

2019

## Determinants of Net Foreign Direct Investment in the USA

Jordan Burt  
*Assumption College*

Follow this and additional works at: <https://digitalcommons.assumption.edu/honorsthesis>



Part of the [Economics Commons](#)

---

### Recommended Citation

Burt, Jordan, "Determinants of Net Foreign Direct Investment in the USA" (2019). *Honors Theses*. 51.  
<https://digitalcommons.assumption.edu/honorsthesis/51>

This Honors Thesis is brought to you for free and open access by the Honors Program at Digital Commons @ Assumption University. It has been accepted for inclusion in Honors Theses by an authorized administrator of Digital Commons @ Assumption University. For more information, please contact [digitalcommons@assumption.edu](mailto:digitalcommons@assumption.edu).

# Determinants of Net Foreign Direct Investment in the USA

Jordan Burt

Faculty Supervisor: Professor Kantarelis, Ph.D.

Department of Economics and Global Studies

A Thesis Submitted to Fulfill the Requirements of the  
Honors Program at Assumption College

Spring 2019

## Abstract

This paper examines whether Net Foreign Direct Investment between the USA and its major trading partners (USNFDI) is affected by US Net Competitiveness (USNC), US Net Economic Freedom (USEF) and US Net Ease of Doing Business (USNE)<sup>(\*)</sup>. Through the use of panel data methodology, the hypothesis that US NFDI is positively affected by USNC, USEF and USNE was tested with data from the Global Competitiveness Report (World Economic Forum), the Index of Economic Freedom (Heritage Foundation), the Ease of Doing Business Index (World Bank) and the World Fact Book (CIA). It was found that all three independent variables had, as predicted, a positive effect on USNFDI, but only USNC was statistically significant. These findings suggest that rising net competitiveness in the US, between it and its trading partners, significantly contributes to higher USNFDI. As pointed out in the paper, NFDI must be judged on the basis of equimarginal welfare implications as they relate to the distribution of bilateral benefits.

---

<sup>(\*)</sup> Definitions:

i = trading partner

USNFDI = (US incoming FDI from country i) - (US outgoing FDI to country i)

USNC = (US's Competitiveness Rank) - (i's Competitiveness Rank)

USEF = (US's Freedom Rank) - (i's Freedom Rank)

USNE = (US's Ease of Doing Business Rank) - (i's Ease of doing Business Rank)

## Introduction

It was not until the 1970s that the term economic competitiveness made its debut on the global stage (Krugman, 1996). Since then, the notion of 'competitiveness' as a property of entire nations, rather than particular businesses, has been highly debated. Some intellectuals have adamantly denounced the usefulness of the idea of national competitiveness, as is the case with Paul Krugman who wrote the article "Competitiveness: A Dangerous Obsession". Contrary to this opinion, others in the field have sought to produce their own definitions of competitiveness in terms of global economies. While each individual definition helps to show that scholar's idea of competitiveness, the variance within the definitions has led to confusion about what competitiveness actually means, and whose interpretation is correct in terms of global economies. Because of this debate, it is important to be clear about the way competitiveness is defined to accurately discuss the topic.

For the purpose of this research, competitiveness will be defined as the ratio of relative costs over relative productivity. Christian Thimann, a supporter of this interpretation of competitiveness explains, "*Improving competitiveness means improving the price or cost structure of a firm or an economy relative to trading partners*" (Thimann, 2015). This definition shows the importance of productivity in a nation relative to its labor costs and how this ratio affects a nation's ability to compete with its trade partners. Hence improving competitiveness means a country can improve the prices and costs in their economy relative to trading partners.

While the debate over the definition of competitiveness has yet to be settled, many see competitiveness as an important aspect of a national economy. The World Economic Forum (WEF) released the first Global Competitiveness Report (GCR) in 1979, and since has released a

new edition each year (Cann, 2017). This Report computes competitiveness indices for over 100 countries based on a Global Competitiveness Index (GCI), which is comprised of twelve pillars. These pillars of evaluation fall into three categories. The first is basic requirements of the GCI are key for factor driven economies. The second is efficiency enhancers which are key to efficiency driven economies. And lastly, innovation and sophistication factors which are key for innovation driven economies (GCR 2017). Many policymakers use this yearly report as a basis for proposing new policies that can raise their GCI ranking, and thus they hope to expand their economies.

Due to this relationship between competitiveness and policy making, it is important to ensure that the GCI uses factors that fully encompass the competitiveness of an economy. Furthermore, national competitiveness is hypothesized to have a positive effect on the net foreign direct investment (NDFI) of a country. In other words, the higher the ranking and score a country receives in competitiveness, the higher their incoming foreign direct investment (IFDI). In turn, the argument is a higher IFDI will stimulate the economy, produce more jobs and other benefits as well as increase the NDFI. Furthermore, because FDI is tied into the overall standard of living for a nation, it would be pertinent to discover the connection between competitiveness and FDI. As such, any new developments in research concerning FDI can result in monumental policy applications in the future.

It seems to be an obvious connection that the ease of starting a business in a country makes it a more attractive country for IFDI. However, in order to examine if this is true, and the effect of the ease of doing business on the FDI of a country, it is crucial to also discuss the Ease of Doing Business Index, published by the World Bank (WB). This index is comprised of ten

factors that are used to produce a ranking of countries from 1-190. These factors range from the ease of acquiring electricity, registering property, paying taxes and conducting cross border trade. A high ranking implies that the regulatory environment in a country is conducive to opening and running a business. I theorized that countries that obtain higher level rankings in this index will experience more IFDI due to the simplicity of starting a company on their land.

The last determinant of NFDI that will be examined is the Index of Economic Freedom produced by the Heritage Foundation. This index provides a ranking of countries based on their individual level of economic freedom. The Index describes economic freedom as the fundamental human right to control their respective labor and property (The Heritage Foundation). In other words, in countries receive high rankings, people are allowed to consume, spend and invest in any way they see fit. I theorize that higher levels of economic freedom generate greater amounts of per capita income, create healthy societies and healthy democracy, all of which can be seen as positive influencers on IFDI.

Therefore, this thesis will look to examine the relationship between the USA's NFDI and its competitiveness as measured by the GCR, as well as the ease of doing business and economic freedom, assuming that causality runs from a nations competitiveness, ease of doing business and economic freedom to NFDI. More specifically, this research will search for the significance and strength of such a relationship between these possible determinants using data provided by the WEF's GCR, the WB, the Heritage Foundation as well as data on two periods of incoming and outgoing FDI from the CIA's World Fact Book. With the results from this testing it will then be possible to critically discuss the implications that competitiveness and the ease of doing business have on NFDI.

## The Competitiveness Debate

Economists have been debating the usefulness of the concept of national competitiveness since the 1970s (Krugman, 1996). In 1994, Paul Krugman published an article titled "*Competitiveness: A Dangerous Obsession*". In this article, Krugman critiqued the overall discussion of competitiveness and concluded the article with the statement, "*competitiveness is a meaningless word when applied to national economies*" (Krugman, 1994). While Krugman made this claim in 1994, just one year prior, the President of the European Commission, Jacques Delors made a presentation to the leaders of the European Union claiming that the problem of unemployment really stemmed from a lack of national competitiveness (Krugman, 1994). These differences in opinions show just how varied views about competitiveness were at the time.

Krugman hoped to end the debate in the 90's by persuading economists not to use the concept of competitiveness to analyze national economies. However, there is now a large literature that does exactly that. Twenty-one years after Delor's presentation, the idea that a lack of competitiveness is the cause of the unemployment is prevalent in economics. As discussed below, other articles make similar arguments while providing different measures of competitiveness. Because of this, it seems the debate has shifted away from trying to justify the use of the term competitiveness, to finding the best measurement of it.

In 2015, Christian Thimann published a paper in which he outlined exactly why he believes a competitiveness problem, along with structural barriers is to blame for unemployment in the Eurozone. Thimann defines competitiveness as, "a comparison of relative costs and relative productivity" (Thimann, 2015). With this definition, we see that if relative

cost of production rises relative to productivity, competitiveness will decline. On the other hand, if relative productivity rises relative to cost of production, competitiveness increases.

### **Definition of Competitiveness**

Most definitions of competitiveness fall into two categories. They are either productivity based definitions, or market share based definitions. Christian Ketels, a member of the Harvard Business School faculty at the Institute for Strategy and Competitiveness, defines this market share based definition of competitiveness as, *“the ability to sell on international markets”* and that this definition is, *“fundamentally concerned with the sustainability of an economy’s overall external balance”* (Ketels, 2006). When Ketels refers to a economy’s external balance he is referring to when an economy’s balance of payments, its account of the values of food and services, the movement of capital and other flow in or out of the country, are neither in deficit or surplus (Carbaugh, 2010).

Contrary to this market share based view, productivity based definitions root themselves in the contribution of competitiveness to the overall prosperity of a nation. Michael Porter, a leading American economist, leans towards the side of a productivity based definition of competitiveness and believes: *“the only meaningful concept of competitiveness at the national level is national productivity”* (Porter, 1998:6). Porter believes that productivity is the key influencer of the level of prosperity (Ketels, 2006). Krugman disagrees with the idea of competitiveness being connected to productivity and explains, *“for an economy with very little international trade, ‘competitiveness’ would turn out to be a funny way of saying ‘productivity’ and would have nothing to do with international competition”* (Krugman, 1994). Here, Krugman



explains that if sales of exports and sales of import-competing substitutes increase over time, then the competitiveness of a nation increases over time. While Krugman condemns this productivity based definition and seems to reject the concept of national competitiveness over all, he still admits to the importance of competitiveness in the more limited sense, “*capability of country to keep its current account in balance along with improving standards of living*” (Krugman in Djogo, 2016).

Overall, these two schools of thought influence the way that people measure competitiveness. Those who fall into the productivity based school of thought, such as Thimann, measure competitiveness relative to productivity. Whereas those who do not see the value of defining competitiveness relative to productivity, such as Krugman, measure it with other variables. Furthermore, some in the field interchange the term competitiveness with comparative advantage, or use it in similar ways as comparative advantage. (Siggle, 2006). Which shows just how varied the measurements of competitiveness are.

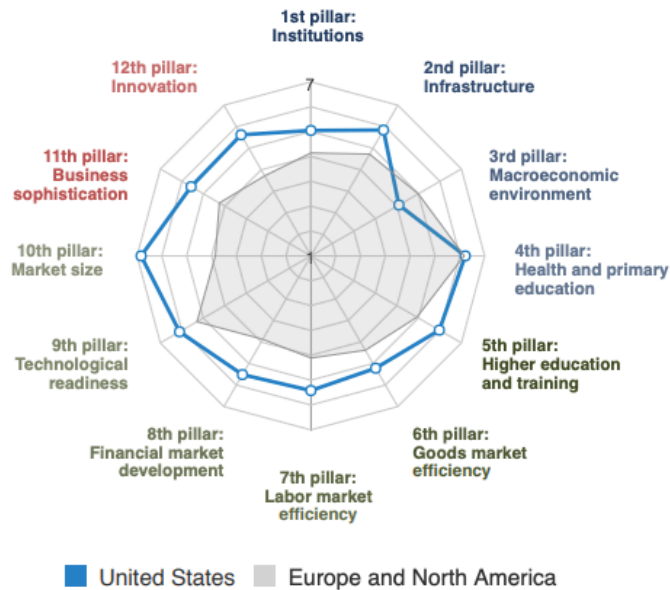
### **Measures of Competitiveness**

One approach to measuring competitiveness is given by David Dollar and Edward Wolff in their book *Competitiveness, Convergence, and International Specialization*. In this book, they propose to measure competitiveness in terms of productivity, by including both labor and total factor productivity (Dollar & Wolff, 1993). This idea of measuring competitiveness in terms of productivity is not far from that of Thimann, who proposes to measure competitiveness as the ratio of relative cost to relative productivity. Additionally, another approach aimed to compute competitiveness at the macroeconomic level is to examine the real exchange rate as well as the

real effective exchange rate (Siggel, 2006). This method is aimed at assessing purchasing power of a nation as well as the degree of currency misalignment when computing competitiveness. This is because when a currency is undervalued, competitiveness is enhanced, and when overvalued, competitiveness is reduced for domestic producers. While there are many different variations for the measurement of competitiveness, within the literature, one of the most common forms of measurement relies on productivity. This thesis, like Michael Porter, will assume that the productivity of a nation is important to its competitiveness level.

Today, one of the best-known measurers of competitiveness is produced by the WEF in their yearly Global Competitiveness Index. This index is comprised of twelve pillars. These pillars are; institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods and market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication and innovation (Schwab, 2016). These pillars are all scored from one to seven, the scores are then aggregated to find the overall GCI scores, then countries are ranked based on their overall GCI score. In this report, they then compare the countries to the average of the surrounding region through the use of radar graphs, as in figure below, where it depicts the United States ranking in the twelve pillars to that of Europe and North America.

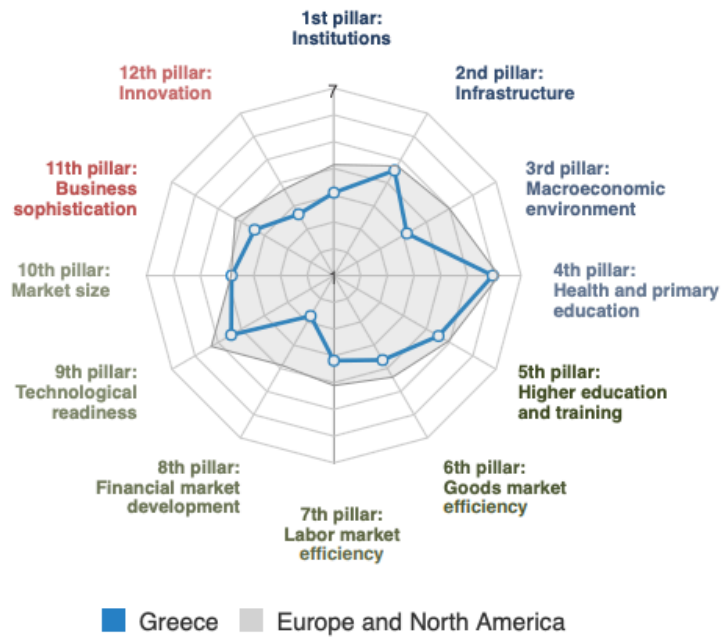
**Figure 1: United States Scores per Pillar against Europe and North America**



Source: The Global Competitiveness Report 2017-2018, produced by the World Economic Forum

In figure one we see that in almost of the pillars, the United States surpasses the radar of Europe and North America. While these graphs show where countries exceed economically, they also show where there is need for improvement. In the United States case, one can see a lacking in the third pillar, Macroeconomic environment. When looking at figure 2, we can see an example of a country that has scored lower in almost all pillars than the United States. These lower scores per pillar results in their lower competitiveness ranking. Figure 2 shows the radar graph for Greece in relation to Europe and North America, one can see they fall short of the average of the surrounding regions except for three. On average, Greece seems to be scoring around the four range for each pillar, compared to the United States in the first graph, which was scoring on average closer to six for each pillar.

**Figure 2: Greece Scores per Pillar against Europe and North America**



Source: The Global Competitiveness Report 2017-2018, produced by the World Economic Forum

### The Importance of FDI

One important outcome of greater competitiveness in the global economy is that a country may begin to attract more foreign investment. This paper focuses on Foreign Direct Investment or FDI, and investigate the degree to which it is affected by competitiveness. FDI can be seen as an investment made by a foreign company or country. Therefore, a country can have incoming (IFDI) and outgoing (OFDI), and in turn net FDI (NFDI), which is the difference between IFDI and OFDI. When companies move from one country to another or even simply opens a new branch in a foreign country, the new host country experiences varied benefits within their economy and society.

These benefits can be seen through a wide scope of changes that occur in the host country. For starters FDI can work as a vehicle for the transfer of technology between countries

as well as motivates domestic investment (Makki & Somwaru, 2004). When companies arrive in the host country, they often bring with them new technology and more efficient production methods. Once the company becomes established, and the benefits of this new technology is realized, this better technology and research may be applied to other areas of the host country to improve its overall manufacturing and production.

Furthermore when IFDI occurs, it is the case that those from the home country seek to work the management side of the company (Pandey, 2014). Therefore, when a new plant, factory, business, whatever it may be, opens in the host country, new employment opportunities are generated. While this stimulates the economy of the host country, it also works to improve the welfare of the people. Those who become employed receive the benefits of an investment that result in physical capital. Because the investment of opening a new branch or starting a new company is less liquid, it is hard to pull out once the job has begun. Therefore, these investments are less volatile and the workers have a sense of security.

In their paper, *How does foreign direct investment affect economic growth*, Broensztein, Gregorio and Lee examine the effect of FDI on economic growth by analyzing the FDI flows from industrial countries to 69 developed countries. In this paper, they conclude that FDI does in fact stimulate domestic investment and that FDI does affect the growth of an economy (Borensztein, 1998). While they concluded that the FDI does have positive effects on the economy, they cautioned that economic growth in relation to increased FDI is dependent on the level of human capital available. Therefore, if there are not enough skilled workers available in the host country, then the economy will not grow.

In contrast to these findings, Maria Carovic and Ross Levine from the University of Minnesota found that, “*the exogenous component of FDI does not exert a robust positive influence on economic growth*” (Carovic and Levine, 2002). Their empirical research led to the conclusion that FDI does not lead to economic growth and that previous macroeconomic studies have found a positive link between the two because of statistical problems. They corrected for these “statistical problems” by constructing a panel dataset with data averaged over a five-year period and then ran the data through the Generalized Method of moments panel estimator to find a consistent and efficient impact of FDI flows on economic growth (Carovic and Levine, 2002). Through these methods, they hoped to enhance the quality and quantity of data used to examine this connection.

## **Methodology**

It is assumed that NFDI has an impact on national income and in turn national welfare. Therefore, this hypothesis is being examined in the hopes that positive findings will impact policy decisions between countries in order to improve the welfare of both nations. If it is found that competitiveness and the ease of doing business are positive influencers of NFDI, then it is important to more closely monitor FDI deals that are occurring. Hence the hypothesis being tested is the following;

$$USNFDI_{i,j,t} = f(NC_{i,j,t}, NE_{i,j,t}, NF_{i,j,t})$$

USNFDI is NFDI for USA

NC is net competitiveness

NE is net ease of doing business

NF is net economic freedom

$i$  is the home country (United States)

$j$  is the foreign countries

$t$  is time periods

This hypothesis states the assumption that the United States NFDI is a positive function of NC, NF and NE with regards to countries they interact with. Based on preliminary results, the linear time series mode below is proposed to identify the full effect of NE and NC on USNFDI.

$$\text{USNFDI} = \alpha + \beta_{\text{NC}}\text{NC} + \beta_{\text{NE}}\text{NE} + \beta_{\text{NF}}\text{NF} + \varepsilon$$

A defense of this linear model will be presented in the next section.

To compute NC for this model, the competitiveness levels for the United States in the years 2015 and 2016 from the GCI were used as the base from which to compare other countries. Therefore, NC represents the difference between competitiveness in the USA and the other nations present in the data set for each year. Similarly, NE and NF has been computed in the same way. By statistically testing this hypothesis, this thesis will hope to fill the gap in literature regarding the relationship between FDI, competitiveness and the ease of doing business in each country. In order to achieve this, the hypothesis will be tested with data consisting of information coming from the World Economic Forums Global Competitiveness Index (GCI), and NFDI data from the World Fact Book for 81 countries in the years 2015 and 2016 to produce 162 observations.

After compiling the data, initial tests were run on the data in order to justify the claim that panel data must be used to truly examine a causal relationship. Table 1 shows the results of the said test preformed in the statistical software Stata.

**Table 1: Panel Test**

```
. xtsum $id $t $ylist $xlist
```

Variable		Mean	Std. Dev.	Min	Max	Observations
id	overall	<b>41</b>	<b>23.4534</b>	<b>1</b>	<b>81</b>	N = 162
	between		<b>23.52658</b>	<b>1</b>	<b>81</b>	n = 81
	within		<b>0</b>	<b>41</b>	<b>41</b>	T = 2
t	overall	<b>1.5</b>	<b>.5015504</b>	<b>1</b>	<b>2</b>	N = 162
	between		<b>0</b>	<b>1.5</b>	<b>1.5</b>	n = 81
	within		<b>.5015504</b>	<b>1</b>	<b>2</b>	T = 2
usnetfdi	overall	<b>-3.267248</b>	<b>197.9823</b>	<b>-1213.7</b>	<b>377.7</b>	N = 162
	between		<b>198.2561</b>	<b>-1134.65</b>	<b>360.55</b>	n = 81
	within		<b>11.64544</b>	<b>-82.31724</b>	<b>75.78274</b>	T = 2
nf	overall	<b>10.30894</b>	<b>9.854521</b>	<b>-13.37281</b>	<b>41.8461</b>	N = 162
	between		<b>9.869306</b>	<b>-13.2414</b>	<b>41.77305</b>	n = 81
	within		<b>.5597919</b>	<b>9.031316</b>	<b>11.58656</b>	T = 2
nc	overall	<b>1.062112</b>	<b>.6155842</b>	<b>-.1596348</b>	<b>2.553022</b>	N = 162
	between		<b>.6160358</b>	<b>-.1529505</b>	<b>2.497667</b>	n = 81
	within		<b>.042438</b>	<b>.8979058</b>	<b>1.226318</b>	T = 2
ne	overall	<b>13.28407</b>	<b>10.87863</b>	<b>-3.12</b>	<b>46.13</b>	N = 162
	between		<b>10.89821</b>	<b>-2.58</b>	<b>45.92</b>	n = 81
	within		<b>.557911</b>	<b>10.84907</b>	<b>15.71907</b>	T = 2

In this table, column three is used as the indicator for the need of panel data. From the variation observed in the standard deviation of the overall between and within each variable, it is clear that panel data is in fact needed. I then proceeded to test the data for multicollinearity for which I received a mean variance inflation factor of 2.90 which is show below in table 2. This score indicates that there is some correlation between the determinants but not enough to cause concern.

**Table 2: Multicollinearity Test**

```
2 . estat vif
```

Variable	VIF	1/VIF
ne	<b>3.15</b>	<b>0.317565</b>
nf	<b>2.92</b>	<b>0.342059</b>
nc	<b>2.62</b>	<b>0.381177</b>
Mean VIF	<b>2.90</b>	



After this conclusion, the data was run through both the Breusch- Pagan LM Test and the Hausman Test . Both of these test were run in order to determine whether the Pooled OLS Estimator, Random Effects Estimator, or the Fixed Effects Estimator would be of better use when interpreting the data set.The Breusch-Pagan LM Test is run as an indicator of which results to use when drawing conclusions. The results of the test are shown below.

**Table 3: Breusch-Pagan LM Test**

Breusch and Pagan Lagrangian multiplier test for random effects

$$usnetfdi[id,t] = Xb + u[id] + e[id,t]$$

Estimated results:

	Var	sd = sqrt(Var)
usnetfdi	<b>39196.98</b>	<b>197.9823</b>
e	<b>269.5583</b>	<b>16.41823</b>
u	<b>39170.72</b>	<b>197.9159</b>

Test: Var(u) = 0

$$\frac{\text{chibar2}(01)}{\text{Prob} > \text{chibar2}} = \frac{79.88}{0.0000}$$

As the p-value of this test is recorded at 0.0000, it is evident that in order to make conclusions on the presented hypothesis, one must look towards either the Fixed or Random Effects Estimator rather than the Pooled OLS Estimator. In order to distinguish which test is suitable, the Hausman Test must then be completed.

The Hausman Test was run with the desire to show whether or not the difference in coefficients was systematic. The null hypothesis for this test was that difference in coefficients was not systematic. From here it can be determined whether the Fixed or Random Effects Estimator should be used.

**Table 4: Hausman Test**

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
nf	.6311087	1.009634	-.3785251	1.849206
nc	25.10771	52.88497	-27.77726	23.09874
ne	-.0787087	.7312537	-.8099624	1.513737

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2( 3) = (b-B)' [(V\_b-V\_B)^(-1)] (b-B)  
 = 3.24  
 Prob>chi2 = 0.3558

The results of the Hausman Test show a probability of .3558, shown in Table 4. Because the p value of this test is greater than .05, one fails to reject the null hypothesis and concludes that the Random Effects Estimator produces more accurate results for the data set.

## Results

Preliminary testing indicated the Random Effects Estimator would be ideal for identifying the effects of the determinants on the USA’s NFDI. The results of this Estimator are displayed below in Table 5. Because of the nature of the data, and the difficulty in cleaning it, the R-sq statistics produced are relatively low but is not of concern at this time. However, the low R-sq statistics do not affect the validity of the proposed linear model. The Chi2 statistic is significant at five percent, indicating that the linear model accurately predicts the effect of the determinants on the USA’s NFDI. The results of this test produce the following model:

$$USNFDI_{i,j,t} = -79.55928 + 52.88497NC_{i,j,t} + .7312537NE_{i,j,t} + 1.009634NF_{i,j,t}$$

(.025)      (.033)                      (.686)                      (.573)

**Table 5: Results of Random Effects Estimator**

Random-effects GLS regression	Number of obs	=	162
Group variable: <b>id</b>	Number of groups	=	81
R-sq:	Obs per group:		
within = <b>0.0066</b>	min =		<b>2</b>
between = <b>0.0938</b>	avg =		<b>2.0</b>
overall = <b>0.0934</b>	max =		<b>2</b>
	Wald chi2( <b>3</b> )	=	<b>7.49</b>
corr(u_i, X) = <b>0</b> (assumed)	Prob > chi2	=	<b>0.0579</b>
theta = <b>.93793161</b>			

usnetfdi	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
nf	<b>1.009634</b>	<b>1.791836</b>	<b>0.56</b>	<b>0.573</b>	<b>-2.502301</b>	<b>4.521569</b>
nc	<b>52.88497</b>	<b>24.87331</b>	<b>2.13</b>	<b>0.033</b>	<b>4.134191</b>	<b>101.6358</b>
ne	<b>.7312537</b>	<b>1.807338</b>	<b>0.40</b>	<b>0.686</b>	<b>-2.811063</b>	<b>4.27357</b>
_cons	<b>-79.55928</b>	<b>35.37429</b>	<b>-2.25</b>	<b>0.025</b>	<b>-148.8916</b>	<b>-10.22695</b>
sigma_u	<b>189.56751</b>					
sigma_e	<b>16.671994</b>					
rho	<b>.9923246</b>	(fraction of variance due to u_i)				

Looking at the variables themselves, only NC was determined to be significant at five percent. Nevertheless the insignificant variables, NF and NE, had positive coefficients associated with them which satisfies the proposed hypothesis. While these results can be seen as rather weak, the fact that they satisfy the hypothesis indicates that these factors are determinants of the USA's NFDI and that further research should be conducted.

### Implications

Based on the results above, possible individualized policy implications may be recommended to the USA, as well as countries suffering from low or negative NFDI. Looking at individual reports for countries in the GCI can show where a country needs to improve. For example, looking back on the spider graph for the United States, it is easy to see that they are behind in their macroeconomic environment. Looking at the specific factors that make up this

pillar, shown in Table 6, it can be seen that the problem lies in the government budget balance as a percent of GDP as well as the government debt as a percent of GDP.

**Table 6: USA's Ranking in the Third Pillar**

Index Component	Rank/137	Value	Trend
 <b>3rd pillar: Macroeconomic environment</b>	83	4.5	
3.01 Government budget balance % GDP	95	-4.4	
3.02 Gross national savings % GDP	83	18.6	
3.03 Inflation annual % change	1	1.3	
3.04 Government debt % GDP	125	107.4	
3.05 Country credit rating 0-100 (best)	4	93.4	

Source: The Global Competitiveness Report 2017-2018, produced by the World Economic Forum

Hence, in order to improve their competitiveness, and therefore entice more IFDI, they should look at policy changes that help to lower the debt of the nation and work towards a more balanced budget. This approach can be taken by each country looking to improve their NFDI through improving their competitiveness.

Although the Index of Economic Freedom and the Ease of Doing Business Index did not hold significance in this testing, further testing may prove them to be noteworthy determinants on NFDI. Because of this, it is also recommended that countries look to improve their respected rankings in each of these areas. Again looking at the United States, it is possible to see areas that need improvement in both of these two indexes. While the US ranked 6<sup>th</sup> overall in the Ease of Doing Business Index, their ranking for getting electricity was 49<sup>th</sup>, and protecting minority investors was 42<sup>th</sup> (Ease of Doing Business, 2017). By improving either one of these areas, the US could see tremendous gains in their IFDI. Moreover, working with the financial sector to protect minority investors, the economy could experience an improvement in the small business area. Therefore, it is easy to see how improving these areas will help both local and national economies.

As for the Index of Economic Freedom, the US ranked 18<sup>th</sup>, which indicates that it is mostly free (IOEF,2018). This is due to the lack of strength in the government size factor. The US falls below the world average in all three of the indicators that make up the group. These indicators are tax burden, government spending and fiscal health. The index computes that the overall tax burden is 26.4% of the total domestic income and that public debt makes up 107.4% of the GDP. From these statistics it is obvious that there must be reform in order to increase the scoring for these indicators. However, at this time a clear recommendation to decrease the deficit and improve the tax burden has not been reached.

### **Welfare Implications**

While it is clear that there is still a debate about the effect of FDI on the growth of an economy, the idea that this could be a positive relationship leads to the conclusion that a country should increase their incoming FDI and “limit” outgoing FDI in order to expand their economy, although in a free economy one cannot “limit” OFDI. Therefore, what is the relationship between competitiveness of a nation, and its NFDI?

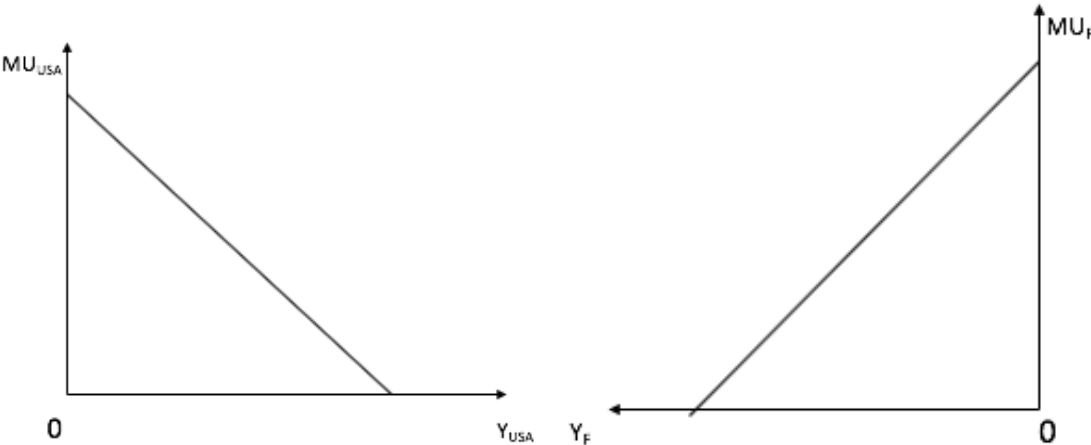
Some of the literature shows a positive relationship between FDI and competitiveness such that an increase in NFDI leads to an increase in competitiveness. Gugler and Brunner (2007) argue this when they explain that FDI may not only enhance the competitiveness of a nation, but may also lead to the upgrading of an economy.

While this research saw a flow from FDI to competitiveness, it can also be argued that competitiveness increases FDI. The idea behind this relationship is that an increase in competitiveness increases the appeal of a country to firms looking to relocate. As discussed before higher competitiveness implies lower production costs and higher productivity, which is

appealing to firms. Empirical research has been performed proving that the level of competitiveness does encourage both IFDI and OFDI (Dunning & Zhang, 2008). For their research, they assumed that the main components for competitiveness, are resources, capabilities and markets and institutions (Dunning & Zhang, 2008).

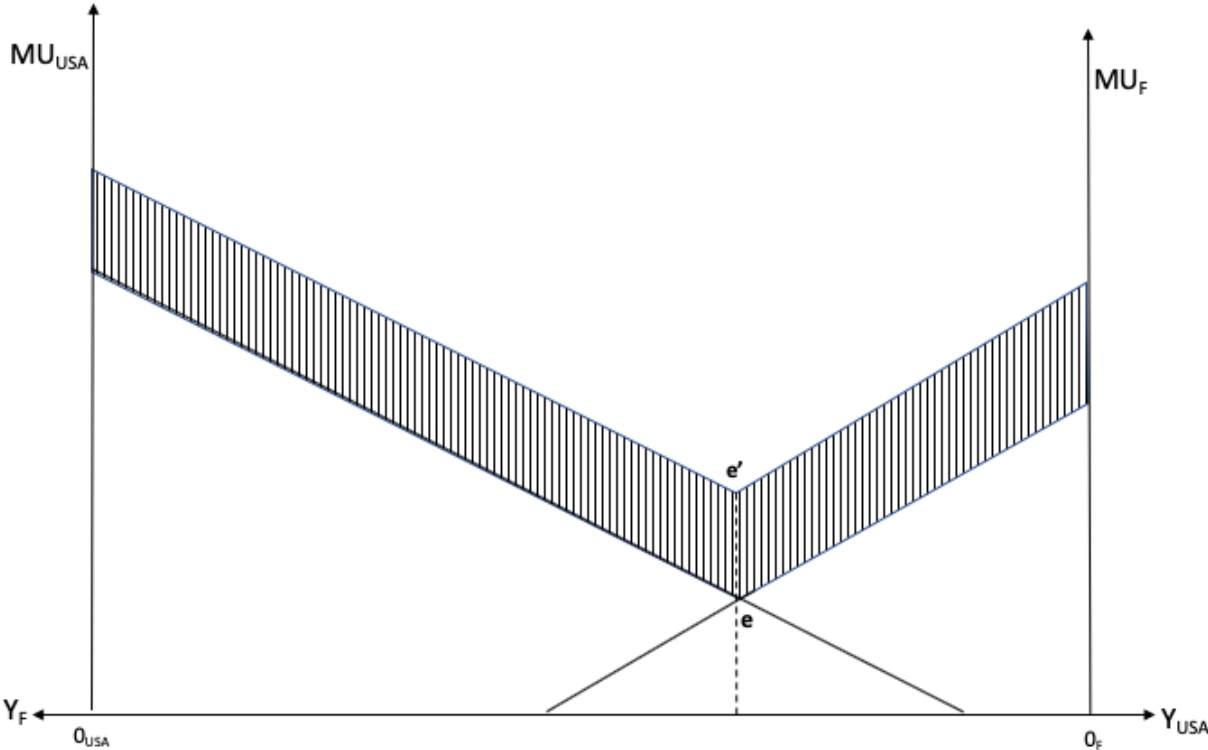
Based on the previously discussed ideas that NFDI is related to national income, and therefore national welfare, it is possible to show how competitiveness and FDI deals can be used to create mutually beneficial environment between trading partners. In order to see this connection, some assumptions must be made. First assume that NFDI is a function of net competitiveness between two countries. Allow  $Y$  to represent national income,  $U$  represent national welfare and  $MU$  marginal national welfare. Now assume that  $U$  is a function of  $Y$ , and the partial derivate of  $U$  relative to  $Y$  is equal to  $MU$ . Because this paper will proceed to discuss NFDI of the USA, this example will also use the USA as an example. Therefore let the  $MU$  of the USA=  $MU_{USA}$  and  $MU$  of the foreign country=  $MU_F$ . I have created Figure 3 below depict the relationship between each countries national income and marginal utility.

**Figure 3: Relationship Between National Income and Marginal Utility**



When these graphs are combined, one may see the optimal point of trade between the countries, which occurs at  $e'$  in Figure 4. In this case, the deal made between the USA and the Foreign entity creates a mutually beneficial situation where both countries gain the utility in the areas shaded.

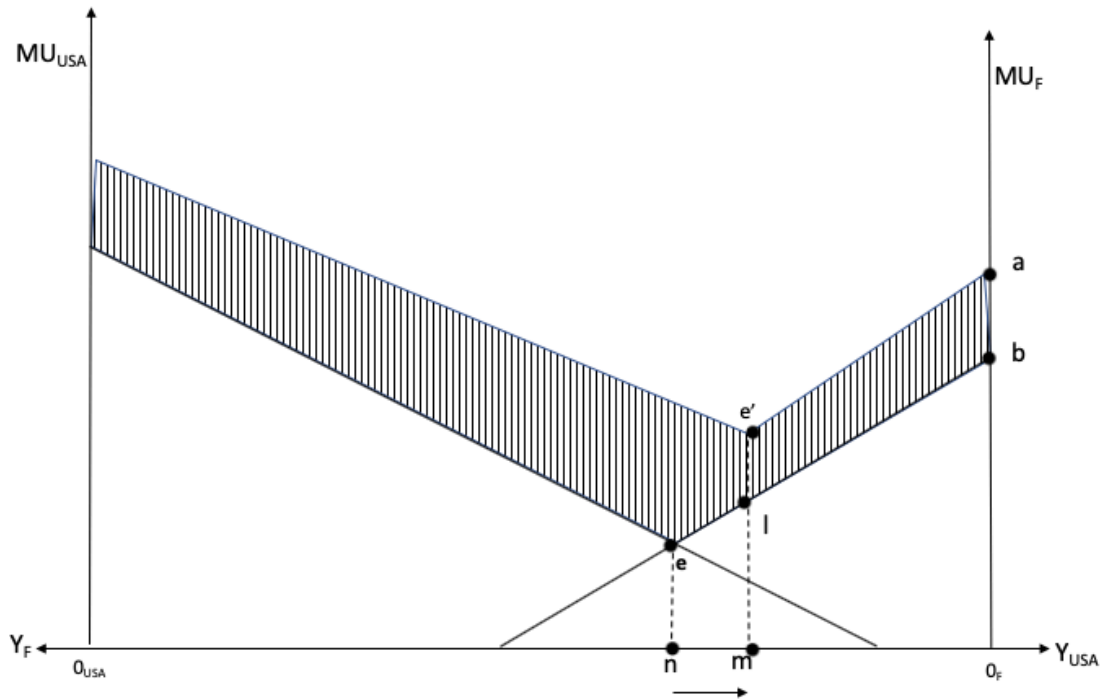
**Figure 4: Optimal Trade; Mutually Beneficial**



Suppose that the USA experiences an increase in their competitiveness. Based on the prior assumptions, this would increase NFDI, and result in a higher level of national income, and therefore a higher level of MU. Figure 5 shows the changes that occur from this shift. In this instance, the USA experiences gains equivalent to the shift from point n to m, and no losses. The Foreign entity experiences both loss and gain. The gain from this new deal is equal to the

area of  $le'ab$ , and loses the area  $nelm$ . However, as graphically depicted, the gains in this instance outweighs the loss and therefore the deal is still mutually beneficial.

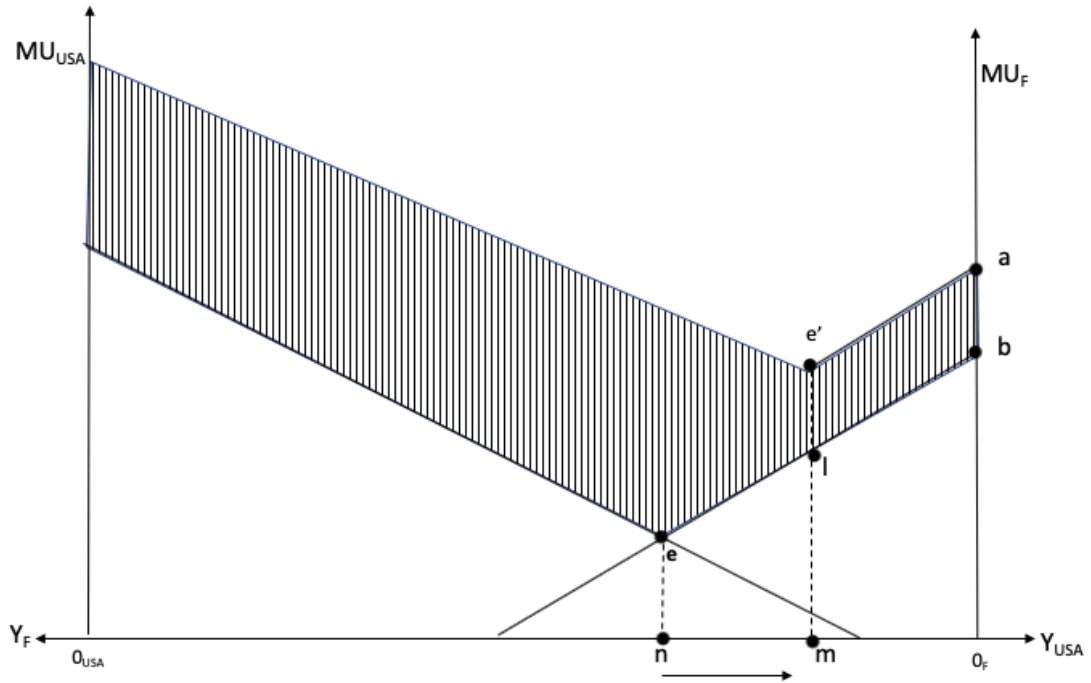
**Figure 5: Expansion of USA's MU**



While Figure 5 still depicts a mutually beneficial trade deal, instances can arise where this is not the case. If the increase to the competitiveness of the USA is large enough, the deal produced will solely benefit them. This idea is depicted in Figure 6, here one can see a larger increase to MU of the USA. When a deal is made at this level of MU, the USA again gains from  $n$  to  $m$ , but this gain is vastly larger than the previous. This creates a disproportionate level of gain and losses to the Foreign entity. Here the Foreign entity loses the area equal to  $nelm$ , and only gains  $le'ab$ . Therefore, this deal is not mutually beneficial to both countries.



**Figure 6: Non-Mutually Beneficial Trade Deal**



These Figures illustrate the point that countries must constantly monitor FDI deals. When unmonitored, potentially harmful deals may occur in countries that suffer from lower levels of competitiveness. Therefore, because competitiveness was found to be a determinant of NFDI, it is critical for countries to monitor FDI deals in order to bolster the competitiveness of their economies due to the significance competitiveness has on NFDI and the welfare of a nation

### **Further Research**

While the results of this model were promising, further research must be conducted in order to truly identify the full effect of these determinants on NFDI. Increasing the number of observations by expanding the time frame examined may help to see the true effect of NE and

NF. Furthermore, the addition of control variables, such as a dummy variable to identify if nations are 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> world countries, may be necessary.

## **Conclusion**

By relying on panel data methodology, it has been concluded that NC, NE and NF have positive effects on USNFDI. The empirical results suggest that by rising the NC level of the United States, it is possible to raise the USNFDI. As seen in Figures 5 and 6, by increasing NC one simultaneously increases USNFDI, hence leading to an increase in the marginal utility of both the US and its trading partners, or if left unmonitored by trading partners, only the US. This increase in the marginal utility of the US suggests significant welfare implications. By monitoring trade deals in relation to competitiveness between the US and its partners, it is possible to bilaterally distribute benefits to the citizens of the US. By increasing NC, the US entices IFDI, leading to technology transfer, the creation of new jobs and higher levels of output. In turn creating a higher standard of living in the US. Therefore, the US should focus on monitoring its competitiveness relative to its trading partners to experience economic growth as positive welfare implications.

## References

- Borensztein, E., De Gregorio, J., & Lee, J. W. (1998). How does foreign direct investment affect economic growth?. *Journal of international Economics*, 45(1), 115-135.
- Carbaugh, R. J. (2010). *International economics*.
- Carkovic, M. V., & Levine, R. (2002). Does foreign direct investment accelerate economic growth?.
- Djogo, Marko, and Nenad Stanisic (2016). Is the Global Competitiveness Report the Right Measure of Macroeconomic Competitiveness. *Zbornik Radova Ekonomskog Fakulteta u Rijeci: Casopis za Ekonomsku Teoriju i Praksu/Proceedings of Rijeka School of Economics: Journal of Economics and Business* 34.1: 91-117. ProQuest. Web. 14 Sep. 2017.
- Dollar, D., & Wolff, E. N. (1993). *Competitiveness, convergence, and international specialization*. Mit Press.
- Dunning, J. H., & Zhang, F. (2008). Foreign direct investment and the locational competitiveness of countries. *Transnational corporations*, 17(3), 1.
- Gugler, P., & Brunner, S. (2007). FDI effects on national competitiveness: A cluster approach. *International Advances in Economic Research*, 13(3), 268-284.
- Ketels, C. H. (2006). Michael Porter's competitiveness framework—recent learnings and new research priorities. *Journal of Industry, Competition and Trade*, 6(2), 115-136.
- Krugman, P. (1996). Making Sense of the Competitiveness Debate. *Oxford Review of Economic Policy*, vol. 12, no. 3.
- Krugman, P. (1994). Competitiveness: A Dangerous Obsession. *Foreign Affairs*, 28-44.
- Makki, S. S., & Somwaru, A. (2004). Impact of foreign direct investment and trade on economic growth: Evidence from developing countries. *American Journal of Agricultural Economics*, 86(3), 795-801.
- Pandey, A. K. (2014, April 18). Foreign Direct Investment (FDI) - Advantages and Disadvantages. GetHow. Retrieved May 1, 2019, from <https://www.gethow.org/foreign-direct-investment-fdi-advantages-and-disadvantages>
- Porter, M (1998). *The Competitive Advantage of Nations: With a new Introduction*, (Rev. ed.). New York: Free Press.
- Porter, M. E. (2008). *On competition*. Harvard Business Press.

Schwab, K. (2016). The Global Competitiveness Report 2016-2017. World Economic Forum.

Siggel, E. (2006). International competitiveness and comparative advantage: a survey and a proposal for measurement. *Journal of Industry, Competition and Trade*, 6(2), 137-159.

The Heritage Foundation. The Index of Economic Freedom: About the Index. Retrieved May 1, 2019, from <https://www.heritage.org/index/about>

Thimann, C. (2015). The Microeconomic Dimensions of the Eurozone Crisis and Why European Politics Cannot Solve Them. *The Journal of Economic Perspectives*, 29(3), 141-163.