

THE EFFECT OF FINANCIALIZATION ON ECONOMIC INEQUALITY IN THE UNITED STATES: 1964-2019

This article investigates financialization (the growing importance of the financial sector relative to the real sector) and its effects on economic inequality in the United States. We summarize the underlying theory given as to why financialization may be causing economic inequality. By regressing financialization and other common reasons given for economic inequality, we search for the single best explanatory factor for income and wealth inequality in the United States over the period of 1964-2019. We use the compensation of the Finance, Insurance, Real Estate (FIRE) sector as a proxy for financialization. Rather than using a single statistical measure for inequality like the Gini coefficient, using the individual economic shares will give greater insight into the effects each factor has on economic inequality. Results find that financialization is the primary driver for economic inequality in the United States. Financialization is found to drive income inequality between the top 10 percent and bottom 90 percent of the population, and wealth inequality between the top 1 percent and bottom 99 percent of the population.

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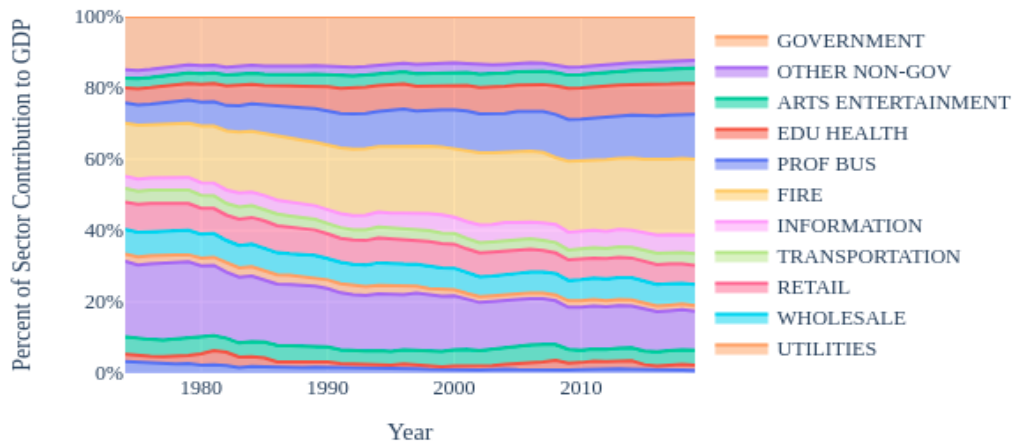
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I. INTRODUCTION

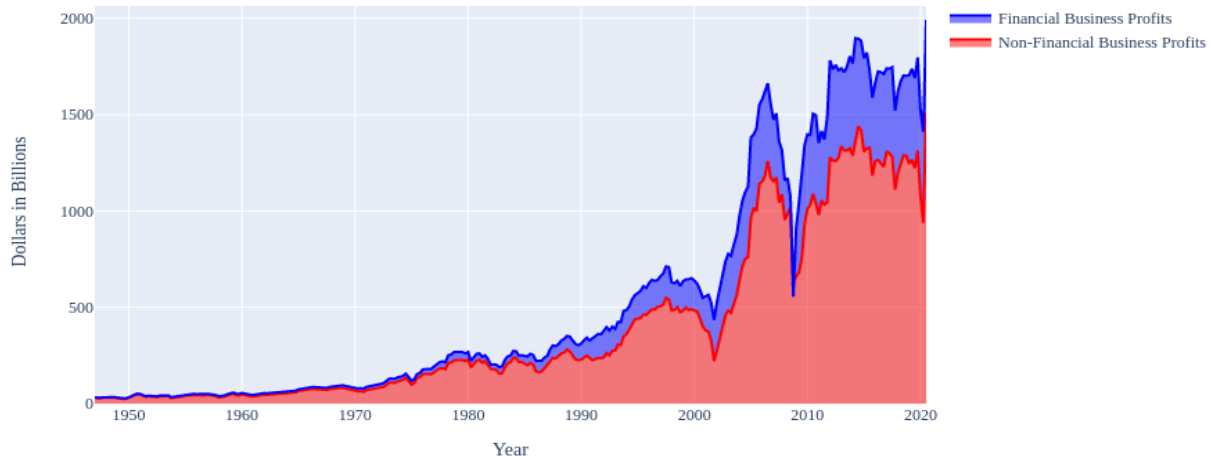
“Financialization refers to the increasing importance of financial markets, motives, and institutions in the operation of the economy”^[1]. A common theme among financialization literature has been the elevated importance of the financial sector relative to the real sector (non-financial elements of an economy). This is evident in the increased share of GDP taken by the financial sector. The FIRE sector made up 14% of GDP in 1974 and 21% as of 2019 (*Figure 1*).

Figure 1. Sector Contribution to GDP in the United States from 1974-2019 [2]



Financialization is also often used to describe the development and growth of financial capitalism and the decline of industrial capitalism. This is characterized by the increasing flow of profits from financial investments rather than the trade of goods and services (*Figure 2*).

Figure 2. Financial and Non-Financial Corporate Profits in the U.S. from 1947 to 2020 [3]



As U.S. firms increasingly seek profits in financial markets and drive more value from financial income it would reduce the need for labor ^[4]. The reduced need for labor would in theory drive wage stagnation and income inequality ^[4]. Similarly, recent financialization

literature shows that the pursuit of financial accumulation contributes to unstable financial systems at the expense of wage earners^[5]. While some economic inequality is essential to the functioning of a market economy (as it gives the necessary incentives needed for investment and growth)^[6], high economic inequality is destructive to economic growth^[7]. Thus, it is crucial to understand the nature of financialization as its associated consequences like economic inequality can eventually put the economy at great risk. This is more important than ever as income and wealth inequality in the United States has steadily grown since the 1980s. This is reflected in the increased share of income and wealth of the top 1 percent (*Figure 3 & 4 in purple*).

Figure 3. Annual Income Share in the United States from 1913-2019^[8]

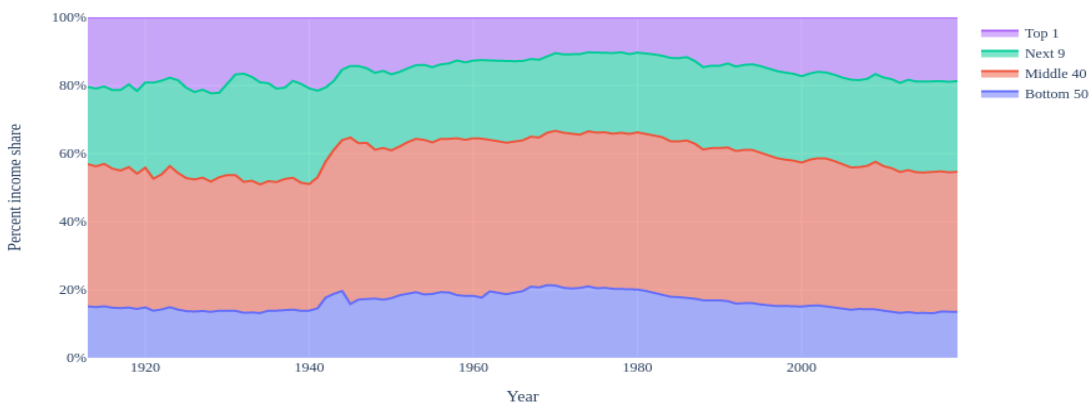
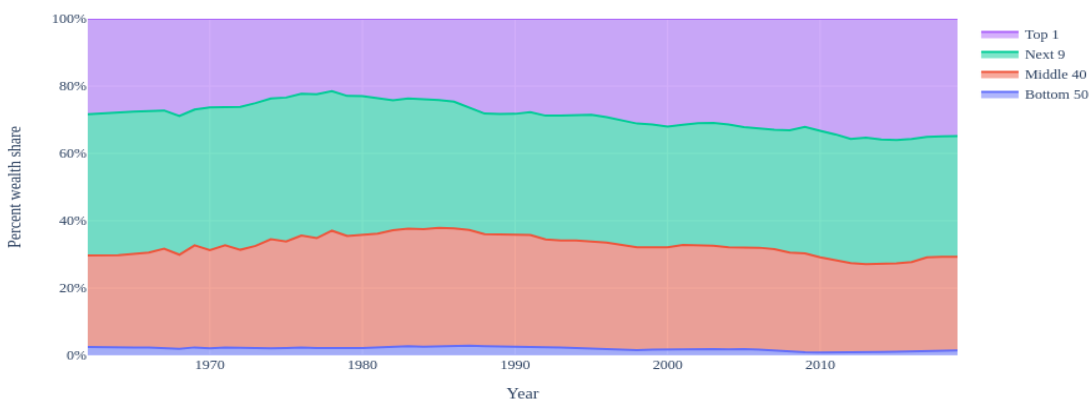


Figure 4. Annual Wealth Share in the United States from 1962-2019^[8]



Papers comparing the effect of financialization on income inequality have largely discussed the theory and trends surrounding inequality. (Tomaskovic-Devey, et al., 2013)^[4] measured trends between financialization and other explanatory factors for declines in the share of income of laborers and officers of industry. (Van Arnum, et al., 2013)^[9] used an econometric model that regressed many explanatory factors along with a financialization factor against a

measure of income inequality. These analyses often explain income inequality by comparing a financialization factor alongside other factors derived from mainstream theories.

However, most studies have not deeply examined the effects of financialization on both income and wealth inequality. To measure true economic inequality, we seek to understand the effects of financialization on both measures rather than just income inequality. By examining the economy of the United States, this paper will discuss financialization as a primary driver of economic inequality. Economic inequality will be examined through income and wealth inequality. We will run regressions of multiple different factors that have been attributed to income and wealth inequality against income and wealth shares. The purpose is to find the single best explanatory factor for income and wealth inequality in the United States. The paper will touch on the evidence of financialization occurring, the policy making that enabled this, and how these patterns fit in with the thesis that it is the primary driver of economic inequality.

II. LITERATURE REVIEW

Over the last few decades, there has been increasing discussion around the topic of financialization. From 2000 to 2018, the surge of journal articles surrounding the topic of financialization triggered (van der Zwan, et al., 2020) to write a paper to introduce the work completed in the field. The paper *Financialization: An Introduction* (van der Zwan, et al., 2020) not only discussed the conceptualizations of financialization but also gave a brief outlook for the field ^[10]. The one central theme among all the papers have been the growth of the financial sector relative to the real sector. Thus, this is the theme that will be used throughout this paper when discussing financialization.

Krippner, *The Financialization of the American Economy* ^[11], suggested an alternative way of characterizing developments in the US economy during the 1980s and 1990s in the form of financialization. Most importantly she showed the rising share of income in the finance, insurance, and real estate (FIRE) sector versus its share of employment in the United States economy. We will use this to measure the effect of financialization on economic inequality. She also showed the effect financialization had on the decreased dependence of non-financial firms on productive activities, and as a result lessened dependence on domestic workforces. This indicates financialization may be a driver of stagnating wages and economic inequality.

First published in 2005, the book *Financialization and the World Economy* ^[12] covered the structural signs that took place in the late 1970s and early 1980s that led to the significant increase in the shares of national income accruing to holders of financial assets ^[13]. It also showed that the payments by US non-financial corporations paid out to financial markets doubled each decade as a share of their cash flow since the 1960s ^[14]. This put non-financial corporations under increasing pressure to make payments alongside the pre-existing pressure to increase the value of their stock prices. As a result, the financial markets were shown to demand more income and more rapidly growing stock prices, while at the same time stagnant economic growth and increased product market competition made it increasingly more difficult to earn profits. Non-financial corporations' response to the pressure came in three ways. They could choose to cut wages and benefits to workers, engage in fraud and deception to increase profits on paper, or move operations overseas. This adds to the theory of our paper where we investigate the effects of financialization on economic inequality. Two other papers that also did similar work to this book were *Financialization: What It Is and Why It Matters* ^[15] and *Financialization: Causes, Inequality Consequences, and Policy Implications* ^[4].

Econometric models that dealt with the impact of financialization on inequality were all compiled and detailed in *The impact of financialization on the wage share: a theoretical clarification and empirical test* ^[16]. Using a set of empirical measures of financialization compiled from previous papers, the paper tested the measures against a panel regression of 14 OECD countries from 1992-2014. They found strong evidence that financialization had negative effects on the wage share.

We will draw inspiration from the paper *Financialization and Income Inequality in the United States, 1967-2010* ^[9]. The paper used several common factors that are often applied to test income inequality. Other papers such as *Financialization: What It Is and Why It Matters* ^[15] have also used the same explanatory factors in their analyses as we will in this paper.

III. DATA COLLECTION

The commonly used measure for income inequality is calculated using the Gini coefficient. Papers such as *Financialization and Income Inequality in the United States, 1967–2010* ^[9] or *In It Together: Why Less Inequality Benefits All* ^[17] use the Gini coefficient as their

measure of income inequality. However, this paper will not be using the Gini coefficient formula to calculate the income and wealth inequality indexes.

The reasons are as follows. Identical Gini coefficients can be calculated from different income distributions. Information about the "shape" of inequality is lost. This is because the Gini coefficient seeks to incorporate the income distribution into a single statistic by flattening a two-dimensional area into a single number. This would be like portraying a photo with the simple average brightness value of its pixels. The Gini coefficient like other measures of inequality is governed by the granularity of the measurements. For example, five 20% quintiles (a lower granularity) will garner a lower Gini coefficient than ten 10% deciles (a higher granularity) calculated from the same distribution. Thus, using the individual income and wealth shares of a population is a far better measure for the relationship between FIRE and economic inequality.

For the financialization factor, we will use *FIRE Compensation to Employment Ratio* as this directly shows the amount of income absorbed by the financial sector and its workers. This is calculated using the percent of income taken by the FIRE sector and dividing it by the percent of full-time equivalent employment by the FIRE sector. The formula used is as follows:

$$\frac{[(\text{compensation of the FIRE sector})/(\text{compensation of all sectors in the country})]}{[(\text{number of people employed in the FIRE sector})/(\text{total employed in all sectors in the country})]} \quad [18]$$

There have been many other factors proposed to explain the rising income and wealth inequality in the United States. Hence, it would make sense to compare other factors alongside financialization against the inequality metrics examined.

One factor commonly cited was the entry of women into the workforce. (Ryscavage, 1999) ^[19] examined whether upper-income or working-class women had higher increases in labor force participation. The theory was that higher-income households benefited from the increase of income due to dual earners while the poorer women had already been participating in the labor pool. For the purposes of this paper, we will represent this with the factor *Women's Workforce Participation* ^[20], which is calculated as a ratio of female workers aged 20 and over of all civilian workers per year.

Increased educational attainment in a country has been argued to reduce income inequality. Yet the opposite has occurred. Rising college premiums have been associated with rising income inequality. (Papay, et al., 2014) ^[21], (Jeng, et al., 2019) ^[22], and others have found

that income inequality rises as more people enter higher education in their analysis. Since this is often associated with income inequality, we will use this as a factor in our analysis represented with the *Share of College 4 years or more* ^[23], where we take the ratio of each year's population over the age of 25 that have had 4 years or more college education over the entire population of people over the age of 25.

The decline of unions since the late 1960s has also been shown to contribute to increased income inequality. (Fitchtenbaum, 2011) ^[24] using panel data found that the decline of unions exacerbated income inequality. They found the social and institutional forces played an important role in determining the distribution of income. This factor will be represented as the *Share of Union workers of Total Workers* ^[25].

Another factor used will be the real value of the minimum wage. (Mishel, 2013) ^[26] argues a decline in real wages produces a widening divergence between overall productivity and the compensation to the worker. The idea is that a higher minimum wage can encourage wage growth over all which would allow workers to benefit from their productivity growth. This will be measured using the ratio of the federal hourly minimum wage over hourly earnings of production. This is represented as *Min Wage/Production* ^[27].

Globalization has been one of the most, if not the most common reason given for rising income inequality. (Meschi, et al., 2007) ^[28] argues that the increase of skilled labor in a country and the shift of low skilled labor to less advanced countries, coupled with an increase in skill premium creates a more unequal income distribution. However, numerous studies also show that globalization has had little impact on income inequality. (Heimberger, 2020) ^[29] suggests that globalization on average has a small to medium sized effect on increasing income inequality. However, his analysis shows that financial globalization has a much larger influence on income inequality than trade globalization. This adds to the financialization hypothesis. For our measure of globalization, we will use the import share of GDP. This will be represented as the *Import Share of GDP* ^[30].

The final factor that will be used is the unemployment rate. Analysts argue that higher unemployment during recessions contributes to inequality since those laid off have completely lost their income. This also reduces the wages for the remaining workers as there is a reduced demand for labor. During upturns capital income may increase during the early growth in the

economy which may cause incomes to diverge and as a result increase income inequality. Due to the prevalence of business cycles, there will be cyclical patterns in unemployment data. To deal with this, experiments have found that lagging the unemployment rate by two years best captures the divergence between wages and profits ^[9]. This factor is called the *Unemployment Rate* ^[31].

IV. ANALYSIS AND METHODOLOGY

The tables below show the results of the regressions of multiple explanatory variables against each annual income and wealth share in the United States over the period of 1964 to 2019. The bottom 50 share of income refers to the percent of income taken by the lowest 50 percent of income earners. The middle 40 refers to those between 50 to 90 percent of the population, the next 9 refers to those between 90 to 99 percent of the population, and the top 1 share refers to the top 1 percent of the population. The purpose of this analysis is to find the best single explanatory factor for income and wealth inequality. The formula for the regression is as follows:

$$\text{Economic Share} = \text{Constant} + \text{Coefficient} * \text{Explanatory Factor}$$

A. INCOME INEQUALITY CONTINUOUS (N = 56)

Table 1.1 – Regression between explanatory variables and the bottom 50 percent share of income using continuous data .

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Bottom 50	FIRE Compensation to Employment Ratio	-0.119573	-28.043113	786.416183	0.935746	0.307110	-0.236951
Bottom 50	Womens Workforce Participation Ratio	-0.561047	-16.550420	273.916388	0.835324	0.133539	-3.102473
Bottom 50	Educational Attainment	-0.341277	-22.657809	513.376288	0.904825	0.205431	1.522842
Bottom 50	Union/Total workers	0.421802	24.510142	600.747043	0.917525	0.177998	-2.260296
Bottom 50	Min Wage/Production	0.445897	10.356083	107.248457	0.665113	0.285898	-1.795480
Bottom 50	Import Share of GDP	-0.645529	-16.250985	264.094507	0.830239	0.326118	-1.584384
Bottom 50	Unemployment Rate	0.000852	0.385035	0.148252	0.002738	0.018671	-3.608148

Table 1.2 – Regression between explanatory variables and the middle 40 percent share of income using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Middle 40	FIRE Compensation to Employment Ratio	-0.067017	-14.637147	214.246081	0.798692	0.265769	-0.236951
Middle 40	Womens Workforce Participation Ratio	-0.229786	-5.761962	33.200204	0.380735	0.148908	-3.102473
Middle 40	Educational Attainment	-0.175678	-10.046977	100.941755	0.651482	0.234330	1.522842
Middle 40	Union/Total workers	0.192252	7.616685	58.013896	0.517917	0.170600	-2.260296
Middle 40	Min Wage/Production	0.203287	5.699773	32.487415	0.375632	0.181389	-1.795480
Middle 40	Import Share of GDP	-0.327029	-8.617455	74.260527	0.578982	0.148643	-1.584384
Middle 40	Unemployment Rate	0.003591	2.865912	8.213454	0.132021	0.070999	-3.608148

Table 1.3 – Regression between explanatory variables and the next 9 percent share of income using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Next 9	FIRE Compensation to Employment Ratio	0.051808	21.239630	451.121864	0.893095	0.421773	-0.236951
Next 9	Womens Workforce Participation Ratio	0.242829	14.495543	210.120754	0.795548	0.199485	-3.102473
Next 9	Educational Attainment	0.152660	25.000981	625.049037	0.920477	0.456567	1.522842
Next 9	Union/Total workers	-0.183434	-20.110752	404.442331	0.882210	0.276148	-2.260296
Next 9	Min Wage/Production	-0.195006	-9.942987	98.862998	0.646743	0.287740	-1.795480
Next 9	Import Share of GDP	0.284767	15.759758	248.369982	0.821411	0.458407	-1.584384
Next 9	Unemployment Rate	-0.000367	-0.373657	0.139620	0.002579	0.035737	-3.608148

Table 1.4 – Regression between explanatory variables and the top 1 percent share of income using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Top 1	FIRE Compensation to Employment Ratio	0.134801	29.157818	850.178379	0.940277	0.356202	-0.236951
Top 1	Womens Workforce Participation Ratio	0.548010	9.591118	91.989545	0.630110	0.131417	-3.102473
Top 1	Educational Attainment	0.364356	15.445730	238.570582	0.815429	0.222194	1.522842
Top 1	Union/Total workers	-0.430671	-12.944276	167.554285	0.756267	0.159031	-2.260296
Top 1	Min Wage/Production	-0.454385	-8.060020	64.963915	0.546081	0.218103	-1.795480
Top 1	Import Share of GDP	0.687790	12.566723	157.922530	0.745190	0.166785	-1.584384
Top 1	Unemployment Rate	-0.004083	-1.680142	2.822876	0.049679	0.036532	-3.608148

The financialization factor (*Fire Compensation to Employment Ratio*) was the most significant single explanatory factor contributing to the income shares except for the next 9th percentile income share (*Table 1.3*), where it was the second best. Since the bottom 90 percent share of income (*Tables 1.1 & 1.2*) had a negative relationship to financialization, and the top 10 percent share (*Tables 1.3 & 1.4*) had a positive relationship, financialization is a driver of income inequality. Since it is the greatest explanatory factor for the income shares it is the greatest driver of income inequality. *Educational Attainment* is the second-best explanatory factor in these tables. Note that there is the presence of autocorrelation seen in the Durbin Watson statistic and the presence of non-stationarity seen in the Dickey Fuller statistic. This will be ameliorated later.

B. WEALTH INEQUALITY CONTINUOUS (N = 56)

Table 2.1 – Regression between explanatory variables and the bottom 50 percent share of wealth using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Bottom 50	FIRE Compensation to Employment Ratio	-0.019019	-8.412446	70.769249	0.567201	0.189449	-0.236951
Bottom 50	Womens Workforce Participation Ratio	-0.066081	-4.555786	20.755185	0.277642	0.110179	-3.102473
Bottom 50	Educational Attainment	-0.052412	-7.516679	56.500462	0.511314	0.159834	1.522842
Bottom 50	Union/Total workers	0.053738	5.473304	29.957062	0.356814	0.126326	-2.260296
Bottom 50	Min Wage/Production	0.043743	3.127551	9.781577	0.153361	0.152148	-1.795480
Bottom 50	Import Share of GDP	-0.104138	-7.613058	57.958651	0.517679	0.180065	-1.584384
Bottom 50	Unemployment Rate	0.000072	0.158275	0.025051	0.000464	0.077478	-3.608148

Table 2.2 – Regression between explanatory variables and the middle 40 percent share of wealth using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Middle 40	FIRE Compensation to Employment Ratio	-0.059201	-4.320719	18.668611	0.256901	0.136255	-0.236951
Middle 40	Womens Workforce Participation Ratio	-0.067539	-0.861498	0.742178	0.013558	0.109368	-3.102473
Middle 40	Educational Attainment	-0.129381	-3.034141	9.206011	0.145651	0.126276	1.522842
Middle 40	Union/Total workers	0.097447	1.770229	3.133710	0.054849	0.114606	-2.260296
Middle 40	Min Wage/Production	0.071068	1.020576	1.041575	0.018923	0.108180	-1.795480
Middle 40	Import Share of GDP	-0.200640	-2.308617	5.329715	0.089832	0.120793	-1.584384
Middle 40	Unemployment Rate	0.005545	2.837485	8.051321	0.129753	0.164493	-3.608148

Table 2.3 – Regression between explanatory variables and the next 9 percent share of wealth using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Next 9	FIRE Compensation to Employment Ratio	-0.095546	-11.650485	135.733797	0.715391	0.240419	-0.236951
Next 9	Womens Workforce Participation Ratio	-0.510935	-16.208820	262.725840	0.829506	0.440007	-3.102473
Next 9	Educational Attainment	-0.273365	-11.096278	123.127382	0.695135	0.247406	1.522842
Next 9	Union/Total workers	0.368517	16.749531	280.546798	0.838588	0.442938	-2.260296
Next 9	Min Wage/Production	0.414615	10.926686	119.392458	0.688568	0.561131	-1.795480
Next 9	Import Share of GDP	-0.519261	-9.867312	97.363847	0.643244	0.247196	-1.584384
Next 9	Unemployment Rate	0.001218	0.603339	0.364018	0.006696	0.073280	-3.608148

Table 2.4 – Regression between explanatory variables and the top 1 percent share of wealth using continuous data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Top 1	FIRE Compensation to Employment Ratio	0.173756	16.952086	287.373224	0.841815	0.158953	-0.236951
Top 1	Womens Workforce Participation Ratio	0.644490	6.914633	47.812147	0.469611	0.074569	-3.102473
Top 1	Educational Attainment	0.455177	10.855069	117.832528	0.685741	0.116695	1.522842
Top 1	Union/Total workers	-0.519659	-8.875896	78.781538	0.593317	0.090992	-2.260296
Top 1	Min Wage/Production	-0.529287	-5.990764	35.889253	0.399261	0.149311	-1.795480
Top 1	Import Share of GDP	0.824040	8.571833	73.476319	0.576392	0.114604	-1.584384
Top 1	Unemployment Rate	-0.006831	-2.091029	4.372404	0.074905	0.052158	-3.608148

The financialization factor was the most significant single explanatory factor contributing to the wealth shares except for the next 9th percentile wealth share (*Table 2.3*), where it was significant but not as significant as other variables. Since the bottom 99 percent share of wealth (*Tables 2.1, 2.2, & 2.3*) had a negative relationship to financialization, and the top 1 percent share (*Table 2.4*) had a positive relationship to financialization, it is the greatest explanatory driver of wealth inequality. There was no factor that was a clear runner up. Again, note that there is the presence of autocorrelation and non-stationarity.

Though the financialization factor was by far the most significant single factor for income and wealth inequality, many other factors also exhibited high significance. Using a correlation matrix between the factors we find most of the factors have very high correlations with one another (*Appendix Figure 5*). Demonstrated by the Durbin-Watson statistic, there is also the presence of autocorrelation in all the variables. Additionally, most of the factors exhibit

a dominant time trend which suggests non-stationarity. This is confirmed by the Dickey Fuller statistic. To extend our understanding of the effects the factors have on income and wealth inequality we will also perform the same analysis using discretized factors. This greatly reduces the collinearity (*Appendix Figure 6*), non-stationarity, autocorrelation, and improves interpretability as we can see the effect a percentage change in a factor affects a percentage change in an economic share. The reduced autocorrelation and nonstationary will be evident in the subsequent tables.

C. INCOME INEQUALITY DISCRETE (N = 55)

Table 3.1 – Regression between explanatory variables and the bottom 50 percent share of income using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Bottom 50	FIRE Compensation to Employment Ratio	-0.441691	-3.642125	13.265074	0.200182	1.703837	-5.757025
Bottom 50	Womens Workforce Participation Ratio	0.485979	1.282986	1.646053	0.030122	1.602107	-3.259403
Bottom 50	Educational Attainment	0.236121	1.310323	1.716946	0.031379	1.664647	-1.239878
Bottom 50	Union/Total workers	0.485099	3.927290	15.423609	0.225414	1.673810	-6.662179
Bottom 50	Min Wage/Production	0.087255	1.593612	2.539600	0.045726	1.549553	-5.837913
Bottom 50	Import Share of GDP	0.014166	0.368560	0.135837	0.002556	1.593588	-5.608533
Bottom 50	Unemployment Rate	0.010739	0.738435	0.545286	0.010184	1.563961	-5.705976

Table 3.2 – Regression between explanatory variables and the middle 40 percent share of income using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Middle 40	FIRE Compensation to Employment Ratio	-0.310800	-5.309246	28.188094	0.347195	2.123028	-5.757025
Middle 40	Womens Workforce Participation Ratio	0.728818	4.060863	16.490606	0.237307	2.050267	-3.259403
Middle 40	Educational Attainment	0.086205	0.887708	0.788025	0.014651	1.908897	-1.239878
Middle 40	Union/Total workers	0.083598	1.128118	1.272650	0.023449	1.949305	-6.662179
Middle 40	Min Wage/Production	0.044274	1.509843	2.279625	0.041238	1.913937	-5.837913
Middle 40	Import Share of GDP	-0.053571	-2.790067	7.784473	0.128067	1.897930	-5.608533
Middle 40	Unemployment Rate	0.032092	4.977617	24.776674	0.318562	2.369089	-5.705976

Table 3.3 – Regression between explanatory variables and the next 9 percent share of income using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Next 9	FIRE Compensation to Employment Ratio	0.044143	0.700442	0.490619	0.009172	1.890530	-5.757025
Next 9	Womens Workforce Participation Ratio	-0.274186	-1.561538	2.438402	0.043984	1.901416	-3.259403
Next 9	Educational Attainment	-0.065210	-0.767021	0.588321	0.010979	1.875688	-1.239878
Next 9	Union/Total workers	-0.125279	-1.981390	3.925908	0.068965	1.930541	-6.662179
Next 9	Min Wage/Production	-0.046673	-1.839538	3.383899	0.060015	1.771622	-5.837913
Next 9	Import Share of GDP	-0.022150	-1.250792	1.564479	0.028672	1.812798	-5.608533
Next 9	Unemployment Rate	-0.001607	-0.235639	0.055526	0.001047	1.844020	-5.705976

Table 3.4 – Regression between explanatory variables and the top 1 percent share of income using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Top 1	FIRE Compensation to Employment Ratio	1.328455	5.830636	33.996318	0.390779	2.247353	-5.757025
Top 1	Womens Workforce Participation Ratio	-2.121277	-2.737132	7.491892	0.123850	1.916605	-3.259403
Top 1	Educational Attainment	-0.329364	-0.841203	0.707623	0.013175	1.913047	-1.239878
Top 1	Union/Total workers	-0.599096	-2.060905	4.247329	0.074193	2.019494	-6.662179
Top 1	Min Wage/Production	-0.181669	-1.538967	2.368420	0.042776	1.907034	-5.837913
Top 1	Import Share of GDP	0.121887	1.502282	2.256852	0.040843	1.847920	-5.608533
Top 1	Unemployment Rate	-0.109100	-3.943061	15.547729	0.226816	2.066994	-5.705976

The financialization factor was the most significant single explanatory factor contributing to the income shares. It remained significant in three of the income shares where it was the most significant in two of them. The other explanatory variables that were more significant in the bottom 50 and middle 40 shares lost significance in the other income shares. Since the bottom 90 percent share (*Table 3.1 & 3.2*) of income had a negative relationship to financialization, and the top 1 percent share (*Table 3.4*) had a positive relationship to financialization, financialization remains the greatest explanatory factor for the income shares it is the greatest driver of income inequality. The runner up was *Union/Total workers*. We see no autocorrelation with the variables. Almost all the variables were stationary except for the *Educational Attainment*.

D. WEALTH INEQUALITY DISCRETE (N = 55)

Table 4.1 – Regression between explanatory variables and the bottom 50 percent share of wealth using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Bottom 50	FIRE Compensation to Employment Ratio	0.006070	0.010562	0.000112	0.000002	1.548730	-5.757025
Bottom 50	Womens Workforce Participation Ratio	0.792753	0.487430	0.237588	0.004463	1.531414	-3.259403
Bottom 50	Educational Attainment	0.255811	0.330009	0.108906	0.002051	1.573018	-1.239878
Bottom 50	Union/Total workers	-0.421412	-0.711887	0.506783	0.009471	1.598026	-6.662179
Bottom 50	Min Wage/Production	-0.712523	-3.292087	10.837838	0.169771	1.872591	-5.837913
Bottom 50	Import Share of GDP	-0.195767	-1.216965	1.481003	0.027184	1.540316	-5.608533
Bottom 50	Unemployment Rate	-0.100220	-1.659268	2.753171	0.049381	1.506029	-5.705976

Table 4.1 – Regression between explanatory variables and the middle 40 percent share of wealth using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Middle 40	FIRE Compensation to Employment Ratio	-0.358166	-1.964990	3.861187	0.067905	2.692942	-5.757025
Middle 40	Womens Workforce Participation Ratio	1.036187	2.007168	4.028723	0.070644	2.758832	-3.259403
Middle 40	Educational Attainment	0.292043	1.160073	1.345769	0.024763	2.867156	-1.239878
Middle 40	Union/Total workers	-0.013523	-0.069207	0.004790	0.000090	2.639517	-6.662179
Middle 40	Min Wage/Production	0.060969	0.785833	0.617533	0.011517	2.590214	-5.837913
Middle 40	Import Share of GDP	0.033633	0.630053	0.396967	0.007434	2.667353	-5.608533
Middle 40	Unemployment Rate	0.007862	0.386842	0.149647	0.002816	2.659274	-5.705976

Table 4.1 – Regression between explanatory variables and the next 9 percent share of wealth using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Next 9	FIRE Compensation to Employment Ratio	-0.241434	-2.176933	4.739038	0.082077	2.457025	-5.757025
Next 9	Womens Workforce Participation Ratio	-0.086565	-0.263822	0.069602	0.001312	2.262912	-3.259403
Next 9	Educational Attainment	0.117247	0.754149	0.568740	0.010617	2.201558	-1.239878
Next 9	Union/Total workers	0.167079	1.420877	2.018890	0.036694	2.380418	-6.662179
Next 9	Min Wage/Production	0.014526	0.303862	0.092332	0.001739	2.287393	-5.837913
Next 9	Import Share of GDP	-0.029404	-0.901864	0.813359	0.015114	2.237727	-5.608533
Next 9	Unemployment Rate	0.028290	2.385783	5.691960	0.096980	2.339182	-5.705976

Table 4.1 – Regression between explanatory variables and the top 1 percent share of wealth using discrete data.

Population	Explanatory Variable	Coefficient	t-value	f-value	r-squared	durbin watson	dickey fuller
Top 1	FIRE Compensation to Employment Ratio	0.684795	4.054147	16.436111	0.236708	1.978037	-5.757025
Top 1	Womens Workforce Participation Ratio	-0.900977	-1.686475	2.844198	0.050931	1.689259	-3.259403
Top 1	Educational Attainment	-0.517312	-2.059399	4.241124	0.074092	1.987639	-1.239878
Top 1	Union/Total workers	-0.090306	-0.452169	0.204457	0.003843	1.729363	-6.662179
Top 1	Min Wage/Production	-0.047004	-0.590126	0.348249	0.006528	1.694160	-5.837913
Top 1	Import Share of GDP	0.003646	0.066458	0.004417	0.000083	1.703306	-5.608533
Top 1	Unemployment Rate	-0.040676	-2.025897	4.104261	0.071873	1.822662	-5.705976

The financialization factor was the most significant single explanatory factor contributing to the wealth shares. Though *Min Wage/Production* and *Women's Workforce Participation* were the best explanatory factors for the bottom 50 and next 40 percent wealth shares respectively, they were not statistically significant in any other wealth shares. Also, in the next 40 percent wealth share the financialization factor was the second most significant explanatory factor. Since the bottom 99 percent share of wealth (*Tables 4.1, 4.2, & 4.3*) had a negative relationship to financialization, and the top 1 percent share (*Table 4.4*) had a positive relationship to financialization, financialization remains the greatest driver of wealth inequality. Like the continuous wealth analysis, there was no factor that was a clear runner up. Almost all the variables were stationary except for the *Educational Attainment* and there was no autocorrelation between the variables.

V. CONCLUSION

From the tables above there is a very strong relationship between financialization with income and wealth inequality. We also compared other factors often used to explain the growth of income and wealth inequality such as Women's Workforce Participation, Educational Attainment, Union Participation, Minimum Wage, Globalization, and Unemployment. Our analyses largely found the factors to be less significant if not statistically insignificant in relation to economic inequality. In our regression of the continuous variables, we found that apart from

the 90th to 99th percentile economic shares, financialization was the absolute most significant factor. Note that financialization was still significant in the 90th to 99th percentile economic shares. The gap created by financialization in income inequality was between the bottom 90 percent vs the top 10 percent. The gap created by financialization in wealth inequality was between the bottom 99 percent and the top 1 percent. The top shares were positively affected by financialization and the bottom shares were negatively affected. Thus, our findings using continuous data was that financialization is the greatest driver of income and wealth inequality. For the discretized data we found the same results except for the bottom 50 percent wealth share, where financialization was insignificant. This most likely stems from the insignificant amount of wealth held by Americans in the bottom 50 percent wealth share. Overall financialization is found to be the most significant explanatory factor for economic inequality. Arguably some of the other factors could be products of financialization or vice versa. However, based on the underlying theory presented by previous works and results of this papers analyses it is very likely financialization is the central factor.

VI. RECOMMENDATION

This paper only measured the effect of financialization on economic inequality in the United States. Ideally one would perform the same analyses on other nations around the world to come to a more robust conclusion on the relationship between financialization and economic inequality. However, this may be difficult as many nations do not collect the same quality of data on its financial sector nor income and wealth shares. Another issue is that the data for some nations have not been collected until recently. However, for nations that have witnessed significant financialization they often collect better data because of having a better developed financial sector. European nations may be a good place to collect data to expand the analyses.

Another possible avenue to improve the analyses is to use better proxies for the other explanatory factors that were regressed against the economic shares. If there is data available for the share of income of women, attainment of 4 years or more college education, and union members, we can derive more robust factors that look at the share of incomes taken by each group over the years. This would push the explanatory variables one abstract step closer to income and wealth share impacts.

The variables may also have a delayed or distributed effect on economic inequality over time. A distributed lag model or ARIMA model may better capture the effects of the variables and may change the findings of this paper.

The last direction these analyses can take is to use financialization as a factor in a multifactor regression for economic inequality. From our analyses financialization should be included in econometric studies of income and wealth inequality. Additionally, it would make sense to only use discretized factors in future tests as it greatly reduced collinearity, non-stationarity, and autocorrelation.

VII. APPENDIX

Figure 5. Continuous Correlation Matrix of Explanatory Factors – High correlation



Figure 6. Discrete Correlation Matrix of Explanatory Factors – Greatly reduced correlation



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All data used was on an annual basis. All calculations and analysis are done in python. The data, visualization, and calculations are all available at: <https://github.com/LeafmanZ/FDC/>.