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# Motivations for US Foreign Direct Investment

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**Abstract**

The purpose of this thesis is to determine US firms' motivations for foreign direct investment and to explore to what extent US firms continue to invest into China and India. I first correlate the agricultural, industrial, and service sectors in the United States with those of China and India. I find that there is a positive relationship between the correlation of US sectors and the host country's sectors and foreign direct investment into each sector. This supports the theory of Vernon's product life cycle hypothesis, which explains that firms expand into lesser developed countries when their product becomes more sensitive to cost of production. I also find that there is a negative relationship between the correlation of the US and host country's economies and FDI into each sector. This supports the cash flow diversification theory, which explains that if sectors in the United States and the host country have a low correlation, US firms will disburse more foreign direct investment into this sector in order to reduce cash flow volatility. I then examine the impact of investment profitability on continuing FDI. The results generally indicate that investment decisions are positively affected by the profitability of previous investments, as expected.

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## **I. Introduction**

Globalization is “the development of an increasingly integrated global economy marked especially by free trade, free flow of capital, and the tapping of cheaper foreign labor markets” (Merriam-Webster Online Dictionary). The global economy started becoming more integrated in late 19<sup>th</sup> century. Corporations were interested in seeking new opportunities to achieve higher rates of return on their investments and a way to diversify the risk on their portfolios. Globalization has been facilitated by the creation of new technology, such as video conferencing, the internet, and cell phones. Advances in technology now allow individuals around the world to be in-sync with one another. This age of increased communication has allowed businesses and corporations to extend their network of operations overseas. CEOs of publicly traded companies have the obligation to make decisions based on increasing their shareholders’ wealth. A common way to increase profit is to lower costs. Globalization has given firms the opportunity to transfer certain activities of production, research and development, distribution of products, and customer service overseas. When a firm does this by investing directly in equipment or in local businesses in the foreign country, it is called Foreign Direct Investment.

Foreign Direct Investment (FDI) is a measure of one firm’s foreign ownership of assets in another country. Foreign Direct Investment can be done through collaborations, joint ventures, private opening of companies, or through capital markets. Some countries put restrictions and regulations on the amount of ownership a foreign company can hold in a specific industry. Expanding into foreign markets becomes possible as countries deregulate their foreign direct investments policies and loosen their restrictions on trade. India’s market liberalization of 1991 and China’s economic reforms in the late 1970’s

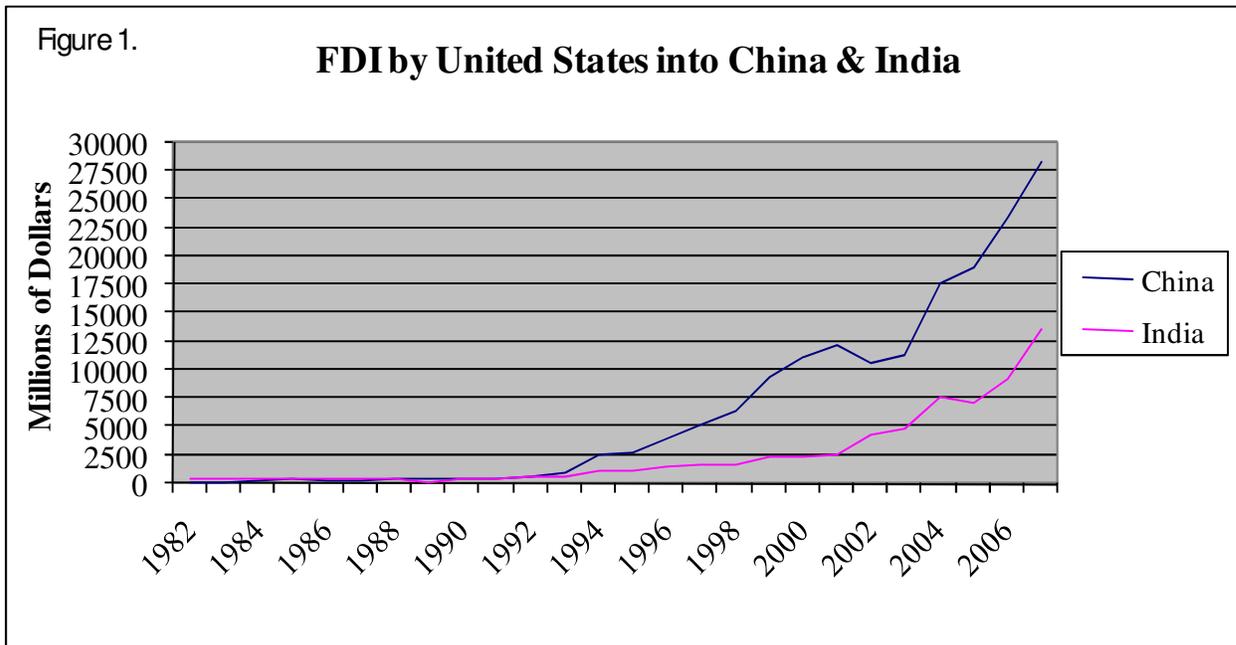
have aided in this process. Opportunities arose for expansion and growth and corporations seized these whole-heartedly.

China began its liberalization in 1979 with the lifting of the ban on foreign direct investment. China developed The Special Economic Zones (SEZ) in 1980, which were export processing centers, and China offered incentives policies for FDI. To further target its focus on exporting, China adopted a coastal development strategy, which had three main objectives. “First, China was hoping to develop an export-led economy in its coastal region. Second, using foreign resources to manufacture products for foreign markets, the Chinese coastal region was expected to give up much of the domestic market to foreign inland producers. Lastly, entering highly competitive world markets would require Chinese enterprises to improve their efficiency and modernize the production technologies.” (Hsieh and Lu, 2003) With this in mind, China continued to open itself to foreign trade by decentralizing power to local authorities and by giving tariff exemptions and rebates.

India initiated its economic reforms in 1991. “To attract FDI, the policy regime for FDI was liberalized considerably. The first step in this direction was the grant of automatic approval, or exemption from a case by case approval, for equity investment of up to 51 per cent and foreign technology agreements in identified high-priority industries” (Goldar and Banga, 2006.). India, like China, began by providing incentives to attract foreign direct investment, such as tax breaks. India also became a member of the Multilateral Investment Guarantee Agency, which helps support economic growth in developing nations by promoting FDI. Trade was also encouraged as India lowered

nominal rates of protection, which is a percentage tariff placed on a product that enters the country.

With the liberalization of policies by both countries, the United States steadily increased FDI inflows from 1982 to 2007 into China and India.



The purpose of this thesis is to determine US firms' motivations for foreign direct investment and to explore the reason for US firms' continued investment in China and India. I first correlate the GDP in the agricultural, industrial, and service sectors of the United States with those of China and India. I find that there is a positive relationship between the correlation of US sectors and the host country's sectors and US foreign direct investment in each sector. This supports the Vernon's product life cycle hypothesis, which explains that firms expand into lesser developed countries when their product becomes more sensitive to the cost of production (Vernon, 1996). I also find that

there is a negative relationship between the correlation of the US and host country's economies and US FDI in each sector. This supports the theory of cash flow diversification, which explains that if sectors in the United States and the host country have a low correlation, US firms will disburse more foreign direct investment into this sector, in order to reduce the volatility of their cash flows. I then examine the extent to which the profitability of firms' investments affects continuing investment. I do this by regressing US FDI on income from investments in the same year and in the two previous years. The results generally indicate that investment decisions are positively affected by the profitability of previous investments, as expected.

## **II. Review of Literature**

The literature on motivations for foreign direct investment is extensive, but there is little testing performed at the firm level. It is important to note that firms are able to cater to foreign buyers in three ways, either by exporting their products abroad, opening up foreign subsidiaries, or by allowing a foreign firm to produce their product. One theory for the motivation of FDI, states that foreign direct investment is directly related to an escape response from the home country. For example, Germany "experienced a surge in OFDI (outward foreign direct investment) of about 400% between 1990 and 2003...explicitly pointing to factors specific to Germany, such as taxes and social security contributions, and high regulatory density as well as the manifold rigidities and inflexibilities in the labor market" (Witt and Lewin 2007). Firms wanted to escape the high regulations by investing their operations abroad. A second theory (Driffield and

Love, 2007) explains that a company deems it more beneficial to setup facilities abroad through FDI, rather than exporting to the host country, when a company faces a competitive advantage and when property rights cannot be ensured to be protected. A third theory focuses on cost issues. Yeaple (2003) discusses two motivations for firms which engage in foreign direct investment. The first motivation is to avoid the costs associated with international trade, such as shipping costs and import taxes. The second motivation is that if firms can break down their production processes, they can find the location where it would cost the least to produce that specific function. A fourth motivation for foreign direct investment comes from Markowitz's (1952) Modern Portfolio theory, which explains shareholder diversification. The diversification aspect of this theory states that lack of correlation among different markets can aid investors in their reduction of risk and in their maximizing of profitability. Cash flow diversification, which is related to this theory, suggests that firms would try to reduce cash flow volatility by investing in foreign countries whose economies do not move together with the economies of their home countries.

Other variables that are commonly known to affect the motivation for FDI are as follows, trade barriers, imperfect labor markets, vertical integration, and the product life cycle. Trade barriers strongly affect the decision of investing overseas because governments have imposed tariffs and restrictions on exports and imports. An example of this is that a firm would be more inclined to use foreign direct investment instead of exporting, if their country's export taxes are high, or the host country's import taxes are high. The imperfect labor market variable shows that labor services could be cheaper in a certain country, which would incline multinational corporations to open subsidiaries

because of the inability for its citizens to move freely for employment. There are also discrepancies between countries in terms of cost of labor.

Firms, therefore, can benefit from a lower cost labor market when manufacturing their products. Vertical integration makes firms more likely to use the FDI method because they would want to cut costs by directly receiving the parts of their product instead of having it transported to them. This would allow the firm to cut out the middle man. The product life cycle variable, as explained earlier, states that firms would be more inclined to use foreign direct investment when the market becomes saturated and costs become more of an issue.

For the purposes of this thesis, I will examine the key motivators for firm level foreign direct investment by correlating movements of different sectors of host countries with the corresponding sectors in the US and looking at how these correlations are related to US FDI. I will also be exploring to what extent US firms make the decision to continue to invest into each country by sector by looking at the relationship between profitability levels and firms' continuing investment decisions. I will relate both of these to existing theories to determine if they add more information on US firms' decisions to invest abroad.

### **III. Data Analysis**

#### **Section I.**

This section first will correlate the agricultural, industrial, and service sectors of the United States to China and India to determine how US firms can reduce cash flow volatility. I expect the results to show that if total economies move together, the United States' firms would be less inclined to invest in the host country because the firms wouldn't be able to diversify their cashflow streams. Therefore, when a sector of the host country has a low correlation with the same sector in the US, the U.S. firms would allocate more foreign direct investment into that industry.

Analyzing the data collected from the U.S. Bureau of Economic Analysis, the National Bureau of Statistics of China, and the Reserve Bank of India, I gathered statistics on the Gross Domestic Product by sector. I correlated the data from China to the United States and from India to the United States to see if there was a relationship between the different sectors. This section analyzes three sectors, agriculture, which is made up of agriculture, forestry, animal husbandry, fishery, and services in support of these industries; industry, which is made up of mining, manufacturing, construction, and utilities; and service, which is made up of finance, insurance, real estate, professional and business services, educational and health care services, and arts, entertainment, and recreational services. The years the data is collected from are 1991 to 2006. Each country had their data reported in their own currency (US Dollar, Chinese Yuan, and Indian Rupee). I converted the Chinese Yuan and Indian Rupee to the US dollar by averaging the monthly exchange rates documented by the St. Louis Fed for each year.

After converting to all one currency, I was able to correlate the data to test the relationship between similar industries in the different countries. In each table below, the row named Correlation stands for the correlation between the GDP in the United States and the GDP in each country by sector. T-statistics are given in parentheses.

**Table 1: Correlation between US GDP and GDP in China and India by sector**

**Panel A: China**

Sectors:	Total	Agriculture	Industry	Services
Correlation	0.735 (12.159)	0.139 -(2.49)	0.53 (2.939)	0.847 (15.895)

**Panel B: India**

Sectors:	Total	Agriculture	Industry	Services
Correlation	0.823 (13.212)	0.025 -(0.543)	0.497 (6.714)	0.809 (14.639)

My results in Table 1 show a high correlation between the two economies and a positive relationship between the industry and service sectors for both countries. In the agricultural sector, the correlation between the two countries and the United States is low, which according to the cash flow diversification theory would imply that more foreign direct investment would be geared toward this sector.

Before proceeding with my regression model, a factor to consider is whether or not the country is a developing nation and if it is, how does that affect US firms' investment decisions. According to theories presented in the review of literature section, US firms, when introducing this product, are more likely to introduce the product to a developed nation first. It is later on in the product life cycle that the US firm begins to introduce their products to developing nations when cost of production becomes an increasingly important factor. It is for this reason that I chose to compare a large selection of countries for this regression model, which are Argentina, Australia, Austria,

the Bahamas, Belgium, Bermuda, Canada, China, Colombia, Czech Republic, Denmark, Dominican Republic, Finland, Greece, India, Indonesia, and Peru. My data was collected from various sources such as each country's central bank website, the United Nations Statistical Database, the U.S. Bureau of Economic Analysis, the St. Louis Fed, the U.S. Census Bureau, and the International Labour Organization. The time period that was examined was 1990-2008. The comparisons of the various developed and developing nations are presented below. The first four columns are correlations between GDP in the United States and GDP in the host countries. The last column displays the total amount of US foreign direct investment in billions of USD.

**Table 2: Correlation between US GDP and GDP in FDI Host Countries and US Total FDI in each country**

	Total GDP	Agriculture	Industry	Services	US Total FDI (in billions)
Argentina	0.5094 (-12.725)**	0.7604 (-1.134)	0.6312 (-4.643)**	0.3336 (-10.498)**	13.542
Australia	0.4794 (-11.992)**	0.1972 (-0.759)	0.1985 (-6.174)**	0.3489 (-12.740)**	51.088
Austria	0.6699 (-13.374)**	0.2697 (-1.003)	0.4238 (-4.335)**	0.4730 (-9.889)**	8.884
Bahamas	0.6597 (-9.629)**	-0.5295 (-0.265)	0.5158 (-2.680)**	0.0823 (-8.705)**	2.546
Belgium	0.7122 (-13.365)**	0.4879 (-1.103)	0.5251 (3.705)**	0.6413 (10.884)**	34.690
Bermuda	0.7201 (-10.875)**	-0.3170 (-0.940)	0.4733 (-2.680)**	0.7366 (-8.708)**	96.359
Brazil	0.4745 (-12.676)**	0.5898 (-0.953)	0.6329 (-4.790)**	0.2930 (-9.683)**	33.121
Canada	0.9396 (-14.125)**	0.1198 (-0.624)	0.5869 (-5.065)**	0.9574 (-21.101)**	188.107
China	0.7351 (12.159)**	0.1395 (-2.49)**	0.5305 (2.939)**	0.8475 (15.895)**	15.865
Colombia	0.8098 (-12.320)**	-0.1917 (-0.636)	0.6744 (-3.939)**	0.4821 (-9.720)**	3.721
Czech Republic	0.5863 (-12.283)**	0.5118 (-1.163)	0.3247 (-3.173)**	0.3439 (-9.878)**	2.084
Denmark	0.7223 (-13.606)**	0.1657 (-0.977)	0.6370 (-4.347)**	-0.3876 (-9.353)**	6.074
Dominican Republic	0.4967 (-13.436)**	-0.2408 (-0.999)	-0.0395 (-4.381)**	0.4050 (-9.969)**	0.968
Finland	0.6626 (-12.921)**	0.5060 (-1.165)	0.5749 (-4.324)**	0.6850 (-9.951)**	1.905
Greece	0.5981 (-8.741)**	0.3152 (-0.994)	0.5614 (-1.895)*	0.4148 (-5.751)**	1.378
India	0.8239 (13.212)**	0.0252 (-0.543)	0.4967 (6.714)**	0.8088 (14.639)**	6.005
Indonesia	0.3114 (-12.850)**	0.2812 (-0.679)	0.3248 (-4.330)**	0.0836 (-9.863)**	9.389
Peru	0.4027 (-13.440)**	-0.3327 (-0.957)	0.4568 (-4.375)**	0.3237 (-9.971)**	4.236

\*\* Significant at the 5% level

\* Significant at the 10% level

I will be testing each country's correlations between total GDP and GDP by sector in my regression model. I will be using these 18 countries to see if there is some pattern in US firms FDI.

The regression model I set up determines how foreign direct investment is distributed across sectors. I use the correlation between the country's various sectors and the corresponding sectors in the United States as well as the correlation between the total

GDP of each country to the total GDP of the United States as independent variables. I have included the US exports to each country and the imports into the US from each country as control variables to control for other theories. As I stated previously, theories suggest that firms will be most inclined to use FDI when exporting from the US is not favorable (trade barriers). Including the total imports comes from Krugman's (1983) New Trade Theory, which states that economies of scale have a role in trade. Countries that have a comparative advantage in one product would not only export it but also import a similar product. This holds true because consumers require variety and in the firm's perspective, as you produce more the cost per unit decreases. Another variable that I used as a control is the hourly wage per country in USD. According to the imperfect labor market theory, wages should play a part in the US firms' investment decision on where to construct their factories. If the wages are low in a country, but the labor is efficient, firms would be more likely to establish manufacturing plants there.

My regression model is as follows:

$$Y = b_0 + b_1\text{CORR} + b_2\text{GDP} + b_3\text{XPORT} + b_4\text{MPORT} + b_5\text{WAGE} + e$$

Where: Y = The average U.S. foreign direct investment in USD in billions in country i. by sector over the period of 1990-2007.

CORR = The correlation between the sector in country i. and the correlation of each sector in the United States

GDP = The correlation between the total GDP of country i. and the total

GDP of the United States

XPORT = The average \$ amount in billions of total United States exports to country i. from 1996-2007

MPORT = The average \$ amount in billions of total United States imports from country i. from 1996-2007

WAGE = The average hourly wage in USD\$ in country i. from 1996-2007

The sectors that I examine are Food Manufacturing, Total Manufacturing, Manufacturing of Computers and Electronic Products, the Information sector, Depository Institutions, Finance and Real Estate (excluding Depository Institutions), and Professional, Scientific, and Technical Services. The sample size is 18. For the US FDI into each sector I used the average of the period from 1990-2007, which is 17 years. My results are given in the following table.

Table 3.	Regression Coefficients by Sector							
	Food Manufacturing	Total Manufacturing	Manufacturing of Computers and Electronic Products	Information	Depository Institutions	Finance and Real Estate	Professional, Scientific, and Technical Services	
CORR	0.953 (2.173)*	24.321 (-0.912)	1.961 (1.066)	2.178 (1.821)**	0.638 (0.944)	16.777 (1.653)	1.184 (2.150)*	
GDP	-1.163 (-2.131)*	-48.783 (-1.472)	-2.943 (-1.286)	-2.970 (-1.929)**	-2.491 (-1.528)	-9.078 (-0.371)	-1.936 (-1.462)	
XPORT	0.021 (5.103)*	-0.044 (-0.173)	-0.009 (-0.525)	-0.031 (-2.932)*	-0.008 (-0.638)	-0.039 (-0.213)	-0.006 (-0.589)	
MPORT	0.000 (0.016)	0.127 (0.702)	0.008 (0.040)	0.027 (3.591)*	0.011 (1.341)	0.049 (0.386)	0.014 (2.112)*	
WAGE	-0.001 (-0.215)	0.368 (0.971)	0.043 (1.651)	-0.004 (-0.223)	0.007 (0.349)	0.381 (1.330)	0.018 (1.153)	
R Squared	0.9208	0.2109	0.2872	0.5479	0.2713	0.3033	0.5898	

\* Significant at the 5% level  
 \*\* Significant at the 10% level

Based on my results, one key motivator for foreign direct investment is the correlation between the total GDP of the United States and the total GDP of the host country. It was expected that as the economies moved together, there would be less foreign direct investment. The results showed that the relationship here is negative, agreeing with what was predicted. As the economies move together, there is less US FDI into each sector of the host economy. This can be explained by the cash flow diversification theory.

The second key motivator for foreign direct investment is the correlation between the industries of the United States and the host country to the foreign direct investment into each sector. It was expected that the relationship would be negative because if the firms had intentions of cash flow diversification, the results would show that when correlations of each sector are low, foreign direct investment is high. However, the relationship is positive and is consistent with Vernon's product life cycle hypothesis. United States firms, in order to continue to be profitable, expand to lesser developed nations to introduce their products. When the products are introduced into the LDCs, they are beginning in the early stages of the product life cycle, while the United States' firms are generating a profit even though in their domestic market, they might have reached market saturation. Hence, on both fronts the firm should show profitability.

## **Section II.**

This section will investigate to what extent profitability of previous investments affect investment decisions in future periods by country and by sector.

The data was collected from the Bureau of Economic Analysis and was reported in millions of dollars. I regress US FDI against FDI Income in the current year and in the two previous years. The chart below presents the results of this regression for China and India by sector. The data range for Total Manufacturing, Food, Depository Institutions, Finance (Except Depository Institutions) and Insurance, and Professional, Scientific, and Technical Services are from 1990-2007. The data range for Computers and Electronic Products and Information are from 1999-2007.

The model for this regression is:

$$FDI_t = b_0 + b_1 Inc_t + b_2 Inc_{t-1} + b_3 Inc_{t-2} + e_t$$

where:  $FDI_t$  = Foreign direct investment in year t

$Inc_t$  = The FDI Income levels in year t

**Table 4. The Impact of Profitability History of US FDI in China and India on Continuing FDI levels**

Regression of Investment Positions on Income Levels	China			India		
	Income 1 Year Prior	Income 2 Years Prior	Income 3 Years Prior	Income 1 Year Prior	Income 2 Years Prior	Income 3 Years Prior
<b>Total Manufacturing</b>	-2.0206	2.6380	0.8245	-1.0460	0.9744	3.6266
	(-1.7887)*	(2.1006)**	(0.6120)	(-1.3429)	(0.8451)	(3.8252)**
	R Square = 0.4538			R Square = 0.8247		
<b>Food</b>	-0.4120	0.6568	0.3285	-0.5151	0.5221	0.6174
	(-0.5857)	(0.8419)	(0.4345)	(-0.7217)	(0.8867)	1.4926
	R Square = 0.1539			R Square = 0.7547		
<b>Computers and Electronic Products</b>	-1.5822	0.6520	-1.1478	-1.5990	2.3058	-0.8586
	(-2.3259)**	(1.0214)	(-1.7583)*	(-0.5426)	(0.6024)	(-0.2591)
	R Square = 0.8684			R Square = 0.4915		
<b>Information</b>	0.4228	-2.877	1.3019	-	-	-
	(0.1881)	(-1.1039)	(0.5449)	-	-	-
	R Square = 0.5841					
<b>Depository Institutions</b>	0.5207	-0.2135	0.8309	2.7365	0.9700	-3.0397
	(0.6754)	(-0.2442)	(0.9613)	(1.3478)	(0.4448)	(-1.2588)
	R Square = 0.3981			R Square = 0.5263		
<b>Finance (Except Depository Institutions) &amp; Insurance</b>	-2.1533	0.0890	-13.2924	-2.4663	6.5426	4.2820
	(-0.2510)	(0.0109)	(-1.0260)	(-0.6313)	(1.3969)	(0.5719)
	R Square = 0.3495			R Square = 0.7556		
<b>Professional, Scientific, &amp; Technical Services</b>	3.4255	-0.0153	2.2797	3.2370	-2.9112	-1.2150
	(2.5738)**	(-0.0104)	(1.6216)	(4.3100)**	(-2.129)**	(-0.3431)
	R Square = 0.7342			R Square = 0.7781		

\*\* = Significant at the 5% level

\* = Significant at the 10% level

In general, I find that the firm's profitability affected investment decisions positively. This is the case for China and India's total manufacturing sector and their professional, scientific, and technical service industry. However, in some cases, the

relationship was negative, contrary to expectations. This is seen in China's computers and electronic products sector.

I expected a positive relationship between investment decisions and profitability over a period of time. Given the lag between investment and profitability, I expected a positive relationship not only between current FDI and current profitability, but also between current FDI and past profitability. A good example of this kind of behavior from India's finance sector is Goldman Sachs. Goldman Sachs, a financial service provider, has been continuing to invest in India's growing economy. In 2004, Goldman Sachs opened its first office in Bangalore as a support and service center. Continuing to invest, Goldman Sachs then opened another office in 2006 in Mumbai, India. Goldman Sachs boasted that "in three short years [its] Bangalore office has grown to become GS' third largest, with over 2,000 employees, and the key to this successful growth is the speed with which people have embraced and embodied the firm's core values" (Goldman Sachs: India). Goldman reports that their Asia division consists of Australia, China, India, Japan, Korea, Hong Kong, Singapore, and Taiwan. In their 10-K financial statements since they have opened up their Bangalore office, Goldman Sachs reports a steady increase in net earnings from the Asian region, as seen in Table 5.

Table 5.

Pre Tax Earnings (In Millions of \$)	2007	2006	2005	2004	2003
Asia	4510	4015	1308	1121	658
Total	17604	14560	8273	6676	4445

\* Source: Goldman Sachs's 10-K for 2007

Based on their high profitability growth from 2003 to 2005 from their office in Bangalore, Goldman Sachs decided to continue to invest into India by expanding in Mumbai.

One explanation of a negative relationship between profitability and investment decision can be seen through the example of Apple Computers. Apple began using third party vendors to manufacture their signature iPod beginning in 2000. In 2007, Apple reported that all its final assembly of MacBooks, iPhones, and iPods were manufactured through this third-party vendor in China. The company also reported that it sells the third-party products to resellers. “Many of the Company’s resellers operate on narrow product margins and have been negatively affected by weak economic conditions over the last several years. Considerable trade receivables that are not covered by collateral or credit insurance are outstanding with the Company’s distribution and retail channel partners” (Apple Computers). This example shows that profitability was low due to weak economic conditions, but Apple continues to invest later on by transferring more manufacturing responsibilities to China. In spite of some unexpected negative events such as the East Asian crisis during these years that caused profitability to be low, Apple maintained a positive outlook and continued to invest.

Another factor to consider is the lack of protection of intellectual property rights. French (2005) from the NY Times reports that “the issue of intellectual property theft has been a fixture on the trade agenda between the United States and China for years, with visiting American officials routinely stopping at the famous Silk Market in Beijing to highlight the sale there, like all over China, of cheap knockoffs of toys, clothing, software, and DVDs.” Profitability is negatively affected because replicas of products are

being reproduced and sold for a cheaper price. However, firms like Apple continue to invest into China because of their efficient manufacturing and inexpensive labor.

In conclusion, there seems to be some relationship associated with FDI income levels and future investment decisions undertaken by US firms. Generally, from my results, as I expected, most firms will continue to invest into each country if their income levels are high, as seen in China's and India's total manufacturing and China's professional, scientific, and technical service sectors.

#### **IV. Conclusion**

In conclusion, there are many key motivators for foreign direct investment. This thesis explores several reasons why US firms choose to invest in different countries and different sectors. I explored how the correlation between a specific sector of the US and the host country and the correlation of the total GDP of the US and the host country affects US FDI. I also looked at how profitability affects US firms' investment decisions. For future studies, firm level data consisting of individual decisions, such as vertical integration and intangible assets, for using FDI is something that can be explored. One can also explore the data I used for foreign direct investment in each sector and break it down into sub-periods. This way, one can see if there seems to be more of an effect in the later years to account for a time lag of decision making by US firms.

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