Shoemaking:
An Inquiry into the Causes of Institutional Change[1]

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Abstract:
Shoemaking in America has seen much change since the first colonists settled until the present. In this paper, I examine some of those changes and ask what the causes behind them were. I specifically look at institutional changes in the Massachusetts shoe industry between the early 1600s and the 1830s, focusing on the rise of the central shop system in the 1810s and 1820s. This paper begins with an overview of the debate in economics concerning the causes of institutional change. Then, I present a historical account of and an analysis of institutional changes in shoemaking in Massachusetts up to the Panic of 1837. Following in the footsteps of Langlois (2016), I argue that adequate explanations of the institutional changes observed look beyond changes in transaction costs alone, and that an increasing extent of the market and changing production costs are at the core of these changes. This paper contributes to the ongoing discussion about the causes of institutional change by stressing the importance of factors besides transaction costs.

Keywords: Shoe industry, Institutional change, American economic history.

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"The division of labour is limited by the extent of the market." ~ Adam Smith (1776, I.3)

"Mises' Suggested Research Topics: Book: A history of shoes and stockings" ~ Bettina-Bien Greaves, paraphrasing Mises (2006)

1. Introduction

Fairy tales of old tell about the poor shoemaker, working in his home, making shoes from start to finish. Such quaint scenes immediately signal to readers today that the fairy tale is set long ago, after all, who today buys their shoes from the village shoemaker? In the last few centuries of American history, shoemaking has gone through several institutional changes. The first was the introduction of a specialized shoemaker and a commercial market for shoes. Another change happened during the early nineteenth century, when production of shoes in Massachusetts began to be centralized. The history of the Massachusetts boot and shoe industry in particular is a rich field for economic study, since it features an "unusually complete illustration of the evolution of industrial organization" (Hazard 1913, 236).[3] As such, it is of particular value for addressing questions regarding institutional change such as centralization of production. Institutional change and the economics of institutions have been the subject of much discussion for the last several decades and they continue to be so. And within this field, there exist ongoing debates.

One such debate centers around how to explain centralization, which is one type of institutional change. Regarding the centralization of British textile manufacturing, economists Richard Langlois (2016) and Douglas Allen (2011) have offered two competing explanations. Both economists work from a framework of orthodox price theory and an appreciation of the

[3] Also, much more information is available for the historic Massachusetts shoe industry than any other colony/state, probably because it was the dominant shoe producer and because it provides this unusually complete illustration. "Massachusetts remained the largest producer of shoes in the United States through World War I, responsible for nearly forty percent of America's shoes and home to an equal percentage of its shoemakers" (Fahey-Flynn 2015).

importance of transaction costs and institutions, but even so, they debate why production was centralized. Allen (2011) proposes a pure transaction costs explanation. Langlois (2016), pointing to growth in both centralized workshops and the putting-out system, argues instead that it was the expansion of the market for textiles which resulted in technological and institutional change (8). The fact that there is still controversy over the causes of centralization is a motivator for continued research.

Shoes are, of course, a different good than textiles, and America is different geographically and politically than England. However, the American shoe industry in the mid-1800s shared many similarities with the British textile industry of the mid-1700s, one century prior (Thompson 1989, 22). Shoemaking in America underwent a similar change as British textile manufacturing. Like British textiles, the production of shoes, which had previously been carried out in people's homes, found a new home in centralized workplaces and later in factories (Hazard 1913). The question this paper seeks to address is the following: what explains the institutional changes, primarily centralization, seen in American shoemaking from the 17th century to the mid-19th century? And once established, does this theory of institutional change have broader application?

In this paper, I argue that though transaction costs did change, they changed as a result of changing production costs. Centralization of production gradually happened as a response to this and the growing extent of the market for shoes. The entrepreneur's motivation to centralize production of shoes was this change in production costs which then changed transaction costs. The increased extent of the market allowed for greater specialization and division of labor, as

Adam Smith said long ago.[4] Explanations that solely focus on transaction costs do not show the full picture and leave many aspects unexplained.

My analysis lends greater support to the view that changing institutions are the result of both production and transaction costs. I also contribute to the literature on institutional economics by analyzing the case of shoemaking using Langlois' (1996, 2006, 2016) more wholistic framework which looks for the interaction of production and transaction costs. Shoemaking is a unique case in which centralization occurred before mechanization and as such, it is a source of some clarity regarding the causes of centralization.

This paper proceeds as follows: Section 2 presents an overview of the literature on the institutional change debate. In Section 3, I provide a historical account of shoemaking in America up to the 1830s. Section 4 analyzes in more detail what I believe are the driving forces behind the institutional changes covered in Section 3. In doing so, Section 4 reveals how the extent of the market and production costs stories are more complete explanations than transaction costs alone stories. Finally, section 5 concludes.

2. Tracing the Debate: Machinery, Monitoring, or Growing Market?

A. The Historical Debate

The issue of centralization has most often been discussed in the context of the Industrial Revolution, which has attracted enormous scholarly attention and debate in many fields. One such debate, the one this paper addresses, is concerned with the causes of the move from the putting-out system to the factory system. This has been a subject of much interest for decades, and the debate is still evolving. Economic historians have traditionally accounted the change to a

[4] "The division of labour is limited by the extent of the market" (Smith 1776, I.3).

factory system to machinery. They claim that the use of large-scale high through-put machinery in textile manufacturing is what caused the factory system to rise in prominence. Mantoux states this in his book, *The Industrial Revolution in the Eighteenth Century* (1961), quite clearly: "The factory system… was the necessary outcome of the use of machinery" (246). However, that simple statement turned out to be highly controversial.

Two former Harvard professors of economics, David Landes (1969, 1986) and Stephen Marglin (1974), agreed that "the motivation for the move from putting-out to factory was the employer's desire to gain control over the work process" (Landes 1986, 602). To the employer, factory work meant discipline *cum* supervision (602). However, they debated the sufficiency of various advantages the factory system brought. Marglin (1974) argued that the discipline/supervision advantage was a sufficient cause of the factory system's dominance. Part of his argument relied on the concept of deskilling labor. "Holding technology constant, he argued, bosses want to switch to the factory system because it enables them to break work into simple tasks and thus to "deskill" the workers, which shifts the rents of skill away from laborers and onto capitalists" (Langlois 2016, 7). Landes (1986) disagreed, and pointed to technological advances in machinery as the *sine qua non* of industrialization, essentially agreeing with Mantoux (1961). Von Tunzelmann (2001) noted that the Landes-Marglin debate "was only a later stage of a long debate…. Throughout, there has been a tension among historians between those conceiving that organizational changes (centered on the factory system and how it operated) or instead technological changes (centering on mechanization) were the most defining characteristic of the British Industrial Revolution" (10).

The work of Oliver Williamson, who is famous for championing the method of comparative institutional economics, is also relevant to this debate. Due to his background in

engineering, Williamson approached economics with an interest in transaction costs.[5] In his 1980 article, "The Organization of Work: A Comparative Institutional Assessment," he utilized a thought experiment to show how, technology held constant, the factory system seems less costly than the putting-out system. In his thought experiment, this is due to the greater amounts of embezzlement and larger inventories of work-in-progress goods under the putting-out system. Nine years later, economist Rick Szostak added his voice to the mix, supporting Williamson and the institutional economists with their pure-transaction cost explanation. Szostak (1989) states that "the advantages the factory possess were almost entirely in terms of the opportunity provided for supervision of workers" (344).

The pure transaction cost explanation has not gone uncontested. A key aspect of Williamson's (1980) thought experiment is "if technology is held constant." Did technology indeed stay constant in the age of the Industrial Revolution? Not at all! Economic historians were quick to point this out (Langlois 2016, 7). In the case of textile manufacturing, centralization was accompanied by a significant change in technology, from hand-held machines to large, high-throughput ones.

B. Pure Transaction Cost Explanation - Douglas Allen

Even so, some economists have maintained the pure transaction cost explanation. Douglas Allen, specifically in his book *The Institutional Revolution* (2011), is one such

[5] In an autobiographical article, Williamson explains how his unique position of being knowledgeable and experienced with both engineering and economics led him to notice a problem in the economic methods of his time. There existed "a major difference between engineering and economics with respect to hypothetical ideals" (Williamson 2009). Both fields made use of assumptions such as frictionlessness in their models. Engineers, of course, know such assumptions are unrealistic. However, in economics, "assumptions of frictionlessness (of which the standard assumption of zero transaction costs was one) often went unquestioned or, even worse, were invoked asymmetrically" (Williamson 2009). In light of this, he developed a new approach to economics, one which accounted for "friction" (transaction costs and the like). He also was discontented to just think of the firm as the neoclassical economists do, as a "black box" which transformed inputs into outputs. He chose instead to give attention to the internal organization of firms.

economist. He argues that the centralization of production is driven by transaction costs and the need for coordination and control in economic activities. As economies grow in size and complexity, as they did in the Industrial Revolution, the need for coordination and control over production processes becomes greater, and this leads to the centralization of production (Allen 2011). The pure transaction-cost position can be summarized thus: "With decreased transportation costs, [Szostak (1989) and Allen (2011)] argue, trade was becoming increasingly anonymous, and embezzlement and lack of standardization were becoming more costly. Changing technology cannot explain the transition, they claim, because many centralized workplaces emerged in this period using exactly the same technology as the cottagers" (Langlois 2016, 7). With technology thus ruled out as the cause, Allen (2011) and the other pure transaction-cost theory supporters claim the reason must have been better monitoring for embezzlement, product quality, and standardization.

C. Extent of the Market Explanation - Richard Langlois

Though Richard Langlois and Douglas Allen share many of the same economic perspectives — orthodox price theory, appreciation of the role of transaction costs and institutions — Langlois (2016) disagrees with the transaction-costs alone explanation maintained by Allen (2011). He stresses that one must look at the whole, dynamic system, not narrowly at contested snapshots (Langlois 2016, 8). By doing so, he comes up with an alternative explanation to Allen's. Langlois argues that capitalist-entrepreneurs centralized production "because the extent of the market was growing at a rate that was beginning to outstrip the capacity of the putting-out system. Capitalists turned to urban workshops to meet the demand… The expansion of the market for British textiles drove the putting-out system beyond the point of

diminishing marginal returns. The result was technological and institutional change," beginning with urban workshops and then later full-fledged factories (2016, 8).

Then, with the introduction of high throughput machines, the dynamics of the system changed again. These machines had high fixed costs which the capitalist-owner, not the worker, bore (Langlois 2016, 8). Owners very much wanted to keep these machines operating. But "because the supply curve of labor was backward-bending at contemporary income levels," according to Langlois, "the capitalists could not ensure high throughput simply by manipulating the piece rate" (2016, 8). The solution? They had to devise a system which would allow capitalists and workers to reach a high-pay, high-effort agreement. To counteract shirking and maintain high levels of effort, supervisors applied factory discipline. The threat of being fired entirely or having corporal discipline applied kept effort up when simply raising a piece rate could not profitably do so. While Allen would say the factory supervisor's role was to discourage embezzlement, according to Pollard, factory discipline was much more about enforcing high effort levels (Allen 2011; Pollard 1963). Supervisors could use the proverbial stick or the proverbial carrot, but either way, the goal was chiefly to keep effort levels up (Pollard 1963).

3. The History of Shoes and Shoemaking

People have been wearing shoes since time immemorial. A pair of sandals was found in California which date back to about 9,000 years ago, but evidence suggests humans began wearing shoes of some sort long before that (Britannica 2023). In ancient Greece, leather sandals were common (Britannica 2023). Medieval Europeans had multiple types of shoes to choose from, including boots and clogs ("Shoes and Shoemakers" 2010). Shoemakers made their shoes, while cobblers were in the business of repairing them ("Shoes and Shoemakers" 2010). Styles

changed greatly over the centuries, but by the seventeenth century, Europeans generally wore leather boots (Britannica 2023).[6]

A. Shoes and Shoemaking in Massachusetts: Home and Handicraft Stages[7]

Likewise, the American colonists also generally wore leather boots. However, once the shoes they brought from England had worn out, it was the responsibility of the men of the household to make replacements (Hazard 1921, 8). The quality of these shoes was much lower than those made by European shoemakers. Hazard, having interviewed New Englanders who lived to experience this, writes the following:

> From their accounts, it is possible to construct a mental picture of the way the country boy stood on the bare kitchen floor or on a paper and had the shape of his foot traced with charcoal or chalk. Sometimes he merely had its length marked, and he watched his father, looking over the family's meagre collection of lasts [a wooden form shaped like a human foot] with breathless anxiety, lest he could not find a last that came even somewhere near that measure. By the time fall had come bringing frost and frozen ground where the boy was doing his farm chores, this barefoot son was vitally interested in having *some* shoes made without delay. (1921, 5)

As there was no market for shoes, the standard of quality was individual: "the best you could make or have" (Hazard 1913, 239). The father or older sons used leather from their farm or a neighbor's to make the shoes. Hazard (1913, 1921) fittingly calls this period of shoemaking the Home Stage, since shoes were made solely for home consumption.

The shoemaking process during the Home Stage was essentially the same as it had been in other countries for ages. It consisted of four processes: cutting the leather pieces; fitting

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[6] One aspect of shoe style that underwent much change was the toe shape. Shoes in the fourteenth and fifteenth centuries became exceedingly long and pointed — the points were sometimes 18 inches or longer! — before this style was condemned by law. Then, "extremely broad toes, shaped like a duck's bill" replaced the extremely pointed toes of the previous century (Britannica 2020).

[7] In this section, I rely greatly on the work of Blanche Hazard because 1. he specialized in the organizational history of shoemaking, and 2. he has a unique advantage as a source: considering how long ago he conducted research, he could consult living people who still personally remembered the prior stages of shoe production and the transitions between stages. Many other books and articles I read also heavily cited Hazard and/or confirmed the validity of claims he made.

(sewing) the individual parts of the upper together; lasting, in which the upper was stretched to fit the last; and bottoming, affixing the outer sole. Only eight tools were necessary: a knife, awl, needle, pincers, last, hammer, lapstone, and stirrup (Hazard 1921). Though the organization of work evolved, the actual process of shoemaking would remain largely unchanged until much later, with the introduction of machinery in the mid-1800s (Mulligan 1981, 60).

In what Hazard (1913, 1921) denotes the second phase of the Home Stage, a new character appears: a traveling shoemaker. He describes this character as "going from house to house with his kit of tools and a few lasts rolled up in a leather apron which was slung over his back, or trundled in a wheelbarrow along with his cobbler's bench" (Hazard 1921, 5). His work, when available and affordable, was greatly appreciated by the family, since it meant better quality and slightly better fitting shoes for them (6). In larger towns, which had already advanced to the next stage, a master shoemaker may have apprentices who, after some years, became journeymen. They were taught all of the processes involved in making a complete boot or shoe (11). Then these journeymen sometimes filled the role of the itinerant shoemaker. Other times, the cobbler was one who had taught himself the craft rather than farming (6).

As each village enjoyed easier times, they also enjoyed shoes of a higher standard. The boot and shoe industry gradually took the form of the Handicraft Stage, village by village, as foreshadowed by the traveling cobbler of the Home Stage (Hazard 1913, 240). In the Handicraft Stage, the "real" shoemaker had enough demand that he could stay in his own shop, and he dealt directly with his market (240). Hazard divides the Handicraft Stage into two phases. In the first phase, the shoemaker only worked on "bespoke" work, work that had been ordered (240). There would be only a comparatively small number of master workmen in each town, since they only supplied their own community's demand for shoes. Master shoemakers (or "cordwainers")

would have journeymen, who would eventually go to the frontier and attempt to establish themselves as the shoemaker for a different town (241).

In the second half of the Handicraft Stage, shoemakers started to make shoes for retail sale as well as ordered ones. This happened as a natural result of shoemakers seeking to minimize losses during slow times. Salinger (1983) reports that "the early colonial labor market encouraged the city's master craftsmen to rely heavily on skilled bound workers, both indentured servants and slaves" (63). Master shoemakers were expected to bear the loss if apprentices cost more than their marginal revenue product, which sometimes occurred during slow times. During such times, the craftsman would focus instead on building up his inventory of shoes to then sell at the general store. By doing so, he was able to employ his apprentices' labor which would otherwise go to waste (Hazard 1913, 242). Especially in cases where the shoemaker lived close enough to send in his wares to large cities like Boston, but too far to attract customers, it was profitable to make retail shoes.[8]

B. Shoemaking in Massachusetts: Domestic Stage/Putting-Out System, to 1837

[8] Quincy Reed's father, grandfather, and great-grandfather had all been shoemakers in Weymouth, MA., ever since the family settled there in 1635. Quincy tells this story of how he saw and took a profit opportunity: "My brother Harvey began it by taking chickens to Boston. He had a pair of chaise wheels in the barn, and putting on a top piece, loaded her up and drove to town. He hung some shoes on the chaise and we sold them in Boston. We did not have a wagon then— I can remember when there wasn't a wagon in this part of the town, and between here and East Abington there was only one pair of wheels. All the shoes (custom order and extra " sale " shoes) before we began business were carried into Boston in saddle bags… We hired a store of Uriah Cotting at 133 Broad Street and fitted it up. Then I used to keep a chest of shoes in a cellar near Dock Square and on Wednesday and Saturday would bring out the chest and sell. I got $15 and $20 a day by it in 1809. I was sixteen and my brother was eighteen years old then. We moved into the Broad Street store with two bushels of shoes. I used to cut out what would promise to be $100 worth a day. We couldn't have them made equal to that, but I could cut them. One day I cut 350 pair of boot fronts and tended store besides. Most of the shoes were made by people in South Weymouth. We had nearly every man there working for us before long. Used to bring out the sole leather swung across the horse's back in those days. We didn't have any capital to start with except father's assurance that 'the boys are all right and will pay their debts.' When we got of age Harvey paid father $1000 for his time and I paid him $3000. By then we had got up a stock of $10,000 and I have the inventory now to prove it. We were getting $2 for the best shoes and $1.25 to $1.50 for the West India shoes. . ." (Hazard 1913, 243-244).

There was a natural and gradual change from the Handicraft Stage, with its village shoemaker mainly making “bespoke” work but gradually giving more attention to extra “sale” work, to the Domestic Stage (Hazard 1913, 244). The two stages, though difficult to distinguish the exact moment of passing from one to the next, are fundamentally different, as they each are characterized by distinct features (244). The Handicraft Stage can be identified by the fact that the shoemaker deals directly with his market and depends on himself to both produce and sell his wares (240). When shoemaking advances to the Domestic Stage, the dealings between the shoemaker and the market are no longer direct but indirect: the capitalist-entrepreneur has entered the scene. The shoemaker is no longer responsible for selling the shoes, simply for manufacturing them (244). The capitalist-entrepreneur is the one who supplies the shoemaker with tools and materials and sells the goods, bearing the risk of profit or loss (244).

This method of production is known as the putting-out system (or domestic system, or cottage system). The capitalist-entrepreneur “puts out” materials to decentralized workers, who then produce the good and return it to the capitalist-entrepreneur for payment. Many industries besides shoemaking have operated under a putting-out system at different times, as it possesses some notable economic advantages. Domestic workers were paid by the piece, not by the hour or any other such measurement of input. As such, they were residual claimants. One major advantage of the piece-rate arrangement is its minimization of monitoring costs, because workers are self-monitoring. Instead of monitoring the workers themselves, the entrepreneur simply has to monitor the product. This is especially advantageous when the workforce is dispersed. In order to monitor the production process, an entrepreneur would either have to incur the costs of

centralizing his workers or somehow supervise them while they worked in their homes.[9] A piece rate is a wise solution to avoid high monitoring costs, in certain cases. In other cases, however, it is still less costly to measure input, even though that requires more stringent monitoring than measuring output (Cheung 1983). Two common examples of monitoring input are hourly or daily wages.

In Massachusetts, the putting-out system for shoes lasted roughly from 1760-1855, but within that period three phases can be identified (Hazard 1921, 24). This paper limits its discussion to the first two phases, lasting until 1837. The shoemaker worked with his apprentices and journeymen in one-room shop, called a "ten-footer," named so because of their size (ranging between 10'x10' and 14'x14') (43). There was no specialization or division of labor within the shop; the master shoemaker taught his apprentices the complete shoemaking process. The shoe was made, start to finish, under the master's direction. Often, it was the product of the labor of every member of his family plus that of the apprentices and journeymen (25).

In 1789, Federal tariff legislation gave protection to the boot and shoe industry. The tariffs were passed despite James Madison's sound arguments against protectionist policies (Hazard 1913, 248). As tariffs do, it made importing boots and shoes more costly and thus increased demand for the close substitute, domestically produced boots and shoes. This increased the market for domestic boots and shoes which in turn affected production. Making production more efficient, saving time and producing greater quantities at lower costs seemed more important than quality (249). Hazard puts it this way: "The time factor seemed more vital than

[9] Jones (1982, 1999) estimates that, in the era of hand-operated machines, production costs would be tripled by requiring textile workers to congregate in one place. Langlois (2016) says this is partly because "cottagers continued to engage in agriculture, producing food from their own crofts and earning occasional income from farm labor, all of which lowered the opportunity costs of textile work" (7). A similar estimation could likely be made for the case of shoemakers.

the quality, for with such big, insistent markets, a merchant could afford to lose a disgruntled customer, sure of having plenty of others" (249). Another noteworthy change introduced in the Domestic Stage is that the shoemaker did not sell directly to the customer, which meant his reputation and repeated sales were not on the line in the way they had been in prior stages. Later, as more capitalist-entrepreneurs saw the profit opportunity shoe production presented and entered the market, increased competition between sellers would re-up the pressure to produce high-quality, low-cost shoes.

During the first phase of the Domestic Stage, the entrepreneur put out large pieces of leather for the shoemaker to cut. Any leftover scraps were the shoemaker's to keep and do with as he wished. This fact did not seem to pose a significant problem, or at least not at first. Because of the piece rate arrangement, its self-monitoring benefits, and the shoemakers' residual claimancy, the shoemakers were incentivized to efficiently use the leather they were given. This pattern of production lasted for about fifty years, from around 1760-1810 (Hazard 1921, 24). But by the end of this phase, scrap leather buyers had started openly going around to shoemakers' shops to buy their accumulated scraps (Hazard 1913, 249). These scraps were made valuable by a new market for scrap leather, as indicated by the appearance of the scrap leather buyers as well as explicit mentions of its the birth (Thompson 1989, 24).

When the scrap leather buyer bought from the shoemakers, this meant loss to the entrepreneur for two reasons: firstly, he did not receive the revenue from selling scraps himself and secondly, shoemakers had an increased incentive to embezzle leather. Old shoemakers who lived during this period can confirm that embezzlement did occur. They "recall with bitterness certain individuals whose dishonesty and poor work led to the development of the central shop" according to Hazard (1921, 43).

Before long, cutting the leather was centralized. It was the first shoemaking process to be centralized, which signaled that the second phase of the Domestic Stage had arrived. Cutting the leather in central shops meant that the entrepreneur, rather than the shoemaker, appropriated the scraps. There was about one central shop worker per forty domestic workers, to cut and portion out pieces for them (Thompson 1989, 23). By 1820, around ten years after the first central shops, the central shop system was rapidly developing (Hazard 1913, 250). Shifts in the language provide evidence of an increased division of labor and specialization (Thompson 1989, 23). As Hazard writes, "The account books changed their phraseology but slowly to keep pace with actual changes in business organization… Roughly dated, until 1815 [the word 'making' in the context of boots and shoes] meant making the whole boot. After that, when processes were subdivided and parcelled out to different individuals, the word came to have a technical meaning, and was meant to include only the lasting and bottoming" (1921, 44-45).

By the 1830s, once the central shop system had time to be established, it was responsible for the bulk of Massachusetts shoe output (Thomspon 1989, 23). Large numbers of women worked in the shoe industry. According to Thomspon, statistics about the change in the proportion of male versus female workers employed give evidence of the division of labor rapidly increasing during the 1830s (1989, 24). The Massachusetts boot and shoe industry enjoyed general prosperity. This lasted until the Panic of 1837, a country-wide financial crisis which caused many shoemaking manufacturers to fail (Hazard 1921, 64).

4. Putting the Pieces Together – Explaining the Changes

Several institutional changes occurring during the time period discussed in the previous section can be identified. The causes of these changes can also be identified, though sometimes this takes more effort. Identifying the various institutional changes and their causes is my aim in

this section. Institutional change is defined to include any change in the organizational form of production and any time a contractual relationship changes (including its appearance and disappearance). This is consistent with the New Institutional Economics' definition of institutions as "the rules of the game," meaning the rules, norms, and practices that govern social and economic interactions. This definition includes both formal legal rules and informal social norms.

The first institutional change, from home production to handicraft production, is rather straightforward. During the home stage, there was no market for shoes (Hazard 1913, 239). A change in the relevant institutions, namely, a shift in social and economic norms, occurred when men began to pay a shoemaker for his services rather than use their own labor. The appearance of the traveling shoemaker signaled that there was an increase in the extent of the market. When that shoemaker was able to settle down in one town rather than travel for work, this indicates another increase. How do we know that? Simply put, in order for it to be economically viable for the shoemaker to stop traveling town to town, there must have been an increase of people within a particular town who demanded shoes at the shoemaker's price and were willing to exchange. Indeed, he was able to specialize in shoemaking precisely because of that increase in the extent of the market. When the extent of the market increases, this allows for increased specialization and division of labor (Smith 1776). A new economic interaction appeared; the suppliers and demanders of shoes became able to participate in mutually beneficial exchanges.

A second example of institutional change, one that is slightly more complicated to explain, occurred during the early nineteenth century, in the middle of the Domestic Stage. When the central shop system emerged, the organizational structure of production clearly changed. The central shop system generally involved performing the tasks of cutting the leather, portioning it

out for domestic workers, and inspecting the final product all under the same roof and under supervision. As such, it is a case of centralization of production, and not entirely dissimilar to the case of British textiles. Recall the discussion in Section 2 in which several explanations of reasons for centralization were reviewed.

The reason for centralizing production in the shoemaking case — specifically cutting and dividing up the leather pieces — may seem obvious. As the old shoemakers themselves admitted, they blamed "certain individuals whose dishonesty and poor work led to the development of the central shop" (Hazard 1921, 43). In other words, the shoemakers' own account supports the transaction-cost explanation for centralization, which claims the reason for centralization was better monitoring for embezzlement, among other things like product quality and standardization (Langlois 2016, 7).

Indeed, the embezzlement story for centralization looks very reasonable. The answer clearly was not machinery; the machines which would later be used in shoemaking had not even been invented yet. On the contrary, Thompson (1989) writes that "the restructuring of craft shoemaking, like that of textiles, may have prepared the way for mechanization" (22). To further support the ruling out of machinery as a cause, Mulligan (1981) says,

> The changes that were introduced between Dagyr's day [mid-1700s] and the introduction of machinery [mid-1800s] were organizational and did not significantly change the way shoes were made. All work continued to be done by hand by skilled artisans working in or very near their homes in small groups. The amount of processing done in the central shops increased, and toward the end of the period-that is, during the 1840s-the binding and making of particular pairs of shoes were separated so that although the men and women of each family still worked in the same craft, they worked as individuals, not as a family unit. (60)

With machinery thus eliminated as a satisfactory explanation for centralization, it seems even more likely that transaction costs related to embezzlement are the reason.

But as discussed in Section 2, transaction costs and machinery were not the only explanations for centralization that have been proposed by economic historians. A third one, found in Langlois (2016), was also offered. Summarized, his explanation is that an increase in the extent of the market pushed the putting out system past its productive capacities, beyond the point of diminishing marginal returns. In response to this, capitalist-entrepreneurs changed how production was organized. In the case of the British textile industry specifically, though other economists hold the position that embezzlement and transaction costs explain the change, Langlois maintains that embezzlement was not a sufficient reason to centralize workers. However, he does not deny that embezzlement did occur. Instead of focusing on transaction costs alone, Langlois asserts that "in fact, we need to argue about which alternative institutional structure minimizes *the sum of production costs and transaction costs*, and we have to recognize that there can be tradeoffs between the two," citing North (2005) and Williamson (1985) (2016, 9; italics in the original).

Could it be that an explanation akin to Langlois' also better explains the Massachusetts shoemaking case? I argue yes, and I will now try to demonstrate that. For the transaction costs story to be better supported, one must ask if embezzlement was suddenly more important, such that it explains why the central shops emerged when they did. The answer to this was mentioned in Section 3: the birth of the scrap leather market. It is recorded that leather buyers had started openly going around to shoemakers' shops to buy their accumulated scraps just before cutting the leather started to be centralized (Hazard 1913, 249).

The resulting increase in embezzlement did indeed increase transaction costs. Regarding the definition of transaction costs, Langlois (2006) writes, "The *property rights tradition*, inspired by the work of Coase (1937, 1960), . . . (implicitly) defines transaction costs as 'the

costs of establishing and maintaining property rights,'" citing Allen (2000) for that definition (1390). Some common examples given to illustrate these costs are the costs involved in security, such as door locks, security personnel, or trained dogs. Less obviously, transaction costs in this sense also include monitoring costs and, importantly, "any residual loss of having imperfectly protected one's assets" (1390). Therefore, in the property rights tradition (which is identified with the New Institutional Economics), an increase in embezzlement of leather clearly fits the definition of an increase in transaction costs.

But *why* exactly did transaction costs related to embezzlement change? The answer to this question challenges the conclusion that transaction costs are a satisfactory explanation. The birth of the scrap leather market changed the production costs of shoemaking. Previously, the piece rate arrangement insured that shoemakers were incentivized to efficiently use the leather they were given. But when leather scraps became valuable, as in, someone was willing to pay a price for them, the shoemakers' incentives changed. Embezzlement became profitable and therefore more attractive than it had been before. Production costs also changed, because the value of leather sides, a factor of production in shoemaking, changed. Whereas before, when leather soles were valued but scraps were not, the fact that the domestic shoemakers got to keep the scraps did not matter much to the entrepreneur. After the emergence of the scrap leather market, however, this became a source of loss for the capitalist-entrepreneur. Central shops emerged because they became a loss-minimizing organizational form. They became a loss-minimizing organizational form because transaction costs changed. But transaction costs only changed because of the change in production costs.

Entrepreneurs responded to the changing production and transaction costs by changing the organizational form of production, namely by introducing the central shop. Specifically, they

moved cutting the leather into central shops where it could be performed under supervision. By parceling up the soles and pieces of the uppers and keeping track of how much each shoemaking team received, the entrepreneur effectively was able to remove much of the domestic workers' ability to embezzle leather. Before centralizing the cutting, shoemakers would cut fewer pieces than possible for a given amount of leather, to increase the amount of scrap they collected and could sell on the side. After centralization, however, these leftover scraps became an additional source of revenue for the capitalist-entrepreneur; he was now able to collect and sell them himself rather than let the domestic workers gain that side income. Though moving parts of the production process to the central shop introduced new costs, these new costs more than offset the decrease costs born by the entrepreneur due to embezzlement.

5. Conclusion

Analyses of the history of shoemaking in America up to the 1830s provide valuable insights into causes of institutional change. As Langlois (2016) has said, it is important to ask, as the New Institutional Economics does, "What problem were these institutions solving?" and also to pay attention to how institutions change (2). In this paper, I have attempted to do so in my investigation of the causes of institutional change in shoemaking. The debate about the causes of centralization of production as well as of institutional change in general is far from over, but the field of economics is indeed moving towards a resolution through the work of Langlois and those with similar approaches.

This paper has demonstrated that an institutional change that one could attribute simply to changes in transaction costs — that change being the rise of central shops in order to combat embezzlement — was, in fact, a result of both changing production costs *and* transaction costs. This is consistent with Langlois' view that institutional change is always due to both of these

types of costs and what matters is the sum total of them. More specifically, I have argued that the changing production costs resulted in the changing transaction costs. This is especially important considering the tendency of some proposed explanations to miss the importance of changes in production costs. In order to achieve a more comprehensive understanding of phenomena like the ones I have discussed, it is vital to give attention to how production costs and transaction costs interact, and how these are both affected by changes in the extent of the market.

My paper also points to some promising areas of continued research. For example, a simple extension upon this paper would be to examine how the dynamics of the system changed in the Massachusetts shoe industry after the Panic of 1837 through the widespread use of machinery under the factory system. Another option is to apply a similar framework to the one used here to explain other industries, both licit and illicit ones, similar to what Anastasi (2023) has done. One question to be addressed in future drafts of this paper is an analysis of the effects of hiring bound versus free wage labor in production, and of the effects trade associations may have had on the industry.

I contribute to the (surprisingly extensive) literature on the history of shoemaking in America, as well as to the discussion about institutional change and its causes. I find that, similarly to the case of British textile manufacturing, the causes of the centralization of shoe production go beyond transaction costs alone. My explanations also include factors such as changes in production costs and increases in the extent of the market, not just changes in transaction costs.

References

Allen, Douglas W. 2011. *The Institutional Revolution: Measurement and the Economic Emergence of the Modern World*. University of Chicago Press, 2011.

Anastasi, Sebastian C. 2023. “In the Spirit of Cottage Industry: The Untapped History of Prohibition Era Alcohol Production.” Austrian Student Scholar’s Conference.

Britannica, T. Editors of Encyclopaedia. 2023. "Shoe." *Encyclopedia Britannica*, October 25, 2023. https://www.britannica.com/topic/shoe.

Britannica, T. Editors of Encyclopaedia. 2020. "Crakow." *Encyclopedia Britannica*, September 10, 2020. https://www.britannica.com/topic/crakow.

Cheung, Steven N. S. 1983. “The Contractual Nature of the Firm.” *The Journal of Law & Economics* 26, no. 1: 1–21. http://www.jstor.org/stable/725182.

Commons, John R. 1909. “American Shoemakers, 1648-1895: A Sketch of Industrial Evolution.” *The Quarterly Journal of Economics* 24, no. 1: 39–84. https://doi.org/10.2307/1886057.

“Evidence of the Putting-Out System in America.” 1930. *Bulletin of the Business Historical Society* 4, no. 5: 11–12. https://doi.org/10.2307/3110855.

Fahey-Flynn, Anna. 2015. “Best Foot Forward: The Shoe Industry in Massachusetts.” Digital Public Library of America. September 2015. https://dp.la/exhibitions/shoe-industry-massachusetts.

Greaves, Bettina-Bien. 2006. “Mises's Suggested Research Topics, 1950-1968.” Mises Institute. https://mises.org/library/misess-suggested-research-topics-1950-1968

Hazard, Blanche E. 1913. "The Organization of the Boot and Shoe Industry in Massachusetts Before 1875." *The Quarterly Journal of Economics* 27, no. 2: 236-262.

---------. 1921. *The Organization of the Boot and Shoe Industry in Massachusetts Before 1875*. Cambridge: Harvard University Press.

Hoover, E. M. 1933. “The Location of the Shoe Industry in the United States.” *The Quarterly Journal of Economics* 47, no. 2: 254–76. https://doi.org/10.2307/1883688.

Landes, David S. 1969. *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*, Cambridge University Press: Cambridge.

---------. 1986. "What Do Bosses Really Do?" *The Journal of Economic History* 46, no. 3: 585-623.

Langlois, Richard N. 1996. "The Coevolution of Technology and Organization in the Transition to the Factory System." *Economics Working Papers*. 199604. https://opencommons.uconn.edu/econ_wpapers/199604

---------. 2006. "The Secret Life of Mundane Transaction Costs." *Organization Studies* 27, no. 9: 1389-1410.

---------. 2016. "The Institutional Approach to Economic History: Connecting the Two Strands," *Journal of Comparative Economics*, http://dx.doi.org/10.1016/j.jce.2016.04.004

Mantoux, Paul. 1961. *The Industrial Revolution in the Eighteenth Century*. Jonathan Cape, London.

Marglin, Stephen A. 1974. "What Do Bosses Do?: The Origins and Functions of Hierarchy in Capitalist Production." *Radical Political Economy*, pp. 19-59. Routledge, 2015.

Mulligan, William H. 1981. "Mechanization and Work in the American Shoe Industry: Lynn, Massachusetts, 1852-1883." *The Journal of Economic History* 41 (1): 59–63. https://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.2120894&site=eds-live&scope=site.

Pollard, Sidney. 1963. "Factory Discipline in the Industrial Revolution." *The Economic History Review* 16, no. 2: 254–71. https://doi.org/10.2307/2598639.

Salinger, Sharon V. 1983. "Artisans, Journeymen, and the Transformation of Labor in Late Eighteenth-Century Philadelphia." *The William and Mary Quarterly* 40, no. 1: 62–84. https://doi.org/10.2307/1919528.

"Shoes and Shoemakers." 2010. The Oxford Dictionary of the Middle Ages, January. https://search.ebscohost.com/login.aspx?direct=true&db=edsoro&AN=oro.9780198662624.013.5339&site=eds-live&scope=site.

Smith, Adam. 1776. *An Inquiry Into the Nature and Causes of the Wealth of Nations*. [S.l.]: Seltzer Books, 2018. https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2604396&site=eds-live&scope=site.

Szostak, Rick. 1989. "The Organization of Work: The Emergence of the Factory Revisited." *Journal of Economic Behavior & Organization* 11, no. 3: 343-358, https://doi.org/10.1016/0167-2681(89)90034-6.

Thomson, Ross. 1989. *The Path to Mechanized Shoe Production in the United States.* University of North Carolina Press.

Von Tunzelmann, Nick. 2001. "Historical Coevolution of Governance and Technology." *The Future of Innovation Studies*: 20-23. https://citeseerx.ist.psu.edu

Williamson, Oliver E. 1980. "The Organization of Work: A Comparative Institutional Assessment." *Journal of Economic Behavior & Organization* 1, no. 1: 5-38.

---------. 2009. "Oliver E. Williamson – Biographical." NobelPrize.org. Nobel Prize Outreach AB 2023. Fri. 8 Dec 2023. https://www.nobelprize.org/prizes/economic-sciences/2009/williamson/biographical/