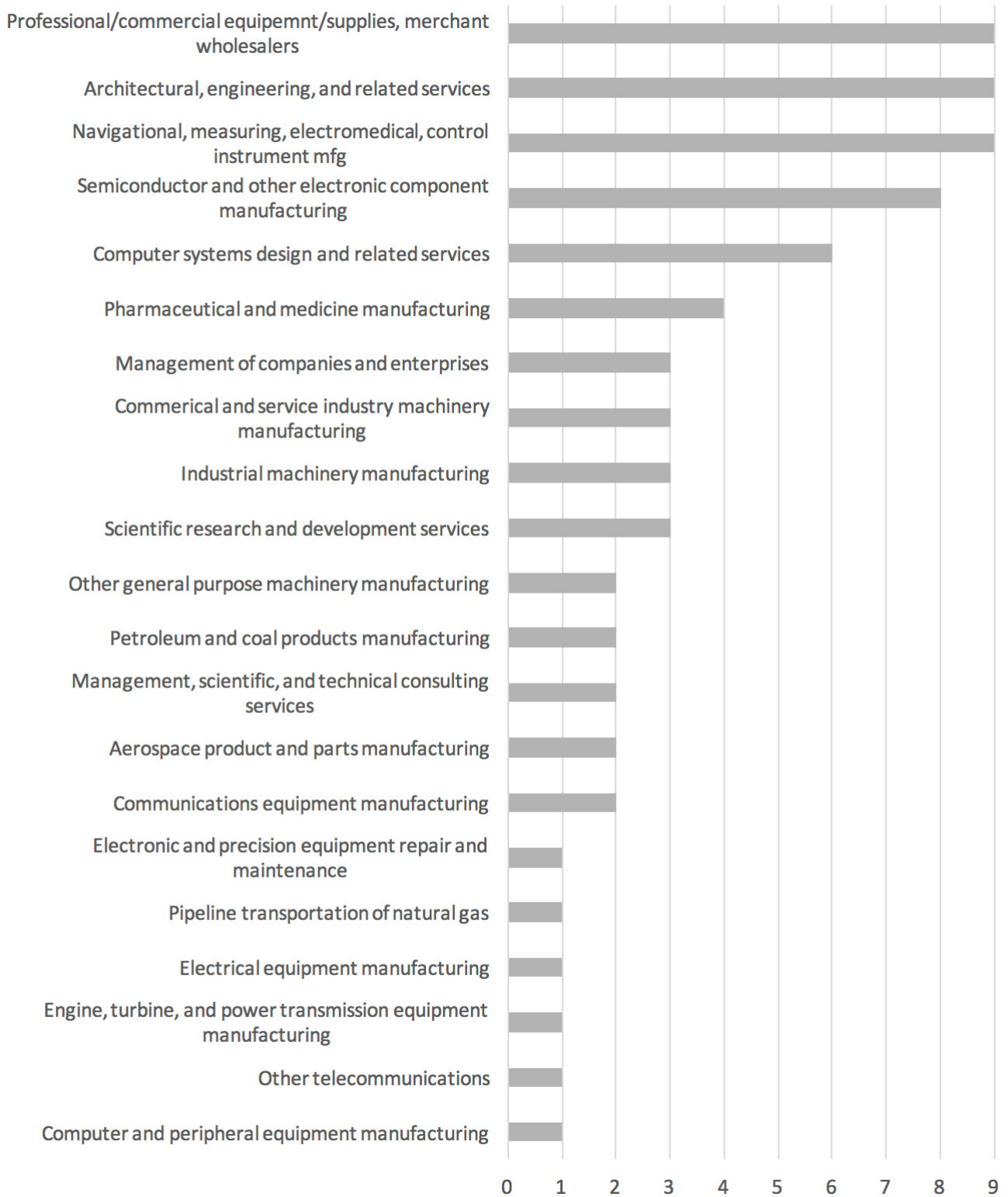
### Presence of Foreign Subsidiaries in High-Tech Industries in Rockingham County



In Grafton County, there are three high-tech firms in professional, scientific and technical services, and one high-tech firm in machinery manufacturing. In Strafford County, only one high-tech foreign firm operates in each of the industries of chemical manufacturing and transportation equipment manufacturing. In Cheshire County, one high-tech foreign firm operates in each of the industries of chemical manufacturing, and management of companies and enterprises. Sullivan County has one high-tech foreign subsidiary in transportation equipment manufacturing. In Coos County, there are two high-tech firms in utilities and one high-tech firm in chemical manufacturing. Our sample has no high-tech foreign firms in Merrimack and Carroll counties.

The New Hampshire Employment Security uses a different, sub-industry classification of the high-tech sector[vi] (the definition was created by the Bureau of Labor Statistics). This cataloging of high-tech industries shows the importance of professional and commercial equipment and supplies, merchant wholesalers in the state (9 firms). Foreign wholesalers' presence may indicate opportunities for attracting international manufacturing that would benefit from distribution networks of foreign firms. The architectural, engineering, and related services, and the navigational, measuring, electro-medical, control instrument manufacturing sub-industries share the top rank with supplies/merchant wholesalers sub-industry, followed in numbers (8 firms) by semiconductor and other electronic component manufacturing. This categorization of high-tech shows the level of diversity across sub-industries. About half of the high-tech sub-industries defined by the Bureau of Labor Statistics have foreign firms in New Hampshire.

## Distribution of High-tech Foreign Subsidiaries by Sub-industry

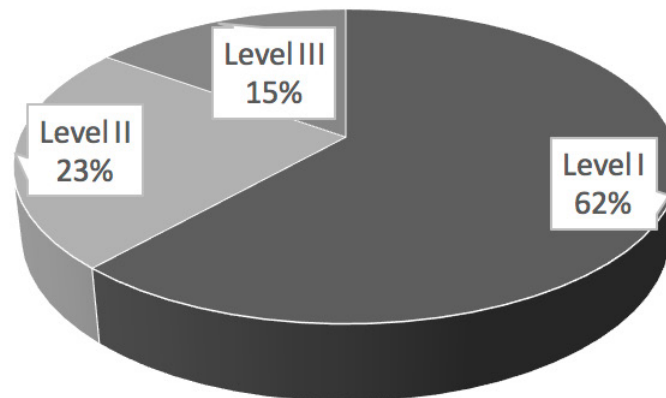


Data reported by the New Hampshire Employment Security, shows yearly increases in New Hampshire high-tech employment and wages over the 2000 - 2016 period[vii]. Using the definition of high-tech employment from the Bureau of Labor Statistics, high-tech industries are those with high concentrations of science, engineering, and technician occupations, and are broken down into three levels[viii]. The distribution of New Hampshire foreign high-tech firms across the three levels shows that most of the high-tech foreign firms are in industries with the highest concentration of science, engineering, and technician occupations of all high-tech industries.

### **Foreign Firms Representation by Concentration of Science, Engineering, and Technician Occupations**

Level I: industries with a concentration of science, engineering, and technician occupations that was at least 5.0 times greater than the average for all industries.	45
Level II: industries with a concentration of science, engineering, and technician occupations that was 3.0 to 4.9 times the average for all industries.	17
Level III: industries with a concentration of science, engineering, and technician occupations that was 2.0 to 2.9 times the average for all industries.	11

### **Distribution of High-Tech Foreign Subsidiaries by the Concentration of Science, Engineering, and Technician Occupations**



According to SelectUSA, “best-in-class global firms investing in innovative U.S. economic sectors ensures the United States retains its global competitiveness in these industries.”[ix] New Hampshire stands to gain from continuing to attract foreign firms as an important way to grow high-tech industries. In addition to supporting employment in advanced industries, foreign subsidiaries make contributions to the economy through research and development, spending, exports, and value-added activities. SelectUSA described an increase in each of these contributions from high-tech foreign subsidiaries at the national level in the past years.



Two related new developments are likely to bring immediate new opportunities and to attract more foreign firms in New Hampshire's healthcare and life sciences sector[x]. The BioTech/MedTech Cluster, an initiative of the New Hampshire High Tech Council aims to advance the state's leadership in the biotechnology, pharma, medical devices and general health technology areas. The Advanced Regenerative Manufacturing Institute (ARMI) will open up many opportunities for domestic and foreign firms to partner in the advancement of regenerative manufacturing.

## Endnotes

[i] SelectUSA, High-Tech Industries, The Role of FDI in Driving Innovation and Growth, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE>.

[ii] NH Tech Council, The NH Tech Sector, <https://nhhtc.org/about/the-nh-tech-sector/>.

[iii] Using the SelectUSA definition, as described in The Role of FDI in Driving Innovation and Growth, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE>.

[iv] In order to analyze FDI in the high-tech sector using data published by the Bureau of Economic Analysis (BEA), SelectUSA created a 3-digit NAICS methodology, identified in the report The Role of FDI in Driving Innovation and Growth, 2017, at <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE>.

[v] Science, technology, engineering, and mathematics (STEM) occupations are analyzed by the Bureau of Labor Statistics. A recent update is included in the January, 2017 report, STEM Occupations: Past, Present, and Future, available at <https://www.bls.gov/spotlight/2017/science-technology-engineering-and-mathematics-stem-occupations-past-present-and-future/home.htm>.

[vi] The NHES high-tech industry cataloging is at the 4-digit level of The North American Industry Classification System (NAICS) codes, as described at <https://www.nhes.nh.gov/elmi/statistics/documents/high-tech-titles.pdf> (from Hecker, D., High-technology employment: a NAICS-based update. Monthly Labor Review. July 2005. Bureau of Labor Statistics. [www.bls.gov/opub/mlr/2005/07/art6full.pdf](http://www.bls.gov/opub/mlr/2005/07/art6full.pdf)).

[vii] New Hampshire Employment Security, High Tech Employment and Wages, 2000 - 2016, <https://www.nhes.nh.gov/elmi/statistics/documents/high-tech-00-16.pdf>.

[viii] New Hampshire Employment Security, High Tech Employment in New Hampshire 2010, <https://www.nhes.nh.gov/elmi/products/documents/ec-high-tech-10.pdf>.

[ix] Idem i.

[x] NH Tech Council, NH High Tech Council BioTech/MedTech Event to Take Regional View of Regenerative Medicine, December 21, 2017. <https://nhhtc.org/nh-high-tech-council-biotechmedtech-event-to-take-regional-view-of-regenerative-medicine/>.

# Employment

## Most Foreign Employers in New Hampshire Are Small

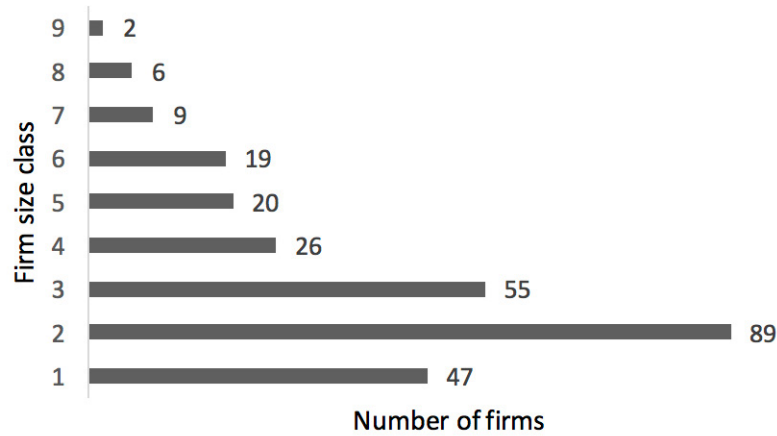
Employment data were collected[i] for 61% of the firms in our sample. The findings described in this chapter are based solely on this reduced data. Missing data is distributed somewhat in line with the pattern of foreign-owned subsidiaries presence across industries (at the 3-digit NAICS code). As available, ranges and actual number of employees were used to determine firm size class in accordance to the Bureau of Labor Statistics[ii].

The highest percentage of foreign subsidiaries in New Hampshire have 5-9 employees. 50% of foreign subsidiaries are very small, with fewer than 10 employees. Only 6% of firms have more than 250 employees. Large foreign firms have a significant contribution to employment in New Hampshire. Their size means that they likely champion supply chains and lead in economic and social contributions. Small foreign firms add diversity and may contribute to the overall entrepreneurial disposition. The small size of foreign firms is in line with the overall small business profile of the state. The US Small Business Administration notes that about 96% of New Hampshire businesses are small[iii]. Firms with fewer than 100 employees have the largest share of small business employment.

### Distribution of Sample Foreign Firms by Size

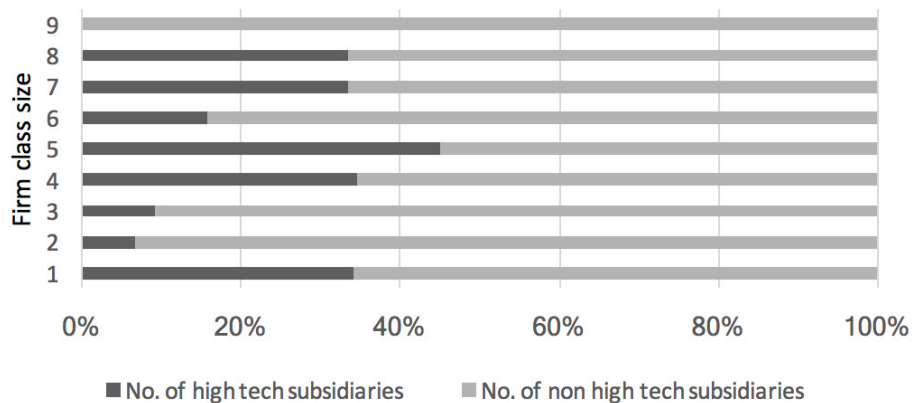
Firm size class	Percentage in total sample
Size class 1 (1 to 4 employees)	17%
Size class 2 (5 to 9 employees)	33%
Size class 3 (10 to 19 employees)	20%
Size class 4 (20 to 49 employees)	10%
Size class 5 (50 to 99 employees)	7%
Size class 6 (100 to 249 employees)	7%
Size class 7 (250 to 499 employees)	3%
Size class 8 (500 to 999 employees)	2%
Size class 9 (1,000 or more employees)	1%

### Distribution of Foreign Subsidiaries by Firm Size Class



The representation of firms in high-tech versus non-high-tech industries is relatively higher for firms that have between 50 and 99 employees. Foreign firms with 5 to 19 employees have the lowest proportion of high-tech industry representation. No single large high tech subsidiary with over 1000 employees appears in this sample.

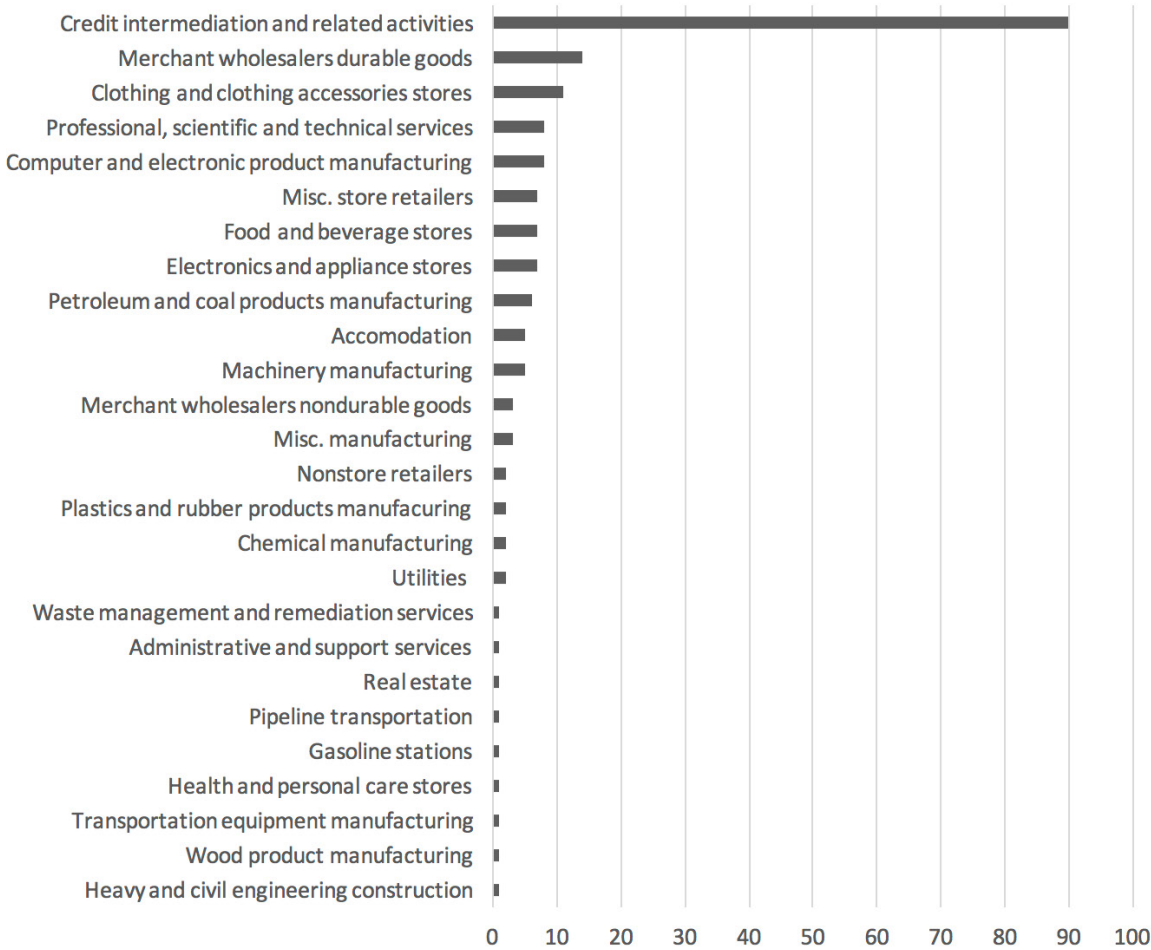
### Distribution of High Tech versus Non High Tech Foreign Subsidiaries by Firm Size Class



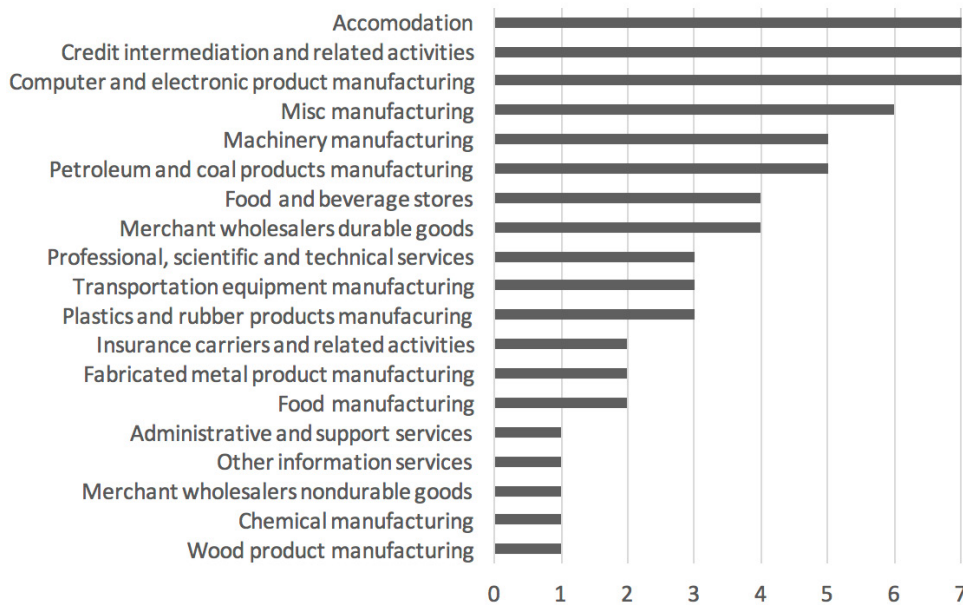
The distribution of foreign firms with fewer than 20 employees verifies the strong presence in the credit intermediation industry. The merchants of durable goods follow on, with the clothing stores completing the top 3 industries represented. Some services, some manufacturing and heavy construction only have one firm of this size each. Foreign subsidiaries in the accommodation, the credit intermediation and the computer and electronic product manufacturing industries are in highest relative numbers when the size range of 20-249 employees is considered. Other manufacturing firms follow the top rank. Firms in machinery manufacturing, and petroleum and coal products manufacturing are also relatively well-represented.

A low number of foreign subsidiaries with more than 250 employees are in miscellaneous manufacturing and in the computer and electronic product manufacturing industry. Only one firm of this size operates in each of the other industries represented (mainly manufacturing: food; textile mills; petroleum and coal products; chemical; plastics and rubber product; nonmetallic mineral products; machinery, electrical equipment, appliance and components; and also merchant wholesalers of durable goods; credit intermediation and repair and maintenance). The charts below visualize the number of firms of selected size ranges across industries, as means to show how firms impact employment in New Hampshire.

**Industry Presence of Foreign Subsidiaries with Fewer than 20 Employees (3-digit NAICS code)**

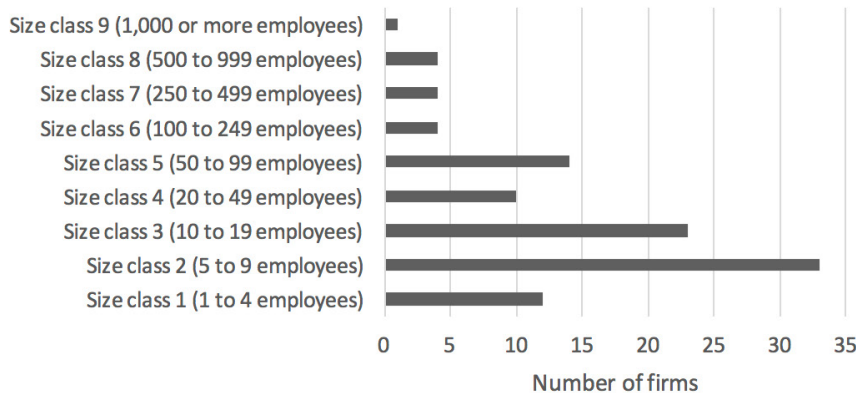


## Industry Presence of Foreign Subsidiaries with 20-249 Employees (3-digit NAICS code)



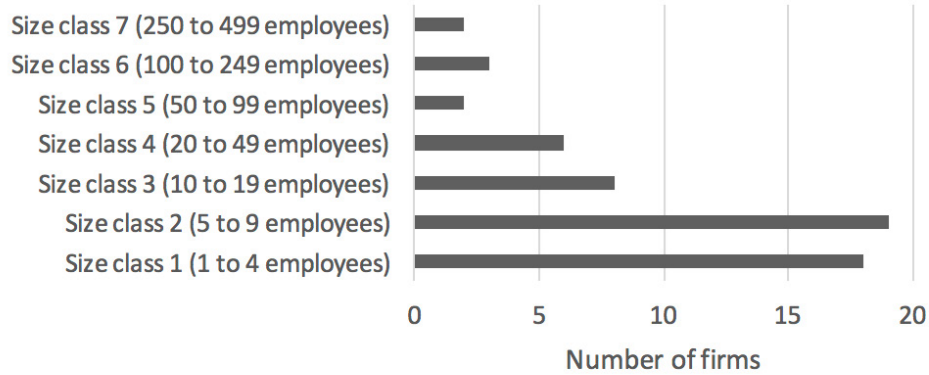
Small foreign firms have a predominant presence across counties. 31% of the sample firms in Hillsborough have 5-9 employees, and 22% have 10-19 employees. Only 5% of foreign subsidiaries in this county have more than 500 employees. Almost 90% of the sample firms have under 100 employees.

## Employment Contributions of Foreign Subsidiaries in Hillsborough County



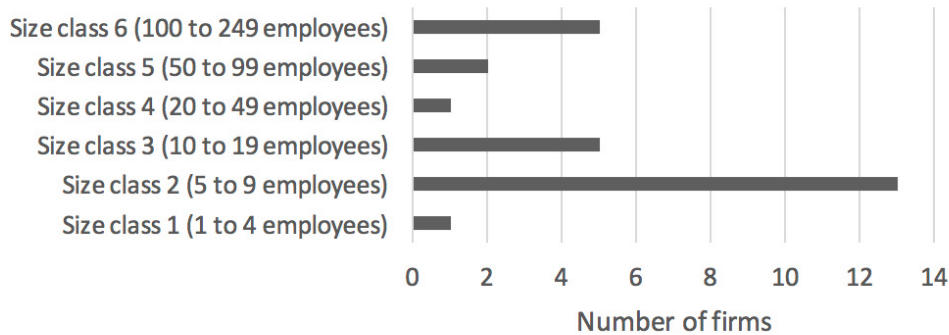
The distribution of foreign firms sample in Rockingham County shows that 33% of subsidiaries have 5-9 employees, and 31% have 1-4 employees. Almost 90% of firms have fewer than 50 employees. There are no firms with more than 500 employees.

### Employment Contributions of Foreign Subsidiaries in Rockingham County



Foreign firms in Merrimack County are again mostly small, with almost half having 5 to 9 employees. About 20% each represents subsidiaries with 10 to 19 employees and subsidiaries with 100 to 249 employees. There are no larger firms.

### Employment Contributions of Foreign Subsidiaries in Merrimack County



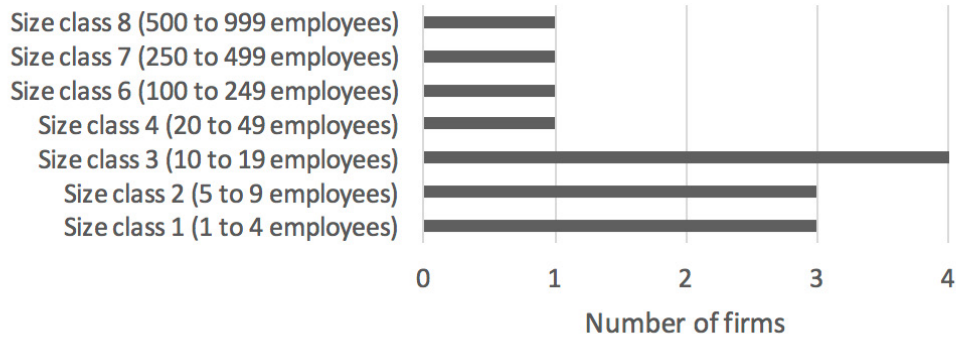
One company in the Grafton County sample has 100 to 249 employees. 36% of foreign firms in this county have 5 to 9 employees, with the remaining subsidiaries equally belonging in the other size classes.

### Employment Contributions of Foreign Subsidiaries in Grafton County



Almost 30% of foreign firms in Belknap County have 10 to 19 employees. About a quarter of the subsidiaries in this sample have 5 to 9 employees and another quarter are in the smallest size class.

### Employment Contributions of Foreign Subsidiaries in Belknap County



About one quarter of the 17 firms in Strafford County are in each of the smallest three size classes, followed by representation of firms with 100 to 249 employees. This sample also includes one firm of size class 4 and one relatively large firm of size class 8. Only a few Cheshire County subsidiaries for which employment data was available are in each of the size classes 1-6 and in class 9 (more than 1000 employees), for a total of 13 firms. Employment numbers were found for 14 foreign firms in Carroll County. The majority have 5-9 employees. No firms have more than 50 employees. All foreign subsidiaries in Coos County have fewer than 50 employees, with one exception of a firm in the size class 6. 7 firms were included in this sample. Only 4 foreign firms have employment data in Sullivan County, and they are in size classes 1,2,3 and 5, respectively.

## Endnotes

[i] The number of employees for each foreign subsidiary was collected from <http://www.amfibi.com> and from <http://listings.findthecompany.com>. For a number of companies, only ranges of employee numbers were available.

[ii] Firm size classes are identified by the Bureau of Labor Statistics as: Size class 1 (1 to 4 employees); Size class 2 (5 to 9 employees); Size class 3 (10 to 19 employees); Size class 4 (20 to 49 employees); Size class 5 (50 to 99 employees); Size class 6 (100 to 249 employees); Size class 7 (250 to 499 employees); Size class 8 (500 to 999 employees); Size class 9 (1,000 or more employees). <https://www.bls.gov/bdm/bdmfirmsize.htm>.

[iii] [https://www.sba.gov/sites/default/files/advocacy/New\\_Hampshire.pdf](https://www.sba.gov/sites/default/files/advocacy/New_Hampshire.pdf).





# Origin Analysis

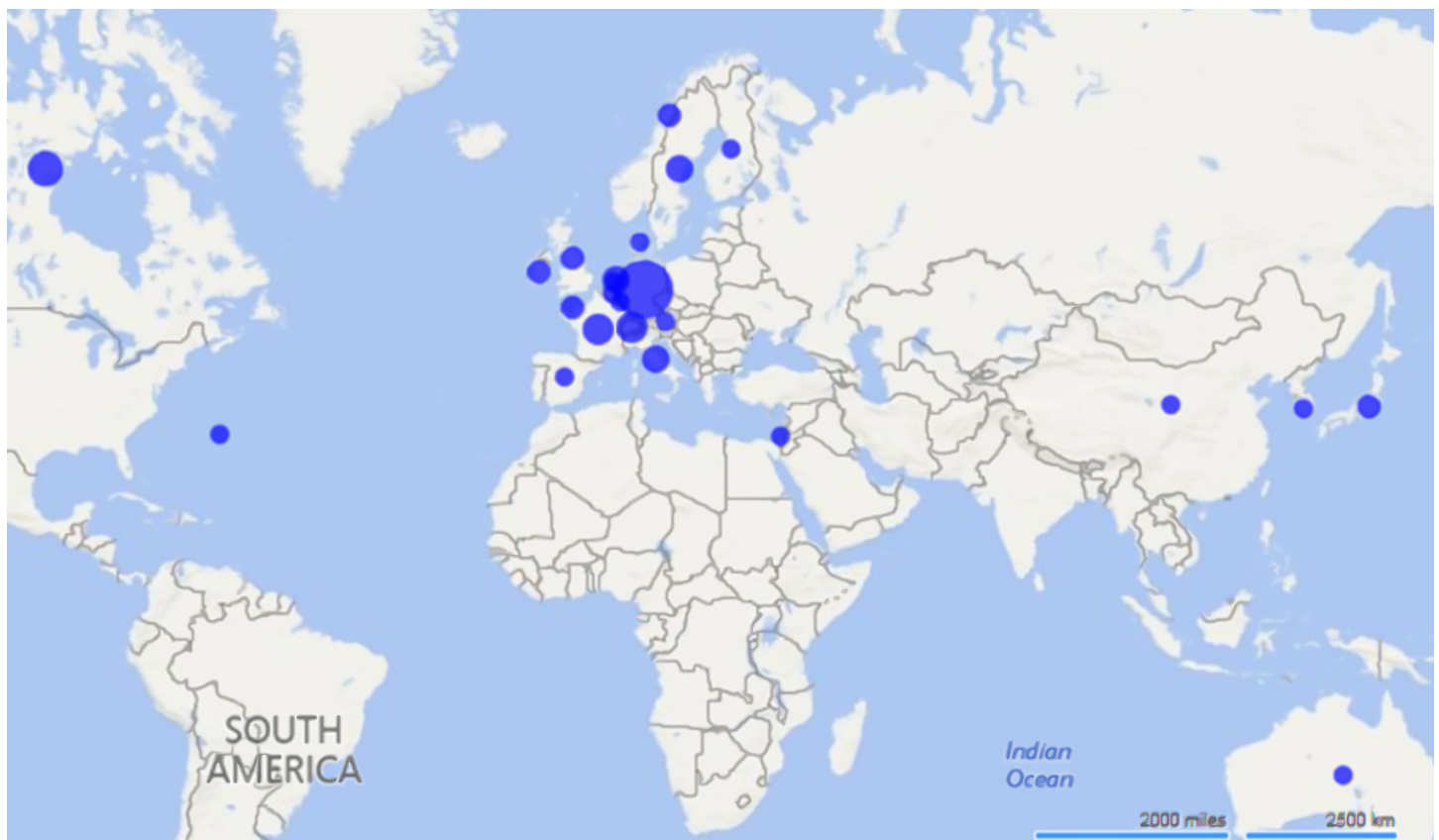
## Europe, Canada and East Asia Drive the Foreign Direct Investment in New Hampshire

According to the sample used for this analysis, as of 2017 the State of New Hampshire has a total of 453 subsidiaries owned by 186 foreign parent companies from 24 overseas countries. The FDI Origin Index is constructed to measure and compare the level of desire for parent companies in different origins to invest in New Hampshire.[i] This index provides useful information for the state policy-makers and Economic Development Agencies (EDA) in regards to strategically allocating their resources in attracting FDI from various countries of origin.

Mapping the countries of origin for foreign subsidiaries in New Hampshire reveals a dominating desire to invest in New Hampshire from European countries, with other origins (by investment desire) scattering in North America, East Asia and Australia. The table included below ranks all countries of origin by the **FDI Origin Index**. Parent companies in Germany lead all other countries in terms of the likelihood to have subsidiaries in New Hampshire, followed by America's northern neighbor, Canada. Japan is the only Asian country among the Top 10 countries that have the highest probability to have subsidiaries in New Hampshire.

Countries of Origin for Foreign Subsidiaries in New Hampshire

### Countries of Origin for Foreign Subsidiaries in New Hampshire



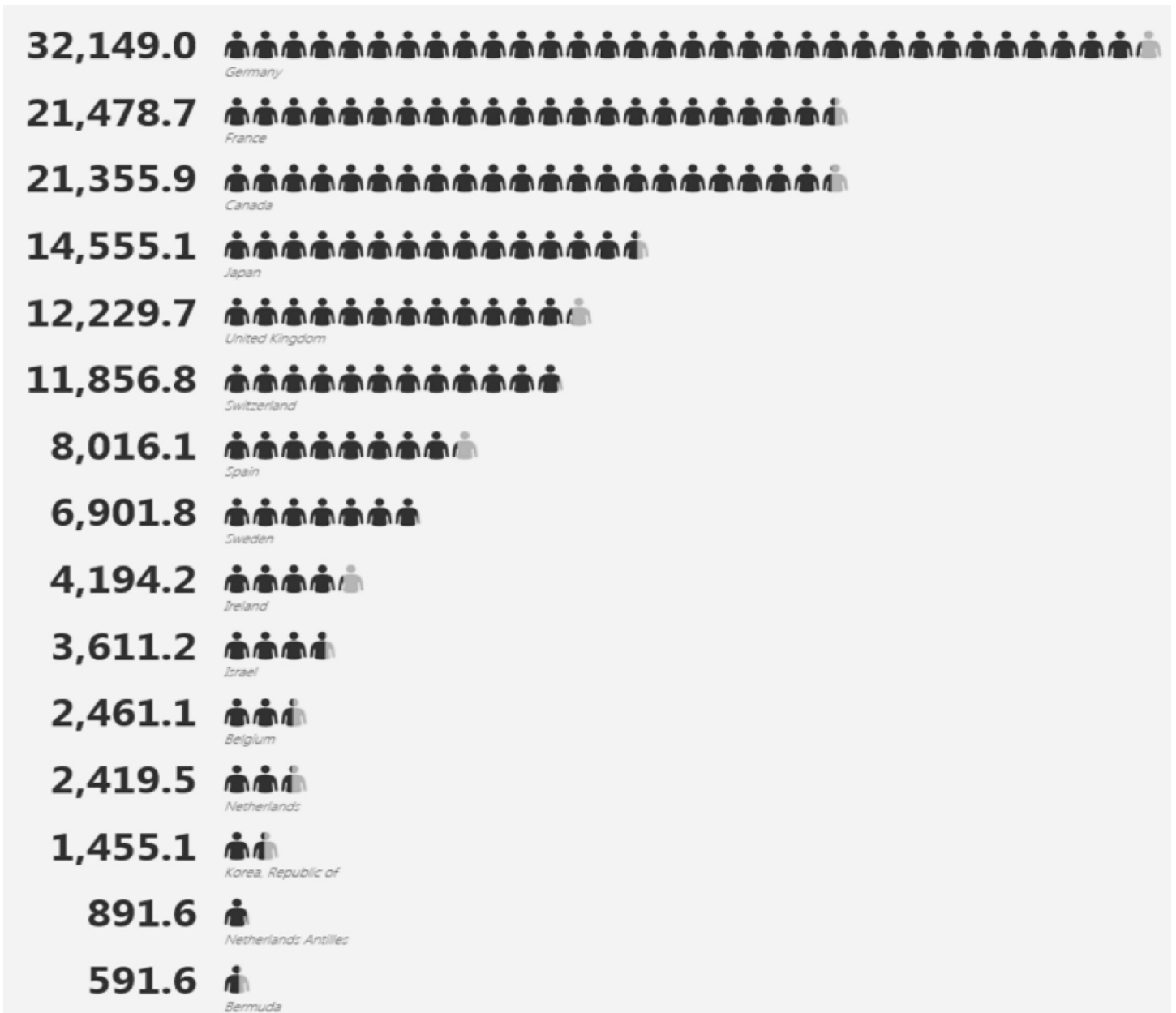
## **Ranking of Companies' Countries-Of-Origin by Level of Desire to Invest In New Hampshire**

<b>Country of Origin</b>	<b>FDI Origin Index</b>
Germany	674.9
Canada	276.4
Switzerland	256.4
France	231.5
Italy	200.0
Netherlands	173.7
Sweden	169.4
Norway	133.3
Japan	121.8
Ireland	114.1
Jersey	100.0
United Kingdom	71.5
Israel	52.5
Austria	41.2
China	41.0
Netherlands Antilles	40.0
Korea, Republic of	16.7
Bermuda	13.3
Belgium	9.3
Australia	7.4
Spain	7.0
Denmark	3.2
Finland	2.0
Luxembourg	0.2

Among the most important contributions that inward FDI adds to local economies in New Hampshire are job creation and retention. The FDI Employment Impact Index is constructed to indicate the estimated employment in New Hampshire that could potentially be supported by parent companies headquartered in each of the 24 countries of origin.[ii]

Our analysis ranks the countries of origin according to the FDI Employment Impact Index for the 15 leading overseas countries.[iii] Germany ranks Number 1 with the estimated 32,149 potential jobs in New Hampshire, followed by France and Canada, each with a potential to support over 21,000 New Hampshire workers. In addition to Europe and Canada, East Asia is also an important employment engine mainly because Japan (and Korea) is ranked Top 4 (and Top 13) on this list. In total, the two Asian countries could potentially support around 16,000 New Hampshire workers.

## The FDI Index for the Top 15 Country of Origin



The inward FDI also contributes to the Gross State Products (GSP) of New Hampshire. This contribution is realized through the revenues of foreign subsidiaries. The GSP Impact Index is computed to indicate the estimated GSP in New Hampshire that could be potentially realized by foreign subsidiaries headquartered in a foreign country.[iv]

The ensuing figure illustrates the estimated GSP impact (in \$million) on the New Hampshire economy of FDI for the Top 15 countries of origin.[v] Germany and Canada are ranked as Number 1 and Number 2, respectively. They significantly outperform France, Japan and United Kingdom who are also ranked Top 5 in the list of GSP Impact Index. Korea is the other Asian country among Top 10 while the predominance of European countries is

### FDI GSP Index for the Top 15 Country of Origin



## Endnotes

[i] FDI Origin Index is constructed for a foreign country  $c$  in the following way:

$$FDI\ Origin\ Index_c = \sum_{i=1}^N PROB_i,$$

where  $N$  is the number of parent companies from country  $c$  with at least one subsidiary in New Hampshire. The probability for a foreign parent company  $i$  to have at least one subsidiary in New Hampshire is conditional on the following criteria being satisfied: (1) this foreign company has operations in overseas countries, (2) among all the foreign subsidiaries at least one is located in the US, and (3) at least one of the foreign subsidiaries located in the US is in New Hampshire. Therefore, the conditional probability is defined as:

$$\begin{aligned} PROB_i &= P(\text{overseas and US and NH}) \\ &= P(\text{overseas}) * P(\text{US}|\text{overseas}) * P(\text{NH}|\text{overseas and US}) \\ &= \frac{\# \text{ foreign subs}}{(\# \text{ domestic subs} + \# \text{ foreign subs})} \times \frac{\# \text{ subs in US}}{\# \text{ foreign subs}} \times \frac{\# \text{ subs in NH}}{\# \text{ subs in US}} \times 100\% \end{aligned}$$

[ii] FDI Employment Impact Index for a foreign country  $c$ :

$$FDI\ Employment\ Impact\ Index_c = \sum_{i=1}^N (PROB_i * EMPLOYEE_i),$$

where  $EMPLOYEE_i$  is the total number of employees (including those in subsidiaries) of a foreign parent company  $i$ , and in country  $c$  there is a total of  $N$  parent companies that each has at least one subsidiary in New Hampshire.

[iii] FDI Employment Impact Index for other countries of origin is shown in the following table.

Country of Origin	FDI Employment Impact Index
Norway	550.0
Italy	470.0
Jersey	450.0
Austria	441.4
China	225.6
Denmark	219.5
Finland	159.1
Australia	70.9
Luxembourg	18.3

[iv] Because subsidiary-level data on revenue is scarce, the authors used the annual revenue of a parent company  $i$  as proxy to calculate the GSP Impact Index for a foreign country  $c$ :

$$FDI\ GSP\ Impact\ Index_c = \sum_{i=1}^N (PROB_i * REVENUE_i),$$

where  $N$  is the count of parent companies in country  $c$  that have operations in New Hampshire.

[v] FDI GSP Impact Index for other countries of origin is shown in the following table.

Country of Origin	FDI GSP Impact Index
Netherlands Antilles	104.5
Norway	104.0
Austria	93.8
Denmark	88.7
Finland	55.4
Jersey	34.9
China	16.4
Luxembourg	5.3
Australia	4.0

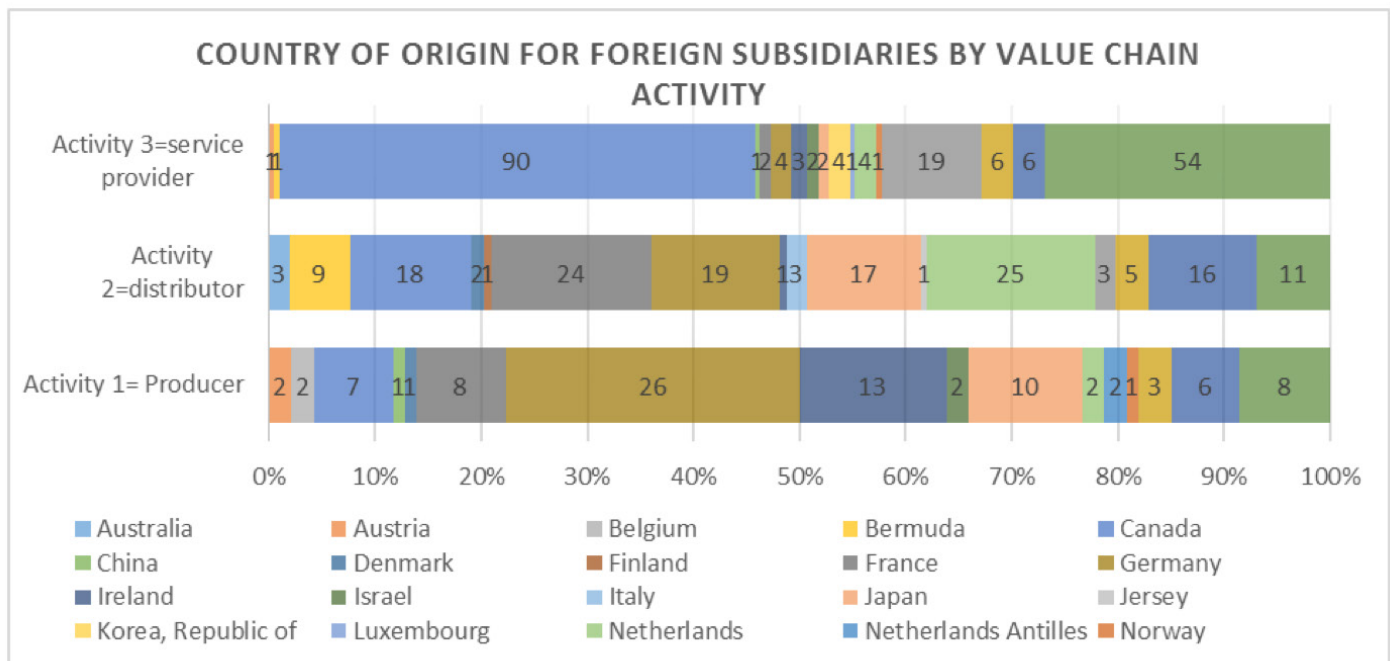


# Country of Origin Analysis

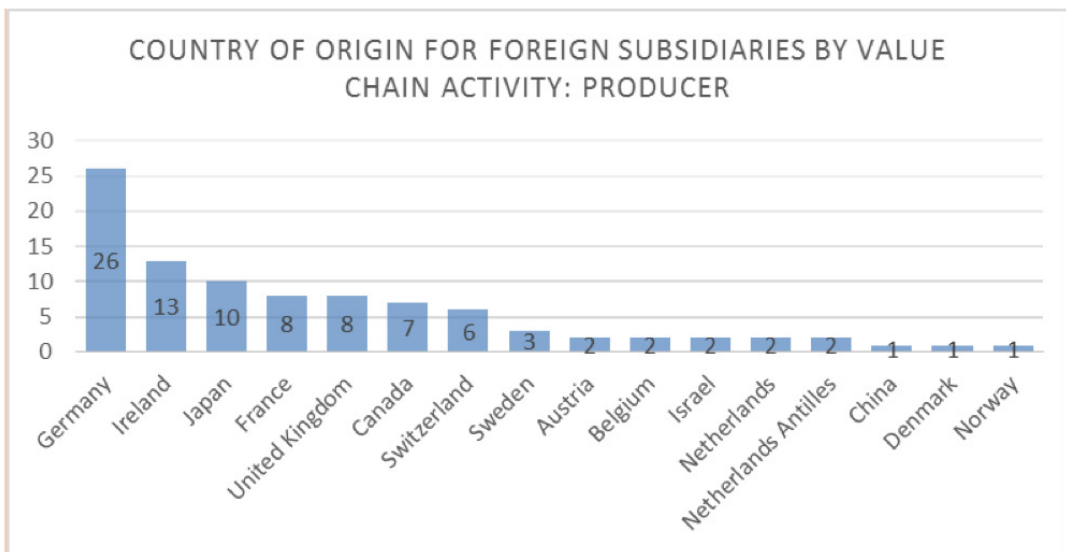
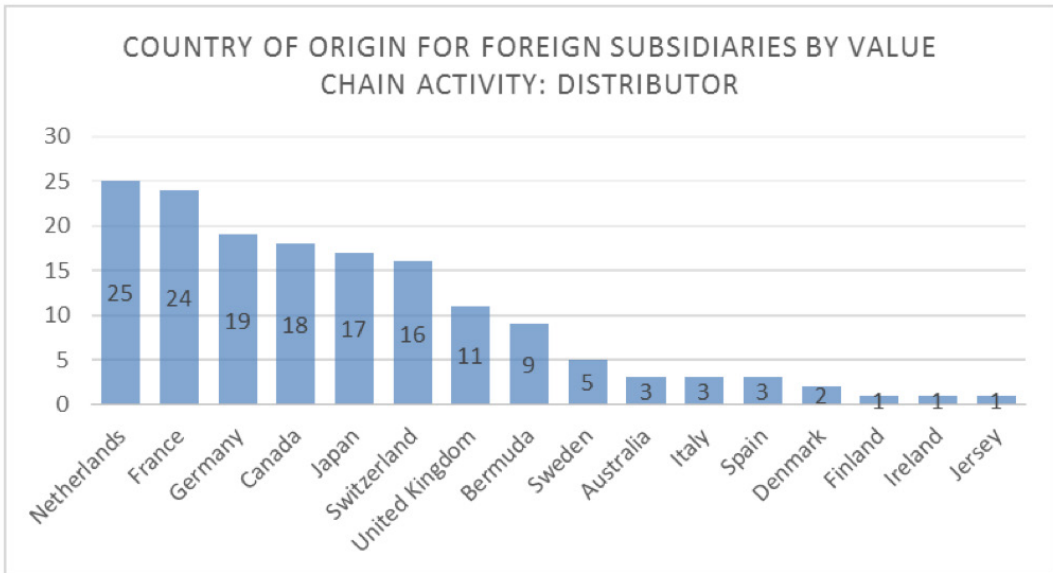
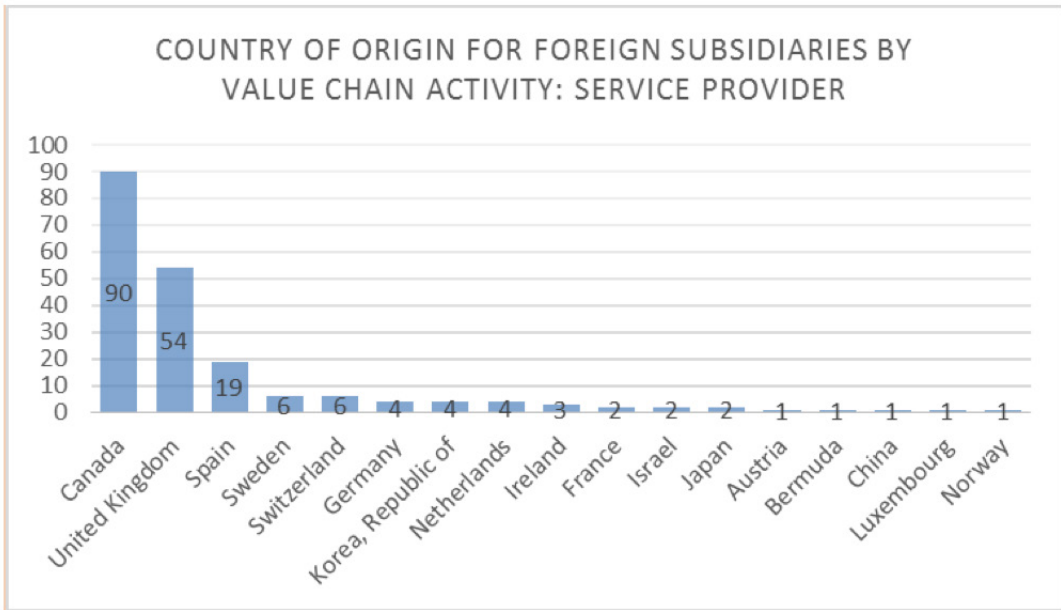
## Key Industries and Sectors of New Hampshire Vary in the Composition and Concentration of Countries of Origin for Foreign Direct Investment

Foreign Direct Investment (FDI) participates in all of the three value chain activities, with foreign firms playing important roles of producers, distributors, and service providers, across a variety of industries and sectors of the New Hampshire economy. Not only does the data analyzed in this chapter provide useful information to foreign investors who are looking at New Hampshire as a potential location for investment, it is also informative to Economic Development Agencies (EDA) in strategically attracting FDI and allocating the investment across industries. The importance of this knowledge is highlighted by the findings of academic research that foreign firms tend to geographically cluster around other foreign businesses both within- and across-industries (Rogers and Wu, 2012).[i]

Understanding the sources of FDI along the whole value chain allows potential foreign investors to discover business opportunities with the upper-stream suppliers, partners and the down-stream clients in New Hampshire. In our sample, about 44 percent of all foreign subsidiaries in New Hampshire are service providers, followed by distributors (35 percent) and producers (21 percent).[ii] The figure presented below offers a scrutiny of the countries of origin for foreign subsidiaries in each value chain activity.







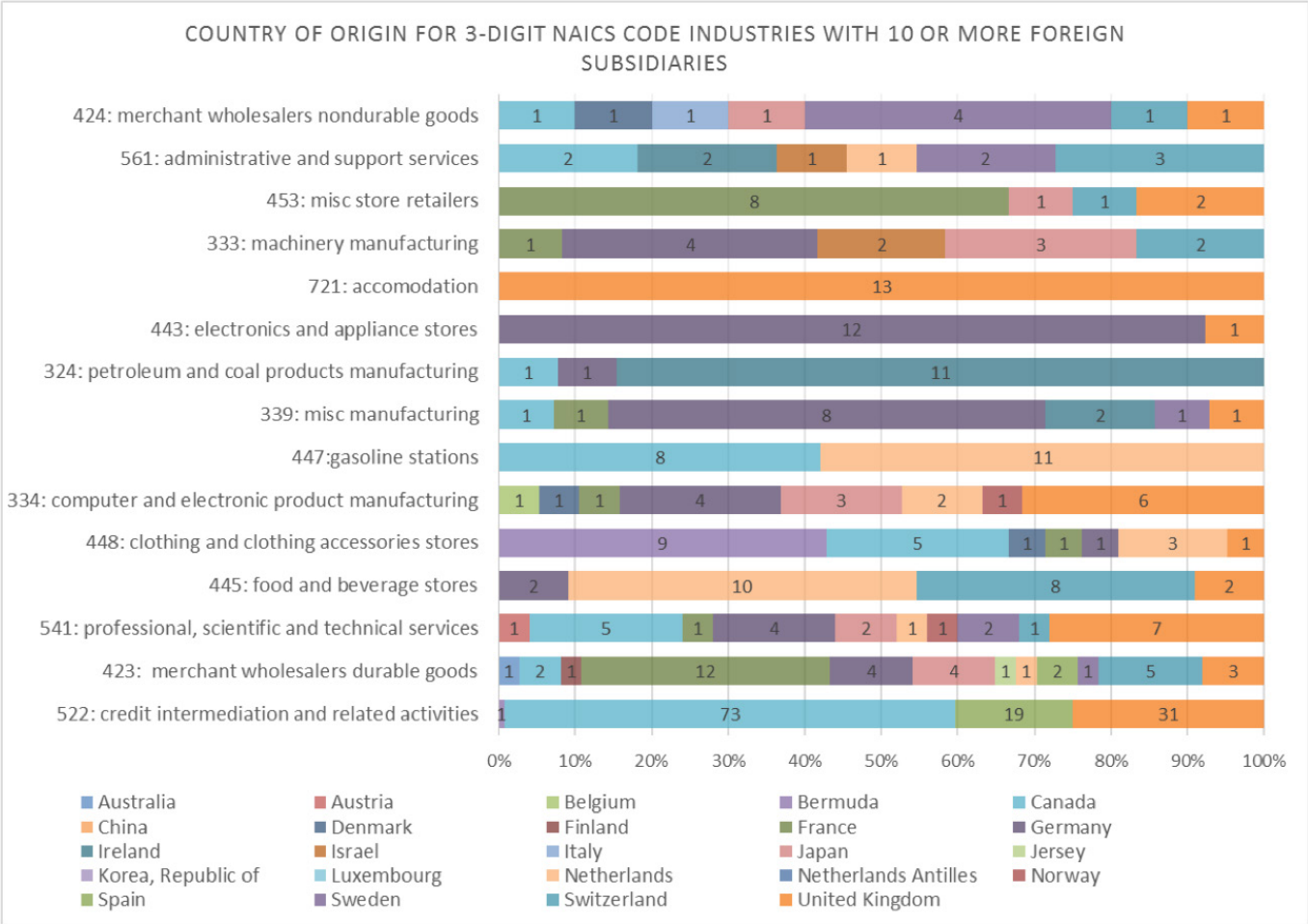
The service activity in New Hampshire embraces a total of 201 foreign firms whose parent companies are located in 17 countries. This level of value chain activity is marked by the dominance of FDI from the America's northern neighbor, Canada, who captures 45 percent of the total count of foreign service providers, a number that almost doubles the share of United Kingdom (27 percent) who is ranked the second. Adding the share of Spain (9.4 percent) who is in the third place, the top three countries of origin account for 81 percent of FDI (by number of foreign subsidiaries) in New Hampshire's service sectors.

The product distribution activity is not as concentrated as service. It is more evenly spread out among a total of 158 subsidiaries of parent companies headquartered in 16 countries. The 4-country concentration ratio is 54.4 percent, calculated by summing up the shares of the four leading countries of origin, namely Netherlands (15.8 percent), France (15.2 percent), Germany (12.0 percent) and Canada (11.4 percent).[iii] It is worth noting that Japan, ranked the 5th with 11 percent of foreign distributors in New Hampshire, is the only non-European and non-American country.

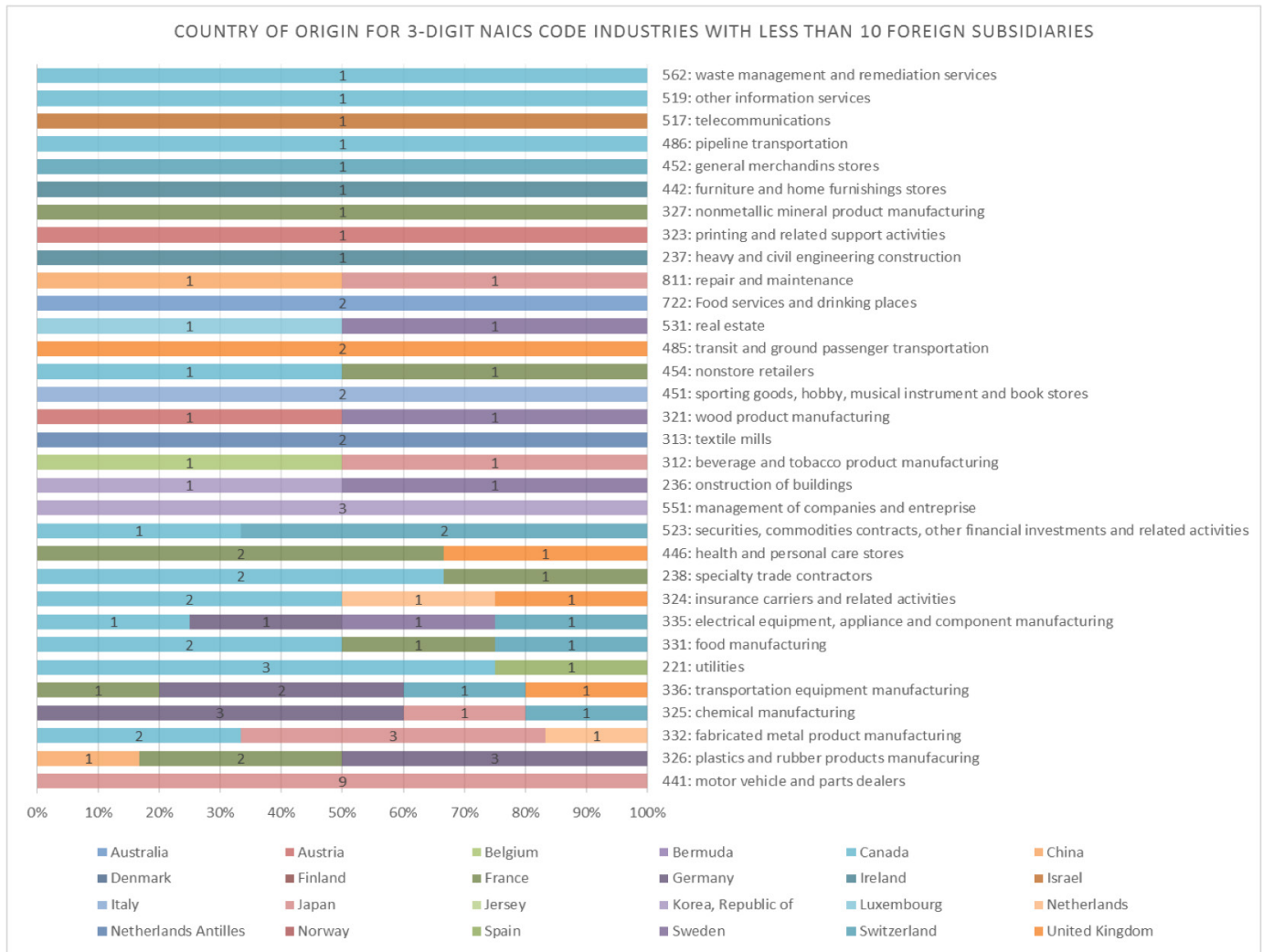
Multinational manufacturers from 16 countries operate 94 subsidiaries in New Hampshire. Although it is not surprising that Germany leads other countries of origin by capturing 28 percent of the total number of foreign manufacturing firms, it is notable to find that Ireland, which ranks second, has a share that is only half of Germany's. Japan ranks the third (10.6 percent), followed by France and United Kingdom (8.5 percent for each).

FDI made its appearance in 47 3-digit NAICS code industries across many important aspects of the New Hampshire economy including construction, manufacturing, retail, wholesale, services, lodging and food, etc. The analysis presented here provides a scrutiny of countries of origin for the key industries in which foreign subsidiaries operate. The information is a useful bridge connecting foreign investors who are seeking investment opportunities in New Hampshire with the state agencies who are attracting FDI to promote local economies. This facilitates a win-win situation.

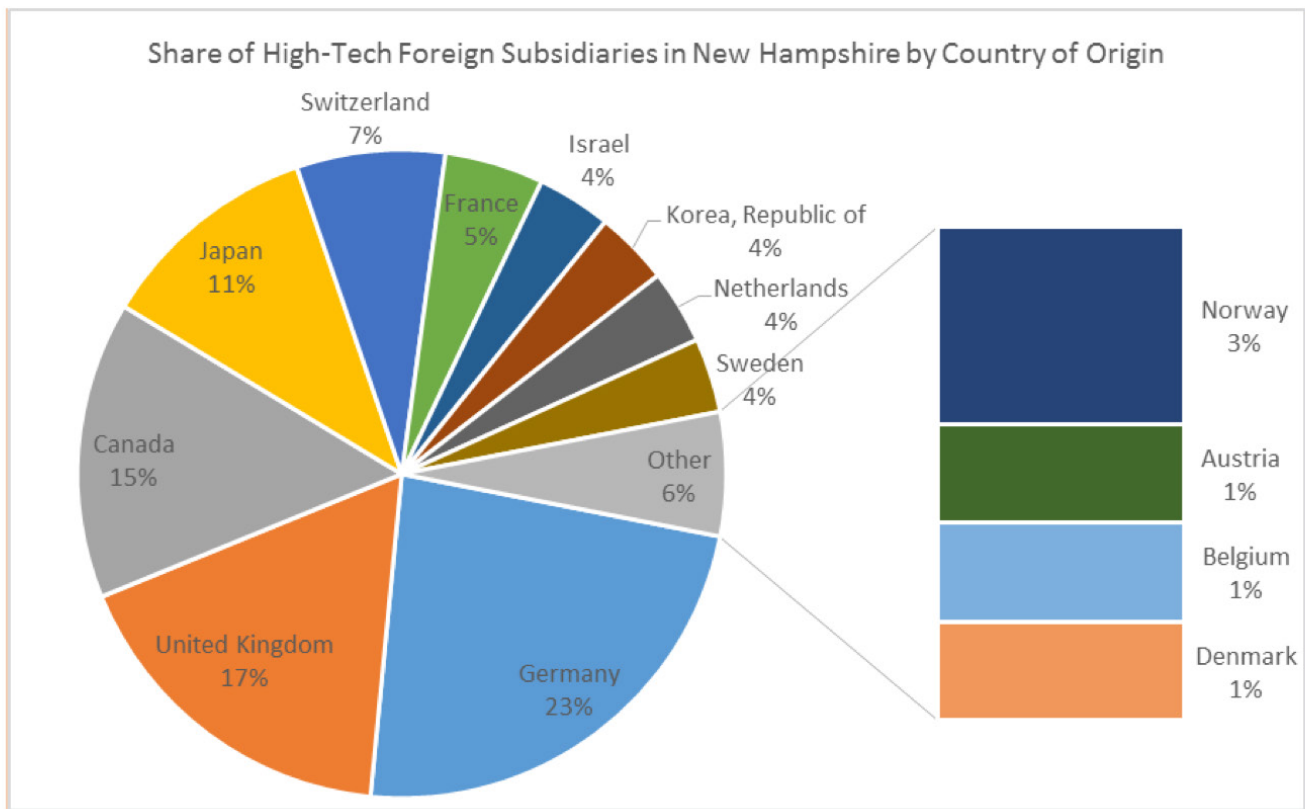
As shown in the figure below, 15 out of 47 3-digit NAICS code industries have 10 or more foreign subsidiaries. Credit intermediation and related activities (NAICS code 522) ranks predominately Number 1 with over a quarter of all foreign subsidiaries. Within this industry, Canada dominates 59 percent of the total count of foreign firms, followed by United Kingdom (25 percent) and Spain (15 percent). Merchant wholesalers durable goods (NAICS code 423) embraces FDI from 12 countries in which France leads this group with a share of near one third, and Switzerland (14 percent), Germany (11 percent) and Japan (11 percent) are other top contributors. The third largest industry (in terms of count of foreign subsidiaries) is professional, scientific and technical services (NAICS code 541), in which FDI from 10 foreign countries operate 25 subsidiaries in New Hampshire. United Kingdom (28 percent), Canada (20 percent) and Germany (16 percent) lead other countries of origin in this industry. Food and beverage stores (NAICS code 445) ranks the fourth and captures 5 percent of all foreign subsidiaries. FDI in this industry are from only four European countries, namely Netherlands (45 percent), Switzerland (36 percent), Germany and United Kingdom (9 percent each). The fifth largest industry is clothing and clothing accessories stores (NAICS code 448), in which Bermuda (43 percent), Canada (24 percent) and Netherlands (14 percent) are the 3 (out of 7) leading countries of origin.



The majority of industries with FDI in New Hampshire (32 out of 47) each has less than 10 foreign subsidiaries, and in total these industries share near 20 percent of all foreign subsidiaries. It is worth noting that the top contributing countries of origin in these less represented industries are Canada and Japan, whose multinationals operate 17 and 15 subsidiaries in 11 and 5 (out of 32) New Hampshire industries, respectively. Other important FDI countries of origin include France (9 subsidiaries in 7 industries) and Germany (9 subsidiaries in 4 industries). More detailed information is outlined in the following figure.



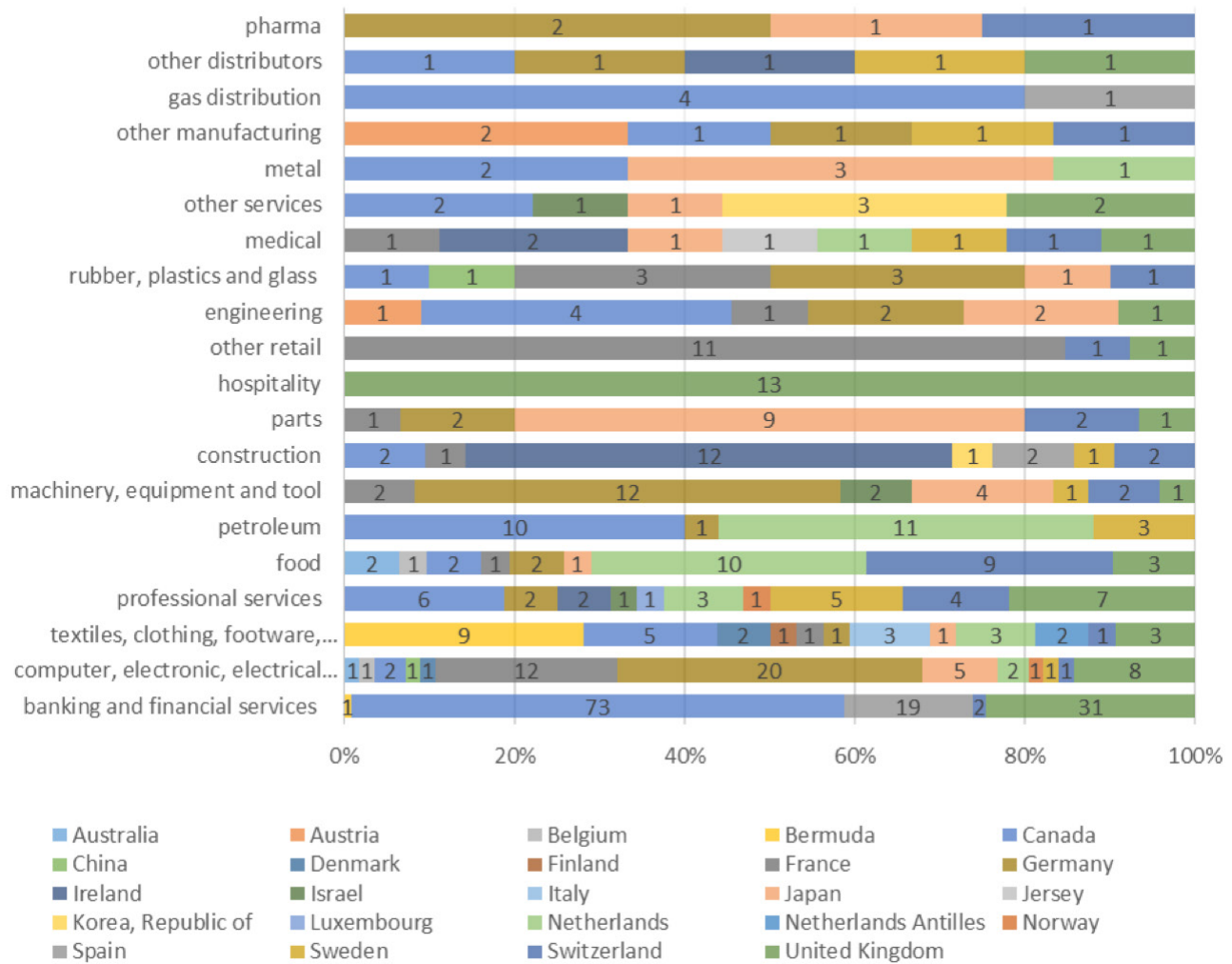
FDI brings cutting edge technology and know-how to their subsidiaries in a foreign country, and thus benefits the local economy via training local workers and the technology spillovers to domestic firms (Wu and Burge, 2017).[iv] As for the state of New Hampshire, 18 percent of all foreign subsidiaries are in the high-tech industries.[v] Europe is the predominant driving power for high-tech FDI in New Hampshire, and East Asia is the other important source. Specifically, two European countries, Germany and United Kingdom, contribute 40 percent of high-tech foreign subsidiaries in combination. Canada ranks the third with 15 percent of the count of foreign firms, signifying a notable border effect. Japan captures 11 percent of this pie and is the fourth largest contributor.



To better reflect on the presence of FDI across sections of New Hampshire economy, the authors further integrate the 47 3-digit NAICS code industries where foreign firms operate into 20 sectors based on the markets of product and service. About two thirds of the 20 sectors embraces 10 or more foreign subsidiaries. The fact that FDI makes its appearance in the most sectors reveals its importance to the production and distribution across a vast range of product and service markets of New Hampshire.

Banking and financial services is identified as the largest sector in terms of capturing 28 percent of the total number of foreign subsidiaries. This sector has FDI from only 5 countries and is concentrated among Canadian (58 percent), British (25 percent) and Spanish (15 percent) financial institutions. The sector of computer, electronic, electrical, and communication equipment and instruments ranks the second with a share (12 percent) that is less than half of the Number 1 sector. However, this sector is the most international with FDI from 13 countries across Pacific-Asia, Europe and North America. Germany (36 percent), France (21 percent) and United Kingdom (14 percent) lead other countries of origin in this sector. The sector of textiles, clothing, footwear and accessories, and the sector of professional services both rank in the third place, each capturing 7 percent of the total count of foreign subsidiaries in New Hampshire. In the former sector, Bermuda (28 percent) and Canada (16 percent) lead the all 12 countries, while United Kingdom (22 percent) and Canada (19 percent) lead the all 10 countries of origin in the latter sector.

## COUNTRIES OF ORIGIN FOR FOREIGN SUBSIDIARIES IN INDUSTRY SECTORS OF NEW HAMPSHIRE



### Endnotes

[i] Rogers, C. and C. Wu. 2012. [Employment by Foreign Firms in the US: Do State Incentives Matter?](#) *Regional Science and Urban Economics* 42(4): 664-680.

[ii] The sample for the analysis presented in the three chapters of origin analysis contains a total of 453 foreign subsidiaries. This varies slightly from the foreign subsidiaries' sample which contains 447 subsidiaries in other parts of the report, as more data was collected for the purpose of origin investigation.

[iii] The Four-Firm Concentration Ratio is the sum of the sales' share of the leading four firms in a market. A large ratio indicates a high level of concentration in the market under study. Here, the authors borrowed this ratio to measure the level of concentration of foreign subsidiaries in terms of their origin.

[iv] Wu, C. and G. Burge. 2017. [Competing for Foreign Direct Investment: The Case of Local Governments in China.](#) Article first published online (March 2017) at Public Finance Review.

[v] Industries for this analysis were based on SelectUSA's identification of high-tech industries at the 3-digit level of The North American Industry Classification System (NAICS).

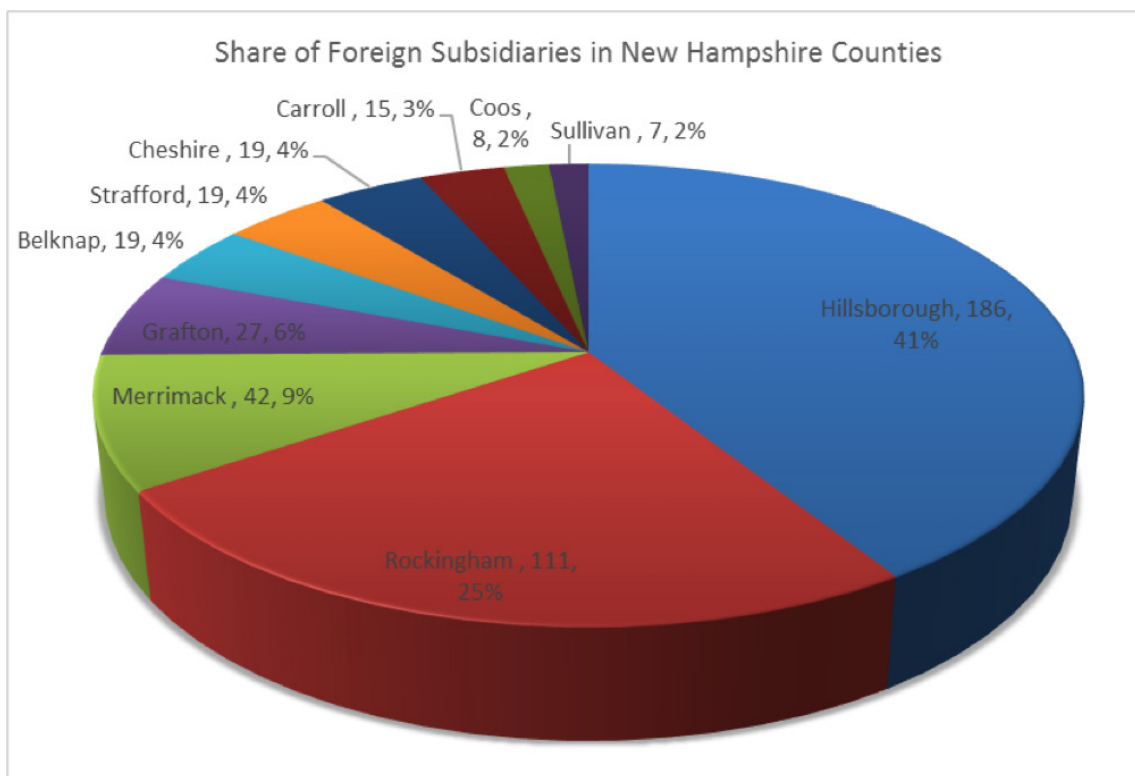


# Country of Origin Analysis

## Distribution of Countries of Origin for Foreign Direct Investment across Counties Reveals Geographic Agglomeration of Foreign Firms in New Hampshire

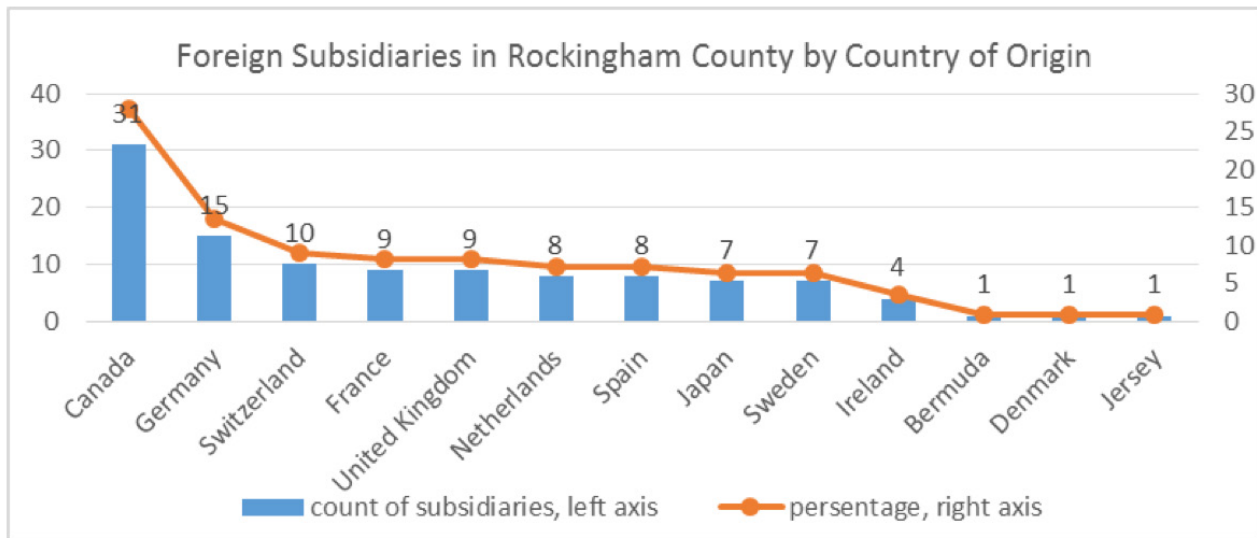
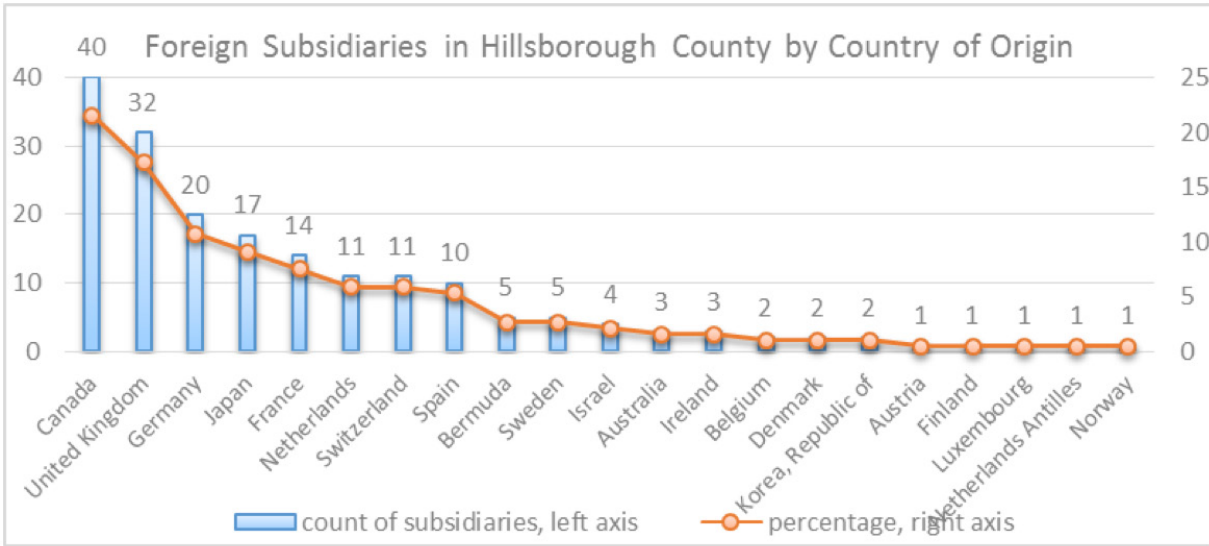
Foreign direct investment (FDI) takes place in all of the 10 counties of New Hampshire[i]. The level of FDI presence in terms of the count of foreign subsidiaries, however, significantly varies, with a decreasing pattern from north to south, and from east to west. The two southernmost counties, Hillsborough and Rockingham, predominately outperform all other counties by capturing 41 percent and 25 percent of the total number of foreign subsidiaries, respectively. The three inner counties, namely Merrimack, Grafton and Belknap, follow their southern counterparts in the rank and, in total, the three counties share 19 percent of all foreign firms in New Hampshire. The northeastern (Coos and Carroll) and the southwestern (Cheshire and Sullivan) parts of New Hampshire are the least represented by FDI, having 5 percent and 6 percent of state's foreign subsidiaries.

The distribution pattern of FDI across counties reveals a notable geographic cluster of foreign firms in the Nashua-Manchester-Portsmouth economic delta along the New Hampshire-Massachusetts border (centered on Boston) and agglomeration spillover towards the inner center of the state. The policy implication of this finding highlights coordinating FDI promotion policy across counties to increase the overall pool of FDI in the state, rather than encouraging local competition over a largely fixed pool of aggregate FDI (Wu and Burge, 2017).[ii] Efforts to attract new FDI might give priority to locating them in the southern region where the FDI cluster is prevailing and facilitate spillovers of foreign investment from the south to the north.

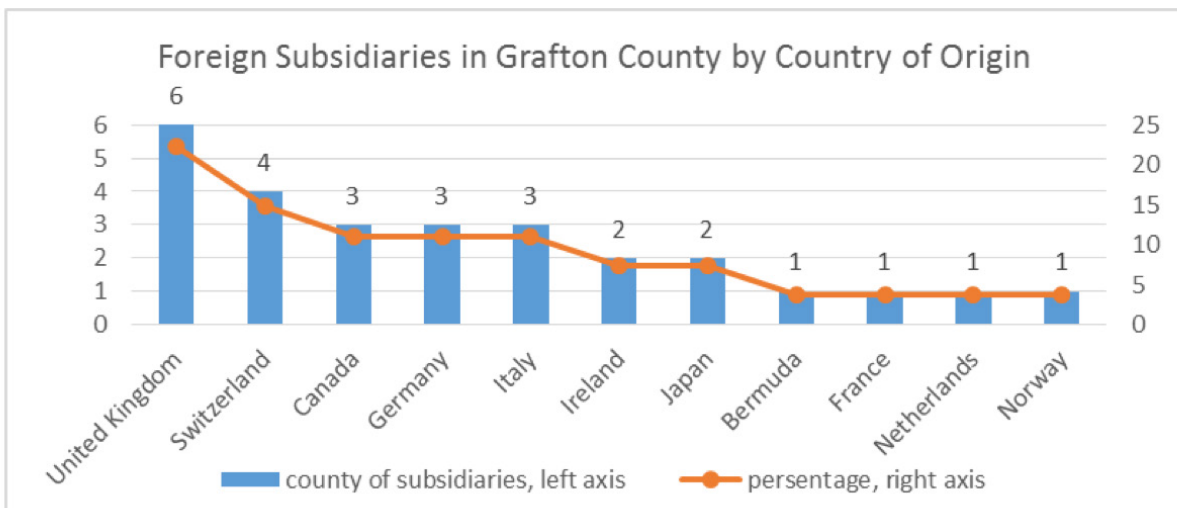
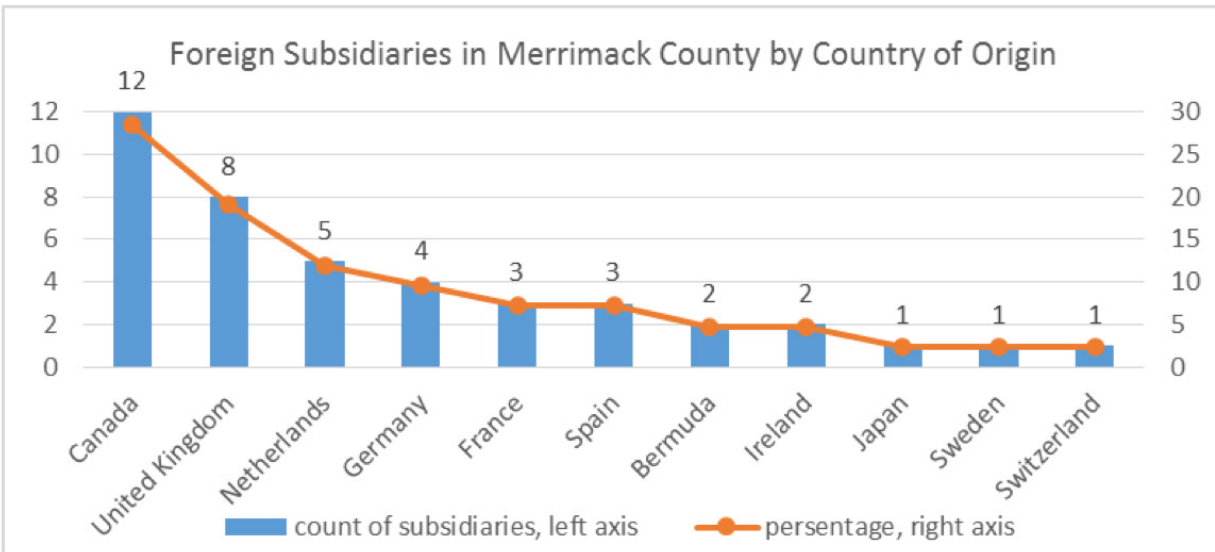




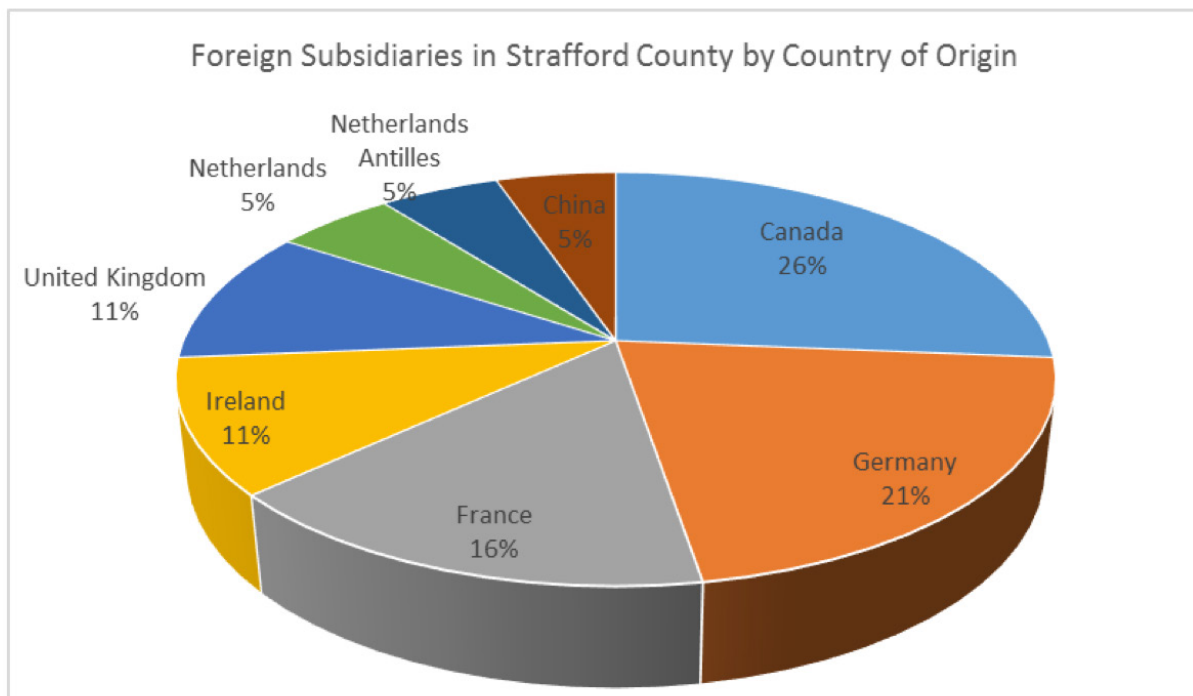
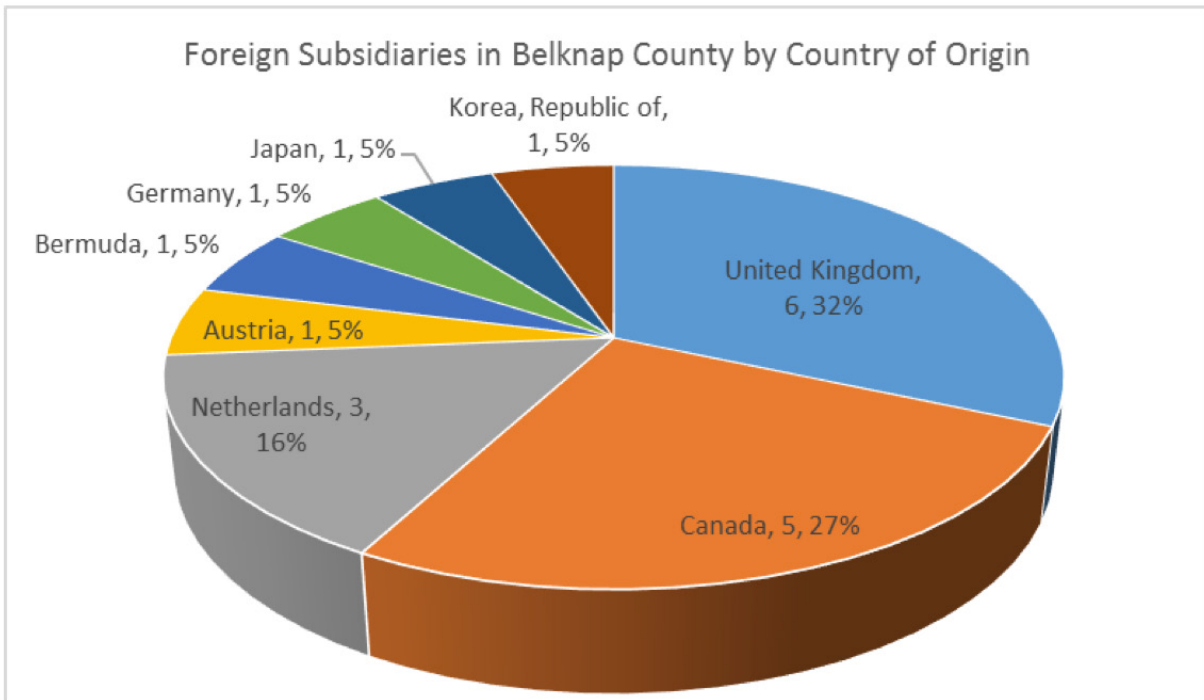
Hillsborough County attracts FDI from 21 countries in Europe, East Asia, Middle East and Australia. The leading countries of origin for FDI in this county (and their share) are Canada (22 percent), United Kingdom (17 percent), Germany (11 percent) and Japan (9 percent). Rockingham County has a smaller number of countries of FDI origin (13 countries) than Hillsborough, and its top 5 FDI sources (Germany, 14 percent; Switzerland, 9 percent; France, 8 percent; United Kingdom, 8 percent) are all European countries except for Canada (28 percent).



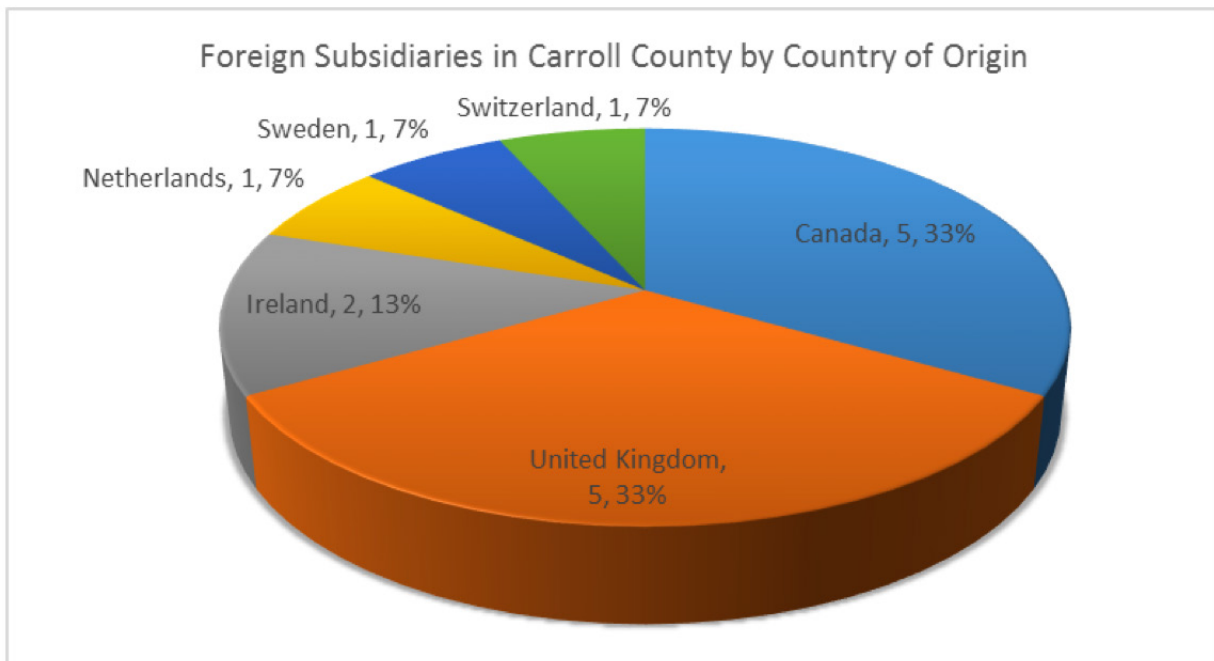
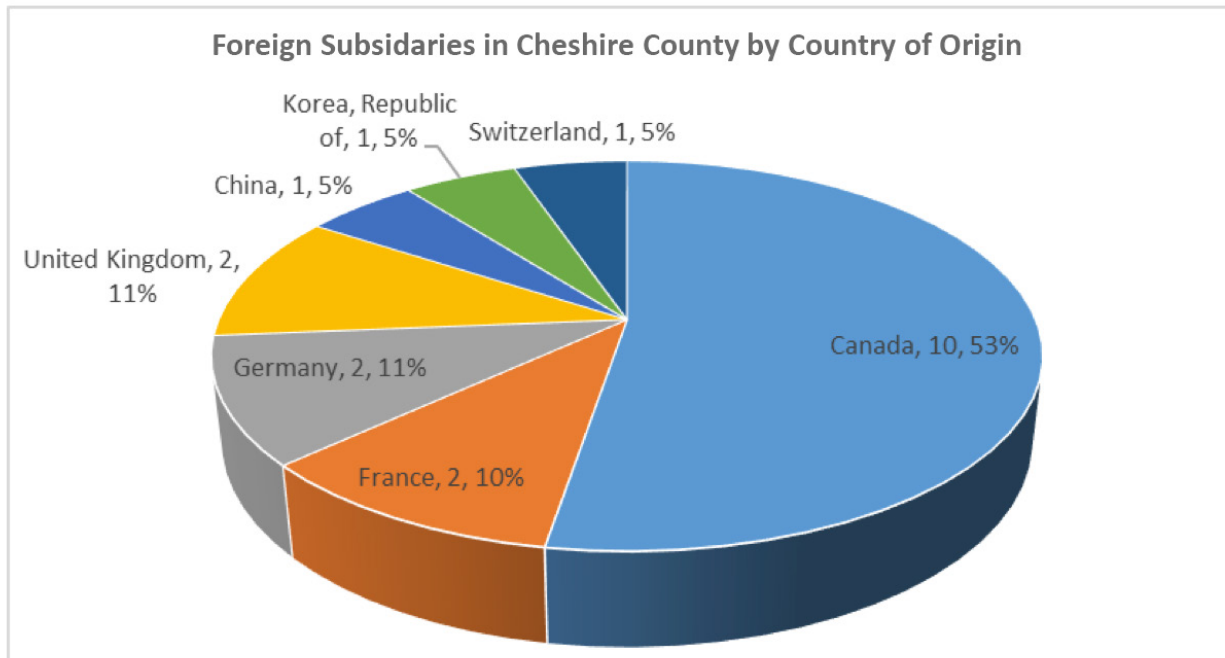
The adjacent Merrimack Country and Grafton Country are in the geographic center of the state and both contain FDI from 11 foreign countries. The composition and distribution of foreign subsidiaries among the origins is similar between the two counties, but in the former county the top 3 countries of origin are Canada (29 percent), United Kingdom (19 percent) and Netherlands (12 percent), while in the latter county they are United Kingdom (22 percent), Switzerland (15 percent) and Canada (11 percent).



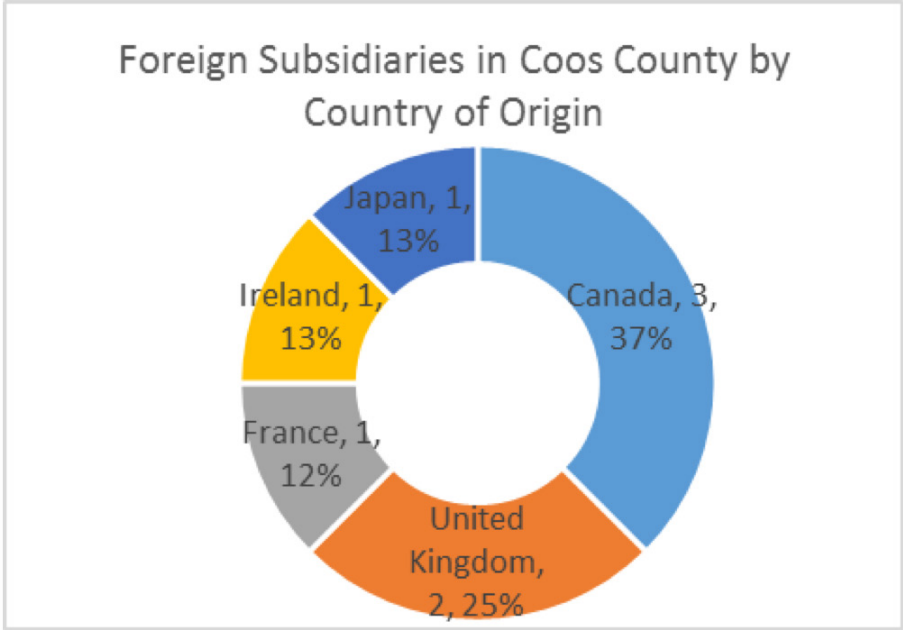
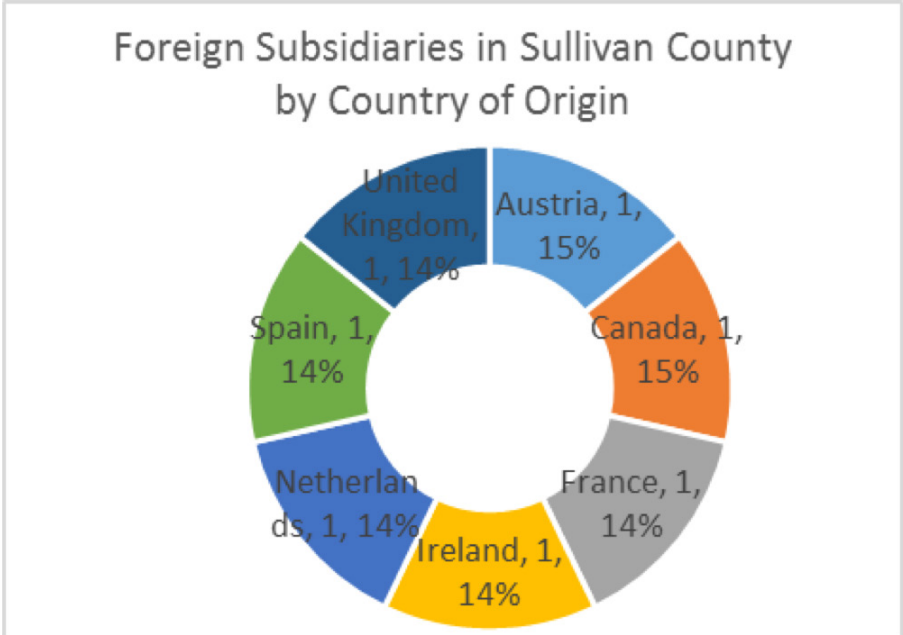
Belknap County and Strafford County both have 19 foreign subsidiaries whose parent companies are located in 8 countries. United Kingdom (32 percent), Canada (26 percent) and Netherlands (16 percent) lead other 5 countries (including two East Asian countries, Japan and Korea) in Belknap, while Canada (26 percent), Germany (21 percent) and France (16 percent) lead the other 5 (including one East Asian country, China) in Strafford.



Cheshire County's FDI are predominately from America's northern neighbor, Canada, who individually accounts for over half of all total foreign subsidiaries. It is worth noting that, Chinese and Korean multinationals also operate subsidiaries in this county. In comparison, countries of origin for foreign firms in Carroll County are more evenly distributed among Canada and other 5 European countries.



Coos County and Sullivan County both have less than 10 foreign subsidiaries. The former has FDI from two leading countries of origin, namely Canada (37.5 percent) and United Kingdom (25 percent), as well as Japan. In the least FDI-represented county, Sullivan, FDI origins are evenly shared by Canada and 6 other European countries.



**Endnotes**

[i] The sample for the analysis presented in the three chapters of origin analysis contains a total of 453 foreign subsidiaries. This varies slightly from the foreign subsidiaries’ sample which contains 447 subsidiaries in other parts of the report, as more data was collected for the purpose of origin investigation.

[ii] Wu, C. and G. Burge. 2017. [Competing for Foreign Direct Investment: The Case of Local Governments in China](#). Article first published online (March 2017) at *Public Finance Review*.

# Conclusions

## Mapping the Future of Foreign Direct Investment in New Hampshire

Foreign direct investment (FDI) strengthens international relations and expands economic ties with trade partner countries and global supply chains. Foreign direct investment in New Hampshire is an important driver of the state's development. Foreign firms bring contributions to many industries and connect our state to the global economy. Foreign direct investment has extraordinary potential to contribute to future growth of the state's economic output and to add ultimate value to local buyers and consumers.

Foreign firms have a presence across New Hampshire's counties and many industries. Extant research revealed that foreign firms tend to agglomerate around a region in order to share the pool of resources and to strengthen their bargaining power[i]. Our study shows the locations and industries where the presence of foreign subsidiaries is more prevalent. The distribution pattern reveals a notable geographic cluster of foreign firms in the Nashua-Manchester-Portsmouth economic delta along the New Hampshire-Massachusetts border (which is within the economic metropolitan area centered on Boston) and agglomeration spillover towards the inner center of the state. The policy implication highlights coordinating FDI promotion policy across counties to increase the overall pool of FDI in the state, rather than encouraging local competition over a largely fixed pool of aggregate FDI.[ii]

The report also infers the areas where more efforts can be placed in order to attract more direct investment based on the FDI Origin Index, the FDI Employment Impact Index, and the FDI GSP Index.[iii] The predominant regions of origin for FDI are Canada, Europe, and East Asia. The international relations between New Hampshire and Europe (and Canada) will continue to be strong, as reflected by the large volume of trade and direct investment in the recent years. In East Asia, Japan and Korea are important sources of FDI and employers of New Hampshire workers. China is currently not among top contributors of FDI, but given the significant growth of Chinese economy and the upgrade of Chinese economic structure from manufacturing to service and high-tech industries, the demand for overseas expansion by Chinese multinationals is growing. Australia and Middle East are also prospective growing point for FDI in New Hampshire.

**Potential of FDI Based on Indices of Origin,  
Employment Impact and Gross State Product Impact**

<b>Country of Origin</b>	<b>FDI Origin Index</b>	<b>Country of Origin</b>	<b>FDI Employment Index</b>	<b>Country of Origin</b>	<b>FDI GSP Impact Index</b>
Germany	674.9	Germany	32149.0	Germany	9150.0
Canada	276.4	France	21478.7	Canada	8011.2
Switzerland	256.4	Canada	21355.9	France	5292.8
France	231.5	Japan	14555.1	Japan	4889.6
Italy	200.0	United Kingdom	12229.7	United Kingdom	2889.1
Netherlands	173.7	Switzerland	11856.8	Spain	2604.0
Sweden	169.4	Spain	8016.1	Switzerland	2540.7
Norway	133.3	Sweden	6901.8	Sweden	1747.5
Japan	121.8	Ireland	4194.2	Netherlands	1592.4
Ireland	114.1	Israel	3611.2	Korea, Republic of	1275.9
Jersey	100.0	Belgium	2461.1	Ireland	1230.6
United Kingdom	71.5	Netherlands	2419.5	Bermuda	751.2
Israel	52.5	Korea, Republic of	1455.1	Belgium	714.9
Austria	41.2	Netherlands Antilles	891.6	Israel	501.8
China	41.0	Bermuda	591.6	Italy	141.0
Netherlands Antilles	40.0	Norway	550.0	Netherlands Antilles	104.5
Korea, Republic of	16.7	Italy	470.0	Norway	104.0
Bermuda	13.3	Jersey	450.0	Austria	93.8
Belgium	9.3	Austria	441.4	Denmark	88.7
Australia	7.4	China	225.6	Finland	55.4
Spain	7.0	Denmark	219.5	Jersey	34.9
Denmark	3.2	Finland	159.1	China	16.4
Finland	2.0	Australia	70.9	Luxembourg	5.3
Luxembourg	0.2	Luxembourg	18.3	Australia	4.0

While foreign firms are concentrated in Hillsborough and Rockingham counties, they are operating in all counties. Some firms are among the largest employers in their respective counties and many add to the small business and entrepreneurial tapestry. It is interesting to notice that even the least FDI-represented counties, such as Coos and Sullivan, attract FDI from a variety of countries of origin including non-dominating countries. Therefore, an opportunity may consist in increasing foreign firms' presence in counties in central and northern New Hampshire.

Foreign firms have a strong presence in financial services across New Hampshire's counties, a sector identified as one of our region's strongest job-generating, growth-producing industries. In more than half of the industry sectors, foreign subsidiaries are present with at least two of the main value chain activities of producer, distributor or service provider. This indicates good potential for other foreign firms to find partners and for the development of or integration in international supply chains. The presence of foreign firms at various stages of supply chains strengthens interconnectivity and may encourage other companies to invest in our state.

Foreign firms have a presence in many industries, meaning that there are opportunities for new foreign firms to find home-based or international partners in most New Hampshire's industries and sectors. This aspect is a good leverage for promoting our state to international businesses. The top 3 industries where New Hampshire foreign firms operate are: finance and insurance; retail trade; and manufacturing. These industries fueled recent economic output growth. This supports the idea that foreign subsidiaries are participating and contributing to current and future economic development.

Foreign investment in manufacturing already has meaningful contributions to New Hampshire and it could play an important part in moving forward the competitiveness of this productive sector in our state. As the largest recipient of FDI in the US, manufacturing holds promise for New Hampshire. In terms of foreign firms' numbers, manufacturing ranks third as the industry of choice in the state. The presence of foreign manufacturers in many industries brings opportunities for further investments, new partnerships and new businesses. As manufacturing jobs are starting to increase, skilled labor and R&D investments should attract new companies. Foreign investors get many benefits by operating in the United States.[iv] Among the motives for investing in US manufacturing are skilled workforce availability and proximity to markets or customers. Business climate, infrastructure and government support are also reasons for investments. These aspects are those that impact New Hampshire's attractiveness as a location of manufacturing foreign investment.

According to a recent study by Bloomberg, New Hampshire is the 12th most innovative state in the country.[v] This is likely a good aspect for the promotion of the state as an attractive FDI location. Our state benefits from strong intellectual property protections and a robust regulatory system. In addition to these merits, a highly educated workforce and the development of research centers are also meaningful aspects for the expansion of manufacturing.

Foreign establishments are making a difference in advanced industries. New Hampshire foreign subsidiaries play a role in employing in and increasing demand for STEM occupations. Foreign subsidiaries in high-tech industries not only support high-wage jobs but also make contributions through innovations and R&D spending. The attractiveness of our state as a location of choice for foreign firms is tied to the growth of viable high-tech industries.

Investment by foreign companies has been gaining in value in recent years and is an important job generator. US employment tied to FDI fared better in the aftermath of the recession than did employment in general. This demonstrates the power that long-term foreign investment can bring to New Hampshire's economy.[vi] The important presence of small foreign firms means that small local businesses and new firms may find it easy to connect with them. Small firms partner as equals and share some of the same risks and challenges.

A state and county's attractiveness to expanding businesses, both foreign and domestic, is fundamental to its economic growth[vii]. Among the elements that draw business activity are quality of workforce, transportation infrastructure, supply chain considerations, the business and regulatory environment, the availability of suitable real estate, and quality of life. Promoting these aspects is an effective way to attract new firms to our state.



We end by placing the New Hampshire Foreign Direct Investment Report inside the context of expanding FDI contributions to our state. Bloomberg's discussion of the most innovative states in the US illustrates that universities and strong research are key to the innovativeness of local economies, which in turn attracts investments[viii]. Schools and local universities play a role in bolstering a highly-educated and skilled workforce, in providing technical assistance to foreign firms and, not in the least, in supporting FDI-related planning and research.

## Endnotes

[i] Rogers, C. and C. Wu. 2012. Employment by foreign firms in the U.S.: Do state incentives matter? *Regional Science and Urban Economics*, 42(4), 664-680.

[ii] Wu, C. and G. Burge. 2017. [Competing for Foreign Direct Investment: The Case of Local Governments in China](#). Article first published online (March 2017) at *Public Finance Review*

[iii] Details on the construction and interpretation of these FDI indices are discussed in the chapter titled Origin Analysis: Europe, Canada and East Asia Drive the Foreign Direct Investment in New Hampshire.

[iv] SelectUSA, FDI in Manufacturing, Advancing U.S. Competitiveness in a Global Economy, 2017. <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t00000000gKi>.

[v] Jamrisko, M. and Lu, W., Here Are the Most Innovative States in America- Massachusetts, California take the top spots in Bloomberg's index, January 07, 2016. <https://www.bloomberg.com/news/articles/2016-01-07/here-are-the-most-innovative-states-in-america>.

[vi] Buckley, P. et al, Deloitte Insights, The Geography of Jobs, Part 3: Mapping the Effects of International Investment Flows, January 26, 2015. <https://www2.deloitte.com/insights/us/en/economy/issues-by-the-numbers/effects-of-foreign-direct-investment-us.html>.

[vii] Idem iv.

[viii] Idem iii.

# Terminology

## **Economic Output**

Economic output is the quantity of a product that a company, sector, or economy can produce over a limited period of time.[i] In this report, economic output is considered to be the total value of all goods and services produced in an economy.

## **Foreign Direct Investment (FDI)**

FDI is an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. The investor's purpose is to gain an effective voice in the management of the enterprise. The foreign entity or group of associated entities that makes the investment is termed the "direct investor". The unincorporated or incorporated enterprise—a branch or subsidiary, respectively, in which direct investment is made—is referred to as a "direct investment enterprise". Some degree of equity ownership is almost always considered to be associated with an effective voice in the management of an enterprise; a threshold of 10 per cent of equity ownership qualifies an investor as a foreign direct investor.[ii] In this report, FDI is defined as investments of companies from outside the US into firms operating in New Hampshire.

## **Foreign Parent Company**

A parent company is a company that controls other, smaller businesses by owning an influential amount of voting stock or control.[iii]

## **Foreign Subsidiary**

A foreign subsidiary is a partially or wholly owned company that is part of a larger corporation with headquarters in another country.[iv] When the subsidiary operates in a different country, it is called a foreign subsidiary. [v] In this report, foreign subsidiaries are signified to be firms that are part of companies with headquarters in a country other than US. For readability, this report uses the terms "foreign subsidiaries" and "foreign firms" interchangeably. "Firms" are used to signify the same, as understood in the context of the study.

## **Multinational Company**

A multinational company is a company with subsidiaries or manufacturing bases in several countries.[vi]

## **R&D**

Research and development (R&D) refers to the investigative activities a business conducts to improve existing products and procedures or to lead to the development of new products and procedures.[vii]

## **Supply Chain**

A supply chain is a network between a company and its suppliers to produce and distribute a specific product. The supply chain represents the steps it takes to get the product or service to the customer.[viii] The supply chain comprises the flow of all information, products, materials and funds between the different stages of creating and selling a product. The supply chain includes all functions involved in receiving and filling a customer request. These functions include product development, marketing, operations, distribution, finance and customer service.[ix]

## **The North American Industry Classification System (NAICS)**

The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.[x]

## The North American Industry Classification System (NAICS) Codes

The NAICS industry codes define establishments based on the activities in which they are primarily engaged. NAICS codes are also used for administrative, contracting, and tax purposes. NAICS is production oriented (not product oriented) and categorizes businesses with others that have similar methods of production.[xi] NAICS is a 2- through 6-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and the more digits in the code signify greater classification detail. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry.[xii] This study uses 2, 3, 4 and 6-digit NAICS codes.

## Value Chain Activity

Value chain activities are interlinked value-adding activities that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage for a company.[xiii] Primary activities create the product or service, deliver and market it, and provide after-sale support. The categories of primary activities are inbound logistics, operations, outbound logistics, marketing and sales, and service. Support activities provide the input and infrastructure that allow the primary activities to take place. The categories are company infrastructure, human resource management, technology development, and procurement.[xiv] The study takes a general view on value chain and uses the main value chain activity to categorize foreign subsidiaries as producers, distributors or service providers.

## Endnotes

[i] Definition quoted from [https://financial-dictionary.thefreedictionary.com/Output+\(economics\)](https://financial-dictionary.thefreedictionary.com/Output+(economics))

[ii] Definitions of FDI are contained in the Balance of Payments Manual: Fifth Edition (BPM5) (Washington, D.C., International Monetary Fund, 1993) and the Detailed Benchmark Definition of Foreign Direct Investment: Third Edition (BD3) (Paris, Organisation for Economic Co-operation and Development, 1996). The definition in this report is extracted from [http://unctad.org/en/Pages/DIAE/Foreign-Direct-Investment-\(FDI\).aspx](http://unctad.org/en/Pages/DIAE/Foreign-Direct-Investment-(FDI).aspx).

[iii] Definition from <https://www.investopedia.com/terms/p/parentcompany.asp>

[iv] Definition quoted from <http://www.businessdictionary.com/definition/foreign-subsiidiary-company.html>

[v] Excerpts from <https://stats.oecd.org/glossary/detail.asp?ID=3315>

[vi] Definition from <http://lexicon.ft.com/Term?term=multinational-company>

[vii] Definition from <https://www.investopedia.com/terms/r/randd.asp>

[viii] Adapted from <https://www.investopedia.com/terms/s/supplychain.asp>.

[ix] Excerpt from <https://www.investopedia.com/ask/answers/043015/what-difference-between-value-chain-and-supply-chain.asp>

[x] Definition quoted from <https://www.census.gov/eos/www/naics/>

[xi] Definition from <https://www.sba.gov/contracting/getting-started-contractor/determine-your-naics-code>

[xii] Description from <https://www.census.gov/eos/www/naics/faqs/faqs.html#q5>

[xiii] Excerpt from <http://www.businessdictionary.com/definition/value-chain.html>

[xiv] Quote from Porter, M. E. (1989). From competitive advantage to corporate strategy. In Readings in strategic management (pp. 234-255). Palgrave, London. Available at [http://people.tamu.edu/~v-buenger/466/Comp\\_Adv\\_to\\_corp\\_strat.pdf](http://people.tamu.edu/~v-buenger/466/Comp_Adv_to_corp_strat.pdf)

# About the Authors



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Dr. Roxana Wright is Professor of Management at Plymouth State University in Plymouth, New Hampshire. Professor Wright teaches strategy and operations management. She is passionate about translating current research and theory into applied consulting projects in which students provide ideas and solutions to organizations. Dr. Wright has authored over 30 refereed publications and conference presentations, on topics such as firm performance, supply chain strategies, adaptation strategies of multinational enterprises, terrorist networks analysis and disruption, and applying complex systems research to international development. Her most recent work combines business and economics analysis to map and analyze New Hampshire's globalization in terms of foreign direct investments. Dr. Wright received her B.S. in Accounting and Management Informatics from Transilvania University of Brasov (Romania), a Master of Business Administration from Plymouth State University, and a Doctorate of Business Administration in International Business from Southern New Hampshire University. She can be contacted at Plymouth State University MSC 27, 17 High Street, Plymouth, NH 03264. E-mail: [rwright01@plymouth.edu](mailto:rwright01@plymouth.edu).



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# Disclaimer

The findings of the study are based solely on our data samples. The analysis relies on the accuracy of data reported by Uniworld Online and the exactness of information provided by the references used in the report. The outcomes represent a snapshot of the current situation. The terminology, the terms and the context of the analysis are as defined by the authors. While we are confident that the report provides meaningful information to executives and organizations, our analysis is not driven by any agenda beyond what is stated in the report.

