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### A Study of the Effects of Foreign Direct Investment on the Economy of the State of New Hampshire Since 1973

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# Thesis

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*A Study of the Effects of Foreign Direct Investment on the Economy of the State of New Hampshire Since 1973*

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May 1, 2014

## Abstract

The purpose of the thesis is to determine the impact that foreign direct investment has had on New Hampshire. New Hampshire as a state was impacted far less severely than much of the rest of the country, which could be considered surprising given the relatively high cost of housing in the state. I believe that part of what made New Hampshire more recession resistant is having the right foreign companies providing employment. To do this, I will be looking at FDI as a percentage of GDP over the previous 40 years and looking for a correlation between a higher percentage and national recession. I will also look at specific foreign corporations that lend the most to the New Hampshire economy to obtain a more specific view of the impact such companies have on both their communities and the state as a whole. This data could prove useful to New Hampshire as well as other states looking to protect against recession, as well as corporations looking to justify FDI to various governments.

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## Introduction

Foreign Direct Investment, henceforth referred to as FDI, plays a small but significant role in the economy of NH, and may explain NH's lower average unemployment rate when compared to the rest of the country. Whether or not FDI has saved NH from the worst of the Great Recession, it deserves a closer look than researchers have given it in the past. I felt that FDI had to do more than simply provide an alternative for employment and contribute to infrastructure in developing nations. I felt that it instead acts as an economic stabilizer and strengthener in any area in which it exists.

We will be taking a look at the effects which FDI has on the NH economy in both monetary format and from the point of view of employment. Subsequently to this we will focus on FDI employment in Massachusetts, Maine, and the United States as a whole, and how they compare to NH. Finally we will take a close, brief look at the top five foreign companies within the state of NH in order to get a better idea as to the kind of companies who choose to set up in NH.

## Methodology

I broke down the research into four categories to facilitate data collection and analysis. Initially I had hoped to collect mostly financial data but due to legal constraints on the availability of aspects such as corporate compensation of employees I was forced to use employee counts and the federal average per employee salary for foreign owned companies. The phases are as follows:

### Phase 1

I began by compiling data from the New Hampshire Department of Resources and Economic Development (DRED), the NH Department of Employment Security (NHES), as well as the US Bureau of Economic Analysis and Labor Statistics (BEA and BLS respectively). The BEA provided the bulk of my data, giving the number of employed both as a whole and specifically to Foreign owned entities, the NH State GDP and gross FDI wages for the one year it was recorded. The BLS provided the unemployment rate. NHES provided median income for NH. I then analyzed the data, looking at FDI as a percentage of GDP for the state of New Hampshire, as well as employees of foreign owned companies as a percentage of the total number of people employed within New Hampshire, then delved deeper to look at unusual patterns, particularly those clustered around recessions and booms. This preliminary analysis was key to determining the direction of the paper, as it provided insight into the general impact of FDI on the state.

### Phase 2

The next step was to look at the companies with the largest FDI in New Hampshire and examine the direct impact upon the communities they inhabit. For this I required data from the SEC's EDGAR database, the corporations themselves, or from the cities and the state. The

purpose here was to get a more detailed picture of the individual companies' impact upon the state on both a macro and microeconomic scale. This is particularly important as it can identify correlations and causality in particular economic effects, which could then be used to both re-analyze the previous data and allow me to identify important differences between the FDI in New Hampshire and other states. The list of the largest foreign companies in the state was provided by the New Hampshire Business Review's yearly "Book of Lists."

### Phase 3

Next, I collected the same data from phase one in reference to the other New England states, using sources relevant to each individual state's economic policies. This portion of the project was less in depth than in phase one due to time limitations, focusing only on employment numbers, which proved to be more available. I again analyzed the data regarding FDI's impact upon the GDP of each state, and attempted to identify patterns in how the percentage changes during periods of recession or boom in order to compare it to the data from phase one. I also used patterns found in phases one and two to find any discrepancies in correlation and causation regarding data between states in hopes of finding important differences in FDI function in each state.

### Phase 4

Finally, I collated all relevant data and expanded upon any interesting findings in an attempt to understand important differences between New Hampshire's FDI and that of the states in the rest of the region. I also developed possible explanations for any unique occurrences and discrepancies within my findings.

### Estimations and Other Important Data Problems

The largest issue that arose with data collection led to the largest assumption in all of my research. This issue was with data relating to gross wages paid in the state of New Hampshire by all foreign owned entities. Due to a series of legal, regulatory, and budgetary reasons this data is only collected once every five years and was only released to the public once, in 2002. Thus I was forced to use gross wages paid by foreign owned entities in the entire US. Once divided by the number of people employed by foreign owned entities, I was able to arrive at a mean per capita income for those employed by foreign companies. While NH mean income is slightly below the average for the entire US initially and then rises above the national average, I felt that this data was close enough to be relevant to my research, although I would like the opportunity to recalculate using more accurate figures in the future. In addition to this, foreign wage data stops after 2006 when the BEA changed their reporting style regarding FDI. Non-Wage benefits stop after this point, as part of the calculation requires wage data. As such, I added compensation for both the State of NH in general and foreign entities in specific, with per capita compensation being calculated using the same method as per capita wage. Compensation is defined by the BEA as:

*“The income received from an employer as remuneration for work. It includes cash payments, payments-in-kind, and employer expenditures for employee benefit plans including those mandated by government statute, such as employer contributions for government social insurance (BEA interactive data).”*

Of a less important note, New Hampshire’s FDI employment numbers for 2005 and 2006 are redacted and listed as a value \$25,000-\$49,999. As such, I estimated them by taking values that were 1/3 and 2/3 the distance between 2004 and 2007. This resulted in a steady decline which is unlikely to be true, as both years are pre-recession. The data for 2005 and 2006 in Maine and Massachusetts may also be erroneous, but for different reasons. During these two years the BEA was altering how they counted jobs created by foreign owned companies and both states see an unusual dip in FDI employment numbers in both absolute terms and relative to total state employment. The year 2012 for all three states is also an estimate as the BEA has yet to release the relevant data on that year. For simplicity, I decided to make 2012=2011. While this data is undoubtedly incorrect, it is close enough to show the continued importance of FDI and was not used to calculate any other figures.

Different data sets start in different years as government agencies failed to collect the relevant data prior to the first year listed. As such 1977 is the earliest year that all collected data is available. Due to this gap, some calculated data is irrelevant before 1978, particularly data that compares to prior years. Such data is usually represented by zeroes or an error message in the spreadsheet. In addition, all years prior to 1997 I was required to use the BEA archive for Employment and compensation data. The specific data sheets I used were G1 for federal data and G7 for state data. These forms are F1 and F7 respectively prior to 1992. In addition I had to use archival data for US FDI wages for all years as this data was not available on the BEA interactive data. The wage data also stops after 2006, leaving this portion incomplete and thus requiring estimates for the remaining years.

## Calculations

The following formulas were used to calculate various columns of data:

### GDP Data

**Yearly growth in GDP**= GDP for NH(Current year- prior year/Prior year)

**Gross NH wages (in millions)**= Per Capita Income \* Number of Employed (NH)/ 1,000,000

**Yearly Growth in Gross Wages**=Gross NH Wages (Current year- prior year/Prior year)

**Growth in NH Per Capita Income**= NH Per Capita Income (Current year- prior year/Prior year)

**FDI Per Capita Income**=FDI Gross Income/Total US FDI Employees\*1,000

**Growth in FDI Per Capita Income**=FDI Per Capita Income (Current year- prior year/Prior year)



**Gross NH FDI Wages (in Millions)**=FDI Per Capita Income\*Number of Employed by Foreign (NH)/1,000,000

**Growth in NH FDI Wages**= Gross NH FDI Wages (Current year- prior year/Prior year)

**Foreign Wages as a % of Gross Wages**= Gross NH FDI Wages/Gross NH Wages

**FDI Wage Multiplier**=FDI Per Capita Income/NH Per Capita Income

**Net Change Row**=Column data range limits (last-First) usually row 35-row 6. GDP is row 41-row 2

**Average row**= Column Data Range limits (average of range) usually rows7 through 35. GDP Growth is average of rows 3 through 41

**Non-Income Monetary Data**

**Per Capita NH Compensation**= Gross NH Compensation/Number of Employed \* 1,000,000

**Growth in Per Capita NH Compensation**=Per Capita NH Compensation (Current year- prior year/Prior year)

**FDI Per Capita Compensation**= FDI Gross Compensation/Total US FDI Employees

**Yearly Growth in FDI Per Capita Compensation**= FDI Per Capita Compensation (Current year- prior year/Prior year)

**Gross NH FDI Compensation (in Millions)**= Number of Employed by foreign (NH)\*FDI Per Capita compensation/1,000,000

**Growth in NH FDI Compensation**=Gross NH FDI Compensation (Current year- prior year/Prior year)

**Foreign Compensation as a % of Gross NH Compensation**=Gross NH FDI Compensation/Gross NH Compensation

**FDI Compensation Multiplier**= Per Capita FDI Compensation/ Per Capita NH compensation

**Per Capita Non-Wage Benefits**=Year n (Per Capita NH Compensation-Per Capita Income)

**Growth In Per Capita Non-Wage Benefits**=Per Capita Non-Wage Benefits (Current year- prior year/Prior year)

**Per Capita Foreign Non-Wage Benefits**=Year n (Per Capita FDI Compensation- Per Capita FDI Income)

**Growth in Per Capita Foreign Non-Wage Benefits**= Per Capita Foreign Non-Wage Benefits (Current year- prior year/Prior year)

**Benefits Multiplier**=Per Capita Foreign Non-Wage Benefits/Per Capita Non-Wage Benefits

**Net Change Row**=Column data range limits (last-First) usually row 35-row 6. Compensation Columns are row 40-row 7.

**Average row**= Column Data Range limits (average of range) usually rows 7 through 35. Compensation Columns are rows 7 through 40. Growth in compensation columns, formulas are (net change in relevant compensation/beginning compensation+1)to the power of 1/number of periods of data)

**Employment Numbers (Relevant Region)**

**% Change in Employment from Previous Year**= # of Employed (Year n -Year (n-1))/year (n-1)

**Foreign % of Total Employed**= # Employed by Foreign/ # of Employed

**% Change in Foreign Employment from Previous Year**= # Employed by Foreign (year n – year (n-1))/year (n-1)

**% Change in Foreign Employment from Previous Year, With Smoothing**= % Change in Foreign Employment from Previous Year (year (n-1) + year n+ year (n+1))/3

**Foreign Employment %**= Foreign % of total Employed \* Employment %

**% Change in Foreign Employment % from Previous Year**= Foreign Employment % (year n – year (n-1))/year (n-1)

**% of Job Growth Attributable to FDI**= # Employed by Foreign (year n-year (n-1))/ absolute value of # of Employed (year n-year (n-1))

**Net Change Row**= Column data range limits (row 40-row 6)

**Average**= Column data range limits (average: row 7 through 40)

**Average % change in employment and FDI employment**=(net change in relevant employment/beginning employment+1)to the power of 1/number of periods of data)

**Average percentage of job growth attributable to FDI**= net change #employed by FDI/# of employed

**Standard deviation row**= standard deviation on column data range limits (usually row 6 through row 40 except those containing cells with no data)

**US Compensation**

**Per Capita US Compensation**=gross US compensation (in millions)/Total US Employment\*1000000

**Per Capita Compensation % Yearly Change**= per capita compensation (year n-year (n-1))/year (n-1)

**FDI Per Capita Compensation % Yearly Change**= FDI per capita compensation (year n-year (n-1))/year (n-1)

**Net Change Row**= Column data range limits (row 40-row 6)

**Average Row**= (net change in relevant compensation/beginning compensation+1) to the power of 1/number of periods of data)

## Results

This section will discuss collected and analyzed data free of opinion or conjecture, divided into three parts: 1) generalized economic data relating to NH; 2) More specific data relating to the top companies within the state; 3) general economic data for MA, ME, and the US in general.

### General Economic Data for New Hampshire

#### Data Relating to GDP

GDP for the State of NH grew from 1973 to 2012 by \$60,524 million from a start of \$4173 million, averaging an annualized average 7.6% growth. Between 1977 and 2006, NH gross wages increased by \$26,812.28 million from \$2716.29 million, with an annualized average growth rate of 8.7%. During this same period, NH FDI gross wages increased by \$1970.53 million from \$108.71 million, and its annualized average growth rate was 11.1%. NH per capita income grew by \$34,797 during this period from a start of \$6,866 and had an annualized average growth rate of 6.5%. During this period the NH FDI per capita income increased by \$37,465.38 from a start of \$13,001.44, with an average annualized growth rate of 4.8%. Between 1977 and 2006, FDI income accounted for an average of 6.09% of gross NH wages.

Between 1977 and 2011, Gross NH Compensation grew by \$33,190.90 million from an initial value of \$3841.30 million, growing at an average annualized rate of 7%. During the same period, Gross NH FDI Compensation grew by \$2920.76 million from an initial value of \$128.85 million, growing at an average annualized rate of 10.5%. During this same period, NH per capita compensation grew by \$43,391.95 from an initial value of \$9709.72, growing at an average annualized rate of 4.88%. During the same period, per capita FDI compensation increased by \$61,212.76 from an initial value of \$15,410.54, growing at an average annualized rate of 4.6%. Between 1977 and 2006 NH per capita non-wage benefits grew by \$2,979.55 from an initial value of \$2,843.72, growing at an annualized rate of 3%. During the same period, NH FDI per capita non-wage benefits increased by \$15,342.27 from an initial value of \$2,409.10, growing at an average annualized rate of 7.4%.

#### Data Relating to Employment

Between 1977 and 2011, total employment in the state grew by 301,769 people, up from a starting number of 395,614. Average yearly growth in employment was 1.60%. During that same period, employment by foreign based companies grew by 31,439 people from a base level of 8361 people. Average yearly growth for foreign employment was 4.34%. On average, foreign employment made up a total of 4.71% of total NH employment during this period, although it accounted for 10.4% of total NH job growth during the period. On the federal unemployment rolls, those employed by foreign owned companies made up an average of 4.71% of all employable people in the state of NH during the period.

#### Data Relating to Employment for Massachusetts

Between 1977 and 2011, total employment in the state grew by 1,220,401 people, up from a starting number of 2,833,405. Average yearly growth in employment was 1.02%. During

that same period, employment by foreign based companies grew by 167,609 people from a base level of 30,326 people. Average yearly growth for foreign employment was 5.64%. On average, foreign employment made up a total of 3.59% of total MA employment during this period, although it accounted for 13.7% of total MA job growth during the period. On the federal unemployment rolls, those employed by foreign owned companies made up an average of 3.39% of all employable people in the state of MA during the period.

### **Data Relating to Employment for Maine**

Between 1977 and 2011, total employment in the state grew by 281,523 people, up from a starting number of 512,788. Average yearly growth in employment was 1.26%. During that same period, employment by foreign based companies grew by 25,887 people from a base level of 5,713 people. Average yearly growth for foreign employment was 4.48%. On average, foreign employment made up a total of 3.63% of total ME employment during this period, although it accounted for 9.2% of total ME job growth during the period. On the federal unemployment rolls, those employed by foreign owned companies made up an average of 3.42% of all employable people in the state of ME during the period.

### **Data Relating to Employment for the US in General**

Between 1977 and 2011, total employment in the country grew by 71,299,500 people, up from a starting number of 105,042,200. Average yearly growth in employment was 1.48%. During that same period, employment by foreign based companies grew by 4,930,789 people from a base level of 1,218,711 people. Average yearly growth for foreign employment was 4.49%. On average, foreign employment made up a total of 3.03% of total US employment during this period, although it accounted for 6.9% of total US job growth during the period. On the federal unemployment rolls, those employed by foreign owned companies made up an average of 2.84% of all employable people in the country during the period.

### **Data relating to Compensation in the US in General**

US per capita compensation in general grew at an average rate of 4.14% while FDI compensation grew at a rate of 4.60%. Per capita compensation increased by \$35,816.93 from a start of \$11,128.86 between 1977 and 2011, while per capita FDI income increased by \$61,212.76 from 15,410.54 during the same period. Total US compensation grew by \$7109.5 billion and total FDI compensation grew by \$452.4 billion.

### **Information Regarding the Five Largest Foreign Companies in NH**

The five foreign companies which employ the most people in NH are the Delhaize Group (Hannaford Brothers) with 4,817, BAE Systems with 4,500, Freudenberg & Co. Kommanditgesellschaft (Freudenberg-NOK) with 1,151, Osram GmbH (Osram Sylvania) with 1,135, and Minebea Co., Ltd. (New Hampshire Ball Bearings Inc.) with 1,028 (NHBR 101). Apart from the Delhaize Group which is a grocery retailer, all of the companies listed are manufacturers, and also manufacture goods meant to be sold both within the United States and

abroad. These five employers accounted 12,631 jobs in 2012, which means that if 2012 had a similar number of FDI jobs, they were responsible for more than 30% of them.

## Discussion

Even before we get in depth, we can see some interesting trends. First is that foreign companies provide pay and benefits greater than that which is provided by companies domestically. This can be seen not only with a look at the compensation multipliers, but also by taking a look at the percentage of NH pay and benefits come from foreign companies compared to the percentage of people in NH who are employed by foreign companies. The second observation is that in every area observed, there was significant growth in foreign employment up until the early to mid-2000's. We also see that the foreign employment played a larger role in NH than it did in MA, ME, or in the US in general.

## GDP and Compensation analysis

Since a perfect comparison between GDP and Foreign investment in the state was not possible, I will instead look at gross income and gross FDI income to determine the effect that FDI has on GDP. The ratio between the two should be roughly equivalent to the ratio of FDI contribution to state GDP and the state GDP itself. That is (Gross FDI Income: Gross Income ~ FDI Contribution to GDP: GDP). From this estimate we can determine that FDI contributed roughly 7.04% of the \$56,103 million dollars in the 2006 NH GDP (\$3,949.65 million), which is the last year we have FDI income data for. If instead we use compensation as our ratio (Gross FDI Compensation: Gross Compensation ~ FDI Contribution to GDP: GDP) by assuming that the amount of benefits that get paid out within the state by all companies is roughly proportionate then we arrive at a 2006 figure of 8.35% (\$4684.6 million) and a 2011 figure of 8.24% of a GDP of \$63,333 million (\$5,218.64 million). Using the full column for compensation ratio we see that between 1977 and 2000 there was a build-up in the percentage of GDP that was FDI, going from a low of 3.35% in 1977 to a high of 9.2% in 2000<sup>1</sup>. Since then the percentage has varied up and down, though between 2003 and 2011 it varied in a range of only .56% peak to trough. 2002 did suffer an unusually low portion of GDP at 6.34% but given that this is the year after the 9/11 attacks, we suspect that this is due to a national hyper-patriotism, and not unique to NH. This hypothesis is supported by US employment data which saw a 5.48% drop in FDI employment nationwide in 2002, the single largest national drop in the dataset including the height of the great recession. Alternatively, this drop could be a combination of market correction for post-recession and an unusual growth in 2000.

Continuing to look at the compensation ratio we see that in every year of a recession, barring 2001 and 2007, FDI compensation went up relative to total compensation, which suggests that FDI is at least somewhat more inflation tolerant than the business community in general. We support this by pointing out that after each recession there is a downward correction

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<sup>1</sup> An anomalous year. See page 13 for possible explanation.

in the compensation ratio, with the exception of the 1980-1982 recession, in which the correction happened in the second year after the recession was over. Together this suggests that FDI demand for workers is somewhat more inelastic than that of the economy as a whole. This would explain why it increases its compensation percentage during a recession but then reduces it once the recession is over. This data is reinforced when you look at employment numbers, although FDI employment is more likely to go down during a recession than the compensation is.

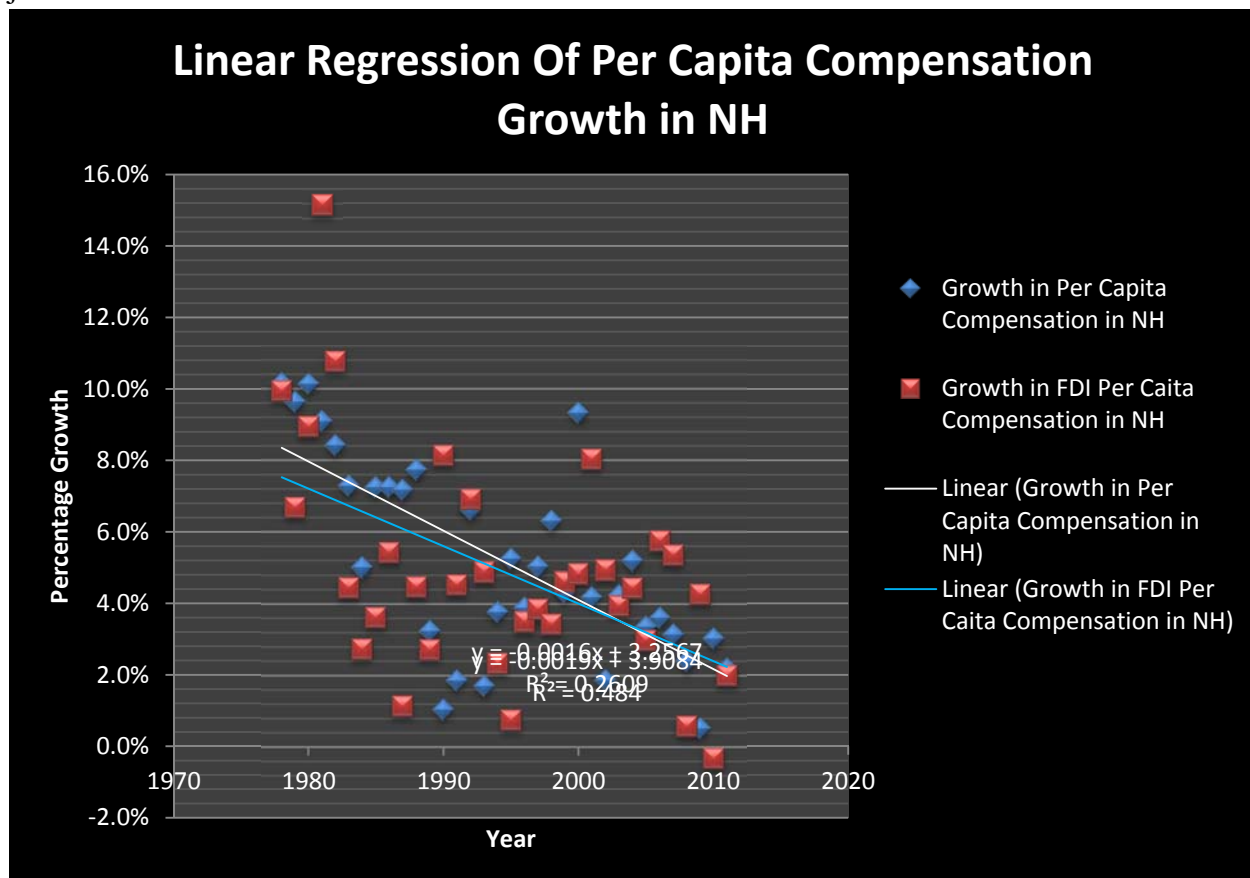
There were several years in which gross FDI compensation increased at a significantly higher rate than gross NH compensation. Among these, the year 1981 stands out for several reasons. The growth for FDI was nearly 3 times higher than for NH in general. Only a small portion was from benefits. Finally, unlike in 2000, where the increase was partly the result of a significant jump in the number of FDI jobs within the state, the majority of the growth came from an increase in per capita FDI compensation. This indicates a shift toward higher paying foreign jobs, and also marks the beginning of what will become an enormous growth in the benefits multiplier.

Switching focus to the FDI wage multiplier, we see that at all points, FDI jobs pay more on average than domestic jobs. This has been trending downward since it started however. The most logical reason for this is that foreign companies set up facilities in the United States in order to have access to the highly skilled workers that reside here, rather than the unskilled laborers, whose domestic jobs persist longer. As the less skilled labor drops out of the labor force or retrains, the wage disparity has decreased, although it has held roughly steady at slightly over 1.2 times median income since the new millennium began. Since this has some similarity to the growth of FDI in the country, it is possible there is some correlation which reduces the wage disparity as FDI becomes more prevalent within the region. Obviously there must be some relationship as the larger a percentage that FDI holds in the GDP, the closer the mean income for the state will be to the mean income of FDI employees. Running a correlation calculation we find that they do in fact have a rough correlation of -0.7685. Since it is unlikely that the foreign wage multiplier will ever be less than 1, it is unlikely that this correlation would remain constant should FDI begin growing as a percentage of GDP again.

If we change focus to FDI non-wage benefits multiplier we see something more interesting, which we did not anticipate. The non-wage benefits multiplier has been growing non-stop since 1977, if a bit unevenly. While benefits make up a smaller portion of total employee compensation than wages, foreign employers inflate the mean benefits package to the point where it is over a quarter of total FDI Compensation, as opposed to less than one eighth of the state mean compensation. The fact that the FDI non-wage multiplier is 3.04 suggests that foreign companies often try to lure more skilled workers by offering better benefits than their domestic competition. Some other possible explanations include a higher percentage of lower paying jobs that have dropped their benefits significantly, thus dragging down the mean benefits for all domestic jobs in NH. Alternatively, there could be state and federal laws which require foreign companies to pay out more than their domestic counterparts would. This last explanation

is the least likely however as this treatment would likely lead to a complaint to the World Trade Organization and I could not find any such case on record.

Some data is slightly misleading out of context. For example, in both the case of wages and compensation, the average yearly percentage of per capita growth is higher for NH in general than it is for FDI specifically. Taken out of context, this could be used to argue that FDI growth is less significant. However, if you look at nominal values, which are relevant on a per capita basis, then we discover that FDI outperformed the per capita mean in both wages and compensation for total growth over the span of the data. This puts better perspective on the utility of FDI than looking at Gross values, as gross compensation vs gross FDI compensation are apart by more than an order of magnitude. Focusing on per capita growth we can see that employees are better compensated for their labor by foreign owned entities, and while domestic compensation is growing faster than FDI, it will be a long time before they are equal, assuming they can maintain their growth rate, which is unlikely. If we look at the linear regression table for compensation, we see that domestic compensation is actually losing growth more quickly than FDI compensation. This suggests that the FDI compensation multiplier should begin working its way up again should this trend continue. This is a reasonable explanation for why the multiplier has held roughly flat for the past ten years. One note is that a significant portion of this shift is the result of the large benefits disparity between the average domestic job VS the average FDI job.





FDI played a significant role to the growth of the NH economy during the 80's and 90's, but growth in FDI came to a standstill in the 2000's, during which period the GDP of NH slowed its growth significantly. While it cannot be claimed with certainty that the former caused the latter, they are definitely related, and since FDI as a percentage of GDP has held relatively constant since 2003, this suggests that it has been growing evenly with the NH GDP, suggesting a lack of additional investment on the part of foreign employers. This means that for one reason or another, foreign companies no longer see additional benefit in investing within NH. Such lack of additional investment does not benefit the people of NH, as foreign jobs excellent benefits alongside a higher average wage, something that benefits both NH citizens and the state as a whole.

### NH Employment Analysis

FDI only plays a small role in the New Hampshire economy. In 2011 it only made up 5.71% of the total New Hampshire workforce. At the same time it has provided an outsized source of growth for New Hampshire. It also helps to stabilize our workforce in uncertain economic times. Below we shall discuss FDI employment in more detail.

FDI employment grew through 2000, after which there was a small drop in numbers and it has subsequently fluctuated up and down slightly. Total jobs in NH, in comparison, increased up until the great recession, which suggests that foreign companies stopped investing more into NH well before domestic companies did. In addition, domestic companies came back after the recession ended, though FDI employment dropped, which fits the pattern mentioned earlier that foreign jobs remain more constant during recessions but suffer a drop once the recession is over. This lack of investment should be a concern, especially if it persists, as the last few years in the table actually show a downward trend, which would negatively impact the GDP if it were to continue. This is because even if domestic jobs were to increase, they do not have a 1 to 1 impact on the GDP relative to FDI jobs. Based solely off wage, we would need to gain 1.2 domestic jobs for every foreign job lost just to stay even in GDP. It would thus be more efficient to encourage FDI development within the state as a way to encourage GDP, than to encourage domestic growth.

One of the most important points is exactly how much faster foreign employment grew compared to employment as a whole. While total employment in NH grew an average of 1.60% a year, FDI employment grew by 4.34%. The problem with this figure is the fact that the vast majority of FDI employee growth took place prior to 2001, and the past 10 years have seen a large percentage of FDI contraction in employment figures took place in the past 10 years. This would be less of a concern if total employment had seen a similar drop. This was not the case however, leaving us concerned that FDI has less reason to expand within the state relative to total corporate investment.

If we take a look at how this growth was early on, we can see that foreign employment doubled in less than 10 years from 8,361 at the start of the data set, then doubled again within the

next twelve years. However since that time there has barely been more than a 4000 employee total increase in FDI employment, a growth in pure numbers that prior to 2000, FDI saw occur six times. The high point for FDI employment numbers, not counting 2000, was in 2004 when there were 42,600 people employed by foreign owned companies within NH. If we were to stop tracking data at that point then FDI would have been responsible for 11.7% of total job growth in NH since 1977. After 2004, total NH employment only grew by 9,528 up to 2011 while FDI lost 2,800 jobs in that time, meaning that FDI lost more than a quarter of the net employment gain in that seven year period. Also, since as we've already determined FDI jobs are worth more than jobs in general, we can determine that there are roughly  $0.2 * 2800 = 560$  jobs worth of wages lost which are unaccounted for in the data as it is spread between all people who ended up employed at a lower salary than would otherwise have been available to them.

In an attempt to compensate for the anomalous jump in hiring that occurred in 2000, I created a column that used data smoothing to create a clearer picture of the long term growth in FDI employment. Taking a look at this column we see that FDI growth was significant in the 80's, and while it slowed down in the 90's it still outpaced growth in general. However as we have seen reflected in the other employment numbers, this trend changes after the year 2000. In this column, it shows no positive growth after 2007 and only three years of positive growth after 2001, each of which is less than 1/2 of one percent.

During the 80's, FDI employment growth was truly prodigious, with six years of double digit growth, and only two years of negative growth. In comparison the highest growth rate for jobs in NH in general was 6.61% which was 2% higher than any other year in the 80's, although general employment saw no negative growth during this period. Average yearly growth for FDI employment during this decade was 8.93%, significantly higher than the 2.97% growth which NH jobs in general saw. From this data, it becomes clear that there was a massive push toward foreign companies moving into NH.

Addressing the year 2000, whose performance I could not find an explanation for, although we could assume that the BEA may have changed their reporting criteria starting at this point, which created the jump in data, although this does not explain the subsequent significant, though less severe drop in 2001. Also, none of the other regions in which I collected data had as significant a jump in employment, although both Massachusetts and the US in general showed slightly higher than normal growth in this year. Another possible explanation would be that a new company opened up facilities in NH in 2000. Going further with this, the data would suggest that setup created an enormous amount of short term employment, while only boosting permanent employment somewhat. This explanation is more likely, although only two foreign companies operating in NH could provide employment opportunities of that size, The Delhaize Group which owns Hannaford's Grocery stores, and BAE Systems. Since both Massachusetts and Maine also have Hannaford's Stores but saw no similar large spike in FDI employment, we can eliminate this as an option even though the purchase took place in 2000. This leaves BAE Systems, which was founded in the US in November of 1999. Since BAE would have achieved

some of this growth by purchasing US companies and keeping their current employees rather than hiring new ones, this would mean that NH employment in general would not have increased as significantly as FDI employment. This is confirmed in the data, as total NH job growth was actually 1,125 fewer new employees than FDI employment growth saw. If this hypothesis holds true, then the 2001 drop in FDI employment is most likely to be from BAE systems letting employees go as they correct for positions in which they have redundancy, since BAE created their US subsidiary by purchasing multiple US companies, all within the same industry. Unfortunately, I was unable to confirm this theory as BAE provided documents to the SEC EDGAR database starting in 2003 and their own website lists financials starting in 2004. In addition, even if I had access to these filings, it is unlikely that they would list their hiring and firing on a state by state basis. Despite my inability to find confirming data, I will use the creation of BEA Systems Inc. as my working hypothesis to explain the anomalous numbers from 2000.

Shifting focus to the data itself, we can see that FDI employment grew by 10600 jobs in 2000, an increase over 1999 by almost 1/3. On a similar note, gross FDI wages in the state also grew by 36.5% in 2000. At the same time per capita FDI income grew by slightly less than the year prior or the year following, going up slightly more than \$2000 on average, while per capita income in NH in general went up slightly more than \$3000 dollars on average. In 2001 we see a drop of 4000 FDI employees despite the fact that employment in general increased slightly. The only bright spot for FDI in 2001 is that per capita FDI income grew by 7.3%, or just over \$3000. 2000 was also the high water mark for FDI in the state as a percentage of both total employed and the total workforce within NH, at 6.88% and 6.70% respectively. The next highest year is 2001, in which it made up 6.24% and 6.03%. Since then FDI has slipped further as FDI employment continued to contract while NH employment in general grew. However it has not slipped as low as the pre-2000 level of 5.39%.

Turning our attention to the final column of the NH Employment spreadsheet we find what percentage of the job growth for that year was from FDI. In any year where the percentage is greater than 100%, whether positive or negative, means that total FDI growth was greater than growth in NH employment in general. A positive number means that FDI grew positively for that year, regardless of whether or not employment in general grew positively. In cases where general employment shrank, the FDI percentage shows how much worse the employment loss would have been, had it not been for growth in FDI. A negative percentage always means that FDI shrank.

The first years we will focus on are 2000 and 2008. In these years growth in general was positive, but FDI growth made up more than 100% of growth, which means that had FDI growth not occurred, the state would have lost employment for that year. While this statement is obviously murky regarding 2000 since FDI growth was most likely caused by the purchase of US companies rather than actual hiring, the fact that in 2008, FDI employment made up 354.6% of total employment growth for the state is far more interesting. Looked at another way, had it

not been for FDI within the state, instead of gaining 423 people in 2008, New Hampshire would have lost 1077 jobs. While not an enormous loss compared to the more than 8000 jobs lost in NH in 2009, it still would have hurt the economy, and put NH on roughly on par with the percentage of job loss that the US in general saw in 2008.

At the other end of this spectrum we have the year 2002, in which all job loss was essentially from FDI, with 101.4% of the net loss in jobs occurring in foreign owned companies. This is not to say that NH would have been fine that year without FDI. Job growth net of FDI was a grand total of 12 jobs, something which could easily be a reporting error as FDI jobs are reported in the hundreds. This job loss was also fairly normal nationally as the US in general saw a 0.22% drop in employment, slightly higher than that which was seen in NH.

Next we look at 1990, 1991, and 2003, in which NH in general saw a drop in employment which was mitigated by a gain in FDI employment. In particular, 2003 would have seen twice the rate of decline in employment had it not been for FDI, though again the job rate change was a miniscule 398 employees. Together with what we already know about 2002 suggests a very slow recovery from the 2001 recession, and in fact growth in the NH economy and employment slowed to a crawl after this point, with employment growth never rising above 1.72% statewide. This rate is rather sluggish compared to the rest of the US in general, although this is from a combination of lower unemployment on average, as well as lower population growth.

Focusing next on the year 2001, we see that FDI took an enormous hit, which left NH with less than  $\frac{1}{4}$  the employment growth it would have had otherwise. While there were other years in which FDI cut into the growth of the state employment, 4 out of 6 occurred within the last 10 years of the dataset. Also, no other year created quite as much drag on growth apart from 2002, which we discussed earlier. These two years taken together bring up an interesting point. If we are correct in assuming that the 2000 jump in FDI employment was from BAE systems purchasing NH companies and a significant portion of the subsequent loss of jobs was from BAE removing surplus employees, then there is some hazard to FDI development which occurs when foreign companies purchase multiple domestic ones, rather than building their own subsidiary from the ground up.

From this spreadsheet, we can see that FDI has done a lot to help grow jobs in NH. However, the FDI growth has stopped within the last decade, and even some of the growth before that was not without its costs. Still, it is clear that NH workers did benefit from the period of growth which occurred in the 80's and 90's, as it resulted in FDI supplying more than 10% of new jobs. When paired with the higher pay and greater benefits, NH would do well to encourage new foreign companies to come here.

## Massachusetts Employment Analysis

The first comparison will be with MA. While it is a similar size to NH and contains a similar mix of natural resources, it has a significantly larger, more diverse population as well as a

much larger economy. MA presents an interesting dichotomy in comparison to NH. While on one hand, FDI makes up a smaller portion of the MA employment market, on the other hand, it is responsible for a larger percentage of total job growth since 1977. This is because MA FDI started out with barely more than half the proportion of the total state job market than NH FDI had, 1.07% compared to 2.11%. At the same time, the MA FDI average yearly growth rate was 1.20% higher. Still, it is obvious that MA does not rely as heavily on FDI as does NH.

While FDI did make up a larger percentage of MA job growth than NH job growth, part of the issue stems from the fact that MA saw a smaller total percentage job growth than did NH. MA total employment only grew by 43% between 1977 and 2011 while NH grew by 76% during this period. In comparison, MA FDI employment grew by 553% and NH FDI employment grew by 376%. When looked at this way, there is an enormous difference in total relative growth for FDI employment, but NH was already more reliant on FDI at the start, making the growth in MA outsized by comparison. However this does mean that should this trend continue, MA will eventually have a larger percentage of its job market derived from foreign employer than NH.

In terms of growth, MA saw a pattern similar to NH, in that most of the buildup in FDI employment occurred in the 80's and 90's with a peak in 2000, followed by a slump. There is a difference however, in that MA saw a more severe slump through the early 2000's but began seeing growth again in 2006, and has only had one negative year since, in 2009. NH on the other hand, saw some growth in 2003 and 2004, but has only had one year of FDI growth since then, in 2008. Also, while MA saw fewer years of double digit FDI growth in the 80's, it saw higher double digits, as well as no years of negative growth. In comparison, employment in general for MA saw one year of negative growth and no years in which growth was above 6%. Finally, unlike in NH, MA FDI employment does not always suffer a post-recession dip.

MA saw some unusual growth in 2000, although it was not anywhere near the growth which was seen in NH. In total, FDI employment only increased by 16.55%. Over the length of the data set, MA saw 5 years with higher growth rates than that, although most were in the 80's. On the other hand, 2000 still saw the largest growth for FDI in sheer number of people employed, increasing by 32200 people. On the other hand, over the next 3 years MA lost all of the gain in FDI that occurred in 2000 and at the end of the data set was still barely above the 1999 level. Since this is completely different from what we saw happen in NH after 2000, we can assume that whatever caused the FDI employment growth in MA for that year was strictly temporary.

As previously mentioned, we see FDI employment growth far outpacing growth in general for the state, up until 2001 where it begins to move more closely in sync with the number of total jobs in MA, although general employment did better in the middle of the decade, while FDI employment outperformed during the Great Recession. Also, since gross employment growth in general is a positive sum since 2001, for all important purposes it has outperformed

FDI employment in terms of job creation within the last decade, mostly due to the significant losses suffered by FDI between 2001 and 2005.

Looking at absolute figures we can see that FDI employment in MA doubled between 1977 and 1982. It then doubled again by 1989. While it came close to doubling again in 2000, it currently rests at a 50% increase from where it stood in 1989. This is similar to what we saw in NH although it is a somewhat more accelerated rate as we expect given the higher average growth rate. This also includes the post-2000 slow down which suggests that this is a trend not limited to NH. While part of it can be explained by the unusual bump that both states saw in 2000, there is a greater trend involved.

Moving now to the final column on the spreadsheet, we will first note that in only one year is the percentage greater than 100%. This year is 1982, and just as in NH in 2008 this data shows that FDI is the only reason that MA had growth in employment for that year. Were FDI not to have grown at all, MA would instead have lost over 3500 jobs. While not an enormous loss, this was during a recession and anything that spares the economy further pain can be viewed as a good thing. This is what both years have in common. They both spared their states' economies from further hardship.

In both 1989 and 2010 FDI saw an expansion in employment which greatly compensated for the loss which happened in employment in general for the state of MA during those years. Neither year was a significant loss for employment in general, but 1989 showed a large gain for FDI employment. In fact, had not been for the FDI gains that year, the loss of employment would have been greater than 1%. In real terms, MA would've lost 47,000 employees rather than the 28,000 that they actually lost.

Next we will look at 1992, 2001, 2004 and 2005. These are the years in which FDI showed significant contraction in opposition to a growth in general employment for the state. The worst of these losses occurred in 2005 when 15,700 people were removed from the FDI employment rolls despite a net gain in general employment of 40,000 people. The three post-2000 years are not a surprise given that we had already discussed the significant contraction in FDI employment that took place during this period. 1992 on the other hand, is most likely explained by looking at the trend of contraction that occurs in FDI after a recession ends, although this trend was more common in NH than it is in MA.

MA showed us what a larger more prosperous state looks like in terms of FDI mixture. As we found, while their growth in FDI employment was higher their reliance upon it was lower than we see in NH. Still, FDI played a role in the growth in employment since 1977 and thus also an important role in the growth of GDP within MA since that time. Care should be taken to continue the trend of FDI growth within the state.

## ME Employment Analysis

Next we'll switch our focus to ME, a state of similar population size and economic prosperity to NH, but with a significantly larger landmass. ME is another state in which the FDI employment growth rate is greater than New Hampshire's because it is starting from a lower percentage. Unlike MA however, ME saw a smaller percentage of its total employment growth since 1977 come from FDI when compared to NH, only 9.2%. ME also relies on FDI less than the other two states, with only 3.98% of their employment made by FDI employees as of 2011. Interestingly, ME is also the only region we looked at in which there is no unusual employment boost in 2000. On the other hand, ME does have a rather large bump in FDI right at the beginning of the Great Recession which none of the other regions have.

Looking initially, we can see that employment growth in ME was slower than in NH but also somewhat faster than MA, growing 55% between 1977 in 2011 as opposed to 76% and 43% respectively. Maine's yearly growth in FDI employment is also somewhere between NH and MA, growing a yearly 4.48% to their 4.34% and 5.64%. Given these two facts it may seem surprising that FDI makes up such a small percentage of Maine's workforce and workforce growth. However, this is once again a case of where FDI was to start and when the largest percentage of growth took place. In this case, ME started out with fewer FDI jobs than NH, combined with a higher starting total Number of jobs. This allowed ME to grow at a significantly faster pace than NH, while still ending up with a total number of FDI jobs created which was less than what we saw in NH, 25,887 as opposed to 31,439.

The initial growth rate for FDI jobs in ME was actually remarkably high, and between 1981 and 1986 ME actually had a larger percentage of its employment coming from FDI than NH did. After this period however, ME failed to keep pace with the growth seen in both NH and MA, mostly due to a poor and occasionally negative growth in the 90's. It is uncertain why exactly ME suffered such significant change in fortunes, since the other regions all saw growth in the mid 80's, while ME experienced a peak in 1984 that it would not reach again until 1995. After that point, ME saw reasonable growth up to 2001, though as mentioned before it did not see the boost in employment that the other two states did. ME FDI employment then shrank again until 2005, in which it lost nearly 20% of its FDI employment. Since then however, ME has seen growth each year apart from 2009, the last year of the Great Recession. 2007 actually saw a significant jump in FDI employment for ME, one which was not followed by significant decline in FDI employment, which was the pattern for the year 2000 bumps that NH and MA saw.

Switching focus to the final column once again, we note that there are three values greater than 200%, two positive and one negative. We also see five years in which the value is not only negative, but greater than 50%. NH only has two such years, and MA has none. Neither have a negative year greater than NH's 101.4%. On the other hand there are also five years in which FDI was responsible for a positive 50% of the total growth in jobs for that year. In this area NH has three years and MA has four. However, both have years where the percentage of

employment attributable to FDI was around 350%. What this tells us, is that in ME FDI is more likely to have a significant impact on yearly job growth than would be expected in the other two states, while also being more evenly distributed, as NH and MA both seem to have longer tails toward the positive end.

Looking first at 1981, we see that FDI made up 255.5% of job growth this year. However in this year growth was negative. This means that had it not been for the FDI, job losses during that year would have been more than 3 times worse than they were, with a loss of more than 4000 jobs rather than just over 1200, during a recession year. This year occurred just at the tail end of the FDI boom in ME. Subsequently, growth was more moderate mixed with some periods of mild negative growth.

Switching next to 1995 we see a year with positive growth and FDI made up a total of 247% of that growth. As we have seen before, this means that were it not for FDI, growth for this year would have instead been negative. Rather than a gain of 1800 jobs, there would have been a loss of 2700. That means, between these two years alone, FDI saved or created around 5500 jobs. While we obviously cannot guarantee that these people would not have found other employment, it still represents a large enough quantity of people to shift the unemployment rate by more than half a percentage point.

If we look at 2005 though, we see a single year FDI job loss of 6100 people. FDI made up negative 231.9% of all job gains for that year. Rather than the 2600 new employees that ME saw for that year, there would have been 8700, and unemployment would have dropped rather than risen in that year. While this brings the net job gain for the three years in which FDI had the largest effect on the number of employed to -600 people, These are only the extremes, and due to the nature of the data, tend to be years in which employment in general did not change significantly, so that the smaller changes in FDI are magnified.

ME started off with an enormous boom in FDI employment, but something changed in 1985. Since then it has failed to keep pace with either NH, which surpassed it in 1987, or MA, which surpassed it for the last time in 1998. Since then FDI has dropped below 4% of total employment and has yet to recover. There was even a period during the 2000's in which ME FDI employment percentage was below the national average. While FDI employment is trending upward again, it is growing at the sluggish pace that MA currently has. Unfortunately, finding out what caused the enormous initial growth and subsequent bust is beyond the scope of this research.

## US Employment Analysis

This segment will focus on total US FDI employment as it compares to NH employment only, rather than talking about US numbers in isolation or as it relates to all three states. The US is only included to get an average reading that better highlights the importance of FDI in NH.



The US is far too varied in law, regulation, population mixture, or natural resources to ever provide clear explanations on what could affect the economy enough to move employment in one direction or another. This does give it an advantage as a measuring tape however, especially since the economy is too large for any single corporate acquisition to shift the employment numbers.

Foreign employment nationwide started at a smaller percentage of total employment than NH did, beginning at a mere 1.16% of total US jobs. With a high point of 3.95% in 2000, it should be said that FDI has never made up a particularly large portion of US jobs. As of 2011 FDI stood at 3.49% of total US employment, meaning that NH at that point had 2.21% more of its jobs come from foreign entities. With a high point of 6.88% in 2000, NH had almost a 3% greater percentage of its jobs from FDI. In fact, at no point in the entire data set does the US in general have a greater percentage of its jobs come from FDI than NH does. Other than this difference in scale, FDI in the US follows a remarkably similar trajectory to NH FDI. There is an initial boom in the late 70's and early 80's, followed by a slowdown in growth in the mid-80's. There is a shorter boom from 1987 to 1989, followed by a more turbulent 90's which includes some negative growth. Both reach their peak in FDI employment percentage in 2000, followed by subsequent losses and turbulent growth. Interestingly, this is not quite the pattern followed by the GDP, so it is clear that expansion in FDI does not correlate perfectly to economic growth.

From 1977 to 2011 FDI made up a total of 6.9% of US growth in employment, a full third lower than the percentage of growth which NH did come from FDI. Total employment grew by 68%, compared to NH's 76%, so in this instance NH actually saw more total employment growth than the US in general. In the US, FDI grew by 405% compared to NH's slightly lower 376%. When these two statistics are combined it is easy to see why the US had a larger average FDI as a percentage of total jobs growth rate than NH. It was a combination of lower general job growth, mixed with the fact that FDI jobs in the US were starting as a smaller ratio.

On average, US unemployment numbers were 2% higher than NH. FDI made up 1.68% less of the total people employed worked for foreign companies in the US than in NH specifically. Finally 1.62% more of the total work force of NH worked in FDI jobs than the US. While I cannot guarantee that FDI would really make up a significant portion of the employment rate gap between NH and the US, it at least provides an interesting thought, although it seems as though a similar pattern occurs with both MA and ME who have average employment rates 1.16% and 1.41% lower than NH while having 1.11% and 1.08% less of their total workforces in FDI, respectively.

During recessions FDI in the US followed a similar pattern to the US in regards to its proportion within total employment, increasing and reducing its share, with the exception of 2 years in which US FDI employment grew while NH FDI employment shrank. This brings up another important difference. We can easily see that FDI growth in the US was negative only one year before 2001. In comparison, there were four years in which NH FDI employment growth

was negative. This suggests that US FDI employment is somewhat more stable than in NH, a suggestion which is backed up by their standard deviations of 7.37% and 8.09%.

Referring back to the percentage growth in FDI employment for the 80's, it is important to point out just how similar their growth rates are, particularly in 1980, 1981 and 1987 through 1989. The reason for this is that their similarity tells us that whatever was causing the enormous growth in FDI employment was a result of national or international effects, and not as a result of policy from a specific state. On the other hand, in 1993, 1998, and 2000 NH saw growth which was either non-existent on the US chart, or was growth to a smaller degree. This suggests that there were events within the state which contributed to FDI growth, such as state policy or, if our hypothesis regarding 2000 is correct, a corporate decision.

Regarding the final column for US employment, we find that there are far fewer times in which FDI made up a significant portion of US job growth. Only three times was the percentage greater than 50 and two of those three times the growth was negative. Unsurprisingly, all three of these years saw very little change in total employment in one direction or the other, each with less than 0.25% growth in total employment. Interestingly, NH FDI had movements in the same direction that met the 50% cutoff in those same years. Those years are 2001, 2002, and 2008. The only difference is that in 2008 US employment in general was negative, while in NH it was positive. Since we already stated earlier that the only reason employment growth was positive in 2008 for NH was because of FDI, we can safely assume that either FDI saw less growth in the US in general, or that since FDI makes up a smaller portion of the US job market, it would have to work harder to compensate for a similar size loss. As NH had an FDI employment growth rate of 3.70% compared the US rate of 3.88% we can assume that the smaller amount of FDI was simply unable to grow enough to make up for the hit to US employment.

2001 and 2002 tell a different story as both are negative, while at the same time both US and NH employment grew in 2001 but shrank in 2002. The only real difference is the proportion of negative growth which each contributed to their relative job markets. NH FDI affected its economy more strongly during the negative growth in 2002, while the US FDI had a greater impact in 2001 while US employment was still expanding. These events highlight the similarity between the US FDI growth and that of NH.

It is clear that while NH followed a similar path to the US in general regarding FDI employment, overall it outperformed the country in nearly every aspect measured, apart from average percentage of growth from FDI, which is more a matter of where each region started from than where it ended, as NH grew by 3.60% between 1977 and 2011 while the US only grew by 2.26% during that timeframe. As the US numbers mark the average of all fifty states employment numbers, we can safely conclude from this analysis that NH relies far more heavily on FDI than a significant majority of the country. The data also seems to show that NH benefits from this reliance, given the higher average pay and benefits provided by FDI. We must also consider that higher FDI employment may provide a lower unemployment percentage. Rather

than simply replacing domestic jobs, having higher FDI seems to create new ones. Unfortunately the only evidence there is of this are the unemployment and FDI percentage of employment comparisons, for which there are multiple possible explanations, including pure coincidence.

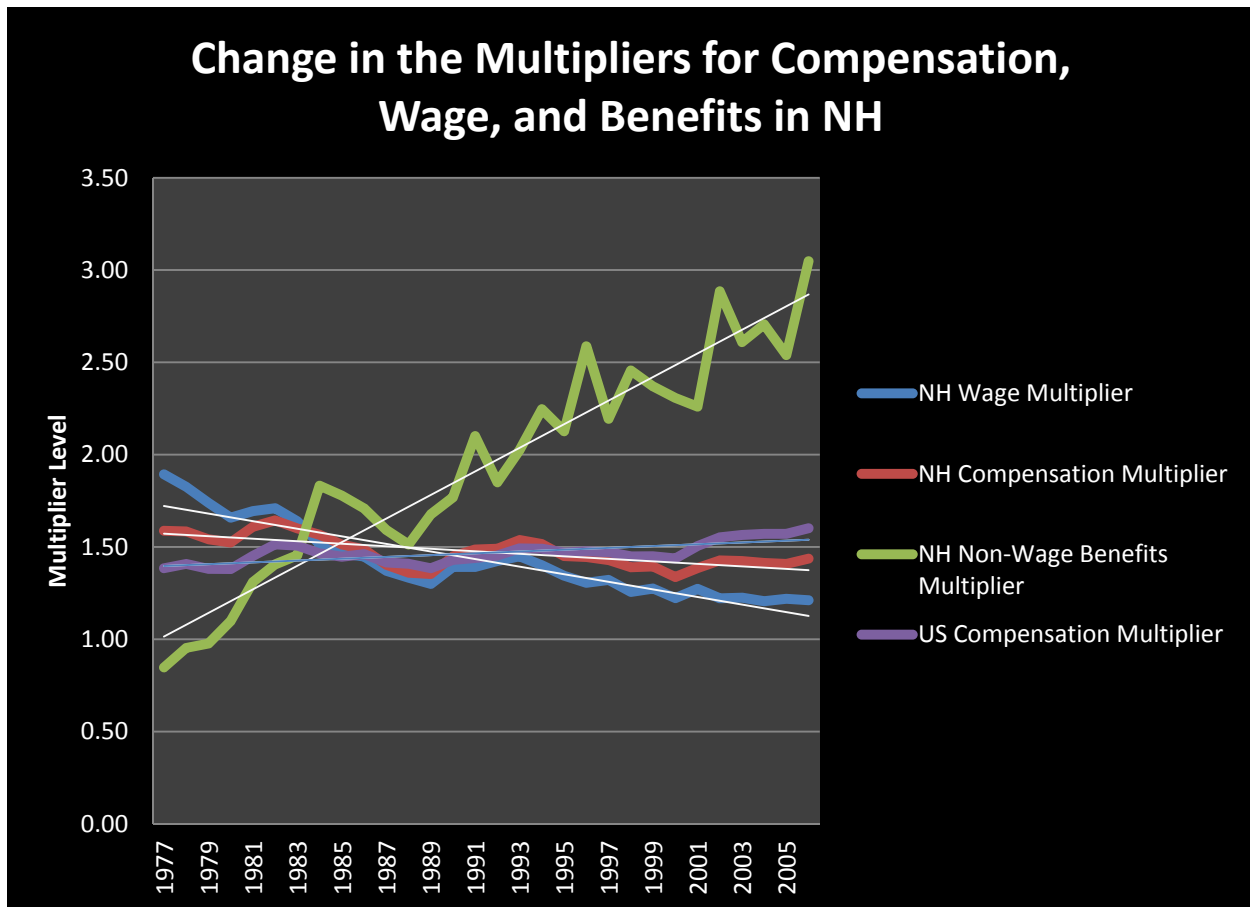
## US Compensation Data

Again we will be comparing general US data to NH data, specifically US and NH compensation data, in order to get an idea of how NH does relative to the US in general.

The National average yearly growth for compensation was 0.44% lower than the growth for FDI. By comparison, NH average yearly growth for compensation was 0.28% higher than growth for FDI. It should be noted again that both NH and the US are using the same per capita FDI compensation data due to data access restrictions. Even still, this tells us that NH compensation has been growing faster than the national average by roughly 0.72% yearly. While NH started with a lower average compensation, it currently stands at 13.1% higher than the national average as of 2011. Because of this, NH compensation is slightly closer to the national average for FDI compensation, which in turn suggests that NH's per capita FDI compensation should also be higher than the national average.

To figure out how much higher, we will take a look at the FDI compensation multiplier. This time around, rather than slowly sloping downward, we see that FDI per capita compensation grew relative to the national average compensation. Starting at a multiple of 1.38, it now stands at 1.63 times the average compensation, essentially a 25% difference from the perspective of average compensation. If NH FDI compensation followed this trend then FDI per capita compensation would equal \$86,555.72 in 2011, which is a \$9,932.42 difference from the national per capita FDI for that year. It is unlikely however that NH FDI would have followed this exact pattern, though it does bring doubt to the idea that the difference between per capita compensation and FDI per capita compensation in NH is shrinking.

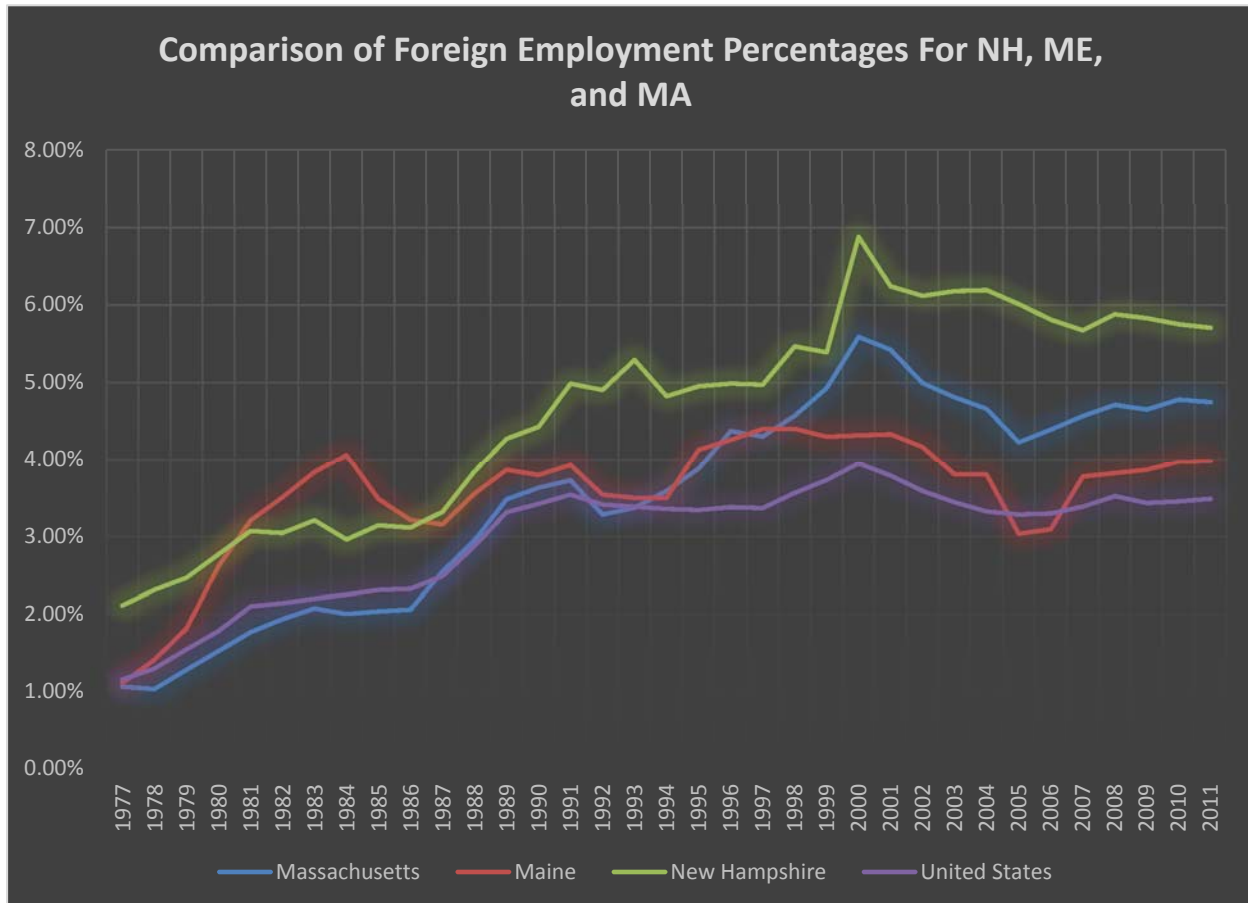
## Change in FDI Multipliers Chart



Next we will examine this graph of the various FDI multipliers we have calculated. At first glance we see that NH wage and compensation trend closely with US compensation multiplier. In particular, both compensations remain very close through the 30 years which are examined in this graph (1977-2006). The only difference seems to be that US compensation slopes slightly upward, while NH Compensation has a slightly greater slope and slopes downward. All three slopes seem to cross each other between 1988 and 1990, while the benefits multiplier crosses the other three between 1983 and 1985, having started from a significantly lower point but grown at a substantially greater rate than any of the others.

During the late 40's we see the three closely tied multipliers all suffer a mild decrease, followed by an increase in the early 80's. Afterward, all three decline at slightly different rates until 1989. After this point they all increase until 1993. It is at this point that, US Compensation differentiates itself, holding roughly steady, with a minor decrease in the late 90's followed by an increase up until the last year on the chart. In comparison, both NH compensation and wage multipliers trend downward after 1993, only seeing slight bumps upward around 2000. The FDI benefits multiplier grew remarkably during this time, although after 1984 it tended to zigzag up and down almost every year.

## Comparison of FDI Percentage of Total Employment Graph



Here we see a graphical representation of the relative percentage of employment which is made up of people working for foreign owned companies in each of the regions. All show a clear trend upward, with a high point in the year 2000, followed by a slight decline which none of the regions have recovered from. The only exception to this trend is that Maine's high point was in 1998 rather than in 2000. Since all four regions see this pattern, we can assume that the change that occurred after the year 2000 had to be a national or international shift. While it is possible that the recession of 2001 played a part in the reduction of FDI employment, this seems unlikely as FDI jobs tend to be slightly more recession resistant than jobs in general. Another possible explanation involves the differences in presidential administrations between Clinton and Bush Jr. Bush tended to be of a less international mindset than Clinton did, but this would not necessarily impact FDI employment to such an extent going forward. One final possibility that we will look at is the terrorist attacks of September 11, 2001. This was a devastating event in which the US responded with a wave of patriotism, as well as multiple new laws and regulations to protect the United States from outside threats. It is possible that the attacks persuaded a portion of the people working for foreign companies to switch to working for domestic ones. It is also possible that the subsequent lack of growth is partially a result of legislation which either intentionally or

inadvertently increased the difficulty of setting up and running a company if the owners were from a foreign country. The biggest problem with this theory is that it would require that the significant drop in FDI employment between 2000 and 2001 occur mainly within the last four months of 2001.

All of this is conjecture however. There is any number of other possibilities for explaining the sudden shift in the growth trend, from a change in consumer preferences, to opening up of trade in China. Still it is worth considering, especially if there is in fact post 9/11 legislation which is causing undue hardship toward any company which wishes to invest within the US.

Changing focus, we will now look at specific unusual points within the data, beginning with the starting point of FDI within the state of NH. The other three data points are clustered around 1.11%, while NH FDI is a full percentage point higher. This means that at the very beginning of our data set, FDI was playing a far more important role in NH than it was in NH's neighbors or in the US as a whole. The only time this does not hold true is between 1981 and 1986, when ME had more FDI jobs relative to total employment. Other than this, NH tends to keep ahead of the other three regions, which each cross the others' paths at least three times. It is unfortunate that data is not available before 1977 so we can see when it was that NH first began to differentiate itself regarding FDI.

The other significantly unusual points seem to occur in ME, specifically the unusual spike which allowed it to temporarily surpass NH in FDI employment proportion, and the bizarre dip in the mid 2000's which temporarily dropped ME below the national average. Since these two events do not match up with the lines from the other three regions, we must assume that they are caused by events which occurred only in ME, which helps to show that individual states can have significant impact on the FDI investment within their borders. No matter how similar all three states are to the average growth line that is the US line, something within each state can cause significant growth or contraction in FDI investment.

One final note about the US line is that since it is an aggregate of all 50 states, it includes states which for one reason or another are not popular choices for FDI investment. For example, landlocked states will tend to be less popular for any foreign company who wishes to take advantage of a skilled US workforce but still wishes to sell the products manufactured outside of the US. This is because it becomes more expensive to ship their products if they are further from international shipping lanes and are forced to send them over land by train or truck to trade ports. This one fact helps explain why all three states examined are above the national average the majority of the time. All three are costal states with easy access to international shipping. While the nature of the difference is undoubtedly more complicated than this, access to shipping does play an important part.

## Conclusion

Throughout the research we have seen several important trends. Foreign employment tends to pay better wages than domestic employers do, as well as offering significantly better benefits. This greater compensation creates a more significant effect on the economy and the GDP than mere employee counts would suggest. This in turn means that foreign companies that invest within NH are more valuable to the economy than a domestic company of the same size. It also helps to raise the median wage in NH and provide for a general sense of prosperity within the state.

We also saw a possible trend in which the percentage of employment that foreign entities are responsible for may create a long term impact on unemployment rates within the region. While evidence for this particular theory is thin, should it prove to be true it would be one of the most valuable arguments in favor of foreign direct investment. It suggests that foreign employers do not solely compete with domestic employers for people who are already working, but also hire from a pool of people who would otherwise be unemployed had the FDI not occurred.

Finally we draw our focus to the fact that NH relies far more on FDI than the United States in general, as well as both ME and MA. FDI has provided enormous benefits to NH, giving more than 10% of employment growth despite making up less than 6% of the workforce. Through higher average wage and benefits it has helped to increase the general wealth and wellbeing to its employees to a degree beyond the average job available in NH, despite NH compensation being higher than the national average since 1995. And while foreign investment has its hazards should they purchase a domestic company and then choose to lay off current employees, this is a risk which can occur whether the purchasing company is US or foreign based. FDI has provided many high quality jobs to the state of NH and helped reduce unemployment, both during recession and during prosperity. FDI has also helped to grow our GDP, both by providing employees with higher salaries and by creating products which are then sold outside the state, thereby bringing money into the economy that otherwise would not be there.

Therefore we must conclude that FDI is beneficial to NH as a whole. The benefits to the individual, to unemployment, and to the GDP are all there to be seen. While FDI growth has slipped since the new millennium, it remains a powerful force within the economy and should not be disregarded or rejected. If utilized properly, the benefits from further FDI development are powerful. They can bring stability during periods of economic uncertainty, and can provide opportunities for growth which might otherwise not exist within the state. This applies not only to NH itself but also to the rest of the country and most likely to any country on Earth.

## Recommendations

My first and most important recommendation is for policy makers at the municipal, state, and federal levels. I recommend that steps be taken to ensure that foreign companies are just as free to develop their businesses on US soil as any domestic company would be. While there are obviously national security concerns that people will want addressed, the benefits that this investment would bring to potential employees and to the economy itself should come first. Growth in FDI since 2000 has been atrocious, so we must decide to let opportunity outweigh fear in our legislation. Choosing not to is negatively impacting the economy.

My next recommendation is for other researchers to continue where my work leaves off. I have uncovered interesting trends and patterns which need to be looked at further. In particular, the possibility that an increase in FDI as a portion of total employment leads to a nearly 1 to 1 reduction in the unemployment rate is something that should be looked at further. Whether or not the research pans out, or even if the conclusion ends up stating that the only pattern is that states with more FDI tend to have lower unemployment rates, the question is an important one to both economists and policy makers.

My final recommendation is to companies who are investing or plan to invest in facilities in other countries. I recommend that you use the data contained within this research to encourage governments to let you develop further. I feel that your utility in whatever country you operate in is greater than the utility which the average domestic company can provide and you should be given every opportunity that they are given.

## Acknowledgements

I would like to first thank my thesis advisor, Professor Fred Kaen, who not only helped me develop my research, but also taught me practically everything I know about financial policy and international finance. Next I would like to thank Professor Evangelos Simos, who provided some important insight into economic analysis. I would also like to thank Michael Bergeron of the NH Department of Resources and Economic Development for helping me find the resources I needed for my research. Finally I would like to thank the people at the Bureau of Economic Analysis for answering the myriad questions I fired at them on a weekly basis.





## Employment Numbers (NH)

| Year               | # of Employed | Employment % | % change in employment from previous year | # Employed by Foreign | Foreign % of total Employed | % change in Foreign Employment from previous year | With Smoothing | foreign employment % | % change in Foreign Employment % from previous year | % of job growth attributable to FDI |
|--------------------|---------------|--------------|---|-----------------------|-----------------------------|---|----------------|----------------------|---|-------------------------------------|
| 1973               | 374038        |              |   |                       |                             |   |                |                      |   |                                     |
| 1974               | 380712        |              | 1.78%                                     |                       |                             |   |                |                      |   |                                     |
| 1975               | 370436        |              | -2.70%                                    |                       |                             |   |                |                      |   |                                     |
| 1976               | 370837        | 93.30%       | 0.11%                                     |                       | 0.00%                       |   |                |                      |   |                                     |
| 1977               | 395614        | 94.40%       | 6.68%                                     | 8361                  | 2.11%                       | #DIV/0!   |                | 2.00%                | #DIV/0!   |                                     |
| 1978               | 420283        | 96.20%       | 6.24%                                     | 9723                  | 2.31%                       | 16.29%  | 9.26%          | 2.23%                | 11.55%  | 5.5%                                |
| 1979               | 439143        | 96.80%       | 4.49%                                     | 10841                 | 2.47%                       | 11.50%  | 13.83%         | 2.39%                | 7.38%   | 5.9%                                |
| 1980               | 444956        | 95.40%       | 1.32%                                     | 12328                 | 2.77%                       | 13.72%  | 12.73%         | 2.64%                | 10.61%  | 25.6%                               |
| 1981               | 453640        | 94.80%       | 1.95%                                     | 13928                 | 3.07%                       | 12.98%  | 8.80%          | 2.91%                | 10.12%  | 18.4%                               |
| 1982               | 455859        | 93.00%       | 0.49%                                     | 13885                 | 3.05%                       | -0.31%  | 7.18%          | 2.83%                | -2.68%  | -1.9%                               |
| 1983               | 471077        | 94.40%       | 3.34%                                     | 15117                 | 3.21%                       | 8.87%   | 2.31%          | 3.03%                | 6.94%   | 8.1%                                |
| 1984               | 502198        | 95.70%       | 6.61%                                     | 14872                 | 2.96%                       | -1.62%  | 6.03%          | 2.83%                | -6.45%  | -0.8%                               |
| 1985               | 524325        | 96.20%       | 4.41%                                     | 16486                 | 3.14%                       | 10.85%  | 4.23%          | 3.02%                | 6.73%   | 7.3%                                |
| 1986               | 547918        | 97.50%       | 4.50%                                     | 17057                 | 3.11%                       | 3.46%   | 8.37%          | 3.04%                | 0.35%   | 2.4%                                |
| 1987               | 569498        | 97.70%       | 3.94%                                     | 18900                 | 3.32%                       | 10.80%  | 10.93%         | 3.24%                | 6.82%   | 8.5%                                |
| 1988               | 582857        | 97.50%       | 2.35%                                     | 22400                 | 3.84%                       | 18.52%  | 13.79%         | 3.75%                | 15.57%  | 26.2%                               |
| 1989               | 587572        | 96.50%       | 0.81%                                     | 25100                 | 4.27%                       | 12.05%  | 11.25%         | 4.12%                | 10.01%  | 57.3%                               |
| 1990               | 585032        | 94.40%       | -0.43%                                    | 25900                 | 4.43%                       | 3.19%   | 8.30%          | 4.18%                | 1.38%   | 31.5%                               |
| 1991               | 569621        | 92.70%       | -2.63%                                    | 28400                 | 4.99%                       | 9.65%   | 3.69%          | 4.62%                | 10.59%  | 16.2%                               |
| 1992               | 568909        | 92.40%       | -0.12%                                    | 27900                 | 4.90%                       | -1.76%  | 5.98%          | 4.53%                | -1.96%  | -70.2%                              |
| 1993               | 580137        | 93.70%       | 1.97%                                     | 30700                 | 5.29%                       | 10.04%  | 0.59%          | 4.96%                | 9.42%   | 24.9%                               |
| 1994               | 594935        | 95.30%       | 2.55%                                     | 28700                 | 4.82%                       | -6.51%  | 2.68%          | 4.60%                | -7.28%  | -13.5%                              |
| 1995               | 605929        | 96.00%       | 1.85%                                     | 30000                 | 4.95%                       | 4.53%   | 0.23%          | 4.75%                | 3.39%   | 11.8%                               |
| 1996               | 617629        | 96.30%       | 1.93%                                     | 30800                 | 4.99%                       | 2.67%   | 3.26%          | 4.80%                | 1.04%   | 6.8%                                |
| 1997               | 635469        | 96.90%       | 2.89%                                     | 31600                 | 4.97%                       | 2.60%   | 5.97%          | 4.82%                | 0.34%   | 4.5%                                |
| 1998               | 651292        | 97.10%       | 2.49%                                     | 35600                 | 5.47%                       | 12.66%  | 5.37%          | 5.31%                | 10.15%  | 25.3%                               |
| 1999               | 666066        | 97.20%       | 2.27%                                     | 35900                 | 5.39%                       | 0.84%   | 14.34%         | 5.24%                | -1.29%  | 2.0%                                |
| 2000               | 675541        | 97.30%       | 1.42%                                     | 46500                 | 6.88%                       | 29.53%  | 7.26%          | 6.70%                | 27.84%  | 111.9%                              |
| 2001               | 680706        | 96.60%       | 0.76%                                     | 42500                 | 6.24%                       | -8.60%  | 6.27%          | 6.03%                | -9.95%  | -77.4%                              |
| 2002               | 679818        | 95.50%       | -0.13%                                    | 41600                 | 6.12%                       | -2.12%  | -3.25%         | 5.84%                | -3.11%  | -101.4%                             |
| 2003               | 679420        | 95.50%       | -0.06%                                    | 42000                 | 6.18%                       | 0.96%   | 0.09%          | 5.90%                | 1.02%   | 100.5%                              |
| 2004               | 687855        | 96.10%       | 1.24%                                     | 42600                 | 6.19%                       | 1.43%   | 0.25%          | 5.95%                | 0.81%   | 7.1%                                |
| 2005               | 696765        | 96.40%       | 1.30%                                     | 41900                 | 6.01%                       | -1.64%  | -0.63%         | 5.80%                | -2.60%  | -7.9%                               |
| 2006               | 708748        | 96.50%       | 1.72%                                     | 41200                 | 5.81%                       | -1.67%  | -1.67%         | 5.61%                | -3.23%  | -5.8%                               |
| 2007               | 713782        | 96.50%       | 0.71%                                     | 40500                 | 5.67%                       | -1.70%  | 0.11%          | 5.48%                | -2.39%  | -13.9%                              |
| 2008               | 714205        | 96.10%       | 0.06%                                     | 42000                 | 5.88%                       | 3.70%   | -0.44%         | 5.65%                | 3.21%   | 354.6%                              |
| 2009               | 696145        | 93.80%       | -2.53%                                    | 40600                 | 5.83%                       | -3.33%  | -0.45%         | 5.47%                | -3.20%  | -7.8%                               |
| 2010               | 693679        | 93.90%       | -0.35%                                    | 39900                 | 5.75%                       | -1.72%  | -1.77%         | 5.40%                | -1.27%  | -28.4%                              |
| 2011               | 697383        | 94.50%       | 0.53%                                     | 39800                 | 5.71%                       | -0.25%  | -0.66%         | 5.39%                | -0.15%  | -2.7%                               |
| 2012               | 701315        | 94.50%       | 0.56%                                     | 39800                 | 5.68%                       | 0.00%   |                | 5.36%                | -0.56%  | 0.0%                                |
| Net Change         | 301769        |              |   | 31439                 |                             |   |                |                      |   |                                     |
| Average            |               | 95.63%       | 1.60%                                     |                       | 4.71%                       | 4.34%   |                | 4.50%                | 3.23%   | 10.4%                               |
| Standard deviation | 96924         | 1.4%         | 2.22%                                     | 11900                 | 1.37%                       | 8.09%   | 5.11%          | 1.31%                | 7.56%   | 71.9%                               |

## Employment Numbers (MA)

| Year               | # of Employed | Employment % | % change in employment from previous year | # Employed by Foreign | Foreign % of total Employed | % change in Foreign Employment from previous year | With Smoothing | foreign employment % | % change in Foreign Employment % from previous | % of job growth attributable to FDI |
|--------------------|---------------|--------------|---|-----------------------|-----------------------------|---|----------------|----------------------|--|-------------------------------------|
| 1973               | 2786670       |              |   |                       |                             |   |                |                      |  |                                     |
| 1974               | 2811480       |              |   |                       |                             |   |                |                      |  |                                     |
| 1975               | 2727603       |              |   |                       |                             |   |                |                      |  |                                     |
| 1976               | 2755729       | 90.2%        |   |                       | 0.00%                       |   |                | 0.00%                |  |                                     |
| 1977               | 2833405       | 91.1%        | 2.82%                                     | 30326                 | 1.07%                       | #DIV/0!   |                | 0.98%                | #DIV/0!  |                                     |
| 1978               | 2957517       | 93.8%        | 4.38%                                     | 30691                 | 1.04%                       |   | 1.20%          | 0.97%                | -0.17%   | 0.3%                                |
| 1979               | 3073593       | 94.5%        | 3.92%                                     | 39541                 | 1.29%                       |   | 28.84%         | 1.22%                | 24.90%   | 7.6%                                |
| 1980               | 3133686       | 94.3%        | 1.96%                                     | 47901                 | 1.53%                       | 21.14%  | 22.05%         | 1.44%                | 18.57%   | 13.9%                               |
| 1981               | 3141874       | 93.6%        | 0.26%                                     | 55643                 | 1.77%                       | 16.16%  | 15.60%         | 1.66%                | 15.00%   | 94.6%                               |
| 1982               | 3143386       | 92.0%        | 0.05%                                     | 60919                 | 1.94%                       | 9.48%   | 11.74%         | 1.78%                | 7.56%  | 348.9%                              |
| 1983               | 3215449       | 93.0%        | 2.29%                                     | 66756                 | 2.08%                       | 9.58%   | 7.07%          | 1.93%                | 8.29%  | 8.1%                                |
| 1984               | 3402387       | 95.2%        | 5.81%                                     | 68189                 | 2.00%                       | 2.15%   | 5.55%          | 1.91%                | -1.18%   | 0.8%                                |
| 1985               | 3509658       | 95.9%        | 3.15%                                     | 71545                 | 2.04%                       | 4.92%   | 3.67%          | 1.95%                | 2.46%  | 3.1%                                |
| 1986               | 3604577       | 96.0%        | 2.70%                                     | 74356                 | 2.06%                       | 3.93%   | 11.08%         | 1.98%                | 1.30%  | 3.0%                                |
| 1987               | 3632415       | 96.6%        | 0.77%                                     | 92500                 | 2.55%                       | 24.40%  | 15.86%         | 2.46%                | 24.22%   | 65.2%                               |
| 1988               | 3739313       | 96.7%        | 2.94%                                     | 110300                | 2.95%                       | 19.24%  | 20.23%         | 2.85%                | 15.95%   | 16.7%                               |
| 1989               | 3710110       | 95.8%        | -0.78%                                    | 129100                | 3.48%                       | 17.04%  | 12.64%         | 3.33%                | 16.87%   | 64.4%                               |
| 1990               | 3614703       | 93.7%        | -2.57%                                    | 131200                | 3.63%                       | 1.63%   | 5.56%          | 3.40%                | 2.02%  | 2.2%                                |
| 1991               | 3450717       | 91.2%        | -4.54%                                    | 128600                | 3.73%                       | -1.98%  | -3.82%         | 3.40%                | -0.06%   | -1.6%                               |
| 1992               | 3481815       | 91.2%        | 0.90%                                     | 114300                | 3.28%                       | -11.12%   | -2.82%         | 2.99%                | -11.91%  | -46.0%                              |
| 1993               | 3547680       | 92.7%        | 1.89%                                     | 119600                | 3.37%                       | 4.64%   | 0.68%          | 3.13%                | 4.38%  | 8.0%                                |
| 1994               | 3615952       | 93.8%        | 1.92%                                     | 129800                | 3.59%                       | 8.53%   | 7.39%          | 3.37%                | 7.74%  | 14.9%                               |
| 1995               | 3648939       | 94.5%        | 0.91%                                     | 141500                | 3.88%                       | 9.01%   | 10.75%         | 3.66%                | 8.83%  | 35.5%                               |
| 1996               | 3712827       | 95.4%        | 1.75%                                     | 162300                | 4.37%                       | 14.70%  | 8.17%          | 4.17%                | 13.80%   | 32.6%                               |
| 1997               | 3802454       | 95.9%        | 2.41%                                     | 163600                | 4.30%                       | 0.80%   | 8.02%          | 4.13%                | -1.06%   | 1.5%                                |
| 1998               | 3884883       | 96.6%        | 2.17%                                     | 177600                | 4.57%                       | 8.56%   | 6.31%          | 4.42%                | 7.03%  | 17.0%                               |
| 1999               | 3948929       | 96.7%        | 1.65%                                     | 194600                | 4.93%                       | 9.57%   | 11.56%         | 4.77%                | 7.91%  | 26.5%                               |
| 2000               | 4057959       | 97.3%        | 2.76%                                     | 226800                | 5.59%                       | 16.55%  | 7.96%          | 5.44%                | 14.12%   | 29.5%                               |
| 2001               | 4087239       | 96.3%        | 0.72%                                     | 221700                | 5.42%                       | -2.25%  | 1.70%          | 5.22%                | -3.95%   | -17.4%                              |
| 2002               | 4031355       | 94.7%        | -1.37%                                    | 201300                | 4.99%                       | -9.20%  | -5.29%         | 4.73%                | -9.47%   | -36.5%                              |
| 2003               | 4000724       | 94.2%        | -0.76%                                    | 192400                | 4.81%                       | -4.42%  | -5.39%         | 4.53%                | -4.20%   | -29.1%                              |
| 2004               | 4023283       | 94.8%        | 0.56%                                     | 187500                | 4.66%                       | -2.55%  | -5.11%         | 4.42%                | -2.48%   | -21.7%                              |
| 2005               | 4063515       | 95.2%        | 1.00%                                     | 171800                | 4.23%                       | -8.37%  | -1.95%         | 4.02%                | -8.90%   | -39.0%                              |
| 2006               | 4111675       | 95.2%        | 1.19%                                     | 180500                | 4.39%                       | 5.06%   | 1.00%          | 4.18%                | 3.83%  | 18.1%                               |
| 2007               | 4201391       | 95.5%        | 2.18%                                     | 191900                | 4.57%                       | 6.32%   | 4.97%          | 4.36%                | 4.37%  | 12.7%                               |
| 2008               | 4217199       | 94.7%        | 0.38%                                     | 198700                | 4.71%                       | 3.54%   | 2.13%          | 4.46%                | 2.29%  | 43.0%                               |
| 2009               | 4123064       | 91.8%        | -2.23%                                    | 191800                | 4.65%                       | -3.47%  | 0.86%          | 4.27%                | -4.29%   | -7.3%                               |
| 2010               | 4112882       | 91.7%        | -0.25%                                    | 196600                | 4.78%                       | 2.50%   | -0.04%         | 4.38%                | 2.64%  | 47.1%                               |
| 2011               | 4177918       | 92.7%        | 1.58%                                     | 198300                | 4.75%                       | 0.86%   | 1.12%          | 4.40%                | 0.38%  | 2.6%                                |
| 2012               | 4250566       | 93.2%        | 1.74%                                     | 198300                | 4.67%                       | 0.00%   |                | 4.35%                | -1.18%   | 0.0%                                |
| Net Change         | 1220401       |              |   | 167609                |                             |   |                |                      |  |                                     |
| Average            |               | 94.47%       | 1.02%                                     |                       | 3.59%                       | 5.64%   |                | 3.39%                | 4.91%  | 13.7%                               |
| Standard deviation | 392682        | 1.8%         | 2.02%                                     | 60740                 | 1.36%                       | 9.55%   | 7.38%          | 1.30%                | 9.06%  | 65.2%                               |

## Employment Numbers (ME)

| Year               | # of Employed | Employment % | % change in employment from previous year | # Employed by Foreign | Foreign % of total Employed | % change in Foreign Employment from previous year | With Smoothing | foreign employment % | % change in Foreign Employment % from previous | % of job growth attributable to FDI |       |
|--------------------|---------------|--------------|---|-----------------------|-----------------------------|---|----------------|----------------------|--|-------------------------------------|-------|
| 1973               | 470180        |              |   |                       |                             |   |                |                      |  |                                     |       |
| 1974               | 477672        |              |   |                       |                             |   |                |                      |  |                                     |       |
| 1975               | 475256        |              |   |                       |                             |   |                |                      |  |                                     |       |
| 1976               | 497868        | 91.5%        |   |                       | 0.00%                       |   |                | 0.00%                |  |                                     |       |
| 1977               | 512788        | 91.7%        | 3.00%                                     | 5713                  | 1.11%                       | #DIV/0!   |                | 1.02%                | #DIV/0!  |                                     |       |
| 1978               | 531154        | 93.6%        | 3.58%                                     | 7531                  | 1.42%                       |   | 31.82%         | 1.33%                | 29.90%   | 9.9%                                |       |
| 1979               | 544802        | 93.4%        | 2.57%                                     | 9904                  | 1.82%                       |   | 31.51%         | 36.48%               | 1.70%  | 27.94%                              | 17.4% |
| 1980               | 552745        | 92.6%        | 1.46%                                     | 14471                 | 2.62%                       | 46.11%  | 33.28%         | 2.42%                | 42.78%   | 57.5%                               |       |
| 1981               | 551487        | 92.9%        | -0.23%                                    | 17685                 | 3.21%                       | 22.21%  | 26.00%         | 2.98%                | 22.89%   | 255.5%                              |       |
| 1982               | 553311        | 91.7%        | 0.33%                                     | 19398                 | 3.51%                       | 9.69%   | 14.54%         | 3.21%                | 7.91%  | 93.9%                               |       |
| 1983               | 565243        | 92.0%        | 2.16%                                     | 21674                 | 3.83%                       | 11.73%  | 10.46%         | 3.53%                | 9.73%  | 19.1%                               |       |
| 1984               | 587454        | 94.0%        | 3.93%                                     | 23835                 | 4.06%                       | 9.97%   | 3.45%          | 3.81%                | 8.11%  | 9.7%                                |       |
| 1985               | 606390        | 94.5%        | 3.22%                                     | 21130                 | 3.48%                       | -11.35%   | -1.84%         | 3.29%                | -13.66%  | -14.3%                              |       |
| 1986               | 630438        | 94.8%        | 3.97%                                     | 20258                 | 3.21%                       | -4.13%  | -4.60%         | 3.05%                | -7.49%   | -3.6%                               |       |
| 1987               | 652556        | 95.3%        | 3.51%                                     | 20600                 | 3.16%                       | 1.69%   | 5.34%          | 3.01%                | -1.24%   | 1.5%                                |       |
| 1988               | 686290        | 96.3%        | 5.17%                                     | 24400                 | 3.56%                       | 18.45%  | 10.40%         | 3.42%                | 13.81%   | 11.3%                               |       |
| 1989               | 701652        | 96.0%        | 2.24%                                     | 27100                 | 3.86%                       | 11.07%  | 9.22%          | 3.71%                | 8.30%  | 17.6%                               |       |
| 1990               | 701002        | 94.7%        | -0.09%                                    | 26600                 | 3.79%                       | -1.85%  | 3.07%          | 3.59%                | -3.08%   | -76.9%                              |       |
| 1991               | 677564        | 92.4%        | -3.34%                                    | 26600                 | 3.93%                       | 0.00%   | -3.75%         | 3.63%                | 0.95%  | 0.0%                                |       |
| 1992               | 680841        | 92.9%        | 0.48%                                     | 24100                 | 3.54%                       | -9.40%  | -2.99%         | 3.29%                | -9.35%   | -76.3%                              |       |
| 1993               | 691753        | 93.4%        | 1.60%                                     | 24200                 | 3.50%                       | 0.41%   | -2.44%         | 3.27%                | -0.64%   | 0.9%                                |       |
| 1994               | 702752        | 93.6%        | 1.59%                                     | 24600                 | 3.50%                       | 1.65%   | 6.79%          | 3.28%                | 0.28%  | 3.6%                                |       |
| 1995               | 704574        | 94.2%        | 0.26%                                     | 29100                 | 4.13%                       | 18.29%  | 8.14%          | 3.89%                | 18.74%   | 247.0%                              |       |
| 1996               | 714237        | 94.8%        | 1.37%                                     | 30400                 | 4.26%                       | 4.47%   | 9.34%          | 4.03%                | 3.71%  | 13.5%                               |       |
| 1997               | 727238        | 94.9%        | 1.82%                                     | 32000                 | 4.40%                       | 5.26%   | 4.18%          | 4.18%                | 3.49%  | 12.3%                               |       |
| 1998               | 747472        | 95.5%        | 2.78%                                     | 32900                 | 4.40%                       | 2.81%   | 2.59%          | 4.20%                | 0.66%  | 4.4%                                |       |
| 1999               | 762877        | 96.1%        | 2.06%                                     | 32800                 | 4.30%                       | -0.30%  | 1.95%          | 4.13%                | -1.70%   | -0.6%                               |       |
| 2000               | 785319        | 96.7%        | 2.94%                                     | 33900                 | 4.32%                       | 3.35%   | 1.21%          | 4.17%                | 1.03%  | 4.9%                                |       |
| 2001               | 787567        | 96.3%        | 0.29%                                     | 34100                 | 4.33%                       | 0.59%   | 0.14%          | 4.17%                | -0.11%   | 8.9%                                |       |
| 2002               | 789968        | 95.6%        | 0.30%                                     | 32900                 | 4.16%                       | -3.52%  | -3.71%         | 3.98%                | -4.51%   | -50.0%                              |       |
| 2003               | 794226        | 95.0%        | 0.54%                                     | 30200                 | 3.80%                       | -8.21%  | -3.36%         | 3.61%                | -9.27%   | -63.4%                              |       |
| 2004               | 807673        | 95.4%        | 1.69%                                     | 30700                 | 3.80%                       | 1.66%   | -8.81%         | 3.63%                | 0.38%  | 3.7%                                |       |
| 2005               | 810303        | 95.1%        | 0.33%                                     | 24600                 | 3.04%                       | -19.87%   | -5.12%         | 2.89%                | -20.38%  | -231.9%                             |       |
| 2006               | 817765        | 95.3%        | 0.92%                                     | 25300                 | 3.09%                       | 2.85%   | 2.23%          | 2.95%                | 2.12%  | 9.4%                                |       |
| 2007               | 828755        | 95.3%        | 1.34%                                     | 31300                 | 3.78%                       | 23.72%  | 9.07%          | 3.60%                | 22.07%   | 54.6%                               |       |
| 2008               | 824563        | 94.6%        | -0.51%                                    | 31500                 | 3.82%                       | 0.64%   | 7.59%          | 3.61%                | 0.41%  | 4.8%                                |       |
| 2009               | 802310        | 91.9%        | -2.70%                                    | 31000                 | 3.86%                       | -1.59%  | 0.11%          | 3.55%                | -1.74%   | -2.2%                               |       |
| 2010               | 791017        | 91.8%        | -1.41%                                    | 31400                 | 3.97%                       | 1.29%   | 0.11%          | 3.64%                | 2.62%  | 3.5%                                |       |
| 2011               | 794311        | 92.3%        | 0.42%                                     | 31600                 | 3.98%                       | 0.64%   | 0.64%          | 3.67%                | 0.77%  | 6.1%                                |       |
| 2012               | 801072        | 92.8%        | 0.85%                                     | 31600                 | 3.94%                       | 0.00%   |                | 3.66%                | -0.31%   | 0.0%                                |       |
| Net Change         | 281523        |              |   | 25887                 |                             |   |                |                      |  |                                     |       |
| Average            |               | 94.22%       | 1.26%                                     |                       | 3.63%                       | 4.48%   |                | 3.42%                | 4.57%  | 9.2%                                |       |
| Standard deviation | 99558         | 1.5%         | 1.83%                                     | 7442                  | 0.79%                       | 13.39%  | 10.25%         | 0.76%                | 12.97%   | 80.1%                               |       |

## Employment Numbers (US)

| Year               | # of Employed | Employment % | % change in employment from previous year | # Employed by Foreign | Foreign % of total Employed | % change in Foreign Employment from previous year | With Smoothing | foreign employment % | % change in Foreign Employment % from previous year | % of job growth attributable to FDI |
|--------------------|---------------|--------------|---|-----------------------|-----------------------------|---|----------------|----------------------|---|-------------------------------------|
| 1973               | 98427500      | 95.1%        |   |                       |                             |   |                |                      |   |                                     |
| 1974               | 100111800     | 94.4%        |   |                       |                             |   |                |                      |   |                                     |
| 1975               | 98900600      | 91.5%        |   |                       |                             |   |                |                      |   |                                     |
| 1976               | 101591200     | 92.3%        |   |                       | 0.00%                       |   |                | 0.00%                |   |                                     |
| 1977               | 105042200     | 92.9%        | 3.40%                                     | 1218711               | 1.16%                       | #DIV/0!   |                | 1.08%                | #DIV/0!   |                                     |
| 1978               | 109686600     | 93.9%        | 4.42%                                     | 1429871               | 1.30%                       | 17.33%  | #DIV/0!        | 1.22%                | 13.57%  | 4.5%                                |
| 1979               | 113147100     | 94.2%        | 3.15%                                     | 1753188               | 1.55%                       | 22.61%  | 18.65%         | 1.46%                | 19.24%  | 9.3%                                |
| 1980               | 113983200     | 92.9%        | 0.74%                                     | 2033932               | 1.78%                       | 16.01%  | 19.15%         | 1.66%                | 13.57%  | 33.6%                               |
| 1981               | 114914000     | 92.4%        | 0.82%                                     | 2416565               | 2.10%                       | 18.81%  | 12.04%         | 1.94%                | 17.22%  | 41.1%                               |
| 1982               | 114163300     | 90.3%        | -0.65%                                    | 2448062               | 2.14%                       | 1.30%   | 8.05%          | 1.94%                | -0.35%  | 4.2%                                |
| 1983               | 115645700     | 90.4%        | 1.30%                                     | 2546514               | 2.20%                       | 4.02%   | 3.97%          | 1.99%                | 2.80%   | 6.6%                                |
| 1984               | 120528100     | 92.5%        | 4.22%                                     | 2714295               | 2.25%                       | 6.59%   | 5.35%          | 2.33%                | 4.65%   | 3.4%                                |
| 1985               | 123796700     | 92.8%        | 2.71%                                     | 2862153               | 2.31%                       | 5.45%   | 4.89%          | 2.15%                | 3.00%   | 4.5%                                |
| 1986               | 126232300     | 93.0%        | 1.97%                                     | 2937890               | 2.33%                       | 2.65%   | 5.95%          | 2.16%                | 0.88%   | 3.1%                                |
| 1987               | 129548400     | 93.8%        | 2.63%                                     | 3224300               | 2.49%                       | 9.75%   | 10.54%         | 2.33%                | 7.86%   | 8.6%                                |
| 1988               | 133563900     | 94.5%        | 3.10%                                     | 3844200               | 2.88%                       | 19.23%  | 15.44%         | 2.72%                | 16.50%  | 15.4%                               |
| 1989               | 136177800     | 94.7%        | 1.96%                                     | 4511500               | 3.31%                       | 17.36%  | 13.84%         | 3.14%                | 15.35%  | 25.5%                               |
| 1990               | 138330900     | 94.4%        | 1.58%                                     | 4734500               | 3.42%                       | 4.94%   | 8.40%          | 3.23%                | 2.98%   | 10.4%                               |
| 1991               | 137612800     | 93.2%        | -0.52%                                    | 4871900               | 3.54%                       | 2.90%   | 1.54%          | 3.30%                | 2.12%   | 19.1%                               |
| 1992               | 138166100     | 92.5%        | 0.40%                                     | 4715400               | 3.41%                       | -3.21%  | 0.25%          | 3.16%                | -4.32%  | -28.3%                              |
| 1993               | 140774400     | 93.1%        | 1.89%                                     | 4765600               | 3.39%                       | 1.06%   | -0.19%         | 3.15%                | -0.16%  | 1.9%                                |
| 1994               | 144196600     | 93.9%        | 2.43%                                     | 4840500               | 3.36%                       | 1.57%   | 1.58%          | 3.15%                | 0.01%   | 2.2%                                |
| 1995               | 147915800     | 94.4%        | 2.58%                                     | 4941800               | 3.34%                       | 2.09%   | 2.32%          | 3.15%                | 0.06%   | 2.7%                                |
| 1996               | 151056200     | 94.6%        | 2.12%                                     | 5105000               | 3.38%                       | 3.30%   | 2.43%          | 3.20%                | 1.37%   | 5.2%                                |
| 1997               | 154541200     | 95.1%        | 2.31%                                     | 5201900               | 3.37%                       | 1.90%   | 4.58%          | 3.20%                | 0.13%   | 2.8%                                |
| 1998               | 158481200     | 95.5%        | 2.55%                                     | 5646100               | 3.56%                       | 8.54%   | 5.73%          | 3.40%                | 6.29%   | 11.3%                               |
| 1999               | 161531300     | 95.8%        | 1.92%                                     | 6027600               | 3.73%                       | 6.76%   | 7.85%          | 3.57%                | 5.07%   | 12.5%                               |
| 2000               | 165370800     | 96.0%        | 2.38%                                     | 6524600               | 3.95%                       | 8.25%   | 3.69%          | 3.79%                | 5.95%   | 12.9%                               |
| 2001               | 165519200     | 95.3%        | 0.09%                                     | 6268300               | 3.79%                       | -3.93%  | -0.39%         | 3.61%                | -4.71%  | -172.7%                             |
| 2002               | 165158100     | 94.2%        | -0.22%                                    | 5925100               | 3.59%                       | -5.48%  | -4.33%         | 3.38%                | -6.36%  | -95.0%                              |
| 2003               | 166026500     | 94.0%        | 0.53%                                     | 5713200               | 3.44%                       | -3.58%  | -3.58%         | 3.23%                | -4.28%  | -24.4%                              |
| 2004               | 169036700     | 94.5%        | 1.81%                                     | 5617100               | 3.32%                       | -1.68%  | -1.47%         | 3.14%                | -2.92%  | -3.2%                               |
| 2005               | 172556400     | 94.9%        | 2.08%                                     | 5665500               | 3.28%                       | 0.86%   | 0.54%          | 3.12%                | -0.78%  | 1.4%                                |
| 2006               | 176116600     | 95.4%        | 2.06%                                     | 5803100               | 3.30%                       | 2.43%   | 2.74%          | 3.14%                | 0.89%   | 3.9%                                |
| 2007               | 179874700     | 95.4%        | 2.13%                                     | 6088700               | 3.38%                       | 4.92%   | 3.74%          | 3.23%                | 2.73%   | 7.6%                                |
| 2008               | 179643900     | 94.2%        | -0.13%                                    | 6324700               | 3.52%                       | 3.88%   | 1.11%          | 3.32%                | 2.70%   | 102.3%                              |
| 2009               | 174225700     | 90.7%        | -3.02%                                    | 5979100               | 3.43%                       | -5.46%  | -0.55%         | 3.11%                | -6.15%  | -6.4%                               |
| 2010               | 173043700     | 90.4%        | -0.68%                                    | 5976200               | 3.45%                       | -0.05%  | -0.87%         | 3.12%                | 0.30%   | -0.2%                               |
| 2011               | 176341700     | 91.1%        | 1.91%                                     | 6149500               | 3.49%                       | 2.90%   | 0.95%          | 3.18%                | 1.76%   | 5.3%                                |
| 2012               | 179613300     | 92.6%        | 1.86%                                     | 6149500               | 3.42%                       | 0.00%   |                | 3.17%                | -0.20%  | 0.0%                                |
| Net Change         | 71299500      |              |   | 4930789               |                             |   |                |                      |   |                                     |
| Average            |               | 93.62%       | 1.48%                                     |                       | 3.03%                       | 4.99%   |                | 2.84%                | 3.44%   | 6.9%                                |
| Standard deviation | 23740357      | 1.6%         | 1.52%                                     | 1623756               | 0.76%                       | 7.37%   | 5.93%          | 0.72%                | 6.79%   | 41.1%                               |

## US Compensation

| Year       | Gross US Compensation (millions) | # of Employed in US | FDI Gross US Compensation (millions) | FDI Gross US Wages (millions) | Total US FDI Employees (thousands) | Per Capita US Compensation | Per capita Compensation % Yearly Change | FDI Per Capita US Compensation | FDI Per Capita Compensation % Yearly Change | US FDI Compensation Multiplier | FDI Per Capita Wages |
|------------|----------------------------------|---------------------|--------------------------------------|-------------------------------|------------------------------------|----------------------------|---|--------------------------------|---|--------------------------------|----------------------|
| 1973       | \$ 815,000.00                    | 98427500            |                                      |                               |                                    | \$ 8,280.21                |   |                                |   |                                |                      |
| 1974       | \$ 890,300.00                    | 100111800           |                                      |                               |                                    | \$ 8,893.06                | 7.40%                                   |                                |   |                                |                      |
| 1975       | \$ 950,200.00                    | 98900600            |                                      |                               |                                    | \$ 9,607.63                | 8.04%                                   |                                |   |                                |                      |
| 1976       | \$ 1,051,200.00                  | 101591200           |                                      |                               |                                    | \$ 10,347.35               | 7.70%                                   |                                |   |                                |                      |
| 1977       | \$ 1,169,000.00                  | 105042200           | \$ 18,781.00                         | \$ 15,845.00                  | 1218.711                           | \$ 11,128.86               | 7.55%                                   | \$ 15,410.54                   |   | 1.38                           | \$ 13,001.44         |
| 1978       | \$ 1,320,200.00                  | 109686600           | \$ 24,225.00                         | \$ 20,183.00                  | 1429.871                           | \$ 12,036.11               | 8.15%                                   | \$ 16,942.09                   | 9.94%                                       | 1.41                           | \$ 14,115.26         |
| 1979       | \$ 1,481,000.00                  | 113147100           | \$ 31,686.00                         | \$ 26,479.00                  | 1753.188                           | \$ 13,089.16               | 8.75%                                   | \$ 18,073.36                   | 6.68%                                       | 1.38                           | \$ 15,103.34         |
| 1980       | \$ 1,626,200.00                  | 113983200           | \$ 40,047.00                         | \$ 33,120.00                  | 2033.932                           | \$ 14,267.01               | 9.00%                                   | \$ 19,689.45                   | 8.94%                                       | 1.38                           | \$ 16,283.73         |
| 1981       | \$ 1,795,300.00                  | 114914000           | \$ 54,798.00                         | \$ 44,965.00                  | 2416.565                           | \$ 15,622.99               | 9.50%                                   | \$ 22,675.99                   | 15.17%                                      | 1.45                           | \$ 18,606.99         |
| 1982       | \$ 1,894,300.00                  | 114163300           | \$ 61,487.00                         | \$ 50,139.00                  | 2448.062                           | \$ 16,592.90               | 6.21%                                   | \$ 25,116.60                   | 10.76%                                      | 1.51                           | \$ 20,481.10         |
| 1983       | \$ 2,013,900.00                  | 115645700           | \$ 66,807.00                         | \$ 54,298.00                  | 2546.514                           | \$ 17,414.40               | 4.95%                                   | \$ 26,234.69                   | 4.45%                                       | 1.51                           | \$ 21,322.48         |
| 1984       | \$ 2,217,400.00                  | 120528100           | \$ 73,155.00                         | \$ 59,437.00                  | 2714.295                           | \$ 18,397.37               | 5.64%                                   | \$ 26,951.75                   | 2.73%                                       | 1.46                           | \$ 21,897.77         |
| 1985       | \$ 2,389,000.00                  | 123796700           | \$ 79,933.00                         | \$ 65,688.00                  | 2862.153                           | \$ 19,297.77               | 4.89%                                   | \$ 27,927.58                   | 3.62%                                       | 1.45                           | \$ 22,950.56         |
| 1986       | \$ 2,543,800.00                  | 126232300           | \$ 86,492.00                         | \$ 71,525.00                  | 2937.89                            | \$ 20,151.74               | 4.43%                                   | \$ 29,440.18                   | 5.42%                                       | 1.46                           | \$ 24,345.70         |
| 1987       | \$ 2,724,300.00                  | 129548400           | \$ 96,009.00                         | \$ 79,926.00                  | 3224.3                             | \$ 21,029.21               | 4.35%                                   | \$ 29,776.70                   | 1.14%                                       | 1.42                           | \$ 24,788.64         |
| 1988       | \$ 2,950,000.00                  | 133563900           | \$ 119,588.00                        | \$ 99,217.00                  | 3844.2                             | \$ 22,086.81               | 5.03%                                   | \$ 31,108.68                   | 4.47%                                       | 1.41                           | \$ 25,809.53         |
| 1989       | \$ 3,142,600.00                  | 136177800           | \$ 144,158.00                        | \$ 118,658.00                 | 4511.5                             | \$ 23,077.18               | 4.48%                                   | \$ 31,953.45                   | 2.72%                                       | 1.38                           | \$ 26,301.23         |
| 1990       | \$ 3,342,700.00                  | 138330900           | \$ 163,592.00                        | \$ 133,283.00                 | 4734.5                             | \$ 24,164.52               | 4.71%                                   | \$ 34,553.17                   | 8.14%                                       | 1.43                           | \$ 28,151.44         |
| 1991       | \$ 3,452,000.00                  | 137612800           | \$ 175,969.00                        | \$ 142,761.00                 | 4871.9                             | \$ 25,084.88               | 3.81%                                   | \$ 36,119.17                   | 4.53%                                       | 1.44                           | \$ 29,302.94         |
| 1992       | \$ 3,671,100.00                  | 138166100           | \$ 182,079.00                        | \$ 146,766.00                 | 4715.4                             | \$ 26,570.19               | 5.92%                                   | \$ 38,613.69                   | 6.91%                                       | 1.45                           | \$ 31,124.83         |
| 1993       | \$ 3,820,700.00                  | 140774400           | \$ 193,000.00                        | \$ 150,014.00                 | 4765.6                             | \$ 27,140.59               | 2.15%                                   | \$ 40,498.57                   | 4.88%                                       | 1.49                           | \$ 32,317.86         |
| 1994       | \$ 4,010,100.00                  | 144196600           | \$ 200,615.00                        | \$ 160,319.00                 | 4840.5                             | \$ 27,809.95               | 2.47%                                   | \$ 41,445.10                   | 2.34%                                       | 1.49                           | \$ 33,120.34         |
| 1995       | \$ 4,202,600.00                  | 147915800           | \$ 206,354.00                        | \$ 164,961.00                 | 4941.8                             | \$ 28,412.11               | 2.17%                                   | \$ 41,756.85                   | 0.75%                                       | 1.47                           | \$ 33,380.75         |
| 1996       | \$ 4,422,100.00                  | 151056200           | \$ 220,637.00                        | \$ 177,630.00                 | 5105                               | \$ 29,274.53               | 3.04%                                   | \$ 43,219.78                   | 3.50%                                       | 1.48                           | \$ 34,795.30         |
| 1997       | \$ 4,714,700.00                  | 154541200           | \$ 233,482.00                        | \$ 189,360.00                 | 5201.9                             | \$ 30,507.72               | 4.21%                                   | \$ 44,883.98                   | 3.85%                                       | 1.47                           | \$ 36,402.08         |
| 1998       | \$ 5,077,800.00                  | 158481200           | \$ 262,112.00                        | \$ 210,397.00                 | 5646.1                             | \$ 32,040.39               | 5.02%                                   | \$ 46,423.55                   | 3.43%                                       | 1.45                           | \$ 37,264.13         |
| 1999       | \$ 5,410,300.00                  | 161531300           | \$ 292,727.00                        | \$ 238,433.00                 | 6027.6                             | \$ 33,493.82               | 4.54%                                   | \$ 48,564.44                   | 4.61%                                       | 1.45                           | \$ 39,556.87         |
| 2000       | \$ 5,856,600.00                  | 165370800           | \$ 332,164.00                        | \$ 271,941.00                 | 6524.6                             | \$ 35,414.96               | 5.74%                                   | \$ 50,909.48                   | 4.83%                                       | 1.44                           | \$ 41,679.34         |
| 2001       | \$ 6,046,500.00                  | 165519200           | \$ 344,730.00                        | \$ 280,363.00                 | 6268.3                             | \$ 36,530.51               | 3.15%                                   | \$ 54,995.77                   | 8.03%                                       | 1.51                           | \$ 44,727.12         |
| 2002       | \$ 6,141,900.00                  | 165158100           | \$ 341,935.00                        | \$ 256,393.00                 | 5925.1                             | \$ 37,188.00               | 1.80%                                   | \$ 57,709.57                   | 4.93%                                       | 1.55                           | \$ 43,272.35         |
| 2003       | \$ 6,365,400.00                  | 166026500           | \$ 342,711.00                        | \$ 252,887.00                 | 5713.2                             | \$ 38,339.66               | 3.10%                                   | \$ 59,985.82                   | 3.94%                                       | 1.56                           | \$ 44,263.64         |
| 2004       | \$ 6,740,500.00                  | 169036700           | \$ 351,905.00                        | \$ 259,008.00                 | 5617.1                             | \$ 39,875.96               | 4.01%                                   | \$ 62,648.88                   | 4.44%                                       | 1.57                           | \$ 46,110.63         |
| 2005       | \$ 7,087,800.00                  | 172556400           | \$ 365,498.00                        | \$ 271,323.00                 | 5665.5                             | \$ 41,075.27               | 3.01%                                   | \$ 64,512.93                   | 2.98%                                       | 1.57                           | \$ 47,890.39         |
| 2006       | \$ 7,503,200.00                  | 176116600           | \$ 395,877.00                        | \$ 292,864.00                 | 5803.1                             | \$ 42,603.59               | 3.72%                                   | \$ 68,218.19                   | 5.74%                                       | 1.60                           | \$ 50,466.82         |
| 2007       | \$ 7,899,100.00                  | 179874700           | \$ 437,566.00                        |                               | 6088.7                             | \$ 43,914.46               | 3.08%                                   | \$ 71,865.26                   | 5.35%                                       | 1.64                           | \$ -                 |
| 2008       | \$ 8,079,200.00                  | 179643900           | \$ 457,154.00                        |                               | 6324.7                             | \$ 44,973.42               | 2.41%                                   | \$ 72,280.74                   | 0.58%                                       | 1.61                           | \$ -                 |
| 2009       | \$ 7,787,800.00                  | 174225700           | \$ 450,605.00                        |                               | 5979.1                             | \$ 44,699.49               | -0.61%                                  | \$ 75,363.35                   | 4.26%                                       | 1.69                           | \$ -                 |
| 2010       | \$ 7,967,300.00                  | 173043700           | \$ 448,948.00                        |                               | 5976.2                             | \$ 46,042.13               | 3.00%                                   | \$ 75,122.65                   | -0.32%                                      | 1.63                           | \$ -                 |
| 2011       | \$ 8,278,500.00                  | 176341700           | \$ 471,195.00                        |                               | 6149.5                             | \$ 46,945.79               | 1.96%                                   | \$ 76,623.30                   | 2.00%                                       | 1.63                           | \$ -                 |
| 2012       |                                  | 179613300           |                                      |                               |                                    |                            |   |                                |   |                                |                      |
| Net Change | \$ 7,109,500.00                  | 71299500            | \$ 452,414.00                        |                               | 4930.789                           | \$ 35,816.93               |   | \$ 61,212.76                   |   |                                |                      |
| Average    |                                  |                     |                                      |                               |                                    |                            | 4.14%                                   |                                | 4.60%                                       | 1.49                           |                      |

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