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Economists Should Be Studying Monopoly Much More Extensively: How Our Interest in Monopoly Waned After We Began Thinking About Monopoly All Wrong

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ABSTRACT

Our forebears — including Adam Smith, Anne Robert Jacques Turgot, William Stanley Jevons, Frank A. Fetter, Lionel Robbins, Jacob Viner, Henry Simons and Thurman Arnold — understood there were many types of groups or organizations that develop into monopolies, including trade associations, cartels, unions, cooperatives and professional associations. They also emphasized that it's difficult to know the full extent of monopolization, as many monopolies were informally organized, while others, perhaps the majority, were alliances of monopolies, making both types hard to detect. Our forebears also understood that monopolies took many types of harmful actions, such as destroying substitutes for their products and services, typically those purchased by low income families. They saw monopolies as the major cause of inequality. But after 1950, our profession simply ignored our forebears' great knowledge. At this time, we adopted the definition of monopoly we have used for the last 75 years — "A monopoly is a firm that is a single seller with no close substitutes." This obviously presents a very narrow view of the organizations that develop into monopolies and the type of harmful actions they take. Under such a view, Harberger (1954) found that the social costs of monopoly were trivial. Our profession's interest in monopoly subsequently waned (see, e.g., Krugman (2015)). But our views about monopoly should not be driven by Harberger (1954), rather we should look to our great forebears. Moreover, a recent literature conducting research in the "spirit" of our forebears (reviewed in Schmitz (2020)) has essentially rediscovered our forebears' findings but for our current period. Our profession should be studying monopoly much more extensively.

1. Introduction

Our forebears, from Adam Smith and Anne Robert Jacques Turgot, through the first half of the 20th century, and including William Stanley Jevons, Frank A. Fetter, Lionel Robbins, Jacob Viner, Henry Simons and Thurman Arnold, understood there were *many types of groups or organizations* that develop into monopolies, not only firms that were sole sellers, including trade associations, cartels, unions and professional associations. They also recognized and emphasized that it's *difficult to know the full extent of monopolization*. Many monopolies were *informally organized*, with no names or addresses, making them hard to identify. Many other monopolies, perhaps the majority, were *alliances of monopolies*, also making them hard to detect.¹

Our forebears also understood that monopolies took *many types of harmful actions*, many of greater harm to society than higher prices. These harmful actions were taken against both “outsiders,” those not in the monopoly, and “insiders,” members of the monopoly. As for actions against outsiders, groups often achieved monopoly “status” by destroying substitutes for their products and services (i.e., those produced by “outsiders”), typically those that were purchased by low income families. They also *sabotaged new innovations* of outsiders, that is, new products and services (or the new technologies that produced them) developed by those attempting to produce new substitutes for the monopolies’ products and services.

Monopolies also attacked outsiders by infiltrating institutions, both public and private ones. A monopoly might place members inside government institutions. This is one method by which they sabotaged products that were substitutes for its products. But the harm inflicted by such infiltration often went far beyond the harms described above, as such infiltration could undermine the integrity of the public institution.

As mentioned, members of a monopoly also took harmful actions against other members within the organization (i.e., “insiders”). Our forebears understood that conflicts arose in monopolies between groups with different goals. A given group of insiders often had the

¹By “forebears,” I mean those scholars whose work was mostly completed before 1950.

interest to drive another group(s) from the monopoly, to increase its rewards and power. This group itself would face similar threats from other groups. For monopolies to “survive,” members of the monopoly would agree to place restrictions on the actions of each other. A common restriction was to grant property rights to a group in the monopoly to certain tasks in the organization. All others were restricted from performing them.²

Our forebears showed these restrictions led to *significant losses in productivity* in the monopoly organizations, as existing technologies were used inefficiently as a result of restrictions.³ They showed restrictions also led to the *blocking of innovations in existing technology*. Our forebears were concerned about these restrictions because, as they saw the great extent of monopoly, they understood these losses inflicted harm on all of society.⁴

Our forebears, then, saw two ways that monopolies blocked innovation: They sabotaged innovations of outsiders and also blocked improvements in existing technologies they used.

Based on their knowledge, our forebears could “see” that monopolies were the source of many economic crises in their time – such as in housing and health care – and that, again, they were almost always inflicted on the low income. Many forebears concluded that monopolies were a major cause, if not the greatest, of *poverty and inequality*.

Today, monopolies behave just as our forebears documented. They still produce economic crises, suffered mostly by the poor. In fact, many of the monopoly-induced crises our forebears documented, including those in housing and health care, continue to this day. If our forebears “visited” us for a day, they would immediately recognize the crises and the monopolies responsible for them. While monopoly behavior has not changed, our profession has profoundly changed. We don’t see the “hand of monopoly” in today’s economic crises or in overall inequality. We have a very poor understanding of monopoly.

This poor understanding resulted from a *giant wrong turn* we took, in the middle of the

²Some of these formal restrictions were called *jurisdictions* in construction, manufacturing and transportation industries. In other industries, like health care, they took the form, of what we would call today, *scope of practice* rules. There were also informal restrictions that were difficult to “see.”

³This meant, of course, that monopolies did not maximize profits.

⁴I use the word “harm” in

last century, in our study of monopoly. We turned our backs on our forebears – we simply ignored their work.⁵ We began to assume that firms are the only organizations that develop into monopolies. The monopolies we study, then, are *a small slice of actual monopolies*. We also assumed such firms have only one “weapon,” the price they charge (e.g., they have no weapon like blocking substitutes for their products). And in studying this small slice of monopolies, we employed approaches — like how we define monopoly — that insure we fail to understand even this small group.

Among those engineering this wrong turn were Stigler (1949), Harberger (1954) and Bain (1941). With this wrong turn, we have been *thinking about monopoly all wrong*. It has led us to the conclusion that monopoly is not very harmful. There are many reasons we reached this conclusion. Harberger’s (1954) finding that the social losses from monopoly were negligible has been influential.⁶

Initially, there was an incredulous response to Harberger’s finding, with many believing it must be wrong. This belief spawned a few different literatures in the 1960s that sought to “overturn his findings.” One literature was that on *rent seeking* with early papers by Tullock (1967) and Posner (1975). Another was the literature on “*X-efficiency*,” the idea that monopolies were inefficient producers, introduced by Leibenstein (1966). Both these literatures grew to be large, especially that on rent seeking, yet neither had any success in denting the original Harberger finding. Neither literature, for example, presented any evidence that persuaded the profession. Tullock (1997) admitted, with great honesty, that after 30 years of looking, he found no evidence.

Given our profession’s big push to overturn Harberger’s finding, and its resounding failure, our profession widely came to believe that monopolies were not very harmful. This naturally led to a *great waning* in our interest in studying monopoly. And as our current approaches

⁵There would be no more “standing on the shoulders of giants.” We struck off on our own, with the ground beneath our feet.

⁶Harberger was very surprised by his findings: “In short, we have labored at each stage to get a big estimate of the welfare loss, and we have come out in the end with less than a tenth of a per cent of the national income. I must confess that I was amazed at this result.” (p. 86) Harberger’s losses are a particular type of harm, often called deadweight losses. I’ll use the word “harm” in a more general way.

to study monopoly have found little evidence to indict monopolies in the economic crises of today, as they have little power to do so, our interest in monopoly has continued to wane. Harberger's conclusion remains intact (see, e.g., Tirole (1988, p. 68), Olson (1996), Tullock (1997) and McCloskey (2017)).

The purpose of this paper, then, is to argue that our profession should be *studying monopoly much more extensively*. Our views about monopoly should not be driven by Harberger (1954), or much of the recent literature on monopoly, as the conclusions are based on flawed approaches. Rather, our view should be that of our forebears: Monopoly is harmful, maybe significantly so. We should consequently study monopoly like they did. A large part of the profession, no matter the subject they were studying, believed that understanding monopolies was crucial to understanding their subjects, whether this was housing, health care, manufacturing, inequality, international trade, public finance, public policy, crime and more. Today, we should not leave the study of monopoly to a single field in economics.

I argue we should study monopoly more extensively in *three steps*: (1) By showing the important lessons about monopoly that our forebears bequeathed to us, lessons, as I said, that are as relevant today as in their time; (2) By discussing a literature that has continued working in the “spirit” of our forebears after 1950 and has essentially rediscovered our forebears findings but for our current period; and (3) By showing the impotence of our current approaches to studying monopolies. I'll argue details below, but experience has shown its impotence: After 75 years of following these approaches, we have discovered little of what our forebears knew about monopoly. Having a bad understanding of monopoly is one thing. If our approaches to studying monopoly were “good,” we could make progress. But we don't progress — we are at a dead end.

The first few sections of the paper take the *first step* — describing our forebears knowledge of monopoly. Section 2 discusses “What organizations become monopolies,” “What harmful actions monopolies take,” and “The types of harm, and the extent of harm, they cause.” Section 3 discusses some of our forebears detailed studies of industries where monopolies had

created economic crises. Section 4 discusses (in more detail than in Section 2) some of our forebears writings on monopoly (including Turgot, Jevons and Simons). Section 5 discusses the *definitions of monopoly* created by our forebears.

Some of the important lessons we learn in Sections 2 to 4 include the large role monopolies played in *economic crises*, and that they were typically inflicted on the poor. I say there is an economic crisis if there is a good or service, of importance to well being of individuals, that is not purchased by a large fraction of the population under current production methods, but that would be purchased in significant amounts if produced under a different technology, one that is available, but has been blocked by monopolies. Our forebears produced many studies of monopolies in housing construction, from the 1860s through to 1950, in England and the United States, showing monopolies led to housing crises. Jevons (1883, [1868]) explained how powerful trade unions in England *blocked new construction methods* and *significantly raised wages*, concluding

“If then the operatives of the building trades gain, it is at the expense mainly of multitudes of their fellow-countrymen who are retained in wretched unhealthy dwellings *unworthy of the nineteenth century*.”⁷ (emphasis added)

In the United States, Judge Keensaw Mountain Landis (as described in Montgomery (1926)), Thurman Arnold (1947) and Edward Levi (and colleagues, including Speck (1947)) showed how monopolies in the traditional construction industry played key roles in creating the housing crises of the first half of the 20th century.⁸

We also learn many forebears concluded that monopolies were a major source of *overall economic inequality*. Here is Adam Smith (1981,[1776])

“It is the industry which is carried on for the benefit of the rich and the powerful, that is principally encouraged by our mercantile system. That which is carried

⁷By the notation — (1883, [1868]) — I mean the quote is from the publication of 1883, though it was originally published in 1868.

⁸Edward Levi organized a group at the University of Chicago Law School in the late 1940s to study housing crises. See below.

on for the benefit of the poor and the indigent, is too often, either neglected, or oppressed.” (p. 644).

and Smith again

“In every different branch, *the oppression of the poor must establish the monopoly of the rich*, who, by engrossing the whole trade to themselves, will be able to make very large profits.” (p. 112).⁹ (emphasis added)

Here is Thurman Arnold (1942) discussing his experience running the DOJ antitrust division:

“We found that our [United States] only expansion had been in luxuries – following the fundamental axiom that in a monopoly economy luxuries expand while the necessities of life contract. We had to subsidize the distribution of food and housing and medical supplies, while even those on relief had automobile and radios.”

We learn that monopolies have invariably infiltrated public and private institutions to pursue their goals. In describing monopolies, Thurman Arnold wrote:

“*They enter into politics using money and economic coercion* to maintain themselves in power, making alliances with other powerful groups against the interests of consumers and independent producers. In short, they will become a sort of independent state within a state, making treaties and alliances, expanding their power by waging industrial war, dealing on equal terms with the executive and legislative branches of the government, and *defying governmental authority if necessary with the self-righteousness of an independent sovereign.*” (emphasis added)

Arnold’s description above is based on his many decades studying monopolies as a legal scholar and his deep experience running the DOJ antitrust group for many years. This description is also part of his definition of monopoly discussed in Section 5.

⁹In the first quote, Smith is discussing conditions in the United Kingdom; in the second, conditions in China.

Our “early” forebears, like Smith (1776) and Turgot (2011), identified organizations as monopolies by how they behaved, the actions they took.¹⁰ When formal definitions of monopoly began to be developed in the late 19th and early 20th centuries, many forebears — like Arnold — followed this approach, that is, their definitions centered around the harmful actions that groups and organizations engaged in. I’ll use the hyphenated words, behavioral-definition or action-definition, to distinguish these definitions from others to follow below.

The word “monopoly” obviously had a much broader meaning for our forebears than it did for Aristotle, who is credited with its initial use. He used it to mean “sole seller.” Many words undergo significant changes in meaning — as monopoly did — a process sometimes called *semantic change*. And of the many ways words might change meaning, one process is called “broadening,” the process at work with monopoly.

As our forebears had a very broad view of monopoly, we learn that they, not surprisingly, had difficulty defining monopoly. They had identified so many organizations as monopolies, and identified so many harmful actions that they took, it was a tall task to develop an abstraction, that is, a definition, that captured the important elements of monopoly. Because of this, the development of such definitions proceeded slowly and no single such definition had emerged as a “favorite” version in the first half of the 20th century.

Arnold’s definition captures much of what our forebears had learned about monopoly, that is, about their harmful behaviors and actions. It’s uncanny how he achieved such a definition. It’s true that monopolies act the same everywhere, and act the same across time and across industries, yet it required someone like Arnold to capture this in a (relatively) brief abstraction. In Thurman Arnold’s definition, a monopoly is a group or an organization that has taken control of the market, where control is defined by a list of actions he specifies, such as destroying existing substitutes and sabotaging new ones. I put Arnold’s definition in an Appendix, as it’s a bit long and is also not easy to fully appreciate at this point.¹¹

¹⁰In my discussions of Turgot throughout the paper, I rely on the English translations of his work, assembled in *The Turgot Collection* (2011). For a collection of the original French texts, see *Oeuvres de Turgot et Documents le Concernant* (1923).

¹¹In Thurman Arnold’s definition of monopoly, he does not require the organization to be a sole seller.

Section 6 discusses the *second step* in arguing that we should study monopoly more extensively — reviewing the literature that has worked in our forebears’ spirit since 1950. Some of this “early” research was produced by Schelling (1967,1971), Tullock (1967), Buchanan (1973) and Olson (1982), and more recently, in various papers and books, by Edward C. Prescott, David K. Levine and Thomas Holmes. The literature’s findings are remarkably similar to our forebears’ findings in Sections 2 to 4 — it has essentially rediscovered them. It’s from this literature that we know monopoly behavior (and its great extent) has changed little from our forebears’ time.¹² It’s from Section 6 that I can say: If our forebears “visited” us for a day, they would immediately recognize the crises and the monopolies responsible for them. In housing, for example, Schmitz (2020) and Falcettoni, Schmitz and Wright (2024) argue that housing crises suffered in the United States since 1950 were primarily inflicted by monopolies.

For much of the literature in Section 6, in particular, that from the last few decades, the research was motivated by the shortcomings of the current approaches to studying monopoly (discussed in Section 7). New approaches were sought. This literature in Section 6 has, unfortunately, only very recently discovered our forebears’ great knowledge (at least that is true for me). Though we rediscovered many of their findings, these forebears are giants, and we have learned, and continue to learn, an incredible amount from them.

Section 7 discusses our current approaches to studying monopoly. We assume firms are the only organizations that develop into monopolies. We then employ definitions of monopoly that insure we make little progress in understanding these monopolies. Section 7 begins by discussing the history of how we arrived at our current definitions. Above, I gave the image of our profession making a wrong turn after 1950. Here I expand that image — our profession was driving erratically for a few decades in the first half of the 20th century and

Rather, the organization has “control” of the market. A monopoly, then, is an organization that has control of the market, where control is defined by a list of actions specified by Arnold. See discussion in Section 5.

¹²The literature in Section 6, that following in our forebears’ spirit, has shown monopolies creating crises in many industries. But it’s a very small literature compared to that discussed in Section 7 (on our current approaches). This literature in Section 6 has, unfortunately, only very recently discovered our forebears’ great knowledge (at least that is true for me).

then, unknowingly, made the wrong turn. The erratic driving set ourselves up for failure. Incredibly, we warned by some forebears that this would be the outcome of this erratic driving.

Over 100 years ago, some economists began to use profits in defining monopoly. Dobb (1925) argued that a monopoly is a firm with positive profits. In this definition, there is nothing about the behavior or actions of the firm. Dobb understood that a firm could earn positive profits as a result of harmful actions like those discussed above, like blocking substitutes. He also understood profits could be earned because of superior skills of a firm's manager, or by building a superior organization, and so on. Yet he argued the word "monopoly" should be applied to both types of firms.¹³ Robbins (1926) argued this was "bad" economics, that we needed to consider what types of actions led to a firm achieving profits, and that not doing so could lead to confusion (as it did).

Robbins, then, was arguing that a definition of monopoly should include the behavior of the firm — a *behavioral-definition* or action-definition, while Dobb was arguing for, what I'll call, a *profit-definition*. A decade after Robbins, many economists began to define monopolies as firms with positive price-cost margins. These economists cited Lerner (1934) for this definition. But Lerner never gave this definition — he was misinterpreted. Stigler (1949) defined a monopoly to be a firm with a positive price-cost margin. Just as with profits, when defining monopoly on the basis of price-cost margins, there is nothing about the actions or behavior of the firms. Robbins' critique of Dobb applies equally well to price-cost margins.

But this literature added another "*failure*" relative to Dobb in its uses of price-cost margins. Dobb made clear that profits could be achieved by "harmful" actions and by "productive" actions. In this literature, however, it was (implicitly) assumed that if a firm had a positive price-cost margin, then the firm had achieved it by some harmful action. This implicit assumption that positive profits and price-cost margins resulted from a firm's harmful actions persists to this day.

¹³Dobb had reasons for defining monopoly this way. Dobb was a very good economist. He also was a Marxist. Robbins suggested he may have chosen this definition for reasons of propaganda.

The introduction of these profit-definitions were likely a major factor in how our profession ultimately forgot our forebears great knowledge. If monopolies could now be identified with positive price-cost margins and, further, if there was no need to “consider” the source of these price-cost margins (as the source was harmful behavior), the study of monopoly becomes quite “easy.” No more struggling to develop behavioral-definitions of monopoly. And then, given these definitions, no more struggling to identify monopolies and their harmful actions. No more difficulties assessing which actions created the greatest harm. All this work was summarized in a single statistic, profits or price-cost margins. As the profit-definitions pushed out the behavioral-definitions, we, obviously, began to loose contact with our forebears’ knowledge more generally. That our profession would take such a significant wrong turn, which involved ignoring our forebears great knowledge, and more, is perhaps more understandable given this history.

When we turn to the post 1950 era, a new type of definition gained prominence. This is the definition found in today’s textbooks: “A monopoly is a firm that is a sole seller of a good without close substitutes.”¹⁴ Note that with this definition, there is also nothing about the actions or behavior of the firms. There is no notion of how the firm achieved “sole seller” status.¹⁵

This definition, obviously, leads to a great reduction in the number of firms that are considered monopolies relative to definitions based on profits or price-cost margins. The number of sole sellers is very small; the firms with positive price-cost margins is very large. This incongruence likely was a big spur to the next definition, that of market power. A firm has market power if, though *not a sole seller*, it has a positive price-cost margin. Again, in this definition, there is nothing about the nature of the actions or behavior of such firms. But the implicit assumption, as above, is that the positive price-cost margin was achieved though harmful means. Robbins’ critique, of course, applies equally well to market power.

¹⁴It’s interesting to note that the qualifier “sole seller” wasn’t discussed by Robbins or Stigler.

¹⁵It’s typically assumed that the status was achieved by harmful means, as this definition of monopoly is usually followed by an analysis of the losses from monopoly.

To see the confusion which Robbins warned us about, consider the current literature on market power. De Loecker, Eeckhout and Unger (2020) (DEU) begin their paper: “Thriving competition between firms is a central tenet of a well-functioning economy. The pressure of competitors and new entrants leads firms to set prices that reflect costs, which is to the benefit of the customer.” Why is it “bad” for the economy if firms are developing new products that are of great benefit to society though they achieve positive price-cost margins and earn profits in the process? If new products are to be developed, firms must be able to expect to enjoy positive price-cost margins and earn profits.

DEU continue: “In the absence of competition, firms gain market power and command high prices. This has implications for welfare and resource allocation. In addition to lowering consumer well-being, *market power decreases the demand for labor and dampens investment in capital*, it distorts the distribution of economic rents, and it discourages business dynamics and innovation.” p 562 (emphasis added). How does new innovation resulting in increased profits and markups decrease the demand for labor and dampen investment?

Section 8 turns to the actual experience of studying monopolies under our current methodology, showing how it’s failing us in our study and understanding of monopoly.

While nearly all the forebears I discuss thought monopolies should be fiercely fought, Schumpeter (1942) was not so sure. In his models, firms engaged in innovation, that is, developing new products and services. But Schumpeter’s firms also sabotaged the innovations of others. Schumpeter knew well these harmful actions that firms engaged in, like sabotaging substitute products. He would likely agree with Arnold’s definition of monopoly. He would call firms engaged in these harmful actions “monopolies.”

Schumpeter’s positive theory, then, is quite different than today’s literature studying “Schumpeterian models” of growth. His models had the feature of “*creative destruction*,” of new goods “destroying” and replacing old goods. But they also had the feature of, what I’ll call, “*unimaginative destruction*,” with firms destroying existing substitutes to its products, and newly developed ones. Some new goods might destroy old ones (creative

destruction), but other new goods are eliminated before they have the chance to destroy old ones (unimaginative destruction).

In these views about creative destruction, Schumpeter had plenty of company. Our forebears knew well that many new innovations were developed that threatened to destroy old goods, like factory-built homes in construction. And they knew well that many such goods were destroyed by monopolies (i.e., unimaginative destruction). But Schumpeter's normative views were truly novel. He argued that there were innovating firms that *stood above the rest*, being controlled by special leaders, and that they should be allowed to sabotage the innovation of other firms. He argued the greatest innovation in the aggregate would be obtained by allowing these special firms a large free rein in the sabotage of others. Speaking of Standard Oil Company (and others), Schumpeter argued "As we have seen, such concerns are aggressors by nature and wield the really effective weapon of competition. But these aggressors are so circumstanced as to require, for purposes of attack and defense, also pieces of armor other than price and quality of their product ..." (1942, p. 89)

Schumpeter faced pushback on his ideas. Edward Mason (1951, p. 140) did not object to his positive analysis, that Standard Oil (and others) used many restrictive devices against others, but to his normative conclusions, that this produced the greatest overall innovation. "The history of the firms and industries which Schumpeter cites in support of his thesis is capable of yielding a rather different story." Schumpeter himself was not so sure.¹⁶

2. Forebears: Many monopolies, many actions

Section 2 presents the views of a "large" number of forebears on a "wide" range of issues. Section 2.1 discusses the monopolies identified by our forebears. Our forebears identified monopolies by the actions they took. Sections 2.2 to 2.6 discuss the different types of harmful actions taken by monopolies. Section 2.7 discusses our forebears views on the extent of harm inflicted by monopolies.

2.1 What groups/organizations become monopolies.

¹⁶I briefly discuss Schumpeter in the Appendix.

Here I describe the types of organizations that they recognized as often developing into monopolies. Before describing these monopolies, it's important to highlight our forebears' humility in identifying monopolies. They emphasized it was *difficult to know the full extent of monopolization*. Groups organizing themselves into monopolies obviously have a great incentive to avoid detection. One method to avoid detection was developing *informally organized* monopolies, that is, organizations with no name, no address, and so on. Another method was to form a monopoly that was an *alliance of monopolies*. Alliances by their nature (with different groups performing different tasks in the monopoly) were difficult to detect.

Here are some of our forebears' warnings about the difficulty of detecting monopolies and their harmful actions. In his discussion of trusts, Folwell (1918,[1900], p. 35) wrote: "Monopolies are always odious, and these trust monopolies, because secret and irresponsible, were especially so." In his discussion about the extent of monopolies in the United Kingdom, Robbins (1939, p.62) warned that there was a "need of analysis ... to look for monopoly beneath competitive appearances." Here is Wendell Berge (1947, 362-3): "The weapons of monopoly are as numerous as they are artful and varied. It is for this reason that monopoly conditions have often grown up almost unnoticed by the public until one day it is suddenly realized that an industry is no longer competitive but is governed by an economic oligarchy able to crush all competition."¹⁷

Theodore Kreps (1945) argued that significant monopoly positions were often developed through informal meetings and understandings: "... the type of collaborative action embodied in and limited to the terms of a written contract is in many respects the weakest. After competitors come to know and trust each other, the written agreement or formal association is felt to be crude, inflexible, and unnecessary." He continues: "There then evolves what has been called the 'basketball technique,' proceeding according to unwritten almost automatic habit patterns of action." (p. 299)

¹⁷Berge was the U.S. Assistant Attorney General for Antitrust who followed Thurman Arnold.

Frank Fetter, a president of the American Economic Association, spoke of the great power of monopolies – they can destroy liberty — yet they can also strike with secrecy: “... the ways of monopoly are devious and past prediction, and eternal vigilance [to limit them] is the price of economic as well as of political liberty.” (1938, 567). Frank Knight’s (1939, p. 273) observations on the complexity of monopolies is also relevant: “The imperfections of the market, including monopoly of all kinds and bases, create power relations of infinite complexity as to kind and degree. They are by no means limited to ‘big business,’ or to ‘trusts,’ as Lord Russell and the public think.”

I now discuss a few of the different types of monopolies that our forebears detected. A given organization may belong to many monopolies. To start with a concrete example, consider carpenters that formed a union among themselves. To work in carpentry in a city, one had to belong to the carpenter’s union. This union set rules for such work. The carpenter’s union would often form alliances with other unions, like the bricklayers and laborers, for dealings with contractors. And for other issues, like blocking factory-built housing, the carpenters would form alliances with more groups, like contractors, building code inspectors and more.

I distinguish three types of monopoly. I label the first type “stand-alone” monopolies, organizations that are monopolies when acting on their own. The last two are different types of “alliances of monopolies.”

Types of Monopoly – Stand-Alone Monopolies

Individual *guilds* were long considered monopolies. Fox (1947) discusses how the word monopoly was in wide use in England by 1600 to refer to guilds and patent holders (a patent was the right given to a group to sell a commodity).¹⁸ Turgot thought guilds were a great threat to the French Republic as they led to significant inequality (more on Turgot throughout). Adam Smith also argued guilds (which he typically called corporations and

¹⁸See, in particular, Fox’s footnote 5, on pages 25-26, where he presents a long list of quotes from the 1500s and 1600s where guilds are described as monopolies. See also Ogilvie’s (2019) very impressive analysis of guilds.

universities) led to significant inequality (see pp. 135-159). Walter Bagehot (1885, p 105) discussed the power of informally organized guilds.¹⁹

Jevons (1981, [1866]) argued *labor unions* in the United Kingdom were monopolies, and that they were a great threat to the country's well-being (more on Jevons throughout). Fetter discussed the significant power of U.S. unions, here discussing those in railroads, where the "... closed shop, with the conditions of membership in the control of the union, creates a distinct monopoly of labor, leaving the employer helpless in any wage dispute and enabling the union to enforce its every demand, regardless of the competitive conditions of the labor market for that class of services" (1923, p.204).

Fetter also discussed the move to monopolization in agriculture: "Here are evidences, with increasing organization among farmers, of an intention to seek political power and favors, which promises to present a new problem of monopoly and bodes ill for the other elements of the community. The road of true progress is not toward more monopoly for farmers, but toward less monopoly for large business and favored commercial interests." (1923, p. 256)

Frank Knight (1939, p.273) thought that *labor unions* and *agricultural groups* were the strongest U.S. monopolies. Jacob Viner also spoke of how monopolies formed in agriculture.²⁰

Cartels were also considered monopolies. Thurman Arnold made no distinction between a cartel and a monopoly: "These great organizations, created to restrict competition, are often called – for want of a simpler word – ‘cartels’ or monopolies." (1945, p.5)

Adam Smith (p.471) used the word *tribe*, for what we would today label a *trade association*, to refer to the manufacturers of a particular good that banded together to block imports of that good (more on tribes below). In a *Positive Program for Laissez Faire*, Simons (1948, p. 48) compared the "*trade-association form of monopoly*" to both that of the cartel

¹⁹ "Even where there is *no formal guild*, the circumstances which have elsewhere created so many, create an *informal monopoly*, mostly much stronger than any force which strives to infringe it." (emphasis added)

²⁰ He mentioned monopolies in "construction (with "concealed protection of monopoly by doctored building and other ordinances"), retail trade (with "so-called 'fair-trade' laws which compel businessmen to act as if they were monopolists even if they wish not to") and farming (where farmers enjoy "the pleasures and profits of monopolistic behavior") (1940, 13)

and trade-union, calling the equilibrium under each to be “strikingly similar.”²¹

Fox (1947), and many others, recognized that *professional associations* were no different than guilds.²² Robbins (1939) saw *licensed groups*, and even *castes*, as monopolies.²³

As all these “stand-alone” monopolies behaved very similar to each other, our forebears often used general terms to refer to them. *Special interests* and *vested interests* were some terms used; Henry Simons favorite term was “*organized minorities*.”

Continuing with stand-alone monopolies, some *large corporations* were recognized as monopolies, as Frank Knight mentioned above. *Organized crime groups* were recognized as monopolies. Lindesmith (1941, p 121) emphasized the *process of exclusion* in forming such a monopoly. Thomas Schelling (1971) would later more formally define an organized crime group as a monopoly based on how it excluded members (see below). Lindesmith also discusses how the group would handle the problem of *defection*. “It consists in organizing machinery for the forcible enforcement of the code. It involves informal gang trial and ruthless, skillful, impersonal killing, not only of informers, but also of competitors, troublesome characters, gangsters who wish to retire, and sometimes of members of respectable society.”

I next turn to monopolies formed by alliances of organizations. I consider two types of alliances: (1) alliances of stand-alone monopolies and (2) other alliances, not easily categorized.

Types of Monopolies – Alliances of Stand-Alone Monopolies

When defining monopolies, Thurman Arnold emphasized these groups affinity to form

²¹Simons’ “Positive Program for Laissez Faire” was originally published in 1934 as a pamphlet. For the purpose of citation, I rely on the 1948 republication of this work.

²²Here is Fox (1947, 10-11): “Those monopolies which owe their causation to legal action, although of a collective type, nevertheless operate by an exclusionary process upon the great majority of the public. These are the monopolies which constitute the so-called ‘closed corporations’ of the professional classes.” ... “In this sense the professions and many other occupations today occupy a position in no way different from the medieval craft guilds and in truth cannot be distinguished from them so far as the right of exclusive privilege is concerned.”

²³“If entry to any line of supply is limited by law or by coercive custom, let us say by a license system or by the institutions of a caste society, it seems reasonable to speak of the existing suppliers as possessing a monopoly and the incomes resulting from their position as essentially monopolistic. There may be competition within the group in the sense that sellers take the market prices for granted. There may be competition in service. But the fact of the limitation of entry gives the group a monopolistic status.” (p 48)

alliances with other powerful groups. Here, I repeat a part of Arnold's definition, given above, but emphasize different clauses: "They enter into politics using money and economic coercion to maintain themselves in power, making *alliances with other powerful groups* against the interests of consumers and independent producers. In short, they will become a sort of *independent state within a state, making treaties and alliances*, expanding their power by waging industrial war, dealing on equal terms with the executive and legislative branches of the government, and defying governmental authority if necessary with the self-righteousness of an independent sovereign." (emphasis added)

Adam Smith discussed the alliance he called "the monopoly of manufacturers" (essentially Britain's mercantile system). This was an alliance of tribes mentioned above. The success of this alliance, of course, encouraged the development of new tribes that could join the monopoly of manufacturers. Smith (1776, p. 471) wrote: ". to attempt to reduce the army would be as dangerous as it has now become to attempt to diminish in any respect the monopoly which our manufacturers have obtained against us. This monopoly has so much increased *the number of some particular tribes of them*, that, like an overgrown standing army, they have become formidable to the government, and upon many occasions intimidate the legislature."

Wolman (1944) used the term *joint monopolies* to refer to the monopolies formed between organized labor and organized industry. "In short, a scheme of things which begins as a simple means of improving the methods of collective bargaining and achieving several of the familiar aims of trade unions flowers shortly into joint monopoly, in its most advanced and effective form." Wolman continued: "Joint monopolies of organized labor and organized industry have long thrived in the *building industry* of many American cities." (p 488) [emphasis added]. Similarly, Simons (1938, p 11) argued "...what we commonly fail to see is that enterprise monopolies and labor monopolies powerfully supplement one another — that the bargaining organizations have large interests in common which are utterly opposed to those of the community as a whole."

The giant corporate organizations that were monopolies (when acting independently) formed alliances with other types of monopolies (e.g., unions, as described by Wolman), but also among themselves. The FTC (United States, 1947) called them *cooperative organizations*. Here is the FTC: “In America we have chosen to call the cooperative organizations [among corporations] set up to further group monopolies by such euphonious names as “trade associations,” “institutes,” “patent pools,” “code authorities,” and the like, even though the group monopoly objectives, the methods used, and the economic effects produced are indistinguishable from those of organizations known as cartels in foreign countries.” (p. 144)

Types of Monopolies – Other Alliances (Not Easily Categorized)

Folwell (1918,[1900]) saw *trusts* as a way to “monopolize” (see his definition of monopoly below). He argued it was not the case that large scale production gave rise to the opportunity to monopolize, as trusts had arose before such developments. “The trust did not give rise to large production, and its accompanying economics, but succeeded to that régime.” Folwell discussed the similarity between “alliances” in feudal society and trusts.²⁴ (p.40)

Max Weber (2019, [1921]) used *cooperative monopolies* or *cooperative organizations* to refer to alliances. Weber describes how monopolies were formed to effectuate “the exclusion of outsiders from sharing in the fields and commons of a Village.” (p. 342)

2.2 Harmful actions taken by monopolies

As our forebears understood it was difficult to know the full extent of monopolization, they also emphasized it was *difficult to know the full variety and scope of monopoly actions*.

²⁴Here is Folwell: “...some powerful noble would come forward, and say to his weaker brothers, ‘Swear fealty to me, give over your lands, array yourselves under my banner, and I will be your protector.’ Then arose that custom known as ‘commendation’ under which independence was sacrificed to security. The original trust seems to me closely analogous to ‘commendation.’ I think it safe to declare that in every case [of a trust formation] there was a ‘promoter’ sharp, enterprising, not over scrupulous, the counterpart of the great land protector under early feudalism. Individual operators were just as keen to put themselves under his leadership, as was he for the glory and profit of a grand enterprise. The trust proper was thus born. Its essence, a small body of men (called trustees) dominated by a promoter, to whom individual proprietors assigned their plants, and stockholders their shares, receiving in exchange, so-called trust-certificates. A large majority of existing establishments, sometimes rising to eighty percent, were taken into the fold, and the remainder, the less vigorous, were left to a fate easy to foresee, and which they soon met. These trustees managed the whole industry as if they were proprietors although they had not a shadow of legal title to the properties; they regulated output, assigned territory, and fixed prices, and held them fixed by factors’ agreements.” (pp.34-35)

As Berge wrote above: “The weapons of monopoly are as numerous as they are artful and varied.” This is another reason why our forebears argued that “eternal vigilance [to limit monopolies] is the price of economic as well as of political liberty,” and why they had humility about their knowledge of monopolies, great as it was.

One such weapon was to “high-jack” legislation. Here is Adam Smith: “The proposal of any new law or regulation of commerce which comes from this order [i.e., monopolies] ought always to be listened to with great precaution, and ought never to be adopted till after having been long and carefully examined, not only with the most scrupulous, but with the most suspicious attention. It comes from an order of men, whose interest is never exactly the same with that of the public, who have generally an interest to deceive and even to oppress the public, and who accordingly have, upon many occasions, both deceived and oppressed it.” (p.267)

2.3 Reducing productivity of existing technology

This section and the next discusses actions that are harmful to those “inside” the monopoly organization. As I said above, members often put restrictions on the behavior of other members. Our forebears showed this led to existing technologies being used inefficiently (this section) and to the blocking of innovations in existing technology (next section). This knowledge was based on their own observations of monopolies, from extensive evidence and theory.

I start with a few observations. Here is Knight (1939, 272): “... most monopoly does not create monopoly profit to any great extent, but results simply in waste through the *misuse of economic resources*.”²⁵ Ruth Mack (1954), who discussed Harberger (1954) at the AEA meetings of 1954, questioned his very small estimate of the losses from monopoly: “I ask, in other words, whether the horizontal cost curve may itself be too high” Stated another way, Mack is saying monopoly “raises the cost curve,” a loss not included in

²⁵Machlup (1952, 32) made a similar point: “One must be on guard against the widespread misunderstanding that the effects of monopoly power are always visible in the form of ‘exorbitant prices’ being charged to buyers Where the monopolistic restrictions lead to *inefficient use of resources*, it may be the economic costs that are excessive, not the profit margin.”

Harberger’s calculation. Mack gave specific reasons why monopolies may raise costs curves. A year later, also at the AEA meetings, Machlup (referenced under Ackley, Gordon and Machlup, 1955, p. 481) made similar arguments: Monopolies have “High production cost behind monopolistic barriers, such as tariffs, patents, building codes ...”

—Evidence: Inefficient use of existing technology.

For the type of actions that led to inefficient use of existing technology, let me give a simple case from the construction industry. The same phenomena was happening throughout the economy, in industries like transportation and manufacturing. Extensive evidence is given in Section 3.

Some of the many groups on construction sites in the first half of the 20th century included carpenters, painters, window glazers, bricklayers, laborers and puddlers (making cement). Each of these groups typically had their own union. These individual-unions typically formed alliances with other individual-unions. One such alliance would be the “grand-alliance,” that is, an alliance of (most) of the individual unions. I call this grand-alliance the “parent organization,” a name used at the time. The contract of the parent union specified the jurisdictions that governed interactions of these groups.²⁶

Consider carpenters and laborers. In most cases, the carpenters’ jurisdiction gave them the right to resupply themselves with wood and so on. The jurisdiction would often “reach back” to where the supplies had been unloaded. Carpenters would walk back to these locations and then back to the work site. They then carried the supplies up to the roofs or other parts of the structure. Such rules obviously added to the costs of construction — carpenters were high-skilled and received higher wages than low-skilled laborers. It also reduced productivity. There was also an “independent” impact on productivity.²⁷

—“Theory”: Inefficient use of existing technology.

²⁶These individual-unions had their own contracts, which specified jurisdictions for interactions of members among themselves. For example, for carpenters, there was no work to be done work “outside” the union (i.e., no moon-lighting). This brought immediate expulsion.

²⁷Delays at the construction site could often result as some carpenters would be idle as other carpenters would be in the process of resupplying materials. Turgot has a wonderful description, which I give below, of how jurisdictions cause delays (2011, p. 275).

What theory might explain why a monopoly organization chooses to reduce its current productivity? This makes no sense in current approaches, as the internal organization of the monopoly plays no role. In the definition used in textbooks, *the monopolist* is a single entrepreneur, or many identical ones. The theories for why monopolies engage in inefficient use of existing technology are based on conflicts among groups. It was the conflict between carpenters and laborers over work rights that was the source of the jurisdictions described above. These jurisdictions led to lost productivity. This is a theory (see Reder 1947).²⁸

We can, of course, push Reder's theory further by asking: Why can't an agreement be reached between carpenters and laborers to reduce the waste? There might be "large" gains from reducing the number of carpenters and increasing the number of laborers. The jurisdictions were there for a reason. The gains were known to the parties. So, it must have been hard to reach agreements. My purpose here is to give just one aspect of the difficulties.

Most senior workers in the carpenter's jurisdiction would not lose their job in such an agreement (they could easily find out by looking at seniority lists). In any case, the "remaining" carpenters have to assess how the decrease in the *size of their jurisdiction (i.e., its employment level)* diminishes its "power" in the union. Kuhn (1961) discusses how these calculations influenced bargaining in union establishments. Kuhn's book is a major study of industrial relations, primarily in the U.S. tire manufacturing industry. Here is Kuhn: "A superintendent of an assembly department in a plant of twenty-three hundred workers once said that he did not see why there should be any dispute among union representatives over which of two classifications, the assemblers or the testers, should be assigned a new job task." Here is Kuhn paraphrasing the superintendent's argument: "After all they're in the same union and the same plant. Nobody is going to lose work." Kuhn follows this with:

²⁸Melvin Reder (1947) presented a theory and the beginnings of a model to account for declines of productivity in monopolies. His paper presented an opportunity for our profession to avert the wrong turn it was taking — an opportunity missed. Reder questioned the assumption of profit maximization: "It is not always appreciated that it was the assumption of perfect competition that gave the profit maximization hypothesis its great a priori plausibility. When economists, at the beginning of the thirties, developed the theory of monopolistic competition, they carried over, rather uncritically, the assumption of profit maximization." (p. 454)

“He did not understand that control of new jobs affects the relative prestige and strength of contending work groups.” (p 134)

2.4 Reducing innovation in existing technology

I begin with one observation by Ruth Mack (1954). When she argued that “the horizontal cost curve may itself be too high,” when discussing Harberger (1954), she included that this may have arisen “... because perhaps of *restrictions in a potential rate of technological change.*” (emphasis added)

—Evidence: Blocking innovation in existing technology.

Just as contract clauses on jurisdictions led to inefficient use of existing technology, other *contract clauses led to blocking of new innovations* in existing technology. Some improvements that were blocked included larger and more efficient brushes for painting apartments and homes. Other blocked improvements included those where “more work” was completed in factories on materials and supplies before delivery to construction sites. These included window glazing in factories and mixing cement in factories. These improvements were blocked for years in some cities. Arnold relates how “For years it has been impossible in Chicago to use ready-mixed concrete in the construction of a house. Every consumer has had to have it puddled on the building site in an expensive and obsolete way.” (2000, [1940], p. 127). Arnold brought suit against — and lost to — the union blocking ready-mix concrete.

—“Theory”: Blocking of innovation in existing technology.

The theory for why a monopoly would introduce jurisdictions that resulted in the inefficient use of existing technology can be used for understanding why a monopoly would introduce jurisdictions that blocked future innovations in the existing technology.

The next two sections discuss how monopoly actions harm those *outside* the monopoly.

2.5 Sabotaging existing, and newly developing, substitutes

Our forebears understood that monopolies destroyed substitutes for their products and services, as well as newly developing ones. This knowledge was based their own observations of monopolies, from extensive evidence and theory.

Turgot (2011,[1759]) discussed how cloth manufacturers in France had blocked lower quality pieces of cloth.²⁹ our forebears long knew Monopolies in the traditional construction industry (e.g. unions and employer associations) have long blocked factory-built homes.³⁰ Many cases are discussed in Section 3.

2.6 Monopolies Infiltrate public and private institutions.

Monopolies infiltrate public institutions to enrich members. This infiltration is one key means by which they can destroy existing substitutes and emerging new ones. They can also greatly degrade the integrity of the public institutions in the process, a potentially much bigger harm to society. I have already discussed some forebears above, like Arnold and Smith, that have touched on monopoly infiltration. Here I discuss some types of infiltration in a bit more detail. I discuss two types: Infiltration of government institutions and universities.

Monopolies infiltrating government institutions

Misuse of Governmental Agencies. In his study of trade associations, Jones (1922) discusses such misuse. He explains how “There have been repeated attempts both during the war and since to utilize governmental agencies for purposes of restraint of trade. In one instance certain officers of an association have been indicted, among other acts, for their alleged action in procuring priority orders from the Interstate Commerce Commission diverting coal from its normal markets into distant sections in order to disrupt the normal distribution of coal and thereby put coal on a ‘spot’ market distribution basis. In another criminal proceeding, a number of parties were indicted, one of the charges being that they tried to influence legislation in certain states in their own favor to the injury and detriment of their competitors.” (273-274)³¹

²⁹Turgot, in speaking about his great mentor, Gournay, said: “He thought that a workman who had manufactured a piece of cloth had made a real addition to the stock of wealth in the State; that if this cloth happened to be inferior to others, there might yet be found among his customers somebody to whom this inferiority would be more suitable than a more expensive perfection.” From "In Praise of Gournay" in The Turgot Collection (2011), p 104.

³⁰a bit of amiguity. widow glazing is improvement in existing technology, complete house is substiute, new technology.

³¹Jones continues: “While any such instance of restraint of trade is unlawful, some organizations are from time to time, by misrepresentations of fact, procuring governmental action apparently under the mistaken belief that the action being taken by the government, there is no danger of liability on the part of the

It's quite telling that the actions above were considered restraint of trade and unlawful. The activities just described, like a firm trying to influence legislation to harm competitors, seem rather "tame" compared to the activities of trade associations today. As I show below, the infiltration is sometimes accomplished by members of the monopoly taking positions of power inside the agency. The agency becomes like an arm of the monopoly.³²

A related issue is lobbying. If a CEO is indicted for trying to influence legislation to harm competitors, why not pay an outsider – a lobbyist – to make such a case? As Teachout (2014) describes, lobbying was considered a civic wrong, and potentially not legal, at the time. "Throughout the country, the sale of personal influence was treated as civic wrong in the eyes of the law from the early 1830s through the early 1930s. There was no personal right to pay someone else to press ones' legislative agenda," (p. 11). "For a good part of our country's history, courts actively scrutinized contracts to influence government and found many of them unenforceable as against public policy," (p. 65).

Corruption of political systems. Organized crime groups were long recognized as corrupting political institutions. Burgess (1929) described the work of John Landesco (1929) as showing "....concretely and with a wealth of detail over the period of twenty five years the *interlocking relationships of politics and organized crime*. It has disclosed that the present power of organized crime is derived not only from huge contributions for political protection and for defense funds against conviction by legal action, but also from local neighborhood sentiment and from ties of friendship between criminals and politicians. It has shown why organized crime has been able to extend its reach into certain normal economic activities of society, as labor unions and merchant associations, and to exert control by violence and by graft."

Monopolies Infiltrating Universities

Mund (1943) warned that corporations were infiltrating universities, in particular, eco-

association or its members for the restraint produced. It is, of course, *impossible to enumerate all collective activities which are restraint of trade.*" (emphasis added)

³²See discussion on housing and antitrust consulting below.

nomics departments. He argued it was beginning to pose a threat to the integrity of the U.S. economics profession. Mund wrote “that something needs to be done about the practice of academic economists serving as experts for corporations charged with violating the antitrust laws. If the present trend continues it promises soon to be impossible to maintain the spirit of academic freedom and impartiality which should characterize university life and work. Economics is in serious danger of becoming a ‘kept’ science, reflecting the views and interests of the dominant industrial groups, rather than of consumers and the nation, generally.”

2.7 Forebears on types of harm (and extent) monopolies inflict

Adam Smith’s *Wealth of Nations* was a monumental attack on mercantilism, with its very logic implying such a system increased inequality. Countries beholden to this system lowered overall national income, but raised the income of the mercantilists, so that the income of the majority necessarily fell. Smith also thought guilds were a major source of inequality. He discussed the “natural” dispersion in wages to be expected from “compensating differentials” (pp. 116-135).³³ He then argued there was much greater inequality in wages than could be explained from these naturally arising differentials. These “*other inequalities of much greater importance*” he attributed to policies that promoted and supported guilds. He presented a long discussion on the regulations and such that decreased competition (pp 135-159).

Turgot saw that monopolies were a great cause of both *inequality and poverty* in France. He feared that the inequality they caused could lead to violence and even revolution. His “Six Edicts,” in particular, the edict “*decreeing the suppression of the craft-guilds,*” were his attempt to lessen inequality and stave off violence in France.³⁴

Jevons (1981,[1866]) saw unions as a great threat to progress of the UK: “The best

³³ “The five following are the principal circumstances which, so far as I have been able to observe, make up for a small pecuniary gain in some employments, and counter-balance a great one in others: first, the agreeableness or disagreeableness of the employments themselves; secondly, the easiness and cheapness, or the difficulty and expence of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which must be reposed in those who exercise them; and fifthly, the probability or improbability of success in them.” (p. 116-117)

³⁴ Shepard (1903, p.143) provides one such interpretation of Turgot’s edicts: “Economic privileges by which the masses were exploited for the profit of the few, arbitrary interference with freedom of trade in the necessities of life and with the freedom of labor—these were the underlying causes of that crisis. Turgot saw it and labored above all his fellows to avert the crash.”

example which I can give, however, of the evils and disasters which may accompany progress is to be found in trade unions and the strikes they originate and conduct.”

Robbins (1976, 113-114) wrote that practices of closed shops (e.g., unions) and professional associations led to inequality and lost output. “It is less frequently mentioned that the practices of the closed shop or requirements of unnecessary qualifications [waste of resources] for professional work of one kind and another, which limit would-be applicants to those parts of the labour market where they prevail, are open to similar objections. It is incontestable that they have been — and still are — productive of much inequality and injustice.” The practices “had inspired the anti-monopoly and anti-restrictive-practices legislation of more recent years.”

Henry Simons believed monopolies were a central cause of the Great Depression and the lost confidence in the “liberal economic system” during the 1930s. His pamphlet, *A Positive Program for Laissez Faire: Some Proposals for a Liberal Economic Policy*, developed proposals to reduce monopoly and inequality.

Thurman Arnold, like Henry Simons, thought monopolies were a major source of inequality and lost output. Arnold opened his book on monopolies, *Bottlenecks of Business* (2000, [1940]), with a figure of the income distribution of U.S. households. The figure illustrated the great inequality in the United States, but also the deep poverty for a large share of the population. His point was clear: monopolies were responsible for much of this inequality and poverty.

Henry Simons disagreed with Arnold on some issues concerning monopoly. Most importantly, Simons argued for restrictions on corporate size. First, he thought the arguments for scale economies were of little merit. Second, while he was for limited government, he wanted the government to have more power than private monopolies. Discussing this view of Simons, Hardy (1948, 306) wrote: “[Simons] did not share the faith of the fathers that that government is best which governs least, largely because he saw that only through the exercise of a governmental monopoly of force can a network of privately organized monopo-

lies be prevented from devitalizing the free market.” Simons (1941) criticized Arnold for not doing more to fight monopolies at DOJ, like promoting legislation to limit firm size. But he also praised his work, and admitted he was amazed that Arnold had not been fired for what he was doing.³⁵

Frank Knight (1939) thought that the harm from monopoly was exaggerated.

3. Forebears: Monopolies creating crises in industries

Here I discuss some of the industries in which our forebears documented monopolies had created crises.³⁶

Housing construction.

In 1920, Judge Keensaw Mountain Landis conducted a major study of the Chicago construction industry. Landis did so after agreeing to arbitrate wage disputes between warring monopolies (between organized employer and organized employee groups). It was highly unusual for an arbitrator to study an industry in as great detail as Landis did. He studied, of course, the contracts between employer and employee groups (i.e., union contracts). But he also studied other contracts, such as those between materials producers and employer groups. He spent a month visiting construction sites to see how they operated.³⁷

Landis concluded the Chicago construction industry was “a thing diseased,” a disease primarily inflicted by monopolies. He showed that conflict within monopolies led to inefficient use of existing technology (as discussed in Section 2.3) and blocking of new innovation in the exiting technology (as discussed in Section 2.4). He also showed that monopolies sabotaged substitutes — and blocked new innovation of outsiders developing substitutes — for traditional housing (as discussed in Section 2.5).

Looking at the impact of unions in creating the disease, Landis emphasized that high

³⁵As far as I can determine, it was after Arnold read Simons (1941) that he invited him to work at DOJ. Simons accepted.

³⁶In many of these industries, monopolies directly led to “crises” for low income households (e.g., in construction and health care). In others, the negative impact of monopolies is less direct but possibly as severe (e.g., in wholesaling and transportation).

³⁷See Montgomery (1926) for a discussion of Landis’ arbitration. The quotes in this section can be found there.

wages were not the biggest problem. Rather, the biggest problem was the role of unions in leading to the inefficient use of existing technology (Section 2.3): “The real malady lurked in a maze of conditions artificially created to give parties a *monopoly*, and in rules designed to produce waste for the mere sake of waste; all combined to bring about an insufferable situation, not the least burdensome element of which was the jurisdictional disputes between trade-union members of the same parent organization.” Landis did a complete inventory of the jurisdictional rules that led to inefficient use of technology and higher costs (at given wages) on the job sites.³⁸

Again, another major cause of low productivity was the blocking of substitute technologies (Section 2.5), in particular, factory-built housing. Many different monopolies formed an alliance to block factory-built homes: employee groups (unions), employer groups (contractors), materials suppliers, banks (for fear of loss of home values), building code inspectors, local police and more. Here is Edwards (1942, p.441) on one experience of sabotage: “Prefabrication is prevented by direct attacks upon those who try to build houses in prefabricated sections. In Belleville, Illinois, a prefabricator tried for a month to get local contractors and A. F. of L. unions to erect a house, and eventually found it necessary to import a C.I.O. construction crew to do the work. Efforts were then made to prevent the unloading of material from the boxcars. Daily riots broke out at the construction site and police protection was vainly requested.”

Landis’ arbitration decision “opened” Chicago to these homes. A day after his arbitration decision, an Iowa manufacturer placed an advertisement in the Chicago Tribune (on 9/21/1921) offering delivery of factory-built homes to Chicago (see Figure 1).

Thurman Arnold and his DOJ colleagues continued Landis’ pioneering work, examining the contracts and working relationships at construction sites throughout major U.S. cities (Edwards (1939)). The DOJ prepared major studies like Landis’ study in preparation for antitrust indictments. The studies showed the inefficient use of existing technology and the

³⁸As Montgomery makes clear, Landis saw that both employee and employer groups were responsible for the disease in the Chicago industry.

blocking of improvements in it. Edwards (1942) presents a vast catalog of such actions and their impacts throughout the entire country.

Arnold continued his attack on monopolies in housing after leaving DOJ. Arnold (1947) argued housing crises were due, in large part, to monopolies blocking factory-homes. Figure 2 is a picture of a homeless WW2 veteran with his family from Arnold (1947).³⁹

In 1947, Edward Levi, who was a Professor of Law at the University of Chicago, organized a group at the Law School to study housing crises. William Speck (1947), an Assistant Professor at the Law School, wrote a key report for the group where he stated “there is general agreement that the high costs of houses result from the failure of the building industry to abandon handicraft, custom building and to adopt large-scale, machine production.” The reason for the failure? Monopolies. Here is Speck: “The combination in house building of perhaps the most complete and widespread local government regulation, restraint-of-trade minded builders and material dealers, and some of the strongest, most conservative labor unions in the country has proved in many localities an insurmountable obstacle to the use of new methods.”(p. 52)⁴⁰

Lee Loevinger (1947) discussed how monopolies, both among employees and employers, lowered productivity in the traditional sector.⁴¹ On trade unions, Loevinger observed, “There is no doubt that the building trade unions do exert a powerful influence in opposition to the introduction of labor saving methods” (p. 49).⁴² He also understood, as had Judge Landis,

³⁹Arnold began his text this way: “Why can’t we have houses like Fords [i.e., automobiles]? For a long time, we have been hearing about mass production of marvelously efficient postwar dream houses, all manufactured in one place and distributed like Fords. Yet nothing is happening. The low-cost mass production house has bogged down. Why? The answer is this: When Henry Ford went into the automobile business, he had only one organization to fight [an organization with a patent] . . . But when a Henry Ford of housing tries to get into the market with a dream house for the future, he doesn’t find just one organization blocking him. Lined up against him are a staggering series of restraints and private protective tariffs.”

⁴⁰I thank John Levi for granting me access to Edward Levi’s files on housing (Edward H. Levi. Papers, Special Collections Research Center, University of Chicago Library).

⁴¹Loevinger would be the Assistant Attorney General for Antitrust for President John F. Kennedy.

⁴²He continued, “Closely allied to the resistance against labor saving methods is the strong insistence on keeping as much work as possible within the ‘jurisdiction’ of each union . . . a policy which inevitably results in clashes between various unions. The details and evils of the ‘jurisdictional dispute’ within the ranks of labor are much too well known to require any elaboration. To expatiate on them at any length is rather like inveighing against sin” (50). And, he argued, “the consequences of such disputes are inefficiency, unnecessary expense, and a decrease in labor productivity” (51).

that building employers engaged in the same activities as trade unions. They resisted new methods: “As building trade unions frequently oppose labor saving devices and methods, so the building trade employers generally oppose any methods or materials that will save expense and threaten to reduce profit” (53).⁴³ Loevinger concludes the paper by stating, “This is not a pleasant picture. The anatomy of the construction industry reveals handicraft methods, restraints of trade and restrictive practices, inefficiency, greed and graft.” (72).

Health Care: Oral Health.

Experiments in oral health care to treat the low income, like those in construction to improve living conditions of the poor, were also crushed by monopolies. Consider one case in the late 1940s when the Department of Public Health (DPH) in Massachusetts introduced a program (with the Harvard School of Public Health) to train “dental nurses” (today called dental therapists) to treat low-income children who had severe dental problems. Therapists are dental professionals who can, among other services, fill cavities. Discovering the program after it was underway, the American Dental Association (ADA) wrote to the DPH complaining that they had not agreed to the program. This was DPH’s response: “As an official of State Government, the Department cannot seek consent from any private agency. The Department acts on behalf of all the people of the Commonwealth (p. 365).”⁴⁴ The ADA was acting as Arnold and so many others found monopolies to act: “as a sovereign nation.” (see Arnold’s definition, point 6). The ADA was able to kill the dental nurses program.

Health Care: Medicine.

Monopolies also crushed experiments in medicine that were designed to reduce costs of low income households. A famous antitrust case was brought by the DOJ (under Arnold) against the American Medical Association (AMA) for sabotaging the development of prepaid

⁴³They too had jurisdictional disputes: “These units (firms) group themselves together into innumerable small functional segments, much like craft unions, and each small segment guards its own small area of business jurisdiction as jealously as any of the unions” (55). Comparing the monopoly behavior of employee and employer organizations, he wrote: “The jurisdictional disputes between business groups are usually not so well known as those between unions, for they are not carried out in public. Nevertheless, such business tactics are probably more important than the corresponding policies of labor as far as increasing the cost to the consumer is concerned” (55).

⁴⁴The Journal of the American Dental Association 40.3 (1950): 363-6.

medical plans for low-income households. The AMA, for example, threatened doctors in such plans with expulsion from medical societies and hospitals. As Arnold (1938) wrote, the DOJ “takes the position that these *monopoly practices* [of the AMA] should not be employed to prevent what may be illuminating experiments in the field.”

Health Care: Eyeglasses.

Thurman Arnold (1940, p.28) addressed the monopoly in eyeglasses in *Bottlenecks of Business*. “There is no economic reason why the ten-cent stores should not sell spectacles. The argument is made that it is necessary to the health of the public that good optometrists be employed. However, Woolworth’s is in as good a financial position to hire a good optometrist as is anyone else.” “Spectacles are a necessity. ... The tax on low income groups by fixing the price of spectacles is enormous.” Four years after Arnold wrote this, the major U.S. manufacturer of eyeglasses, Bausch & Lomb, was found to have violated the Sherman Act. The United States Supreme Court held that Bausch & Lomb had “contracted and conspired with retailers to fix prices and to restrict sales.” (United States v. Bausch & Lomb Optical Co., 321 U.S. 707, 64 S. Ct. 805 (1944)).

Transportation industries.

Holmes and Schmitz (2001) provide a critique of Fogel’s (1964) estimation of the benefits of railroads, as he did not recognize that a significant benefit from them was to limit monopolies in the water transportation industry. We provide extensive references to forebears’ writing in the 19th century who provided evidence on how monopolies in the *water transportation (freight) industry* had lowered productivity and increased costs in the industry. Some of the monopoly groups included those “on the water,” such as riverboat pilots and coastal shipping lines, and those “in ports,” including longshoremen unions and warehousemen, all of which engaged in actions reducing productivity and increasing costs.⁴⁵

⁴⁵Hester (1896) described how cotton shipments were being diverted from the port of New Orleans in large measure due to strong monopolies in unions and warehousing. Productivity was low in the port because of onerous work rules and extremely high wages by longshoremen unions, and by high storage and warehouse charges. Here is Hester(1896, p. 4): “By far the most serious impediments [to port volume] have been the labor problem and [cotton] press and warehouse combination. These were actually strangling the local cotton trade.” Veblen (1892, pp. 89-90) discussed the seemingly monopoly prices in Buffalo warehouses.

Distribution/Wholesale Industries.

Edwards (1940, pp 225-239) wrote about DOJ investigations (under Arnold) into monopolies in the wholesaling and distribution of food. He notes: “The perishable nature of fresh fruit and vegetables has become the basis for a series of wasteful and extortionate practices in their handling at terminal markets.” “In many of these markets trucking monopolies have been established and no truck owned by a wholesaler or an independent trucker is allowed to take delivery direct from the railway car, nor is any interstate trucker allowed to make delivery direct to his customer. Instead, either all the produce must be loaded on a truck belonging to the ring and then reloaded from that truck to the customer’s truck, or else a fee must be paid for the unneeded and unused services of an extra driver or extra loaders.” (pp. 236-237)

Manufacturing industries.

Gaffey (1940, 1941) argues the United Rubber Workers union played an important role in the slowing of U.S. tire manufacturing productivity. Sobel (1954, 18) presents an interesting diff-diff analysis of productivity in the U.S. tire manufacturing industry, over the period from 1935 to 1947, providing strong support for Gaffey’s hypothesis.

4. A Few Great Forebears on Monopoly

Anne Robert Jacques Turgot.

Turgot’s edict, “... decreeing the suppression of the craft-guilds,” is an extraordinary document. Considered as a short essay on how monopolies work, I can think of no equal, other than possibly Simons’ *Positive Program for Laissez Faire*. Here I present a few of Turgot’s descriptions of monopolies and their behavior. These actions of monopolies that Turgot describes will come to be seen as the greatest harms inflicted by monopolies. The actions described in Arnold’s definition, developed well over 150 years later, will closely resemble Turgot’s actions I now describe.

Here is Turgot discussing the economic impacts of what amount to jurisdictions between guilds. The description is similar to Landis’ above, but where Landis is describing

jurisdictions within a given construction site, or manufacturing plant, Turgot is discussing jurisdictions between guilds in a locality.

“Often one cannot execute the simplest work without having recourse to many workmen of different guilds, without enduring the delays, the infidelities, the exactions which necessitate or favor the pretensions of the various guilds, and the caprices of their arbitrary and injurious regime. Thus the effect of these institutions, on the part of the state, is an appreciable diminution of trade and of industrial labor the effect is exactly analogous to that of an effective monopoly, a monopoly of which those who control it against the public are *themselves the victims* whenever they in their turn have need of the commodities or trade controlled by another guild.” (Turgot (2011), p. 275)

The last part of this statement discusses the loss resulting from guilds simultaneously erecting jurisdictions. This closely matches what Henry Simons would argue over 150 years later. He argued (1938, p. 11): “We must establish effective competition, if only to keep our powerful special interests from biting off their own noses.” More than 50 years after Simons, Holmes and Schmitz (1995) also make this point. In our model, there are groups that have (scarce) skills in an existing technology. New technologies “arrive” that dominate the old technology, though all individuals (throughout “the economy”) are equally skilled in them. Groups have a technology (e.g. lobbying) to block the new technologies. Groups decide whether to block them or not. For each group it may be unilaterally beneficial to block the new technology, but when all groups do so, all groups wind up poorer (see Proposition 7).

Turgot also discussed how guilds would block competition from foreign producers. The losses from jurisdictional disputes like those above, of course, would often result in imports into the area if foreign producers were not blocked. Here is Turgot: “The guilds devote themselves especially to excluding from their territory foreign commodities and labor; they lay great stress on the pretended advantage of excluding from commerce such commodities as are supposed to be poorly made. The pretext led them to demand for themselves regulations of a new kind, tending to prescribe the quality of raw materials, their use and their

manufacture; (p. 276)

With imports blocked, he argued that guilds could put in regulations to their advantage, such as those allowing stronger members of guilds to attack or abuse weaker members of guilds. Turgot continues from above: “ these regulations, whose execution was entrusted to officers of the guilds, gave to them an authority which became a means, not only of more effectually excluding aliens when suspected of infraction, but in addition of *subjecting the masters of the guilds* to the domination of leaders, and of compelling them, under fear of being prosecuted as suspected offenders, never to separate their interests from those of the association, and thus making them accomplices in all the maneuvers inspired by the spirit of monopoly animating the leading members of the guilds.” p 276

Many of our great forebears made the same observations about strong members exploiting weak members 150-175 years later. One of the actions in Arnold’s definition of monopoly was that they “set up an arbitrary and despotic control over production and exploit weaker members of their own group.” Schelling (1971) argues that organized crime is a monopoly, Turgot’s description seemingly fitting the behavior in such groups.⁴⁶

The next description of monopolies (i.e., guilds) covers much ground (pp. 278-279). Turgot begins with inequality. “We regard it as one of the first obligations of our justice ... to abolish the arbitrary institutions which *do not permit the indigent to live by their labor* ... which *exclude the sex whose weakness implies greatest needs and fewest resources*, and which seem, by condemning it to inevitable misery, to encourage seduction and debauch .. ”

Turgot continues with the impact on innovation of the arbitrary institutions “....which *stifle emulation and industry* and make useless the talents of those whom circumstances exclude from admission into the guild which *retard the progress of the arts by the difficulties which inventors find multiplied by the guilds, who thus dispute the right to exploit discoveries which they themselves have not made*

And, finally, Turgot discusses the impact on general poverty of these institutions “....which,

⁴⁶important implications, average profits equal zero those at the top make extraordinary money.

in short, by the facility they afford to members of the guilds to combine among themselves and to compel the poorer members to submit to the rule of the wealthy, become an instrument of monopoly and give rise to schemes whose effect is to increase beyond all natural proportion the price of commodities which are most necessary for the subsistence of the people.”

William Stanley Jevons.

Jevons was both a great theorist and applied economist. His discussions about technology, and the resistance to it, display a deep understanding of both theory and evidence (See, e.g., 1981, [1866]). Above I presented his assessment of the building trades role in the housing crises in England, which is worth repeating: “If then the operatives of the building trades gain, it is at the expense mainly of multitudes of their fellow-countrymen who are retained in wretched unhealthy dwellings *unworthy of the nineteenth century.*” (emphasis added) High wages were responsible but so was blocking new technology: “At the late Social Science Meeting it was stated that attempts had been made to lower the cost of erecting workmen’s dwelling and lodging houses, and thus improve their domestic condition by employing bricks of a larger size than usual. The insuperable difficulty was at once encountered that no bricklayers could be found who would set such bricks.”

Jevons discussed a large number of industries, not only construction, where machines had been blocked. “I am peculiarly acquainted with the case of a machine for making horse-shoes invented by an American gentleman many years ago. My father purchased the patent for the United Kingdom, and had no difficulty in making shoes as good and cheaper than they can be made by hand. On trying to introduce these, however, he found that every farrier in the kingdom declined to have anything to do with machine-made shoes.”

Jevons understood well, not surprisingly, that these machines that he could identify as being sabotaged, represented only a part of the those that were abandoned. Many were likely considered, though not tried, given the predicted opposition from unions and others. “Many must be the cases of inventions and improvements which, when once frustrated by

opposition, have been abandoned and forgotten.” And he tells us why. “It avails not to say that in these or any other cases the machines did not work successfully or cheaply enough. It is only after long experience and improvement by actual working that a machine can be brought near its maximum of efficiency. There is cost and difficulty enough in bringing any invention or improvement into use without the opposition of the whole series of labourers and tradesmen on whom its use depends.”

And he goes further still, astutely noting: “If a composing machine, a brick-making machine, a chain-forging machine, or any other machine, will not and cannot succeed, why should workmen hesitate to try it and demonstrate its failure. The fact is they needlessly hate its success, and will not allow it even to be tried.” Of course, those working with these machines are no different than a multitude of other monopolies, like professional associations, that forbid any use of an alternative service, no matter how small its chance of success, or how slight its intended use.⁴⁷

Henry Simons

Simons believed monopolies were a central cause of the Great Depression and the lost confidence in the “liberal economic system” during the 1930s. In his pamphlet, *A Positive Program for Laissez Faire: Some Proposals for a Liberal Economic Policy*, he discussed the many ways monopolies had led to inequality and reduced output. My main interest in reading Simons, and from reading all the great forebears, is to learn some of the nuts and bolts about how monopolies work. In this section, I also discuss some of Simons’ policy ideas, including his proposals to save laissez faire.⁴⁸

Simons offered five proposals to save the liberal economic order (p. 57). The proposals

⁴⁷Lawyers do not permit any person who is not a lawyer to give legal advice of any kind.

⁴⁸The pamphlet, for Simons, was about policy. He began: “This is frankly a propagandist tract – a defense of the thesis that traditional liberalism offers, at once, the best escape from the moral confusion of current political and economic thought and the best basis or rationale for a program of economic reconstruction. This view has been widely ridiculed of late, by communists and fascists, by most of our ‘liberal’ reformers and politically ambitious intellectuals. Old-fashioned liberals, and the more orthodox economists especially, have responded meagerly to the attack; only their position is inadequately represented in the welter of current controversy. Consequently, one is impelled to try, humbly but uncompromisingly, to state that position, and to indicate specifically how economic reconstruction might be achieved along lines dictated by a faith in liberty.” p 40

were summaries of some wide ranging and nuanced discussions throughout the pamphlet. There was little nuance in the proposals. Simons' first, and most important proposal, was the "*Elimination of private monopoly in all its forms.*" Simons provided two steps to achieve this goal: "1. Through drastic measures for establishing and maintaining effectively competitive conditions in all industries where competition can function as a regulative agency (as a means for insuring effective utilization of resources and for preventing exploitation), *and* 2. Through gradual transition to direct government ownership and operation in the case of all industries where competition cannot be made to function effectively as an agency of control." (p 57) For Simons, the industries that would likely fall into this group, though that was to be determined, included railroads and utilities.⁴⁹ As part of the first step, "drastic tariff reduction is an important and perhaps indispensable element in a program for eliminating private monopoly ..." (p. 69)

Simons' third proposal was the "*Drastic change in our whole tax system, with regard primarily for the effects of taxation upon the distribution of wealth and income.*" (p. 57)⁵⁰

In his text, almost 20 pages before the third proposal, Simons had offered this about inequality: "Surely there is something unlovely, to modern as against medieval minds, about marked inequality of either kind [economic and political]. A substantial measure of inequality may be unavoidable or essential for motivation; but it should be recognized as evil and tolerated only so far as the dictates of expediency are clear. If we dislike extreme inequality of power, it is appropriate to view with especial misgivings the extension of political (and monopoly) control over relative prices and incomes." (p51-52). This view may seem fairly reasonable to many readers, especially if I replace "evil" with, say, "undesirable."

In his text, roughly 10 pages after the third proposal, Simons presented a more strident view of inequality and taxation. Simons writes: "Our proposal with reference to taxation is based on the view: (1) that reduction of inequality is per se immensely important; (2)

⁴⁹"In general, however, the state should face the necessity of actually taking over, owning, and managing directly, both the railroads and the utilities, and all other industries in which it is impossible to maintain effectively competitive conditions."

⁵⁰His second proposal was adequate "rules of the game" for money.

that progressive taxation is both an effective means and, within the existing framework of institutions, the only effective means to that end; (3) that, in a world of competitive, invidious consumption, the gains at the bottom of the income scale can be realized without significant loss to persons of large income, so long as their rank in the income scale is unchanged; and (4) that drastic reduction of inequality through taxation is attainable without much loss of efficiency in the system and without much impairing the attractiveness of the economic game ..” (65). Many fewer would likely agree with this.

Simons’ policy views on monopoly had a long tradition. His view on eliminating private monopoly was held by many forebears, Smith, Turgot, and so on. This proposal is similar to Turgot’s edict on suppressing the guilds (though Turgot gave many more specifics, as his edict was a detailed plan being written for the king). Both Simons and Turgot believed the elimination of monopoly would significantly reduce inequality. Simons called for using taxes as well, since he saw the very difficult road to eliminating monopoly.⁵¹

Simons’ views were similar to many of his contemporaries as well, who praised his efforts, some calling them “courageous,” to rescue the old-liberal order from calls for dictatorship from both fascists and communists. They acknowledged that his efforts to reconstruct *laissez faire* were badly needed. Irving Fisher wrote Simons with great praise for *Positive Program*. Fisher’s letter began: “I have now had a chance to read your ‘A Positive Program for Laissez Faire.’ It rather takes my breath away as you cover so much ground with which I am not familiar and on which I do not feel competent, without further study, to pass.”⁵² In his letter, Fisher acknowledges that *laissez faire* had become unpopular, and applauded Simons for attempting to save it.⁵³

⁵¹Turgot faced great backlash after writing his proposal. He retired from public life on May 12, 1776 (Shepard 1903, p. 17). Beyond losing his job, Turgot was also socially exiled.

⁵²It was not that Fisher had little knowledge of *laissez faire*. He had written about *laissez faire* for *Science* 25 years earlier (Fisher (1907)). It was Simons great knowledge about the subject to which Fisher’s words spoke. (see Fisher’s letter to Simons, Dec. 14, 1934, Henry Simons Papers, box 2, folder 66.) Also on Fisher’s great respect for Simons, see Fisher’s letter to Estate of Henry Simons (September 19, 1946, Henry Simons paper, Box 10; Folder 1) where he writes: “Professionally Professor Simons and I were not only well acquainted but warm friends and I esteemed his work more highly than that of any other economist of his generation.”

⁵³“I am greatly interested and pleased to think that you are courageously reverting to the unpopular

Positive Program was also praised by graduate students and faculty in economics who were at Chicago when Simons wrote the pamphlet. In his memorial tribute to George Stigler, W. Allen Wallis (1993) wrote about how he and Stigler (as graduate students) had written a letter to the editor of the New York Times (December 4, 1934) critical of some proposals for addressing the economic crises of the time, and referencing “concrete and practical proposals for social policies, such, for example, as that contained in Professor Henry Simons’s brilliant and suggestive ‘A Positive Program for Laissez Faire.’” Wallis also mentioned how he and Stigler, along with Milton Friedman, would often eat dinner together and, when not discussing what Frank Knight had “said,” would sometimes discuss the Positive Program, “a pamphlet that, although small, was inexhaustible.” These discussions took place in 1946, when Wallis and Friedman had just begun appointments at the Graduate School of Business and the Department of Economics, respectively.⁵⁴

Jacob Viner was a colleague of Simons at Chicago when *Positive Program* was written. He shared many of Simons’ concerns about monopoly. He, too, thought free markets tended to monopoly. In his Henry Simons memorial-lecture, Viner (1960) argued monopoly was widespread and entrenched in the United States (and the Western world). “Monopoly is so prevalent in the markets of the western world today that discussion of the merits of the free competitive market as if that were what we were living with or were at all likely to have the good fortune to live with in the future seem to me academic in only pejorative sense of that adjective.” (p. 67) Viner shared Simons’ policy prescriptions: “[G]iven the prevalence or the danger of substantial intrusion of monopoly into the market, the logic of the laissez faire defense of the market against state-intervention collapses and there is called for instead, by

laissez faire. I was brought up under laissez faire and while I have partly repudiated it I think there is a lot of sense in it for the most part and it should be the basis for an economic system but with perhaps more exceptions than you would have.”

⁵⁴As best as I can tell, Stigler was visiting the department in anticipation of an offer. Here is Stigler (1988, p. 40): “In the spring of 1946 I received the offer of a professorship from the University of Chicago and, of course, was delighted at the prospect. The offer was contingent upon approval by the central administration after a personal interview. I went to Chicago, met with the president, Ernest Colwell—because Robert Hutchins was ill that day—and I was vetoed! I was too empirical, Colwell said, and no doubt that day I was. So the professorship was offered to Milton Friedman, and President Colwell and I had launched the Chicago School.”

its very logic, state-suppression or state-regulation of monopoly practices, which one may wish to call, as Henry Simons called it, an instance of ‘positive laissez faire’ or, as I prefer, as an instance of deliberate departure from laissez faire.” (p. 60).

Simons’ influence, and his Positive Program, reached departments throughout the University of Chicago. T.V. Smith (1945), a philosopher at Chicago, closed his review of Friedrich Hayek’s *The Road to Serfdom* with this: “NOTE –The American reader will find most that is good in this book and all that is applicable to our national condition in Henry Simons’ earlier pamphlet from the University of Chicago Press (for twenty-five cents), A Positive Program for Laissez Faire. He will there find the matter put affirmatively rather than negatively, put economically rather than rhetorically, put calmly rather than hysterically. Simons pounds the keynote which I have here sought to sound: that “the so-called failure of capitalism may reasonably be interpreted as primarily a failure of the political state in the discharge of its minimum responsibilities under capitalism.”

Sidney Ratner (1949), an economic historian, not at Chicago, but Rutgers, had this to say in his review of Hayek’s *Individualism and Economic Order*. “He [Hayek] is against not only industrial protectionism and government-supported cartels, but the unqualified extension of the concept of property to such rights and privileges as patents for inventions, copyright, and trademarks. Corporations and trade unions, in his opinion, should not be granted the same freedom and rights as the individual. The reader, however, will have to turn to Henry C. Simons, *Economic Policy for a Free Society*, for more light on how to implement Hayek’s general principles.” Simons’ book is, again, a compilation of some of his papers, including a Positive Program.

5. Definitions based on behavior / actions

Definitions are often hard to develop but also crucial to the progress of a scientific discipline. Consider that the AEA organized a committee of economic theorists in 1893 to define *political economy*, though nothing was concluded.⁵⁵ Defining monopoly proved difficult as

⁵⁵Here is Folwell (1893, p. 32): “Whoever thinks of the present uncertainty of definitions, to say nothing of our disagreements as to conclusions, cannot fail to welcome any reasonable experiment along new lines. Your

well. Fetter (1904, p.302) contains a section entitled “Difficulty of fixing the meaning of monopoly,” in which he concluded, “The recent rise of trusts and monopolies has given a large new body of facts bearing upon the subject, but all the resulting discussion by the public and by economists has not brought agreement upon a definition entirely satisfactory.”

When Fetter wrote it was difficult to develop definitions, he was, of course, speaking of action-definitions. Defining monopoly by profits was easy, but he saw it as “bad” economics. Fetter (1904, p.303) felt compelled to argue: “*The ability of superior material agents and of skilled workers to secure higher returns than do poor ones does not constitute monopoly.*” (emphasis in original).

These difficulties defining monopoly were widely mentioned in the literature. Pribram (1935, p.379): “This discussion ... [of monopolistic tendencies] ...was largely clouded by conflicting ideas advanced as to what is to be understood by ‘monopoly.’ This notion was — sometimes no doubt unconsciously — shaped in such way as to free certain cartel types from the reproach of monopolistic restraint of trade.”

And Solomon (1948): “.... this problem - which is the problem of measuring monopoly power – arises from our lack of clarity as to the exact ultimate meaning of monopoly.” Solomon raises a significant issue — how to measure monopoly without something akin to a definition of monopoly? Abramovitz (1950) makes this point two years later — when he argues that measuring monopoly without defining it is “bad” economics — a practice that continues to this day (see Section 7).

Given these difficulties defining monopolies, some economists refrained from including definitions in textbooks. Here is Donald Dewey (1959): “Personally, I doubt the usefulness of hornbook-type definitions in law or economics; hence the absence of capsule definitions of such terms as ‘competition, ‘monopoly, ‘market,’ and ‘restraint of trade’ in this book.” (pp. 8-9).

committee on economic theory not long ago undertook the task of seeking a definition of political economy itself, and one of its members prepared a long and able report, which collated the formula of the books into genera and species, but effected no final reduction.”

In this section, I focus on the forebears developing behavioral or action definitions. I first discuss definitions that considered more organizations than simply (independently acting) firms as monopolies. Then I extend the discussion to definitions which added many actions.

For Edgeworth (1896, 805), from his entry in the *Dictionary of Political Economy*: “Monopoly means literally sale by one man; but the term is EXTENDED to denote either the sale, or purchase (e.g., of labour), by either one man or a group acting as one man (e.g., a trade-union).” A “group acting as one man” is, of course, a much more general formulation than a “firm.” Later in the entry: “Monopoly in the sense here adopted plays a greater part in modern economics than has been assigned to it in the classical treatises. Witness the spread of trade unionism, the growth of combination in the new form of trusts, the prevalence of joint-stock companies, particularly railway companies ..” (p. 806).

Here is Marshall (1920,[1890], p.477): “At present we consider only those general causes determining monopoly values, that can be traced with more or less distinctness in every case in which a single person or association of persons has the power of fixing either the amount of a commodity that is offered for sale or the price at which it is offered.” He then offers more specifics: “Similarly the primâ facie arguments in favour of the fusion of monopolistic cartels, or other associations, in complementary branches of industry, though often plausible and even strong, will generally be found on closer examination to be treacherous. They point to the removal of prominent social and industrial discords; but at the probable expense of larger and more enduring discords in the future ..” (p.495). And in Marshall (1919, p. 396): “when a giant business is striving to attain a monopoly, or to repel rivals from ground which it wishes to make its own, it is under strong temptation to use ferocious and unscrupulous methods to compass their undoing.”

Here is Laing (1919, 156): “We may, therefore, define a monopoly as a business group which has such unity of producing and distributing organization as gives it power to fix prices without reference to competition.” A “business group” includes alliances of businesses, a much more general idea than an independently acting firm. Here is Ely (1912,[1900]):

“Monopoly means that substantial unity of action on the part of one or more persons engaged in some kind of business which gives exclusive control more particularly, although not solely with respect to price.” “It is not said that unity of action need be absolute, but there must be substantial unity of action.”(p. 14)

Some definitions included harmful actions taken by monopolies. Here is Folwell (1918,[1900]) and Fetter (1923, p.305) offering definitions of trusts. In Folwell’s definition of *trusts*: “(1) The prime object of the trust is to monopolize, which implies the exclusion of competition, the *obliteration of the market*, and the closing of the doors of opportunity to capital and labor, which, were the field free, would offer their services to the public” and “(2) The secondary object is *exploitation*, i.e. greedy speculation. The speculative characteristic means, that by over-capitalization and waiting, the promoters intend to take possession of any unearned increment of value which may accrue from monopoly, and demand from the public continuing dividends thereon.” (p. 35)

Folwell goes on to discuss “The temptations to which institutions thus constituted are exposed,” including “To impoverish material men, or to squeeze them out completely, and seize and engross the original deposits; To depress wages; Reduce quality of goods or services; To extort excessive prices; and To use wealth, influence, and talent to corrupt legislators, judges, commissioners, and taxing authorities.” Folwell continued: “The last item [influence and corruption] may be dismissed with the remark that it affects individuals, partnerships, and associations of many sorts. Trust managers have no monopoly in the lobby. They may have exceptional influence, however.” (p.35) In his definition, the trust as monopoly doesn’t have to be a sole seller. He states the trust may be a “large majority of existing establishments, sometimes rising to eighty percent ...” (p. 40).

Here is Frank Fetter (1923,p.305) on trusts: “..when one examines the methods that the notable trusts actually did employ, and apparently had to employ, even when they were already powerful single enterprises, in order to destroy their competitors and to attain their monopolistic power, the word ‘natural’ seems hardly to describe the process. This

evidence is a startling array of ‘unfair practices’ and ‘unfair’ forms of competition, which, however novel in appearance, are essentially of the kind that have been illegal under the common law for the past five hundred years. Many of these practices were baldly dishonest, many of them were contemptibly mean. The manifold varieties of unfair competition may be roughly grouped under three headings, according as they are connected with (1) illegal favors received from public or quasi-public officials; (2) discrimination against, or control of, customers; (3) foul tactics against competitors.”

In another approach to presenting the actions of monopolies, Hexner (1943), rather than developing an abstraction, a definition, lists many actions and characteristics of international cartels. His list counts 44 items, categorized under three headings: (1) the ways cartels have established *control of the market*, (2) how the cartels were *administered*, and (3) the *actions they took*. Here are some of the 44 characteristics. “*Control*: participants (individual firms or national combinations) cooperating without formalized agreement; control exercised through public agencies established through diplomatic agreements; control exercised through private agencies established through diplomatic agreements. *Administration*: administration by public agencies appointed by governments, administration through trade associations. *Actions*: regulation of all kinds of non-price competition; agreements concerning technological processes, patents, trademarks, agreements concerning fair competition, common policies toward outsiders, coordinated propaganda.” While such a list may not be useful for some purposes, such as a definition of monopoly in a textbook, surely it is of significant importance in the overall understanding of, and fights against, monopolies.

Thurman Arnold developed his definitions of monopoly in order to educate the public about monopolies, publishing them in periodicals and pamphlets that had wide distributions.⁵⁶ To be successful in attacks on monopoly, Arnold believed the public’s support was crucial. Again, his definition is in the Appendix. His definitions are of the form: “A

⁵⁶Some of these publications included Arnold (1943), “Labor Against Itself,” a discussion of when labor unions develop into monopolies, and Arnold (1945), “Cartels or Free Enterprise,” a discussion of when industrial firms (and alliances among them) become monopolies. The definitions are nearly identical in both publications. Monopolies behave the same.

monopoly is a group that engages in these actions” While he used the word “monopoly” throughout these publications, when presenting his definition he substituted the *expression* “A private group that has taken control of a market” for the *word* “monopoly.” So, Arnold’s definitions begin: “It follows that whenever private groups [monopolies] have acquired control of the market these results occur ...” He then lists seven actions (those that define “taking control”). For easy reference, I list the seven actions in a footnote here.⁵⁷

Arnold’s first action is about the group (i.e., monopoly) destroying existing substitutes. The second is about the group sabotaging new substitutes, new innovations. After these tasks are “completed,” his third action has the group choosing price. His fourth action concerns the reduction in productivity of, and future innovation for, the existing technology. The fifth action concerns the members of the group that formed the monopoly abusing the other weaker members. The sixth action covers many types of harmful actions, some of which I discussed above.

Note well that Arnold *did not specify an organization type*. Note well he *did not require the group to be a sole seller*. If a group has, say, a 50 percent share of the market, but engages in the behaviors on his list, he calls it a monopoly. With Arnold’s definition (or similar), I show that we can define competitive-industries and monopoly-industries. I discuss this in Section 7.

Thomas Holmes and myself have numerous papers with the word “competition” and/or “monopoly” in the title. We were aware there was not a “good” definition of competition or monopoly (and told readers as much). We studied “natural experiments” where we felt

⁵⁷The actions are: 1. “They seek to consolidate industrial power by destroying existing independent enterprise;” 2. “They prevent new enterprise from entering the field;” 3. “Having accomplished these objectives, they restrict production and raise prices;” 4. “They stop the introduction of new and more efficient methods in order to maintain obsolete ways of production in the continuance of which they have a vested interest;” 5. “They set up an arbitrary and despotic control over production and exploit weaker members of their own group;” 6. “They enter into politics using money and economic coercion to maintain themselves in power, making alliances with other powerful groups against the interests of consumers and independent producers. In short, they will become a sort of independent state within a state, making treaties and alliances, expanding their power by waging industrial war, dealing on equal terms with the executive and legislative branches of the government, and defying governmental authority if necessary with the self-righteousness of an independent sovereign;” 7. “They form their own protective tariffs and make foreign economic policies for the nation.”

any good definition of competition would identify some of the historical episodes we studied as increases in competition.⁵⁸ We then argued that we could determine how monopolies behaved, by looking at the organizations before and after these increases in competition. We could understand the harm they inflicted, by looking at the change in the actions of the monopolies during these periods. We were (implicitly) constructing a list of behaviors of monopoly organizations. We were “approaching” Arnold’s definition. Who knows if we would have ever arrived.

6. Recent research in forebears spirit

Here I discuss research since 1950 that has been close in spirit to our forebears. Section 6.1 discusses a few forebears that made some conceptual contributions, in the 1960s and 1970s, to the study of monopoly, many motivated by the belief that the approaches our profession was taking to study monopoly were significantly inadequate. Section 6.2 discusses studies of industries showing monopolies had led to economic crises for families purchasing their goods. Given what is learned from Section 6.2, Section 6.3 discusses a couple of puzzles that may be much less of puzzles. Section 6.4 briefly discusses a few recent studies that are attempting to quantify the harm from monopolies.

6.1 Some conceptual contributions

Gordon Tullock (1967) presented a theory for why the social losses from monopoly might be much larger than Harberger’s (1954) estimates. He argued that groups would fight to obtain “ownership of” the monopoly and that the resources in these battles were “wasted” and should be included in the losses due to monopoly. Tullock’s ideas are certainly related to the ideas of our forebears. They argued, for example, that the jurisdictions in many industries, which led to increased costs and lower productivity, and hence “wasted resources,” were related to the fights over the monopoly. Tullock searched for resources that were lost, by looking at spending on lobbying, and so on. Tullock (1997) admitted that after 30 years, he could find no evidence for the losses in his theory. The losses from jurisdictions are, of

⁵⁸We not only studied natural experiments of moving from competition to monopoly but the opposite as well, moving from monopoly to competition.

course, not found in such things as expenditures.

Our forebears also had a much more extensive theory than Tullock for why monopolies lead to losses much greater than in Harberger (1954). One loss results from groups in the monopoly blocking improvements in existing technology of the monopoly, a loss with no counterpart in Tullock's theory. Other losses are from the blocking of substitutes for the monopoly, the blocking of new innovation by outsiders developing new substitutes and, finally, the infiltration of public institutions.

Thomas Schelling (1967,1971) and *James Buchanan* (1973). When Thomas Schelling (1967,1971) explored the nature of organized crime, he concluded the fundamental aspect of these groups was the exclusion of outsiders. He argued that organized crime groups were monopolies. His analysis represented a significant opportunity for the profession to reconsider its definition of monopoly, to expand the groups and organizations considered to be monopolies. It was an opportunity missed. By "seeing" that organized crime groups are monopolies, we can also understand that monopolies not only block substitutes that are "good" for households and society, but can also develop "bads." This point was missed by Buchanan in his analysis of organized crime.⁵⁹

Harvey Leibenstein. Twenty years after Reder (1947) argued that monopolies don't maximize profits, and in particular, because of conflict within the monopoly, Leibenstein (1966), in his famous paper, "Allocative Efficiency vs X-Efficiency," also argued that monopolies were inefficient. But he did not have a theory that was convincing to the profession. Nor did he present evidence that was convincing. Stigler (1976) attacked the ideas in "Allocative Efficiency vs X-Efficiency" in his paper "The Xistence of X-efficiency." It's too bad Stigler did not discuss Reder's work in his paper, for Reder provides a convincing argument of

⁵⁹James Buchanan (1973), in "A Defense of Organized Crime?," also called organized crime a monopoly. Yet his analysis was influenced by the current definition of monopoly. It led him to poor policy recommendations. Here is Buchanan: "If monopoly in the supply of 'goods' [like food] is socially undesirable [because of output restrictions], monopoly in the supply of 'bads' [like heroin] should be socially desirable, precisely because of the output restriction." But an organized crime group with monopoly control of, say, the heroin market in one city will not fail to see opportunities to move to nearby cities that have no heroin trade. Monopolies *can create bads*. There is no role for this in the current definition. We can see this creation of "bads" in other markets — see below for my discussion of the antitrust consulting industry.

why monopoly reduces productivity. If Stigler had introduced Reder's work into the debate on X-efficiency, which received lots of attention, Reder's work would have gained a wider readership (another lost opportunity).

Harold Demsetz (1973) questioned why a high concentration ratio in an industry, or a firm with a very high market share, were signals of monopoly. Why wasn't a high concentration ratio in an industry a signal of a competitive industry, where productive firms were "allowed" to grow. Demsetz had a point in sensing "something" was wrong with the current approach, but he failed to understand that the problem with such a statistic was that it *did not follow from a definition of monopoly*.

Mancur Olson (1983) argued prosperous nations could enter into "declining" periods as special interest groups formed rent-seeking coalitions that sabotaged growth. Some of the special interest groups he discussed were business associations, farm organizations, labor unions, and professional associations – many of the same organizations discussed by our forebears. He believed these special interests led to great losses in many countries — rich and poor alike. Olson (1996) repeated this conclusion in his AEA lecture "*Big Bills Left on the Sidewalk: Why Some Nations are Rich, and Others Poor*." He began the conclusion of the lecture with: "The best thing a society can do to increase its prosperity is to wise up. This means, in turn, that it is very important indeed that economists, inside government and out, get things right. When we are wrong, we do a lot of harm. When we are right—and have the clarity needed to prevail against the special interests and the quacks—we make an extraordinary contribution to the amelioration of poverty and the progress of humanity. The sums lost because the poor countries obtain only a fraction of—and because even the richest countries do not reach—their economic potentials are measured in the trillions of dollars." (pp. 20-21)

Olson's work received wide praise. He, unfortunately, did not see the connection between his work and those of our forebears, such as Simons and Arnold. He did not recognize that these special interests were defined to be monopolies by these great forebears and many

others.

When Olson thought about monopolies, he thought about those in our textbook definition (see below), as firms that are sole sellers, with only one action. Olson (1996) cited Harberger (1954) to argue that monopolies were of little harm, with Harberger's monopolies consisting only of firms choosing only price.⁶⁰ Olson (1983,1996), then, was seemingly misled by our current definition of monopoly. If Arnold's definition (or similar) was dominant after 1950, Olson would almost surely have seen his special interests as monopolies. This would likely have greatly improved his work and extended its reach.

Schelling (referenced under Oates, Oppenheimer and Schelling, 2000) wrote a wonderful memorial for Olson. He begins: "The entities he studied were interest groups, both organized and unorganized. They acted within markets and impinged on markets, but they were not business firms and were not, as interest groups, producing marketable commodities. Sure, farmers produced crops and medical doctors produced health services, but Olson didn't study the price of grain or the incomes of doctors. He studied how farmers, doctors, labor organizers, and others looked after, as best they were able, the interests that farmers had in common, that doctors had in common, or that workers had in common." (p. 798)

Schelling later writes: "In Nations [Olson, 1983], he takes sides. His interest is not Scout troops or, in the more recent civic interest, bowling teams and choral groups, but what have come to be called "rent seekers," protectionists, groups devoted to raising their incomes, not their productivity, through some exercise of monopoly power in the marketplace or of political power in the legislature. He analyzes both the deadweight loss due to protectionism and the loss of competitive dynamism through the stifling of new enterprise; thus the 'decline' of his title." (p 799) Note that Schelling uses the word "monopoly" in describing Olson's work. So did many others when reviewing Olson (1983).

6.2 Monopolies creating crises in industries after 1950

⁶⁰Here is Olson: "A body of empirical research finds that the losses from monopoly in U.S. industry are slight: Harberger triangles are small. In the same spirit, many economists find that the social losses from protectionism and other inefficient government policies are only a minuscule percentage of the GDP." (p.4)

In the introduction, I said there is an economic crisis if there is a good or service, of importance to well being of individuals, that (1) is not purchased by a large fraction of the population under current production methods, but that (2) would be purchased in significant amounts if produced under a different technology, one that is available, but that (3) has been blocked by monopolies. Here I briefly discuss a few goods and services that have been subject to such economic crises. More details about the crises discussed below can be found in Schmitz (2020). In addition, more goods and services that have been subject to crises can be found there as well.

Construction.⁶¹

Housing crises, of course, did not end with Arnold (1947) — they have continued throughout the post 1950 period. Housing crises don't fit the definition above as closely as many goods below. I can “adjust” it for housing by saying it's a situation where families spend a large share of their budget on housing, say 40%, or 50%, or more, when there are alternative technologies that would reduce the share to 30% or less. I can also use a different definition of a crisis, as I did in Schmitz (20220), saying there is a crisis if the rate of productivity growth is small, even negligible, in the existing technology, but could be significant if an alternative technology was used.

Monopolies in the traditional construction industry have played a major role in these crises, both by (1) reducing productivity and innovation in existing technology in the traditional sector and, most importantly, (2) resisting the introduction of factory built homes.

On the first factor, Herbert Northrup wrote widely about monopolies in the traditional sector. In a review paper delivered at the National Conference on Construction Problems, Northrup (1968) argued that unions, through the inefficient use of existing technologies brought on by restrictive work rules (e.g., jurisdictions) and by blocking technology improvements in existing technology, led to stagnant productivity and were responsible, in part, for crises in construction. Northrup began his review with a brief summary of a recent

⁶¹housing (pp. 174-175)).

strike by Philadelphia rod setters. “For fifty-one days during the past summer, nearly all major construction in the Philadelphia area was shut down. The cause was a strike of rod setters, members of the International Association of Bridge and Structural Iron Workers.” And he continued: “The Philadelphia rod setters strike is, unfortunately, typical of current building construction industrial relations In actual fact, the rod settlers have no reason to exist as a craft. The work is, at best, semiskilled. Nonunion builders teach unskilled recruits to perform the rod setters’ function with only minimum training. Of course, the nonunion contractors have their men use a simple tool to tie the rods—which the rod setters’ union does not permit on its jobs.” (p1)

Northrup’s (1968) review had a section titled: “*Featherbedding as a Way of Life,*” where he discussed many of the restrictions on technology improvements we’ve discussed above and others. He concluded: “That these practices exist is indisputable. Why they exist and what can be done to alleviate the situation is a national concern.” (p. 2) In a section titled: “*Monopoly and Race Discrimination,*” Northrup discussed how construction unions had used various tactics to monopolize the trade, primarily by finding ways to exclude entry. “Not surprisingly, this union [rod setters] has found race and color to be convenient ways to monopolize the trade.” (p.3) He finished the paper with: “Let me close by reminding my friends in the construction industry that the crisis in construction is primarily theirs.” (p.12)⁶²

⁶²Knox and Hennessey (1996) discussed the large losses from jurisdictions in England (where they called job demarcations) in the traditional construction industry. “If many observers, including some employers, consider that the construction industry’s procedure for settling disputes is the most efficient in the country, it nevertheless remains true that demarcation disputes, however quickly settled, reveal the existence of restrictive practices. All demarcation agreements are unnecessary since the need for an agreement is prima facie evidence that members of both unions could do the disputed jobs.” .. “Demarcation is especially important in building where many crafts engage in each operation and where it is still necessary for the employer to call in a specified craftsman for a defined job, possibly for a few minutes at a time while other workers stand idly by. Coordination in building is inevitably complicated, with as many as 80 subcontractors working on a construction site, but unnecessary craft demarcation adds gratuitous complications.” “Finally, insistence that labourers should not do certain jobs of which they are capable adds unnecessarily to costs. In the course of the research for this Paper the effort to compile examples from the ‘case law’ of demarcation disputes settled at national level in the building industry resulted in a monumental document. Had the researcher been asked to compile, in addition, disputes settled at local or regional level, his task would have been Herculean without adding to enlightenment, because when one has read one demarcation case one has read most of them. What stands out is that however efficient the building industry’s demarca-

Reduction of productivity and innovation in the existing technology was also discussed in Oster and Quigley (1997), who discuss resistance to new methods by unions and other groups (see discussion in Holmes and Schmitz (1995)). Productivity losses are still being imposed today by unions and other groups. Unions in the United States have, of course, faced a significant decline, but in construction, especially in big cities, there are still unions that I would classify as monopolies (by examining their contracts, for example). But I know of little work on their recent impact.

As for the second factor, blocking of factory-built homes, there has been very little study of factory-built homes by economists after 1950.⁶³ As we are not studying these homes, seemingly not even recognizing them, it's difficult for our profession to "see" that monopolies were sabotaging them. Over the post-1950 period, there was great effort to *mass produce factory-built homes* in order to alleviate, if not solve, housing crises. But there was also tremendous effort devoted to sabotaging these programs. For most of the period, these sabotaging efforts prevailed. There is one exception. After WW2, a new factory built home was introduced, the Mobile Home (now called the Manufactured Home). Mass production of these homes was achieved for a couple of decades from 1950 to the early 1970s.

When Mobile Homes were introduced, they met great resistance, both from local builders and local communities. Many communities banned them entirely from their borders. Some permitted them, but only in industrial areas and areas with dumps, and then typically required the homes to be in Mobile Home parks. In addition, they could only be financed with chattel loans (like cars), as it was claimed they were not homes.

Yet despite the great resistance, the industry achieved mass production. By "mass production," I'll mean that a similar good is being produced in a very large number of factories, with many factories using similar production processes. With mass production came signifi-

tion procedure, it results in a large national waste of scarce man-power and resources in wholly unnecessary work." pp23-24

⁶³Here are two references that are representative of the literature. Gyourko (2009), reviewing "Housing Supply," and Glaeser (2023), in "Free to Build: How to Solve America's Housing Crisis," both have no mention of factory-built housing.

cant productivity growth. Over the 1958-1973 period, TFP grew at an annual rate of 2.7% in the Mobile Home industry. From 1960 to the early 1970s, production increased from 100K to 600K units. Mobile Homes grew to about one-third of U.S. single family housing production by the early 1970s, with many Southern and Western states achieving shares exceeding 50 percent.

These houses were overwhelmingly being purchased by low income households. The industry was well on its way to greatly alleviating housing crises. Many forebears, dating back to the first half of the 20th century, had argued that the only *hope for producing “decent” housing for the low income* was in factories.⁶⁴ In the 1960s, the great innovators in mass producing houses “outdoors,” Levitt and Sons, recognized their methods could not achieve the goal of building decent housing at a cost low enough for the low income. Here is Charles Biederman (1969), Vice President of Levitt and Sons, in testimony before Congress: “Factory-built housing must succeed, or we will never be able to produce the homes and apartments needed to house our expanding population and our underprivileged citizens in a comfortable, dignified, decent way.” So, by the early 1970s, the dream of providing decent housing for low income households had been achieved.

Falcettoni, Schmitz and Wright (FSW) (2024) ask:

How did the Mobile Home industry achieve mass production of houses in factories by the early 1970s?

This is an important question for a few reasons. Answering this question mat help greatly in answering another: Why has mass production of houses in U.S. factories never been achieved before in other types of factory-built homes, nor has it since. Here I am thinking of Modular Homes. As for terminology, Mobile Homes (or Manufactured Homes) are modular

⁶⁴In the 1950s, John Betjeman (1952), an architectural critic at the time (among other things), and later poet laureate in the United Kingdom, wrote: “Architects have been too wrapped up in ‘style,’ in bricks and foundations and what not, to devote their attention to the only solution of the housing problem—the production of decent and convenient mass-produced houses. These houses should be pre-fabricated, as was the Crystal palace, they should be and could be well planned, as sound and weather-proof as the best brick-built house.”

homes that are typically transported to a housing site on a chassis, with attached wheels. Another type of modular home is typically transported on the flatbed of trucks, requiring more specialized labor (and cranes, etc). These homes are (confusingly) called Modular Homes. It may help solve another question: Why did mass production of Mobile Homes essentially end in the mid 1970s? Production of the homes collapsed at that time.

FSW (2024) document the extraordinary history of how the industry achieved mass production over the 1948-1973 period. This history should be well known, with the industry and its leaders being highly praised, as they created an industry solving a great need. They did so without any government support — leading President Ford to label them as “true entrepreneurs.” FSW document how the leaders of the industry understood the great benefits that could flow from mass production, again, of having 100s of factories producing a similar good, many following similar production methods. They understood that a great benefit was “directed technical change” (DTC), whereby suppliers to the industry would recognize the great opportunities to engaging in research and innovation to supply such a large market.

But in the early 1950s, DTC was in the future. To achieve it, the leaders began to develop a uniform building code for the homes. After this was underway, they brought in outside expertise, both for additional knowledge and, very importantly, for credibility. By the mid 1960s, these homes were manufactured to a very high standard – the building code was sponsored by leading code-making authorities, like the National Fire Protection Association. The industry then lobbied states to make the codes mandatory. By the early 1970s, 45 states had done so. The conditions for DTC were established. Moreover, the industry promoted DTC, starting formal meetings with supplier groups on how Mobile Home producers might help suppliers in their efforts to develop new technology.

FSW’s (2024) research offers insights into the questions above. Why has mass production of Modular Homes never been achieved? There were efforts, beginning in the early 1970s, to begin mass producing these homes. Legislation was passed establishing uniform building codes for the homes in some states. But this legislation was written by traditional builders

or legislators with their interests in mind. The legislation was filled with sections that guaranteed its failure. This was exactly what Adam Smith had warned 200 years earlier: “The proposal of any new law or regulation of commerce which comes from this order [i.e., monopolies] ought always to be listened to with great precaution,” (p.267) So, while the headlines might trumpet state-wide building codes for Modular Homes, in practice they did not accomplish anything.⁶⁵

This lesson, that the legislation passed to encourage mass production of Modular Homes, was doomed to fail, and did fail, was never learned. Incredibly, there have been recent, massive efforts to, again, mass produce homes in these states. Kattera received huge funding, to the tune of two to three billion dollars, to achieve this goal. It failed – for the same reasons that failure occurred in the early 1970s. And, as FSW argue, the industry has still not learned, as we discuss some very recent failures.

Schmitz (2020, pp 172-239) studied the collapse of the Mobile Home industry that began in the middle 1970s. He examined many factors that were behind the collapse. FSW’s findings support the conclusion that one of the factors was paramount — the imposition of national building code for Mobile Homes that superseded state-wide codes.

As Schmitz argues, the resistance from traditional builders to Mobile Homes dramatically increased beginning in the late 1960s. The great increase in resistance coincided with a shift in the “locus” of resistance from local institutions to federal ones. There surge in resistance at the national level was made possible with the establishment of the Department of Housing and Urban Development (HUD) in 1965. With its establishment, the trade association of the traditional builders, the National Association of Home Builders (NAHB), was given the opportunity to *create* an ally in its fight against Mobile Homes. Key leadership positions in HUD were soon being filled with political appointees from NAHB. These appointees — who had their own traditional construction companies — left leadership positions in NAHB to

⁶⁵The Mobile Home codes, by contrast, were written by the Mobile Home industry (and the national code-setting groups). Paradoxically, it was the great resistance to Mobile Homes when they were introduced, when they were pushed out of most areas, that led to this result. Since these areas had no formal building code (or none for houses), the industry was given the opportunity to develop its own building codes.

take leadership positions in HUD. From these positions in HUD, traditional builders were able to influence key legislation that was proposed by HUD, and then write the regulations to implement the legislation.

One piece of legislation in 1974 created a national building code for Mobile Homes. This code — called the HUD-code — superseded the state Mobile Home codes. It was argued that a national uniform code could only improve on state wide codes. But this legislation, and its subsequent regulations, significantly increased the costs of making Mobile Homes and, at the same time, also significantly decreased their desirability.

One piece of the legislation was the requirement of a “permanent chassis.” As mentioned, a Mobile Home was typically transported to its housing site on a chassis, with wheels attached. When the Mobile Home arrived, the chassis was typically removed, and the Mobile Home placed on a foundation, often with a basement. The legislation now *forbade* the chassis from being removed – it was now a “permanent chassis.” This greatly reduced the desirability of the house. If one wanted to put the home on a foundation, it would have to be dug much deeper. If a basement was desired, it would need to be dug deeper still.⁶⁶

The only purpose of the permanent chassis was to sabotage the Mobile Home industry (see Ohanian and Schmitz, “Want Affordable Housing? Take the Chassis Off Manufactured Houses: And Don’t Call Them Mobile Homes.” *Washington Post* (May 21, 2024)).

Health Care.

—Health Care — Medicine.

Recall that Arnold (1938) characterized the American Medical Association as a monopoly (as did Simons (1944)). Reuben Kessel produced significant research on the medical monopoly as regards both price discrimination (Kessel (1958)) and physician supply (Kessell (1970)). For his work on price discrimination, Arrow (1963, p. 957) writes: “As Kessel has pointed out with great vigor, not only is price discrimination incompatible with the competitive

⁶⁶Note that the cost of building the home is increased by the permanent chassis, whether a foundation is dug or not. The chassis cannot be reused, and must be purchased. This is only one of the increased costs, not insubstantial, but smaller than other costs.

model, but its preservation in the face of the large number of physicians is equivalent to a *collective monopoly*” (emphasis added). On physician supply, Kessel wrote: “There exist *many parallels* between medicine and AFL building trade unions — discrimination in admissions, training techniques that are over-specified and excessively protracted, and archaic work rules. There has been great public dissatisfaction with the performance of both.” (p. 281) (emphasis added)

Jeffrey Berlant (1978) produced significant research on many aspects of the medical monopoly, including (1) how the “collective” monopoly formed, (2) how it avoided detection for so long and (3) how it managed to avoid conflicts among those in the monopoly. Here is Berlant (1978, p. 50) on how it formed: “First, it is my contention that medical ethics, though ostensibly pertaining to the doctor-patient relationship, have, in fact, addressed the structuring of relationships among doctors. Second, many prescriptions for professional behavior can be discerned in medical ethics which, if adhered to, would result in a highly monopolistic form of social organization of professionals. Third, historically, social medical ethics have increasingly served the collective interests of physicians through the gradual innovation of monopolistic uses of medical ethics. Paradoxically, documents which manifestly call for the protection of patient interests have actually been more concerned with the furthering the interests of physicians and may have helped forged the Anglo-American medical profession into a *collectively organized group*.” (emphasis added)

Berlant discusses Thomas Percival’s (1803) code of medical ethics (he cites Leake (1923) in his discussion of Percival). Berlant sees Percival’s code of ethics as means to build patient trust as part of the apparatus to create monopoly. “The most important impact [of inducing trust] has been the creation of a paternalistic relationship toward patients which has helped to undermine the creation of consumer organization for self protection among patients and has thereby maintained consumer atomization. Essentially, trust inducement persuades the patient that he need not protect his own interests either by himself or by organized action. Through atomization of the public into vulnerable patients, paternalism results in the profes-

sion's dealing with fragmented individuals instead of with organized groups." (p. 51) With trust established, it's also harder to "detect" any monopoly.

Berlant traces the suppression of conflict back to Percival's code as well. "Yet the use of paternalism to dominate patients is not sufficient to create a monopolistic form of professional organization. The bulk of Percival's code is directed toward reducing the internal conflict among physicians It is preoccupied to an extraordinary degree with the suppression of intraprofessional comparisons." (p. 52)

—Health Care – Oral Health.

Recall above where I described how the ADA had blocked a program, initiated by the Department of Public Health (DPH) in Massachusetts and the Harvard School of Public Health, to train dental therapists to treat low-income children who had severe dental problems. The ADA has continued its assault on introducing therapists and other oral health professionals that are very capable of providing some of the services provided by dentists. A particularly egregious case is from the early 2000s, when leaders in Native American villages in Alaska (in partnership with universities in New Zealand) launched a program to train dental therapists. Once the ADA learned of the program, it sought to kill the program, just as it had done 50 years earlier in Massachusetts (see Nagel and Nash (2005) and Smith (2007) for a description of this episode). Chu, et al (2014) note that, fortunately, the ADA failed to sabotage the program: "In 2003, the Alaska Native Tribal Health Consortium (ANTHC) sent Native American Alaskans to New Zealand to train to become dental therapists. They returned to be employed as Dental Health Aide Therapists (DHATs). The American and Alaska Dental Associations sued the ANTHC and the individual DHATs for the illegal practice of dentistry, but the suit was withdrawn once the Alaska attorney general ruled that the DHATs were practicing under federal legislation, thus not subject to state law ..."

The episode above consists of dentists sabotaging substitutes for their services. Dentists also sabotage new technology that is developed by dentists to increase productivity and reduce costs. Thomas (2015) is a nice study of Sarrell Dentistry, an innovative dental group

in Alabama. It developed a plan to serve the poorest children in the poorest counties of a very poor state. Sarrell realized that they could achieve high volumes of service with offices with many chairs, given that access to care was so limited. That meant that even though its patients were overwhelmingly children, with roughly 90 percent having insurance through Medicaid or CHIP, with low reimbursement rates, it could still succeed. The Alabama Dental Association attempted to kill the program — but ultimately failed. When Sarrell attempted to move to neighboring states, they were blocked.

—Health Care – Hearing Aids.

The hearing aid industry is overrun with monopolies. I describe some below. These monopolies work together, spinning power relationships of “infinite complexity,” to pursue their goals. They inflict great harm on low and middle-income Americans.

Outline of crisis. In a report to President Barack Obama, the President’s Council of Advisors on Science and Technology (PCAST) (2015) PCAST reports hearing loss impacts many Americans. “Age-related hearing loss affects many Americans, with older adults particularly at risk—a quarter of adults between 60 and 69 years, over half in the range 70-79 years, and almost 80 percent of those older than age 80 have difficulty hearing. The absolute number of those affected, already almost 30 million, is expected to grow as the population ages.” It continues: “While untreated hearing loss likely impairs physical and cognitive health, only a minority of Americans with hearing loss (perhaps 15-30 percent) seek out and use assistive hearing technologies. Adoption rates are even smaller for people with low income and for racial and ethnic minorities.” As for the barriers to seeking help: “PCAST believes that cost is the largest barrier to hearing-technology adoption. A 2014 survey found that the average price of one hearing aid was \$2,363, with premium models costing \$2,898. Many, if not most, individuals need two hearing aids, one in each ear, doubling the cost.” (https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_hearing_tech_letterreport_final.pdf).

There are typically two types of professionals that serve as hearing aid fitters in U.S.

states. One is audiologists, individuals who hold advanced degrees, both MAs and PhDs. Audiologists also provide a wide range of other services, many of a more technical nature. The other professional group, one that goes by slightly different names across states, simply fits hearing aids. They typically require only a high school degree. They are often allowed to operate independently of audiologists. In Minnesota, they are called hearing instrument dispensers (HIDs). A HID can typically work independently of an audiologist that fits hearing aids.

This situation is different than in industries like legal services and oral health services, where lower skilled professionals, whom are very capable of providing some of the services of higher skilled professionals, are either entirely blocked from working, or are required to be supervised by the higher skilled professional. This situation in hearing aids developed because of the peculiar history of the industry. Hearing aid fitters go back before WW2, long before audiologists. Historically, the industry had significant problems with corruption, deceit and misinformation, dating back to before WWII. Many decades ago, the FTC held hearings to discuss such problems.

The answer to this problem is meaningful government oversight of the industry. The answer to such problems is not to require a PhD to fit hearing aids.

But many audiology groups have seen this as an opportunity to make their profession comparable to the legal profession. That is, just as no individual can give legal advice of any kind without being a member of the bar (see below), these groups want no individuals to give any kind of hearing care, including fitting of aids, unless they are an audiologist – that is, have an MA or PhD from an audiology program.

Unlike lawyers and dentists, then, that have made low-cost substitutes illegal, audiologists have been forced to use other means. I present a couple of the methods that audiologists in Minnesota have used to block HIDs.

Taking tests. To be certified to fit hearing aids, both HIDs and audiologists must pass a practical test, the actual fitting of the hearing aids. Becoming a HID requires passing a

further battery of “academic type” tests. For audiologists, those with an MA or PhD, the academic type tests are waved. Why wave such academic tests for audiologists? Lawyers obviously don’t. The fee for the practical exam, the exam both HIDs and audiologists take, differs for HIDs and audiologists. The fee for a HID applicant is \$1,200, while that for an audiologist is \$250. Let me emphasize that this is the same exam.

I wrote to state officials in Minnesota and asked what accounted for this difference in fees for taking the practical exam. Here is the response I received: “Regarding the differentials, the examination fees along with licensing fees are defined in statute and support the hearing instrument dispenser certification program, under Chapter 153A and the audiology licensing program, under sections 148.511 to 148.5198. . . . There are approximately 230 certified hearing instrument dispensers and 465 licensed audiologists. Therefore, program fees for audiologists are spread across a larger applicant base.”

Internships. If a potential HID passes all the exams, another requirement to be certified is that the person complete an apprenticeship or internship with an already licensed hearing aid dealer (either a licensed HID or licensed audiologist). The potential HID must find a dealer who will act as a sponsor for the internship. Audiologists don’t have this requirement. The incentives of a potential sponsor are clear: Why sponsor a HID who will be a competitor? This is a much greater barrier to HIDs than the costs of all the exams together, but none of this shows up in measures typically collected on the costs of licensing.

Legal Services.

Today, there is a legal crisis in the United States. A very large share of the low income population has no access to legal services (or advice). Charity (e.g., pro bono work) and public support (e.g., legal aid societies) fill only a tiny percent of those seeking help.

Lack of access to legal services can have severe consequences for a family’s well being. Marrero’s (1991), p. 771) study of the legal needs of low-income New Yorkers points out the great need of the poor for legal advice: “Our society has evolved in a way that makes access to legal services increasingly crucial to handling the emergencies which routinely beset

poor persons. Whereas people of means can regard the service of a lawyer as an optional convenience to be availed of only in certain relatively well defined circumstances, the poor paradoxically live in circumstances in which they need legal services more but can obtain them less. Typically, their needs for legal services are not in any sense optional but rather deal with access to essentials of life.”

One reason was for the great need for legal services was described by Smith (1919): the poor are preyed upon as they have no legal recourse. “Denial of justice . . . *actively* encourages fraud and dishonesty. Unscrupulous employers, seeing the inability of wage-earners to enforce payments, have deliberately hired men without the slightest intention of paying them” (p. 9) [emphasis added]. Smith’s (1919, 9) description of the consequences of lack of legal protections remains accurate: “Because law is all-embracing, the denial of its protection means the destruction of homes through illegal foreclosures, the loss through trick or chicanery of a lifetime’s savings, the taking away of children from their parents by fraudulent guardianship proceedings.”

Monopolies in legal services, including state bar associations and the ABA, just like the ADA and state dental associations, and so many monopolies, consider themselves as *sovereign nations*. They consider themselves the authority to determine what’s in the public interest regarding the market for legal advice. These monopolies are instrumental in passing Unauthorized Practice of Law (UPL) statutes that prohibit a non-lawyer from giving *legal advice* of any kind. Bar associations have blocked books that give legal advice. Clerks in courts cannot tell visitors what documents are appropriate for their cases. Paralegals cannot offer any legal advice. UPL statues, of course, also block any non-lawyer from providing *legal services*. Paralegals are not permitted to practice independently, though they are capable of providing many services performed by lawyers. Schmitz (2020) discusses a whole range of other professionals that are blocked from providing legal services.

Christensen (1980) provides a nice study of the lawyer monopoly and its unauthorized practice of law (UPL) statutes. He argues the “interest of the public is one that has been

defined, articulated, promulgated, and enforced not by the public but by the legal profession. And nowhere, in all of the literature or in any of the court decisions, is there evidence of a public voice with respect to this supposed public interest.” (p. 201) Christensen continues: “From the very beginning the effort against lay practitioners [non-lawyer professionals] has been justified as necessary for the well-being of the public. Suppression of the practice of law by non-lawyers has been proclaimed to be in the public interest, a necessary protection against incompetence, divided loyalties, and other evils.” And Christensen again: “Even more significantly, nowhere, in all of the literature or in any of the court decisions, has there been, until very recently, any serious suggestion that any other interest of the public might be involved” (201)

Many in the legal profession have attempted to reform the monopoly (or eliminate it). Deborah Rhode (1981, 2004), a Professor at Stanford Law School, dedicated her career to improving access to the legal system for low income individuals. Engstrom (2021) provides a tribute to her memory and service to helping extend legal services to the poor.

Here is Denise Johnson (1998): “The consistent rationale [for UPL statutes] is that consumers need protection against their own ignorance, and that only by regulating lawyers will the public be protected from the unscrupulous. But . . . it is difficult to sustain the argument that the poor are being protected by not receiving any legal advice at all.”

Antitrust consulting.

Recall that Mund (1943) was concerned that the economics profession was being infiltrated by major corporations, leading it to become a “kept” profession. The profession has not been so timid as Mund, or the word “timid,” might have thought. Elements of our profession have created their own monopoly. Schmitz (2020, pp. 283-301) argues that today’s U.S. antitrust consulting industry is a monopoly, one primarily harming low income Americans.⁶⁷ This monopoly has infiltrated institutions, both economics departments and

⁶⁷Schmitz describes how the industry (which I call “ACE,” as in Antitrust Consulting by Economists) harms low income Americans. It has become common practice for economists in ACE to leave their consulting positions to take leadership positions at the DOJ-AD and/or FTC. So, they have influence on agency agendas. Their incentives are to steer agendas toward those with the greatest rewards to ACE. Agendas emphasizing

the antitrust agencies.

The industry consists of economists at private consulting firms, many of whom have academic appointments as well. I'll call it the "Antitrust Consulting (from) Economists" industry, and denote it by "ACE." The industry provides services to corporations and to the FTC/DOJ. If, for example, the FTC challenges a merger, ACE members lead the team defending the merger, while other ACE members are hired by the FTC to challenge the merger.

How is the ACE-industry a monopoly? Members of ACE have incentives to act cooperatively with each other. Imagine Firm-A and Firm-B want to merge. Consider two ACE-firms, ACE-firm-merge that represents the merging parties, and ACE-firm-govt that represents the government.

These two firms, and the consultants from the firms, are meant to be in an adversarial position. But challenging the credibility or conflicts of interest of the other firm or their consultants could damage the credibility of the ACE-industry. Such challenges would be met with similar challenges from the other firm. Such challenges to credibility are a losing proposition for both sides.

The incentives of ACE consultants are aligned. Members of ACE have incentives to act cooperatively with each other across firms. They are essentially one organized group, one concentration of power, a monopoly. No formal organization was needed to work out these agreements. The ACE monopoly is informally organized. There is no trade association . It's held together through some powerful forces – like that just discussed.

Another powerful force holding the monopoly together is peer pressure. There are 100s of consultants/economists in ACE. If an economist is a member of ACE, it's very likely that a large fraction of that person's professional colleagues are ACE-members as well. And some of them may be members that earn fabulous amounts of money from ACE. For such a person to be critical of the ACE-industry would bring high costs.

protecting low-income households from monopolies seems a less lucrative agenda for ACE than other agendas.

The consequences of this monopoly are not simply the transfer of funds from the merging parties to ACE in the form of very high charges. There are significant real losses. ACE primarily hurts the poor. Over the last several decades, it has become common practice for economists belonging to ACE to leave their consulting positions to take leadership positions at the DOJ-AD and/or FTC. The incentives of ACE-consultants in these important positions at the FTC and DOJ almost surely include how various antitrust agendas influence the profitability of ACE. This might be the only consideration. An agenda at the DOJ-AD and FTC that included a significant commitment to protecting low-income households from the monopolies discussed above would seem to be a much less lucrative agenda for ACE than those requiring analysis of potential mergers and the like. This is a real cost.

Manufacturing.

There have been numerous studies of U.S. manufacturing industries examining the formation and then great decline (or elimination) of monopolies in the industries. This history allows one to analyze the harm they create as they form, and then how that harm is erased as they are decimated.

—Sugar manufacturing: New Deal monopoly, 1934–1973.

The U.S. sugar manufacturing industry was given the opportunity to form cartel in 1934 as part of the New Deal. Those involved in setting up the cartel rules included the major sugar manufacturers, farmers groups, state governments and the federal government. The cartel lasted until 1974, when Congressional legislation eliminated the cartel. During the period of the cartel, U.S. sugar prices were roughly twice world prices (with imports strictly limited) and the industry received significant subsidies (derived from taxes on imports).

D. Gale Johnson (1974) conducted an extensive study of the New Deal “Sugar Program” and its consequences, focusing on the early 1970s. He reached a conclusion that surprised himself. He found that the program in the 1970s had large costs for society, but very small benefits for the sugar manufacturers and farmers that were the beneficiaries of the program. In consequence, he title his study: “The Sugar Program: Large Costs and Small Benefits.”

The small benefits received by monopoly members that Johnson had found was the result of the monopoly destroying industry profits as the cartel progressed, the destruction the result of conflicts within the monopoly (see Bridgman, Qi and Schmitz (2015)).

In 1934, the monopoly was very profitable. It was the rules the cartel set up in 1934 to reduce conflict that led to the losses of profit over time.⁶⁸

One source of conflict was between individual U.S. states. In the past, states had attempted to “steal” the sugar industries from other states by offering subsidies to sugar producers to move states. To alleviate this conflict, when the monopoly assigned quotas to areas (on the basis of current production), it stipulated that the quota was tied to the location (usually a county) for perpetuity.

California and Colorado received the great bulk of the acre quotas as this is where the industry was primarily located in 1934. Over time, it became more profitable to produce in the Midwest but the quotas were fixed in location. Profit opportunities were missed. But it was worse than this. Farmers received subsidy payments for each ton of beets grown, over and above prices (subsidies amounted to about 20 percent of prices). So, not only was production not moved from California to North Dakota and Minnesota. Farmers in California would grow sugar beets rather than, say, strawberries, because they received a subsidy on the beets (which was financed by a tax on imports). California farmers grew beets even though profits were negative (See Bridgman, Qi, and Schmitz (2015)). So, industry profits were essentially zero (some profits were earned in the Midwest, but there were negative profits (net of subsidies) in the West).

In 1974, the cartel was eliminated. Protection from foreign sugar remained, but now the domestic industry was “competitive.” the domestic beet industry shifted dramatically from California and Colorado, to North Dakota and Minnesota. This led to large decreases in costs (inputs were much cheaper in the latter states) and increases in productivity (it’s more

⁶⁸The members of the monopoly, including the great sugar manufacturers, farm associations, and the individual U.S. states where sugar was produced, struggled to reach an agreement, and the federal government threatened to take away this opportunity to form a cartel (as it did in other industries).

productive to grow beets in the latter states).

—Cement manufacturing.

A “strong” monopoly in the U.S. cement industry, and one which orchestrated a dramatic growth in “benefits” for its members from the early 1950s to the mid 1980s, was the Cement, Lime and Gypsum Workers (CLGW) union. While the growth was over a few decades, its decline was swift, it being decimated in a few years. Northrup (1989) provides a nice history of the union, which he titles “From Union Hegemony to Union Distintegration: Collective Bargaining in Cement and Related Industries.” Here is Northrup: The union “... won not only high wages and benefits, but imposed restrictive rules as severe as those in any industry. Eventually, however, foreign competition and economic realities forced the companies to revolt ... and today [1988] unionism, once so strong, is weak and divided as management imposes or forces acceptance of its conditions ..” (from the abstract of paper). The disintegration came from imports and, far more importantly, the threat of imports.

As for benefits, production workers in CLGW earned about the average hourly production worker wage in 1950. By 1980 they were earning 150 percent of the average (see Dunne, Klimek and Schmitz (2010)) (DKS). This put cement workers among the “elite.” Compared to auto and steelworkers, cement hourly wages in 1950 were 81% and 85%, respectively. By 1970, they were roughly the same, staying that way until 1984 (see Northrup p. 371).

As Northrup said, the restrictive work rules, such as jurisdictions and the rules for technology adoption, were among the most severe in any U.S. manufacturing industry. The rules on jurisdictions were among the most restrictive I’ve seen. But the work rules regarding a manufacturing plant adopting a new machine or such were the most restrictive I’ve seen.

Jurisdictions ensured, which was common throughout U.S. manufacturing industries, that those operating machines in plants were forbidden from doing anything other than running the machines. If machines stopped operating and needed minor adjustments, no matter how small, repair staff had to be called. This work was the “property” of the repair staff. Another feature of jurisdictions, also common in manufacturing, was that there were many

different repair classifications. Repair work was broken down into many different types of jobs, creating many different job classifications or jurisdictions.

Sometimes a manufacturing plant would also break down repair jobs by departments. Here is such a clause from a cement contract:

“..... when the Finish Grind Department is completely down for repairs, the Company will not use Repairmen assigned to the Clinker Handling Department on repairs in the Finish Grind Department.”

In cement, the rights to jobs sometimes extended to workers when they were not in the plant. If there was a breakdown in the plant that required a particular type of repair classification that was not in the plant, workers within this jurisdiction were contacted about the opportunity to come to work.⁶⁹

As reported in the Voice, a publication of the CLGW union, when U.S. cement workers visited cement plants in Germany in 1980, they were struck by the difference in how repair was conducted in the two countries. As one U.S. worker noted, “We were also told that if they have a breakdown during a shift, they use the people on that shift to make the repairs, if possible ...” while another stated that “They have breakdowns, as we do. The big difference is that almost anyone pitches in to fix it.” These workers also noted that they liked the U.S. system better. (DKS 2010)

Such jurisdictional rules obviously reduce productivity. When the plant must wait for repair staff to arrive to fix machines, capital is not operating, though energy is still consumed (in the kilns), and no output is produced. This reduces capital productivity, energy productivity, and labor productivity.

The next clause was common in cement plants, but no other industry contracts I’ve seen.

⁶⁹Here is a clause from a contract: “In cases where repair work on Mobile equipment (other than structural work or welding) is required at times when Mobile Department Mechanics are not scheduled to work, the Repair Foreman will first attempt to contact the Mobile Mechanics to perform the work on an overtime basis. Should all of the Mobile mechanics refuse the overtime or be otherwise unavailable to report to work, a General Repair crew will be assigned to do the job in conformity with past practices as to the nature of the repair work involved.”

“Employees will not be terminated by the Company as the result of mechanization, automation, change in production methods, the installation of new or larger equipment, the combining or the elimination of jobs.”

This clause speaks for itself — and the industry operated by these rules. This is the most restrictive clause I’ve seen in an industry, but there were many other manufacturing industries with restrictive clauses on technology adoption and such.

The productivity of the U.S. cement industry grew slowly, if at all, during much of the CLGW period. Energy productivity in the U.S. cement was significantly behind those industries in Europe and Japan at the beginning of the period, and fell further behind as the period continued. From 1960 to 1975, U.S. energy productivity, relative to the UK productivity, fell from 90 to 75 percent. The same numbers relative to France were 70 to 65, relative to Germany were 70 to 60 and relative to Japan were 80 to 60. From 1975 to 1980, U.S. energy productivity relative to these countries’ productivity remained roughly the same, as the United States made significant investments in energy efficient technology.

U.S. labor productivity was significantly larger than the labor productivity of the European countries above in 1955. U.S. productivity relative to France and Germany was roughly 1.42, and relative to Spain, four (4). But 25 years later, the labor productivity of the European countries equaled the U.S. productivity (DKS, Figure 11).

The decrease in relative productivity could not continue indefinitely. Imports began in the late 1970s. But they reached only 20% in 1980s. It was the threat of imports that was the union’s undoing. To see the threat of imports at play in a specific historical case, consider what happened in the upper Midwest in the 1980s, in particular, in Minneapolis and surrounding areas. At that time, cement was being produced in Iowa, and shipped up the Mississippi to Minneapolis. Costs of producing and transporting the cement had become so high, that a Spanish firm decided it could make a profit delivering cement to concrete makers in Minneapolis. Dumez and Jeunemaitre (2000, p. 135) report on a joint venture to import Spanish cement into Minneapolis that was set up between a Spanish Company and concrete

manufacturers in Minneapolis. Spanish companies would ship cement on barges up the Mississippi, from New Orleans to Minneapolis. The joint venture was ultimately cancelled, so that no Spanish cement made it to the Port of St. Paul. But according to Dumez and Jeunemaitre, the joint venture accomplished the goal of exposing the local cement producers to price competition (presumably the Spanish company received a nice payoff when the joint venture was cancelled). (DKS, 2010)⁷⁰

With the surge of the threat of imports in the middle 1980s, and with the union's collapse, the restrictions described above were dropped. At the same time, productivity in the industry soared. DKS (2010,2014) argue, using various methods, that the productivity surge was primarily driven by the elimination the restrictive practices the industry had operated under for a few decades.

— Iron Ore Manufacturing (and Steel Manufacturing).

There were a number of monopolies in the U.S. iron ore manufacturing industry. In many ways, the experience of the U.S. iron ore industry is very similar to that of the U.S. cement industry. One of the differences was that the cement industry was located throughout the United States, while the iron ore industry was concentrated in a single area, deep in the Great Lakes, in the “Iron Range” in Minnesota. This meant that there were likely more monopolies in iron ore than cement, as I explain shortly. But the main experience in iron ore was the same as in cement: strong monopolies developed, which led to low productivity growth, so that the prices of Minnesota iron ore delivered to, say, Chicago, became so high that iron ore producers from far way places (in particular, Brazil) offered to sell iron ore in Chicago at dramatic discounts to Minnesota iron ore. This threat, as there were no actual shipments, greatly weakened the monopolies on the Iron Range, which led to a great reduction in restrictive practices and a surge in industry productivity (see Schmitz (2005)).

The monopolies included the United Steel Workers of America (USW). The USW had

⁷⁰I first learned about this episode from Victor Rios Rull. In 1985, he was flying from Spain to Minneapolis and was seated next to a Spanish cement company executive. Victor was shocked that he was coming to Minneapolis to sell Spanish cement. After Victor told me this story, I looked for a discussion of this episode in the literature.

significant restrictive practices in the iron mines, though not as much as the CLGW. The major steel companies were here, and there was likely elements of monopoly involving them. Given the U.S. iron ore industry was concentrated locally, it was somewhat at the mercy of different government entities, and this introduced elements of monopoly.

Just as in many industries, in the iron ore industry work practices imposed a sharp separation of maintenance and repair work from production work. Machine operators (production workers) were precluded from setting up their machines, for example, picking up small supplies and parts incidental to the job. They were not allowed to maintain their machines, for example, by tightening nuts and bolts; replacing fuses, wiper blades, tires, bulbs, batteries, and fluids; or jump-starting vehicles. They were not permitted to help repair staff when they were called. Work practices also assigned repair staff to a job category or classification. A person with a given classification completed repair jobs assigned to this classification but not others.

After the crisis, much of this changed — rules became much more flexible, or even dropped. Machine operators could supply their machines, could engage in simple maintenance, and help repair staff. After the crisis, repair workers engaged in a wider range of repairs. New jobs were created that rolled a large number of previous repair jobs into a single new combined job. A new job category, “ironworker,” was to perform the duties that were previously done by boilermakers, riggers, and welders. Another new job category, “millwright,” had duties that included those previously assigned to plumbers, pipefitters, welders, and mechanics. In some mines, the number of repair job categories fell from the upper 20s to the low single digits. (Schmitz, 2005, pp. 609-610)

Repair staffs fell disproportionately during the crisis. Significant evidence comes from the path of repair hours relative to total hours at the Minntac mine in Minnesota. Minntac was owned by the U.S. Steel company and had approximately 2,000 employees when the crisis began. Repair hours as a percentage of total hours fell sharply at Minntac during the crisis. The share was approximately 50–55 percent before the crisis; after the crisis, it

was approximately 28 percent. The reduction in repair staff accounted for a large share of employment reduction, well over 75 percent of the total. (p 612)

6.3 Understanding monopoly and some puzzles that may not be

Here I discuss some of the lessons or implications of the findings from the previous section. I discuss how two “puzzles,” that the expenditures on lobbying seem to very small given the gains that they deliver, and that the gains from trade seem to be very small, are perhaps less of puzzles given the factual findings above.

I start with lobbying and Tullock’s idea that there is a puzzle — lobbying expenditures are very small, yet the seeming gains very large.⁷¹ I examine the implications of Johnson’s (1974) finding that the losses to society from the Sugar Program were large but the gains to manufacturers and farmers, the beneficiaries, were very small, as well as Bridgman, Qi, and Schmitz’s (2015) (BQS) finding that monopolies had destroyed lots of the industry profits.

Figure 3, the top panel, presents the simple textbook model of monopoly. We have p_c and q_c the competitive price and output, and p_m and q_m the monopoly price and output. The rectangle G is the gain to the monopolist. The rectangle is the transfer from households to the monopolist. The shaded area is the social loss from monopoly (DWL) in the textbook model, often called the Harberger triangle. In this model

Textbook monopoly: Social losses = Harberger-triangle

Tullock (1967) argued that there would be “competition” for this monopoly-gain G . He argued the resources spent to obtain G should be included in losses. Let me set up a “game.” Anyone can submit a bid for the monopoly. Bids are public. The winner must do an amount L in pro bono law work (L for law work or lobbying). I now call G the (gross) monopoly-gain and $G - L$ the (net) monopoly-gain. Competition ensures a winning bid $L = G$. So, the

⁷¹lobbying only one part of expenditures.

(net) monopoly-gain is zero, $G - L = 0$. So, for Tullock

$$\text{Social losses} = L + \text{Harberger-triangle} = G + \text{Harberger-triangle}$$

and since Harberger triangles are thought to be small,

$$\text{Tullock monopoly: Social losses} \approx (\text{gross}) \text{ monopoly-gain} = G.$$

Tullock (1997) throws his hands up, and says he cannot find resources spent that are even close to the social loss.⁷²

I now turn to Johnson and BQS. As BQS show, monopolies in the sugar manufacturing monopoly introduced restrictions which led to significant increases in costs and profit losses. The (gross) monopoly-gain is now less, call it G' . I model this in the bottom panel by having the marginal cost curve shift up to c' . For simplicity, I keep monopoly output fixed (and so social losses as well). I denote the losses from higher costs by R , for “loss from monopoly restrictions,” where $R = (c' - c) \cdot q_m$, so $G' = G - R$. I set up the game the same way. Competition ensures $L' = G'$. So the (net) monopoly-gain is $G' - L' = 0$.

With the same total social losses, we can write, ignoring the Harberger-triangle,

$$\text{Social losses} = L' + R = G' + R \gg (\text{gross}) \text{ monopoly-gain } G'$$

since R is large (relative to G').

In summary, from understanding monopoly, we see that the amount spent on lobbying (G') may be small, yet the social losses from the lobbying (G) are very large.

Consider the other puzzle, that the gains from trade are small. I begin with a short detour. Thirty years ago, Holmes and Schmitz (1995) developed a model where the amount of trade could be small but the benefits of trade could be of importance. We developed

⁷²There are, of course, many resources spent to achieve monopoly positions. I am assuming in this discussion that they are included in L .

this model long before we knew about our forebears, and before our other joint work on monopoly began. In the model, groups (i.e., monopolies) could block new innovations that would harm the existing technology they used. That is, the groups have (scarce) skills in an existing technology. New technologies “arrive” that dominate the old technology, though all individuals are equally skilled in them. The groups have a technology (e.g. lobbying) to block the new technologies. Groups decide whether to block them or not. Our interest was to show the impact of trade on these blocking decisions. We considered a two-country version of the model, with the only difference being that one country allowed lobbying, the other didn’t. In the equilibrium, groups in the lobbying-allowed country might block new technologies if there is no trade, but would not do so if there was trade.

Our motivation for developing such a model, with this feature of blocking or sabotage, was our observations of current events in many industries. We saw there was blocking of new methods before trade, and then blocking would be dropped with trade.

After this detour, I return. When Harberger (1954) found the losses from monopoly to be very small, he not only surprised himself, but, as I suggested, he surprised many others. This included international trade economists, who soon engaged in similar calculations to Harberger, finding that the gains from trade were small. In his review of such findings, Robert Mundell (1962, p. 622) wrote: “... there have appeared in recent years studies purporting to demonstrate that the welfare loss due to monopoly is small, that the welfare importance of efficiency and production is exaggerated, and that gains from trade and the welfare gains from tariff reduction are almost negligible. Unless there is a thorough theoretical re-examination of the validity of the tools on which these studies are founded, and especially of the revitalized concepts of producers’ and consumers’ surplus, some one inevitably will draw the conclusion that economics has ceased to be important!”

As Mundell seems not to have known, our forebears had ideas on why trade was important and still could be consistent with the estimation findings Mundell was reviewing. Our forebears emphasized how “small’ tariffs were important factors in keeping groups from

forming and building domestic monopolies. If tariffs are small, some monopolies may not form that otherwise would have. But we won't know that, since we don't see the calculations of potential monopolies telling them its not a worthwhile investment to build a monopoly.

This "gain from trade" is, then, difficult to quantify. I see the experiences of the cement industry and the iron ore industry of providing some evidence on this benefit of trade (of potential trade). Consider the "protection" the cement industry was receiving from the possibility of imports in 1950. The sources of protection included tariffs (though there were none), transportation costs from potential exporters to a U.S. market (which were typically "large") and unit labor costs (the average cost of labor to produce one unit of output) of potential exporters to the United States relative to U.S. unit labor costs (which was large in 1950). The protection offered the industry in 1950 was "positive" and significant. As time moved on, the protection offered the industry began to significantly fall, as the relative unit labor costs of potential exporters relative to U.S. unit labor costs significantly fell. The protection from the above sources turned "negative."

Turn next to the Great Depression. With the National Industrial Recovery Act of 1933, the U.S. federal government permitted groups and industries to form monopolies. That Smoot-Hawley tariffs were in place at this time almost surely meant that the monopolies that formed could introduce more restrictive practices, and create more harm, than if the monopolies weren't receiving the protection from Smoot-Hawley tariffs. The costs of the Smoot-Hawley tariffs, then, includes the "additional" freedom given to the monopolies to erect restrictive barriers. This is one reason Simons (1934) wrote: "drastic tariff reduction is an important and perhaps indispensable element in a program for eliminating private monopoly" (p. 69)

It seems, then, that we want our trade theory to cover such situations. We are developing general models of trade. International trade economists have not introduced such considerations into their models. One likely reason is the way monopolies are treated in our current methodology. Why consider monopolies if their only cost is Harberger triangles?

7. Forebears Critical of How We Study Monopoly

Our forebears not only developed a great knowledge about monopoly, they warned us about the methods we would use to study monopoly. We ignored these warnings as well as their great knowledge. Here I discuss the shortcomings of the current approaches to study monopoly, structuring the discussion around the criticisms our forebears gave to them. I discuss three approaches: (1) Use of Cournot-Monopoly and Monopolistic-Competition models (2) How we define monopoly and (3) How we measure monopoly.

7.1 Limits of Cournot Monopoly / Monopolistic Competition

In the 1930s, the Cournot model began to be intensively studied (having been developed a 100 years earlier). The monopolistic competition model was being developed. Many forebears pointed out the shortcomings of these models. They were not anti-theory — just the opposite. They were theorists that wanted to highlight the limits of the models for studying actual monopolies. Some forebears gave general comments on the limits of the models. Some gave more precise comments.

Hicks (1935) explained that the Cournot model was not thought of as a means to understand the role of monopolies in the crises of the 1930s. “The preoccupation of contemporary theorists with problems of monopoly [and the Cournot model] does not appear to be due, as might perhaps be expected, to their consciousness of the increased urgency of these problems in the modern world . . . [Rather,] the widespread interest in monopoly theory is much easier accounted for on grounds inherent in the development of economic theory itself.”

Robert Brady (1942, 89), who wrote extensively about monopolies in Nazi Germany, was critical of the models as offering a means to understand harm caused by “actual” monopolies: “Only the historically untutored or politically and philosophically naive could suppose that the power phase of coordinated monopoly controls ... [could] ... be handled in terms of ‘duopoly,’ ‘oligopoly,’ ‘imperfect competition,’ and the like.”

Reder (1947) gave more specific comments, questioning the assumption of profit maximization in all these models. In the language of this paper, Reder was questioning the

limitation of the models where monopolies took one action, choice of price. He recognized that members of a monopoly took actions that lowered productivity. More critical comments followed Harberger's (1954) work. As mentioned, Mack and Machlup, and there were others, also argued that monopolies led to productivity losses.

7.2 Forebears warnings about definitions of monopolies

I begin with a simple pie-chart for profits earned by firms in Figure 4. The circle is the population of firms. The top part is firms with positive profits (or with $p - c > 0$).⁷³ The bottom part is firms with "zero" profits (or $p - c \approx 0$). The top part is divided into two pieces, one part for firms that earn profits from, say, research, the other for firms earning profits from harmful activities, like sabotaging substitutes.

Dobb (1925), among others, argued that all firms with profits should be considered monopolies.⁷⁴ So, in Figure 4, this corresponds to all firms in the top part. Robbins was critical of Dobb's idea. In his summary of Dobb's argument, Robbins (1926, p.33) related that Dobb saw profit arising from "limitations of supply," including "limitations arising from the scarcity of men naturally fitted to be undertakers [entrepreneurs] ..." and "limitations arising from deliberate hindrances imposed upon free supply by law or by the machinations of established undertakers." Dobb (p.105) argued: "It seems convenient, to describe this differential [talent] advantage as a scarcity or monopoly gain, and the persons who are thus graced by fortune may be said to be in a position of monopoly or advantage; and it is in this comprehensive sense that the term monopoly will be here used." Robbins (p.34) objected: "Nobody will deny that the position of the monopolist [the entrepreneur whose profit is from ill gotten means]and the man of talentmay give rise to problems of the highest importance. But to label them [both] with the affectively-toned name of 'monopolist' is to obscure such problems, not to hasten their solution."

Let me summarize the discussion thus far by presenting two definitions.⁷⁵

⁷³ "Positive" profits is used as a shorthand for "above average" profits. The expression " $p-c>0$ " is used as shorthand for "price-cost margin greater than zero."

⁷⁴ Dobb's argument was given in his book, see especially pp. 103-105.

⁷⁵ These definitions represent my summaries of the relevant discussions — they were never formally written

Definition – Dobb. A firm with a positive profit is a monopoly.⁷⁶

Robbins offer this “extended” definition:

Definition – Robbins. A firm with a positive profit is a monopoly if the profit is achieved through harmful activity. If the positive profit is achieved through research, and the like, it’s not a monopoly.

Less than a decade after Robbins, Lerner (1934) wrote a significant paper on monopoly. Unfortunately, Lerner was misinterpreted as saying that a firm with a positive price-cost margin was a monopoly. Lerner (1934) never proposed such a definition.⁷⁷ Lerner studied a firm that had achieved its positive price cost margin through ill gotten means. We know this because the firm’s actions led to a welfare loss. A major goal of Lerner’s was to ask: *Is the size of the welfare loss related to the size of the price-cost margin?*⁷⁸

Stigler (1947) defined a firm with a positive markup, $p-c > 0$, to be a monopoly.⁷⁹

Definition – Stigler. A firm with a positive price-cost margin is a monopoly.

down. Note that the restriction of “sole seller” was not introduced into these discussions.

⁷⁶Since Dobb assumes the only monopolies are firms, I could have written the definition as “A monopoly is a firm with a positive profit.”

⁷⁷Lerner almost surely recognized that there were firms earning positive price cost margins through research and so on. Lerner was a graduate student at LSE who was significantly influenced by Robbins (as were many at LSE). Moreover, the Dobb-Robbins debate was carried out in *Economica*, one of the leading journals at the time.

⁷⁸Unfortunately, Lerner went on to substitute the perhaps more sexy but nebulous term “*monopoly power*” for the concrete and well understood term “*welfare loss*.” Monopoly power has come to mean the size of a monopolist’s price-cost margin. A monopoly’s price-cost margin, in general models of monopoly, where the monopoly blocks substitutes for its products and so on, may have little to do with the harm (i.e., welfare loss) it inflicts on society (e.g., consider the monopolies in the housing industry above).

⁷⁹Stigler begins his discussion of price cost margins by writing “...in a stationary economy, the strength of a monopolist might be measured by the difference between price and long-run marginal cost.” (p. 47). This does not, of course, define a firm to be a monopolist if it has a positive markup. Stigler then discusses industries. It’s in this discussion that he assumes a firm with a positive price cost margin is a monopoly. He does so by using, as his measure of monopoly power of an industry, the average of the price-cost margins of firms in an industry. He treats price-cost margins of every firm the same. In taking the average of price-cost margins, he “doesn’t remove” the firms who have achieved the margins through research and such. He does not recognize such firms. He uses this industry average to rank industries according to their monopoly power. Stigler’s discussion is quite confusing, as among other things, he uses words he doesn’t define. But I think I have correctly summarized the discussion.

Stigler's definition is of the Dobb form.

Moving to the post 1950 period, there are two types of definitions that form the bedrock of our current approach. One is typically found in economics textbooks:

Definition – Textbook. A firm that is a sole seller without close substitutes is a monopoly.

This definition is of Dobb's form as well, in that there is no recognition of where the "sole seller" status came from. Again, it may have emerged from a firm's successful innovation, or a manager's organizational skills, and so on.

As I said in the introduction, the growing usage of the textbook definition of monopoly was likely a spur to the second definition that is key today, that on market power.

Definition. A firm has market power if, though *not a sole seller*, it has a positive price-cost margin.

Once again, this definition is of the Dobb variety — there is nothing about the nature of the actions or behavior of such firms. But the implicit assumption is that the positive price-cost margin was achieved through harmful means.

As Robbins predicted, and I mentioned already when discussing De Loecker, Eeckhout and Unger (2020) above, such a definition has led to significant confusion. Here is Goolsbee, Levitt and Syverson (2023). "Given that a firm with market power charges a price that is above its marginal cost, the market power benefits the firm. We can also see how market power affects consumers (*Hint*: badly)." And Philippon (2019, p 26), "*Market power* is a key concept in economics. It measures the ability of a firm to raise its price and increase its profits at the expense of its customers." (p. 26, emphasis in original). Not only does confusion accompany the use of price cost margins but as Miller (2025, p1) claims in the first sentence of his paper: "Market power is the central subject of Industrial Organization (IO) as a field of economics."

Robbins' criticism of profits and price cost margins was 100 years ago. Elzinga and Mills (2011) (EM) offer a much more recent criticism. EM offer a very nice history of what has become called the Lerner index (i.e., $(p-c)/p$). They describe how Lerner was *misinterpreted* as saying a firm with a positive markup was a monopoly. They discuss how the profession grew to understand that positive price cost margins were possible for reasons other than monopoly, for example, that the markup might reflect the efficient use of scale or covering of fixed costs (p 559, citing Lindenberg and Ross (1981)).

But as EM emphasize, this still misses the crucial point: “Economists generally agree that, outside the textbooks, almost all firms have positive price cost margins. More often than not, firms with Lerner Indices large enough to indicate significant market power are not ‘monopolies’ in the traditional antitrust sense that emphasizes heavy-handed output constraints and the absence of competition. Rather, these firms’ price-cost margins may reflect ‘superior skill, foresight and industry’.” (p. 561) Even with EM’s very clear warning, Lerner’s paper still is being misinterpreted 90 years later (see, e.g., Edmond, Midrigan and Xu (2023)).⁸⁰

7.2 Forebears warnings about measuring monopoly

At least 85 years ago, some economists began measuring monopoly using statistics on firms and industries (like concentration ratios and average profits). Some great forebears argued they were “measuring monopoly without a definition” and warned this would only bring confusion. These warnings were ignored, and the practice is a bedrock of our current methodology.

Both Clair Wilcox (1941) and Warren Nutter (1952) conducted major studies on the extent of monopoly in the United States. Of particular interest to them was whether competition had declined in the United States in the first half of the 20th century. Both leaned

⁸⁰I close this section on definitions with a special acknowledgement. Schmitz (2022) provided extensive criticisms of using profits and price-cost margins to study monopoly. When I asked my colleague Jonathan Heathcoate to read Schmitz (2022), he offered this great advice: “Profits are good.” Yes. As economists, that should be our starting point. Sometime after Jonathan’s remarks, I began to read Robbins’ critique of Dobb and using profits as a measure of monopoly. It finally sunk in. I am grateful to these two great British economists, who combined, with remarks 100 years apart, finally opened my eyes to the obvious.

heavily on the concentration of industries in making classifications into competitive and monopoly industries. Both argued competition had not declined though urged caution in interpreting their results.

Recall that Solomon (1948) argued: “.... this problem - which is the problem of measuring monopoly power — arises from our lack of clarity as to the exact ultimate meaning of monopoly.” Neither Wilcox or Nutter had “solved” this problem identified by Solomon. They were measuring monopoly without a definition.

Moses Abramovitz (1950) discussed a paper by Nutter at the 1949 NYC Econometrica meetings that would form the basis of Nutter (1952). Abramovitz provided a biting criticism of the approach used in Nutter: “Economists are continually faced with the need for estimating the comparative extent and growth of monopoly in the United States. If disagreements about facts are to be eliminated, the issue of the definition of monopoly must be considered separately from the measurement of its extent. This paper [by Nutter] is not concerned with the issue of definition.”

This approach of Nutter and Wilcox is widely used today — it’s the standard approach. Shapiro and Yurukoglu (2024) (SY) have recently addressed the same question as Wilcox and Nutter in “*Trends in Competition in the United States: What Does the Evidence Show?*” SY make two errors in their analysis. First, SY don’t define “competition” (though it’s in their title), yet they proceed to measure it, with statistics like price cost margins and concentration ratios. Second, they use measures that were long ago discredited, like price cost margins.

How, then, can we answer a question like “Has competition decreased in the United States”? I begin by developing definitions of competitive-industries and monopoly-industries. I do so with Arnold’s definition of monopoly (or a similar definition based on actions). I define a “*monopoly-industry*” as one that has an organization that engages in the behaviors on Arnold’s list (or some subset). If an industry does not have such an organization, I call it a “*competitive-industry*.” I also distinguish among monopoly-industries. I define the extent of

monopoly in an industry by, for example, counting the *number of monopolies* in an industry. I can also define the extent of monopoly by the *amount of harm inflicted* by monopolies in the industry.

Has monopoly increased over time in the United States? I'm not going to answer that question here, of course, as most of my efforts have been devoted to understanding what monopolies are. But I can give some thoughts on how that question might be answered (and, perhaps, fairly soon). We can start looking at the amount of harm inflicted by monopolies in a given industry over time. Consider the housing industry. It has been a monopoly industry for a long time, with many monopolies at a given point in time. But suppose we compare the industry of 1980 to that of today. Monopolies have essentially greatly limited the use of factory production over the entire 45 year period. But the harm the industry inflicts grows over time because the opportunities lost grow as manufacturing methods are continually improving. Quantifying this harm, and how its grown, is difficult, but seems within the range of our technical capabilities. In many of the other industries discussed in Section 6, it seems that the harm from monopolies has grown over time. As we have grown to be a more litigious society, the harm from not having access to legal advice and services grows. But we need a widespread canvas of industries, and if we use our forebears knowledge of monopolies, we'll find many more than we previously recognized, and we'll understand we are missing some, or many, because they are hard to detect.

8. Current methodology is failing us

I now turn to the experience of studying monopolies under our current methodology, showing how it's failing us in our study and understanding of monopoly.⁸¹

8.1 Current methodology misses role of monopolies in current crises.

—Housing crises.

Housing crises have been with us a very long time. Jevons talks about them in 1860s England. Today, the study of housing is its own field, a large one, with housing crises a big

⁸¹I offer just a few of the many ways our methodology fails us.

issue in that field. The central assumption of the field is that the industry is competitive.

The conclusion is based on many measures of competition and monopoly, none of which is based on definitions. Glaeser and Gyourko (2003) estimate that the price cost margins in the industry are very small.⁸² In his review of “Housing Supply” for the Annual Review of Economics, Gyourko states: “Housing is supplied by single-family and multifamily builders. The large number of such builders strongly suggests that homebuilding is a very competitive industry” (Gyourko 2009,298). In their study of the industry, Glaeser, Gyourko, and Saks (2005, 331) state: “Homebuilding is a highly competitive industry with almost no natural barriers to entry.” This last concept, of free entry into an industry, is often cited as a conclusive evidence that an industry is competitive. Our forebears knew well that there were industries that were monopolies that also had free entry. In fact, Henry Simons argued that these monopolies were the worst type. And he mentioned the construction industry in these discussions.⁸³

The residential construction industry is not competitive. There are many monopolies in the industry. But our methodology blinds us to this fact. This has a huge consequence. We don’t see the monopolies that are blocking factory-built housing. This means we don’t see what Levitt and Sons had known, that “Factory-built housing must succeed, or we will never be able to produce the homes and apartments needed to house our expanding population and our underprivileged citizens in a comfortable, dignified, decent way.”

—Legal Service crises.

Posner (1993) labeled the legal profession a cartel. As Posner did not understand monopolies as our great forebears did, he did not recognize that the great cost of the legal services monopoly was the blocking of substitutes that would have helped solve the legal crisis facing low and middle income Americans.

From his perspective, in 1993, he said: “Today all is changed, changed utterly . . . Al-

⁸²See, “The Impact of Building Restrictions on Housing Affordability,” NY FED, June 2003.

⁸³The real estate industry is similar to construction in this regard. It’s controlled by monopolies (including a professional accociation) but there is free entry into it.

though the profession has not been thrown open to free entry, an accelerating accumulation of legal and especially economic changes over the past three decades has transformed the profession decisively in the direction of competitive enterprise” (Posner 1993, 26). “Competition makes them [lawyers] work harder, too, and reduces their security of tenure—so there are more and more cases of firms dissolving, restructuring, regrouping; of firms firing associates and even partners; and of wide fluctuations in earnings within firms (p.28).”

But did the industry change “utterly?” No, it did not. Increases in competition may have led lawyer-work to be less enjoyable, but the lawyer-monopoly continues to block all substitutes. UPL statutes still rule the day. The competition Posner discusses did not lead to large reductions in the great harm caused by the lawyer monopoly. Very little changed as far as the poor’s access to legal advice. In the most important way, then, the industry didn’t change. As Posner uses the Cournot model (see, e.g., Posner and Landes (1980)), he cannot see that little has changed.

8.2 Inequality and monopolies.

There have recently been significant contributions to the measurement of inequality in many countries. As economists consider the factors driving inequality, monopolies are sometimes mentioned but typically are just one possible factor among many. Our forebears, of course, considered monopolies to be one of the key causes of inequality.

That our profession, over the last 75 years since we ignored our forebears knowledge, has not been able to “see” the role of monopolies in inequality, is almost surely a result of our following the current methodology to study monopoly. In this approach, there are no monopolies blocking substitutes for their products, those typically purchased by low income families.

Conclusion

I have shown that our forebears had a great knowledge of monopoly. They concluded that monopolies were a major factor in inequality and poverty. I have shown that studies after 1950 have rediscovered what our forebears had long known. I think the implication is

clear — we need to study monopoly much more extensively.

We should also consider adopting some of the methods they used to study monopoly. Our profession has developed extensive amounts of theory, statistical tools and data sources since 1950, all great developments for the field. But we can also examine our forebears methods, which obviously proved very successful. Here are two features.

1. Examining monopolies in great detail

Adam Smith was a great observer of his world. He interacted and learned from “practical” men. He visited the docks. The maxim I would give Smith describing his method is: “If you want to examine monopolies, then you have to know monopolies.” (see Wilson below). Turgot had the same approach. He had added incentive to record details as he was a key administrator at many levels of French government who had the goal of eliminating monopolies.

This approach has been trumpeted in other disparate disciplines. The great American philosopher William James wrote, “In my belief that a large acquaintance with particulars often makes us wiser than the possession of abstract formulas, however deep, I have loaded the lectures with concrete examples ...” (1917, p.3).

More recently, the great scientist Edward Wilson has championed such approaches. In an interview, he said: “ ‘There are six hundred and twenty-four species in this book, and I drew every one by hand,’ he said. ‘It took me twenty years. I know that sounds obsessive, but that’s what it takes. If you want to explain ants, then you have to know ants.’ ” (Lehrer 2012). I obviously lifted my Smith-maxim from Wilson.

2. Our forebears had a great breadth of knowledge.

Our forebears typically had a deep knowledge of current events and institutions. They had a good knowledge of current economic theory. They were well versed in many disciplines (if not active participants in them), including sociology, history, political science, philosophy and more. That specialization increased as our profession developed theory and statistical tools in the first half of the 20th century was a good development for the field.

But early on there were arguments it was going too far. In his famous paper, “On Empty Economic Boxes,” Clapham (1922) argued that theorists had become divorced from reality, that they were creating empty boxes (with no actual industries “inside”). His article drew significant attention. In his comment on Clapham (1922), Pigou (1922) admitted empty boxes were being built, but argued it was a natural process in the profession’s learning of theory. He agreed there should be more integration of theory and detailed studies, but there was a “temporary” lion in the way. “There is, indeed, a lion in the path; the fact that those people — with the towering exception of Jevons — who have the qualities required for conducting a detailed intensive study of particular industries and writing monographs about them, are not usually well versed either in the more intricate parts of economic analysis or in modern statistical technique; while the ‘analytics’ [theorists] lack alike capacity and inclination for these detailed studies. For this there is only one real remedy. We must endeavour to train up more men of the calibre of Jevons, who are equally at home in both fields. Till we can accomplish that, the next best thing, for those lesser persons who are moderately qualified for the one sort of inquiry and for the other, is to work together in combination, and not to waste time in quarrelling, perhaps on the basis of an imperfect understanding, with the deficiencies of one another’s methods.”

This makes a lot of sense. As theory progresses, there can be a merging of the paths at some point. He didn’t guess how long it would take. Specialization has certainly increased dramatically over the last 100 years, and seemingly continues. Perhaps we should consider that Pigou-time has passed.

Appendix

Thurman Arnold's Definition of Monopoly

Arnold's definition (1946) is of the form: "A monopoly is a group that engages in these actions" While he used the word "monopoly" throughout this publication, when presenting the definition he substituted the *expression* "A private group that has taken control of a market" for the *word* "monopoly." The definition is: "It follows that whenever private groups [monopolies] have acquired control of the market these results occur:⁸⁴

1. "They seek to consolidate industrial power by destroying existing independent enterprise.
2. "They prevent new enterprise from entering the field."
3. "Having accomplished these objectives, they restrict production and raise prices;
4. "They stop the introduction of new and more efficient methods in order to maintain obsolete ways of production in the continuance of which they have a vested interest;"
5. "They set up an arbitrary and despotic control over production and exploit weaker members of their own group;"
6. "They enter into politics using money and economic coercion to maintain themselves in power, making alliances with other powerful groups against the interests of consumers and independent producers. In short, they will become a sort of independent state within a state, making treaties and alliances, expanding their power by waging industrial war, dealing on equal terms with the executive and legislative branches of the government, and defying governmental authority if necessary with the self-righteousness of an independent sovereign."⁸⁵
have no truck with.
7. "They form their own protective tariffs and make foreign economic policies for the nation."

⁸⁴This definition is discussed at the end of Section 4.

⁸⁵libertarianism

Schumpeter and Monopoly

Recall from the introduction that Schumpeter's (1942) positive theory of growth, his models, had the feature of "*creative destruction*," of new goods "destroying" and replacing old goods. They also had the feature of "*unimaginative destruction*," with firms destroying existing substitutes to its products, and newly developed ones. Recall also his normative theory, where he argued some innovating firms should be permitted to engage in this unimaginative destruction. For him, patents were not enough of a stimulus for some firms. Some firms should be allowed to engage in restrictive practices that were considered illegal. One of his motivations in developing this normative theory was to limit antitrust enforcement against large firms.

Schumpeter's arguments for this view included the idea that modern investment requirements had become so large and daunting that patent protection was not sufficient to encourage adequate research: "... enterprise in most cases would be impossible if it were not known from the outset 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. Again, this requires strategy that in the short run is often restrictive. In the majority of successful cases this strategy just manages to serve its purpose. In some cases, however, it is so successful as to yield profits far above what is necessary in order to induce the corresponding investment. These cases then provide the baits that lure capital to untried trails." (p.90)

He concludes that allowing some restrictive practices is necessary, even if some actually result in very bad consequences: "our argument does not cover all cases of restrictive or regulating strategy, many of which no doubt have that injurious effect on the long-run development of output which is uncritically attributed to all of them." (p. 91) He then adds some caveats: "And even in the cases our argument does cover [where none of the restrictive practices allowed are extremely injurious], the net effect is a question of the circumstances and of the way in which and the degree to which industry regulates itself in each individual

case. It is certainly as conceivable that an all-pervading cartel system might sabotage all progress as it is that it might realize all that perfect competition is suppose to realize.”⁸⁶

Schumpeter then springs his case for lenient antitrust. “This is why our argument does not amount to a case against state regulation. It does show that there is no general case for indiscriminate “trust-busting” or for the prosecution of everything that qualifies as a restraint of trade. Rational as distinguished from vindictive regulation by public authority turns out to be an extremely delicate problem which not every government agency, particularly when in full cry against big business, can be trusted to solve.” (91-92)

“But our argument, framed to refute a prevalent theory and the inferences drawn therefrom about the relation between modern capitalism and the development of total output, only yields another theory [his theory], i.e., another outlook on facts and another principle by which to interpret them. For our purpose that is enough. For the rest, the facts themselves have the floor. (p. 92)

At the time Schumpeter (1942) published this book, there was, of course, great work and great research being done at U.S. antitrust institutions. Thurman Arnold was leading the way at the DOJ, and was hiring the top talent from American law schools to the DOJ. He attracted significant academic talent as well, including Henry Simons, Corwin Edwards and Edward Levi. Schumpeter could have found plenty of evidence of the type he was asking for. But, unfortunately, I find no record of him making contact with this group.⁸⁷ While Arnold, as I mentioned, had no absolute rule against large firm size (though Simons did), he surely would have disagreed with Schumpeter’s analysis.

⁸⁶I must admit that I found reading Schumpeter to be very hard. As I said when I found tough going on reading Stigler, I believe I have this mostly correct.

⁸⁷I would love references if Schumpeter actually engaged with the current antitrust group.



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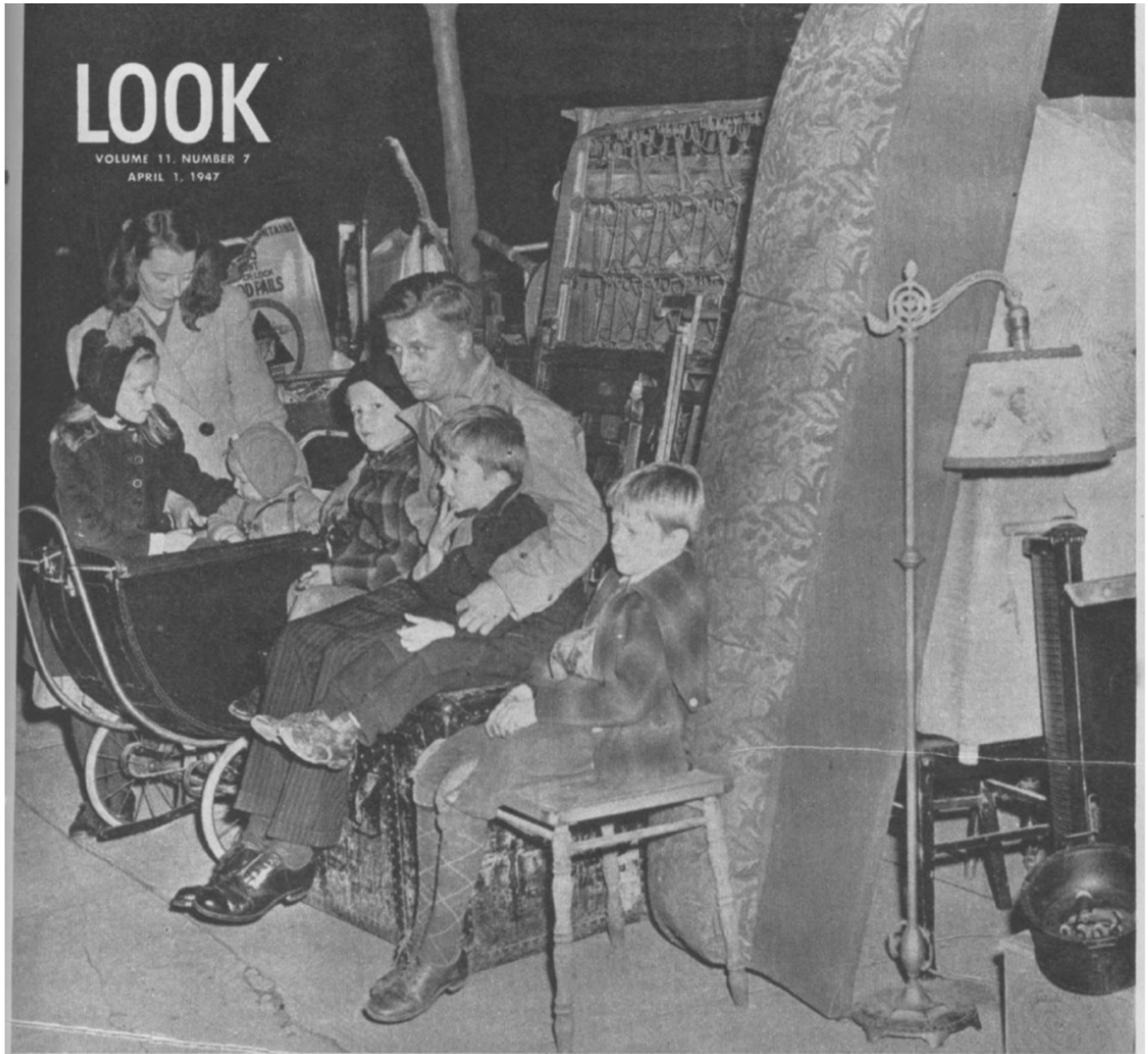
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FIGURE 2



This Pacific war veteran and his family are homeless because we have let rackets, chiseling and labor feather-bedding block the production of low-cost houses.

Look (April 1, 1947): p. 21.

FIGURE 3

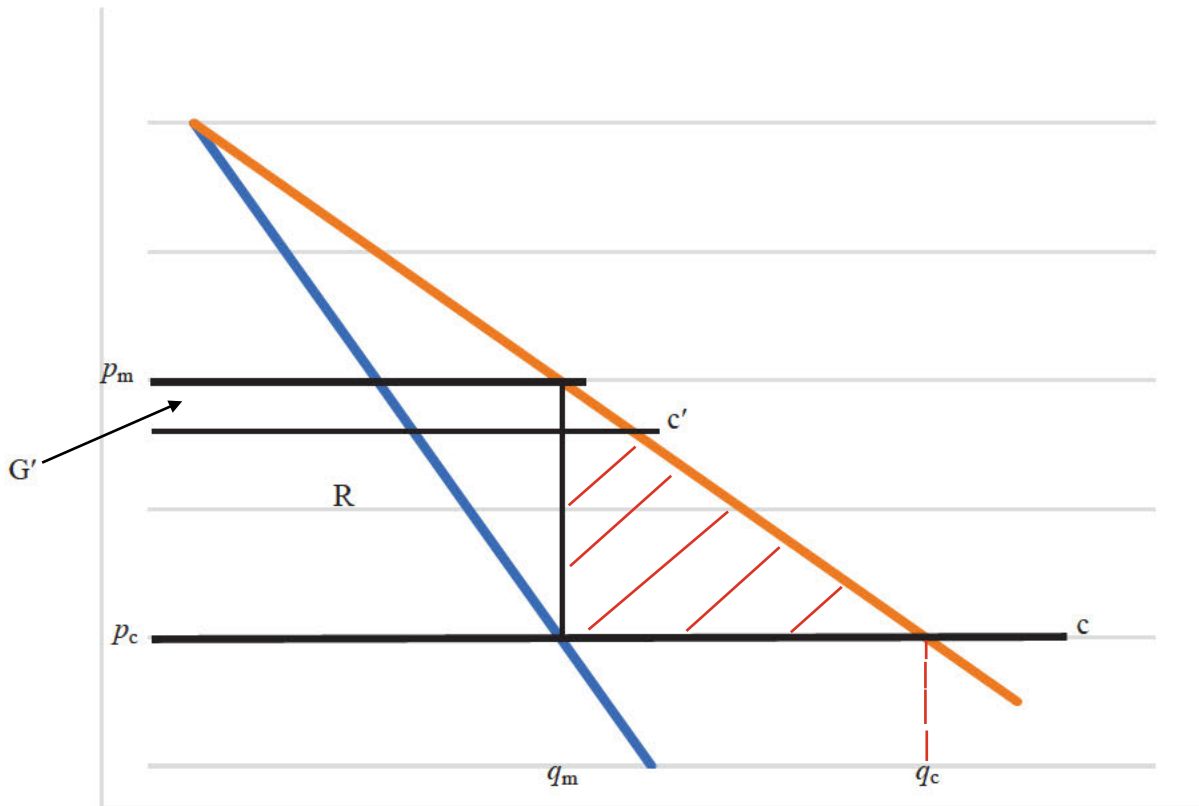
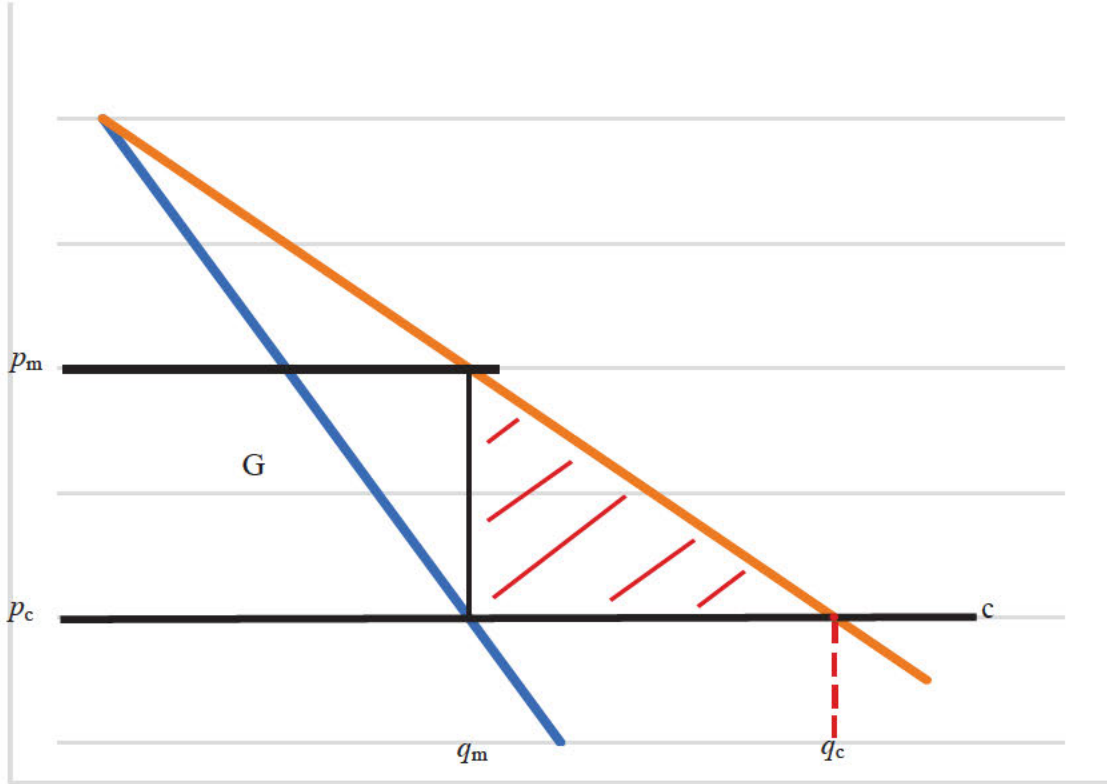
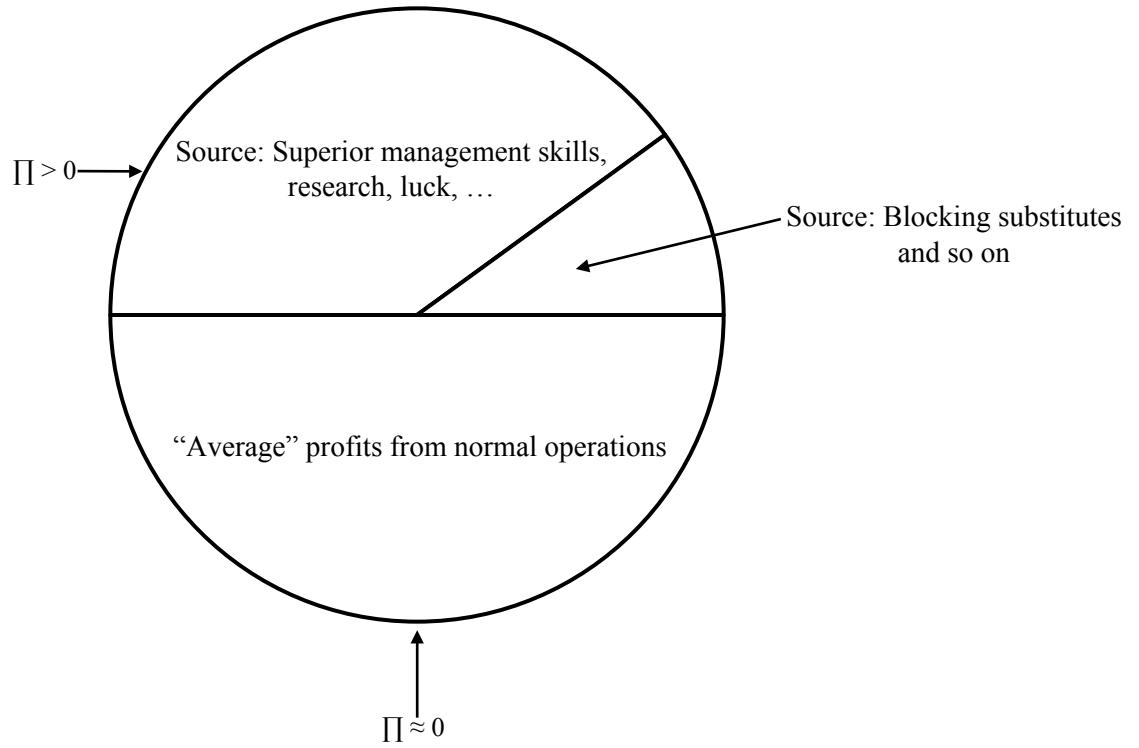


Figure 1

Profits
Population of Firms



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