

# **Evaluating Theories on Income Polarization in the U.S.**

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Political Science Senior Thesis  
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April 2018

### **Abstract**

*This paper examines the relationship between technological change and income polarization within the United States. I examine and discuss the reshaping of the U.S. labor market via skill-biased technological change, possible effects of globalization, as well as institutional policies. My research also explored how aspects of corporate structure norms, and tax avoidance could be causes for increased income polarization related to top tier incomes. Using current literature and data to consider the top causes of an increasingly widening wage gap, one can see that advancements in technology and the changes it has had on the labor market, as well as facilitating capital gains, have been driving factors to ongoing trends of uneven income distribution. Arguments regarding policy and deregulation are also very strong, as are factors relating to corporate structure. Within the structure of the corporate and finance world you see wages and the accumulation of capital at record highs. However, my research shows how both skill and capital-biased technological advancement has been the leading facilitator for much of the increasing polarization of U.S. wages. Technological change presents itself within every theory and is clearly a forerunner among them.*

### **Introduction**

Over the last forty years, economists have seen economic inequality increase in multiple ways. Though the subject remains controversial, several prominent theories have emerged to try to explain the growth in income inequality. It persists within developed countries, and these economists have noted that some of the world's leading countries, like the United States, continue to have increasingly high rates of income polarization. The wage gap within the United States has continued to grow over the last forty years. Top earner income growth has rapidly outpaced that of the bottom earners. Economists have drawn from multiple data sets and have come to a clear agreement that income growth is not happening equally at all earning levels.

The bottom half of the distribution, the lowest earners in the United States, have had declining, or stagnant income growth since the late 1970s. The trend in wage inequality between

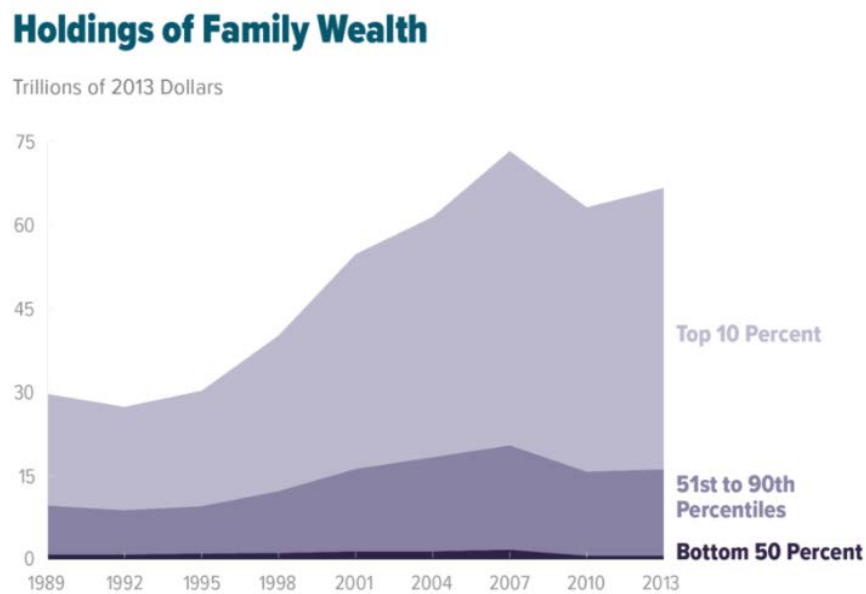
1979 and 1987 involved a surge of inequality with lower incomes falling by nearly 9 percent before leveling off, and those of high earners (notably those in the top 5 percent) increasing 19 percent during the same period, creating distinctly noticeable polarization. Originally there was controversy surrounding the causes of this, especially considering there was a deep recession from 1981-1982. Many economists considered it to be an episodic event related to this (Autor, Katz and Kearney 2008). However, income polarization has since continued to grow. As Mehrene Larudee (2009) states that by 2006 the incomes of the top 5 percent rose by 87 percent from their 1979 levels indicating the trend had continued.

Another part of the problem is the movement out of middle-class income levels all together. While there has been a small positive change in the individual incomes of those who remain in the middle class, the number of workers in the middle class has reduced from 58 percent of the population in 1970 to 47 percent in 2014. Of this 11 percent decrease among the middle class, nearly equal shares have merged into lower and higher income levels. Concerningly, most of this equal growth occurred before 2000, as since then only .25 percent have moved upwards, while 3.25 percent have moved down the income ladder (Autor 2008).

The middle-class is an important key to a functioning economy. Unlike lower income brackets, people with middle income levels typically have extra money to spend on higher end products and some luxury items, which invigorates the economy. Though upper tier incomes also have excess to spend, a greater portion of their incomes end up in some form of savings or into the capital investment cycle, or often pass through as inheritance. The lack of positive wage change in the lower incomes, as well as more Americans moving into lower income brackets leaves a large pool of people without enough to spend within the economy.

The polarization of income in the United States has consequently led to a large divide between top earners and lower earners, however when considering the gains to the top 1 percent, and the lower shares to distribute among the largest and poorest category the inequality is becoming a growing concern.

A chart by Thomas Piketty illustrates the disparity of wealth distribution in the U.S.



Source: Piketty et al. 2016

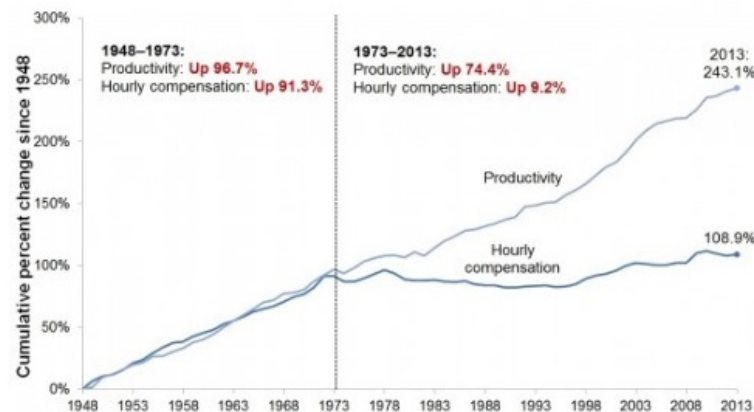
Economists have spent a great deal of effort trying to explain what has caused this stagnation of income growth for low earners relative to the increasing rate of growth among the top earners. as well as the number of jobs in the middle-income ranges declining, and low incomes increasing.

### **Literature & Theory Review**

Although much of the literature indicates a slowed rate at the bottom end of polarization since the late eighties, the fact remains that half of the workers in the United States haven't seen real wage growth, or a rising standard of living, for an entire generation (Piketty 2016). This

wouldn't be as notable if economic productivity ceased growing overall. However, from 1980 to 2014 the national level of income growth in the U.S. had steadily grown by 61%, and what needs to be further examined is why the distribution of the earnings of that productivity is so uneven (Autor et al. 2008, Piketty 2016). With the increased levels of productivity and earnings, it would make sense that the growth would be distributed somewhat evenly along all groups of earners. In fact, a figure by the Economic Policy Institute (2015) shows that typical wage compensation hasn't matched productivity since the early 1970's.

### Disconnect between productivity and typical worker's compensation, 1948–2013



**Note:** Data are for compensation (wages and benefits) of production/nonsupervisory workers in the private sector and net productivity of the total economy. "Net productivity" is the growth of output of goods and services less depreciation per hour worked.

**Source:** EPI analysis of Bureau of Labor Statistics and Bureau of Economic Analysis data

## Policy Making

One body of research has been developed related to how government policy and taxation, wage setting institutions, and reduction of unions have facilitated economic inequality. Unfavorable policy can lead to lack of industry starting up (due to outsourcing) in areas that need steady, decent paying middle-skill jobs (Dew-Becker and Gordon 2007). To coincide with this, more research has been able to show that changes in wage-setting institutions, as well as a lack of emphasis on union and organizational policy, have reduced collective bargaining power for

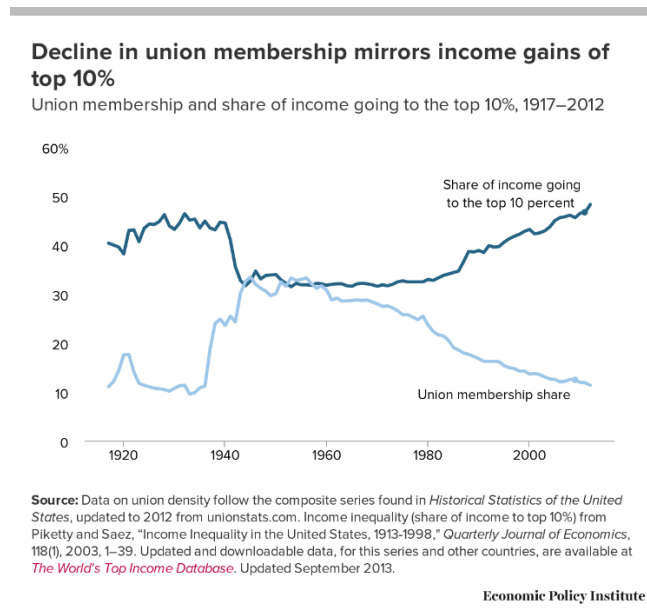
waged employees. Lack of wage barriers in the United States may have allowed for increases in top-end executive incomes within the top 1 percent, many of which are largely in the corporate and banking sector (Lemeiux 2007; Piketty and Saez 2003).

Additional research by Autor (2008) more closely addresses what may be facilitating the growth for the highest earners, and ties in how skill and capital-biased skill change has a large influence on the earners near “superstar” level; many of whom exist within the limits of the executive world. Many of them don’t rely on market influences and their incomes rest largely in the hands of shareholders and board of directors, likely contributing to gains in the top 1-5%.

### *Taxation and Regulations*

Tax policy and other regulatory systems have been discussed heavily by economists, as they seem to have played a role in some of the trends of income inequality. Business location decisions are largely driven by economic factors that favor the business, even though attempts at government regulation are in place. High tax policy, and unionization can often result in driving business decisions away (especially within manufacturing and production industries). Firms become reluctant to open, resulting in lowered wages via competition within the labor pool. Not to mention there are becoming less jobs at the middle level as the demand is felt on the higher and lower skill levels (Bartik 1985; Bluestone and Harrison 1988; Piketty 2016). Following suit with the process of deregulation and implementing neo-liberal policy, union membership began to decline after the mid 1970s. Unions have always benefitted the working class the most, and without the bargaining power they bestow worker protection, benefits, and a lack of steadily increasing wage potential began to dissipate. It’s interesting to note how top tier income gains directly mirror the rise and fall of union membership, and discussing how this could be facilitated is important.

A graph produced by the Economic Policy Institute gathers historical data on top tier wage growth versus union membership.



As the nature of middle-class jobs changed due to a collection of causes, so too did the power of the middle-skill waged worker. This argument holds a lot of weight, but when really worked through it is clear that other factors, like technology change and globalization, led to the environment in which worker strength subsided. The power of unions wasn't felt as strongly by the population, and the choice to join often wasn't supported. On the other hand, corporations were given a perfectly set table for creating business in the most opportune locations for profit, and least concern for worker welfare. Literature and data that shows this inconsistency in policy and worker protection has the greatest negative effect on middle income earners, and industries that are more prone to outsourcing (Dew-Becker and Gordon 2007). Regardless, it did not help unions spread into lower wage tiers and advance their ability to protect workers, but left the upper income and capital sectors open to easy growth.

Another point to note about taxation is in regards to income redistribution via tax policy. Generally, a broad set of empirical evidence synthesized and discussed by Taylor and Taylor

(2014) suggests that tax cuts favor economic growth at the national level, creating a small controversy in how growth is measured and what role tax policy has on affecting income inequality. Piketty, Saez and Zucman (2017) elaborate in a lengthy set of analysis what roles the government has on income distribution. Though they conclude government redistribution isn't helping with the polarized nature of income inequality, it does help off-set inequality for the middle class via tax-exempt fringe benefits, however still leaving the lowest earners with little to ease the lack of growth. A set of economists have set out to elaborate on pre-tax and post-tax incomes, and although data shows the bottom 50 percent felt an increase of 21 percent between 1980 and 2014 on their post-tax incomes, government policy for redistribution did little to offset the pre-tax inequality for the lowest earners. Though much of the tax redistribution goes into public goods and health services, aiding the elderly, or back to the middle class, for much of the bottom 50 percent of the population it falls "woefully short" and data shows it has "offset only a small fraction of the increase in pre-tax inequality" in this earning category (Piketty 2016).

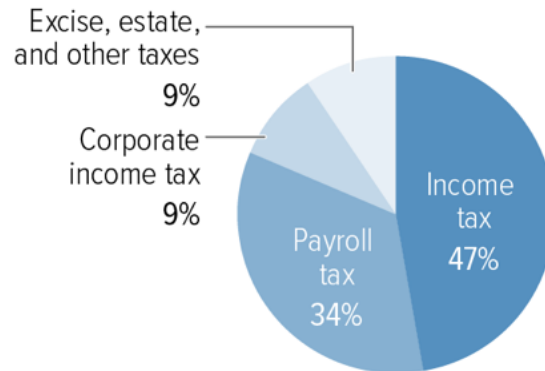
### *Corporate Taxation*

There has been a shift in the tax burden over the last 50 years. During this time the tax liability of corporations was reduced, and an increase at the individual level. Corporate tax rates have been falling consistently over the last forty years, yet some of the highest earners in the United States are corporate executives. Since Larudee (2009) elaborates the distinct difference in revenues created from corporate taxation has shifted from 27.5 percent of national tax revenues in the 1950s, to 10.5 percent in the 1990s, while currently hovering closer to 9.4 percent (CBPP 2017), it is critical to further break down where the documented national income growth is really being distributed.

The Center on Budget and Policy Priorities produced this chart on sources of federal tax revenue.



## Sources of Federal Tax Revenue, 2016



Note: "Other Taxes" category includes profits on assets held by the Federal Reserve. Figures do not total 100% due to rounding.

Source: Office of Management and Budget

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In the 1950s middle-income earners felt the surge of growth post WWII, and top capital incomes were slow to recover, while they held a larger tax burden (Piketty and Saez 2001). Tax policy slowly shifted the tax burden from corporations onto individual incomes, now accounting for 47 percent of the current federal tax revenue, while the corporate tax rate fell to aforementioned values from the Center on Budget and Policy Priorities (2017). This may have led to increased profits and earning potential in the corporate sector as is discussed in the following section.

### *Corporate Structure and Social Norms*

Regressive taxation coupled with a level of social norms more prevalent in the United States than any other developed nation via relaxed regulations set up top earners for increased earnings potential, and greater capital expansion (Lemeiux 2007; Piketty 2016). Regardless of tax policy or evasion, there are other ways corporate structure funnels a portion of the national income growth into the hands of fewer earners. These top earners accumulate enough wealth they

emerge into the capital and finance realm, a sector that dominates top tier income gains. Not only do we see expansion of corporate leaders into the finance sector, but executives of corporations are in the top tier of earners. Often, compensation and other corporate benefits, as well as social norm driven perks, rival an income all their own. This adds strength to the argument top tier wage growth is facilitated by aspects of corporate structure.

One last point that becomes important to factor, is that although there are vast increases in some top-end executive and corporate pay ladders, income differences in the U.S. are more prevalent between professions rather than always relying on a bureaucratic hierarchy, leaving some industries struggling, others booming on the market, and some earners unaffected by minor market forces (Kulikauskus 2013). Industries like information technology have greatly facilitated outliers for corporate and capital operations. This sector creates ample opportunity for individual start up, investment and growth. In general, top-end executive pay is more influenced by directors and shareholders and is less effected by market driving forces (Autor and Dorn 2013; Lemeiux 2007), which leads strength to the argument that the structure and norms of corporate life lead to top tier income growth. However, at the heart of this theory lies the factor that innovative technology, and having the skills to manipulate it, is the leading factor based on the sectors that utilize it best at the corporate level.

Even though this is a global phenomenon, as stated earlier, the levels of polarization in the United States rival that of any other developed country. Another part of the weakness of this theory relates to how executive pay has increased so much in the U.S., and that it isn't as drastic in other highly developed countries like France (Dew-Becker and Gordon). This is generally attributed to more consistant pay-setting institutions such as union power controlling the wages at multiple levels, as well as other factors that reduce barriers to higher wages that can be

facilitated by global integration (Lemeiux 2007), further reducing the strength of the corporate structure argument.

### **Globalization Theory**

As our the world rapidly innovated into a highly integrated global trade system, many aspects of business and labor changed. The developing world was a fabulous host for investment, and expanding markets. Coupled with the deregulation following the 70's, the clamour to provide cheap labor by developing countries was a business dream. With capital moving fairly freely, and little regulation to protect worker power, capital investors saw maximum earning potential. The United States saw many manufacturing jobs move to the developing world in search of the cheap labor, and there was a rapid growth to it's service industries.

#### *Shifts in Industry and Outsourcing*

Globalization has also had a major effect of income inequality. Though the tax policy within the United States is a defining factor, the ability for businesses to outsource has grown due to being able to efficiently operate in a global market. This often drives wages down in the United States in the process. This not only causes potential barriers to solutions to income inequality, but it also enlightens the situation, as many other highly developed countries with more regulated tax and wage policies do not have quite the level of income inequality seen in the United States (Lemeiux 2007, Piketty and Saez 2003). Without going into great detail, for the purpose of this paper it is suffice to say that economists are in agreement that the United States maintains the largest income inequality of any developed state. The influences are, in part, globalized, but the heart of the problem may lie in intervening at the federal, state, and local level to equalize the distribution of human capital according to leading world economists Piketty and Saez (2016). The fact that other countries have equalized their income distributions, and developed policy that

considers the collective over the corporation shows that globalization theory has limitations once governments choose to intervene. On the other hand, government policy can be so relaxed it develops a haven for corporate profits.

#### *Off-Shore Tax havens*

Another issue related to globalization and income inequality is off-shore tax havens. They allow corporations and wealthy individuals to divert profits via extremely low taxation policy, funneling the associated revenues for national income growth away from potential redistribution (Larudee 2009). Without the integrated global finance and trade system, this type of tax evasion wouldn't be so simple. Again, at the heart of this theory is how technology has rapidly changed the make-up of global economics.

#### **Capital & Skill-Biased Technological Change, Education and Routinization**

Many studies argue the early trends in polarization, and continued inequality are caused by changes in the labor demand for varying levels of education in combination with theories regarding skill-biased technological change. The supporting research shows how technology has made fairly broad changes in the labor market creating more opportunities for higher-skill levels, while closing off some for middle-skill level positions, and resulting in little growth for wages at both the lower and middle-skill levels (Axfentiou and Kutasovic 2011; Autor and Dorn 2013; Lemeiux 2007).

Technology has not affected much income change at the lowest-skill manual positions directly, as it has for the middle and upper-skill levels. However, it has been the largest driving factor behind driving a global economy. It has facilitated communication, global investment and business practices at an astonishing rate. This has caused a "race to the bottom" scenario across the globe within the industrial sectors, creating a competition factor that drives wages down

(Coe, Kelly and Yeung 2013), contributing to the low wage stagnation for the bottom 50% here in the United States as well. What has occurred via technological advancement is a reorganizing of the economic and trade system, especially through communication, transport time and cost, and logistics. This has had a major effect on how and where labor is exploited and compensated for, and what skill-level is needed to perform the task.

Currently a large host of data clearly indicates a continued growth in inequality negatively affecting the wage potential and share of jobs for low and middle earners, and substantially increasing that of high income earners (Autor et al. 2008; Bluestone and Harrison 1988; Dew-Becker and Gordon 2007). A general agreement is that technological advancement has played a key role in this part of the polarization process (Afrentiou and Kutasovic 2011; Autor and Dorn 2013; Bluestone and Harrison 1988; Lemieux 2007). In addition to this theory, Goos and Manning (2007) elaborate that routinization has also played a role in replacing labor, as well as changing the value of it.

#### *Education & Routinization*

Some of the early explanations for this discussion revolve around changes in the labor market in relation to the supply of educated workers. This may hold some weight, and since the early 1990s the consensus on data shows that education and technological advancement went nearly hand in hand in changing wage inequality, and the relative demand for college educated worker skill had increased (Autor 2008; Lemieux 2007). As this advancement process continued, a couple factors create the shift in demand that began to heavily favor the highly educated over even the moderately educated. Changing technology served to automate many functions previously held by moderately skilled workers. Not only did workers become replaced by more machines, but in some professions the value of their labor dropped. Routine tasks are substituted

with technology, and less intricate labor is needed. Though the changes in technology have had little impact on low-skilled manual tasks, highly educated workers benefit, especially via information technology, as their abstract tasks are often complimented by technology making them more efficient at their jobs (Autor et al. 2003; Goos and Manning 2007). Another factor in the changes to the labor market within the United States was the shift from manufacturing to service industries, which also reduced job availability in the middle-skill level and increased those of lower-skill levels.

### *Capital-Biased Technological Change*

Explanations, yet again, for the increase in income within the top 10 percent excluding the top 1 percent, are more closely explained by the movement of middle class workers into higher earnings categories, but it doesn't fully explain the whole scenario. The earners within the top ten percent have seen increases to their wage by about 121 percent from 1980 to 2014. The very top earners, those within the top 1 percent of income distribution, have seen 205 percent growth in the same time frame. When broken down further, income growth for the very top nearly grows by leaps and bounds, with the top .001% skyrocketing to 636 percent since 1980 (Piketty and Saez 2016). Most of these top earners are the holders of the world's capital as well. Typically, as someone moves up the income ladder high enough, they just emerge into the financial sector. Whether through investment or firm startup, they can produce the startup capital that leads to the capital gains when business is handled successfully. Technology has served the finance and capital sectors very well via the easy and instant transfer of funds across the globe, as well as the super well-oiled machine that is Wall Street. The ways in which technology has made how money is invested have become so intricate, it sets those with the means and the know-how up

for vast potential. The main reason this influences polarization is that it highly benefits those with capital, creating a cycle in which the top 1% just continue to have facilitated gains.

### **Analysis & Conclusion**

Much of the polarization of the bottom 90 percent can be explained through skill-biased technological change, and effects of policy, unionization, and the onset of corporate structure in a global environment (Afxentiou and Kutasovic 2011; Autor and Dorn 2013; Autor, Levy and Murnane 2003; Bluestone and Harrison 1985; Lemeiux 2007; Larudee 2009).

### **Conclusion**

There is no way to deny that growth is a good thing, however when that growth continues to concentrate into an increasingly smaller share of earners a concern for a trending problem has grown. The overwhelming evidence shows gains to the top 5 to 10 percent far outreaching those on the lower ends, and the fact that wages at the bottom have stagnated for an entire generation is alarming. Understanding how unequal the United States currently is, and more importantly why is critical to decided what, if any, solutions can be enacted. Putting it simply, in the last 40 years, the United States has seen immense changes in income structure. In 1980 the top 1 percent earned about 27 times more than those in the bottom 50 percent. Today that ratio is closer to 1 to 81, very similar to the gap between the average income of those in the United States and the world's poorest countries.

Throughout this body of research one distinction can be made. Theory regarding technological change has the fewest weaknesses and leads as the greatest factor of income polarization in the United States. Within nearly every theory technology has played a vital role, if not being the very center of it. Skill and capital-biased technological change has driven up the demand for highly-skilled positions, while facilitating massive accumulation of wealth and

global capital in the hands of a few, with the majority of the population struggling to see growth. Though deregulation of business practices, union decline, and inconsistent wage barriers for executives have been contributing factors, they have merely been facilitated by rapid technological advancements that have reshaped trade, business operations, and the make-up of labor markets.

The solution may not be a quick fix, but it certainly wouldn't hurt to investigate the reform of policy and regulations (or lack there-of) at a global level while increasing worker bargaining power now that technology has facilitated such a global economy. What also needs to be addressed in a solution is how technology has advanced the accumulation, and economic power of global capital, while so many see so little growth. More effort needs to be put into curtailing the effects of skill and capital-biased income growth and creating more competent and consistent wage policy on a global scale (Piketty and Saez 2016).



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