Senior Project

Department of Economics

An Examination of the Stock Market's Effect on Economic Inequality

Nicholas Golina

Spring 2018

Abstract

The economic literature on economic inequality has shown that it can negatively impact aggregate demand because it indicates a higher concentration of wealth in the hands of the top 10% as opposed to the poor and middle class, who are more likely to consume. The literature has identified many factors that can lead to increasing inequality. The stock market could be one of those factors since it can either create an upward redistributive effect towards the top 10% or redistributive effect towards the middle class. This paper tested the effect of the stock market on inequality. This study contributes to the literature by analyzing the stock market in terms of size, the turnover of stocks, and the return on stock markets in Organization of Economic Development (OECD) countries. Using the standard OLS model and building upon the fixed-effects regression model of Tsountas et al (2015), the results showed that the stock market can have a positive impact on inequality, but only in terms of the return on the stock market, and has weak economic significance. The paper recommends that policymakers should attempt to focus attention on factors that more greatly affect economic inequality.

Table of Contents

1. Introduction

According to Auclert (2016), economic inequality is associated with a decrease in aggregate demand due to a concentration of wealth in the hands of the wealthy top 10%, and a decrease in the income of the poor and the middle class. Alvaredo et al (2017) noted that since the 1980s almost every region of the world has seen an increase in economic inequality. They go on to note that this increase in inequality can be explained by an imbalance in the ownership of capital. The stock market can help to explain this imbalance and it is worth studying the potential economic effects that the stock market may have on economic inequality. The stock market could have the effect of decreasing economic inequality by increasing investment, wages, and employment for the poor and the middle class[i] or increasing economic inequality by concentrating wealth in the hands of a few wealthy investors.[ii] Stocks are important because they give investors the ability to earn greater risk adjusted returns on investments as opposed to traditional bank deposits. They are also an asset worthy of study on its own, since Jorda (2017) found that stocks and other private equities have historically represented 39.1% of all the investable assets in the United States, based on their exhaustive new dataset on assets including the years from 1872 to 2015. But since the effect of the stock market on inequality is not entirely clear, it is imperative that a comprehensive analysis is undertaken.

Since the economic literature has mixed conclusions on the effects of the stock market on economic inequality, policymakers need to have a better understanding of whether and to what extent stock markets can affect inequality in order to identify solutions that can ameliorate the potential effects of the stock market on inequality.[iii] If the stock market is associated with an decrease in economic inequality then it could provide support for limiting forms of progressive taxation that act as a tax on capital. The relevance is that capital is extremely important for stock

market performance. These taxes on capital could include lowering medium to long term forms of capital gains taxes or lowering the corporate income tax, which are important examples of these kinds of policy prescriptions.[iv] If the stock market is associated with an increase in inequality, then policymakers could try to decrease the risk associated with investments by the poor and the middle class or encouraging greater stock market participation.[v] It is also important to note that the stock market has been historically important to the wealth composition of the United States.

Since the wealthy 1% of Americans have historically been investing more money in stocks, it has been generating more wealth for the top 1% over the last decade and thus increasing economic inequality. The top 1% tend to diversify their investments in the housing market, while the poor and the middle class tend to invest more in their primary residence.[vi] Individuals with a bachelor degree also participate more in the stock market, which confine the wealth of the stock market to those that have the skills to gain access to already high income professions. This can increase economic inequality by making the stock market more stratified based on education. The previous financial crisis was also defined by a period of volatile fluctuations in stock prices that reduced participation in the stock market. This reduction in participation is salient because the stock market is an extremely important source of wealth for Americans.[vii]

Since the stock market plays an important role in the wealth composition of economies, it is the goal of this paper to look at how the stock market affect inequality. The theory that will be used to predict the relationship between the stock market and inequality will be Tobin's Q Theory. The empirical model for this paper will build on the model of Tsountas et al (2015) and will analyze the stock market in terms in terms of size, the turnover of stocks, and the return on

stock indexes. This will attempt to build upon an extensive literature that has many explanations on how stock markets affect economic inequality.

2. Literature Review

The economic literature has pointed to a variety of different perspectives on the relationship between the stock market and economic inequality. Some of these perspectives point to a positive relationship (meaning an increase) between the stock market and economic inequality. DiPietro and Sawhney (2006) using a sample of 73 OCED countries found that the historical activity in the stock market was associated with an increase in economic inequality. The stock prices of the information technology industry have been a historically important part of this activity. Galbraith and Hale (2014) used county level data to document changes in income inequality that are compared against the logarithm of the Nasdaq index. Galbraith and Hale (2014) noted that there is plausible evidence for a positive relationship between stock prices and economic inequality when looking at the rise in stock prices of major information technology firms during the technology boom of the 1990s.

The upward redistributive effect of the stock market on the income distribution could be partially explained by the link between the stock market and the capital share in national income, which was mentioned by Tobin (1969). Bengtsson and Waldenstrom (2015) investigated this relationship. Using a panel dataset of 19 Organization of Economic Development Countries (OECD) Bengtsson and Waldenstrom (2015) show that the increasing role of capital in the economy was associated with an increase in the top income shares. However, when using a broader measure of inequality, i.e. the Gini coefficient, a weaker positive relationship was found. So, the literature has historically supported a hypothesis that inequality can increase from stock market appreciation when the role of capital is considered, after looking at multiple perspectives

on stock prices and inequality. However, there are alternative conclusions to the nature of this relationship.

Another approach to looking at the effect of the stock market on economic inequality is by considering the wealth distribution of stock market participation. Favilukis (2012) considers this approach and found that in tandem with decreasing borrowing costs, increasing participation in equity markets increases wealth inequality. The study's explanation for this finding is the increasing domination of investments in the stock market by the wealthiest Americans even while a greater percentage of the American population is participating in the stock market. Furthermore, after adjusting for investment opportunities in the stock market that vary over time, Gomez (2017) found that households holding stocks had positive income responses to increased asset prices. Based on further analysis of the data, the wealthiest households benefitted the most financially from stock price increases, which potentially demonstrates an upward redistributive effect from the stock market. Billias et al (2017) also confirmed this finding that through a series of quantile regressions, inequality in the ownership of equity is positively related to wealth inequality.[viii] If the poor and the middle class have incomplete information on the optimal set of investments in the stock market, this could create a situation where the rich are better equipped to monetarily gain from the stock market. The poor and the middle class also have a lower incentive to take risk because they tend to save less than the wealthy. But the literature also shows that in some cases the stock market can decrease inequality.

The stock market can decrease inequality when considering the influence of stock market size. Using a panel regression analysis of 61 countries from 1975 to 2005 Mathew (2008) looked at 3 measures of the stock market: (1) size, (2) liquidity, and (3) overall activity. In terms of stock market size, it was found that stock markets in their initial stages of development can

increase income inequality in the short term, but over the long term, the stock market is found to decrease income inequality when the market is more accessible to a greater percentage of the population. Although, liquidity was found to have a weak positive relationship with income inequality, stock market activity was not found to increase income inequality. Additionally, other aspects of the literature focus on role that recessions play in increasing inequality. The Great Recession is particularly important to study since it had lasting effects on many aspects of the income distribution such as wages, employment, and productivity growth. Wolff (2012) tested the effects of sudden asset price declines on the wealth of the middle class and asserted that the asset price declines of the Great Recession increased inequality in terms of the net worth of households. Such price declines were meaningful because the model considered the high racial income disparities and the high leverage ratio before the Great Recession. The leverage ratio was an indication of how vulnerable households were to sudden changes in the stock market and the racial income disparities showed that the socioeconomically disadvantaged households were also vulnerable. But other aspects of the literature specifically point to little evidence of a relationship between the stock market and inequality.

This literature points to little evidence of a relationship between stock markets and inequality after considering a variety of historically important factors in inequality. Using a micro level household dataset, Zietz and Zhao (2009) found that the effect of the S&P 500 index on income inequality. Two Gini coefficients were computed in this study, one was simulated under the assumption that the was no stock price appreciation and another with stock price appreciation. After contrasting the contrasting the coefficients, the effect of the stock market on inequality was quite small and temporary over a longer time series. Additionally, the income elasticity to test the responsiveness of the income of stockholder households to stock prices was .1, which is

rather inelastic. However, other scholars point to more impactful factors that contribute to inequality.

These scholars in the literature stress that the labor market can play a more crucial role in increasing inequality. Belratti and Morana (2007) elaborate through a neoclassical growth model that most of the factors affecting the income distribution, such as labor supply and productivity, operate through the labor market, rather than through the stock market. However, a negative (a decrease) but transitory relationship was found between stock prices and the wage rate, which means that inequality can be negatively impacted by the stock market under this model, but not in a very statistically significant way. When taking the variety of the literature into account, this paper will attempt to build on existing panel data techniques to estimate the effects of the stock market on inequality, using an up to date dataset that includes more measures of the stock market such as stocks traded as a percent of GDP, the S&P global equity index, market capitalization of companies as a percent of GDP, and the average return on domestic stock indexes. The paper will include Tobin's Q Theory as a theoretical model necessary for the paper to accurately represent economic theory.

3. Theoretical Model

Stock market appreciations can affect economic inequality though its direct impact on the wealth of stockholders themselves or it can affect it indirectly through its impact on the labor market, investment, and economic growth. Tobin (1969) provided a theoretical foundation for this link by tying asset prices to 2 channels; First, the labor channel which identifies the potential trickledown effect of the stock market on income inequality by incentivizing higher wages and employment; Second, the capital accumulation channel, which identifies the potential wealth effect of the stock market for stockholders, which can increase inequality. His neoclassical theory

predicts that the optimal level of capital accumulation is determined based on the level of capital and labor in the economy.[ix] This theory, which is visualized below (from left to right), has a solid framework for analysis of the stock market and inequality.

Tobin's Q Theory builds upon neoclassical foundations by accounting for the influence of investor expectations and showing that sound stock prices provide a sound basis for firms and investors to make optimal decisions on accumulating capital. [x] The theory also sets the theoretical foundation for an analysis of the effects of the market value of assets (such as stock prices) on the income distribution. Thus, existing financial theory argues that the stock market can either increase inequality or decrease inequality. Economic inequality will be analyzed as a function of the stock market, along with the important control variables that will be outlined in the empirical model.

4. Empirical Model

Based on existing economic theory and the empirical model on the components of global inequality from Tsountas et al (2015), this study will attempt to model inequality as a function of the stock market and control for the components of inequality identified in the IMF paper. The key aspects of the empirical investigation that will isolate the influence of the stock market on inequality will include the variables that have historically been identified to influence economic inequality. These factors will be based off the analysis of Jaumotte et al (2013), which identify the key components of globalization that have been shown in the past to influence inequality beyond the traditional patterns of the Kuznets Curve. The existing literature can be narrowed down to 7 factors.

Control Variables

Financial Openness

Financial openness is an important variable to control for because financial globalization has resulted in the concentration of foreign direct investment and assets in the hands of the wealthiest investors. Drucker et al (2013) confirms this theory, by finding that financial globalization was associated with an increase in economic inequality in European countries and common wealth independent states. The literature pinpoints this to two important reasons. First, because information on financial markets and investments is not distributed equally, this means that the gains from investments will not be distributed equally.[xi] Second, according to Quadrini et al (2014), increasing cross border financial flows and lower barriers to access international finance has been associated with a large increase in public debt, which can exacerbate inequality in the long term, since high levels of public debt harm the aggregate performance of the economy. Therefore, the effect of financial openness on inequality is expected to be positive.

Technological Innovation

According Mnif (2016), technological innovation can increase inequality by changing important dynamics of the labor market. Galor and Moav (2000) find that because technological change has generated a need for new specialized technical skills, such as coding and machine learning, this innovation has reduced the demand for unskilled labor and thus has increased inequality. In addition to the greater demand for high skilled workers, Benabou (2004) found that the focus on cost cutting by many businesses automate low skilled professions. This in turn means technological innovation is most likely to increase inequality.

Employment Protection

Kauffman (1989) explained that inequality could have been heightened by the steadily decreasing bargaining power of workers in the economy. This includes declining union membership and the weakening of collective bargaining laws. Gebel (2011) noted that often reforms to increase the flexibility of the labor market have not resulted in increased employment or reduced income inequality. In fact, Serrano (2013) found that labor market reforms in Spain increased the use of temporary employment, which increased inequality, because of the lack of long term job opportunities. So, with this literature in mind, an increase in employment protection is expected to decrease inequality.

Mortality

Mortality can increase inequality by interfering with the labor market's overall effectiveness. Mortality is often more present among the most economically vulnerable groups in society, which is why the economist Gary Becker includes the health of the population as a determinant for labor in the standard production function.[xii] So, with this theory in mind, it is expected that mortality will increase inequality.

Government Spending

Government spending can affect economic inequality by changing the distribution of income through direct transfers and government programs of many types. Anderson (2017) through meta-analysis found that the literature on this subject comes to mixed conclusions on the effect of government spending on inequality, because government spending is divided into many different programs. Groves (2016) found that government spending can decrease economic inequality, but only when it redistributes wealth from the rich to the poor. So, because government spending is complex in nature, the expected effects on inequality will most likely be mixed.

Trade Openness

Trade Openness can affect economic inequality by creating new competition between the workers of developed and developing countries and creating a race to the bottom in terms of their wages. Samano (2012) found an increase in inequality from increases in trade openness because free trade can increase the wage premium for skilled work due to an increase in the trading of high tech goods and services. Squire et al (2005) also found that in regions with higher concentration of trade unions, trade openness tends to positively affect economic inequality to a greater degree. This is because since companies have greater flexibility to move overseas, multinational corporations tend to avoid labor forces with high concentrations of trade unions. So, we would expect trade openness to have a positive effect on income inequality.

Education

Education can impact inequality by fulfilling the demand for advanced technical skills that are often expensive to attain. Autor (2014) found that the increasing returns to higher

education have been found to increase economic inequality, because of the increased wages associated with higher skilled professions against the backdrop of low wage growth in low skilled professions. So, because of the influence of the high skills premium for people with a college degree, education is most likely to increase economic inequality.

Model Specifications

The OLS Model

The initial OLS model will attempt to provide some insight on the influence of the stock market on inequality under conditions of a simple linear regression. The standard OLS regression model can be viewed below:

$$Inequality_{it} = \beta_0 + \beta_1 StockMarket_{it} + \beta_2 FinancialOpenness_{it} + \beta_3 TechnologicalInnovation_{it} - \beta_6 EmploymentProtection_{it} + \beta_7 Mortality_{it} -/+ \beta_8 GovernmentSpending_{it} + \beta_9 TradeOpenness_{it} + \beta_{11} Education_{it} + \varepsilon_{it}$$

After examining this model, it will provide an important vantage point to examine the relationship after accounting for fixed effects.

The Fixed Effects Model

One of the important reasons for including a fixed effects model is that there are differences between countries and also differences over time. Therefore, it is important to go beyond the model in Tsountas et al (2015) to account for these differences and properly test the nature of the relationship between the stock market and inequality.

The Fixed Effects model can be viewed below:

$$Inequality_{it} = \beta_1 StockMarket_{it} + \beta_2 FinancialOpenness_{it} + \beta_3 TechnologicalInnovation_{it} - \beta_6 EmploymentProtection_{it} + \beta_7 Mortality_{it} -/+ \beta_8 GovernmentSpending_{it} + \beta_9 TradeOpenness_{it} + \beta_{11} Education_{it} + \theta_t + \mu_i + \varepsilon_{it}$$

The model above will be tested using a one way fixed effects model and a two way fixed effects model. After these tests, the results will be analyzed accordingly. The parameter i refers to the country of the stock market and t refers to the time component of the model.

5. Data Section

The data that will be used on economic inequality will come from the Harvard Data-verse. This includes a Gini coefficient for market income, which is income before taxes and transfers, and a disposable income Gini coefficient that measures inequality after adjusting for taxes and transfers.[xiii] Data on the stock market will come in 4 forms. The first will be the percent change in the S&P global index, which is a measure of the performance of the top companies within a country's stock portfolios.[xiv] The second measure will be the market capitalization index, which is the sum of the market value of investment funds and companies in stock market. This allows for an analysis of the actual value of the equity portfolios when considering price and quantity of equity in a variety of financial institutions.[xv] The third measure will be stocks traded as a percent of GDP. This allows for a specific measure of the turnover of equities in the market, as opposed to the market capitalization index, which is a measure of the total amount of equities in the market.[xvi] The final measure will be the average percent return on stocks, which is an average of the indexes of domestic stock market.[xvii] For the control variables, several factors will be used to control for other components of inequality that have been identified in the IMF paper. In addition to the original model identified in the IMF paper, an economic crisis variable will be used as a control variable in this study (see the table of control variables).

Table of Control Variables		
Variable	Definition	Source
Technological Innovation	Information technology's percent contribution to GDP Growth	The Conference Board Total Economy Database™ (Adjusted version), November 2017
Education	% of the working age population with a tertiary education	OECD (2018), Population with tertiary education (indicator). doi: 10.1787/0b8f90e9-en (Accessed on 20 March 2018)
Mortality	The number of adults per 1000 adults that die before the age of 60.	World Bank: https://data.worldbank.org /indicator/SP.DYN.AMRT.MA
Government Spending	Government expenditures as a percent of GDP	Mauro, P., Romeu, R., Binder, A., & Zaman, A. (2015). A modern history of fiscal prudence and profligacy. Journal of Monetary Economics, 76, 60-70.
Trade Openness	the percent change in the sum of exports and imports	IMF: https://www.imf.org/external/pubs /ft/weo/2017/02/weodata/index.aspx
Financial Openness	Net sum of foreign assets and liabilities	World Bank: https://data.worldbank.org/indicator/ FM.AST.NFRG.CN
Employment Protection	An index that quantifies the strength of government regulation in protecting employment for workers	OECD: http://www.oecd.org/els/emp/ oecdindicatorsofemploymentprotection.htm

Number of Economic Crisis	A historical collection of economic crises such as inflation crises, currency crises, financial crises, and debt crises.	Laeven, L., & Valencia, F. (2012). Systemic banking crises database: An update. Reinhart, C. M., & Rogoff, K. S. (2011). From financial crash to debt crisis. *American Economic Review*, *101*(5), 1676-1706.

In terms of the overall dataset, the data will be divided into 2 year frequencies (such as 1991 to 1993 instead of 1991 to 1992) and the dataset overall contains 215 observations with the maximum amount of year being from 1991 to 2011. This dataset is divided into those intervals because changes in the Gini coefficient tend to be insignificant from year to year it was important to make sure that the number of observations was not limited too much. This unbalanced panel dataset of 34 OECD countries will be used to conduct the empirical examination (see the data table below):

Data Table	
Country	Years Used
Australia	1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Austria	2005, 2007, 2009, 2011
Belgium	1992, 1995, 2001, 2003, 2005, 2007, 2009, 2011
Brazil	2009, 2011
Canada	1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007

Chile	2009, 2011
China	2009, 2011
The Czech Republic	1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Denmark	2001, 2003, 2005, 2007, 2009, 2011
Estonia	2009, 2011
Finland	2003, 2005, 2007, 2009, 2011
France	1991, 1995, 1997, 2001, 2003, 2005, 2007, 2009, 2011
Germany	2001, 2003, 2005, 2007, 2009, 2011
Greece	2001, 2003, 2005, 2007, 2009, 2011
Hungary	1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Israel	2009, 2011
Italy	2001, 2003, 2005, 2007, 2009, 2011
Japan	1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
South Korea	1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Mexico	1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
The Netherlands	2001, 2003, 2005, 2007, 2009, 2011

New Zealand	1992, 1994, 1997, 1999, 2001, 2003, 2005, 2007, 2009
Norway	1991, 1994, 2005, 2007, 2009, 2011
Poland	1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Portugal	2001, 2003, 2005, 2007, 2009, 2011
Slovakia	2007, 2009, 2011
South Africa	2009, 2011
Spain	2001, 2003, 2005, 2007, 2009, 2011
Sweden	2001, 2003, 2005, 2007, 2009, 2011
Switzerland	1991, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
Turkey	1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
The United Kingdom	1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011
The United States	1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011

6. Results Section

The Stock Market

The results of this study overall show support for hypothesis that the stock market can positively affect economic inequality. Based on analysis of the tables that showcase the regression models, the data clearly showed fixed effects based on the F-Test. This means that the fixed-effects are preferable to the OLS models. In terms of the specific fixed effects models that are preferable, almost all the F-Tests from Table 1.10 show that the one-way fixed-effects models are preferable to the two-way fixed-effects models. The exception is the model with the independent variable of the market capitalization index and the dependent variable of the disposable income Gini. When analyzing the t-statistics on the stock market variables, they were statistically significant except the regression with the independent variable as stocks traded as a percent of GDP, along with the dependent variable being the market Gini. The regressions with the market capitalization index were also not statistically significant (see table 1.6 and 1.8).

In terms of the economic significance of the results from the stock market variables, the overall finding is that the stock market can affect inequality, but it is rather small based on results. Table 1.2 shows that a one standard deviation increase in stocks traded as a percent of GDP was associated with an increase in inequality of .2185 percentage points in terms of the disposable income Gini. Table 1.3 and 1.7 demonstrated that a one standard deviation increase in the % return on the S&P global index was associated with an increase in inequality of .2611 percentage points in terms of the disposable income Gini and. 2483 percentage points in terms of the market Gini. Table 1.4 finds that a one standard deviation increase in the market capitalization index was associated with an increase in inequality of .0973 percentage points in terms of the disposable income Gini. Table 1.5 and 1.9 shows that a one standard deviation

increase in the average return on domestic stock markets was associated with an increase in inequality of .2749 percentage points in terms of the disposable income Gini and .2255 percentage points in terms of the market Gini. Overall this means that while the stock market has been shown to increase inequality it is small and sometimes inconsistent based on the model.

The Control Variables

The control variables been shown to have varying effects on inequality through an investigation of the results. The technological innovation variable was shown to have a statistically significant and negative effect on inequality, in terms of market income, except for the fixed effects models using the S&P global index. After looking at inequality by disposable income, the technological innovation variable was statistically insignificant for all the models used. This means that the hypothesis was disproven that technological innovation would affect inequality in a positive way. The education variable showed similar statistical insignificance.

The parameter estimate for the education variable is statistically insignificant for all the models using the market income Gini and the one model using the disposable income Gini and the S&P Global Index. The few positive trends are consistent with the predictions of the literature. For the mortality variable, the only model that was statistically significant for the disposable income Gini was the model with the S&P Global Index and the parameter estimate was negative. For the market income Gini, all the models were statistically significant, but the model with stocks traded as a percent of GDP had a positive coefficient, as opposed to the other models that have negative coefficients. These results overall are not consistent with the hypothesis that mortality will increase economic inequality, based on existing economic theory. The government spending variable also showed some variance in the results.

When looking at the government spending variable, the only models that were statistically significant for disposable income Gini were the models with stocks traded as a percent of GDP and the market capitalization index. The parameter estimate for the government spending variables in these models was negative. These trends were consistent for the market income Gini as well. This means that since half the models show negative trends and the other half show no trends, this is consistent with some of the literature that government spending can decrease inequality. When analyzing the trade openness variable, all the models did not show statistical significance except the model with the average return on stock indexes and the market Gini. This model had a negative coefficient on the trade openness variable. Surprisingly, these models did not show that trade openness increased economic inequality and this was the case for other control variables too.

The financial openness variable showed these trends as well for the disposable income Gini and this did not follow the expectation that an increase in financial openness would increase inequality. After looking at the employment protection variable, all the models for the market income Gini were statistically significant and had negative coefficients. The models for the disposable income Gini were statistically insignificant. So, the market income Gini models are consistent with what was predicted, but the disposable income Gini models were not consistent. Finally, the economic crisis variable was invariable in terms of its trends in the models used. All the coefficients for this variable were positive and statistically significant at the 1% level. This means that the trends for the variables provide strong evidence to indicate that economic crises can increase inequality.

7. Conclusions

In conclusion, based on the 4 measures of the stock market, stock markets can have a positive and statistically significant effect on economic inequality, but economically significant at a weak level. It is also important to note that it is not statistically significant for stock market size based on analysis of the market Gini. The nature of the relationship between the stock market and economic inequality is mostly present for the stock market in terms of the return from stock market indexes and the turnover of stocks in the market. Therefore, this study provides weak evidence to indicate that the stock market can be an important part of economic inequality and its negative impact on aggregate demand. Therefore, it is the recommendation of this study that policymakers should focus on factors that affect inequality to a greater degree. For example, the economic crisis variable showed the strongest positive effect on inequality in the model. This means that improving the general stability of the financial system could go a long way to prevent these crises from increasing inequality. The control variables in the model showed varying results that were often inconsistent with the hypotheses that were made. That could be because of the limited time series that was used and the lack of representation of developing countries in the model used.

Moving forward, future researchers should attempt to control for more variables that can affect economic inequality such as access to credit and find a longer time series to include more developed and developing countries in the dataset for analysis. This is because a more diverse dataset will allow for researchers to make more robust conclusions. It is also important to attempt to find more in country evidence as opposed to just doing cross country analysis using panel datasets. This is because each country has its own unique economic conditions and this means

that the stock market can affect inequality to different degrees depending on the country being analyzed.

8. Figures and Data Tables

Table: 1.1: Descriptive Statistics **The Stock Market and Economic Inequality** *Dependent Variables: The Disposable Income Gini and the Market Income Gini*				
	Mean	**Standard Deviation**	**Minimum**	**Maximum**
Stocks Traded (% of GDP)	59.1059%	58.91%	.036%	295.99%
The S&P Global Index (% return)	16.7%	36.37%	-68.91%	254.5%
Average % Return on Stocks	4.03%	27.0857%	-41.77%	199.45%
The Market Capitalization Index (% of GDP)	70.57%	51.733%	3.21%	268.84%
The Market Income Gini	47.157	5.13	30.1	68.5
The Disposable Income Gini	31.833	6.68	22.8	58.5
Technological Innovation	.5932	.391	-.4	2.60
Education	26.01%	11.023%	7.58%	59.63%
Mortality	101.942	46.855	54.23	473.88
Government Spending	44.739%	10.404%	15.39%	71.48%
Trade Openness	7.489%	16.946%	-50.94%	51.4%
Financial Openness	2.97	2.69	.18	14.05
Employment Protection	1.925	.9064	.25	3.78
Number of Economic Crisis	.5	.736	0	5

Table: 1.2: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Disposable Income Gini* *Independent Variable: Stocks Traded (% of GDP)*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	46.76131 (15.47)***	34.45427 (23.55)***	33.03166 (19.23)***
Stocks Traded (% of GDP)	0.02516 (3.69)***	0.00371 (2.09)**	0.001385 (0.63)
Technological Innovation	-.785094 (-7.97)***	-.059803 (-2.19)**	-.136235 (-3.50)***
Education	-0.07615 (-2.00)**	0.071968 (3.91)***	0.076785 (3.81)***
Mortality	0.04788 (6.00)	0.004532 (0.62)	0.015895 (1.46)
Government Spending	-0.33854 (-8.64)***	-0.03921 (-2.53)**	-0.02066 (-1.19)
Trade Openness	-0.03301 (-1.51)	0.001315 (0.31)	0.00646 (0.82)
Financial Openness	-0.41029 (-3.01)***	-0.06076 (-1.02)	-0.12772 (-1.90)
Employment Protection	0.94569 (2.35)**	-0.33574 (-1.17)	-0.07813 (-0.26)
Number of Economic Crisis	0.90172 (2.03)**	0.307981 (3.26)***	0.288239 (2.67)***
R Squared	0.5808	0.9894	0.9907
Adjusted, R Squared	0.5602	-	-
Number of Observations	193	-	-
Number of Cross Sections	-	31	31
Time Series Length	-	13	13
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.3: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Disposable Income Gini* *Independent Variable: The S&P Global Index*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	49.51336 (16.40)***	56.41983 (25.00)***	53.36877 (19.42)***
The S&P Global Index (% return)	0.02625 (2.92)***	0.006828 (2.48)**	0.008164 (3.55)**
Technological Innovation	-.734152 (-6.99)***	-.005772 (-0.13)	-.021876 (-0.33)
Education	-0.02825 (-0.80)	0.022848 (0.87)	-0.02253 (-0.77)
Mortality	0.04534 (5.78)***	-0.05551 (-4.55)***	-0.01158 (-0.68)
Government Spending	-0.43769 (-11.77)***	-0.03573 (-1.33)	-0.01377 (-0.44)
Trade Openness	-0.01179 (-0.59)	-0.00415 (-0.70)	-0.00347 (-0.32)
Financial Openness	-0.13333 (-1.08)	-0.06735 (-0.75)	-0.20387 (-2.02)**
Employment Protection	0.90601 (2.20)**	0.022848 (0.87)	-1.2969 (-2.87)***
Number of Economic Crisis	1.56717 (3.29)***	0.549268 (3.43)***	0.526635 (3.04)***
R Squared	0.5749	0.9554	0.9602
Adjusted, R Squared	0.5557	-	-
Number of Observations	210	-	-
Number of Cross Sections	-	34	34
Time Series Length	-	13	13
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.4: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Disposable Income Gini* *Independent Variable: The Market Capitalization Index*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	45.44636 (16.69)***	33.78823 (21.79)***	32.89092 (18.37)***
The Market Capitalization Index (% of GDP)	0.06425 (7.96)***	0.007598 (2.63)***	0.001881 (0.49)
Technological Innovation	-.867838 (-9.46)***	-.073943 (-2.59)**	-.135114 (-3.46)***
Education	-0.09057 (-2.72)***	0.084006 (4.86)***	0.080989 (4.17)***
Mortality	0.03248 (4.32)***	0.005097 (0.66)	0.015783 (1.46)
Government Spending	-0.33491 (-9.76)***	-0.03898 (-2.48)**	-0.01893 (-1.07)
Trade Openness	-0.01871 (-0.95)	0.000725 (0.17)	0.007804 (0.97)
Financial Openness	-0.99975 (-6.65)***	-0.09479 (-1.30)	-0.16951 (-1.98)*
Employment Protection	1.87239 (4.88)***	-0.27503 (-0.94)	-0.08923 (-0.29)
Number of Economic Crisis	1.53307 (3.73)***	0.376046 (3.81)***	0.327903 (2.87)***
R Squared	0.6722	0.9901	0.9912
Adjusted, R Squared	0.6561	-	-
Number of Observations	193	-	-
Number of Cross Sections	-	33	33
Time Series Length	-	13	13
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.5: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Disposable Income Gini* *Independent Variable: Average Returns on Stocks*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	47.10955 (12.80)***	33.878 (23.40)***	33.19353 (20.39)***
Average % Return on Stocks	0.37983 (2.47)**	0.010149 (4.00)***	0.011694 (3.65)***
Technological Innovation	-.680338 (-5.55)***	-.052915 (-2.12)**	-.095836 (-2.66)**
Education	-0.04913 (-1.15)	0.09015 (5.48)***	0.081844 (4.42)***
Mortality	0.04681 (5.95)***	0.000055 (0.01)	0.009018 (0.92)
Government Spending	-0.35753 (-7.62)***	-0.01384 (-0.88)	-0.00496 (-0.30)
Trade Openness	-0.04260 (-1.67)	-0.00491 (-1.24)	0.003655 (0.55)
Financial Openness	-0.16002 (-1.12)	-0.10445 (-1.89)*	-0.17881 (-2.86)***
Employment Protection	0.33654 (0.71)	-0.08549 (-0.28)	0.003272 (0.01)
Number of Economic Crisis	1.58344 (3.42)***	0.34807 (3.94)****	0.375921 (3.81)***
R Squared	0.6292	0.9910	0.9920
Adjusted, R Squared	0.6016	-	-
Number of Observations	131	-	-
Number of Cross Sections	-	34	34
Time Series Length	-	12	12
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.6: Regression Hypothesis Testing
The Stock Market and Economic Inequality
Dependent Variable: The Market Income Gini
Independent Variable: Stocks Traded (% of GDP)

	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	43.98259 (18.50)***	54.80595 (24.61)***	52.81579 (20.86)***
Stocks Traded (% of GDP)	-0.00151 (-0.28)	0.003458 (1.28)	-0.00093 (-0.29)
Technological Innovation	-.675623 (-8.72)***	-.059144 (1.42)	-.174719 (-3.05)***
Education	-0.01009 (-0.34)	-0.00137 (-0.05)	-0.03049 (-1.03)
Mortality	0.05219 (8.31)***	0.0112 (-2.58)**	0.010184 (0.64)
Government Spending	0.07918 (2.57)**	-0.06073 (-2.57)**	-0.04068 (-1.58)
Trade Openness	0.00023613 (0.01)	-0.00787 (-1.23)	0.00257 (0.22)
Financial Openness	0.14922 (1.39)	-0.0429 (-0.47)	-0.23239 (-2.35)
Employment Protection	-0.80551 (-2.54)**	-1.53147 (-3.50)***	-1.38803 (-3.16)***
Number of Economic Crisis	-0.22257 (-0.64)	0.471682 (3.28)***	0.489276 (3.07)***
R Squared	0.6026	0.9624	0.9689
Adjusted, R Squared	0.5830	-	-
Number of Observations	193	-	-
Number of Cross Sections	-	31	31
Time Series Length	-	13	13

The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.

Table: 1.7: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Market Income Gini* *Independent Variable: The S&P Global Index*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	45.10882 (19.34)***	56.41983 (25.00)***	53.36877 (19.42)***
The S&P Global Index (% return)	-0.00513 (-0.74)	0.006830 (2.48)**	0.008626 (2.29)**
Technological Innovation	-.638371 (-7.86)***	-.005772 (-0.13)	.021876 (-0.33)
Education	-0.01661 (-0.61)	0.022848 (0.87)	-0.02253 (-0.77)
Mortality	0.04928 (8.13)***	-0.05551 (-4.55)***	-0.01158 (0.5001)
Government Spending	0.05032 (1.75)*	-0.03573 (-1.33)	-0.01377 (-0.44)
Trade Openness	0.00770 (0.49)	-0.00415 (-0.70)	-0.00347 (-0.32)
Financial Openness	0.12656 (1.33)	-0.06735 (-0.75)	-0.20387 (-2.02)**
Employment Protection	-0.62620 (-1.97)**	-1.31849 (-2.99)***	-1.2969 (-2.87)***
Number of Economic Crisis	-0.13493 (-0.37)	0.549268 (3.43)***	0.526635 (3.04)***
R Squared	0.5372	0.9554	0.9602
Adjusted, R Squared	0.5164	-	-
Number of Observations	210	-	-
Number of Cross Sections	-	34	34
Time Series Length	-	13	13
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.8: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Market Income Gini* *Independent Variable: The Market Capitalization Index*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	43.69941 (17.99)***	52.26199 (24.08)***	51.77617 (21.12)***
The Market Capitalization Index (% of GDP)	0.00948 (1.32)	0.002876 (0.71)	-0.00104 (-0.20)
Technological Innovation	-.701243 (-8.57)***	-.065679 (-1.65)	-.150016 (-2.81)***
Education	-0.01943 (-0.65)	0.021534 (0.89)	-0.0184 (-0.69)
Mortality	0.05022 (7.48)***	-0.02043 (-1.90)*	0.007917 (0.53)
Government Spending	0.07581 (2.48)**	-0.04836 (-2.20)**	-0.03453 (-1.42)
Trade Openness	0.00690 (0.39)	-0.00456 (-0.78)	-0.00193 (-0.17)
Financial Openness	0.07868 (0.59)	0.143499 (1.40)	-0.00319 (-0.03)
Employment Protection	-0.60540 (-1.77)*	-1.20005 (-2.92)***	-1.17324 (-2.81)***
Number of Economic Crisis	0.14394 (-0.39)	0.42347 (3.06)***	0.360428 (2.30)**
R Squared	0.5794	0.9687	0.9733
Adjusted, R Squared	0.5588	-	-
Number of Observations	193	-	-
Number of Cross Sections	-	33	33
Time Series Length	-	13	13
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.9: Regression Hypothesis Testing **The Stock Market and Economic Inequality** *Dependent Variable: The Market Income Gini* *Independent Variable: Average Returns on Stocks*			
	The OLS Model	**Fixed Effects One Way**	**Fixed Effects Two Way**
Intercept	41.58613 (14.14)***	55.53611 (23.20)***	53.80514 (20.06)***
Average % Return on Stocks	0.03881 (0.32)	0.008324 (1.98)**	0.011981 (2.27)**
Technological Innovation	-.594293 (-6.06)***	-.051915 (-1.26)	-.050272 (-0.85)
Education	-0.01919 (-0.56)	0.015186 (0.56)	-0.01907 (-0.63)
Mortality	0.05060 (8.05)***	-0.04053 (-3.55)***	-0.01304 (-0.80)
Government Spending	0.13050 (3.48)***	-0.04719 (-1.81)	-0.03046 (-1.11)
Trade Openness	0.01383 (0.68)	-0.01287 (-1.97)*	-0.00534 (-0.49)
Financial Openness	0.15717 (1.38)	-0.02641 (-0.29)	-0.18103 (-1.76)*
Employment Protection	-1.04979 (-2.78)***	-1.30127 (-2.61)***	-1.32085 (-2.60)**
Number of Economic Crisis	-0.11041 (-0.30)	0.579457 (3.97)***	0.652339 (4.01)***
R Squared	0.6733	0.9588	0.9633
Adjusted, R Squared	0.6490	-	-
Number of Observations	131	-	-
Number of Cross Sections	-	34	34
Time Series Length	-	12	12
The following in parentheses are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values above the t values are parameter estimates for the variables being analyzed.			

Table: 1.10: F Tests for One Vs Two Way Fixed Effects **The Stock Market and Economic Inequality** *Dependent Variable: The Market Income Gini* *Independent Variable: Average Returns on Stocks*	
Fixed Effects Regressions	**F Values**
Dependent Variable: The Disposable Income Gini Independent Variable: Stocks Traded (% of GDP)	**1.904****
Dependent Variable: The Market Income Gini Independent Variable: Stocks Traded (% of GDP)	**2.487*****
Dependent Variable: The Disposable Income Gini Independent Variable: The S&P Global Index	**1.775***
Dependent Variable: The Market Income Gini Independent Variable: The S&P Global Index	**1.591***
Dependent Variable: The Disposable Income Gini Independent Variable: The Market Capitalization Index	**1.396**
Dependent Variable: The Market Income Gini Independent Variable: The Market Capitalization Index	**1.986****
Dependent Variable: The Disposable Income Gini Independent Variable: Average Returns on Stocks	**1.615***
Dependent Variable: The Market Income Gini Independent Variable: Average Returns on Stocks	**1.727***
The following are F values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level.	

1.11: Results After Introducing GDP Per Capita Growth as a Control Variable		
Stock Market Variables	**Market Gini**	**Disposable Income Gini**
Stocks Traded (% of GDP)	0.003688 (0.00263) [1.40]	0.003753 (0.00177) [2.11]**
S&P Global Index (% return)	0.006398 (0.00268) [2.38]**	0.007119 (0.00170) [4.20]***
Market Capitalization Index	-0.00113 (0.00518) [-0.22]	0.007672 (0.00288) [2.66]*
Average Return on Stocks	0.008595 (0.00410) [2.10]**	0.010161 (0.00254) [3.99]***
The following in brackets are t values and * indicates statistical significance at the 10% level, ** indicates statistical significance at the 5% level, and *** indicates statistical significance at the 1% level. The values in parentheses are standard errors for the variables. The values above the standard errors are parameter estimates.		

9. Endnotes

[i]Blau, B. M. (2018). Income inequality, poverty, and the liquidity of stock markets. *Journal of Development Economics*, *130*, 117-126.
[ii] Egan, M. (2017, September 27). Record inequality: The top 1% controls 38.6% of America's wealth. Retrieved February 07, 2018, from http://money.cnn.com/2017/09/27/news/economy/inequality-record-top-1-percent-wealth/index.html
[iii]Owyang, M. T., & Shell, H. (2016). Taking Stock: Income Inequality and the Stock Market. *Economic Synopses*, (7), 1-2.
[iv]Salter, M. (2014, December 23). Why Our Capital Gains Tax Needs Radical Reform. Retrieved February 7, 2018, from https://ethics.harvard.edu/blog/why-our-capital-gains-tax-needs-radical-reform
[v]Long, H. (2017, August 03). Dow 22,000? Most Americans don't benefit from record stock market gains. Retrieved February 07, 2018, from http://www.chicagotribune.com/business/ct-americans-dow-22000-investing-20170803-story.html
[vi]Smith, N. (2017, August 28). How the Top 1% Keeps Getting Richer. Retrieved January 13, 2018, from https://www.bloomberg.com/view/articles/2017-08-28/how-the-top-1-keeps-getting-richer
[vii]Long, H. (2014, September 22). Who's getting rich off the stock market? Retrieved January 13, 2018, from http://money.cnn.com/2014/09/18/investing/stock-market-investors-get-rich/index.html
[viii]Bilias, Y., Georgarakos, D., & Haliassos, M. (2017). Has Greater Stock Market Participation Increased Wealth Inequality in the Us?. *Review of Income and Wealth*, *63*(1), 172-188.
[ix]Eklund, J. E. (2013). Theories of investment: a theoretical review with empirical applications. In *Swedish Entrepreneurship Forum* (p. 3).
[x]Eklund, J. E. (2013). Theories of investment: a theoretical review with empirical applications. In *Swedish Entrepreneurship Forum* (p. 8-9).
[xi]Daisaka, H., Furusawa, T., & Yanagawa, N. (2014). Globalization, financial development and income inequality. *Pacific economic review*, *19*(5), 620-633.
[xii]Soares, R. R. (2015). Gary Becker's contributions in health economics. *Journal of Demographic Economics*, *81*(1), 51-57.
[xiii]World Bank: https://data.worldbank.org/indicator/SI.POV.GINI
[xiv]World Bank: https://data.worldbank.org/indicator/CM.MKT.INDX.ZG
[xv]World Bank: https://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS
[xvi]World Bank: https://data.worldbank.org/indicator/CM.MKT.TRAD.GD.ZS
[xvii]World Bank. 2018: http://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database

10. References

Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2017). World inequality report 2018. *The World Inequality Lab, http://wir2018. wid. world*.

Anderson, E., Jalles D'Orey, M. A., Duvendack, M., & Esposito, L. (2017). Does Government Spending Affect Income Inequality? A Meta-Regression Analysis. *Journal of Economic Surveys*, *31*(4), 965-987.

Azzimonti, M., De Francisco, E., & Quadrini, V. (2014). Financial globalization, inequality, and the rising public debt. *American Economic Review*, *104*(8), 2270-2302.

Becker, G. S. (2007). Health as human capital: synthesis and extensions. *Oxford Economic Papers*, *59*(3), 379-410.

Bénabou, R. (2005). Inequality, technology and the social contract. In *Handbook of economic growth* (Vol. 1, pp. 1605-1638). Elsevier.

Bengtsson, E., & Waldenström, D. (2015). Capital shares and income inequality: Evidence from the long run. Pg. 1-16.

Bilias, Y., Georgarakos, D., & Haliassos, M. (2017). Has Greater Stock Market Participation Increased Wealth Inequality in the Us?. *Review of Income and Wealth*, *63*(1), 172-188.

Blau, B. M. (2018). Income inequality, poverty, and the liquidity of stock markets. *Journal of Development Economics*, *130*, 117-126.

Dabla-Norris, M. E., Kochhar, M. K., Suphaphiphat, M. N., Ricka, M. F., & Tsounta, E. (2015). *Causes and consequences of income inequality: A global perspective*. International Monetary Fund.

Daisaka, H., Furusawa, T., & Yanagawa, N. (2014). Globalization, financial development and income inequality. *Pacific economic review*, *19*(5), 620-633.

David, H. (2014). Skills, education, and the rise of earnings inequality among the" other 99 percent".

Egan, M. (2017, September 27). Record inequality: The top 1% controls 38.6% of America's wealth. Retrieved February 07, 2018, from http://money.cnn.com/2017/09/27/news/economy/inequality-record-top-1-percent-wealth/index.html

Eklund, J. E. (2013). Theories of investment: a theoretical review with empirical applications. In *Swedish Entrepreneurship Forum* (p. 8-9).

Elmawazini, K., Sharif, A., Manga, P., & Drucker, P. (2013). Trade globalization, financial globalization and inequality within south-east Europe and cis countries. *The Journal of Developing Areas*, *47*(2), 310-317.

Ferreiro, J., & Serrano, F. (2013). Labor Flexibility, Inequality, and Financial Crisis. *Journal of economic issues*, *47*(2), 570-574.

Galor, O., & Moav, O. (2004). From physical to human capital accumulation: Inequality and the process of development. *The Review of Economic Studies*, *71*(4), 1010-1026.

Gebel, M., & Giesecke, J. (2011). Labor market flexibility and inequality: the changing skill-based temporary employment and unemployment risks in Europe. *Social Forces*, *90*(1), 20-39.

Jaumotte, F., Lall, S., & Papageorgiou, C. (2013). Rising income inequality: technology, or trade and financial globalization? *IMF Economic Review*, *61*(2), 271-309.

Jordà, Ò., Knoll, K., Kuvshinov, D., Schularick, M., & Taylor, A. M. (2017). *The Rate of Return on Everything, 1870–2015* (No. w24112). National Bureau of Economic Research. Pg 1-8.

Kaufman, B. E. (1989). Labor's inequality of bargaining power: changes over time and implications for public policy. *Journal of Labor Research*, *10*(3), 290-298.

Long, H. (2017, August 03). Dow 22,000? Most Americans don't benefit from record stock market gains. Retrieved February 07, 2018, from http://www.chicagotribune.com/business/ct-americans-dow-22000-investing-20170803-story.html

Long, H. (2014, September 22). Who's getting rich off the stock market? Retrieved January 13, 2018, from http://money.cnn.com/2014/09/18/investing/stock-market-investors-get-rich/index.html

Mayer, S. E., Lopoo, L. M., & Groves, L. H. (2016). Government spending and the distribution of economic growth. *Southern Economic Journal*, *83*(2), 405-415.

Milanovic, B., & Squire, L. (2005). *Does tariff liberalization increase wage inequality? Some empirical evidence* (No. w11046). National Bureau of Economic Research.

Mnif, S. (2016). Bilateral Relationship between Technological Changes and Income Inequality in Developing Countries. *Atlantic Review of Economics*, *1*, 1.

Owyang, M. T., & Shell, H. (2016). Taking Stock: Income Inequality and the Stock Market. *Economic Synopses*, (7), 1-2.

Salter, M. (2014, December 23). Why Our Capital Gains Tax Needs Radical Reform. Retrieved February 7, 2018, from https://ethics.harvard.edu/blog/why-our-capital-gains-tax-needs-radical-reform

Smith, N. (2017, August 28). How the Top 1% Keeps Getting Richer. Retrieved January 13, 2018, from https://www.bloomberg.com/view/articles/2017-08-28/how-the-top-1-keeps-getting-richer

Soares, R. R. (2015). Gary Becker's contributions in health economics. *Journal of Demographic Economics*, *81*(1), 51-57.

Szekely, M. & Sámano, C. (2012) Did Trade Openness Affect Income Distribution in Latin America? Evidence for the Years 1980–2010. WIDER Working Paper 2012/003. Helsinki: UNU-WIDER.

Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of money, credit and banking*, *1*(1), 16-26.

Zietz, J., & Zhao, X. (2009). The short-run impact of the stock market appreciation of the 1980s and 1990s on US income inequality. *The Quarterly Review of Economics and Finance*, *49*(1), 48-53.