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Abstract

Historical studies of U.S. capital markets show a dramatic skew in the distribution of corporate wealth. This thesis investigates the evolution of economic thought related to realistic models of competition, seeking to find the most suitable theory of competition to explain this skew in U.S. corporate wealth creation. The incorporation of realistic elements into the static theories of competition leads to theoretical difficulties in the early 20th century. Another line of thought developed non-equilibrium dynamic models of competition, culminating in Schumpeter. In Schumpeter, firms seek to manage the uncertainty from rapid change induced by innovation and increasing returns by following regulative business strategies to reduce the uncertainty of investment. Failure to manage the uncertainty of investment results in “creative destruction,” allowing firms with superior strategies to reap disproportion rewards, resulting in a skewed distribution of corporate wealth, until the environment changes to undermine the previously successful strategy.

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University of Denver

In Partial Fulfillment

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Master of Arts

by

Marc Pentacoff

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Advisor: Dr. Markus Schneider

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Historical studies of U.S. capital markets show a dramatic skew in the distribution of corporate wealth. This thesis investigates the evolution of economic thought related to realistic models of competition, seeking to find the most suitable theory of competition to explain this skew in U.S. corporate wealth creation. The incorporation of realistic elements into the static theories of competition leads to theoretical difficulties in the early 20th century. Another line of thought developed non-equilibrium dynamic models of competition, culminating in Schumpeter. In Schumpeter, firms seek to manage the uncertainty from rapid change induced by innovation and increasing returns by following regulative business strategies to reduce the uncertainty of investment. Failure to manage the uncertainty of investment results in “creative destruction,” allowing firms with superior strategies to reap disproportion rewards, resulting in a skewed distribution of corporate wealth, until the environment changes to undermine the previously successful strategy.

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1. Introduction

1.1 Motivating Questions

Our interest in this paper is to examine economic theories of competition which can best meet realistic theoretical conditions and economic history. In particular, we are searching for theories of competition which can encounter and describe the significant skew in the distribution of U.S. public corporate wealth creation since 1926 (“wealth creation”). Wealth creation is defined as the increase in the aggregate value of a firm’s common stock in excess of that which would have otherwise been obtained by investing in risk free securities.

The skew in the distribution implies the persistent presence of firms which capture and maintain significant market share—implying significant profit potential—yet whose continued existence and dominance is not assured. Many of these firms, after all, dominate records of corporate wealth creation for decades only to go out of business. In other words, the financial record in the United States strongly suggests that the most realistic theory of competition will be one of monopolistic competition with super normal profits which are, nevertheless, uncertain in the long run.

In this paper, we will first go over the most realistic theories of competition from marginalist economics looking specifically at Alfred Marshall, Piero Sraffa and Edward Chamberlin. We will then review the dynamic theory of competitive behavior in Joseph Schumpeter, Frank Knight and Maurice Dobb. Our conclusion is that Schumpeter’s approach to the theory of competition is more developed and specific than is commonly recognized. It is established on a well developed theoretical foundation within the prior literature and builds off an infrequently discussed branch of competition theory running from a young Schumpeter to Knight and Dobb before coming back to Schumpeter. The well known concept of “creative destruction” is

rarely put into its proper context of justification for Schumpeter's theory of monopolistic competition which, to some observers of the 1940s, seemed to amount to a defense of monopolistic corporate practices.

It is appropriate to view Schumpeter's theory as superseding and incorporating the advances in dynamic theory made by Frank Knight and Maurice Dobb. Allyn Young's famous 1928 paper on increasing returns is discussed as it reflects an early stage sketch of a dynamic theory of competition, while providing a more technical discussion of the pervasive increasing returns environment. These increasing returns are themselves responsible for creating the rapidly changing environment, which creates the fundamentally uncertain environment that needs to be managed by firms in their competitive process. Thus, while Young's contributions in this direction were cut short by this untimely death in 1929, his rigorous analysis of the importance of increasing returns helps to explain theoretically the creatively destructive environment which firms find themselves in: increasing returns create rapid economic change which cut away the basis for generalizations, resulting in new avenues for innovative investment, resulting in fundamental uncertainty, resulting in the requirement that firms plan to manage this uncertainty. Management of this uncertainty, in Schumpeter, means firms take competitive actions that they believe are the most likely to help them control and influence their proximate economic environment.

If "creative destruction" is one half of Schumpeter's theory, the other half is his theory of "regulative strategies" to manage this uncertainty of future profits. Firms follow competitive policies—set prices, make adjustments to products, follow certain sales strategies, follow certain investment processes, among other things—on the basis of a general plan, a "regulative strategy," developed to manage the long term uncertainty of their investment which arises from operating in a rapidly changing economic environment.

Some specific techniques of managing uncertainty will be discussed when we review Frank Knight's work where he refers to common techniques used to manage uncertainty. Firms, in their quest for profits, invest with a desire for returns yet the specific policy of investment is, in Schumpeter, made on the dual basis of whether it helps to protect past investment from new

competition, in addition to the desire of generating new streams of profit. Firms in this model will seek to expand continuously so as to diversify and find new avenues for growth—growth becomes the health of the enterprise in a dynamic and uncertain environment. Instead of simply looking at the raw mathematics of M-C-M' driving accumulation, it is the threat of future destruction and the goal of protecting existing profit streams which drive further accumulation through investment.

These approaches can be contrasted with marginalist economics where economists approached realistic theories by attempting to take into account widely observed phenomena, such as increasing returns to scale in manufacturing and oligopic market structures. As we will discuss in our review of static marginalist economics, incorporating these phenomena into static models lead to further difficulties and, ultimately, a chain of events which resulted in the decline in Marshallian economics. It was in the shadow of these events that leading economists, like Knight and Schumpeter, began to suggest a strong distinction between static and dynamic theories of economic analysis.

The historical results from US capital markets broaden the focus of the theory of competition away from only looking at the median or typical corporate firm, which we will see produces meagre financial returns, to the median or typical increase in corporate wealth, the latter of which will be concentrated in a small number of super firms. A theory of competition can only be adequate if it is able to deal with the median firm as well as the super firm, especially since the median increase in corporate wealth is found within the super firms. It is these super firms which, frequently holding significant market share, determine average financial returns and determine other average relationships throughout their industry and the economy more broadly. Many theories, particularly static theories, are designed explicitly to only deal with the average firm and, by definition, exclude these super firms from the analysis.

Instead of competing on price, even understood in its most abstract way, competition in the dynamic theories proceeds on a much more complex basis, taking into account realistic institutional arrangements. Schumpeter is said to have viewed the book in which this theory is

presented, *Capitalism, Socialism and Democracy*, as allowing for economic theory in the context of institutional change. In this sense, competition through “regulative strategies” can be seen as working to reduce the long term uncertainty of investment within its realistic institutionalist context.

In the initial reviews of Schumpeter’s dynamic theory, some felt his theory of “regulative strategies” was an inappropriate defense of monopolistic behavior, while hailing the language of “creative destruction,” a term borrowed from Werner Sombart. This general reaction has carried through to the present where his theory of monopolistic competition is infrequently taught and hardly examined in detail and theoretical origin.

As we will show, creative destruction and regulative strategies are complimentary. It is the uncertainty from rapid economic change which can cause “creative destruction,” which results in firm’s following “regulative strategies” to manage the uncertainty from change. From this point of view, Schumpeter is attempting to put forward a dynamic theory of competition which can serve economics in its traditional role of regulating qualities and quantities within the economic system, all within the context of pervasive “monopolistic competition.”

While there is some evidence that Schumpeter is not entirely satisfied with his solution to the problem of realistic competition, this theory of corporate firms pursuing strategy to manage uncertainty from rapid economic change represents the best theory he could come up within his lifetime. Unlike a theory which presumes all competition to proceed on the basis of price—or, in its more developed form under Chamberlin, where it proceeds on the basis of price, advertising expense and product variation—this theory is inclusive of all forms of competitive behavior overtime within a realistic and complex institutional context. It is not necessarily an abstract theory of a single product firm in a single market but rather a theory of the behavior of a unit of capital seeking to survive and grow. In that sense, it is properly seen as a theory of the process of competition with the successful result being profits.

1.2 Competition in Economic Theory

Competition in economic theory plays the critical role of regulating qualities and quantities, notably price and output in static economics, and is the actuating force behind the distribution of resources and the division of labor. The economic literature over the last 150 years makes important, but wholly theoretical, distinctions between “perfect competition,” “pure competition,” “imperfect competition,” and “monopolistic competition,” contrasting these with “absolute monopoly” where competition offers no forces to regulate profits or output. These concepts have meaning largely as a means of describing different market structures at equilibrium within the context of static marginalist equilibrium economics. For the purposes of this essay, we take it for granted that there is a clear distinction between static economics and — employing any of the wide number of terms used by Schumpeter and Knight—“dynamic,” “development,” “historical,” or “evolutionary” economics. The latter theories can be said to deal with actual outcomes in historical time, the former only with theoretical outcomes with fixed sets of factors.

According to McNulty, the analytic function of competition in economic analysis was already well developed by the time Adam Smith turned to the question in *The Wealth of Nations*. McNulty cites the use of the theory of competition in Boisguillebert, Cantillon, Turgot, James Steuart and Adam Smith’s colleague David Hume.¹ Competitions “analytical function was its recognized tendency to bring the market price to a level which would eliminate both excessive profits and unsatisfied demand, that is, to the lowest level sustainable over the long run.”² Smith’s competitive process was a dynamic rivalrous process for profits with capital flowing into new markets with high profits and out of markets with low profits, all with profits being directionally related to “risk” without being proportionate. Ricardo limits his analysis to markets where competition operates without “restraint.” We will see that our modern environment offers many

¹ Paul J. McNulty, “A Note on the History of Perfect Competition,” *Journal of Political Economy* 75, no. 4, Part 1 (1967): pp. 395-399, <https://doi.org/10.1086/259295>, p. 395-396.

² *Ibid.*

competitive restraints, although ones far different from the legal restraints of the early 19th century. Mill famously states, just before discussing problems which result in frictions impeding the operations of competition, that “only through the principle of competition has political economy any pretension to the character of a science.”³

The conceptual construction of perfect competition was well advanced before the turn of the 20th century. Yet by the end of the 19th century, a corporate merger movement had dramatically altered the industrial landscape and global world wide trade was at a high point under the gold standard managed by the Bank of England. Domestic markets in the United States and Europe were stitched together by train and telegraph. International markets were stitched together by steam ships and undersea telegraph cables. The creation of national markets opened the way to economies of scale and new business strategies embodied in size. The era of big business, which began with the railroads, was in full swing. The environment looked increasingly different from which was embodied in the mathematical economics of Walras, although the competitive theory within the American and British economic profession was not yet, as it would become, “rigorously” defined. Marshall’s popular textbook repeatedly notes that the problems of partial equilibrium analysis and the problems of taking supply and demand analysis too far. High quality data on stock returns to calculate corporate wealth creation only starts in 1926, just as industrial firms begin to dominate the US capital markets after decades of being built up by railroad securities.⁴

The railroads by themselves had already presented intellectual problems for competitive analysis. Allyn Young and Joseph Schumpeter first befriend each other at a conference discussing economic theory and railroad pricing and, characteristically, disagree about regulation. Edward Chamberlin, who later coined the term “product differentiation” in his effort to describe

³ John Stuart Mill, *Principles of Political Economy, with Some of Their Applications to Social Philosophy* (Charleston, SC: BiblioLife, 2009), <https://www.gutenberg.org/files/30107/30107-pdf.pdf>, p. 176.

⁴ For a discussion of the composition of US capital markets across this period, see Mary A. O’Sullivan, *Dividends of Development: Securities Markets in the History of US Capitalism, 1866-1922* (Oxford, England: Oxford University press, 2016), p. 345.

“monopolistic competition” in static equilibrium, was inspired by the Taussig-Pigou controversy over railway rates. Chamberlin’s youthful conclusion was that:

“[The railroad] cannot secure an increased share in the more profitable market by offering a lower price, for his competitors will follow at once, and relative shares will be the same as before. He, therefore, sets such prices in each market as will make his total return a maximum, and, in doing so, he will take account of the strength of the demand in each case, charging “what the traffic will bear.” If the total returns to each seller are large, there will be more sellers, rather than a readjustment of their price policies.”⁵

This conclusion, authored prior to Sraffa’s famous 1926 analysis but resembling it, can be seen as embodying the elements which are to become the equilibrium approach to imperfect market structures. As will be seen below, in Chamberlin’s final equilibrium analysis he assumes away those very firms which gives rise to the extraordinary distribution in corporate wealth creation found by Bessembinder.⁶ The general thrust of excluding these extreme wealth creators is typical of the marginalist literature. For instance, Marshall dismisses firms which are able to obtain increasing returns to scale over a long period of time because these are “very few” firms. Of course, it is these very few firm’s which raise the most interesting—and perhaps most important—questions for the theory of competition and material economic progress. These firms, after all, by dominating their respective market sectors have a huge influence on pricing and the direction of industry.

It is thought that to produce a “general” theory, it must explain the median firm but, in doing this, it risks missing what is also important, namely, that the median increment of corporate wealth is created in an unusually rare firm. A median publicly traded firm, according to Bessembinder’s analysis, provides less return to its equity investors than do monthly government treasuries. Or, in other words, an investor’s capital will increase faster by investing in monthly government bills than in any randomly chosen public corporate firm. This historical fact is, as we will see shortly, at odds with the old generalizations of academic finance. A “general theory” of competitive behavior cannot dismiss outliers when these do not represent the median firm

⁵ Edward Chamberlin, *The Theory of Monopolistic Competition* (Cambridge: Harvard University Press, 1933), p. 295.

⁶ Hendrik Bessembinder, “Do Stocks Outperform Treasury Bills?,” *SSRN Electronic Journal*, 2017, <https://doi.org/10.2139/ssrn.2900447>.

because these same outliers represent the median increment of corporate wealth creation. The marginal increment of corporate wealth creation, or what can be thought of as the “creation of capital values,” does not have its source in a “marginal” or “representative” or “median” firm. These outlier firms, through their extraordinary influence, are important vectors for determining other average relationships throughout the economy. Furthermore, public corporate equities make up a significant portion of total U.S. household and nonprofit financial assets, with direct ownership of equities accounting for 20.4% of household and nonprofit financial assets in the United States, with significant indirect ownership through mutual funds (10% of U.S. household and nonprofit financial assets) and pension funds (29.3% of U.S. household and nonprofit financial assets).⁷

The top firm in our extension of Bessembinder accounts for some 2.6% of all U.S. corporate wealth creation in the 91 year period 1926 through 2017. This firm, Apple Inc., has had a significant social and economic impact. In the historical record, however, there have been other firms of this nature and there exist a number of firms of this type—it is not a single instance but a persistent group of important instances in the history of US capitalism. The future will likely bring about new super wealth creators, which will reflect their influence on the economic relationships of their time. The challenge for economic theory is that these examples are excluded from static analysis, as in Chamberlin.

Any theoretical explanation which stops where Chamberlin stops leaves open important questions. For instance, if a few firms do not respond to competition as might be expected in the static approach, what ultimately regulates these firms? Why do they grow, dominate and die? Take the case of General Motors, founded in 1908. By the end of 1970, General Motors was the greatest wealth creator in the United States—perhaps the world—since the beginning of the record in 1926. Its life, however, ended in bankruptcy and wealth destruction for investors in

⁷ Board of Governors of The Federal Reserve System. *Z1 Financial Accounts of the United States* (September 21, 2020), distributed by the Board of Governors of The Federal Reserve System. <https://www.federalreserve.gov/releases/z1/20200921/z1.pdf>. See Table B.101, p. 138. The remainder of U.S. household financial assets are in currency, deposits, money market funds, debt securities, life insurance, and equity in noncorporate businesses, among other items.

2009. By excluding the extreme firms from static analysis, it also excludes how competition works on these firms over time and glosses over their pivotal role in shaping industries.

In what follows, we will first discuss the findings of Bessembinder in more detail to illustrate the nature of the motivating historical observations. We extend his work to look at the distribution in corporate wealth creation in rolling ten year periods to examine whether the skew in corporate wealth has changed over time. We will see that in every ten year period there is a small group of firm's which dominate corporate wealth creation in that period or, in other words, there is a persistent tendency for wealth creation to be concentrated in a small number of super firms. We will then bring these features of history into our review of the economic literature on competition.

2. Bessembinder and The Skew In Corporate Wealth Creation

In the theory of capital values put forward by Irving Fisher in 1907, the value of capital is its prospective income stream, discounted and adjusted for the shape of the income flow and the risks to that stream of income.⁸ The capital values measured in Bessembinder are reflective of changes in equity prices, which reflect the future as understood by investors in every month since January 1926. It is our assumption, with Fischer Black, that security prices are efficient in that they are within a “factor of 2 of value 90% of the time.”⁹ Given that, we assume that security prices can serve as a guide to capital values as created by the competitive process over long periods of time. We look to corporate wealth creation, instead of accounting profits, since the profit to the capitalist and entrepreneur (who is typically also a “capitalist” in the sense of owning part of the firm’s capital) is in part from the appreciation of their capital, which can come from the mere expectations of profits, not necessarily from actual profits themselves. To illustrate this point, the 5th greatest corporate wealth creator over the 91 year period is Amazon, a firm which purposefully avoided profitability to avoid taxation. By doing so, it was able to retain more capital for reinvestment. Such phenomenon can never be captured by looking at returns from the perspective of accounting profits and can only be seen by looking at capital appreciation in the capital markets. The notion that capital appreciation needs to be counted as “profits” was noted early in the literature by Veblen and Dobb.

⁸ Irving Fisher, *The Rate of Interest: Its Nature, Determination and Relation to Economic Phenomena* (Mansfield Center, CT: Martino Pub., 2009).

⁹ Fischer Black, “Noise,” *The Journal of Finance* 41, no. 3 (1986): pp. 528-543, <https://doi.org/10.1111/j.1540-6261.1986.tb04513.x>, p. 533.

Bessembinder is coming from the finance tradition and is investigating the distribution of financial returns over time, scaled according to the number of shares outstanding. Put another way, he is investigating the relative increase in aggregate equity financial capital per firm overtime. His paper's period of investigation begins in 1926 and runs through the end of 2016. Our own extension repeats this result through 2017 and breaks down the analysis into rolling ten year periods.

The financial profession has long been interested in the differences in returns between stocks and bonds. An early 1924 analysis which Keynes popularized argued that stocks as a class have greater returns than bonds due to reinvested profits, resulting in compound interest effects.¹⁰ The now widespread notion of equities providing greater returns than bonds was crystallized in a series of papers out of Chicago's Center for Research into Securities Prices ("CRSP") in the 1960s. By the 1980s, it was canon and finance academics began to refer to it as the "equity premium puzzle." To these finance academics, it was not clear why stocks should perform so much better than bonds as a class and the study Keynes had reviewed in the 1920s was long forgotten. The source of this confusion is Modigliani and Miller's 1958 "capital structure irrelevance" theory which says that, ignoring bankruptcy, taxes, and growth, equity and debt instruments should have the same returns or, put another way, should require the same discount rate to equate their specific cash flows to present value. Thus, the capital structure of firms should be "irrelevant" to total enterprise value, inclusive of equity and debt capital.¹¹

Bessembinder is writing at the end of this long tradition in finance. The skew in stock returns is known and is seen as adding to the arguments for portfolio diversification. Still, it is widely considered to be relatively unimportant and, in extreme cases, anomalous. Bessembinder breaks new ground by investigating this skew and combining it with the aggregate amount of capital which exists in any period. From this analysis, he shows that there is a huge skew in

¹⁰ Edgar Lawrence Smith, *Common Stocks as Long Term Investments* (New York, NY: Macmillan, 1935). Reinvestment is considered the primary effect but it is one of a number of effects the author lists, including management bias in favor of equity investors and against bond holders.

¹¹ Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," *The American Economic Review* 48, no. 3 (1958): pp. 261-297, <http://www.jstor.org/stable/1809766>.

corporate wealth creation over the 90 year period of 1926 through 2016. Over the life of any publicly traded stock, only 42.1% of them have lifetime returns above those of risk free monthly government treasury bills.¹² This challenges the canon of the “equity premium” and suggests that any positive premium which exists for the class is simply due to the fact that the mean of the skewed distribution is higher than the median.

It is no longer that equities as a class outperform bonds but rather a very small portion of the distribution outperform bonds in an extraordinary fashion. In the history of American capitalism, the examples of this are numerous. The historical record shows a US cigarette firm having compounded returns of 17.6% per annum for 91 years, a figure far above the bond yields for nearly a century.¹³ Amazon, which has shown little to no profits over the period, has returned 38% per annum over 20 years. Bessembinder investigates whether these effects are due to financial leverage and finds that it plays no role.¹⁴

Bessembinder’s analysis is over a 90 year period and taken in aggregate finds that 4% of securities make up all the positive wealth over monthly government treasury bills. The bottom 96% of firms produce collectively zero net corporate wealth over monthly government treasury bills. To investigate if the skew in wealth creation persists across smaller periods, we extended Bessembinder’s analysis to look at rolling ten year periods beginning with the 10 year period 1926 to 1936 and continued every year through the end of 2017. Through our extension of Bessembinder, we have found a relatively stationary distribution of wealth creation over time, exclusive of periods of financial stress which flattens and reverses the skew.

¹² Hendrik Bessembinder, “Do Stocks Outperform Treasury Bills?,” *SSRN Electronic Journal*, 2017, <https://doi.org/10.2139/ssm.2900447>, p. 1.

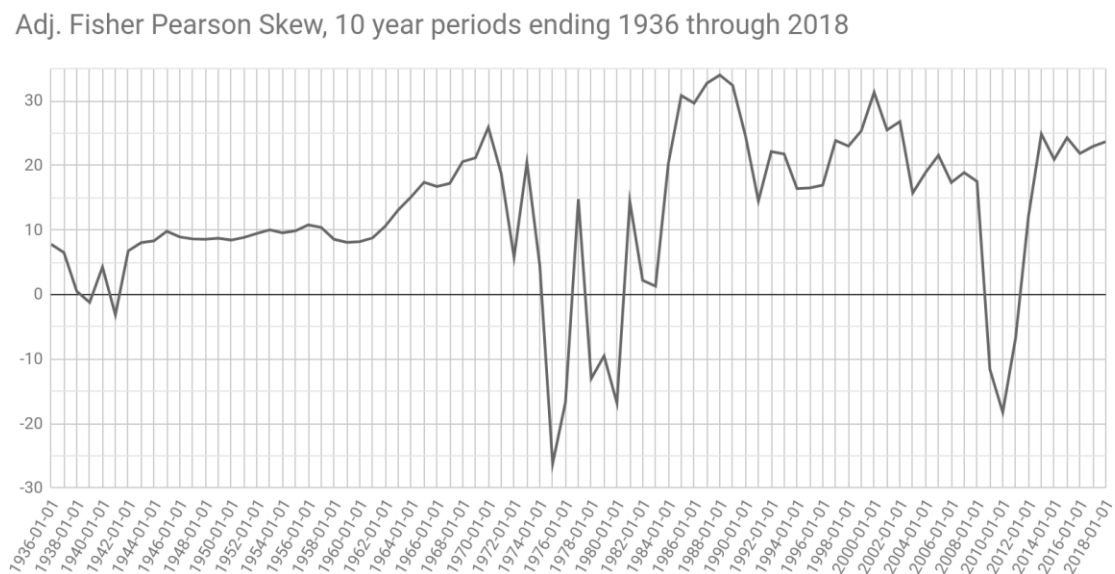
¹³ Bessembinder measures “corporate wealth creation” by looking at monthly price returns in the stocks of US public corporations and comparing those returns with a “risk free” security, in this case the monthly US treasury bill. Dividends in any month would count towards excess returns, with taxes being excluded from the analysis. Altria’s extraordinary return is in part due to a period of paying large dividends throughout the period. Whatever excess return exists would then be scaled to the number of shares the firm had outstanding. These excess returns generated by corporate equity securities above the monthly treasury bill, in the period between 1926 and 2017, would then be brought forward to the present using forward discounting at the risk-free rate and summed. *Ibid.*, p. 17 - 18.

¹⁴ *Ibid.*, p. 13.

2.1 Results of Skew Overtime

In Figure 1, we show the adjusted Fisher Pearson skew for corporate wealth creation in each 10 year distribution. This indicates that in most periods there is a positive skew in the distribution of corporate wealth creation. In other words, in most periods a small number of firms account for a disproportionate share of corporate wealth creation. Dates indicate the end date of each 10 year period:

Figure 1



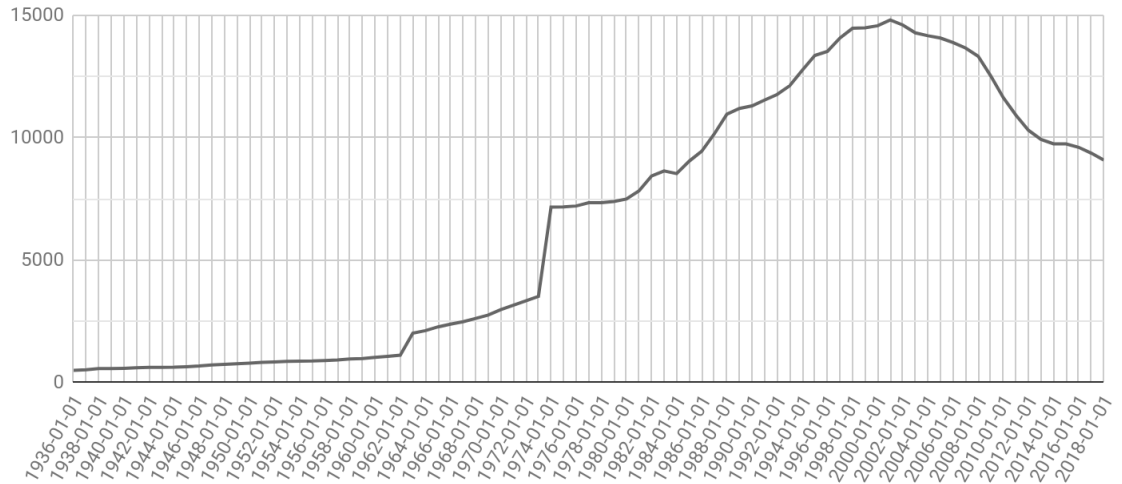
The periods of negative skew, such as the period ending in January 2010, reflect features unique to this period, notably the fall in asset prices due to the financial crisis of 2008. Similar financial effects occur in the periods ending in the middle of the 1970s (the dramatic increase in input prices, notable oil, resulting in recession) and early 1980s (the uniquely high interest rates which resulted in lower stock prices). In periods without these peculiar effects, it can be seen that, as a stylized fact, in most ten year periods there is a strong positive skew in the distribution of corporate wealth creation.

Before looking at the significant concentration of corporate wealth creation in the top few firms, it is worthwhile contextualizing this dataset. The data from the CRSP is the standard data

set used by financial academics for the study of equity prices. Below is number of observations, public securities in the database, in any given 10 year period changes overtime:

Figure 2

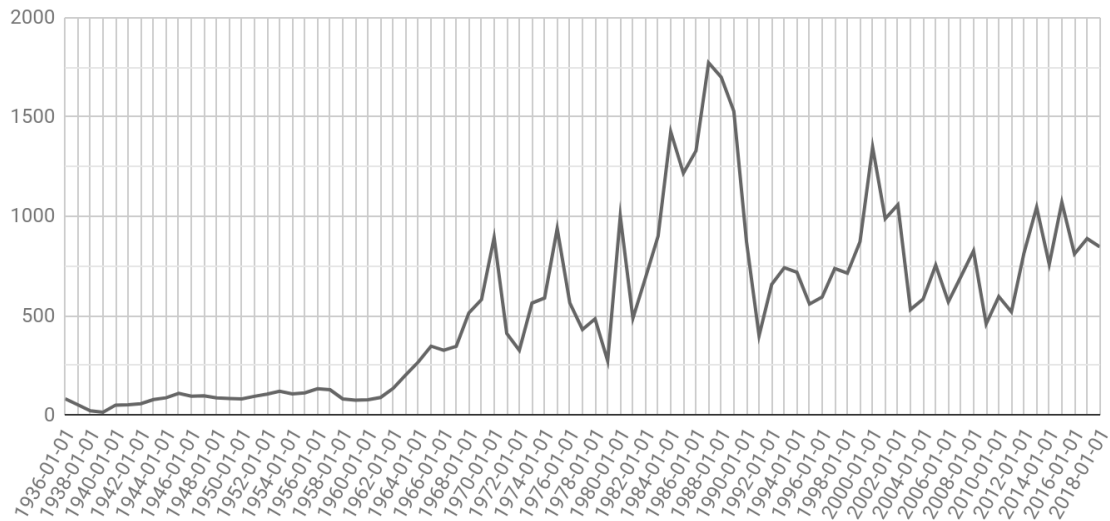
Number of companies in each period, 10 year periods ending 1936 - 2018



The number of securities in the sample before the mid-1960s suggests that there may be some survivorship bias within the CRSP dataset. This conclusion is also suggested by the kurtosis of the dataset, a measure which reflects extreme values in the data set—outliers—or the heavy tailedness of the distribution. This measure is relevant because the extreme leptokurtic nature of the data set suggests the extraordinary degree of outliers within the data set, notably, the super firms. As seen below, the distribution of wealth creation in any given ten year period is extremely leptokurtic:

Figure 3

Kurtosis of distribution each period, 10 year periods ending 1936 - 2018



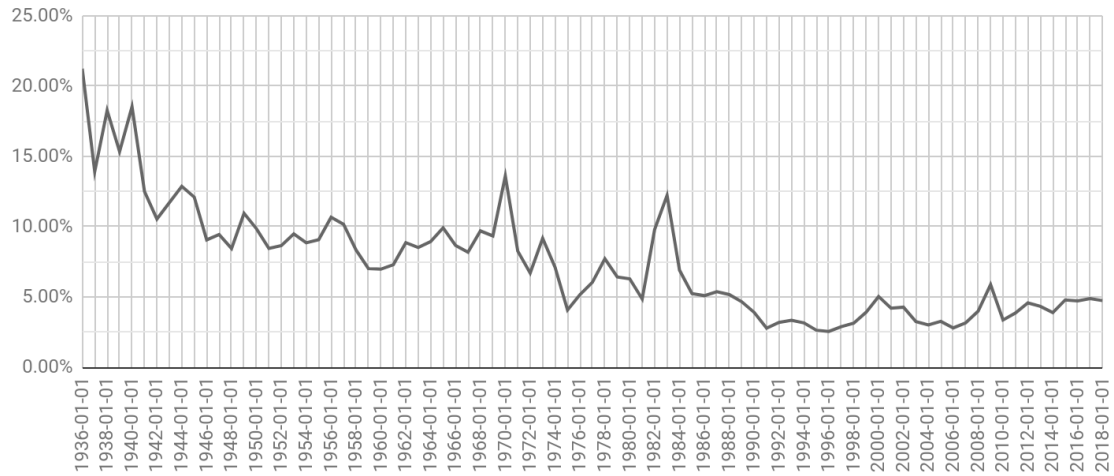
The above data indicates that there are extreme outliers, with kurtosis values over 3 being considered leptokurtic. These features of the data set are important to keep in mind as we look at the level of concentration of the top firm, the top five firms and the top twenty five firms. These examples illustrate the importance of super firms in any given ten year period.

2.2 Concentration of Wealth Creation in Top Firms

Consider the percentage of gross wealth creation contributed by the top corporate wealth creator in any given period:

Figure 4

Percent of gross public corporate wealth creation from largest wealth creator, 10 year periods ending 1936 - 2018



Clearly, the most important firm in terms of wealth creation in any given period is a significant aspect to understanding the competitive results of any given 10 year period. The firm which produced 21% of all gross corporate wealth between 1926 through 1936 is General Motors, a measure which is likely exaggerated by the effects of the great depression and survivorship bias in the early part of the data set. In the most recent period, 4.75% of all U.S. corporate wealth creation between 2008 and 2018 was Apple. In Appendix 1, you can find the list of the top corporate wealth creators in any given period.

The skew in the distribution can be seen when we look at the top five and top twenty-five wealth creators as a percent of gross wealth creation:

Figure 5

Percent of gross wealth creation, top five firms each period, 10 year periods ending 1936 - 2018



In the last 35 years, one can suggest as a stylized fact that the top five wealth creating firms create between 15% and 25% of all gross public corporate wealth creation in any given 10 year period. A similar feature of the data set can be see in the top twenty five wealth creating firms:

Figure 6

Percent of gross public corporate wealth creation, top 25 firms in period, 10 year periods ending 1936 - 2018



A suggested stylized fact here is that in the last 40 years, the top 25 firms account for more than 25% and less than 40% of the corporate wealth creation in any given 10 year period.

In addition to the above distribution overtime, there remains other features of the historic data set which are necessary to keep in mind in the forthcoming discussion. Looking at the top 15 firms across the whole period between 1926 through 2017, we see that a number of them produce very high annualized returns for very long periods of time:

Table 1

Firm	Start Date	End Date	Annualized Returns	Total Wealth Creation (billions)	Years in data set
APPLE INC	1980-12-31	2017-12-29	17.04%	\$1,036	37.0
EXXON MOBIL CORP	1925-12-31	2017-12-29	11.66%	\$1,011	92.0
MICROSOFT CORP	1986-03-31	2017-12-29	25.49%	\$825	31.8
ALPHABET INC	2014-04-30	2017-12-29	20.68%	\$537	3.7
AMAZON COM INC	1997-05-30	2017-12-29	38.20%	\$536	20.6
IBM	1925-12-31	2017-12-29	13.52%	\$525	92.0
JOHNSON & JOHNSON	1944-09-30	2017-12-29	15.64%	\$504	73.3
GENERAL ELECTRIC CO	1925-12-31	2017-12-29	9.91%	\$503	92.0
ALTRIA GROUP INC	1925-12-31	2017-12-29	17.60%	\$489	92.0
WAL MART STORES INC	1972-11-30	2017-12-29	19.00%	\$466	45.1
BERKSHIRE HATHAWAY	1976-10-29	2017-12-29	22.59%	\$443	41.2
GENERAL MOTORS CORP	1925-12-31	2009-06-30	5.63%	\$439	83.5
CHEVRON CORP NEW	1925-12-31	2017-12-29	10.95%	\$419	92.0
PROCTER & GAMBLE CO	1929-08-30	2017-12-29	10.47%	\$386	88.3
COCA COLA CO	1925-12-31	2017-12-29	13.05%	\$356	92.0

The top two are very large firms with high returns, necessarily resulting in being represented as significant wealth creators for their owners. There are, however, also smaller firms

with long periods of superior wealth creation, like the cigarette producer Altria Group with returns of 17.6% per annum compounded for 92 years.

A theory of competition must encounter these features of the historic record, namely, the numerous instances of high annualized returns on capital, the long lengths of time these returns persist, the resulting significant skew in wealth creation, as well as the fact that firms which once rank in the top tier of wealth creators later disappear from upper ranks, like Kodak, a firm cited by Chamberlin in 1933.

It is not possible to explain the above results in their specificity except by an exacting analysis of historical records. These results, however, represent the type of stylized facts which economic theory, specifically the theory of competition, must be able to encounter and explain theoretically. The theory of competition must be able to deal with those few firms which generate corporate wealth far in excess of other firms. As Bessembinder has written, these results raise the question about whether existing theory can account for the degree of concentration in terms of the creation of corporate wealth.¹⁵ These exceptional firms, persistent across the entire data set, determine average returns and other average relationships, like long term return expectations on investment, industry pricing, average quality and expected service levels. In what follows, we will look at whether the theories of competition from the literature can explain these historical results. We will first look at static theories of competition and then turn to dynamic theories of competition.

¹⁵ Bessembinder, "Do Global Stocks Outperform US Treasury Bills?" p. 5.

3. Static Models of Competition

To understand the rationale for clearly separating dynamic from static competitive analysis, and moreover the reasons why Schumpeter is forced to reject static analysis, it is important to review the development of realistic static models of competition. A literature review must begin with Marshall and his attempt to include increasing returns to scale from manufacturing into a static model of competition. This is generally seen as a failure but how it fails and how economic theorists attempt to rectify the mistakes inform the entire debate around realistic models of competition in static theory. The static approach attempts to include realistic market structures, such as oligopoly, as well as including realistic cost functions, like returns to scale effects or increasing returns. The static models of competition do not, however, expressly deal with fundamental uncertainty in the theory of competition, something that was formally introduced by Frank Knight in 1921. In terms of the static approach to competition theory, we will look at Marshall, Straffa and Chamberlin as illustrations of the problems which arise in static economic theory. We will then turn to the dynamic theories of Young, Knight, Dobb and Schumpeter.

3.1 Marshall

Marshall provides an analysis of competition with realistic increasing returns to scale in Chapter XII of *Principles of Economics*. It is this analysis which, due to its attempt at realism, helps inspire later critiques which ultimately discredit Marshall's economics. These few pages of Marshall, while reflecting only a sliver of Marshall's work, usefully foreshadow a number of debates regarding the nature of oligopolic markets, static equilibrium and increasing returns.

Marshall separates his analysis into the short and long period, with the short period being one of fixed factors and decreasing returns, implying a fixed number of firms in the short run. In

the long period, it is assumed new firms are formed and increasing returns have their effect. With manufactured products, the short period price is set in a realistic dealer market where price movements are determined by inventories on hand and the expectations of prices in the “next market.” In the long period for manufactured products, however, the average cost will be decreasing. Firms will, therefore, experience increasing returns and, in this context, supply can be theoretically infinite given the construction of supply and demand curves.¹⁶ This is Cournot’s oft repeated conclusion that increasing returns in manufacturing results in monopolies. In reality, we do not see the creation of absolute monopolies in this fashion. Therefore, to fit reality into the static model, output must be stopped either by having falling revenue with increasing output or by increasing costs with increasing output (decreasing returns) to arrive at an equilibrium.

Marshall solves this dilemma in two ways. First, by suggesting that a continuous advance in supply at decreasing costs will eventually be stopped by a decay in a firm’s managerial ability and that, at such times, the increasing returns which “enabled it to rise” will cause it to be “destroyed.” Secondly, in the context of an industry, firm’s are confined to their “particular market” and therefore “any hasty increase in its production is likely to lower the demand price in that market out of all proportion to the increased economies that it will gain.”¹⁷

In a footnote, Marshall writes that an individual producer faces not the general demand curve for an industry but its own “particular demand curve” for his own “special market.” This demand curve will be extremely steep or inelastic which limits the potential application of increasing returns to scale for the firm. Furthermore, Marshall argues that the number of firms to which increasing returns are achieved for long periods of time are “very few” and, furthermore, that there needs to be a sharp contrast between the economies of scale for an individual firm and for that of an industry. The important point for our discussion is that, to Marshall, whatever monopoly elements may arise are a short run and special phenomenon.

¹⁶ *Principles*, p. 378.

¹⁷ *Ibid.*, p. 379.

Clearly, even if monopoly elements are a special phenomenon and that long periods of increasing return dynamics are few, Bessembinder's stylized results above show that this cannot be said to be a reason to ignore the few firms which showcase extraordinary performance—those few firms, after all, account for an important percentage of corporate wealth creation. Marshall notes that his analysis requires that general economies from new inventions be excluded from the analysis, while also assuming a balance of “progress and decay” between firms.¹⁸ This analysis, he writes, cannot be pushed too far because, as it:

“...verges on the high theme of economic progress... it is especially needful to remember that economic problems are imperfectly presented when they are treated as problems of static equilibrium, and not of organic growth... the statistical theory of equilibrium is only an introduction to economic studies.”¹⁹

Sraffa, in his famous critique of Marshall, ignores this admonition and picks up on the notion of a “special market” for each firm. He shows Marshall's conception of equilibrium with increasing returns is inconsistent, all while suggesting a direction of analysis where monopolistic competition is assumed to be, not a short run and special case, but a general element of the competitive environment.

3.2 Sraffa

Sraffa, in addition to succeeding in his goal that Marshall should be abandoned, was successful in pulling together the problems of increasing returns, such as those raised above, and presenting a conception of imperfect or monopolistically competitive markets which was to become very influential. As Andrews has written, at the time of Sraffa's critique, it was possible to either drop the industrial analysis of Marshall or to drop the concept of static equilibrium itself — Sraffa chooses to drop the former.²⁰

¹⁸ Ibid., p. 381.

¹⁹ Ibid., p. 383.

²⁰ Philip W. S. Andrews, Frederic S. Lee, and Peter E. Earl, *The Economics of Competitive Enterprise: Selected Essays of P.W.S. Andrews* (Aldershot: Edward Elgar, 1993), p. 124.

Sraffa's gains prominence, including an invitation by Keynes to teach in the UK, through showing how Marshall's partial equilibrium framework breaks down when it is extended to simple conceptions of economies of scale.²¹ Sraffa's conclusion is that to capture those effects one must turn to the theory of monopoly as the general theory of competitive behavior. Two empirical features need to be captured by this new theory of competition Sraffa writes. First, producers can, in fact, affect the price and are not mere price takers whose output has a negligible effect on the price. Secondly, producers face decreasing costs or constant costs—not increasing costs.²² The problem is complicated by the fact that most markets are not ones of "absolute monopoly." In perfect competition, elasticity of demand is infinite, in absolute monopoly it is a unity, but in the intermediate state, a "monopolist" has some control over price but must forgo some purchasers when it increases its price. These purchasers shift their budgets to competing producers or other goods.

When Sraffa refers to the model in Marshall's footnote referred to above, the demand curve for any particular firm is a demand curve for its "special market," Sraffa extends the analysis to say that:

"...the possible buyers are entered in descending order according to the price which each of them is prepared to pay, not rather than go entirely without, but rather than not buy it from that particular producer instead of elsewhere...that is to say, that two elements enter into the composition of such demand prices—the price at which the goods can be purchased from those other producers who, in the order of a purchaser's preference, immediately follow the producer under consideration, and the monetary measure of the value (a quantity which may be positive or negative) which the purchaser puts on his preference for the products of the firm in question."²³

Here two different types of marginal customers regulate prices—those who are marginal to the particular firm's products, who enforce the limit by which a particular firm may increase the price of its product in its special market, and those who are at the margin of the general market and

²¹ Piero Sraffa, "The Laws of Returns under Competitive Conditions," *The Economic Journal* 36, no. 144 (1926): p. 535, <https://doi.org/10.2307/2959866>, p. 541.

²² Chamberlin (1961, p. 310) mischaracterizes Sraffa as arguing that most firms compete in conditions of constant costs. This is one of a number of interesting mischaracterizations Chamberlin makes when it comes to Sraffa.

²³ Sraffa, "Law of Returns," p. 547.

who fix a limit on the general increase in price.²⁴ Sraffa notes that the incentives to increase profits from price increases are more powerful than the incentives to increase profits from price cuts, since the former imply greater profits for the firm and benefit competitors while the latter does not benefit competitors and calls forth retaliation.

Sraffa disagrees with the popular conception of an indeterminate equilibrium in the case of multiple monopolies and cites Edgeworth's comment that "the extent of indeterminateness' diminishes with the diminution of the degree of correlation between the articles."²⁵ Sraffa notes that the degrees of difference in the special markets between the individual firms will indicate the determinateness of the equilibrium. Any individual case will be determined on the grounds of differentiation unique to that industry. These results "require only a very slight degree of preference for a particular firm in each of the groups of customers."²⁶

This slight degree of preference, as Chamberlin will argue apparently without inspiration from Sraffa, can be accomplished through product differentiation. This represents a "tendency, which prevails even in actual cases where the conditions of the various undertakings differ among each other, whereby the cumulative action of slight obstacles to competition produces on prices effects which approximate to those of monopoly."²⁷

From these observations, a line is usually drawn to Chamberlin and Robinson, both of whom certainly appear to draw from Sraffa's analysis. Schumpeter writes that Sraffa's article led to the creation of the "English branch of monopolistic competition."²⁸ This conclusion is admitted by Joan Robinson and rejected by Chamberlin who, writing after Schumpeter's death in 1961, argues that his work was unrelated to the representative firm and cost critiques of Marshall, of which Sraffa is a part.²⁹ Chamberlin clarifies the problems involved in moving from a general

²⁴ Ibid.

²⁵ Ibid., p. 548.

²⁶ Ibid., p. 549.

²⁷ Ibid.

²⁸ Schumpeter, *History of Economic Analysis*, p. 1012.

²⁹ Edward H. Chamberlin, "The Origin and Early Development of Monopolistic Competition Theory," *The Quarterly Journal of Economics* 75, no. 4 (1961): p. 515, <https://doi.org/10.2307/1884318>.

market to a collection of separate markets by investigating trademarks and patents and writes that his analysis is inspired by Allyn Young's descriptions of trademarks and patents in *Outlines of Economics*. Chamberlin presents a novel analysis of trademarks and patents as representing the semi-permeable barriers between the separate markets in a static equilibrium model of monopolistic competition.

3.3 Chamberlin

In 1951, Chamberlin writes that the theoretical conclusion of his work is supposed to be general, in the same sense as Sraffa's suggestion for perfect competition to be replaced with monopolistic competition: "Where everything is perfectly divisible, economies of scale remain and, in a world of human beings having diversified tastes, the free play of economic forces would necessarily establish monopolistic competition."³⁰

Chamberlin sees his work as establishing a general theory of monopolistic competition—which may explain why he defended his approach throughout his life.³¹ Chamberlin builds on the insight that differentiation allows for price adjustments above purely competitive prices and that, in a market with only a few sellers, the sellers would recognize their mutual dependence. This mutual dependence means that a decrease in price to obtain greater market share would result in competition responding by reducing prices, leaving market share the same as before but with less profits. The recognition of this mutual dependence would tend to prevent price based competition, as that is mutually unprofitable, and result in a tendency to charge what the traffic will bear. This result, he writes, is not a deviation from a welfare ideal.

³⁰ Edward H. Chamberlin, "Monopolistic Competition Revisited," *Economica* 18, no. 72 (1951): p. 343, <https://doi.org/10.2307/2549607>, p. 345.

³¹ This can be compared to Joan Robinson's opinion. She sees ideological bias in Chamberlin's commitment to his theory, rather than an ambition to rewrite the foundations of economics. See Joan Violet Robinson, *The Economics of Imperfect Competition* (London, England: MacMillan and Co., Limited, 1969), p. v -xii.

Chamberlin's is said to have coined "product differentiation" and his discussion of trademarks is novel and, in its contrarian conclusions, breaks important new ground by arguing that trademarks are more monopolistic than patents. He defines differentiation as follows:

"Differentiation may be based upon certain characteristics of the product itself, such as exclusive patented features; trade-marks; trade names; peculiarities of the package or container, if any; or singularity in quality, design, color, or style. It may also exist with respect to the conditions surrounding its sale."³²

These represent the principal variables which competitors may adjust in terms of their "product."

Adjusting the "conditions surrounding sale" implies that the variables available to the seller or producer includes the specific process of distribution. Including conditions surrounding sale

allows Chamberlin to note that all products are at least slightly differentiated and thus all

competition should be viewed as monopolistic. There is no such thing as an absolute monopoly

"as long as there are substitute [products] to any degree imperfect, he still has a monopoly of his

own product and control over its price within the limits imposed upon any monopolist—those of

demand."³³ Real world prices represent an individual position between monopoly and competition

which is "determined with reference to the relative strength of the two forces"—a "purely

competitive price is not a normal price."³⁴ The argument is that monopoly, as far as Chamberlin

understands it, does not imply higher prices than similar products, "nor profits higher than the

ordinary rate."³⁵

Chamberlin's discussion of patents and trademarks sets the stage for his "special market"

concept. Given that trademarks and advertising are important tools of corporate strategy, a

concept important in our discussion of Schumpeter, we will highlight Chamberlin's contributions

here. Chamberlin argues that patents, while clearly monopolistic for specific components of

articles, are usually only effective at shutting out competition for near substitutes when all the

important patents are acquired by a single firm, with only less perfect substitutes providing

³² Edward Chamberlin, *The Theory of Monopolistic Competition* (Cambridge: Harvard University Press, 1933), p. 56.

³³ *Ibid.*, p. 65 - 67.

³⁴ *Ibid.*, p. 64.

³⁵ *Ibid.*, p. 68.

competition. In addition to this limitation in the monopoly elements of patents, they can also be considered to generate further competitive forces through the incentive to obtain the patent itself.

Chamberlin goes against the general view that trademarks are less monopolistic than patents and cites Allyn Young by saying a firm:

“...may be able to lift himself a little above the “dead level” of competition [through trademarks]...he is...able to obtain what might be called a quasi-monopoly. But because the control the price of his product is in general much more limited than a true monopolist, and because competition limits and conditions his activities in other ways, his business is more properly called competitive than monopolistic.”³⁶

Chamberlin, at this stage in his argument, cites five specific brands whose trade marks are clearly so valuable 1933 as to question the general assumption that patents are more powerful than trademarks. It is interesting to observe that three of the five brands he cites in 1933, Coca-cola, Kodak, and Ivory (introduced by Proctor and Gamble in 1879), were owned by 3 firms in the top 15 most wealth generating firms between 1926 and 1970. Two of the five remain in the top 15 through 2017. The firm to drop out of the top 15 was Kodak, established in 1888 and holding a huge market position in film and cameras until the 1980s when it was unable to transition its business with the advent of digital photography and foreign competition. The firm is now considered a classic example of Schumpeterian creative destruction.

The traditional theory of monopolistic pricing focuses on a single firm’s equilibrium. A theory of monopolistic competition must refer to a “group equilibrium” of different monopolies.³⁷ Chamberlin’s goal is to “give weight” to the “degree of isolation that exists by focusing attention on the market of the individual seller.”³⁸

Chamberlin presents two models, a large group monopolistic competition model and a small group, or oligopoly, model. In his formal models, the degree of separation, which results in sales levels, are limited to three variables: price, product and advertising expenses. Allowing for product as a qualitative variable is novel—although Schumpeter will argue this is not enough—as

³⁶ Richard T. Ely and Young A. Allyn, *Outlines of Economics*, 3rd ed. (New York, NY: The Macmillan Company, 1919), p. 196.

³⁷ Chamberlin, *Monopolistic Competition*, p. 69.

³⁸ *Ibid.*, p. 70.

is his inclusion of advertising outlays, which also introduces numerous theoretical difficulties. The product variable encompasses: “technical changes, a new design, or better materials; it may mean a new package or container; it may mean more prompt or courteous services, a different way of doing business, or perhaps a new location.”³⁹ Chamberlin is aware of the limitations of this approach and notes that qualitative variations of a product cannot be captured on a single diagram—one might realistically question if it can be captured on diagrams at all.⁴⁰

The ability to shift demand by advertising exists because of imperfect knowledge of buyers and the possibility of altering wants by advertising. It also ends the independence of the supply curve on the demand curve, which Chamberlin recognizes. To arrive at a group equilibrium, prices and products must be varied. Prices may be adjusted for product, product may be adjusted for prices, although prices are assumed to be “often a relatively unimportant phase” in the competitive process. “Price competition is evaded by turning the buyer’s attention towards a trade-mark, or by competing on the basis of quality or service” or by advertising.⁴¹ The complete picture of competition would see every element of product subject to adjustment—and this includes, to emphasize, location, price, quality, service, etc. There can be a heterogeneity of prices in the market because of the nature of product variations—not to mention differences in cost curves and elasticities of demand.⁴² Variations here are assumed to be temporary and are viewed as constantly being eliminated. Chamberlin’s focus is those relationships which “persist over a long period of time,” although the results of any market are unique—“imperfections of competition [are] not uniform.”⁴³ This is to say, competition is always leveling both profits and product differentiation.

³⁹ *Ibid.*, p. 71.

⁴⁰ *Ibid.*, p. 78-79.

⁴¹ Chamberlin, *Monopolistic Competition*, p. 73.

⁴² *Ibid.*, p. 81.

⁴³ *Ibid.*, p. 82.

If new competition “invades” an existing market and market share cannot be “wrested from them with equal facility,” or if some markets are “virtually unaffected by an invasion of the general field,” he writes, “[then] their monopoly profits are beyond the reach of competition.”⁴⁴ He concludes that these variations “give no real difficulty in the end.”

Chamberlin’s large group model is designed to replace perfect competition models. His less well developed small group model is his oligopoly model. To obtain his results in both cases, Chamberlin waves away increasing returns by assuming all firms have the same cost structures. He assumes that profits are set at the level which is “just adequate to maintain the amount” of competition, to avoid introducing new competition since there is free entry.⁴⁵ This latter point becomes an important matter of debate but our intention is not to critique Chamberlin. All of this, of course, implies that there are effective substitute products. For us, this is the crux of the matter.

If substitutes, however, are not effective, then profits may still be higher—and “this is the explanation of all monopoly profits, of whatever sort,” he writes.⁴⁶ In this domain appears to be the types of firms responsible for the extreme returns highlighted in Bessembinder. The items that, to Chamberlin, can prevent substitute competing products are: (1) strong customer preferences combined with patents, copyrights and trademarks, (2) “peculiarities” of the establishment which cannot be duplicated, (3) “reputation, skill and special ability.”⁴⁷ Chamberlin then says that “the competitive theory of rent explains differences in income in so far as they arise from such a source” but “further differences are accounted for only by the theory of monopoly.”⁴⁸ These elements result in “limitations on the effectiveness of substitutes to diminish profits within certain portions of the field.”⁴⁹

⁴⁴ Ibid.

⁴⁵ Ibid., p. 85.

⁴⁶ Chamberlin, *The Theory of Monopolistic Competition*, p. 111.

⁴⁷ Ibid., p. 112.

⁴⁸ Ibid.

⁴⁹ Ibid.

It would seem that Chamberlin's analysis is inapplicable to our problems since it appears to put the few extreme corporate wealth creators outside of his theory. He puts their analysis into the theory of competitive rents. Only his notion of product differentiation and his final comments about markets where perfect substitutes are prevented are useful in explaining the results of Bessembinder. By pointing to the theory of rents, however, an important question is raised: how are firms which experience competitive rents regulated in the long run? Ultimately, in a painstaking 1937 review of the marginalist theories of imperfect competition, John Hick's concludes that their applicability to practical analysis is limited.⁵⁰

⁵⁰ J. R. Hicks, "Annual Survey of Economic Theory: The Theory of Monopoly," *Econometrica* 3, no. 1 (1935): pp. 1-20, <https://doi.org/10.2307/1907343>, p. 19 - 20.

4. Dynamic Models of Competition

Straffa's comments on increasing returns were part of a broader discussion which was held throughout the 1920s, referred to today as the cost controversies. These debates stimulated Allyn Young to express his own views around increasing returns while examining the division of labor, progress and the extent of the market. Embedded within his views are the faint outlines of a theory of enterprise, industries and competition in the context of increasing returns. The viewpoint expressed is a realistic model of disequilibrium, entrepreneurs and expectations. We begin with Young because of his close association with Knight's thesis on uncertainty and because he is developing a dynamic model where progress is closely associated with increasing returns, a view like Schumpeter's writings of the same month in 1928. Both men are discussing increasing returns as the source of progress within a dynamic model, albeit with different points of emphasis.

Young and Schumpeter's view of progress and increasing returns represent the actual environment which Frank Knight is seeking to explain in his discussion of real world profits, imperfect competition and the epistemic problems facing economic actors, most notably, the problem of uninsurable and unforeseeable change or fundamental uncertainty. Uncertainty comes from rapid economic change, which, as Dobb argues more explicitly, comes from entrepreneurs creating new divisions of labor and thereby increasing returns. The problem of uncertainty, arising from increasing returns and change, becomes the most critical aspect of any dynamic competitive model.

Dobb's contribution in this essay is his theory of competitive rents, which Chamberlin may have in mind when he briefly refers to them. Dobb's discussion is relevant because it raises the question of how profit positions are maintained and he answers that they are maintained by slowing the response of competition through "advantages" cumulatively derived from supplying a

scarce resource. Despite notions of cumulation, Dobb's analysis is still set in an equilibrium world, with dynamic elements. Importantly, in Dobb's analysis, Knight and early Schumpeter are merely short run theories explaining profits before the increase in competition—these theories still need to deal with what one might call the middle and long period of competition.

Finally, we will turn to Schumpeter and show how his later work is an elaboration and reaction to the ideas so far presented with the addition of a concept of business strategy to manage the fundamental uncertainty which is the result of progressive and widespread increasing returns, allowing, as they do, for the creation of new entrepreneurs, new strategies and new markets.

We will argue that Schumpeter's theory of regulative strategy implies that firms act in an instrumentally rational way to manage the fundamental uncertainty of investment and that Schumpeter's theory of competition best explains the actual history of competition, market structures, and the long run positive skew of returns on financial capital as demonstrated in US capital markets. This is to say, Schumpeter's theory, understood in its proper intellectual context, represents the most flexible theory to explain the stylized facts which have been derived from Bessembinder and our extension of Bessembinder.

The regulative strategy which firms follow in the Schumpeterian competitive process is a means to continuously and progressively lower the fundamental uncertainty facing profits on investment. In the short run, profits emerge due to better anticipations and innovation. They are then maintained through strategy, as elaborated in Dobb and Schumpeter. Assuming profit positions are maintained the question is, then, of how is capital and profits regulated in the long run, after protections of profit positions have been built up? This question appears to be only answered clearly by Schumpeter, where he draws on his analysis of monopolistic competition, uncertainty and increasing returns. The regulating force in the long run of monopolistically competitive capitalism is "creative destruction." We will argue that creative destruction can only be understood as the theoretical complement of regulative strategies to manage uncertainty

driven by the increasing returns environment. Together they form a dynamic theory of competition which can fulfill the traditional role of competition in economic theory.

4.1 Allyn Young

Allyn Young's 1928 essay on economic progress and increasing returns represented a view he had been harboring since helping Frank Knight with his PhD thesis in the 1910s.⁵¹ Young does not believe that economic progress, and specifically the phenomenon of increasing returns, can be understood in the context of equilibrium.⁵² Internal economies of scale which a firm is able to achieve by increasing output, to take the most simple example, can be used to lower the price of their product, which lowers the cost of inputs for other firms, resulting in external economies for that firm and a continuous process of disequilibrium. Schumpeter voices similar opinions in his "The Instability of Capitalism" published in September 1928, the month of Young's speech.

Young's views can be seen as, in part, filling out the background conditions for Knight's views on uncertainty, as well as providing a technical compliment to Schumpeter's point of view on innovation. For Young, increasing returns through the division of labor are the source of general progress and a source of disequilibrium. Young's differences from Schumpeter's point of view are largely in terms of emphasis and semantics: Young focuses on market size and how it enables new roundabout methods of production, whereas Schumpeter focuses on entrepreneurship as leadership and the introduction of new things in the circular flow. Schumpeter categorizes most "increasing returns" under the heading of "innovation," writing that: "Innovation, unless it consists in producing, and forcing upon the public, a new commodity, means producing at [a] smaller cost per unit, breaking off the old "supply schedule" and starting on a new one."⁵³

⁵¹ Charles P. Blicht, *Allyn Young: The Peripatetic Economist*. (Houndmills, Basingstoke, Hampshire: Macmillan Press, 1996), p. 169.

⁵² Allyn A. Young, "Increasing Returns and Economic Progress," *The Economic Journal* 38, no. 152 (1928): p. 527, <https://doi.org/10.2307/2224097>, 527.

⁵³ Joseph A. Schumpeter, *The Instability of Capitalism* (London, UK: Macmillan, 1928), p. 378. Schumpeter also addresses the increasing returns debate here by noting that decreasing returns only exist in a static model due to the assumption of diminishing returns from drawing on a set of fixed factors. That is all. Increasing returns which can result in

For Young, not all of the economies which can be called “external” to one firm can be accounted for as internal to other firms, since some of these economies are driven from qualitative improvements in product and the division of labor. Efficiencies which are external to a firm are both quantitative, in the simple sense of the already mentioned internal economies of scale passed along from suppliers, as well as qualitative in the sense of the structure of the external economy itself; in other words, economies from new products and new methods of production or organization. This disequilibrium, he writes, is characteristic of the economy external to a firm.⁵⁴

The most important economies which result in increasing returns are “capitalistic” or “round about” economies.⁵⁵ The forces which would bring the economy to equilibrium are “continuously defeated” by economies of scale, as well as being defeated by “new or adventitious elements.”⁵⁶ Young writes:

“Every important advance in the organisation of production, regardless of whether it is based upon anything which, in a narrow or technical sense, would be called a new ‘invention,’ or involves a fresh application of the fruits of scientific progress to industry, alters the conditions of industrial activity and initiates responses elsewhere in the industrial structure which in turn have a further unsettling effect. Thus change becomes progressive and propagates itself in a cumulative way.”⁵⁷

Young notes that even if we suppose a frictionless, perfectly economical process not requiring trial and error, there will be a limiting pace with which progress can be made, partially limited by the capital accumulation necessary to advance methods and products, and partially limited because:

“...the demand for some products is inelastic, or, with an increasing supply, soon becomes so...In most fields, moreover, progress is not and cannot be continuous. The next important step forward is often initially costly, and cannot be taken until a certain quantum of prospective advantages have been accumulated.”⁵⁸

instability of a different order and are largely from innovation and indivisibilities. Decreasing and increasing returns simply are not symmetrical concepts. Schumpeter’s solution to the Marshallian cost controversies is to separate the increasing and decreasing returns debate to their respective spheres of dynamic and static analysis.

⁵⁴ Young, *Increasing Returns*, p. 528.

⁵⁵ *Ibid.*, p. 530-531.

⁵⁶ *Ibid.*, p. 531.

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*, p. 535

A certain “quantum of prospective advantages” being required for new investment will be echoed by Schumpeter and it is fair to view this as a theoretical concept which has its analytic function in a dynamic or development theory where investment faces fundamental uncertainty and requires inducements to overcome this uncertainty.⁵⁹

While noting that one shouldn't assign a single factor to the leading role in economic progress, Young asks: “is there any other factor which has a better claim to that role than the persistent search for markets? No other hypothesis so well unites economic history and economic theory.”⁶⁰

After the historic transition from commerce to industry in the industrial revolution, Young writes, commerce became an agent of industry and now the “finding of markets” is an important task of industry. This represents one of Young's important views, crucial to understanding the relationship between roundabout specialization, allowing for increasing returns, and market size. He had already taken this position in a chapter written in 1924 titled “The creator of wealth” where the title refers to trade - not invention, land or labor.⁶¹

Thus, the search for new markets to reach scale, combined with a certain quantum of advantages, is required for new capitalistic and roundabout means of production. Young writes of this theory of enterprise:

“The great change, I imagine, is in the new importance which the *potential market* has in the planning and management of large industries...Potential demand, then, in the planning of industrial undertakings, has to be balanced against potential economies, elasticity of demand against decreasing costs. The search for markets is not a matter of disposing of a “surplus product,” in the Marxian sense, but of finding an outlet for a potential product. Nor is it wholly a matter of multiplying profits by multiplying sales; it is partly a matter of augmenting profits by reducing costs...How far ‘selling expenses,’ for example, are to be counted [in] economic waste depends upon their effects upon the

⁵⁹ One can contrast this concept with Steindl where investment is induced when there appears to be a sufficient premium return over the estimates of risk. Risk in Steindl refers to the variance of return, which can only be calculated on repeated and similar business decisions. With “the next step forward” there is no means of classifying the variance of returns. Although he does not use the term, Young is referring to “innovations” - defined as novel elements in the circular flow - and these do not have a historical basis upon which to generalize about the variance of returns.

⁶⁰ Ibid., p. 536.

⁶¹ Perry G. Mehrling, *Money and Growth: Selected Papers of Allyn Abbott Young* (Routledge, 2014), 151.

aggregate product of industry, as distinguished from their effects upon the fortunes of particular undertakings.”⁶²

Clearly, here are the outlines of a theory of enterprise and its relationship to industry, together forming a partial picture of the competitive process. The scale of the end market determines what types of division of labor, or specialization and roundabout methods, can be employed. He writes:

“The degree in which [a firm] can secure economies by making its own operations more roundabout is limited. But certain roundabout methods are fairly sure to become feasible and economic when their advantages can be spread over the output of the whole industry. These potential economies, then, are segregated and achieved by the operations of a specialized undertakings which, taken together, constitute a new industry.”⁶³

Specialist firms can become suppliers or vendors to an existing industry by providing a service which is more efficient than that which could be provided by any individual firms in that industry internally—that is, only specialists can achieve certain economies of scale by providing their service to the industry as a whole, as only this scale of end market allows for these types of economies of scale.

The search for potential markets—with selling costs and advertising—is not just about shifting the demand curve, problematic in terms of any static analysis, but to achieve potential economies of scale in the context of specializing firms. Unlike in Chamberlin where advertising exists to alter preferences, and selling costs are relegated to costs in production from differentiation, the implication in Young is that advertising exists to expand and efficiently tap a potential market for a firm’s products. Young’s views correspond to the later views of Philip Andrews, as well as to academic business history.⁶⁴ This allows for a more capitalistic processes

⁶² Ibid., p. 536 - 537. This last line points to a common refrain heard from small firms in new markets where a large competitor begins moving into the market, beginning with a large advertising campaign. It is not uncommon to hear these small firms say that they believe their large competitor’s new marketing campaigns will rather expand the entire market for both their products and, thus, may make their own selling process more efficient, rather than take away share in a zero-sum manner.

⁶³ Ibid., p. 539.

⁶⁴ Philip Andrews views are expressed in a number of places, for instance, in his 1952 Netherlands lectures. See *The Economics of Competitive Enterprise: Selected Essays of P.W.S. Andrews*, p. 217. For references in academic business history, see *The History of Unilever: A Study In Economic Growth and Social Change*. There the economies from advertising are described as bringing the same concept of machine repetition to selling by reducing expensive frictions in the process of the sale. It is designed to lower the average unit cost of selling and distribution expenses, including those of the final distributor, since this will make the manufacturer’s goods more attractive to distribute. As well, in this business history, advertising expenses are not considered to be paid for by existing consumers but only through an increase in sales. For competitive reasons, if advertising expenses succeed in increasing sales, it effectively generates a reserve or

of production, allowing for increasing returns at the firm level and, assuming these efficiencies are propagated to their customers, altering the budget composition for customers. This is the realistic environment which allows for new combinations from a continuously changing environment of long term payoffs.

It is fair to view Young's dynamic model of increasing returns as a model of circular and cumulative causation where, quoting Toner, "growth in productivity and growth in output are interdependent and self-reinforcing."⁶⁵

Frank Knight wrote to Allyn Young about this paper saying that he should have made a clearer distinction between static and dynamic models.⁶⁶ To this Young replied that:

"...[the] purely static view does not interest me very much, because if it is rigorously adhered to, almost everything worth saying about it can be put onto a few page...I should hold that the conditions of an equilibrium rate of change afford just as appropriate a hunting ground for 'pure theory' as the conditions of static equilibrium do."⁶⁷

Young never got a chance to elaborate on this idea and throw it into some "simple and stable mechanism," or to work from a "generalization to the facts and from the facts back to new generalizations in a way which blends deduction and induction," as he once described the work of an economist.⁶⁸ There is, however, a whole approach here where, as biographer Charles Blicht puts it, "growth is demand-determined, with increases in the size of the market generating capital investment, external economies and increasing returns, which in turn, expand the market so that the process is cumulative."⁶⁹ There are, as well, outlines of a theory of competition where firms plan for potential markets and potential economies of scale. Employing selling costs and

buffer which, in times of stress, can be reduced without a sacrifice of sales for a limited period. See Charles Wilson, *The History of Unilever: a Study in Economic Growth and Social Change* (London, England: Cassell, 1970), p. 57 - 58.

⁶⁵ Phillip Toner, *Main Currents in Cumulative Causation: the Dynamics of Growth and Development* (Basingstoke, Hampshire: Macmillan, 1999), p. 162.

⁶⁶ Blicht, *Allyn Young*, p. 176.

⁶⁷ Ibid.

⁶⁸ Allyn A. Young, "Economics as a Field of Research," *The Quarterly Journal of Economics* 42, no. 1 (1927): p. 1, <https://doi.org/10.2307/1885362>, 25.

⁶⁹ Blicht, *Allyn Young*, p. 177.

advertising are necessary to expand its market so as to obtain the scale required to employ capitalistic and roundable strategies to achieve these economies.

4.2 Frank Knight

When Frank Knight was writing his thesis in the years before 1921, he wrote that the theory of perfect competition requires increasing costs because, if not, a firm could scale to absolute monopoly by achieving increasing returns to scale—Cournot's position, in other words. In such a situation, perfect competition requires new supply to come in the form of new firms, he claimed. Allyn Young, his adviser, pointedly noted that some economies are only possible from a large demand, most importantly economies from "highly specialized establishments," and that:

"I differ from your notion of decreasing costs. I hold them to be real, not necessarily tending to monopoly, and one of the most important economic phenomenon of modern times. They are *not* a matter of 'proportioning of factors.' They are, in great part, a matter of the economies of the *division of labor*, which as Adam Smith observed, is limited by the 'extent of the market.'"⁷⁰

Knight's views, however, were that specialization and the division of labor—and consequently increasing returns, progress and history—are a theme outside of static theory. Instead, it is part of dynamic theory, which Knight later suggests we call evolutionary theory or historical theory.⁷¹

His Ph.D. thesis introduces another important element of realism which, when combined with and understood in context of Young's increasing returns, lay the groundwork for better understanding Schumpeter's theory of monopolistic competition. Knight writes that the "problem of profit is one way of looking at the problem of the contrast between perfect competition and actual competition," with the greater part of his thesis being focused on how imperfect competition and profit arise due to uncertainty.⁷² One result of his thesis was the widely accepted definitions

⁷⁰ Ibid., p. 169-70.

⁷¹ Frank Knight, "Some Fallacies in the Interpretation of Social Cost," *The Quarterly Journal of Economics* 38, no. 4 (1924): p. 582, <https://doi.org/10.2307/1884592>. R. Marchionatti, "On the Methodological Foundations of Modern Microeconomics: Frank Knight and the 'Cost Controversy' in the 1920s," *History of Political Economy* 35, no. 1 (January 2003): pp. 49-75, <https://doi.org/10.1215/00182702-35-1-49>, 70. See also Frank Knight, "Statics And Dynamics," *The Ethics of Competition*, August 2017, pp. 153-177, <https://doi.org/10.4324/9781351304009-6>, p. 176.

⁷² Frank H. Knight, *Risk, Uncertainty and Profit* (Martino Publishing, 2014), p. 199.

of “risk” as foreseeable, regular, measurable and insurable change, and “uncertainty” as immeasurable, unforeseeable and uninsurable change.

Fundamental uncertainty is the result of rapid economic change which, as Dobb will argue more explicitly than Knight, comes from entrepreneurs who further the division of labor, resulting in increasing returns. This rapid economic change continuously alters the field of play wherein adaptation and correct anticipation explains short run profits.

Knight’s definitions of risk and uncertainty were widely applied after his book, for instance, in Keynes’ *The General Theory*.⁷³ Prior references to “risk” in the literature, such as in Smith, Mill and Marx, refer to both risk and uncertainty. Further definitional cleaves have been suggested, for instance, in the last book by Hicks and Dequech.⁷⁴ Arrow writes that Knightian uncertainty might potentially be defined as when it is impossible to determine priors in a Bayesian context.⁷⁵ This essay cannot explore these and other reactions. The focus here is on the exploration of imperfect competition in Frank Knight where profits and imperfect market structures arise due to the fact of more or less able actors encountering the epistemic problems of fundamental uncertainty, including the uncertainty from hierarchical effects in management’s ability to judge other people’s ability to manage uncertainty.

In looking at how actual markets deviate from perfect markets, change as such needs to be separated from unforeseeable change, as only the latter can create opportunities for differences in ability to better anticipate the future. Knight writes that,

“We live only by knowing something about the future; while the problems of life, or of conduct at least, arise from the fact that we know so little... The essence of the situation is action according to opinion, of greater or less foundation and value, neither entire ignorance nor complete and perfect information, but partial knowledge.”⁷⁶

⁷³ There is a deeper connection with Keynes in that, up to that time, only Keynes’ *Treatise on Probability* (1919) presented, in addition to its mathematical approaches, a non-mathematical and subjective logic of probability through weights of evidence and degrees of confidence. It would appear that Keynes’ logic of probability would apply to Knightian “estimates” but we will not explore this here.

⁷⁴ John Hicks, *A Market Theory of Money* (New York, NY: Oxford University press, 1991), p. 142. David Dequech, “Fundamental Uncertainty and Ambiguity,” *Eastern Economic Journal*, *Eastern Economic Association* 26, no. 1 (2001): pp. 41-60.

⁷⁵ Kenneth J. Arrow, “Alternative Approaches to the Theory of Choice in Risk-Taking Situations,” *Econometrica* 19, no. 4 (1951): pp. 404-437, <https://doi.org/10.2307/1907465>, p. 417.

⁷⁶ Frank H. Knight, *Risk, Uncertainty and Profit* (Martino Publishing, 2014), p. 199.

Knight spends a great deal of time writing about the problems of “action according to opinion,” about how we have an imperfect image of the world in our minds and that when we act, we project an imagined future extending out from our already imperfectly imaged state of the world. On this basis, we make guesses about how our actions will change this imagined future.

The implication is that we estimate the results of our actions imperfectly and, even then, only from one imagined state of the world to another imagined state. In addition to the challenges which must arise in such a process, we also simply error once we decide to take action. What is presented to consciousness, in Knight, is “more a product of inference, more an imaginative construct than a direct communication” with reality.⁷⁷

The problem is one of the human mind encountering the fact that the future is yet to be created and that the important factors and influences are unknown in the present. His discussion touches on the subjects of probability, noting that consequential business decisions cannot be statistical because they cannot be classified into groups from which one is able to establish regularities and, of course, business decisions are different from the logical deductive or *a priori* probabilities found in games. Business decisions, like the decisions in common life, are made with rough estimates of the future—“estimate of an estimate”—and their nature is that there is “no valid basis of any kind for classifying instances.”⁷⁸ And these estimates, however, are not without some differences in ability between business men—for Knight’s theory is, in part, built on the basis of there being differences in ability in encountering uncertainty. “It is,” Knight writes, “this true uncertainty which by preventing the theoretically perfect outworking of the tendencies of competition gives characteristic form of “enterprise” to economic organization as a whole and accounts for the peculiar income of the entrepreneur.”⁷⁹

⁷⁷ Ibid., p. 202.

⁷⁸ Ibid., p. 225.

⁷⁹ Ibid., p. 232.

In this context, rational action necessitates taking steps to reduce the uncertainty: "...in attempting to act "intelligently" we are attempting to secure adaptation, which means foresight, as perfect as possible."⁸⁰ These methods include (1) grouping of cases or decisions, (2) specializing in making certain types of decisions, (3) control over the future, (4) increased power of prediction, e.g., through better information and (5) methods of diffusing the costs of mistakes.⁸¹ He observes that the economic system is designed so that the producer forecasts the needs of its customers in advance, rather than working from the basis of customer orders, and the producer is able to do this because it is producing for a statistical market whose behavior is more predictable than any given purchaser within this market.⁸² It is also worth observing here that this taxonomy represents a means of analyzing and classifying the "regulative strategies" of Schumpeter's monopolistic competition and, more importantly, in considering ways to limit the advantages of dominant firms for purposes of policy within existing law—for instance, by limiting the secrecy and informational advantages of dominant firms by forcing greater disclosure under existing securities laws, thereby weakening their ability to have "control over the future" and providing information to competitors about investment opportunities they may be overlooking.

Knight writes that the possibility of further grouping of decisions subject to uncertainty constitute an additional incentive to the scaling of an enterprise, besides mere economies of scale. It may justify borrowings to extend business, if it allows for greater scope and grouping of business decisions, making the uncertainty of decisions less uncertain as a group.⁸³ Specialization is a means of increasing and grouping the decisions made by a specific firm, manager or entrepreneur. By specializing in certain types of decisions, the quality of decisions will increase through practice. Knight overlooks it but, it is clear, increased scale and number of

⁸⁰ Ibid., p. 238.

⁸¹ Ibid., p. 243-244.

⁸² Ibid., p. 240.

⁸³ Ibid., p. 252.

decisions under an improving decision maker would amount to an “increasing return” due to the sharpening of specialization and the better grouping of decisions.

The most powerful “methods for dealing with uncertainty [is] by securing better knowledge of and control over the future.”⁸⁴ This may be from having better information about what is going on in the economic system. It may be in terms of the ability to shape the future by shaping expectations with actions, e.g., through demoralizing investments. Furthermore, firms frequently acquire through merger innovative competitors, typically incorporating the new offering within their own business or product, thereby controlling new innovation in their market through acquisition.

At this point in Knight’s argument, all of the aforementioned problems are scaled up to the problem that entrepreneurs must themselves select managers who they believe will be good at managing fundamental uncertainty. “Business judgment,” he writes, “is chiefly judgment of men.”⁸⁵ Specialization occurs to ensure that those who are best able to manage uncertainty are placed in the responsible position to do so.

Profits arise, in this model, from uncertainty and from some managers better anticipating their markets. For Knight, the income of society is divided between contractual incomes, or rent, and residual incomes, i.e., profits.⁸⁶ “The entrepreneur’s income is not ‘determined’ at all,” he writes, “it is ‘what is left’ after the others are ‘determined.’”⁸⁷ Making profits rests on believing you can contract services in advance, guaranteeing payment, and then securing a market in a way which produces a residual. This anticipated excess—the profit or residual—is a matter of the correctness of judgment or the failure of judgment on the part of his competitors.⁸⁸ These profits need not have some specific relationships with the capital required to obtain them since they are

⁸⁴ Ibid., p. 260.

⁸⁵ Ibid., p. 291.

⁸⁶ Ibid., p. 271.

⁸⁷ Ibid., p. 280.

⁸⁸ Ibid., p. 281.

merely a residual of correctly anticipating a market and having previously contracted for services.

In summation, Knight writes:

“the background element of the problem should now be clear: the uncertainty of all life and conduct which calls for the exercise of judgment in business, the economy of division of labor which compels men to work in groups and to delegate function of control as other functions are specialized, the facts of human nature which make it necessary for one who directs the activities of others to assume responsibility for the results of operations, and finally the competitive situation which pits the judgment of each entrepreneur against that of the extent business world in adjusting the contractual incomes which he must pay before he gets anything himself.”⁸⁹

The residual profit for any firm is the result of making payments to factors at the established competitive rates and selling at the highest value obtainable in their own market. Fundamentally, in Knight, this comes from better anticipation of their market.

When it comes to the level of profit across industry, Knight writes that the main effect here is the:

“...rashness or timidity of entrepreneurs (actual or potential) as a class in bidding up the prices of productive services. Entrepreneur income, being residual, is determined by the demand for other services, which demand is a matter of the self-confidence of entrepreneurs as a class, rather than upon a demand for entrepreneur services in a direct sense.”⁹⁰

Clearly, there is a resemblance here between those ideas derived by accounting identity, such as in Kalecki and Steindl, where entrepreneurial profits are determined by entrepreneurial investment, less their consumption. Furthermore, this “self-confidence of entrepreneurs” is undoubtedly the “state of confidence” or the “animal spirits” within “the state of long term expectations” of Keynes.

At this juncture, it is appropriate to note that, in this theory of profits, entrepreneurs would need to have a continuous stream of correct judgments about the future for profits to continue to emerge. That is to say, Knight’s explanation of profits is a short run theory only. It is a theory of profit from change, not a theory of profit from “risk.” Schumpeter writes that Knight’s conception of profit and uncertainty, combined with an analysis of differential ability “achieved a synthesis that

⁸⁹ Ibid., p. 277.

⁹⁰ Ibid., p. 283.

is not open to the main objection against the ordinary type of risk theories” and that “[a] further step in the same direction was taken by Dobb.”⁹¹ Schumpeter later refers to Knight and Dobb side by side and it will be seen that Schumpeter’s theory of “regulating strategies” can be considered a variation of Dobb’s ideas around how firms slow or restrict the response of competition.

4.3 Maurice Dobb

Monopoly advantages, in Dobb’s *Capitalist Enterprise and Social Progress*, exist when there is a “differential advantage, due to superior opportunity” from being a supplier of scarce service.⁹² “Deliberate or intentional monopoly” are actions designed to render or keep something scarce—although this is not to say that the situation is less of a welfare ideal than that which was previously obtained. Having these advantages from scarcity allows for additive advantages in bargaining and, combined, result in a slower response from competition, allowing for any profits initially obtained through an entrepreneur better anticipating the market *a la* Knight to be kept above the level of profits which would be obtained under long run perfect competition. Dobb writes that “monopoly...is the Aladdin’s lamp to wealth...the history of the growth of riches will be in large part the history of monopoly in its development in various forms.”⁹³

Dobb later says that *Capitalist Enterprise and Social Progress*, his first book, was “unsuccessful and jejune” in trying to express “Marxist insights with a Marshallian vocabulary” but it nevertheless appears to be a worthwhile attempt of formulating a concept of persistent “competitive rent” such as that referred to above in Chamberlin.⁹⁴ The analysis can also be criticized for not thoroughly separating the static and dynamic modes of analysis, which is explicit in Knight and Schumpeter. It is worthwhile to overlook this, in our view, so as to focus on how

⁹¹ Joseph A. Schumpeter and Elizabeth B. Schumpeter, *History of Economic Analysis* (London: Routledge, 1994), 861.

⁹² Maurice H. Dobb, *Capitalist Enterprise and Social Progress* (London, England: Routledge, 1925), p. 104 - 105.

⁹³ *Ibid.*, p. 112.

⁹⁴ Timothy Shenk, *Maurice Dobb: Political Economist* (New York, NY: Palgrave Macmillan, 2013), p. 38 - 39.

firms may slow the response of competition in a context of Knightian uncertainty and Knightian profits.

Monopolistically competitive market structures, for Dobb, do not imply that resources are distributed farther from ideal than they otherwise would be because, he writes, a monopolistically competitive firm may facilitate a new division of labor.⁹⁵ Therefore, a monopolistically competitive firm may be constructive in that sense, as well potentially being destructive through the process of restricting output or competition. They may be beneficial in youth and harmful in old age.

The entrepreneur in Dobb anticipates a potential market under conditions of uncertainty, like in Frank Knight, although with greater emphasis on novelty and the creation of new divisions of labor, as in Schumpeter and Young. Rapid economic change arises from the actions of entrepreneurs. The entrepreneurs' gains are from being a pioneer and providing a new service through the division of labor. Echoing Knight he writes:

“Uncertainty will occur when the course of events is incalculable or unforeseeable; and it will be economic change, introducing something new, which will contain the greatest incalculable element. Every kind of economic activity will be exposed to the occurrence of economic losses.”⁹⁶

Uncertainty, being generated by the actions of innovative entrepreneurs, creates: “a future that is different from the past [and] cuts away the basis—generalizations from past experience—for a calculation of future probabilities.”⁹⁷ Progress depends on the willingness to make judgments on the basis of “meagre evidence”—it can be seen as non-ergodic.

Dobb sees Knight’s analysis as a Marshallian short period analysis where the supply of competitors is fixed, allowing for these better anticipations to create temporary profits. In the long period, Dobb argues, there would remain a tendency for profits to be “normal,” or rather “they will tend to that level which is sufficient to attract the requisite competition.”⁹⁸ The actual level of

⁹⁵ Dobb, *Capitalist Enterprise and Social Progress*, p. 14.

⁹⁶ *Ibid.*, p. 33.

⁹⁷ *Ibid.*, p. 36.

⁹⁸ *Ibid.*, p. 71.

profits in this model would be determined by the Marshallian “supply-price” of entrepreneurs. If the “price” must be high to stimulate competition, profits will be high. Dobb continues:

“...the chief consideration in finding the cause of supply-price of [entrepreneurs], and hence of the level of profits in general and in particular industries, is the ease or difficulty with which new undertakers are forthcoming—the limitations on their supply.”⁹⁹

The elements which determine the “supply-price” of entrepreneurs is the minimum supply-price and the elasticity or responsiveness of this supply. The minimum supply-price can be thought of as the rate of interest, the cost of education of the entrepreneur, and the average expectation of profits.

Assuming this minimum is obtained, the responsiveness of entrepreneurial competition or the responsiveness of the supply—which, when slack, implies greater profits—is determined by (1) the rarity of the specific abilities required for some market, (2) education for the specifics of the market, (3) the initial capital required for the undertaking being available, (4) lack of knowledge of the market or the “the lack of knowledge of the true possibilities of undertaking except for the privileged few with ‘insider information,’” (5) legal protections or advantages, which we take to be inclusive of trademarks, and (6) business connections and goodwill.¹⁰⁰ Since this last feature applies especially to large firms with established reputations, this gives established firms an additional advantage when approaching new markets, e.g., “this very fact, by raising a new barrier to competition, places established firms in a partially protected position.”¹⁰¹ Clearly, when the response of entrepreneurs to profits is slowed, due to a combination of the above reasons, the apparently temporary profits obtained in the Knightian sense persist.

This analysis of profits turns to the idea of differential rents. All prices have within them some aspects of rent from an imperfect response of supply to demand and, thus, every market can be seen to have some degree of inelasticity. This “differential advantage...it seems convenient to describe as a scarcity or monopoly gain.”¹⁰² In addition to any advantages one has

⁹⁹ Ibid., p. 74.

¹⁰⁰ Ibid., p. 80.

¹⁰¹ Ibid., p. 83.

¹⁰² Ibid.

from being able to supply a scarce resource, there are bargaining advantages, such as controlling the timing of sale, superior information, greater facility in multiple markets, and scale.¹⁰³

In this context, profit is a species of monopoly advantage and “profit” is here inclusive of capital appreciation. The profit will be due to the limitation on the facility of supply or the responsiveness of competition to high prices. In the context of economic change, each of these advantages become increasingly important. The entrepreneur is the disturber of equilibrium, they are “a dynamic force itself, effecting new groupings of resources with the aim of lowering costs and widening the market to which he can supply utilities.”¹⁰⁴ He writes:

“When a change occurs which brings an increased net product to the economic system, the whole of this gain at first accrues to the undertaker since he receives the margin between selling-price and cost. Only as the force of competition reduces selling prices or raises costs will he be forced to part with this gain to other sections of the community. A very important factor will, therefore, be the length of time it takes for competition of new undertakers to have effect. The existence of certain limitations on the entry of new undertakers will tend to lengthen this period of time...”¹⁰⁵

For Dobb, economists who only look at the long run of equilibrium are missing the big picture. All these effects are cumulative, for instance, as in the access to credit.¹⁰⁶ The advantages which are gained have a tendency to “increase cumulatively, ceteris paribus.”¹⁰⁷ By being able to borrow, the entrepreneur:

“...has an increased power of extending his business, securing economies of organization, building up a commercial connection and ‘goodwill,’ accumulating reserves against hard times or a competitive struggle, and facing larger uncertainties than he formally dared. This, in so far as it is general, may cause the monopoly position of existing undertakers to be strengthened through an increase in the limitations on the entry of new rivals. Larger capital may be needed in the future for new men in that line of enterprise; and the task and hazard of the newcomer may be increased.”¹⁰⁸

¹⁰³ Ibid., p. 107-108.

¹⁰⁴ Ibid., p. 116.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid., p. 121.

¹⁰⁷ Ibid., p. 123.

¹⁰⁸ Ibid.

Within this, one can see a number of Knightian aspects come through—e.g., the ability to manage more uncertainty through scale. Marx, Dobb writes, charged 19th century economists as being blind to capital “as a transferable monopoly right, the product of differential advantage, not of abstinence.”¹⁰⁹ They were also blinded, he writes, “to the influence of the cumulative tendency of monopoly in the development of capitalist undertaking.”¹¹⁰ He continues:

“They do not appear to have noticed (except in the case of land) that the possession of a differential advantage opens opportunity of securing additional advantages in the future, and may thereby cause the major gains of social progress to be acquired by those possessed of [these] property-rights.”¹¹¹

For the purposes of this thesis, Dobb has provided a novel analysis of competition overtime with a few important points of emphasis. First, what matters for the medium and long term level of profits is the responsiveness of new supply or the responsiveness of new competition to market prices which are all seen to contain an element of rent. If the response of competition is slowed, then profits derived from better anticipating change and creating new divisions of labor can be made to persist. Secondly, he has combined this with a notion of additional advantages from bargaining and maneuver, further slowing the ability of a competitor to catch up. Third, he brings into context the cumulative aspects of the competitive process.

Dobb’s later discussions of monopolistic competition, for instance in his 1967 book *Political Economy and Capitalism*, neglect to mention his own earlier analysis as well as mentioning that much of the work on imperfect competition, specifically advertising analysis, undermines both static equilibrium and subjective value theory. There he notes that the theories of imperfect competition are of three types: (1) theories that merely introduce a delay to the achieving the long term equilibrium of perfect competition, (2) theories which offer a new long term equilibrium which is determined in a new way, usually implying higher profits than under perfect competition, or (3) theories which require a new concept of equilibrium, perhaps along the lines of Young.

¹⁰⁹ Ibid.

¹¹⁰ Ibid., p. 124.

¹¹¹ Ibid.

While Dobb's analysis employs both static and dynamic elements, the direction here is useful, in part because it is written to further the analysis begun by Knight, in part because it raises the specific questions of delaying the elimination of profits in theoretical analysis. Since Schumpeter's early analysis has much in common with Knight's, his own concepts will need to change in response to Dobb.

5. The Dynamic Model of Schumpeter

Schumpeter shifts from advocating mathematical approaches in the early 1930s to advocating economic history in the 1940s, shocking past students like Paul Samuelson. It is also in this later period, after studying the details of business cycles in depth, that the concept of regulative strategy to conserve a stream of profits in the face of creative destruction becomes part of his competitive analysis.

Schumpeter's advocacy of history is not surprising given his starting point in *The Theory of Economic Development* which, as he wrote in the preface to the Japanese translation, was "to construct a theoretical model of the process of economic change in time" or to "answer the question of how the economic system generates the force which incessantly transforms it."¹¹² He notes that this intention, although not the result, is similar to Marx. The story goes that between his early work and his later work Schumpeter was more optimistic about the possibilities of equilibrium and mathematical approaches. Clearly, however, his feelings were already moving away from them in the mid-1930s, as in his review of Joan Robinson's work on imperfect competition where he writes "the time has probably come to get rid of the apparatus of supply and demand."¹¹³

Not only was it time to get rid of supply and demand and embrace a dynamic theory but economic history is, Schumpeter writes in the introduction of *History of Economic Analysis*, "by far the most important" fundamental field of economics and that "most of the fundamental errors currently committed in economic analysis are due to lack of historical experience."¹¹⁴ In one of the

¹¹² Joseph Alois Schumpeter, *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism* (London, England: Transaction Publishers, 2002), "Review of Robinson's Economics of Imperfect Competition," p. 165.

¹¹³ *Ibid.*, p. 132.

¹¹⁴ Joseph A. Schumpeter and Elizabeth Boody. Schumpeter, *History of Economic Analysis* (London: Routledge, 1994), p. 11.

last essays, he laments the lack of cooperation between economists and historians in what amounts to a plea for further research.¹¹⁵ Indeed, it is only in 1954, with Charles Wilson's three volume *The History of Unilever*, when business history is established as a serious subject of intellectual interest. Alfred Chandler's first work, *Strategy and Structure*, was only published in 1962. One of Schumpeter's biographers has written that a competent editor could have turned Schumpeter's *Business Cycles* into the first academic work on business history—but it was not to be.¹¹⁶ In the year before his death, Schumpeter's relationship with history is clear when he writes that he believes "there is an incessant give and take between historical and theoretical analysis, though for investigation of individual questions it may be necessary to sail for a time on one tack only."¹¹⁷

The theory of competition presented in Schumpeter's later work was developed in such a way as to successfully encounter the facts of history by being robust enough to deal with their bewildering variety. Schumpeter was made aware of this rich complexity as he worked through the historical research which culminated in his *Business Cycles*. Few would see this work as a success but the historical research which went into it can be seen as setting the factual and historical constraints that a theory of monopolistic competition must encounter. This theory of competition, in the sense of a theory of competition which regulates the forces of capitalism, is found in his most acclaimed work, *Capitalism, Socialism and Democracy*.

5.1 Competition in *Theory of Economic Development*

His later model of competition solves a problem shared with Knight and identified by Dobb, namely, that his first theory is a short run theory. In *The Theory of Economic Development*

¹¹⁵ Schumpeter, *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism*, p. 221 - 273. See "The Creative Response in Economic History," "Theoretical Problems of Economic Growth," "Economic Theory and Entrepreneurial History" in Joseph Alois. Schumpeter, *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism* (London, England: Transaction Publishers, 2002).

¹¹⁶ Thomas K. Mccraw, "Schumpeter's Business Cycles as Business History," *Business History Review* 80, no. 2 (2006): pp. 231-261, <https://doi.org/10.1017/s0007680500035479>, p. 238.

¹¹⁷ *Ibid.*, p. Xvii.

changes are brought about by entrepreneurs combining factors into new and novel—hitherto unseen—arrangements. This is the entire definition of “innovation” and all further discussion evolves out of that problems which arise from embarking on a new and untried path.¹¹⁸ Clearly, innovation applies to a new product, a new variant of product, a new method of production, a new market, a new input, or a new method of organization.¹¹⁹ The theory is that economic activity is set in motion by an entrepreneur making innovative investments—funded in his first theory and in *Business Cycles* by bank credit—and the overall system is one of endogenous qualitative growth where any equilibriums that might exist are displaced in a discontinuous manner. The discontinuity, for Schumpeter, is a defining feature of a dynamic theory (in Schumpeter’s language, a “theory of development”) as compared with a static theory.

In his early work, new combinations “as a rule” are from new firms and those carrying out combinations are “entrepreneurs,” separated from the “capitalist” who fund the enterprise and who risk their capital. Schumpeter’s entrepreneur must show leadership in the face of a lack of data—i.e., uncertainty—regarding the future about which he can only guess.¹²⁰ The success of the enterprise depends upon “intuition, the capacity of seeing things in a way which afterward proves to be true.”¹²¹ In this way the entrepreneur leads “the means of production into new channels,” presumably shaping consumer budgets, undermining older firms. Clearly, we have Schumpeter’s entrepreneur encountering fundamental uncertainty 10 years before Knight’s thesis.

The problems with this analysis, prior to Schumpeter’s later modification, is that it doesn’t address the competitive process except by bringing out the development of new and innovating enterprises—or, with Knight’s style of emphasis, except by showing the importance of better anticipations in the face of uncertainty. The approach doesn’t deal very well, for instance, with what we might call the competitive response of existing firms to the new enterprise. The concept

¹¹⁸ Joseph A. Schumpeter, *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest and The Business Cycle* (New Brunswick: Transaction Publishers, 1983), p. 64.

¹¹⁹ *Ibid.*, p. 66.

¹²⁰ *Ibid.*, p. 85.

¹²¹ *Ibid.*

of innovation, as well, carries too great weight in the model and the theory of profits is essentially only a short run theory of profits from successful innovations. A continuity of profits would only arise from a continuous stream of successful innovations. The similarities with Knight are clear with the caveat that Schumpeter is already discussing business planning, whereas Knight is overwhelmingly focused on the uncertainty of specific decisions and the resulting or required structures.¹²² Both, however, are short run explanations.

It is worth noting here that it is artificial to remove Schumpeter's early concept of competition from his theory of cycles, since cycles can be seen as being driven by a swarm of entrepreneurs whose expectations are later upset. These entrepreneurs drive instability in the economic system by creating systems of increasing returns, undermining old establishments, collectively over investing and thereafter causing a cluster of errors. It is also necessary here to remain focused on micro elements and to exclude a discussion of aggregates. Minsky has noted that profits from competition in Schumpeter are in part driven by a cycle in aggregates, such as total credit, and that the Kaleckian profit-investment accounting identity is latent in Schumpeter's work.¹²³ Our focus here will be on the process of competition at the firm level.

5.2 Competition in *Business Cycles*

While the systematic analysis of the middle and long period of the competitive process is developed in *Capitalism, Socialism and Democracy*, certain aspects were beginning to form in Schumpeter's *Business Cycles*. Here profit is a "functional return" since it is a temporary, not a recurring, income. What is most important in the analysis are "the struggles to conserve the stream of profit itself."¹²⁴ He writes:

"Secrecy regarding processes, patents, judicious differentiation of products, advertising, and the like, occasionally also aggression directed against actual and would-be competitors, are instances of a familiar strategy, which in the public, as well as in the professional, mind have done much to veil the source and nature of profits in our sense, especially because that strategy may be resorted to in other cases as well."

¹²² Ibid.

¹²³ Minsky, "Money and Crisis in Schumpeter and Keynes" (1983), p. 9 - 10.

¹²⁴ Joseph A. Schumpeter, *Business Cycles* (New York, NY: McGraw-Hill, 1939), p. 107 - 108.

Writing in the wake of Robinson and Chamberlin, one sees Schumpeter referring to business strategy, not so much as a separate component of his analysis, but rather a latent aspect of reality—the “judicious differentiation of products, advertising,” he notes, “are instances of a familiar strategy.” Still, he is saying that these features “veil the source and nature of profits” in his sense. What sense does Schumpeter mean?

“It follows that profits might, as far as this goes, be also included in the category of monopoloid gains. This, however, would blur the specific character in our case: not every generalization is profitable to an analyst—any more than every innovation is to an innovator. Moreover, profits change their character in the course of such struggles.

Not only is practically every enterprise threatened and put on the defensive as soon as it comes into existence, but it also threatens the existing structure of industry...An innovation sometimes may do so by its mere possibility and even before it is embodied in an enterprise. That structure...resents the threat and perceives possibilities of defence other than adaptation by a competitive struggle which generally means death for many of its units...Taking industry as a whole, there is always an innovating sphere waring with an “old” sphere, which sometimes tries to secure prohibition of the new ways of doing things...or to discredit them...or to buy them off...or penalize them.”¹²⁵

Despite the resistance of the “old” sphere, a paradox is that the competition forces the resistant old sphere to evolve and adopt new methods by the “law of its own life.” The profits which arise through this process are, it would seem, more tentative than the mere profits from innovation found in *Theory of Economic Development*. They arise from innovating firms which are able to persevere through the competitive struggle as old firms go to war and seek to protect their market positions by strategies of defense or by adopting similar innovations. He notes that “profits change their character in the course of such struggles” which we take to mean that profits from successful innovations are, in time, transformed into situations of “imperfect competition” with “monopoloid gains,” although this only happens after a war over the structure of the industry.

It is also evident that Knightian “anticipations” in the context of unequal skill are part and parcel of innovation, for instance, as in the first page of his chapter in *Business Cycles* called “The Contours of Economic Evolution.”¹²⁶ There he makes it clear that innovation merely sets in

¹²⁵ Ibid.

¹²⁶ Ibid., p. 130.

motion the competitive struggle as it engages the old spheres, as well as creating imitating competitors along the “path of innovation.”¹²⁷

The focus of this work was on business cycles and he was not trying to develop or elaborate a theory of competition, such as might play the role that the theory of competition has traditionally played in economic theory. Neither his sociologist biographer, Richard Swedberg, nor his business historian biographer, Thomas McCraw, realize this theoretical intention or how Schumpeter’s questions and perspectives grow out of the existing literature. While *Business Cycles* was written during the great depression, Schumpeter’s actual analysis of the great depression—that it was due to allowing bank failures *en masse*—was absent from the text.¹²⁸ The argument for a new theoretical approach to competition, so it may serve its traditional role in economic theory, was saved for *Capitalism, Socialism and Democracy*.

5.3 Competition in *Capitalism, Socialism and Democracy*

The problem of medium and long term profits—in the face of, as we will see, creative destruction—becomes the focus of the analysis in *Capitalism, Socialism and Democracy*. The problems for entrepreneurs and managers created by a world of innovation—essentially the fundamental uncertainty from rapid economic change facing investment—raises the problem that a business needs to manage this constant change. The economic system can never be stationary and the impulse which keeps the “capitalist engine in motion comes from the new consumers’ goods, new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates.”¹²⁹ This results in competitive forces unlike those assumed in static approaches. One oft quoted passage reads that the competition which counts is:

¹²⁷ Ibid., p. 131.

¹²⁸ Thomas K. McCraw, *Prophet of Innovation: Joseph Schumpeter and Creative Destruction* (Cambridge, MA: Belknap Press of Harvard University Press, 2009), p. 322.

¹²⁹ Schumpeter, *Capitalism, Socialism and Democracy*, p. 83.

“...the competition from the new commodity, the new technology, the new source of supply, the new type of organization...competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the output of the existing firms but at their foundations and their very lives. This kind of competition is much more effective than the other as a bombardment is in comparison with forcing a door...it disciplines before it attacks.”¹³⁰

It is to be expected that rational behavior in such an environment is to manage these risks. For Schumpeter's, this is done through business or regulative strategy. Business strategy, he writes, obtains its significance in this uncertain and competitive environment: “It must be seen in its role in the perennial gale of creative destruction: it cannot be understood irrespective of it or, in fact, on the hypothesis that there is a perennial lull.” This competition is not the sort of competition which simply “drives out high cost producers” and steadily reduces profits from innovation but rather competition which entirely threatens product lines, production, and a firm's existence.¹³¹

Compared to young Schumpeter, there are two new elements in his competitive analysis which play functional roles: regulative strategy and creative destruction. In mainstream economics, creative destruction has been received into the textbooks but regulative strategy has not. This is a mistake because of the importance of the concept in a dynamic model of competition. Indeed, Schumpeter's *History of Economic Analysis* itself refers to business strategy a number of times at one point writing that assumptions of perfect competition as the general state of affairs can be called: “the Principle of Excluded Strategy and accordingly say that the bulk of...pure theory...was a pure theory of static equilibrium *that excluded strategy*” (emphasis Schumpeter's).¹³²

The concept of “regulative strategy” exists to manage “creative destruction” and “creative destruction” exists, in Schumpeter's model, to destroy regulative strategies which have thus far protected profit positions. These two ideas are connected at conception and are defined in contrast to each other in terms of their analytic function. A few economists —like his sociologist

¹³⁰ Ibid., p. 84 - 85.

¹³¹ Steindl has developed a persuasive and complimentary theory of concentration which helps to illustrate the mechanisms which produce concentrated markets, including models with stochastic processes. His theory of competition, however, rests on the standard assumption of price and cost based competition rather than competition from innovation in the Schumpeterian sense.

¹³² Schumpeter, *History*, p. 938 - 939.

biographer who suggests his analysis of monopolistic competition may be tongue in cheek —miss the fact that Schumpeter is attempting to present a new theory of competition which can continue to serve its traditional role in economic theory, albeit within a realistic dynamic model.

5.3.1 Creative Destruction and Regulative Strategies

For Schumpeter, the future is full of threats from new innovation enabled through the increasing returns environment which is rapidly changing the calculation of business. “Long range investing under rapidly changing conditions,” Schumpeter writes, “especially under conditions that change or may change at any moment under the impact of new commodities and technologies, is like shooting at a target that is not only indistinct but moving—and moving jerkily at that.”¹³³ Patents, secrecy, long period contracts may help but the problem is more extreme due to other risks which are “no less an element in long-run costs” and where one is unable to insure against. In such cases, other means must be devised to protect investment from the fundamental uncertainty of the future and those means are “regulative” or business strategy. Schumpeter, it should be noted, also calls it restrictive strategy, not in the sense of restricting output but of restricting competition in the Dobbian sense. Schumpeter cites the case of new firms or new aggressors for illustration because these instances allow for greater illustration.¹³⁴ These aggressors:

“Require, for purposes of attack and defense, also pieces of armor other than price and the quality of their product which, moreover, must be strategically manipulated all along...largest-scale plans could in many cases not materialize at all if it were not known from the outset that competition will be discouraged by heavy capital requirements or lack of experience, or that means are available to discourage or checkmate it so as to gain the time and space for further developments.”¹³⁵

Schumpeter notes that even one of the most aggressive corporate strategies of all time—the Standard Oil railroad rebate scheme covered by Ida Tarbell in 1904—can be seen in a different

¹³³ Schumpeter, *Capitalism, Socialism and Democracy*, p. 88.

¹³⁴ Many writers have misunderstood this example to suggest that Schumpeter is still, in his later years, only talking about new firms. Other writers have misunderstood the discussion to mean that large firms innovate more than small ones. Old Schumpeter sets down no generalizations in this regard.

¹³⁵ *Ibid.*, p. 89.

light when the scheme is viewed only from the perspective of the total output and ignoring the moral implications.¹³⁶

Many enterprises would not have begun, Schumpeter notes, if they did not believe that “exceptionally favorable situations are likely to arise which, if exploited by price, quality and quantity manipulation will produce profits adequate to tide over exceptionally unfavorable situations provided these are similarly managed.”¹³⁷ The argument includes old and established firms in that they have to develop strategies to manage change, inclusive of moments when obsolete industries attempt to “turn a rout...into orderly retreat.”¹³⁸ All of this, he writes, is “the tritest common sense” which is “overlooked with a persistence so stubborn as to raise the question of sincerity.”¹³⁹ The debates on the empirical fact of price rigidity miss the point and may be better understood as attempts by industry to avoid the chaos of always adapting prices to the environment by following a pricing policy and strategy to even out these effects, thereby helping to stabilize their markets.

The terminology of “monopoly” is, as well, problematic for Schumpeter given its historical development in the classics and, eventually, in Cournot and Marshall. Firms which appear to have the most monopolistic elements—like railroads and power utilities—had to “create the demand for their services and, when they had done so, to defend their markets against competition.”¹⁴⁰ In the first conception of monopolies, like the Tudor and Stuart monopolies criticized by Adam Smith, the monopoly price is higher and the output smaller than the competitive price and output. In the modern conception, however, “there are superior methods

¹³⁶ Ibid. Standard Oil's successor, Standard Oil of New Jersey, went on to become Exxonmobil, the greatest US wealth creating firm according to Bessembinder's first paper in 2017. The Standard Oil monopoly was in part created by a railroad rebate scheme where the major railroads transporting oil were forced to pay Standard Oil rebates on *all* oil shipments, including those of Standard Oil's competitors. This gave Standard Oil a huge cost advantage, since the rebates were netted against Standard Oil's transportation expense, in addition to other operational advantages it already possessed. All this allowed for even greater scale and efficiency. The firm was eventually broken up by a court decision in 1911 but the effect of this singular institution on the world is significant. This is shown by Bessembinder's estimate of wealth creation, its influential role in the first world war, as well as through the fact that part of its wealth went into the creation of the University of Chicago (where Frank Knight helped to found the “chicago school” of economics).

¹³⁷ Ibid., p. 90. See Young's discussion of a “certain quantum of prospective advantages” above.

¹³⁸ Ibid.

¹³⁹ Ibid., p. 91. Schumpeter repeats this accusation in *History*, p. 146.

¹⁴⁰ Ibid., p. 99.

available to the monopolist” which their competitors either cannot access at all or only slowly, with Schumpeter noting that the monopoly may attract abler employees and have better financial standing, with the result that “monopoly prices are not necessarily higher or monopoly outputs smaller” than under the competitive hypothesis.

The monopolistic competition analysis outside of the static schema results in an entirely different conclusion than that understood by Cournot and Marshall because they arise in the context of creative destruction—innovation, increasing returns, fundamental uncertainty—and since they “largely create what they exploit.”¹⁴¹ The history of US railroads in the west are the striking example of this process of circular and cumulative causation. One acclaimed business history, Overton’s *Burlington Route*, writes that the dilemma of the American west was that “without a substantial population in its territory willing and able to ship and travel, no railroad could survive as a venture, but only a railroad could bring about a rapid development of the area.”¹⁴²

Furthermore, the typical conclusion that long run output is below competitive conditions is only applicable in a static model. If an innovation allows for a temporary monopoly on a product, there are still some substitutes and the demand schedule for the new product needs to be built up overtime. The element of “monopoly gain in those entrepreneurial profits which are the prizes offered by capitalist society to the successful innovator” have their main function in that it gives “space...for long-range planning” which is back where we started with business strategy.¹⁴³ Not all firms successfully make the transition from innovation to long term planning—for instance, Ford Motor in its early contests with General Motors. To illustrate the importance of strategy in a realistic dynamic theory of monopolistic competition, we discuss two examples from business history in section 5.4 below.

¹⁴¹ Ibid., p. 101.

¹⁴² Richard C. Overton, *Burlington Route: a History of the Burlington Lines* (Lincoln, NE: University of Nebraska Press, 1976), p. 19.

¹⁴³ Schumpeter, *Capitalism, Socialism and Democracy*, p. 103.

5.3.2 Schumpeter Responds to Critics

Schumpeter closes his discussion of monopolistic competition by pointing out that static models of imperfect competition preclude progress, entail wastes of their own, and moreover are all impossible on their own terms. Business strategy, frequently resulting in the development of large-scale establishments, is for Schumpeter the most powerful engine of progress in terms of the expansion of long range output.

In the preface to the second edition of *Capitalism, Socialism and Democracy* published 1946, Schumpeter reacts to the “what many readers considered to be a defense of monopolistic practice.”¹⁴⁴ He writes that he is only describing the history and theoretical situation of monopolistic competition which “no competent economist can deny.” He writes:

“1. The classical theory of monopolistic pricing (the Cournot-Marshall theory) is not entirely valueless, especially when overhauled so as to deal not only with the instantaneous maximization of monopoly gain but also with maximization over time. But it works with assumptions that are so restrictive as to exclude its direct application to reality. In particular it cannot be used for what it is being used in current teaching, namely, for a comparison between the way in which a purely competitive economy functions and the way in which an economy functions that contains substantial elements of monopoly.

The main reason for this is that the theory assumes given demand and cost conditions, the same for the competitive and the monopolistic case, whereas it is of the essence of modern big business that its demand and cost conditions are, for large quantities of output, much more favorable—and inevitably so—than the demand and cost conditions that would exist in the same industries in a régime of perfect competition.

2. Current economic theory is almost wholly a theory of the administration of a given industrial apparatus. But much more important than the manner in which capitalism administers given industrial structures is the manner in which it creates them...into this process of creation the monopoly element enters necessarily.”¹⁴⁵

The manner in which capitalism creates industrial structures is through profitable innovations which allow for the application of regulative strategy. These strategies inherently have “monopoly elements” and result in imperfectly competitive market structures at any given moment in time.

This monopolistic competition is, however, general in that all firms are seeking to establish attractive demand and cost conditions with their strategy; or, in other words, all firms are seeking

¹⁴⁴ Joseph Alois Schumpeter and Richard Swedberg, *Capitalism, Socialism and Democracy* (London, UK: Routledge, 2005), p. 412.

¹⁴⁵ *Ibid.*

profits in a dynamic environment with uncertainty and creative destruction. The strategies whose outcome is an attractive demand and cost condition are those which are successful in managing the rapidly changing environment or, in other words, those who successfully manage the uncertainty created by creative destruction.

5.3.3 Competition in History of Economic Analysis

“Forward strategy very often requires defensive tactics as a complement,” Schumpeter writes early on his *History of Economic Analysis* before complaining that economists are stubborn in their refusal to discuss business strategy.¹⁴⁶ In his last great work, some of the lineage drawn up in this essay can be seen. For instance, when discussing entrepreneurial gains Schumpeter writes:

“The fundamental reason is that entrepreneurial gains are not permanent returns at all but emerge each time—to adopt the language of the Knight-Dobb theory—an entrepreneur’s decision in conditions of uncertainty proves successful and have no definite relation to the size of the capital employed.”¹⁴⁷

And that:

“In the second place, it should be observed that, whatever their nature in other respects, entrepreneurs’ gains will practically always bear some relation to monopolistic pricing. Whatever it is that produces these gains, it must of necessity be something that, for the moment at least, competitors cannot parallel for, if they did, no surplus over costs (including entrepreneurial ‘wages’) could emerge. The successful introduction of a new commodity or brand is perhaps the best illustration of this. Moreover, there are means available to the successful entrepreneur—patents, ‘strategy,’ and so on—for prolonging the life of his monopolistic or quasi-monopolistic position and for rendering it more difficult for competitors to close up on him.”¹⁴⁸

Schumpeter follows these notes by saying that this has much in common with a “depreciation theory” (i.e., exploitation) of profits and that interpretation seems to be a matter of ideology:

“Obviously, this may be linked up with the elements of the case that have been glanced at in the preceding paragraph in such a way as to yield a picture of reality that may, for practical purposes, differ but little from that drawn by a straight depreciation theory. Rare birds indeed are the economists who give the proper weight to this set of facts and at the same time do not overstress them. It is here rather than in the fundamental question of

¹⁴⁶ Schumpeter, *History*, p. 146.

¹⁴⁷ *Ibid.*, p. 864.

¹⁴⁸ *Ibid.*

theory involved that ideological bias as well as political interest assert themselves. On principle, a sponsor of a functional theory is at liberty to give as much weight to predatory activities as he pleases. But most economists who wrote before 1914 may have underutilized this freedom as much as many of their successors have abused it. It must not be forgotten, however, that the widespread hostility to big business and to 'trusts,' so far as there was any analytic meaning to it, does imply equally widespread recognition of the facts referred to."¹⁴⁹

The observation here regarding ideology leads the way into many important problems facing the method of economics. While these are beyond the scope of this essay, one relevant instance of these ideological problems can be mentioned here. In Frank Knight's preface to the 1957 edition of *Risk, Uncertainty, and Profits* he explains that economic "truth" is pitted against "combating prejudice" and that Knight thinks it more useful to side with the latter because this makes "economics more useful to society" and forces economists to sell their line.¹⁵⁰ In this preface, he is advising economists not to dissent from orthodoxy as he himself had done. The implication is that he views his theory of "actual profits" and imperfect competition arising from uncertainty to be "truth" while viewing the concept of perfect competition as a means of "combating prejudice."

5.4 Historical Examples

After the above discussion, with its focus on how actual competition works in a dynamic model with uncertainty, we appeal to the historical record to demonstrate the overwhelming importance that regulative strategy can have on actual historical outcomes. First, we will review how Ford Motor did not parlay its initial profits from innovation into a long term strategy which would protect the firm's market position. Ford Motor eventually lost its lead to General Motors who followed a distinctly different strategy. Afterward, we will review how the mail order firms encountered the changing market brought on by the development of the automobile. The result was a need to change strategies. The crucial point in each case is the determining factor of regulative strategy as compared to price, product or advertising competition.

¹⁴⁹ Ibid., p. 865.

¹⁵⁰ Frank H. Knight, "Preface For The Reprint of 1957" in *Risk, Uncertainty and Profit* (New York, NY: Reprints of Economic Classics, 1964), p. Lii-lxi.

5.4.1 Ford versus General Motors: 1908 - 1929 (Example 1)

Schumpeter wrote in *Business Cycles* that the automobile industry qualifies “for the role of standard example for the process embodied in our model [of economic change].”¹⁵¹ And that it “did not simply expand in function of the increase in real income but helped to bring it about.”¹⁵²

General Motors, despite its bankruptcy in 2009, was the 12th greatest wealth creating firm between 1926 and 2017 due to its long history of dividends and above market returns in the middle of the 20th century. It also went through one of the most well known strategic contests with Ford Motor which can be used to illustrate aspects of economic reality which Schumpeter’s theory of competition attempts to capture. The strategic contest can be described as follows.

Ford’s assembly line innovation gave it a huge position, about half the market in 1914, with commensurate profits. By the mid-1920s, it ranked first in payments for wages and supplies in the United States. It achieved this by focusing on the low end of the market with the Model T, thereby expanding the market. From the start, Ford Motor was concentrated on a single product and maximizing the economies of scale from this single product.

General Motors, a collection of consolidated small volume automobile manufacturers backed by Du Pont, saw that its best strategy—the strategy which best managed the long term uncertainty of investment—was to build automobiles in volume at different price points, in part because of their sunk costs in numerous acquired divisions pointed in this direction, in part because of the advancing income of the US consumer would allow for greater long term product differentiation. This was particularly important as the market was evolving to one where consumers purchased a replacement automobile, rather than their first automobile. Industrial capacity came to outstrip demand and Chandler writes, “Marketing became a greater problem than production” and that “Henry Ford refused to take seriously these fundamental changes in the market.”¹⁵³ General Motors was transparent about its strategy, for instance disclosing it in detail in

¹⁵¹ Joseph Alois. Schumpeter, *Business Cycles*, vol. II (New York, NY: McGraw-Hill, 1939), p. 772.

¹⁵² *Ibid.*, p. 774.

¹⁵³ Alfred D. Chandler, *Giant Enterprise: Ford, General Motors and Automobile Industry* (New York, NY: Harcourt, Brace, 1964), p. 13.

their 1923 annual report. Ford could have imitated it but rather choose to follow their largely single product strategy.

Over the course of the 1920s it was to become clear that GM's strategy was superior and Ford was forced to change strategies in imitation in the late 1920s. The defeat of Ford was all the more striking because they had to entirely stop production. The predominant factor in determining the competitive outcome of this inter-industry competitive struggle was having the right strategy to manage the uncertainty of investment in the face of the rapidly changing environment.

To illustrate the importance of this point, consider that Henry Ford's technically superior River Rouge plant embodied the mistake of his strategy, despite its superiority in output. Its large fixed costs were geared to the low cost production of a single, increasingly outdated, product: the Ford Model T with its production run of 18 years. These high fixed costs reduced flexibility in the face of a rapidly changing market and dismissed the lessons of General Motors strategy of "a car for every purse and purpose."¹⁵⁴

General Motors' dealer strategy further illustrates the wisdom of their overall policies, while also illustrating the complex character of regulative strategy more generally. General Motors allowed dealers a greater markup on new vehicles than Ford—making it more attractive to sell General Motors vehicles—while providing them with back office services and financing. Furthermore, General Motors did not interfere with dealer pricing for used vehicles. Ford, by contrast, limited markups on used vehicles, only allowed a smaller markup on new vehicles and did not assist dealers with the back office or provide financing. Clearly, it was more attractive to be a dealer for General Motors and this was an explicit strategy of the firm.

Strategic differentiation between the two firms can also be seen in their attitude towards vertical integration. General Motors, for purposes of "insurance," had a strategic policy of 100% control of 33% of their parts and accessory suppliers. That is, they only partially vertically integrated as a matter of strategy. Ford Motor, by contrast, was as vertically integrated as

¹⁵⁴ Chandler, *Giant Enterprise: Ford, General Motors and Automobile Industry*, p. 16.

possible. Chandler has written that “by using differing strategies of vertical integration both General Motors and Chrysler paid a smaller price than Ford for operating at reduced capacity.”¹⁵⁵

Alfred Sloan, president of GM and architect of their strategy, wrote that:

“Every enterprise needs a concept of its industry. There is a logical way of doing business in accordance with the facts and circumstances of an industry, if you can figure it out. If there are different concepts among the enterprises involved, these concepts are likely to express competitive forces in their most vigorous and most decisive form.”¹⁵⁶

Clearly, Ford’s strategy was to offer one primary product and to maximize the cost advantages of large scale production with significant vertical integration. He was known for saying that customers can have “any color that he wants so long as it is black.” This focus missed the power of General Motors’ strategy, which began in the mid-1920s to better meet the needs of their changing market. The success of General Motors’ strategy was particularly striking in that it forced Ford to completely stop production for several months to retool their River Rouge plant in 1927. Chrysler, simply by imitating General Motors strategy, was able to capture more market share than Ford by the late 1930s.

5.4.2 Sears and the Development of Department Stores (Example 2)

The rapid changes in the market brought about by the automobile forced the great mail order firms to change strategy. This can be seen in the story of Sears Roebuck transition from a mail order firm into a retailer. At the start of their business, Sears was an imitator of Montgomery Ward and only sold watches and jewelry by mail order. Montgomery Ward had discovered the potential demand in the countryside by selling goods and having them delivered to railroad terminals for pick up. Sears, Roebuck and Company in 1895 expanded their merchandise into the goods wanted in the American countryside and, overtime, had sufficient success in merchandising to surpass Montgomery Ward in sales.¹⁵⁷ Both firms quickly made investments in

¹⁵⁵ Alfred D. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA: Harvard University Press, 1994), p. 208.

¹⁵⁶ Sloan, *My Years With General Motors*, p.58.

¹⁵⁷ Alfred Dupont Chandler, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (MIT Press, 1972), p. 226.

distribution facilities that had volume and lines of business that greatly exceeded the largest chain and department stores. Using the language of Schumpeter, the success of these two firm's gave them room for long range planning which was, in this case, put to good use. By the end of 1970, after successfully adopting a new strategy in the 1930s, Sears was the 6th most wealth creating firm since 1926 behind only General Motors, IBM, Standard oil of New Jersey (not yet renamed Exxon), AT&T and DuPont.

The importance of regulative strategy as an element in the theory of competition can be highlighted by the changes which took place with the increasing presence of the automobile. The economics of rural mail order shipment rested, in part, on the difficulty of rural America getting to a market where they could purchase goods. An executive of Montgomery Ward and former U.S. brigadier general, Robert Wood, noticed from the *Statistical Abstract Of The United States* that the United States was rapidly urbanizing. Robert Wood, aftering trying to sound the alarm at Montgomery Ward, joined Sears on the understanding that he would be able to develop a strategy to encounter the changes in the market, namely, the introduction of retail stores to distribute durable goods at high volumes in urbanizing areas.

The changing market required a change in strategy to manage the uncertainty which was being created by this change. The outcome of this struggle was not determined by shifting advertising dollars, adjusting the product, or offering the best price. It was determined through having the best strategy to manage long term uncertainty driven by rapid economic change. Despite being new to the field of retailing and claiming to have made every mistake possible in the field, Sears began to have success and Montgomery Ward belatedly began to imitate successfully. Sears shifted full gear into their retailing strategy when Robert Wood came to head Sears in 1928.

Wood later says in 1948, "Business is like war in one respect—if its grand strategy is correct, any number of tactical errors can be made yet the enterprise proves successful."¹⁵⁸ His

¹⁵⁸ Ibid., p. 235.

retailing strategy was to concentrate on growing urban markets, with a mix of different store sizes, targeting population areas above a certain threshold to avoid competing with their rural mail order business. The point was, naturally, to leverage their past mail order investments and to avoid cutting into their existing mail order business.

The different store sizes were positioned to compete against the other retail stores of the era who did not have the same buying power in durable goods as a mail order house. Taking into account the revolution of the automobile, furthermore, meant a spread of retailing centers to new points and Sears located many of its stores away from expensive city centers to cheap land accessible from highways.

To manage the uncertainty of their supply, Sears' strategy was to buy an interest in factories which made goods where the supply was most uncertain. The firm restricted its ownership to 50% or less and preferred that the factory continued to sell some of its output to other firms. From a unit cost perspective, their strategy was essentially to link up volume buying power with mass production and mass distribution and take advantage of their scale.¹⁵⁹ Overtime, the firm would come to design their own products for reasons of, quoting Chandler, increasing "its control over the function of coordinating the flow of products to include every step from the initial design of the product to its sale to the ultimate customer."¹⁶⁰

By the early 1930s, the mail order business deteriorated rapidly with revenues falling from \$266 million in 1929 to \$116 million in 1932—a 56.3% collapse—due to a fall in farm incomes from the great depression. Their retail business initially grew between 1929 and 1931 until the depression caught up with them in 1932 at which point their retail business was only 8.6% below 1929, a comparatively good result justifying their prior shift in strategy.¹⁶¹ Their investment into physical retailing both generated new streams of profits and helped to protect

¹⁵⁹ Ibid., p. 236.

¹⁶⁰ Ibid., p. 236 - 237.

¹⁶¹ Ibid., p. 260.

their prior investment in handling facilities. Without making the change the firm likely could not have survived the rapidly changing conditions in their market in the early 1930s.

In this example, as in the General Motor's example, the firms required a specific strategy to manage the uncertainty of rapid change and the firms invested based on the quantitative and qualitative changes they perceived in their market. These investments served to simultaneously grow future profits and protect their past investments. Their strategies took into account the complexity of the market conditions and they organized their strategy in such a way so as to maximize their long term success within those conditions. While the firms were seeking profitable investment outlets, their search for investment and profits were in the context of a general strategy which was designed to manage the rapidly changing conditions, placing the firm in the best position possible for what were perceived as future conditions based on information available at the time.

Especially in the case of Sears is it clear that their business required a new strategy given the subsequent fall off in their mail order business. In this context, it is clear that these firms were competing not specifically on the "product" of marketing and distribution or on price or on advertising driven loyalty but on another level of organizational concepts—"grand strategy"—which had to play out over long range periods of time. Had the firm not changed strategies and chosen the right one, the firm would have been creatively destroyed.

The theoretical point of these examples is to emphasize the theoretical critique of marginalism in Schumpeter—that mere price, product and advertising competition is insufficient to explain capitalist competition—and to illustrate his theory of regulative strategies to manage the creatively destructive environment. It is not enough to say firms profit maximize or to describe competition in terms of price, product or advertising. In a realistic dynamic system with increasing returns and uncertainty firms must plan on the basis of a concept of their market—or rather of their future market—and then follow a strategy to regulate the uncertainty of their investment in accordance with this point of view.

Firms are necessarily seeking profits and growth but the complexion of competition arises through competing strategies to manage uncertainty of past and forward looking investment. Theories of competition which consider only price or product competition are, in that sense, inadequate to the tasks of explaining the regulative function of competition between different firms or units capital.

6. Conclusion: Schumpeter and Bessembinder

The results first identified by Bessembinder indicates that there is an extreme skew in corporate wealth creation, suggesting the continuous existence of large market share winners with prices sufficiently above costs to allow for large accounting profits or, at least, the long term promise of profits. Across the entire data set it is also clear that many firms become large wealth creators for decades before losing their position overtime. A few firms are important corporate wealth creators for the entire 9 decades of the dataset.

The continuous persistence of exceptional firms over many decades determine average financial returns by dramatically skewing the distribution. The typical increase in U.S. public corporate wealth resides within these firms. These firms are critical factors in determining other “average” relationships throughout the economy, like price, quality and distribution. Furthermore, these average returns enter into the state of long-term expectations which, in Keynes, eventually impacts the aggregate level of investment.¹⁶²

Our interest was in the realistic theories of competition which could best describe this historical outcome. A survey of realistic static equilibrium theories showed that they stopped at the door of the most important theoretical questions because they could not explain important aspects of realistic firm behavior, most notably increasing returns. Many of these theories also assume long run “normal” profits, an assumption which flies in the face of Bessembinder’s results.

This failure of static theory drove the search into dynamic theory, with its focus on change and actual outcomes. The period of dynamic theory we examined began with Schumpeter’s 1911 book, *The Theory of Economic Development*, which helped inspire the theoretical foundations of

¹⁶² See Chapter 12 in Keynes’ *The General Theory*.

Knight's 1921 book, *Risk, Uncertainty and Profits*. Dobb responds to both of them in 1925 with *Capitalist Enterprise and Social Progress* which, though perhaps "jejune," raised a critical theoretical problem about their theories: they did not describe the long term maintenance of profit positions which were evident to Dobb. Here we find a focus on how the response of competition is slowed or stopped to allow for profits to be maintained and capitalized. But even here, Dobb neglects how the things he discusses are overcome by competition, only mentioning that uncertainty from economic change means significant losses at irregular intervals which, in the progress of civilization, are assumed to be counterbalanced by the gains. We argue that only late Schumpeter deals with the whole problem by describing the creation of profit positions, their maintenance, and their competitive destruction. The skew in corporate wealth creation can only be explained by a theory which can account for the whole life cycle of firms, as Schumpeter's theory does. Static equilibrium theories where all the firms have the same cost structure, annihilating any competitive advantages from increasing returns, cannot be used to explain the skew in corporate wealth creation.

Frank Knight's theory of profit and imperfect markets from uncertainty may explain temporary large profit positions and why concentrated markets can exist but it does not explain why these profit positions are sometimes protected from competition. Schumpeter's first theory of innovation had the same problem writing "competitors...first reduce and then annihilate [the entrepreneurs] profit."¹⁶³ But we know that many of these competitive positions generate a disproportionate amount of wealth for decades and therefore these early theories of Schumpeter and Knight are insufficient to explain the long term skew in wealth creation. Dobb helps to frame the problem as rather related to the slowing or prevention of new supply from competitors. Schumpeter views Dobb's *Capitalist Enterprise and Social Progress* as clearly positioning Dobb as a capitalist in terms of his economics, regardless of his politics.¹⁶⁴

¹⁶³ Schumpeter, *The Theory of Economic Development*, p. 89.

¹⁶⁴ Schumpeter, *History*, p. 851.

With the introduction of “regulative strategies” Schumpeter presents his own concept of the persistence of profit positions and introduces one of the most famous terms to show how these profit positions are dismantled: creative destruction. Thus, Schumpeter makes the case for a realistic theory of profit positions, imperfect markets, the slowing or prevention of new competitors, with their eventual decline—all of which is implied by our survey of the historic skew in corporate wealth creation. This skew in corporate wealth creation is a result of competitive struggles with big winners in monopolistically competitive markets who then protect their market positions with business strategy, sometimes for decades. Strategy is crucial for Schumpeter as mere product, price, or trademark superiority are seen as insufficient to describe historical outcomes.

Knight wrote in 1921 that actual profits are a residual—they are what is left over after everything else has been determined in the context of uncertainty. In this sense, profits need not have some specific relationship with the capital employed—this is also Schumpeter’s position and it is what appears to be born out by the diverge rates of the growth of wealth uncovered by an investigation in long term financial returns.¹⁶⁵ Dobb notes that Cantillon defined the entrepreneur as “one who bought goods ‘at a fixed price’ and sold them ‘at an uncertain price.’”¹⁶⁶ There is uncertainty in sales, whereas costs are more predictable and determined. If an entrepreneur has better anticipated the future, they can profit to the extent that the market will “bear the traffic.” A firm can invest where it anticipates having a high likelihood of success and where the investments are protective of past and ongoing investments. The protective nature of investments are part of a “regulating strategy” whose goal is to make the future more predictable and manageable, even if probabilities can only be a Knightian “estimate of an estimate.”

The anticipations that really pay off are those which are innovative and introduce new things into the ongoing flow of the economic system, since new things are not immediately copyable without difficulty. These innovations and anticipations generate receipts and short run

¹⁶⁵ Ibid., p. 864.

¹⁶⁶ Dobb, *Capitalist Enterprise and Social Progress*, p. 17.

profits which give room for long term strategy before competitors, to quote Schumpeter, follow “after them...in increasing numbers, in the path of innovation, which becomes progressively smoothed for successors by accumulating experience and vanishing obstacles.”¹⁶⁷

Firms follow a strategy to build up aspects of their business which competitors may not find possible to replicate—like their trade-mark, supplier relationships, technical innovations, product design, and good will—all while envisioning a plan which will best insulate them from the best efforts of their competitors. The plan or strategy is designed to slow, or entirely eliminate, a competitor’s ability to parallel what the innovative firm has done. In no sense does this imply the restriction of output and in many cases it means the opposite, since the latter prevents a competitor’s ability to parallel a firm seeking to extend an existing cost advantage through scale. It is illustrative to note that, because of this phenomenon, the risk faced by an entrepreneur may not be simply upward sloping with capital invested, as in Kalecki’s principle of increasing risk, but may initially drop as increasing investment initially lowers risks by preventing effective competition.

Firms cultivate a strategy based on what they believe will reduce the uninsurable uncertain risks to their profit streams. This is not the forecastable variance of returns as in Steindl but a risk to capital of another order.¹⁶⁸ All these decisions are based on the nature of their specific and varied markets—such as the degree of capital intensity allowed for in production, giving room for economies of scale, or the degree to which consumer demand can be ensured through building goodwill via advertising or service levels—with the implication that it would be difficult to generalize from any one competitive struggle. If the innovating firm is successful and continues to grow and scale, eventually the competitors will recede, fail, and the market will look oligopolic. There will be advantages in size, either through the scale of the plant, or the scaling on fixed administrative and selling expenses—as in Chandler’s “scope”—or in the advantage derived from being able to tap into accumulated goodwill, as noted by Dobb.

¹⁶⁷ Joseph A. Schumpeter, *Business Cycles* (New York, NY: McGraw-Hill, 1939), p. 131.

¹⁶⁸ Josef Steindl, “On Risk,” in *Economic Papers, 1941-88* (London, UK: Macmillan, 1990), p. 3.

A successful strategy leads to the greater application of existing advantages, leading to more concentrated markets. This theory of market concentration does not disagree with Steindl's multiple theories of concentration from diversity, where his favored firms grow faster than disadvantaged firms due to simple advantages, even when the latter are arrived at through random processes.¹⁶⁹

Profits may be reaped as the firm achieves economies of scale, further buttressing itself against the environment. The static theories of competition cannot manage increasing returns, let alone uncertainty, or the sheer variety of markets each which demand that a firm has, quoting Alfred Sloan, "a concept of its industry." Alfred Sloan, manager of General Motors while it was the greatest wealth creating firm in the world, wrote that "there is a logical way of doing business in accordance with the facts and circumstances of an industry" and "if there are different concepts among the enterprises involved, these concepts are likely to express competitive forces in their most vigorous and most decisive form."¹⁷⁰ If the end market is large enough, successful firms will begin to show up at the top of a list of wealth creation, at least until the environment changes threatening their profit positions as their existing strategy is undermined by change. Eventually, they will be forced to adapt by "the law of their own life" but, as history shows, many will be unable to do so.¹⁷¹

The implications of Schumpeter's analysis is that there will be big winners in markets because of the cumulative nature of advantages developed through strategy, making it difficult for competitors following a inferior strategy or even for competitors who follow the superior strategy too late for it to make any difference. The latter implies the existence of first mover advantages which are well documented in the business history literature, as in Alfred Chandler's *Scale and Scope*. In many industries at the turn of the 20th century, there was a huge advantage in scale of plant and therefore a common strategy was to scale as rapidly as possible since this prevented

¹⁶⁹ Harry Bloch. "Steindl's Analysis of Firm Growth and the Tendency toward Industry Concentration," p. 28 - 29.

¹⁷⁰ Alfred D. Chandler, *Giant Enterprise: Ford, General Motors and Automobile Industry* (New York, NY: Harcourt, Brace, 1964), p. 13.

¹⁷¹ Joseph A. Schumpeter, *Business Cycles* (New York, NY: McGraw-Hill, 1939), p. 108.

effective competition. Chandler writes, “the latecomers’ [initial] investment not only had to be larger [to catch up], they were also riskier, precisely because of the first movers’ competitive strength.”¹⁷²

These winners, however, exist in an industrial landscape which is constantly being transformed through increasing returns present across all industries, allowing for new divisions of labor and new innovations. It is a landscape which, at any moment of time, appears to be one of monopolistic competition with concentrated market share. In time, the increasing returns environment outside the firm will alter the superior uncertainty reducing strategy for the firms in the industry, forcing adaptation or creative destruction.

This analysis suggests that there are big winners and, perhaps, that the precariousness of these winners depends on the nature of change in their industry or, said another way, the time in which a strategy, once developed, can remain unchanged without danger. The nature of change for that industry depends on the degree of increasing returns available to that industry and the qualitative change in the external environment. History seems to suggest that some industries, like cigarettes or chewing gum, are protected from change since the increasing returns available in production and distribution are limited. But even here, contemporary readers will note the progress of “e-cigarettes” introducing a qualitatively new element into the otherwise “resistant to change” cigarette market. In other industries, like semiconductor manufacturers, there is constant evolution as every part of their business and the entire environment outside of their business is undergoing rapid change from increasing returns.

The key difference between Schumpeter’s theory and the other static or dynamic theories before him can be illustrated in the following way. If two firms were the same in every respect at an initial point in time—equal amounts of employee talent, financial capital, advantages of location and equal plant, etc.—the firm following a superior uncertainty reducing strategy will rapidly accumulate further advantages. The cumulative effect of these advantages result in greater market share. The firm following the more successful strategy will, furthermore, very likely

¹⁷² Alfred D. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA: Harvard University Press, 1994), p. 35.

have more resources to invest into adjacent markets, if they see this as a means of lowering their total uncertainty. Following Knight, if the firm believes they can move into a new market with some certainty of success, and which does not decrease their chances of continued success in their “old” market, a more general strategy of diversifying all their investment nearly compels the firm to grow adjacently, if only to scale their fixed costs of administration, sales and distribution. Or, put another way, a rational policy of reducing the uncertainty of investment always compels investment and growth if it reduces the long term uncertainty of existing investments. It is not merely investment for accumulation but also investment to protect investment. The firm following the inferior strategy, despite beginning in the same position as the other firm, will quickly be at a disadvantage. Depending on the nature of their industry, this may be decisive or merely a setback. All this, to quote Schumpeter, is “the tristest common sense” which is “overlooked with a persistence so stubborn as to raise the question of sincerity.”¹⁷³

¹⁷³ Ibid., p. 91. Schumpeter repeats this accusation in *History*, p. 146.

Bibliography

- Andrews, Philip W. S., Frederic S. Lee, and Peter E. Earl. *The Economics of Competitive Enterprise: Selected Essays of P.W.S. Andrews*. Aldershot: Edward Elgar, 1993.
- Arrow, Kenneth J. "Alternative Approaches to the Theory of Choice in Risk-Taking Situations." *Econometrica* 19, no. 4 (1951): 404–37. <https://doi.org/10.2307/1907465>.
- Bessembinder, Hendrik. "Do Stocks Outperform Treasury Bills?" *SSRN Electronic Journal*, 2017. <https://doi.org/10.2139/ssrn.2900447>.
- Bessembinder, Hendrik (Hank), Te-Feng Chen, Goeun Choi, and Kuo-Chiang (John) Wei. "Do Global Stocks Outperform US Treasury Bills?" *SSRN Electronic Journal*, 2019. <https://doi.org/10.2139/ssrn.3415739>.
- Black, Fischer. "Noise." *The Journal of Finance* 41, no. 3 (1986): 528–43. <https://doi.org/10.1111/j.1540-6261.1986.tb04513.x>.
- Blinder, Alan S. *Asking about Prices: a New Approach to Understanding Price Stickiness*. New York, NY: Russell Sage Foundation, 1998.
- Bloch, Harry. "Schumpeter and Steindl on the Dynamics of Competition." *Journal of Evolutionary Economics* 10, no. 3 (2000): 343–53. <https://doi.org/10.1007/s001910050019>.
- Bloch, Harry. "Steindl's Analysis of Firm Growth and the Tendency toward Industry Concentration." Essay. In *Rethinking Capitalist Development: Essays on the Economics of Josef Steindl*, edited by Tracy Mott and Nina Shapiro, 23–35. London, UK: Routledge, 2012.
- Blicht, Charles P. *Allyn Young: The Peripatetic Economist*. Houndmills, Basingstoke, Hampshire: Macmillan Press, 1996.
- Board of Governors of The Federal Reserve System. Z1 *Financial Accounts of the United States*. September 21, 2020. Distributed by the Board of Governors of The Federal Reserve System. <https://www.federalreserve.gov/releases/z1/20200921/z1.pdf>.
- Chamberlin, Edward H. "The Origin and Early Development of Monopolistic Competition Theory." *The Quarterly Journal of Economics* 75, no. 4 (1961): 515. <https://doi.org/10.2307/1884318>.
- Chamberlin, Edward H. "Monopolistic Competition Revisited." *Economica* 18, no. 72 (1951): 343. <https://doi.org/10.2307/2549607>.
- Chamberlin, Edward. *The Theory of Monopolistic Competition*. Cambridge: Harvard University Press, 1933.
- Chandler, Alfred D. *Giant Enterprise: Ford, General Motors and Automobile Industry*. New York, NY: Harcourt, Brace, 1964.
- Chandler, Alfred D. *Strategy and Structure: Chapters in the History of the Industrial Enterprise*. Cambridge, Mass: M.I.T. Press, 1969.
- Chandler, Alfred Dupont. *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, MA: Harvard University Press, 1994.

- Christensen, Clayton M. *The Innovator's Dilemma: the Revolutionary Book That Will Change the Way You Do Business*. New York, NY: Harper Business, 2000.
- Dequech, David. "Fundamental Uncertainty and Ambiguity." *Eastern Economic Journal, Eastern Economic Association*, Winter, 26, no. 1 (2001): 41–60.
- Dobb, Maurice H. *Capitalist Enterprise and Social Progress*. London, England: Routledge, 1925.
- Ely, Richard T., and Young A. Allyn. *Outlines of Economics*. 3rd ed. New York, NY: The Macmillan Company, 1919.
- Fisher, Irving. *The Rate of Interest: Its Nature, Determination and Relation to Economic Phenomena*. Mansfield Center, CT: Martino Pub., 2009.
- Hayek, F.A. "Competition as a Discovery Procedure." *The Quarterly Journal of Austrian Economics* 5, No. 3 (Fall 2002): 9–23.
- Hicks, J. R. "Annual Survey of Economic Theory: The Theory of Monopoly." *Econometrica* 3, no. 1 (1935): 1–20. <https://doi.org/10.2307/1907343>.
- Kaldor, Nicholas. *Economics without Equilibrium*. Armonk, NY: M.E. Sharpe, 1985.
- Knight, Frank H. *Risk, Uncertainty and Profit*. Martino Publishing, 2014.
- Knight, Frank H. "Statics And Dynamics." *The Ethics of Competition*, 2017, 153–77. <https://doi.org/10.4324/9781351304009-6>.
- Knight, Frank H. "Preface For The Reprint of 1957." Preface. In *Risk, Uncertainty and Profit*, lii-lxi. New York, NY: Reprints of Economic Classics, 1964.
- Knight, Frank H. "Some Fallacies in the Interpretation of Social Cost." *The Quarterly Journal of Economics* 38, no. 4 (1924): 582. <https://doi.org/10.2307/1884592>.
- Robbins, Lionel. "The Dynamics of Capitalism." *Economica*, no. 16 (1926): 31. <https://doi.org/10.2307/2548547>.
- Robinson, Joan Violet. *The Economics of Imperfect Competition*. London, England: MacMillan and Co., Limited, 1969.
- Marchionatti, R. "On the Methodological Foundations of Modern Microeconomics: Frank Knight and the 'Cost Controversy' in the 1920s." *History of Political Economy* 35, no. 1 (2003): 49–75. <https://doi.org/10.1215/00182702-35-1-49>.
- McCraw, Thomas K. *Prophet of Innovation: Joseph Schumpeter and Creative Destruction*. Cambridge, MA: Belknap Press of Harvard University Press, 2009.
- McCraw, Thomas K. "Schumpeter's Business Cycles as Business History." *Business History Review* 80, no. 2 (2006): 231–61. <https://doi.org/10.1017/s0007680500035479>.
- McNulty, Paul J. "A Note on the History of Perfect Competition." *Journal of Political Economy* 75, no. 4, Part 1 (1967): 395–99. <https://doi.org/10.1086/259295>.
- Mehrling, Perry G. *Money and Growth: Selected Papers of Allyn Abbott Young*. Routledge, 2014.

Mill, John Stuart. *Principles of Political Economy, with Some of Their Applications to Social Philosophy*. Gutenberg. Charleston, SC: BiblioLife, 2009.
<https://www.gutenberg.org/files/30107/30107-pdf.pdf>.

Minsky, Hyman P. Ph.D., "Money and Crisis in Schumpeter and Keynes" (1983). Hyman P. Minsky Archive. 334. https://digitalcommons.bard.edu/hm_archive/334

Modigliani, Franco, and Merton H. Miller. "The Cost of Capital, Corporation Finance and the Theory of Investment." *The American Economic Review* 48, no. 3 (1958): 261-97. Accessed May 9, 2020. www.jstor.org/stable/1809766.

O'Sullivan, Mary A. *Dividends of Development: Securities Markets in the History of US Capitalism, 1866-1922*. Oxford, England: Oxford University press, 2016.

Overton, Richard C. *Burlington Route: a History of the Burlington Lines*. Lincoln, NE: University of Nebraska Press, 1976.

Schumpeter, Joseph A. *Business Cycles*. I. Vol. I. New York, NY: McGraw-Hill, 1939.

Schumpeter, Joseph Alois. *Business Cycles*. II. Vol. II. New York, NY: McGraw-Hill, 1939.

Schumpeter, Joseph Alois, and Richard Swedberg. *Capitalism, Socialism and Democracy*. London, UK: Routledge, 2005.

Schumpeter, Joseph A. *Capitalism, Socialism and Democracy*. New York: Harper Perennial, 2008.

Schumpeter, Joseph A. *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest and The Business Cycle*. New Brunswick: Transaction Publishers, 1983.

Schumpeter, Joseph A., and Elizabeth B. Schumpeter. *History of Economic Analysis*. London: Routledge, 1994.

Schumpeter, Joseph Alois. *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism*. London, England: Transaction Publishers, 2002.

Schumpeter, Joseph. "The Instability of Capitalism." *The Economic Journal* 38, no. 151 (1928): 361. <https://doi.org/10.2307/2224315>.

Scitovsky, Tibor. *Papers on Welfare and Growth / by Tiber Scitovski*. Stanford, CA: Stanford University Press, 1964.

Shenk, Timothy. *Maurice Dobb: Political Economist*. New York, NY: Palgrave Macmillan, 2013.

Smith, Edgar Lawrence. *Common Stocks as Long Term Investments*. New York, NY: Macmillan, 1935.

Sraffa, Piero. "The Laws of Returns under Competitive Conditions." *The Economic Journal* 36, no. 144 (1926): 535. <https://doi.org/10.2307/2959866>.

Steindl, Josef. *Economic Papers, 1941-88*. London, UK: Macmillan, 1990.

Supple, Barry. *The Royal Exchange Assurance A History of British Insurance 1720-1970*. Cambridge, England: At the Univ. Press, 1970.

Swedberg, Richard. *Schumpeter: A Biography*. Princeton, NJ: Princeton Univ. Press, 1991.

Toner, Phillip. *Main Currents in Cumulative Causation: the Dynamics of Growth and Development*. Basingstoke, England: Macmillan, 1999.

Wilson, Charles. *The History of Unilever: a Study in Economic Growth and Social Change*. London, England: Cassell, 1970.

Young, Allyn A. "Economics as a Field of Research." *The Quarterly Journal of Economics* 42, no. 1 (1927): 1. <https://doi.org/10.2307/1885362>.

Young, Allyn A. "Increasing Returns and Economic Progress." *The Economic Journal* 38, no. 152 (1928): 527. <https://doi.org/10.2307/2224097>.

Appendix

Top Wealth Creator In Each Ten Year Period

Date	Sample Size	Top Firm	Percent by Top Firm	By Top 5 Firms	By Top 25 Firms
1926-01-01	493	GENERAL MOTORS CORP	21.22%	67.43%	86.19%
1927-01-01	521	GENERAL MOTORS CORP	13.91%	61.84%	80.14%
1928-01-01	565	AT&T INC	18.26%	71.19%	90.20%
1929-01-01	572	AT&T INC	15.33%	61.49%	83.37%
1930-01-01	580	GENERAL MOTORS CORP	18.52%	61.68%	80.79%
1931-01-01	597	GENERAL MOTORS CORP	12.50%	54.75%	72.78%
1932-01-01	614	SHELL OIL CO	10.54%	50.54%	70.30%
1933-01-01	620	GENERAL MOTORS CORP	11.70%	49.10%	67.77%
1934-01-01	623	AT&T INC	12.87%	50.50%	66.74%
1935-01-01	645	AT&T INC	12.10%	47.17%	63.35%
1936-01-01	672	AT&T INC	9.06%	37.67%	53.45%
1937-01-01	713	AT&T INC	9.44%	35.01%	51.94%
1938-01-01	741	GENERAL MOTORS CORP	8.44%	36.44%	52.37%
1939-01-01	766	CHRYSLER CORP	10.95%	57.36%	72.33%
1940-01-01	788	COCA COLA CO	9.85%	50.46%	66.31%
1941-01-01	818	GENERAL MOTORS CORP	8.45%	37.67%	53.91%
1942-01-01	837	GENERAL MOTORS CORP	8.66%	38.50%	53.12%
1943-01-01	860	GENERAL MOTORS CORP	9.49%	39.19%	53.55%
1944-01-01	872	GENERAL MOTORS CORP	8.85%	40.62%	55.13%
1945-01-01	879	GENERAL MOTORS CORP	9.07%	41.46%	55.79%
1946-01-01	899	GENERAL MOTORS CORP	10.67%	44.89%	59.68%
1947-01-01	920	GENERAL MOTORS CORP	10.17%	43.71%	59.87%
1948-01-01	959	ARCONIC INC	8.35%	47.60%	65.22%
1949-01-01	977	GENERAL MOTORS CORP	7.02%	41.62%	57.82%
1950-01-01	1022	GENERAL MOTORS CORP	6.98%	41.17%	57.14%
1951-01-01	1064	AT&T INC	7.30%	40.76%	56.79%

1952-01-01	1112	AT&T INC	8.87%	40.28%	54.30%
1953-01-01	2012	AT&T INC	8.52%	43.12%	56.95%
1954-01-01	2116	AT&T INC	8.94%	42.74%	55.46%
1955-01-01	2270	GENERAL MOTORS CORP	9.92%	42.89%	54.08%
1956-01-01	2383	GENERAL MOTORS CORP	8.67%	38.55%	50.25%
1957-01-01	2483	IBM	8.19%	35.93%	49.05%
1958-01-01	2615	IBM	9.70%	33.77%	44.84%
1959-01-01	2755	IBM	9.34%	30.72%	41.12%
1960-01-01	2978	IBM	13.60%	36.34%	49.39%
1961-01-01	3154	IBM	8.27%	40.96%	54.22%
1962-01-01	3337	IBM	6.71%	34.41%	48.16%
1963-01-01	3517	IBM	9.17%	33.53%	49.95%
1964-01-01	7168	IBM	7.11%	31.51%	50.71%
1965-01-01	7171	JOHNSON & JOHNSON	4.07%	31.05%	49.53%
1966-01-01	7210	IBM	5.17%	33.08%	50.06%
1967-01-01	7343	EXXON MOBIL CORP	6.05%	29.58%	45.95%
1968-01-01	7348	EXXON MOBIL CORP	7.72%	32.79%	45.97%
1969-01-01	7392	SCHLUMBERGER LTD	6.43%	35.26%	48.99%
1970-01-01	7496	EXXON MOBIL CORP	6.30%	25.74%	37.71%
1971-01-01	7827	EXXON MOBIL CORP	4.87%	27.95%	38.52%
1972-01-01	8434	NEC CORP	9.79%	31.29%	41.81%
1973-01-01	8640	NEC CORP	12.23%	24.80%	34.86%
1974-01-01	8536	NEC CORP	6.91%	18.90%	27.30%
1975-01-01	9042	NEC CORP	5.24%	24.37%	31.79%
1976-01-01	9450	NEC CORP	5.10%	20.80%	27.77%
1977-01-01	10159	NEC CORP	5.38%	16.36%	25.25%
1978-01-01	10961	NEC CORP	5.18%	18.40%	28.28%
1979-01-01	11195	NEC CORP	4.67%	18.53%	27.23%
1980-01-01	11303	NEC CORP	3.91%	19.47%	30.37%
1981-01-01	11541	ALTRIA GROUP INC	2.78%	20.02%	33.32%

1982-01-01	11769	EXXON MOBIL CORP	3.20%	20.22%	31.81%
1983-01-01	12126	EXXON MOBIL CORP	3.35%	20.55%	31.26%
1984-01-01	12759	GENERAL ELECTRIC CO	3.16%	18.37%	29.34%
1985-01-01	13362	EXXON MOBIL CORP	2.64%	17.54%	29.91%
1986-01-01	13527	COCA COLA CO	2.56%	18.12%	30.63%
1987-01-01	14076	COCA COLA CO	2.89%	19.89%	31.67%
1988-01-01	14471	GENERAL ELECTRIC CO	3.15%	18.72%	31.09%
1989-01-01	14493	MICROSOFT CORP	3.92%	22.09%	37.95%
1990-01-01	14575	MICROSOFT CORP	5.04%	23.84%	39.28%
1991-01-01	14815	GENERAL ELECTRIC CO	4.21%	19.94%	33.65%
1992-01-01	14605	GENERAL ELECTRIC CO	4.28%	21.69%	34.69%
1993-01-01	14284	MICROSOFT CORP	3.26%	19.36%	33.71%
1994-01-01	14167	GENERAL ELECTRIC CO	3.02%	18.61%	31.62%
1995-01-01	14072	GENERAL ELECTRIC CO	3.27%	17.50%	27.68%
1996-01-01	13889	GENERAL ELECTRIC CO	2.81%	15.89%	25.97%
1997-01-01	13664	EXXON MOBIL CORP	3.16%	15.03%	24.97%
1998-01-01	13330	EXXON MOBIL CORP	4.00%	16.14%	26.70%
1999-01-01	12525	EXXON MOBIL CORP	5.89%	17.40%	27.64%
2000-01-01	11640	ALTRIA GROUP INC	3.37%	16.55%	25.87%
2001-01-01	10926	APPLE INC	3.87%	17.02%	26.51%
2002-01-01	10305	APPLE INC	4.58%	18.82%	27.75%
2003-01-01	9931	APPLE INC	4.34%	16.96%	26.22%
2004-01-01	9751	APPLE INC	3.90%	16.57%	27.37%
2005-01-01	9745	APPLE INC	4.80%	16.73%	28.32%
2006-01-01	9608	APPLE INC	4.72%	18.74%	32.29%
2007-01-01	9369	APPLE INC	4.90%	19.03%	31.59%
2008-01-01	9090	APPLE INC	4.75%	20.72%	31.58%