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Contrasting Chicago School and Kaleckian Theories: Industrial Organization, Income Distribution, and Historical Policy Significance in the United States

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The purpose of this paper is to identify the role that long-run industry concentration plays in determining the distribution of income, particularly in the past four decades in the United States, as well as examining how industry concentration has developed during that period. The paper is especially focused on the fall in labor's share of income. First, I examine current literature regarding trends in industry concentration and its relation to the distribution of income. Next, I examine the historical impact of the Chicago School of Economics on this subject, focusing on the school of thought's propositions regarding industry concentration, their anti-regulation bent more generally, and their impact on industry concentration throughout the past four decades, especially in the United States judiciary. Finally, I propose an alternative, post-Keynesian theoretical framework to the neoclassical, micro-foundations-driven one used by the Chicago School and other mainstream economists: a theory of concentration and distribution in the tradition of Michal Kalecki and Josef Steindl, which I argue is a much more realistic and descriptive way of thinking about the issues of competition and concentration in industry and their relation to the distribution of income

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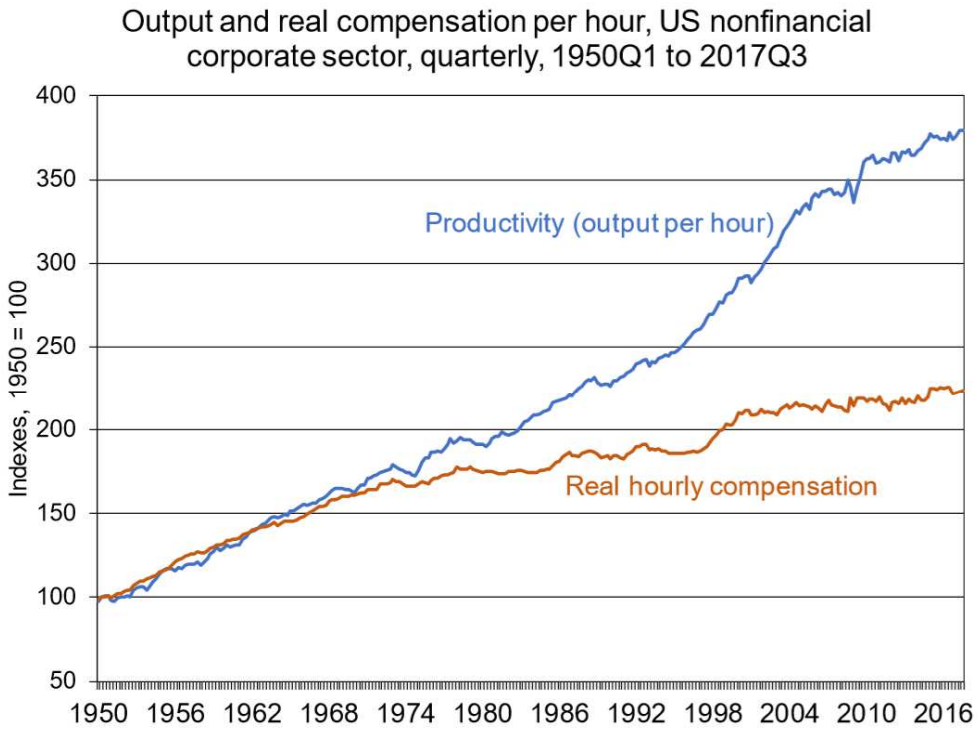
Table of Contents

Chapter 1: Introduction

A precipitous rise in wealth and income inequality has been observed in the United States since the 1980s. Median wages have stagnated during this period, even as workers have become more productive and highly educated. For many workers, wages have fallen in relation to key costs of living, such as housing, and education during this period. Simultaneously, businesses have become increasingly profitable, and the share of income earned and wealth owned by the top of the income distribution has continued to rise. This rising inequality, which has essentially excluded the vast majority of Americans from the benefits of economic growth seen in the past four decades, has been attributed to various factors. These range from a deterioration of labor protections and decline in unionization, lowering of taxes for the very rich, a decline in antitrust regulations, information asymmetries in markets broadly favoring firms, and an extreme rise in the costs of education and health care.

While the determinants of income and wealth inequality are both multifaceted, and all the above factors are likely to have played at the very least some role in their rise, this paper will focus on the role of rising industry concentration on changes in the distribution of income. We will also examine how the rise in concentration has proceeded and the role that a subset of economists played in influencing regulations in a way that

contributed to that rise. Finally, we will see an alternative theoretical framework which does a better job of explaining the phenomena observed in the past four decades as well as the inherent connection between industry concentration and income distribution. The connection between industry concentration and income inequality is through the distribution of income from production between wages paid to workers, payments made on capital for productive activities, and rents retained as earnings by capitalists. Even as all three categories rise in absolute terms, we can see a relative shift in the data from labor and capital payments to profits. This results in owners and executives of businesses retaining an increasingly large share of income from production, and a smaller share of income being reinvested into capital or paid out to workers. One common way of thinking about this shift is through the relationship between productivity and wages. Robert Blecker (2018) used US Bureau of Labor Statistics data to compare trends in Productivity as measured in output per hour and Wages in terms of Real hourly compensation by indexing both to their 1950 values in the United States. The result can be seen in figure 1 below. What stands out in this comparison is the rise in median wages and productivity proceeded at essentially identical rates until the late 1970s, and after that time, the gap between the two has emerged and steadily increased. Recently, increased scholarship has been dedicated to understanding the causes and implications of this diversion between wages and productivity.



Source: US Bureau of Labor Statistics, www.bls.gov, Major Sector Productivity and Costs, downloaded April 28, 2018, and author's calculations.

Figure 1: from Blecker (2018)

In the next chapter, we will see empirical support for the idea that this ever-rising gap is explained by a rise in the profit share of income and corresponding fall in labor's share of income. We also will see support for the idea that profits have been rising during this period because of higher markups being charged by businesses in increasingly concentrated industries. Additionally, as industry in the US has generally become more concentrated, firms have increasingly exercised market power in the labor market, using their favorable bargaining position to lessen their expenditures on labor.

One way to think about industries is in terms of their concentration in both buyers and sellers. In general, the fewer players holding the greater market share in an industry,

the more concentrated it is. When just one firm sells all of the product in an industry it is a monopoly, and when one buyer purchases all the product in an industry it is a monopsony. Similarly, oligopoly and oligopsony refer to very few sellers and buyers in an industry, respectively. A market which is less concentrated is more competitive. In general, the degree to which the sellers and buyers in a product market are concentrated plays a large role in their market power, or the ability influence prices in their favor. The greater the market share of an actor on one side of the market (either buying or selling) and the more competitive the other side of the market is, the more market power that actor has. Another way of thinking about it is by thinking about price elasticities facing the firm. As a firm gains market power, their goods become more price inelastic. Where in a perfectly competitive market, a price increase of any size means a total loss of sales, a monopoly would likely face much more inelastic prices, meaning they could very often increase revenue by increasing prices, because they would lose relatively few buyers. The buyers, in this case, have no other option who would be willing to charge less. Because of this influence on price, in more concentrated industries, firms are able to charge higher markups than they otherwise would, meaning the difference between their prices for their goods and the cost of labor and capital used to produce it is higher. In the following chapters, we will see correlation between increases in both industry concentration and the size of firms' markups over past decades. This paper argues that the rise in concentration of US industries has directly increased inequality by simultaneously stifling wage growth and raising profits.

There are two complementary broad categories for reasons for the rise in concentration which we will observe. First is that the competitive pattern that holds in product markets leads to the most capable firms gradually (or not so gradually) gaining market share at the expense of less capable firms and broadly having the ability to charge higher markups as they do so. Second is that the regulatory framework in the US has, since the 1980s, been more permissive to the acquisition of market share which would have been regulated against in previous periods, through means which the legal system considered anticompetitive in previous periods. This defanging of antitrust regulation has been widely attributed to the influence of a group of economists and legal scholars called the Chicago School, so called for their being mostly based out of the University of Chicago's Economics and Law departments. Prior to this influence, the US judiciary enforced the Sherman and Clayton Antitrust Acts of 1890 and 1914 by using a structural presumption that acquisition of excessive market share was itself an attempt to monopolize a market and harmful to consumers and other firms. This belief was referred to as Economic Structuralism.

We will see that in general, the Chicago School espoused the notion that markets were generally competitive and that the firms which attained large market share did so on the merits of their productive efficiency and low prices. Therefore, for the Chicago School, most antitrust regulation, and indeed business regulation in general, was counterproductive because it interfered with the efficiency of markets. Following this logic, the Chicago School legal scholars in the 1970s advocated replacing the structural presumption of the post-war period with the consumer welfare standard (CWS). This

consumer welfare requires prosecutors to prove conduct by a business would result in a future rise in prices for it to be considered anticompetitive. In practice, this CWS limits the extent to which legal action can be taken against firms, cartels and mergers which would attempt to concentrate an industry. The CWS proliferated not through any new regulations or supreme court decisions, but through economic education programs which targeted judges, espoused Chicago School ideas, and funded by pro-business interests. The CWS was meant to reduce what the Chicago School saw as excessive antitrust regulations, and, as we will see, it succeeded in doing so.

The Chicago School takes a very similar view towards regulating for distribution, believing that the growth inherent in the development of the free market will make all participants strictly better off and that regulating for distribution will only slow growth. Part of the reason why their theories have had such important effects in income inequality must be because they believed that inequality wasn't a serious consideration for economists in the first place. This set of ideas proved hugely influential in the promotion of supply-side economics under Reagan in the United States and Thatcher in the United Kingdom, and indeed many of the principal Chicago School authors went on to serve in the Reagan administration or were appointed to the judiciary.

While this theory of competitive markets has been hugely influential, we will see how it is by no means the only way of thinking about markets. One other lens that seems to have a particularly accurate view of how firms tend to behave within a specific market and how that impacts the distribution of income is the tradition of Michal Kalecki and Josef Steindl. Both Kalecki and Steindl consider how markets naturally tend towards

concentration over time and how that tendency leads to higher markups and necessarily a shift of income from labor to capitalists. Kalecki points out the positive relationship between markups and concentration (even defining the relative size of the markup as the "degree of monopoly") and considers how the markup impacts the distribution of income in a Marxian class analysis. Steindl goes into more depth regarding the process by which "progressive" firms compete with "marginal" firms for market share until the gains in market share are no longer worth the effort, and the remaining firms sit on their market share and try to maximize their profits by raising their markups (note that progressive and marginal here refer to costs faced by firms in the same industry, with marginal firms facing higher costs than progressive firms; this is unrelated to the more common use of marginal in economics to refer to a specific change). Finally, the Kaleckian tradition also addresses how these competitive dynamics and trends towards higher and higher markups relate to growth. By finding that capitalists have lower marginal propensities to consume than do workers, capitalism's observed tendency towards redistributing from workers to capitalists can severely limit consumption demand, leading to stagnation. We will see as move through empirical evidence regarding concentration and the distribution of income that this tradition is remarkably useful for understanding the accelerating inequality being experienced in the United States.

Before getting into the body of this paper, it's worth highlighting the major theme that runs throughout it: the distribution of income from sales in the product market. For any product sold in a market, the price can be decomposed into three major parts, the wages paid to workers, the payments paid to capital equipment, and the profits retained

by business owners. Payments to productive capital ultimately end up as prices of capital goods, which are produced by workers who receive wages, other capital goods purchased by the firms, and owners and managers of the firms who produce the capital goods, who also receive profits. Profits are determined by the markup, which is difference between the price and costs, those costs being wages paid to workers and payments made to acquire and maintain capital. This paper aims to show that over the past four decades in the United States, market dynamics have led to higher degrees of concentration. Consequently, a higher proportion of revenues from sales in the United States has been retained as profits or rents by business owners and upper management, while a lower proportion has been paid out as wages or capital payments. These developments help explain a great deal of the rising income inequality observed in the United States since the end of the 1970s. As industries become more and more concentrated, higher markups lead to an ever-increasing share of incomes being claimed by a small and shrinking segment of the population who find themselves owning or managing large firms in concentrated markets. Because the vast majority of Americans get their incomes from wages rather than rents, this shift in incomes from direct costs to rents over time has resulted in redistribution to a small class of owners and managers at the expense of the majority of Americans, who are workers. Exploring how this redistribution of income has occurred and the theories surrounding it will be the main focus of this paper.

Chapter 2 will focus on empirical research showing the connection between the rise in concentration and the rise in markups. Furthermore, these developments have occurred during a period in which the theories of the "Chicago School" were extremely

influential on public policy. These theories lead to policy recommendations for deregulation. In Chapter 3, we will examine these theories, contrast their theories of industrial organization and the markup with empirical observations, and in chapter 4 introduce a more satisfactory Neo-Kaleckian theoretical framework of industrial organization and competition.

When compared to the conclusions made by the Chicago School, the observations of this Kaleckian tradition necessarily lead to very different views on the functioning of market competition and the importance of regulation. Parsing out the descriptive usefulness of the Chicago School's theories and the neo-Kaleckians' requires taking a look at empirical literature to get a sense of how the market has evolved over the past four decades, which is what we will do in the next chapter.

Chapter 2: Empirical Evidence of Market Concentration and the Labor Share

2.1 Introduction

This chapter will primarily focus on recent research which points to the relationship between concentration of industry and the distribution of income. Sections 2.2 and 2.3 show a positive relationship between concentration and profits and discusses the choices firms make as they gain market share. Broadly speaking, as firms take market share, they tend to reallocate spending from innovation, wages, and payments to productive capital —such as facilities and equipment— and to executive salaries and profit sharing with shareholders. While the replacement of human labor through automation is frequently cited as mechanism through which the labor share decreases, we will see evidence from Simcha Barkai (2016) that suggests this effect is less important than the rise in the profit share of revenue. In fact, the rising profit share also cuts into the share of revenue allocated to capital payments. The evidence suggests a pattern of competition in which technologically advanced, innovative firms gain market share and shift gears, maintaining high markups through entry barriers.

Section 2.4 discusses literature related to bargaining power in the labor market. While the rise in markups discussed in 2.2 and 2.3 raise the profit share by lowering the

share of income paid to wages and capital expenditures, the flip side of the story is the rise in firms' ability to dictate wages to workers. This section will focus on considerations that affect bargaining power in the labor market, like alternative work arrangements, declines in the real minimum wage and unionization, and increasingly monopsonistic labor markets. This shift in labor market bargaining power allows firms to increase profits by lowering direct labor costs, which, for owners and executives of large firms in concentrated markets, combines nicely with the ability to raise prices in steadily more oligopolistic and monopolistic product markets.

2.2 Product Market Concentration and Markups

Jan De Loecker and Jan Eeckhout (2018) note a rise in the global markup from 1.1 in 1980 to 1.6 in 2016 where the mark up is the ratio of the output price to the marginal cost. They estimate this using a cost-based method, incorporating information about variable cost, overheads, and sales, and define the markup as the price divided by the marginal cost from firms' financial statements, including their Income Statements, Balance Sheets, and Cash Flows. Additionally, they find a general pattern of relatively rapid growth in the markup in the developed world, especially in Europe and North America. The US in particular has exhibited a rise in the markup to 1.78 in 2016 from 1.15 in 1980. The authors of the study note that an increase of the markup has been found in all the US industries they studied.

De Loecker and Eeckhout (2018) go on to comment on the impacts on efficiency and distribution that this increase mark ups may have. They indicate that in terms of efficiency, they predict the rise in will result in deadweight loss: "Because of high prices,

marginal consumers choose not to buy (De Loecker and Eeckhout 2018, p 8)." Additionally, they note a tendency for the rise in markups to redistribute income away from the labor share and to the profit share. "Firms with high markups demand fewer variable inputs. Due to higher prices, demand for the output falls, and as a result, the quantity produced declines. As a result, the demand for inputs such as labor decreases (De Loecker and Eeckhout 2018, p 9)." This effect, combined with rise in profits that necessarily accompanies the rise in markups, explains the distributional impacts of increased markups. Additionally, using the production function they used to calculate the markup, they show mathematically that "With market power, the labor share declines, and in the long run so does the capital share. As a result, either the profit share increases or the share of fixed costs increases (De Loecker and Eeckhout 2018, p 9)." While De Loecker and Eeckhout do not determine in this paper whether fixed costs or profit shares are increasing, when we get to Mott and Evers (2013) we will see that in fact it may be a matter of how one chooses to categorize high-level management salaries.

A 2017 IMF working paper by Federico Diez, Daniel Leigh, and Suchanan Tambunlertchai finds very similar results regarding markup size since 1980, both internationally and in the US specifically, to those found by De Loecker and Eeckhout (2018), using a similar cost-based method to determine markups. While they do not show all of their data in this draft of the working paper, they do summarize their findings: "In advanced economies, markups have increased by an average of 39 percent since 1980. The increase is broad-based across industries and countries and driven by the highest

markup firms in each economic sector (Diez et al 2018, p 1).” For the US specifically, they found:

> markups of U.S. firms have increased by a sales-weighted average of 42 percent during 1980-2016.10 Markups have increased across all major industries, and not only technology ones, with the sales-weighted average increase ranging between 7 and 137 percent for the 10 broad ICB industries available within Thomson Reuters Worldscope (Diez et al 2018, p 8).
> Additionally, they point to certain industries and sub-industries that have seen

above average relative increases in markups, including Technology, Finance, and Healthcare. The undisputed title in markup increases since 1980, however, goes emphatically to Biotechnology, a subset of Health Care, which has seen a markup increase of 419 percent. Figure 2 below, from the paper, compares the markups of various sectors in 2016 to their markups in 1980.

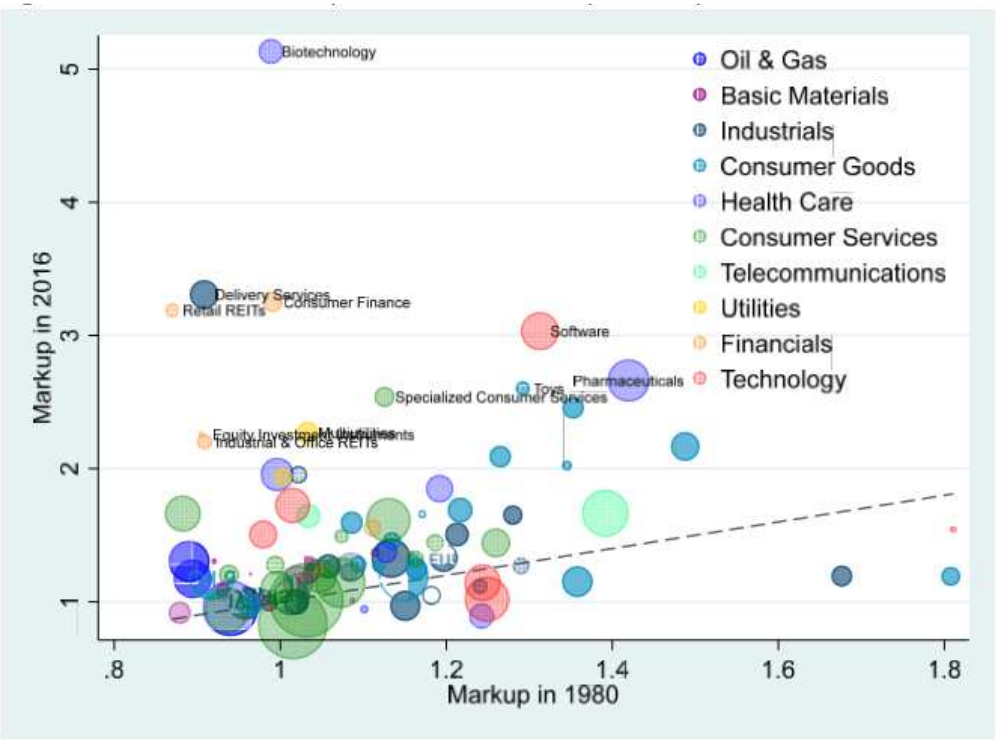


Figure 2: U.S. Firms: Markups in 2016 vs. 1980 by Industry (Diez et al 2018, p 21)

They also looked for correlations between markups and other relevant indicators such as profitability, concentration, and innovation. They find a strong positive correlation between markups and profitability, as measured by ratios of dividends to sale and market capitalization to sales. They also used an adjusted Hirschman-Herfindahl Index (HHI) to measure market concentration. The standard HHI is widely used as a measure of industry and is the sum of the squares of each firm's share in the yearly sales in their industry. For example, the HHI for an industry that has only one firm would be either 1 (1^2) or 10,000 (100^2), depending on whether decimals or percentages, respectively, were used to measure market share. The authors elected to modify this standard measure because their sample was publicly traded firms, and there was a large number of IPOs in the 1990s which would show up in the standard HHI as a spurious decrease in concentration. To get around this, their modified HHI uses the sum of squares of the market share of each decile of the distribution of publicly traded firms in an industry. So, a market whose sales are made by the top decile of firms (which would have to be a monopoly), the modified HHI would be 1. This adjusted HHI was positively correlated with markups.

Finally, Diez et al (2018) find a negative and statistically significant correlation between the labor share and the markup.

> As the level of market concentration increases, the negative relation between markups and the labor share grows stronger. Overall, these results are consistent with the conjecture of Autor and others (2017) that a rise in market power reduces the labor share (Diez et al 2018, p 16).

To summarize the findings of Diez et al (2018) reviewed above: since 1980, markups have risen across US industries, though not evenly across all industries, there is

a statistically significant positive correlation between industry concentration and the markup, and there is statistically significant negative correlation between the labor share and the markup, which grows stronger as concentration increases.

Simcha Barkai (2016) calculated the shares of US income which were spent on capital payments, spent on labor, or retained as profits. He measures the labor expenditures as wages multiplied by the quantity of labor and capital payments as the product of the required rate of return on capital, the price of previously purchased capital and the capital stock in the previous period. All the income not spent on either labor or capital payments is considered profits. The required rate of return is calculated as the sum of the nominal cost of borrowing, the rate of depreciation on the capital, and the capital's expected appreciation in value. He observes a rise in the profit share and falls in both the capital and the labor share over the past 30 years. He finds that between 1984 and 2014, labor productivity has grown faster than labor compensation, but the observation that the capital share has fallen (at a greater rate than has the labor share) refutes the proposition that the lost labor share is explained by an efficient substitution for capital.

> Measured in percentage terms, the decline in the capital share (30%) is much more dramatic than the decline in the labor share (10%). Back in 1984, every dollar of expenditures on labor was accompanied by approximately 38¢ of expenditures on capital. By 2014, a dollar of expenditures on labor was accompanied by only 31¢ of expenditures on capital. Despite the decline in the labor share, expenditures on labor have increased faster than expenditures on capital (Barkai 2016, p 3).

Additionally, he finds that the rise in the profit share offsets the combined fall of capital and labor.

> Consistent with earlier research, I find that profits were very small in the early 1980s. However, profits have increased dramatically over the past 3 decades. Across specifications, the profit share (equal to the ratio of profits to gross value added) has increased by more than 12 percentage points (Barkai 2016, p 3).

Barkai finds that the non-financial corporate sector experiences a fall in the required rate of return and that the sector does not respond by increasing its use of capital inputs, which causes a decline in the capital share (Barkai, 2016). This, along with the growing gap between productivity and wages over the same period, are features of a decline in competition. In more competitive markets, firms would respond to the relatively low cost of capital and labor by utilizing more of each, but they have not done so. Instead, they have charged increasing markups. Barkai (2016) notes a general tendency for expenditures on labor to rise faster than expenditures on capital, but that profits have been rising much faster, so that the labor share has fallen by 10% and the capital share by 30%, while the profit share has increased by 12%. Using a general equilibrium model of monopolistic competition, he goes on to show that a rise in concentration could explain the observed fall in the labor and capital shares and the rise in the profit share.

Gustavo Grullon, Yelena Larkin, and Roni Michaely (2018) reach similar findings in their paper "Are U.S. Industries Becoming More Concentrated?" Namely, they find that since 1990, the HHI has "systematically increased in more than 75% of U.S. industries, and the average increase in concentration levels has reached 90% (Grullon et al 2018, p 2)." They then go on to find that profitability has risen for firms in those industries sustaining increases in concentration levels, and that this rise in profitability is

primarily driven by the firms' ability to extract higher profit margins, rather than increased efficiency due to size or increased reliance on capital.

> A change in the Concentration Index in the magnitude of its interquartile range (75th minus 25th percentile) increases profit margins by 182% (relative to its median), whereas the same change increases Asset Utilization by only 6% (Grullon et al 2018, p 2).

Grullon et al (2018) also find a positive relationship between the profitability of mergers and that concentration of the industries in which they occur, as well as between industry concentration and returns to shareholders. This suggests for the authors that horizontal mergers are primarily motivated by gains in profitability associated with increased industry concentration; additionally, the rise in shareholder returns signals that the gains from the markups in concentrated industries are being passed on to shareholders rather than reinvested in labor or capital, which is consistent with Barkai's (2016) findings.

Grullon et al (2018) also examine whether higher profits in concentrated industries are driven by factors other than higher markups. First, they address whether firms with large market shares are able to earn high profits through being able to charge high markups by utilizing barriers to entry or if, instead, they have an advantage over other firms in terms of operational efficiency. They evaluate this by comparing the relationship between the concentration index and the HHI and the Lerner index, which measures the markup and the Asset Utilization Ratio. They find a much stronger correlation between markups and concentration than between Asset Utilization and concentration, which suggests that entry barriers are the primary drivers of high profits in

highly concentrated industries. Second, they examine whether the higher profits are observed in concentrated industries are because of a higher cost of capital not reflected in accounting statements which they use to measure it, as opposed to truly higher profits. They point out that a firm which has a large capital share and/or faces a high price of capital could end up with accounting profits which are much higher than economic profits. However, Grullon et al still find the same pattern of correlation between measures of profits and measures of concentration after controlling for the price of capital and capital share, indicating that the higher profits experienced in more concentrated industries are not driven by higher capital intensity, and that the relationship is not spurious in that way (Grullon et al 2018, 17).

Grullon et al (2018) point out that their study is the first they are aware of that finds a relation between industry concentration and profits, and cite previous studies examining earlier periods (Domowitz, Hubbard and Petersen,1986a, 1986b, 1987; Schmalensee,1989) which did not find such a relation. This seems to suggest that the rise in profits driven by concentration and entry barriers is a recent phenomenon. They also suggest that the trends which they examine could be in part explained by changes in antitrust regulation.

> Specifically, we find that the use of Section 2 of the Sherman Act, which allows antitrust agencies to prevent increase in market power of existing dominant firms, has declined from an average of 15.7 cases per year over the period 1970-1999 to less than 3 over the period 2000-2014 (Grullon et al 2018, p 3).

Tracy Mott and Mark Evers (2013) point out the rise in the productivity-wage gap experienced in the US since 1983 has been accompanied by precipitous rise in the

salaries of those in the top 10% of the income distribution. Most of the workers in this category are either non-finance executives such as CEOs or finance professionals. According to data collected by the AFL-CIO (2018) the average S&P 500 CEO in 2018 made 287 times as much as the average employee at these companies in the same year. Similarly:

> In the past 10 years, CEO pay at S&P 500 companies increased more than $500,000 a year to an average of $14.5 million in 2018. Meanwhile, the average production and nonsupervisory worker saw a wage increase of $785 a year, earning on average just $39,888 in 2018 ("Executive Paywatch | AFL-CIO" 2018).

These figures should illustrate the extent to which executive salary growth has outpaced that of the average worker. Mott and Evers (2013) suggest that these salaries should be classified as overhead expenses rather than as wages and reflect the growth of the markup. They also suggest that a sharp decline of unionization of US workers, an increase in concentration of industries, lax financial regulation and different taxes on different forms of income are all factors influencing the development of high markups and increase in salaries among high earners. To sum up their argument, the observed stagnation in the median income in the US can be explained to a great extent by a shift in incomes from average workers to executives, resulting from increased industry concentration allowing for firms to charge higher prices alongside bargaining power dynamics which allow them to pay lower wages. This reclassification of high-end salaries from wages to overheads raises an interesting question as to whether the redistribution from labor to profits has been underestimated. When combined with Grullon et al (2017) and Barkai (2016) we get a picture of productivity gains increasingly being captured by

executive's salaries and shareholders, rather than those gains being reinvested into production. This shift appears to be occurring at least to some extent in at least three quarters of industries in the United States.

2.3 Concentration, Innovation, and Corporate Incentives

We have seen evidence that concentration of an industry leads to a higher markup, but what firms do with that markup and why is still an important question. As Barkai (2016) points out, the income being made as a result of this markup is increasingly not being put back into wages or capital investment, but instead retained as earnings. This section will focus on observations regarding the uses of corporate incomes, particularly with respect to innovation and profit retention at various stages of concentration.

Autor et al (2017), emphasizes changing technology influencing industry structure to ones that favor higher degrees of concentration. They find a significant trend towards sales concentration in US industries, that industries which experience a larger trend towards concentration also experience faster declines in the labor share, that the decline in the labor share is due to a reallocation of sales between firms rather than a general fall in labor share across firms, that this reallocation driven fall has been most pronounced in industries with had the largest increase in sales concentration, and that these data trends are present across the OECD. In their research, Autor et al examined various industries across six sectors (Manufacturing, Retail Trade, Wholesale Trade, Services, Finance, and Utilities and Transportation) and their concentration, labor share, and related data to try to find determinants of labor share and concentration.

Autor et al (2017) show that industry concentration is positively and significantly correlated with growth in patenting intensity and Total Factor Productivity (the residual productivity in a Cobb-Douglas production function which isn't explained by capital or labor) growth rate and that concentration is increasing faster in technologically progressive industries. Additionally, in industries with slower tech diffusion (speed of citations), concentration has risen by more and labor share has fallen by more. OECD researchers add that productivity growth gap between top 5 percent of firms and the remainder has widened due to a slowdown in tech diffusion from better protection of intellectual property rights (Andrews, Crisculo and Gal, 2015). This is related to a slowdown in aggregate productivity growth, as technological innovation is increasingly concentrated among the most innovative of firms and laggards are slower to adopt new technologies. Also, they do not find measures of business dynamism, computer investment, or susceptibility to routine task-replacing tech change to be related to concentration, which is in line with the conclusions of Barkai (2016).

Autor et al (2017) do not suspect that firms in the process of growing enact barriers to entry to gain an advantage in their markets, but they do suggest further research into whether already enshrined large firms use various entry barriers including lobbying and patents to maintain large market share. Instead, they ultimately suggest innovative firms genuinely compete on merits of cost and quality in a "winner-takes-most" fashion, and then enact entry barriers after the fact (pg 26). This conclusion seems to match the findings of Diez et al. (2018) mentioned above.

In the same paper mentioned above, the IMF also find non-monotonic relationships between markup and concentration with investment and innovation.

> At low levels of markups, an increase in market power is associated with more investment, but eventually higher markups are associated with lower investment, particularly for companies operating in industries with high levels of market concentration (Diez et al, 2018).

They also find a negative relationship between markups and labor share, as companies able to appropriate a growing share of production rents leave smaller returns available to labor. Their comments on policy responses indicate a need for future research into the causes of market power increases. The authors write that there should be a distinction made by antitrust regulators between industries which are concentrated due to entry barriers, and those which are concentrated due to network/information externalities and increasing returns to scale. This shows

In *The Master Switch* (2011), Tim Wu discusses concrete examples of powerful firms in the highly concentrated communications and entertainment industries not only reducing their own innovative activities, but stifling the innovations of would be competitors. Since the 19th century, when Western Union attempted to block the telephone industry to protect its profits in the telegraph industry, firms in these industries have engaged in various anticompetitive tactics to protect their ascendancy. One of the best examples of this has been AT&T, a firm which should rightly be credited with some incredible innovation, but which has at various points since becoming a communications monopoly engaged in anticompetitive tactics including physically cutting competitors telephone lines and engaging in legal wars of attrition with competitors. They even went

so far as to hide their own useful but potentially monopoly damaging inventions like magnetic storage tape and the answering machine, which had both been pioneered in Bell Labs (AT&T's research division) in the 1930s. Both are clearly useful inventions that Bell Labs ordered a cessation of research into due to fears they would displace the telephone (Wu 2011, p 105-106). The fact that Bell Labs had pioneered these technologies didn't become public knowledge until six decades later. All the while, AT&T has been shielded from competition by their being early movers in telephony and owning a vast network that would be incredibly costly to replicate, leaving aside that they actively obtained government support to prevent replication in the first place.

Clearly, we have evidence that entrenched monopolies and oligopolies get to their perches through a competitive technological advantage, and then dramatically shift gears. Once they gain a large enough market share to earn a high markup, these firms' primary interest changes from gaining market share to maintaining market share. The data and research on innovation and concentration confirms that firms experience very different motivations regarding investment and innovation as their market share grows. Wu (2011) repeatedly shows in *The Master Switch* this type of changing incentives for firms as they gain market share over time, and he deems it predictable enough to call it "the Cycle."

Firms in concentrated markets, no longer concerned with expanding production, because they have their desired market share, or introducing new products and services, which they view as threats to that market share, primarily focus on accumulating profits. We have seen that they maximize profits by charging a high markup, whose size is determined by the concentration of the industry. However, relatively recent developments

in financial regulation have changed the ways in which owners and CEOs can extract wealth from these profits. William Lazonick (2014) explains the shift from the labor share to the profit share through the lens of value extraction on the part of CEOs of large companies. He writes that there are three main uses to which corporations put their cash on hand: reinvestment into productive capacity, payment dividends to shareholders, and stock buybacks. There has been a trend towards reallocating cash on hand from reinvestment to dividends and stock buybacks, which Lazonick (2014) illustrates by showing that between 2003 and 2012, the 449 publicly traded companies on the S&P 500 spent 54% of their earnings on buybacks and nearly 37% on dividends, which all left very little to be reinvested in either capital investment, training, new products, wages, or new hires. Lazonick (2014) suggests the main driver of this reallocation of earnings is the simple fact that CEOs are able to make decisions on the use of earnings and are paid largely in stock options and stock awards (in 2012 42% and 41% of CEO earnings were in those forms, respectively). Stock buybacks raise the value of the shares offered to CEOs, which explains why they make purchases of stock even when it is likely overvalued. The marked increase in stock buybacks is explained by deregulation in the early and mid-1980s under the Reagan Administration and the John Shad-led Securities and Exchange commission, with the stated, but obviously not realized, intention of efficiently channeling savings into economic investments.

2.4 Labor Market Concentration and Wages

There is also literature which focuses on the effects of monopsony power in the labor market as a cause of declining labor share of income. This literature describes how,

in addition to the ability to charge a high markup over costs, market share gives firms a bargaining power advantage over workers, which can manifest itself in a variety of ways. The 2018 Economic Policy Institute (EPI) paper by Bivens, Mishel and Schmitt is a great place to start in understanding the recent literature regarding the impact of labor market concentration. While they consider studies that show product market and labor market concentration both play a role in reducing wage growth over time, they also show that labor market power dynamics are much too complex to be explained by the concentration of markets alone. These dynamics include informational asymmetries regarding compensation and job options in favor of the firm, declines in the prevalence of collective bargaining, a history of monetary policy focusing on minimizing inflation over minimizing unemployment, as well as other legal considerations such as the decline in the real minimum wage, forced arbitration, nonpoaching agreements between employers[1], and noncompete agreements between employees and firms.

As by Autor et al (2017) in the same paper referenced above, "workplace fissuring" between employees of businesses and those workers subject to "alternative work arrangements," such as contract work, work through a temporary employment agency, working as a freelancer or independent contractor, or on-call work, has made an additional contribution in the decrease in labor market power for those working in positions subject to alternative work arrangements (see also Katz and Krueger (2016)).

While this paper primarily concerns itself with product market concentration and its tendency to redistribute income towards profits and exacerbate inequality, it is

[1] Bivens et al (2018) cite the example of Silicon Valley technology companies agreeing not to hire each other's employees

important to note that firms' bargaining power with labor also plays a significant role. In fact, Bivens et al (2018) assert based on the evidence they review that bargaining power imbalances in the labor market are *more* important than either product market or labor market concentration when explaining the changing distribution of income. This means that any policy proposal aimed at income inequality should aim not only at antitrust, but at labor market bargaining as well. To get a more holistic picture of the recent trends in the share of income, it would be essential to combine the history of government regulations we'll see in chapter 3 and the Kalecki-Steindlian industrial organization theories we'll see in chapter 4 with a similar historical exercise in labor market regulations and a theory like the "Dynamic Monopsony" proposed by Alan Manning (Manning 2003), which takes considerations such as those discussed in this section into account when describing the labor market. Above all, any attempt to assert either labor or products are competitive in a neoclassical sense needs to be dropped.

2.5 Conclusions

This combination of bargaining power over consumers through product market power and bargaining power over workers through labor market power which firms can exercise is a driver of the shift in the shares of income observed in the United States since. As firms are able to continually drive wages and payments to capital down, and prices up, their owners are increasingly able to capture a greater share of income in the form of profits. We can see clearly in Barkai's data that rather than being the result of capital replacing labor in production, labor's decreasing share in income is primarily driven by its being replaced by increased profits in combination with a deteriorating

bargaining position in the labor market. One of the key reasons that firms can retain an increasing share of the national income is that they hold increasing market share, which gives them the ability to charge a higher markup. Autor et al, Grullon et al, the IMF, and Wu show a competitive process where innovative firms are able to seize market share through competition, and once a market reaches a tipping point in concentration, innovation rapidly slows and entry barriers are the primary way that concentration is maintained. This concentration has been shown to be correlated with profitability, as expected. Lazonick (2014), Mott and Evers (2013), and Barkai (2016) show that these increasing profits end up forming the salaries of CEOs and dividends to shareholders in a form monopoly rent seeking. The work reviewed in this chapter broadly supports a trend of increasing concentration and markups since 1980, coinciding with the fall in the labor share divergence of labor productivity and wages noted in the introduction.

In the next chapter, we will see that this proliferation of monopoly rent seeking has been not only one that took place because of market forces, but was also driven by political and academic forces which have been at work since the 1970s. One of the most influential developments in economics and politics in the United States over the past several decades has been the rise of the libertarian ideas espoused by the University of Chicago Economics and Law departments, and the Law and Economics movement they inspired. In order to truly understand the changes in market competition and income distribution that have taken place, it is essential to understand the Chicago School's impact on antitrust regulation.

Chapter 3: Chicago School Industrial Organization Theory and Antitrust Enforcement

3.1 Introduction

The Chicago School of Economics, a Neoclassical approach towards economic analysis grounded in price theory, gained substantial influence US economic thinking generally and specifically in antitrust law in the late 1970s and 1980s. Legal scholars such as Robert Bork and Richard Posner (both of whom received their JD's from the University of Chicago and were appointed to the Judiciary by President Ronald Reagan) were extremely influential in spreading these ideas during this time period and applying them to antitrust cases. In general, we will see that the Chicago School presented a theory which was much more favorable to monopolies and oligopolies than the industrial organization-based theories which had been dominant between the Great Depression and the 1960s. As a result, many business tactics by firms, previously viewed as anticompetitive, including predatory pricing, tie-ins and entry barriers, either had their definitions significantly narrowed, or were reinterpreted as being utility-enhancing for consumers (Posner 1979).

The Chicago School and the related Law and Economics movement is noted for its strongly libertarian bent and is broadly characterized by calls for deregulation of industry in areas other than antitrust, which go beyond the scope of this paper (see Khan

2017 and Ash et al 2019). While this paper concerns itself primarily with industrial concentration and the distribution of income, Chicago School economists and legal scholars concerned themselves with neither. Robert Bork's widely influential 1978 book *the Antitrust Paradox* was subtitled "a Policy at War With Itself," and University of Chicago Economist Robert Lucas in 2004 declared "Of the tendencies that are harmful to sound economics, the most poisonous, is to focus on questions of distribution (Lucas 2004)."

3.2 The Chicago School on Industrial Organization and Antitrust

This minimization for the need for government intervention in antitrust was consistent with the position of the Chicago School generally. With Antitrust specifically, Chicago School Economists such as Yale Brozen argue that antitrust regulations can lead to less competitive markets if misapplied. Brozen argues against the breaking up of large firms with high market share. One way in which Brozen tries to narrow the scope of antitrust enforcement is to broaden the definition of new entry. Instead of constraining the definition of a new entrant as a new firm entering a market in which it had previously not been active, he includes existing firms who have expanded their productive capacity under the umbrella of new entry. He argues that firms are rational actors and would not merge with or acquire other firms if they didn't expect to expand capacity and lower costs. This implies that any move by a firm to acquire a larger market share must therefore expand capacity in that market lowering costs and prices. If no new entrants appear to challenge this large firm, it must be the case that no one sees an ability to further lower costs, and that the current market configuration brings the most value to

consumers. This is because these high-market-share firms are the best at providing their good or service at a low cost for consumers, which should not be considered a barrier to entry. If a monopoly or oligopoly exists, economies of scale allow one or a few firms to provide a larger quantity at a lower price than several smaller firms could. If this is the case, then by breaking up monopolies, regulatory bodies could easily end up harming consumers (Brozen 1975).

Brozen strongly argues that a firm's being efficient is not anticompetitive behavior. Problems with antitrust generally "can be summarized in saying that the law as presently interpreted seems to say that firms should compete but should not win (Brozen 1975, p 7)." In fact, because of his broad definition of entry, regulating a firm based on its large market share may be considered anticompetitive, as "the blockage of entry by acquisition to a firm that might be a potential entrant is likely to block the expansion of capacity, which is true entry (Brozen 1975, p 12)." He writes that true barriers to entry consist of government "arbitrarily" blocking otherwise qualified entrants from market participation, including examples of trained and licensed taxi drivers or pharmacists are not allowed to ply their trades in concentrated areas, and the post office attempting to regulate against other mail carriers. His argument can be summarized by saying that the best way to lower costs and expand production is to maximize available capacity, that it doesn't matter whether that capacity is controlled by many or few firms, and that government intervention can often hinder this growth of capacity in an industry.

A very common argument in Chicago school literature is that the threat of new entrants disciplines a large firm's price, quality, and output decisions in the same way

that actual competition would. Ambrose Pare Winston (1924), Joseph Schumpeter (1942), and Eugene Fama and Arthur Laffer (1972) all argue that because (in the case of Winston and Schumpeter's arguments) or as long as (in Fama and Laffer's argument) capital is mobile from industry to industry because capitalists are able to reinvest their returns in to whichever industry is currently most profitable, firms currently in an industry have to beware of new entrants coming in and outcompeting them, and thus act as price takers rather price makers.

Fama and Laffer (1972) go so far as to construct a general equilibrium model, which shows that "under certain conditions,a general equilibrium with two or more noncolluding firms per industry is perfectly competitive (Fama and Laffer 1972, p 43)." Specifically, Fama and Laffer show that a market with only two firms participating in it will produce at the same price and quantity as it would under perfect competition (price equals marginal cost, and supplying the full demand at that price), so long as certain conditions hold. These conditions include the following:

- Factors of production must be infinitely divisible and costlessly mobile
- all factors of production may be used in any industry or, if they are unique to an industry, must be owned by individuals and sold to firms.
- Information on returns in a given industry must be easily available to anyone who is interested at no cost.
- All firms in a given industry are able to use any method of production that any other firm can use.

- Demand curves must be downward sloping at all quantities, and the marginal cost curve must be greater than the slope of the demand curve at all quantities.
- Firms in the market are always able to precisely adjust their outputs to responds to changes in production by the other firm(s) in the market.

Given these assumptions, firms will behave as if they were in a competitive market or a Bertrand Oligopoly, which, as we discuss in 3.3, leads to efficient outcomes in the market where there are not markups. These assumptions, however, are extremely strict, and many of them, especially the perfect information available to all parties and the divisible and mobile factors of production, will be rejected by the Kaleckian theory we will visit in chapter 4. The model used by Fama and Laffer here also ignores two potential situations which would certainly lead to imperfect competition: the existence of a monopoly or a cartel. Furthermore, the evidence we viewed in chapter 2 regarding the correlation between markup size and industry concentration (and the existence of a markup at all) allows this model to be dismissed as a useful way to describe industrial competition.

The scholarship from the Chicago School on the issue of antitrust reviewed above seems to be focused very much on reasons to not regulate against large firms, mostly on the grounds that their profit maximizing behavior is rational and not deliberately anticompetitive, that they have attained their market share by virtue of their producing the most efficient outcomes, that their prices, quantity and quality is a close approximation to a perfectly competitive market, and that regulating against them would in fact constitute a barrier to entry of productive capacity and disincentivize firms from using their increasing returns to scale to reduce prices and increase output. Chicago School

Economists seem to be in unwavering agreement that the best outcomes for consumers come from markets that are allowed to function freely without regulation. They further find anticompetitive behavior like predatory pricing or leveraging vertical mergers to be nonissues because taking those tactics would reduce a firm's own profits, and therefore not worth regulating against.

These arguments proved influential in legal scholarship. Robert Bork, in his influential book *The Antitrust Paradox* (Bork 1978), argues that in many cases, antitrust rulings end up hurting consumers, because larger firms simply outcompete smaller ones through economies of scale and are able to bring products to consumers at a lower price. Where previously, low prices driving out competitors would have raised suspicion of predatory pricing (temporarily pricing below cost to drive out competitors), Chicago School exponents like Posner and Bork would argue that such behavior is actually irrational because it would cause negative profits for a profit-maximizing firm and therefore wouldn't occur, and also that, in any case, if it were regulated against, it would be raising prices for consumers (Posner 1979). They essentially argue predatory pricing is a case of mistaken identity. Instead of pricing below costs, the offending firm is instead said to be leveraging its economies of scale to charge low prices, rather than trying to captivate a market to later raise prices as it would be otherwise understood. Similarly, price discrimination, charging different prices to different customers based on ability to pay, was viewed as a way to increase total welfare by allowing the maximum number of customers to consume the product.

Additionally, Bork argues that regulation of horizontal mergers at the time of his writing was excessive. During the 1960s and 1970s, if a merger stood to control more than 5 percent the market, it would be declared illegal under the Clayton Antitrust act of 1914. Bork argued that this low threshold led to serious diminishing of productive efficiency, writing:

> The harmful effects of the present law on consumer are evident in this analogy: by the court's criterion, if there are a hundred lawyers in a town, no partnership may contain as many as five. Such a rule obviously cuts far too deeply into the efficiencies of integration (Bork 1978, p 217).

Similarly, Bork writes of vertical mergers: "Antitrust has been concerned about the effects of vertical mergers upon competition for over sixty years, but it has never evolved a satisfactory theory of the ways in which such integration could be harmful (Bork 1978, 225)."

Interestingly, Yale Brozen (1974) presented some empirical evidence to support this legal line of thinking, by examining firms' profit rates in relatively concentrated and unconcentrated industries, with varying degrees of market share, and did not find a significant difference in profits across market share. He uses this as evidence that firms in concentrated industries behave much the same as ones in unconcentrated industries, supporting the theoretical mindset of the Chicago School (Brozen 1974). An interesting critique one could raise here, however, is one of historical context. His data was collected in the 1930s and 1940s, when antitrust enforcement was more aggressive than what he argued for. This raises the question of whether the firms in concentrated industries behaved like those in less concentrated ones because they were competing with specter of

future entrants, or because they were compelled to by law. It further raises the question of whether or why the deregulation the Chicago School championed was necessary, given that firms were already behaving as if they were in competitive markets, which is what the Chicago School wanted out of regulatory conditions anyway.

This historical context is also relevant when considering arguments for whether behavior by large firms should be considered anticompetitive or not. Aaron Director and Edward Hirsch Levi (1956) find that those mergers which were regulated against in the early history of the Sherman Antitrust Act (passed in 1890) such as those of United States Steel and Standard Oil, were truly cases of firms that had reached their large market share through conduct that was sufficiently abusive to be regulated against. They assert that the market landscape had changed since the turn of the century, so that at the time of their writing there were fewer instances of corporate abuse to regulate against. It would be interesting to consider whether these changes were due to increases in capital mobility, as they assert, or simply because such conduct had been regulated against more effectively in the interim.

Chicago School Economists appear to see no downside at all to industry concentration to the welfare of consumers. The results of their analysis seem to indicate that if anything, industry concentration improves consumer welfare. They do not seem to have any thoughts on the effect of concentration on wages or distribution, or at least they do not appear, from what I've seen in their literature, to address them directly. Where they do comment on the results of increased competition for labor, they seem to address it only in terms of simplifying the demands on labor through more use of capital, so that

laborers were required to be less skilled and could be more easily replaced (Winston 1924), thereby making it easier to increase production. The impact that this change has on workers' bargaining power and income is not seriously considered, and neither are its implications concerning demand.

In a less formal and more general essay, largely about the industrial revolution, Robert Lucas lays out what seems to be the quintessential Chicago view on markets and distribution: "The potential for improving the lives of poor people by finding different ways of distributing current production is *nothing* compared to the apparently limitless potential of increasing production (Lucas 2004)." Lucas asserts that the Chicago School view does not hold that unequal distribution of resources isn't immoral or something to be fixed, but rather, on the macro level, focusing on distribution (the most "seductive" and "poisonous" tendency for economists) shifts the focus away from what would truly alleviate these distributional issues: allowing markets to function freely from regulations that are unnecessary at best, and at worst, a hindrance to productivity.

3.3 Other Neoclassical Antitrust Perspectives

The neoclassical model traditionally holds that a market in perfect competition creates the most efficient outcomes, when neither firms nor consumers hold enough market share to influence price and no way to differentiate the product, and all market participants are profit or utility maximizing agents who have perfect information about price. In practice, such markets are, to say the least, hard to find. Under this model, markets with varying degrees of concentration produce less efficient outcomes than a perfectly competitive market does. However, Chicago School economists argue that as

long as no artificial barriers to entry are present, it is not a given that prices will be high or quantities lower as the neoclassical model suggests given high concentration, because by charging higher monopoly prices or not fully utilizing capacity, firms in such markets are in effect issuing a challenge to outside firms to come in and compete with them. Thus, despite having few actors in the market, a highly concentrated market approximates a perfectly competitive one.

It is worthwhile to consider Neoclassical economics' definition of efficiency in markets and how the framework holds that competition effects that efficiency. Neoclassical economics defines an efficient market as one that maximizes utility minus costs. In a perfectly competitive industry, where any firm can enter and undercut any other firm earning a profit, and all firms face the same costs, produce identical products, and consumers are aware of every firm' pricing, prices equilibrate to equal marginal costs (Varian 1992, p 291) because any firm who prices higher than this loses all its sales and any firm which prices lower than this takes a loss. Anyone paying attention will notice they can imagine more cases where these assumptions do not fully hold than cases where they do, so Neoclassical Economics also has ways of thinking about imperfect competition that differ from those put forth by the Chicago School starting in the 1970s. In cases where there are restrictions on entry and fewer firms involved in production, this potential for losing sales is reduced, and so firms engage in profit maximization.

The most extreme case of this is of course monopoly, where only one firm accounts for all sales in a given market. Here, because there isn't an infinite outside option for consumers, the monopolist's quantity sold is continuous function of its prices,

and the monopolist is incentivized to price at a level where profits are maximized. They do this by producing units at the level where marginal revenue equals marginal cost and setting the price according to the maximum amount their consumers would be willing to pay for that level of output. Thus, in a utility maximizing sense, this arrangement is inefficient in that it gives prices which are higher than marginal costs and results in lower quantities produced (Varian 1992, p233-236). This results in a reduction in consumer welfare, partly because of its being subsumed by producer welfare, and partly because of it's being lost to levels of production which are less than optimal. The Chicago School would argue that most monopolies are "natural monopolies," which, while more inefficient than perfect competition would be, produce *more* efficient outcomes than other feasible arrangements because of some kind of technical edge on the part of the monopolist over potential competitor, combined with increasing returns to scale.

When there are a limited number of competitors in a product market, which all deal in the same homogeneous product, we have an oligopoly. Neoclassical theory regarding oligopolies is based in game theory and primarily revolves around the costs that the competitors face, the price they decide to charge, and the quantity they decide to produce. Next, the theory considers where the firms are making decisions about their and each other's quantity to maximize profits, or prices to maximize their market share. Another important variable is whether there is a "leader" who makes their decision first with the "follower" firm(s) responding to them, or if they make their decisions simultaneously. In Stackelberg competition, for example, one firm is a quantity leader that anticipates the reactions of its competitors in order to decide on a quantity and price

which maximizes its profits, and followers make their quantity decision in response to maximize their own profits.

In Cournot and Bertrand competition, each firm makes their own decision on quantity (in the Cournot case) and price (in the Bertrand Case) simultaneously, anticipating the other firms' reaction. Both examples assume that firms face the same costs, make homogeneous products, do not price below cost, and do not cooperate with each other. In Cournot competition, firms all base a quantity decision on each other's quantity produced in a given period, targeting the quantity which will net them the largest profit. In Bertrand competition, firms make decisions about their own price level based on the expected pricing decisions of their competitors, in order to claim the largest possible share of the market. Cournot competition is a profit maximizing oligopoly where Bertrand Competition is a fierce war over price to claim market share (Varian 2010, Ch 27). Cournot competition is inefficient in the same sense as a monopoly, because of the profit margins the firms are targeting. A scenario with Bertrand competition, on the other hand, is much more efficient, reaching perfectly competitive levels of efficiency if firms have the same costs. This is because the firms compete each other's price down to their costs as they would in a perfectly competitive market (Varian 1992, p 29), which is very similar to the Chicago School's assertions about the efficiency of markets regardless of their concentration.

It is important to note some of the limitations of these models, however. In particular, both of them describe competition in a single period, whereas typically firms compete with each other over some time, and also assume that firms are on the same page

about what they are competing over (Varian 1992, p 297). Also, both assume that products are homogeneous, and that their costs are identical. If, in a Bertrand competition, one firm had a cost advantage, there would be nothing stopping it undercutting its competitors and acting as a monopolist in a later period. We can get a similar result if we include a firm willing to engage in predatory pricing, and price below costs. Also, if we relax the assumption regarding firms not cooperating with each other, firms could decide to simply maximize their profits by forming a cartel. Finally, Varian writes that Bertrand Oligopoly may occur in limited circumstances, such as when firms are engaging in competition via sealed bidding (Varian 1992, p 292).

This is all to say that the Neoclassical framework which the Chicago School drew on has a much more nuanced and varied treatment of competition and its effect on efficiency than their polemics tended to imply. While the above is certainly not a full review of industrial organization under Neoclassical theory, it should serve to show that there is a much more nuanced and descriptive treatment of these issues in that framework which Chicago School elected to reject, and there exists a springboard to the conclusion that antitrust could be efficiency-enhancing.

3.4 The rise of the Consumer Welfare Standard

Steinbaum and Stucke (2018), Khan (2017), and Shapiro (2019) identify lax regulation influenced by Chicago School Consumer Welfare Standard (CWS) as a major contribution to the concentration of industry. Antitrust regulation in the US is primarily done under the Sherman Antitrust Act of 1890 and Clayton Antitrust and Federal Trade Commission (FTC) acts of 1914. These laws are widely considered to be robust in terms

of scope and enforcement, as they explicitly outlaw anticompetitive agreements, attempts to monopolize markets, and mergers which reduce competition as well as allow the DOJ and FTC to declare actions illegal and courts to award injured parties treble damages (Shapiro 2019). As we will see, this legislation hasn't changed since the passage of these acts, but their enforcement has drastically changed over the years as dominant economic theories changed and informed DOJ guidelines and decisions in US circuit courts. In particular, Chicago School economists and legal scholars in the 1970s and 1980s made a push for the requirement to prove a practice which previously would have been considered anticompetitive would result in higher prices or lower output, harming consumers. This additional hurdle to antitrust enforcement has been a factor in the rising concentration of US industries and therefore the increase in markups.

Lina Khan (2017) writes that through the 1960s, "economic structuralism" was the guiding school of thought for antitrust. Broadly speaking, structuralists held that a more concentrated market would be subject to greater incidence of anticompetitive behavior, for three main reasons: first, firms in a more concentrated market could more easily collude with each other; second, they were in a stronger position to block new entrants; and third, they could use their market power to charge higher prices with lower levels of service and quality. The Chicago School, she writes, rejected this interpretation of concentration as anticompetitive on its face. Instead, the Chicago School asserted that as, Richard Posner (1979) puts it, "the proper lens for viewing antitrust problems is price theory." What this shift in focus meant practically was a narrowing of the definition of entry barriers to exclude capital requirements, product differentiation, and economies of

scale. Additionally, where previously antitrust was focused primarily on the potential effects of concentrated markets on consumers and suppliers, the Chicago School was effective in narrowing the focus of antitrust to the prices paid by consumers, which now needed to be demonstrated to rise to demonstrate the harm of alleged anticompetitive practices. She writes that this new focus has had the effect of hamstringing antitrust enforcement. Previously, successfully challenging an incident of predatory pricing, foreclosure, or a merger hinged on showing an attempt to monopolize a market. The CWS was a much more specific and difficult to prove proposition.

Similarly, Carl Shapiro (2019) goes into detail about the history of diminishing antitrust enforcement during the past 40 years. He finds that in the 1960s, mergers were heavily regulated according to the market share which would result from the merger. In 1963, the Supreme Court held that any merger producing a firm with an undue market share and increases concentration would be likely to lessen competition (United States v Philadelphia National Bank 374 U.S. 321 (1963)). A strict standard of challenging mergers between firms which each represented 5 percent or more of a given market, or betwee a firm with more than 20 percent market share and any much smaller firm was presented in the Department of Justice Merger guidelines of 1968. This "structural presumption" held that mergers that led to significant concentration were to be considered anticompetitive. Since that time, writes Shapiro, the market share that triggered this structural presumption has steadily risen and other evidence to support the anticompetitive effects of mergers have become much more important in regulating mergers. This change has occurred without any change in legislation by Congress and

without any further input from the Supreme Court, which hasn't heard a merger case since 1974. Instead, updated merger guidelines from the DOJ in 1982 led to circuit courts treating concentrated markets as "a convenient starting point for a broader inquiry into future competitiveness (United States v Baker Hughes, 908 F. 2d 981, at 982)," rather than as a grounds in itself to block a merger. This trend of placing increasingly less weight on concentration and more weight on other types of competitive analysis (primarily based on price theory, requiring the DOJ and FTC to prove a future raise in prices from a merger) continued throughout the 1990s into today and has resulted in increasingly complex and conflicting analyses being brought by opposing sides of merger cases, which are difficult for judges to decipher. As a result, mergers have become much less strictly regulated, to a degree which certainly appears problematic due to evidence we've seen on market concentration and markups.

The "Powell Memo," written by soon-to-be Supreme Court Justice Lewis Powell in 1971 to the US Chamber of Commerce, may have provided the motivation for the push by business interests for conservative and pro-business rulings. In it, Powell urged American business to defend itself in the press, academia and the courts from efforts to dismantle what he called the system of free enterprise, which he argued was responsible for the "strength and prosperity of the American People." Conservative pro-business think tanks and foundations such as the Heritage foundation and Cato Institute, founded in 1973 and 1975 respectively, and proliferated and dedicated themselves to "formulate[ing] and promote[ing] conservative public policies based on the principles of free enterprise, limited government, individual freedom, traditional American values, and

a strong national defense," as the Heritage Foundation's mission statement puts it (Temin, 2015). Peter Temin points to the Powell memo as a powerful driver of pro-business lobbying for deregulation, and as major inspiration for the types of conservative foundations driving the law and economics movement, as Ash, Chen and Naidu report in their study on the Manne program's influence.

3.5 Law and Economics' impact on Labor

DOJ guidelines do not appear to be the only mechanism by which the CWS became so prevalent in its use by the judiciary. A working paper by Elliott Ash, Daniel L. Chen and Suresh Naidu (2019) shows the influence of the Manne Economics Institute for Federal Judges, established in 1976 by Henry Manne, which espoused the ideas of Chicago School Scholars like Bork and Posner. The Manne Economics Institute was "a controversial economics training program for federal judges funded by business and conservative foundations (Ash et al 2019, p 2)" and was a 2-3 week intensive program focused teaching on teaching economic ideas, and in particular Chicago school economic ideas, to Federal Judges. The program continued to run once or twice a year, until 1999. Ash et al (2019) find that attendance in the Manne program very significantly led to increased conservative rulings, increased use of economics language in, and increased rulings against Federal agencies, like the Internal Revenue Service, Environmental Protection Agency, Department of Labor and the National Labor Relations Board. Tangentially, participation led to the judges to change their rulings in a wide variety of ways beyond the scope of this paper, such as dealing out harsher sentences to criminals,

on the utility-maximizing-theory-based grounds that harsher sentences would lead to more effective deterrence.

While these programs were primarily funded by conservative think tanks and pro-business interests, Ash, Chen and Naidu (2019) point out that their effects were not found only in the rulings of conservative judges; in fact, more liberal judges attended these programs, viewed them positively afterwards, and may have changed their rulings more than their conservative colleagues. The paper attempts to control for selection bias by comparing judges' decisions before and after the program and finds statistically significant, roughly 10% increases in rulings against regulatory agencies. While the paper focuses on the effects of Manne programs on rulings related to labor organizations and the EPA, the paper shows a powerful pathway through which business interests can change the rules they operate under without changing legislation or Supreme Court rulings, as Shapiro (2019) notes. While they do comment that antitrust opinions consistent with those reviewed in section 3.2 were advanced in these programs, it would be very interesting to see if Ash, Chen, and Naidu's (2019) results could be replicated with respect to antitrust as well. One example they give is "Klein and [Harold] Demsetz gave the received views on antitrust: 'price discrimination, which encourages production is good.'" Additionally, it would certainly be interesting to consider the impact of these programs on wages, given their bias against unions and bodies such as the NLRB (see section 2.4), and the decrease in union participation which accompanied it (see Mott and Evers (2013)).

3.6 Criticisms of the Consumer Welfare Standard

The Roosevelt Institute (Steinbaum and Stucke 2018) maintain that the CWS favored by the Chicago School-influenced Law and Economics movement since the 1970s and 1980s has led to a hamstringing of antitrust enforcement. Broadly, the stated intent of the CWS, as set down by Robert Bork in *The Antitrust Paradox* (1978), was to focus antitrust enforcement on cases in which a merger, monopoly, cartel or other combination reduced output or raised prices in an industry for consumers. Bork bemoans antitrust cases where value judgements were made by the courts rather than the legislature and wanted to limit cases where the effect of court judgements on consumer welfare were unclear or where the court had to decide on an issue of distribution. Steinbaum and Stucke (2018) write that this standard for antitrust led to a pronounced drop in antitrust enforcement by the Department of Justice, noting that the DOJ brought its last predation case in 1999, and that between 1999 and 2018, the DOJ had brought one major monopolization case under Section 2 of the Sherman Antitrust Act, as compared to 39 civil and 3 criminal cases between 1970 and 1972.

Steinbaum and Stucke (2018) cite surveys showing that the CWS is widely used throughout industrialized countries in the International Competition Network, but that concrete definitions of what it means are rare, and those definitions that do exist vary widely. Additionally, they note an ongoing debate within the US Antitrust Modernization Committee, and within Academia as well, as to what the precise definition of consumer welfare is. They specifically note a lack of clarity on who or what constitutes a consumer, noting the definition has been extended in legal proceedings to cover any purchaser,

including large corporations. Also, they note that there is no agreed-upon method of quantifying consumer welfare and no reliable data source with which it quantified. This ambiguity, for Steinbaum and Stucke (2018), causes problems when the concept is used a trigger for enforcement. Prosecutors, to effectively regulate against anticompetitive behavior, must prove that consumer welfare has been reduced, and in cases beyond price fixing, there is no objective way in which to do so. Steinbaum and Stucke also bemoan the CWS's general lack of easy applicability to cases where innovation, product variety, quality degradation, or privacy degradation. In antitrust cases which involve these aspects of competition, which Steinbaum and Stucke (2018) note they often do, the CWS severely limits enforcement.

The CWS is also extremely difficult to apply to cases in which upstream sellers and not consumers are impacted by monopsony, rather than monopoly, power. As a result, the CWS simply is not used under these cases (Steinbaum and Stucke 2018, p 17-21). Under a CWS, using monopsony power to lower prices charged by suppliers would be permitted on the grounds that such a practice would ultimately lower prices for final consumers. This myopic focus on a poorly-defined and difficult to measure standard of consumer welfare severely hamstrings the DOJ and Federal Trade Commission's efforts to prosecute businesses under the Sherman and Clayton antitrust acts, making these cases difficult to win and disincentivize their being brought in the first place (Shapiro 2019). Steinbaum and Stucke further point out that "consumer welfare" has not improved during the period in which it has been the primary focus of the judiciary, as industries have continued to grow more concentrated and markups have continued to rise (De Loecker

and Eeckhout 2018, IMF 2017, Autor et al 2017) and an increasing share of income in the United States is going to profits at the expense of wages and investment into productive equipment (Barkai 2017). They also cite research which shows a substantial percentage of mergers have led to consumer price increases (Kwoka 2015). All of this suggests a scenario in which the CWS which was originally put forward by Chicago Economists and Legal Scholars makes it difficult to actually protect consumer welfare.

Russell Pittman (2007) points out that a key feature of the economic analysis that is used is surplus, which is the sum of consumer surplus, the total amount over the price that consumers would have been willing to pay for each unit, and producer surplus, the total amount under the price they would have been willing to sell each unit for. One way to think about the optimal level of production for a certain good would be when total surplus is maximized. Another critique leveled at the welfare (or surplus) maximizing framework espoused by the Chicago school is that it does not distinguish between consumer and producer surplus. This means that by the legal system focused entirely on deadweight loss, it may be ignoring large transfers of surplus from consumers to producers, which could potentially make consumers worse off than any deadweight loss would (Pittman 2007).

This narrowing of the focus of antitrust to the Chicago School's CWS significantly lowered the scope and frequency of DOJ and FTC enforcement. It is almost certainly not a coincidence that the CWS's dominance over the practice of antitrust law has coincided with the recent rise in market power, concentration, markups and income inequality that we have seen in the data earlier.

3.7 Conclusions

The Chicago School's argument that the unregulated market is inherently efficient clearly proved to be a persuasive one. They broadly made two points about industrial organization: the first is that firms behave as though they need to compete with hypothetical entrants on price as they would with real competitors and the second was that the arrangement of competition that prevailed in the market existed because it was the most efficient. Therefore, generally speaking, there was no need for government intervention because production was already at its most efficient, and any meddling would necessarily make the market less efficient and in fact harm consumers. Upon making these points, the Chicago School and the Law and Economics set about changing the architecture by which antitrust was enforced, namely the judiciary and the Department of Justice antitrust guidelines, rather than changing antitrust laws. This proved to be incredibly effective, as antitrust suits and cases became less and less likely to both win and to be brought in the first place.

As we have seen in the data in chapter 2, in the period since the 1970s and '80s, corresponding with this reduction in antitrust enforcement, concentration has increased, as have markups. We have seen that the standard neoclassical definition of efficiency in markups, presented in microeconomic textbooks such as those by Varian, is the minimization of the difference between prices and costs. Ironically, by advocating for less regulated markets on the grounds that this would make them more efficient, the Chicago School and the Law and Economics movement have succeeded in making markets materially less efficient by this Neoclassical definition. They have also

succeeded in raising the profits made by the pro-business interests which funded the Manne Programs (Ash et al. 2019). To determine whether this movement should therefore be considered a success or failure, one would have to ask the Chicago School and members of the Law and Economics movement what the goal was: the improved efficiency of markets or increased profits for owners and management of large firms. Clearly, the movement has been a miserable failure if we consider the former and a soaring success if the latter was the true goal.

What is clear, however, is that the assumptions which underpin the Chicago School antitrust position, most importantly that considerations such as firm size and capital intensity are not entry barriers and that firms behave as if they have competition whether they do or not, have been shown to be inaccurate. In the following chapter, we will see a theory that does a much better job of describing the recent trends in product market concentration and income distribution.

Chapter 4: Neo-Kaleckian Theory: A Post-Keynesian Approach to Competition, Distribution and Growth

4.1 Introduction

As we've seen, the Chicago School presents a simplistic idea of how competition works in practice in the economy and uses these ideas to make their case for how (de)regulation should be carried out. To summarize, firms in any market, regardless of their market share, behave in a competitive fashion because of the threat of their competitors and of future entrants should they try to price at a level where they would get more than normal profits. They posit that if a firm or small group of firms holds a large market share, then this must be the most efficient configuration in terms of delivering a high output at low cost. From these assumptions, they argue that attempts to regulate firms' competitive practices make markets less efficient by reducing firms' ability to produce at low cost and high output, and in effect punish competitive firms for wining. They eschew analysis regarding distribution, and instead prioritize the capacity of firms to create output, lower costs, and thus make consumers better off.

As we saw in Chapter 3, the Chicago School worked hard to present their ideas to policymakers as representative of the entire economics discipline in a successful attempt to advocate for broadly libertarian and conservative principles. However, there are alternative schools of thought, both within the Neoclassial tradition and Heterodox Economics, regarding how competition works in product markets, and how this affects the economy more broadly. One of the heterodox schools of thought follows the work of Michal Kalecki and Josef Steindl. This line of thought, divides people in the economy into capitalists, who own productive capital and earn profits; rentiers: landowners who earn rents; and workers, who are employed by capitalists and earn wages.

An advantage of the neo-Kaleckian/Steindlian perspective as it relates to this research question is that, unlike the Chicago School, it addresses the question of how patterns of competition impact distribution of income, and in turn how that affects the economy as a whole. Kalecki, in particular, focuses on how the degree of monopoly is impacted not only by concentration but also by labor unionization. This chapter will look at how Kalecki and others have described the distribution of income and what causes it to change. We will also discuss Steindl's model of competition, which provides a nice addition to explain how market power develops.

4.2 Kalecki on Distribution of Income

To begin, Kalecki (1991 [1954]) writes that national income is made up of value added minus the cost of materials and inputs, and so can be thought of as the sum of aggregate wages, overheads and profits. Overheads and profits are the sum of the markup of prices over the direct costs minus the sum of direct costs, which are wages and

materials (Mott and Evers, 2013). The distribution of income from production is therefore determined by the size of the markup relative to direct costs, and the ratio between wages and materials in the direct cost. Therefore, the share of wages in the national income can be reduced by substitution of capital for labor in production and increase in prices relative to costs. The markup, Kalecki (1991 [1938]) writes, is what indicates the degree of monopoly in an industry and defines the degree of monopoly as the ratio of the markup to the price (difference between the price and marginal cost divided by the price). For Kalecki, there are four major factors that drive changes in the degree of monopoly.

The first of these factors is concentration in industry, as firms with large market share tend to raise prices relative to costs across the industry as

> Such a firm knows that its price influences appreciably the average price, and moreover that the other firms will be pushed in the same direction because their price formation depends on the average price. Thus, the firm can fix its price at a higher level than would otherwise be the case (Kalecki 1991[1938], p 215).

He also writes that "the same game is played by other big firms (Kalecki 1991[1938] p 2015)," and that this effect can be compounded by tacit or cartel agreement.

The second factor is the development of sales promotion through advertising, which Kalecki (1991[1938]) writes tends to increase markups because firms replace their competition over price with competition over advertising campaigns. This echoes Steindl's discussion of sales efforts, and competition based primarily on "goodwill" rather than strictly over prices. This switch to advertising competition reduces the downward pressure on firms' prices.

As noted in chapter 2, the markup is not only a function of the price a firm is able to charge, but also of the costs that it needs to pay. Therefore, input costs are pertinent to the distribution of income and the size of the markup. Thus, Kalecki (1991 [1938]) writes that an increase in the level of overheads relative to prime costs (here meaning direct costs, i.e. parts and labor) will tend to increase the degree of monopoly. This is because overheads cut into in profit margins, and

> as a result, there may arise a tacit agreement among the firms of an industry to protect profits, and consequently to increase prices in relation to unit prime costs. For instance, the increase in capital costs per unit of output as a result of the introduction of techniques which increase capital intensity may tend to raise the degree of monopoly in this way (Kalecki 1991 [1938]), p 215.

We can easily relate this back to Mott and Evers (2013), who write that the increasing salaries of executives and payments to shareholders should be classified as overhead costs. The persistence of these kind of increases in overheads, even when they have nothing at all to do with production, can be in part explained by the tacit profit protection agreements described by Kalecki (1991[1938]).

The last of the four factors that Kalecki (1991 [1938]) writes will raise the degree of monopoly is a fall in the strength of trade unions. The strength of trade unions is a moderating influence on the degree of monopoly as defined by Kalecki because the bargaining position of the union is increased with higher profits, "since higher wages are then compatible with 'reasonable profits' at existing price levels (Kalecki 1991 [1938], p 216)." This effect tends to regulate the degree of monopoly in two ways: the first is that price rises are made more likely to be met with cost increases; the second is that firms are discouraged from raising prices in the first place, because the price increases are more

likely to be met with a higher wage bill, and thus not bring in profits worth the potential loss in sales. This is particularly important in light of the discussion in Ash et al (2019) regarding the arguments of the Law and Economics movement's anti-union efforts (discussed in section 3.5), and the contemporaneous decline in union membership noted by Mott and Evers (2013) and Bivens et al (2018) (discussed in section 2.4).

Kalecki (1991[1938]) writes that the degree of monopoly is extremely important for understanding the distribution of income between workers and capitalists. Any increase in profits obviously causes a fall in the labor share to accommodate a rise in the profit share, which we have seen in the evidence in Chapter 2. Kalecki adds that the degree of monopoly also can inform the distribution of profits within the capitalist class, as a growth in big corporations "results in a relative shift of income from other industries to industries dominated by such corporations. In this way income is redistributed from small to big business (Kalecki 1991 [1938], p 216)." We can relate this back to Autor et al's (2017) discussion of "superstar" firms, as very large firms in very concentrated industries capture an outsized share of profits in the modern US economy.

Kalecki notes that "The degree of monopoly has a general tendency to increase in the long run and thus to depress the relative share of wages income (Kalecki 1971 [1938]), p 65)," and Steindl (1976[1952]) further fleshes out why this is, which we'll see in the next section.

4.3 Steindlian Competition Theory

Steindl's model of competition, which he presents in *Maturity and Stagnation in American Capitalism* (1976 [1952]), presents a theoretical framework of firm behavior

which explains why this tendency towards concentration occurs. In Steindl's analysis, firms can be placed into one of two groups: progressive firms, which are able to produce at a low-cost relative to price, and marginal firms, whose costs are high and therefore make a small markup. This is an important distinction between the models used by Chicago School authors such as Fama and Laffer (1975 [1972]) who make the assumption that firms have identical access to all productive technologies.

In Steindl's analysis, progressive firms follow the price of marginal firms, and thus attain a higher markup than the marginal firms. Over time, progressive firms are able to expand their capacity by reinvesting their markup and gain market share. This process continues until growth in capacity exceeds the growth in demand. At this point, competition between firms becomes much fiercer, as firms engage in aggressive sales efforts and lower prices to gain market share from competitors. Progressive firms dominate this process of competition because their lower costs allow them to lower prices below what marginal firms can compete with and can spend from their markups on sales efforts to take market share from marginal firms. Eventually, only a small number of progressive firms remain. This state is regarded as a mature industry.

This process of fierce competition may recall the fundamental Chicago School conception of how markets function, but once it is completed, firms no longer behave as if terrified of new entrants. Steindl writes that, instead, these remaining progressive firms accept their market share and that of their competitors. This is because capacity has exceeded demand, and so to obtain additional market share, the firm would need to take it from another progressive firm, which he writes would entail a costly sales effort and

price competition, both of which the other firm would be able to match. Furthermore, this effort would result in a gain in market share which the firm would find to be not worth the cost of this fierce competition. The firms in the industry therefore eschew price competition and all maintain high profit margins and reinvest these profits in other industries.

If we recall the discussion of Neoclassical market types from section 3.3, we can describe this process of competition as beginning in a Bertrand Oligopoly (which the Chicago School tries to assert is the character of all Oligopolies) until a turning point when demand growth can no longer keep pace with excess capacity. At this point, something resembling a Cournot Oligopoly emerges. While this description fits fairly well, it's important to note that these are viewed as moments occurring in an ongoing competitive process in Steindl's theory, rather than as static states of being for a market, as they are treated in the Neoclassical theory we discussed in section 3.3.

Another difference between Steindlian analysis and Chicago's analysis is the role of the initial cost of investment to enter an industry as a barrier to entry. The Chicago School perspective is that the cost of entry isn't a barrier, because if a firm sees high profit margins in another industry, they will move capital to that industry, thus lowering profit margins through competition. The Steindlian perspective is a bit more nuanced. Here, the costs of the firms in question matter a lot more. In this line of thinking, as Nina Shapiro (1981) and Julie Hogeland (2005) both point out, a firm's ability to enter depends on the capital intensity of the industry, and costs of production for itself and its competitors. A firm will only enter a new market under the condition that it can beat a

marginal firm on cost by a wide enough margin to cover both the initial capital investment to enter and the sales competition with the marginal firm. This gives a much more rigorous idea of whether or not new entrants will appear than simply asserting that they will. In fact, along the way, we reach the opposite conclusion to the Chicago School's on entry, which is that firms will tend to enter in more competitive markets rather than less. In summary, capitalists will be made more inclined to enter a market given the following conditions: lower capital intensity, higher costs of production faced by competitors, lower costs faced by themselves, and a growth in demand that exceeds the growth in capacity.

4.3.1 Excess Capacity

For the sake of applicability to the real world, Steindl drops certain assumptions regarding "perfect" competition. One such assumption is that products in a given market need to be physically and technologically homogeneous, and another is that consumers are utility maximizing with perfect information. As a consequence of these, product markets do not generally exhibit identical prices, even if their products were technologically and physically identical, because firms actually develop "good will" with consumers over time, and not instantaneously by appearing on the scene with a lower price than everyone else. This makes sense intuitively, because consumers do not necessarily know the quality of products sold by firms, and so use signals such relative prices and whether they've heard of a company as a proxy for quality. In any event, products in industries are often heterogeneous, and not homogeneous as Fama and Laffer (1972) suggest.

> The limited ability of buyers to compare and judge the quality, as well as irrational preferences, lead to a phenomenon which has attracted much attention, the conscious endeavor of business men to offer types and qualities which are different form those of their competitors (Steindl 1976 [1952], p 59).

Another assumption that Steindl drops is that factors of production are infinitely divisible and can be instantly be bought or sold (Steindl 1976 [1952]).

We can contrast these assumptions strongly with the model used by Fama and Laffer (1972) that we discussed in section 3.2. One key difference in assumptions that leads to such widely differing results in regard to profits in a concentrated industry is that Steindl allows for consumers to not have perfect information about quality. This assumption, implicit in Fama and Laffer's (1972) model, is what allows for consumers to be willing to instantaneously switch which firm they buy from *en masse* given a lower price. Steindl's ((1952) 1976) assertion that firms need to build up good will with customers via sales efforts and consistent quality over time provides the basis for the broader reason why firms in oligopolistic industries often do not behave as if they were in a Bertrand game. Firms need to gain good will in the market, and this combined with the reality that they cannot simply divide and move their productive capital from one industry to another at will and at no cost, presents us with costs facing would-be entrants that Fama and Laffer (1972) ignore. "Why is it not possible for the producer to expand his capacity step by step as his market grows? The reasons for this are obviously the indivisibility and durability of plant and equipment (Steindl 1976 [1952], p10)."

By recognizing these realities, we arrive at an explanation of firm behavior that may otherwise be considered irrational. One such behavior is building and holding onto

excess capacity. Steindl notes that it is easy to imagine why a firm would build excess capacity if it expects that demand will grow over time, or if it imagines that a temporary positive demand shock may occur. In both cases, firms hope to gain an advantage in claiming the additional sales by being quick to respond to the increase in demand and maximize their ability to claim profits and market share. He also asserts that holding on to excess capacity given conditions of decreasing demand, rather than selling unused factories and equipment, also makes sense because firms are reluctant to give up their good will in the market by leaving it. In short, holding excess capacity is a rational response to elasticity in the system to rapid changes in aggregate demand, given that capital is durable, indivisible, and takes time to acquire and that consumer good will is often difficult to gain and easy to lose.

This analysis gives us some surprising conclusions, including an inversion of the reasoning that entry barriers cause excess capacity. In fact, according to Steindl, excess capacity is a rational response by firms to market dynamics and in some ways, this causes imperfect competition. “Instead of explaining the existence of excess capacity in a state of equilibrium by excessive profit margins, it explains these excessive profit margins by the deliberate holding of excess capacity (Steindl 1976 [1952], p 11).” Because firms take such a long run view of capital investment decisions, they are able to beat new entrants to the punch when demand rises and are very reluctant to leave the market when demand falls.

4.3.2 Price Rigidities and Pricing Strategy

Additionally, Steindl comments on the rigidity of prices in oligopolistic industries, which some would expect would lead to a decrease in sales. He writes that the reason why oligopolistic industries' prices are rigid is because the firms in such industries believe they face a kinked demand curve. "They [Industrialists] are convinced that the price elasticity of demand for their products is very small, and that any price cut would lead only to a relatively small increase in the quantity sold (Steindl 1976 [1952], p 15)." Thus, a price cut would see their profits fall. While this would lead us to suspect firms in monopolistic industries or price leaders in oligopolistic industries would raise prices, Steindl explains that this is not the case.

> In the short run the demand for the products of an industry is in most cases probably very inelastic, but in the long run this is less likely to be the case. This provides the explanation for the imaginary kinked demand curve. Prices are determined with a view to long run demand conditions, and short run changes are, which are not thought to be permanent in character, do not induce any changes in price. Price reductions in slumps do not stimulate demand, and price increases in face of a temporary boom may be disturbing for the long run development of demand. (Steindl 1976 [1952], p16)

Firms are also therefore loath to *raise* prices in these concentrated industries, because they feel that in the long run, demand is more price elastic. Therefore, by raising their prices, they would expect short-term gains in profits, but in the long-term, they would expect to lose their good will with consumers to producers of cheaper substitutes, who now lack the good will to compete with them. Firms are also disciplined by the threat of new entry, which for Steindl is determined by the capital intensity and profits available in an industry. If firms raise their prices, the likelihood that new entrants will

compete with them increases as well. “The price in oligopolistic industries is therefore fixed on a level which just keeps potential competitors out; or, in other cases, it may be fixed at a level which is sufficient to squeeze out some existing competitors (Steindl 1976 [1952], p 17).” This may recall the arguments from the Chicago School in Chapter 3, but here, rather than the presence of profits itself motivating the entry, the price increase motivates the entry. One can imagine that firms expect their raising prices both increases the window for potential profits for new entrants and reduces customer good will for themselves. They do not expect, however, that entrants lowering prices somewhat would cause enough customers to switch to justify the entry, because of the price inelasticity of demand for price decreases.

This view of a kinked demand curve explains how prices can be rigid in both directions: firms expect to be punished in the short run in lowering their prices and punished in the long run by raising them. Price leaders in concentrated industries therefore set a price that maximizes their profits while maintaining or increasing their market share. In the case of an attempt to increase market share, progressive, price-leading firms will set a lower price than they would otherwise in an attempt to squeeze marginal firms out of the market.

4.3.3 Sales Efforts

Sales efforts are an important feature of competition in the Steindlian sense. Because this framework does not view productive technology, cost structures, and product characteristics to be necessarily homogeneous and it also does not view customers as being strictly utility maximizing rational actors with perfect information, it

does not present competitors in a product market as competing solely on price. Instead, firms compete on market share, which for Steindl is a more complicated proposition than who has the lowest costs and prices. As we've seen, firms compete for consumer good will through price competition, yes, but also through competition over quality and marketing efforts to influence consumers' perception of the firms and its products. Also, we can recall from section 4.2 that Kalecki (1991[1938]) held that the degree to which this kind of sales efforts replaced price competition is one of the main drivers of the degree of monopoly. Steindl writes that even in the case of a market with homogeneous products and cost structures, a cut in prices may not be sufficient to draw market share from another company, because consumers have a degree of loyalty to one firm or another. We can probably put this loyalty down to imperfect information and suspicion over a new firm's product quality.

Consequently, firms are engaged in competition for good will among new consumers in industries where demand is expanding, and for each other's consumers' good will in mature industries where demand has stagnated. In the former, progressive firms do this by reinvesting in additional capacity to serve new consumers faster and through marketing to build awareness and good will for their products. They also use marketing campaigns and compete on quality and price with marginal firms to take their market share. In a mature industry, firms do much the same thing, but are more conservative over the use of these sales efforts. This is because they have to weigh marketing costs, lower prices, and the cost increasing quality against the expected market share gain. They also have to estimate the response by their competitors. It may be

determined, and according to Steindl usually is determined, that the costs of such a sales effort outweigh the benefits, and so firms find that the way to maximize their profits is to maintain their own market share rather than trying to take someone else's. Additionally, potential new entrants in such mature industries weigh the costs of sales efforts in trying to compete with established firms alongside the initial capital investment required and the potential for profits to be earned in making their decision to enter a market.

Firms who already hold a high market share may decide that reinvesting profits in an adjacent product market could give them a higher return on their investment into productive capacity and sales effort, particularly if the latter market is not as mature as the former. A good example of this was the Big Four meat packing companies choosing to expand to food processing rather than compete with each other in meat packing (Hogeland, 2005).

4.3.4 Entry through Innovation

Julie Hogeland (2005), in a historical analysis of the US meat packing industry during the 20th century, makes an important contribution to Steindlian analysis by addressing how an oligopoly formed in the pattern of competition Steindl describes can decline. Where Steindl asserts that a large firm will always outcompete a small firm in competition through its capability to recreate a smaller firm's productive strategies on a larger scale and leaves it there, Hogeland provides a more satisfactory analysis of Oligopoly over time. Hogeland asserts that a high degree of capital intensity and unionized labor force for the Big Four firms of the US meat packing industry in the 1930s-1971 led them to experience lower profit margins than their much smaller

competitors. In effect, the combination of unionized skilled labor and high cost meat packing plants made the industry leaders high-cost, marginal firms. These firms were able to consistently able to outproduce smaller rural operations with low cost, but new entrants would have a difficult time competing on price at the same scale as the Big Four given the capital intensity of meat packing, the cost of labor rising with scale, and the cost of sales efforts. Competition ended up arising through the development of boxed beef, which was a different product in the same industry that may have been more expensive to the producers than the methods used by meat packers at the time, but which lowered costs for retailers. As the Big Four's sales declined, they found themselves unable to reinvest their small profit margins in producing boxed beef, and their hold on the meat packing industry was lost by 1970. This is example of firms who are able to innovate a new product in an industry entering an oligopolistic market, because their competitors weren't able to pivot in the way Steindl predicted.

This incidentally provides a helpful way of thinking about a common Chicago critique of Antitrust legislation, which is that dominant firms with large market share often do not earn a high mark up and also often fail. A good example of this is the Yale Brozen article *Concenration and Profits: Does Concentration Matter?* (1975 [1974]) While Brozen and others leverage this argument to suggest that large firms inevitably lose their hold on industry to new entrants, Hogeland, Steindl and Shapiro add that this movement occurs when a new firm innovates a new, cheaper productive strategy or a new product, and the large firms in the industry are marginal, and thus unable to compete by investing in the newly formed technology or product market. We can think of the

latter case as not as one easy to enter product market, but as two separate and difficult to enter product markets, one newer and preferred to the other. This case of a changing of the guard in an industry occurs when the large firms are also marginal firms.

This theoretical framework from Hogeland and Shapiro helps to explain how we can get arrive at a changing of the guard, so to speak, of an oligopolistic industry. We can now bridge the gap between Steindl's observations of difficult entry, and the Chicago School's assertion of inevitable entry. In short, for a "mature" industry in the Steindlian theory of competition, barriers to entry such as the size of firms and the capital intensity of production can be overcome by an innovative outside firm *if* the outside firm's product is preferred to the established firm's and if the established firm is marginal and unable to compete in the new product space. If the established firms continue to hold high profit margins, then the Schumpeterian creative destruction that the Chicago School predicts will not occur, and instead the established firms will outcompete new entrants in the new product spaces. If we consider Autor et al's (2017) findings regarding superstar firms and that concentration is positively correlated to Total Factor Productivity growth and speed of patents, it could be reasonable to speculate that in fact creative destruction could be making industries more concentrated, not less.

4.3.5 Horizontal Integration, Vertical Integration and Collusion

While Steindl's *Maturity and Stagnation in American Capitalism* provides a theoretical framework for how market competition naturally tends towards concentration, Julie Hogeland (2005) asserts that the framework doesn't sufficiently deal with some of the anticompetitive practices that firms can use in addition to sales efforts to obtain and

protect market share. Steindl does address the tendency to reinvest in capacity in new industries following maturity in a firm's original industry but does not address how savvy planning on the part of the capitalist can result in horizontal or vertical integration. Briefly, horizontal integration involves obtaining a large market share for a product as well as substitutes and compliments, and vertical integration involves obtaining a large market share in a final product as well as the markets for its inputs. Steindl does associate horizontal integration with mature capitalism, as a logical consequence of many firms being incentivized to invest in adjacent product markets rather than the one they are currently in. This is because of the higher returns to sales efforts in a less concentrated new industry relative to their current concentrated industry, where sales efforts are likely to lead to unsatisfactory returns. Additionally, adjacent industries are easier to enter because of similarities in productive technologies and probably the potential for consumer good will to translate to these industries easily (it is perhaps easier to imagine consumers trusting a foray by Apple Inc into providing internet service than a foray by Apple into, say, agricultural products).

Hogeland (2005) writes that in focusing on sales efforts as the primary means of competition and obtaining market share, Steindl ignores vertical integration as an alternative. She points to established firms in the meat industry eschewing competition via sales efforts as Steindl would predict. These firms, however, gained footholds in input markets like railroads, livestock marketing, slaughtering, and market news publications and competed by trying to foreclose competitors rather than through price competition or sales efforts (foreclosure is the act of a vertically integrated firm charging higher prices or

not dealing with one of its competitors in an input market). She holds that an understanding of this process provides an understanding for a mechanism by which concentration occurs.

Finally, Hogeland (2005) writes that Steindl ignores collusion in oligopolistic markets. For Hogeland, collusion is a logical next step for firms in mature industries, where firms accept that they can't compete with each other but do want to prevent new entrants from gaining any market share. She again points to the meat packing industry, in which firms refused to cut capacity to lower prices and made market sharing agreements in which the four major firms each agreed to only expand at the rate the industry was expanding. This resulted in a stable market share for the firms, a higher price level for their products, and, eventually, their running afoul of the Federal Trade Commission. An interesting twist here is that the established firms essentially wound up agreeing to be large marginal firms and one the one hand this stymied innovation on their part, but on the other hand it left them open to more innovative new entrants, despite the capital intensity of meat packing. This is an example of the Chicago School's proposed Schumpeterian creative destruction at work, with new firms with new technology beating out and replacing the old. However, this took a period of several years, and resulted in a similarly concentrated market, only with different firms in the ascendancy.

4.4 Macroeconomic Implications of Kalecki and Steindl

While income inequality can be certainly considered a normative issue in its own right, Kalecki (1971a) and Steindl ((1952) 1976) point out the potential, contrary to the tenets of the Chicago School, for inequality to have a serious dampening effect on

growth. The mechanism for this is the difference in marginal propensity to consume between capitalists and workers. Kalecki shows that in an economy where workers have a marginal propensity to save of zero and capitalists have a positive marginal propensity to save, redistribution from workers to capitalists will reduce consumption demand more than it will increase investment, and therefore slow economic growth.

Robert Blecker (2002) points out that Steindl and Kalecki's predictions for stagnation resulting from a redistribution of income from workers to capitalists relies on specific assumptions and provides a synthesis of the possibilities of growth and distribution which have been presented in neo-Kaleckian models. Profits can either be positively or negatively related to capacity utilization, which would make redistribution to profits from wages either Exhilarationist or Stagnationist, respectively. Additionally, under Stagnationism, whether the realized profit rate is positively or negatively related to the profit share determines whether the economy is conflictive or cooperative, respectively. Under Exhilarationism, if the total real labor income is positively related to the profit share, the situation is cooperative, but if the relationship is negative, then it is conflictive. Cooperative and conflictive here refer to the relationship between workers and capitalists and whether growth for one comes at the expense of the other. Also, a distinction is made between profit-led and wage-led growth, which depends on whether capacity utilization is positively or negatively related to the profit share, respectively.

While it would be a plausible suggestion to make, more work needs to be done (or reviewed) to determine whether the recent redistribution from wages to profits has hampered growth. If we were to use Blecker's synthesis of possible conditions, we would

categorize Steindl's view of the capitalist economy in *Maturity and Stagnation* ((1952) 1976) as being wage-led, and conflictive-stagnationist. This means that for Steindl, capacity utilization and capital accumulation tend to fall as the profit share rises and realized profits rise with the profit share. This would mean that as industries concentrate, profits rise and wages fall, aggregate demand falls, capacity utilization and capital accumulation both slow, and investment and consumption both fall. Flaschel and Scott (2006) develop a model that "supports Steindl's position on the stagnationist effects of increased oligopolization: an upward shift in the dynamic equation for the markup generates a decline in both utilization and growth (Flaschel and Scott 2006, p 27)."

Going back to section 2.2, De Loecker and Eeckhout (2018) suggest that this has been the case. Their argument was that the growth in markups that results from the concentration of markets would result in deadweight loss, as marginal consumers were deterred from buying. This decrease in demand would result in less utilization of labor and capital in these more concentrated industries, which would in turn lead to a further redistribution away from labor and to profits. If we continue this logic along the lines proposed by Kalecki (1971) and Steindl (1976 [1952]), because workers have high marginal propensity to consume, this decrease in the labor share could reinforce the original decline in demand resulting from the markup increase described by De Loecker and Eeckhout (2018). This decrease in demand and utilization would be the mechanism by which concentration could decrease the potential for growth.

4.5 Comparison to Neoclassical Industrial Organization

While the Chicago School's argument is generally characterized by insistence that the product market displays or resembles perfect competition, Neo-Kaleckians reject these claims. "Perfect competition, when its actual status as a handy model is forgotten, becomes a dangerous myth (Kalecki 1991 [1938], p 99)."

If we leave some of the apparently willful, and certainly useful, ignorance of the Chicago School aside for a moment, in some respects, this Kaleckian-Steindlian model has advantages over the neoclassical model of imperfect competition which we visited earlier. In particular, this model drops many of the restrictive assumptions that are used in the game theory-based theories of oligopoly, as well as the static nature of that analysis, in favor of a description of competition as a dynamic process with several phases. While markets may at times resemble monopolistic competition, Cournot Oligopolies, Bertrand Oligopolies, Stackleberg Oligopolies, or Monopolies, what's missing in this kind of analysis that Steindl, in particular, provides is a treatment of how these markets evolve and change over time. Also, the Neo-Kaleckian theory puts a clear focus on the division of income between classes of people (workers and capitalists), which has begun to be a much more salient point when discussing the US economy since the 1980s. Finally, the consideration of anticompetitive behavior such as predatory pricing, formation of cartels, and vertical and horizontal integration fits much more nicely in this theoretical tradition than in the neoclassical one, for which these are special cases which can be easily forgotten about. As has been made very clear by the law and economics movement, the way a theory treats anticompetitive behavior can have huge influence in regulation, and

in turn this regulation can have dramatic effects on the structure of the market in the real world.

4.6 Conclusions

Of course, the reason we should pay attention to this neo-Kaleckian theory is its utility in understanding the issue at hand, which is how concentration in the product market forms, how that concentration impacts distributions, and the ultimate implications therein. The theory discussed in the chapter bears striking resemblance to the evidence surrounding the US product market over the past 40 years. In particular, we can see evidence of progressive and marginal firms battling for market share until the progressive firms' eventual victory in the IMF (2017) and Autor et al (2017) papers. Throughout the papers reviewed in Chapter 2, we see that concentrated markets do not arise necessarily through anticompetitive behavior, and firms can legitimately outcompete one another. We can expect, however, that this competition, whether over prices or technological innovation, stops once concentration is attained.

Firms in mature, concentrated markets are primarily concerned with maximizing profits, relying on entry barriers to protect them from serious competition. While these firms can use anticompetitive strategies such as foreclosure or predatory pricing as entry barriers, they could also rely on the sheer size of the investment it would take to compete with them. For a real-world example, consider that in the first decade of the 21st century, the cost of entry for a communications firm looking to compete with Verizon and AT&T would have been at a minimum $10 billion, including licenses and equipment (Wu 2011, p 48). This risk is staggering considering there is no guarantee of being able to succeed in

the market. To be willing to enter such a market, according to Neo-Kaleckian theory, an entrepreneur would need to be confident they had technology which would allow them to beat existing competitors on price by that amount. That is certainly a tough ask, though one that seems realistic given the steady concentration observed over the past four decades, aided by the Chicago School and Law and Economics movement's drive to reduce antitrust enforcement over the same period.

Additionally, in order for a firm to be willing to compete on price with another firm, the prospective future gains in profits need to exceed the profits lost in the competition. As markets become increasingly concentrated, we have seen markups rise, indicating price competition is lessening. If we consider the work of Grullon et al (2019) alongside the work of Steinbaum and Stucke (2018), it would have to appear that these firms have eschewed price competition for mergers, a result which is not out of line with this Neo-Kaleckian model.

We can understand through this competitive process how markups have increasingly affected the distribution of income. As firms exist in decreasingly competitive markets, they increasingly become sources of monopoly rents, which decreases the share of income paid to workers. If we add a dynamic monopsony theory of the labor market to this theory of product market competition, we get a very clear and accurate picture of competition in both sectors, and how that has affected a rapid redistribution of income from workers to a few owners and executives of large firms.

This brings us to a major point of contention between this Neo-Kaleckian theory of competition, and the theory that underpins the Chicago School theory regarding

antitrust and regulation in general: the relationship between distribution and growth. The Chicago School in general is against targeting more equitable distribution of income, because they argue such regulation hurts productive efficiency. Antitrust regulations are held to be unnecessary and potentially harmful to production, and tactics often deemed to be anticompetitive such as mergers, predatory pricing, and price discrimination are held to be consumer welfare enhancing. The arrangement that any market finds itself in is deemed to be the most efficient arrangement possible, because if it wasn't, competitors would necessarily be entering to take advantage of overly high prices. The Neo-Kaleckian theory flips this reasoning on its head. Here, growth depends on distribution of income, because workers have a higher propensity to consume than capitalists do. Any redistribution from workers to capitalists (such as the growth in the profit share at the expense of the wage share of income we covered in Chapter 2) therefore lowers demand. Additionally, rather than naturally tending towards competition, industries naturally tend toward increased concentration, which tends to raise markups and redistribute away from workers. The Neo-Kaleckians have a strong argument that deregulation of the sort the Chicago School asserts will lead to increased growth will instead hasten redistribution and therefore lead to stagnation, as firms loose incentive to expand capacity and consumption demand falls.

Chapter 5: Conclusions

This body of research paints a picture of US markets which seem to match fairly well the conclusions of the Neo-Kaleckian model of competition discussed earlier. Here, we have evidence of markets steadily trending from competition to concentration, and that trend corresponding with a higher share of profits and lower share of wages. In particular, the work of Diez et al (2018) and Autor et al (2017) seem to suggest a competitive pattern in which technologically advanced, innovative firms are able to gain increasing market share over their less innovative competitors, until some threshold is reached, at which time innovative activities are replaced with anticompetitive ones. This is also supported by the findings of Grullon, Larkin, and Michaely (2018) and Barkai (2016), who further find a positive relationship between the concentration of industries and the size of their markups, and negative correlations between concentration and innovation, capital utilization, productive efficiency and labor's share of production. Barkai further concludes that the decline of labor's share is not the result of a substitution of labor for capital, but, instead, is a result of a rise in the markup. This data, taken as a whole, supports the conclusions of Steindl, Kalecki, and others, that the trend towards to market concentration eventually leads to a decline in the ferocity of competition between firms, as they begin to realize that the gains from increased capacity would not outweigh

the costs of doing so, and instead make efforts to *maintain* their market share and charge markups as a rent.

This turn of events leads to a decline in productive activities as well as labor's share of income, as profits rise. Additionally, this turn of events would not be possible under conditions of free entry.

Furthermore, the points made by the Chicago School regarding the competitive behavior of markets have not only been shown to be overly simplistic and incorrect in the data, but have also been shown by the work of Khan (2017), Steinbaum and Stucke (2018), Shapiro (2019), and Ash et al (2019) to have been a contributing factor to the growth of market power on the part of large firms.

If we consider the gap between productivity growth and wage growth which was shown in chapter 1, the Neo-Kaleckian perspective offers a convincing explanation as to how this occurred. On its surface, it is fairly simple: industries have been becoming increasing concentrated, leading to increasing markups, and, simultaneously, workers have lost bargaining power over wages due to a decline in unionization (among other factors). This has led to a decrease in labor's share of income. However, the implications of this decline in labor's share go beyond equity and into efficiency. Because workers have a higher propensity to consume, and lower incomes than do capitalists, redistribution to the former form the latter reduces quantity demanded, an effect strengthened by the rise in markups. Because of this, capacity utilization among firms may fall with demand. Therefore, not only does increased concentration and poor

bargaining position among workers arrest the growth of wages when compared productivity growth: they also tend to slow down productivity itself.

The evidence regarding this rise in income inequality raises an important question: what policy measures could be employed to reverse it? Potential remedies range from a return to the structural presumption from the CWS in the judiciary to progressive taxation and various schemes of redistribution. The reality of the situation may be, however, that those who benefit most from the current state of affairs, namely capitalists in charge of large superstar firms, have both a vested interest in preserving it, as well as outsize influence in the US political process and the judiciary to do so. The work done by Ash et al (2019) presents a stark example of this influence. Further work could be done regarding this interplay between political science and economics.

While this paper focuses on literature concerning concentration in the US product market and its effect on the labor's share of income, work has also been done regarding the concentration of factor markets including labor and suppliers, and the effect those factors have had on the distribution of income as well. While this paper focuses primarily on industrial organization in product markets and how that affects distribution, that is really only half the story, and it is also important to consider the labor market in much more depth than I have here. Additionally, work has been done comparing and contrasting the effects of these same factors on the distribution of income in other OECD countries, particularly in the European Union.

Another related line of research is the effect of distributional changes in the US and other countries on economic growth along the lines described by Blecker (2003).

This also would provide an opportunity to explore a further point of contention between the Chicago School theory and that of the Neo-Kaleckians, especially Steindl ((1952) 1972) similarly to how this paper has attempted to explore the differences between these two schools of thought's theories on Industrial Organization and compare them to results attained in empirical literature. This would be an excellent opportunity evaluate the claim implied by Robert Lucas (2004), that growth and equity are mutually exclusive. Steindl would be expected to argue the opposite, that redistributing away from workers and to capitalists would end up stifling demand and reducing growth.

Having reviewed this literature up to this point, it certainly seems that this Neo-Kaleckian school of thought, though comparatively obscure, does still provide insight into markets, their evolution, and the questions of income and wealth which carry so much weight in today's political and academic discourse. It certainly seems to compare favorably to the Chicago School theories of industrial organization in describing the effects observed in the literature of concentration on efficiency and markups. It provides by default a better explanation of distributional effects of competition than the Chicago School, in that it deigns to concern itself with distribution in the first place.

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