Holding Steady

Survival, Migration, and Future Prospects in the Printing and Food Manufacturing Industries in Philadelphia County, Pa.

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Abstract

Despite a massive deindustrialization that took place beginning in the 1940s, manufacturing still continues to play a vital role in Philadelphia’s economy. This thesis utilizes case studies in the city’s printing and food manufacturing industries to explore the challenges that industry faces in a city attempting to position itself in a global knowledge and service economy. Specifically, this work seeks to explain reasons why some firms survived the process of deindustrialization, while others did not. A variety of geographic, quantitative, and qualitative indicators are used to construct hypotheses as to why some firms are able to succeed within the city of Philadelphia, while so many others are not. These hypotheses are then evaluated and abstracted to provide a set of conclusions and policy recommendations with the intent of helping to retain (and perhaps even grow) manufacturing operations that currently exist within Philadelphia.
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Introduction

 Anyone who has ventured beyond the bounds of Center City knows that Philadelphia was once a great industrial city. The sheer breadth and scope of the industrial infrastructure that remains in the city today leaves no doubt that industry and manufacturing were, at one time, an important part of Philadelphia’s identity and economy.

 Times have changed, however. Philadelphia’s landscape is littered with hulking factories now at a standstill. Once-bustling railroad junctions are now choked with weeds and garbage. Industrial infrastructure that, at one time, was the envy of other cities now sits outside rusting. It is clear—both from informal observation and from the Census of Manufactures (See Figure 15, Chapter 3) that Philadelphia has undergone an acute deindustrialization.

 Through this process of deindustrialization, Philadelphia has struggled to redefine itself and its economy. Most Philadelphia policy analysts and economists have looked towards Philadelphia’s burgeoning service economy for the future of the city’s economy—which has put the promotion of a service economy at the top of the political and economic development agendas. Successive mayoral regimes have worked to construct a convention center and install hotels in Center City to promote tourism. Local officials have worked in tandem with representatives from the University City Science Center to christen West Market Street as the “Avenue of Technology” in an effort to spur high-tech economic development. Philadelphia’s government, universities, and civic
organizations have joined together in an effort to “plug the region’s brain drain” in the hopes of attracting “knowledge industries” to the city (KIP).

In all of these efforts to reinvigorate Philadelphia’s economy, plans to further Philadelphia’s industry and manufacturing enterprise have been conspicuously absent. Perhaps in an effort to distance strategies for Philadelphia’s future from the gloom of its industrial past, those planning for the future of the city rarely even discuss plans or prospects for growth and development in the manufacturing sector. Indeed, the last comprehensive City Planning Commission study of plans for industrial development was completed in the early 1990s—leaving Philadelphia without a master plan for industrial development that is complete, or in even synch with other efforts to develop the city’s service economy. The meager attempts that have been undertaken to attract and retain manufacturing operations under the authority of the city’s Empowerment Zones and Philadelphia Industrial Development Corporation (PIDC) have been marginally effective, at best.

Despite the fact that modern policymakers have largely ignored industry as a mode of economic development, manufacturing industry continues on in the city. In the 1997 Economic Census (the most recent year for which a full dataset is available), 1,342 manufacturing establishments remained within the city of Philadelphia. Though these firms only represent 6.8% of all businesses in the city, the sales of these manufacturing enterprises account for fully 24.7% of gross business revenue in Philadelphia. In 1997, manufacturing establishments generated $11,098,092,000 in sales, and retained 46,928 workers with a payroll of $1,582,403,000.
That manufacturing would still continue to represent such a sizeable proportion of Philadelphia’s economy is nothing short of stunning. A well-documented and respected corpus of literature—both general and specific to Philadelphia—clearly suggests that there is no reason for these businesses to remain within the city. Shifting logistics of transportation and manufacturing have rendered the city’s aging industrial infrastructure obsolete, at the same time that ponderous tax burdens and changes in makeup of the workforce have made suburban—or even international locations—much more attractive. Location theory suggests that the city is no longer the ideal place to manufacture, and posits that the urban environment may actually be an economic liability.

Yet, these 1,142 manufacturers have stayed—and survived. Why? How have these businesses flourished, while many similar enterprises have failed? How can these manufacturers turn a profit, even though economists and policy wonks have predicted otherwise? How have these firms managed to overcome the competitive disadvantages of the urban environment? What can we learn from the successes of these businesses? What general lessons can be abstracted from these successes to help other urban manufacturers survive—and perhaps even grow?

To attempt answers to these questions, this thesis begins by recounting the traditional narrative of deindustrialization in Philadelphia in order to nuance an understanding of the factors that led to the city’s precipitous industrial decline. Once historic reasons for industrial migration have been established, the work moves on to use qualitative interview data and quantitative measures to survey current challenges
facing Philadelphia’s manufacturing establishments. A variety of quantitative, geographic, and qualitative interview data is used to assess the impact of these challenges on the current state of the city’s industries. Trends and patterns observed in this research are then used to posit hypotheses as to why some businesses were able to remain—and even continue to succeed—in the city. These hypotheses are then used to craft conclusions and policy recommendations intended to stabilize Philadelphia’s manufacturing activity.

As materials are introduced and trends are highlighted, certain factors important to a firm’s survival—and sustained health—will rapidly become apparent. Geographic location, innovation, and institutional adaptability, for example, will emerge as clear predictive elements of a given firm’s survival and success.

Before these observations are elaborated, however, it is important to understand the rationale behind the arbitrary selections of scope for this project. Perhaps it is best to start with the most fundamental question first: why are we bothering to study Philadelphia, anyway?

*Why Philadelphia?*

Why Philadelphia, indeed? Why not Milwaukee or Cincinnati or Baltimore or Albany or any one of the hundreds of other cities also grappling with realities of post-industrialism and post-Fordism?

First, there is the practical matter of data accessibility. Proximity to Philadelphia also means proximity to the superb data collections at the University of Pennsylvania
and Temple University—often, the best data on an urban environment lies deep in the archives of the city’s university and research libraries. Additionally, conducting research on Philadelphia allows the author to draw on several personal connections to facilitate data collection.

Philadelphia, though, also functions well as a case study because of its history as an exceptionally strong manufacturing center. Philadelphia was once the “workshop to the world” and held claim to world-class manufacturing firms in a variety of fields, from hats to umbrellas to locomotives (Society, Macfarlane 42). The city’s ferocity in manufacturing was matched only by the intensity of its deindustrialization and decline—which makes locating case studies and identifying factors that allowed for a firm’s survival relatively straightforward. Manufacturing operated on a grander scale in Philadelphia than in most other industrial cities, and so identifying trends within the processes of industrialization and deindustrialization is simpler.

Now that it is understood why Philadelphia is used as a case study, another obvious question presents itself: why have the printing and food manufacturing industries been selected as sectoral case studies?

Why printing and food manufacturing?

Printing and food manufacturing were selected as case studies, in large part, because of their strong history in the city. Philadelphia has always been a key player in the printing industry—partially due to the city’s early rise as a prominent American city in the colonial era, and partially due to Philadelphia’s proximity to major publishing
concerns in New York (Regional). Historically, Philadelphia has also been home to several major food manufacturing outfits—including Whitman’s chocolates and Breyer’s ice cream, among others. Though both of these sectors have certainly declined as Philadelphia deindustrialized, the city’s historic and continued strength in these sectors make them good choice for case studies.

Furthermore, there is the matter of practicality. It is clear that the United States will never regain its competitive advantage in manufacturing, say, steel or transportation equipment. The United States—and Philadelphia—may yet be able to retain some degree of competitive advantage in printing or food manufacturing, particularly since these activities are best conducted locally. The logistical difficulties presented by moving large quantities of printed products quickly (or transporting large amounts of freshly processed food without spoilage) mean that U.S. and Philadelphia-based printing and food manufacturing concerns still have some degree of inherent viability. There is no sense in delving into case studies of sectors that have no good competitive advantage.

These sectors also make a good deal of sense in the context of a regional service economy. If Philadelphia does indeed develop its service economy as it hopes, both printing and food manufacturing still make sense within the framework of a service economy. Thus, conclusions and observations made here are still valuable, regardless of Philadelphia’s future economic direction.
An Introduction to the Case Studies

Two major case studies are employed in this work. A study of Bartash Printing, Inc. is used as a case study to critically survey Philadelphia’s printing industry. Similarly, Tasty Baking Co., Inc. is used as a study to examine the state of food manufacturing in Philadelphia. A brief institutional history of each company is provided here to offer the reader context with which to frame further discussion of these case studies.

Bartash Printing

Bartash Printing, the city’s largest commercial web printer, is presently located in a sprawling industrial complex near the west bank of the Schuylkill River (Bartash). The company, which was founded in 1952, began as a small printing outfit housed in a series of West Philadelphia row homes (Bennett). It has since passed through three generations of family owners and expanded into a moderately-sized company with 200 employees and $25 million in annual sales (Bennett). Originally, the company specialized in printing shopping bags and retail circulars. Since Bartash lost a major supermarket bag printing contract in 1995, though, it has refocused its business on a variety of small publications that often include some sort of color—including newspapers, penny savers, and magazines (Bennett). The company draws its customer base mainly from the northeastern United States, although some materials are shipped cross-country (Bartash). In addition to printing and binding services, Bartash also handles bulk addressing and mailing for many of its customers (Bartash). Bartash is particularly unique in that it is a web printer in an urban environment. Web presses, which print publications onto a continuous “web” of paper that is eventually cut down
to the final publication size (as opposed to printing a publication on precut sheets of paper), require a good deal of floor space—and so are conventionally found in suburban or rural environments where square footage is less expensive.

_Tastykake_

The Tasty Baking Company was founded in Philadelphia in 1914 (Tasty “History”). It produces a wide variety of snack cakes, cupcakes, and doughnuts. Originally, the company produced cakes that were sold for 10 cents each, which produced nearly $300,000 in sales during the company’s first year of operation (“History”). Today, the company is publicly traded, and has approximately $250 million in sales annually (“Report” 16). Tastykake sells exclusive distribution rights for a particular area to its drivers, who are responsible for selling and distributing the cakes to retail outlets (Tasty “Routes”). The company is in the midst of the implementation of its “Strategic Transformation Plan,” which involves redesigning, repackaging, and reformulating its products to cut costs while producing a more “competitive” product (Tasty “Report” 3). It has also started to expand its delivery routes westward to the Pittsburgh and Cleveland metropolitan areas (7). Tastykake is a useful case study, since it represents a traditional Philadelphia company that has adapted to survive deindustrialization. It is a strong, successful, mid-sized company that could easily serve as a model for other mid-sized food manufacturers in Philadelphia.
CHAPTER 1
The Rise and Fall of Industrial Philadelphia

Pre-Industrial Philadelphia

Not more than one year after its settlement, Philadelphia’s first manufacturing operation—Roberts’ Grist Mill—was opened in 1693 (MacFarlane 5). Settlers brought extensive experience in milling, linen weaving, wool production, and papermaking, which they used to establish small, sole-proprietor workshops (ibid.). As Philadelphia’s population continued to grow and the city started to physically expand, factory-like workshops started to appear that produced flour, lumber, iron nails, hats, leather, and clothing on a slightly larger scale (ibid.). The scope of these operations was limited not only by the skills of the workers and the technology available in the colonies, but also by protective acts of the British Parliament that severely restricted colonial manufacturing—particularly manufacturing that might produce exports competing with English products (6).

After the Revolutionary War and the passage of the Embargo Act of 1808\(^1\) (and, subsequently, the Non-Intercourse Law of 1809) sharply reduced the flow of imports

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\(^1\) During the Napoleonic Wars, Congress attempted to maintain America’s neutrality by forbidding any trade with England or France. The Embargo Act of 1808 extended this legislation to encompass trade over inland waters, which effectively barred businesses from trading with foreign countries. (Shrock).
into the United States, increased U.S. demand prompted businessmen to expand manufacturing beyond the production of basic domestic goods (Ibid.). Manufacturers started to produce glass, pottery, jewelry, sugar, malt liquors, machinery, and textiles in increasingly modernized and mechanized plants (Ibid.). By 1809, the total value of Philadelphia’s manufactures had reached $10,000,000 (more than $115 million in today’s dollars—or, roughly 25% of the manufacturing value produced by Philadelphia today) and Philadelphia had started its rise to prominence as an industrial city (Ibid.). Indeed, Philadelphia’s industry had become so significant that Robert Morris feared the loss of the city “would be the most fatal blow that America could receive as our artificers and manufacturers have proved a constant magazine of necessaries for the army, navy, and all the other states” (Peskin 57).

The repeal of the Embargo Act and Non-Intercourse laws in 1809 and 1810, respectively, further bolstered the growth of Philadelphia’s industry (Digital). Manufacturers stopped duplicating efforts of major firms abroad, and more closely aligned their production with local demand. “As many of the nonimportation-era projects disappeared, they were replaced by new efforts,” explains one historian (Peskin 57). In many cases, this transition was both literal and physical, as “…in the case of [a] failed china manufactory, which was converted into an iron foundry by an expatriated New Yorker” (Ibid.).

Among these burgeoning industries, Philadelphia’s printers quickly rose to prominence. “Despite earlier starts in Boston and Cambridge, and some competition from New York, Philadelphia in the Colonial and Post-Revolutionary period was the
center of publishing and graphic arts” (Bussy 1). As early as 1740, Philadelphia had gained international “renown as a printing center,” a reputation that was due in part to the importance of both intellectual and governmental work taking place in the city (Bussy 2,3).

Philadelphia: Workshop of the World

“Under the choir of St. Paul’s Cathedral, London, where Sir Christopher Wren, its architect, is buried, there is a tablet with this well-known epitaph, “Si monumentum requiris, circumspice.” So might William Penn from the tower of City Hall, pointing to the smoke rising from thousands of manufacturing plants in the city which he founded, say, “If you seek a monument, look around.”

-William MacFarlane, 1912 (99)

By the late 1800s, Philadelphia’s highly mechanized and efficient industries were far removed from the workshops and lone artisans of the eighteenth century. “The pace had quickened, competition from others was often keen, the threat of new machines and new methods was continuous, and the possibility of new modes of organization pervaded every old craft as well as every new skill” (Warner 71). Philadelphia had industrialized, along with many other American cities.

Yet, Philadelphia’s industrial landscape was fundamentally different than other industrial centers such as New York or Chicago. Most notably, the city had a greater number of smaller firms. Though the city was certainly home to large establishments such as Disston Saws or the Baldwin Locomotive Works, “…Philadelphia was known far better as an incubator for small enterprises, as a city packed with workshops and mid-size firms begun in many cases by workers or supervisors who ‘graduated’ from
employment to entrepreneurship” (Society ii-3). This abundance of small- and mid-sized manufacturing firms meant that the city’s manufacturers were strongly oriented towards “…batch and custom operations, rather than mass production” (Scranton 6). These “firms generally were run by lean teams of hands-on manager who kept close to both the shop floor and their customers,” rather than by the elaborate bureaucratic constructs found in much larger companies (Ibid.)

But the smaller scale of the average manufacturing concern did not limit the scale or breadth of the city’s industry: strictly considering manufacturing output, Philadelphia was the leading United States manufacturing city until 1879, when was surpassed by New York (MacFarlane 11). Even beyond 1879, though, Philadelphia was still notable for its breadth of industry: “unlike New England centers that often focused on a single sector…Philadelphia could and did do nearly everything across the spectrum of transforming materials into products” (Society ii-2-ii-3). Though diversity is decidedly “unspectacular” in its own right, this variety in the city’s industrial portfolio

![Figure 2](image_url) Two of Philadelphia’s most famous (and largest) industrial enterprises: the now-defunct Disston Saw Works (top), a saw and blade manufacturer, and Stetson Hats (bottom), a world-renowned hat manufacturer now making cowboy hats in Texas (MacFarlane).
allowed Philadelphia to sustain its industrial prominence even as individual sectors expanded and contracted.

Innovation was also a critical component of Philadelphia’s industrial success. Some of this innovation was spurred by challenges inherent to Philadelphia’s construction and geography. Manufacturers in the city, for example, were some of the earliest adopters of steam power due to a lack of ready access to fast-flowing rivers. “Lacking a major waterfall, Philadelphia could not build complexes of large mechanized factories. This disadvantage was overcome by an early reliance on steam power…” (Nash 152). This early adoption of steam power forced many manufacturers to experiment with and innovate in their production process—and led Philadelphia to become an early national leader in the production of steam engines (153).

Much of the innovation taking place in manufacturing was fueled, at least in part, by Philadelphia’s academic and intellectual institutions—most notably the Franklin Institute. The Institute, which, “in its time, was one of the world’s great forums for promoting and assessing mechanical inventiveness,” originally began as a “library and a museum of mechanical models” (Society ii-5, Nash 154). After a few years of operation, the Institute expanded its role by opening a mechanical laboratory and drafting studio and publishing the Journal of the Franklin Institute highlighting recent advances in technology and mechanization (154). It is said that in these “journal[s], exhibitions, prize awards, and public debates, the Franklin Institute captured, refined, and distributed the essence of Philadelphia’s prowess and drew to the city in return some of the finest scientific and technical innovators of the nineteenth century” (Society ii-6).
But perhaps the most important innovations took place as the result of unique cooperations between manufacturers and between industries. Frequently, competing firms engaged in “shared problem solving” and even contracted jobs out to each other—colloquially known as ‘calling into service others’ machinery” (Ibid.). “In such [cooperative relations] lay one key to Philadelphia’s special genius, its flexibility and specializations, its endless versatility, for the firm was not a closed box but a unit in a constantly shifting web of interconnected activities” (Ibid.). Through this unique, informal cooperation “new products, ideas, solutions percolated through the city (some patented, some not) generating productive ‘external economies’ that made the districts as a whole far more than the sum of their parts” and brought tremendous industrial success upon the city (Ibid.). These links between firms generated an “elaborate [network] that [made] it possible to view they city as a vast workshop” (ii-3).

Innovation and relentless advancement were at the root of many of Philadelphia’s early success. The city, for instance, was able to capture much of the growth of the weaving and textile industry that took place during the Civil War because of this agility. “Where Lowell, utterly dependent on cotton and unable to shift its rigid technology to wool or blended fibers essentially closed shop…Philadelphia used its flexibility to good advantage” to capture the market (Society ii-6). Here, innovation and entrepreneurship coalesced to secure a key industry that remained a staple of Philadelphia’s industrial economy for some time. Ironically, however, a lack of innovation and flexibility eventually led to the demise of Philadelphia’s weaving and textile industries a century later—as we will see in the next chapter.
Certainly, there were also other factors responsible for Philadelphia’s industrial successes. The city’s early role as a center of the colonies established a well-developed banking infrastructure that facilitated loans and financing for growing manufacturers (Nash 154). The city was highly accessible by rail (particularly since the Pennsylvania Railroad was headquartered in the city) and had good connections to the nation’s canal systems via the Schuylkill and Delaware Rivers—making it easy for manufacturers to receive raw materials and ship finished goods. Philadelphia was close to the coal mines of central Pennsylvania, lowering the total cost of coal in the city—which, in turn, allowed industries that depended on coal for their steam power to expand much more rapidly (Feedley). By the time of its industrialization, the city had developed an “immense reserve of skilled labor” that benefited existing manufacturers and attracted international manufacturers “seeking to get inside the tariff wall by starting American plants” (Society ii-4). All of these conventional elements of industrial success were present in the city—Philadelphia’s impressive success came by building upon these elements through innovation and the efficiencies of clustering and agglomeration economies (Freedly).

And so, by the turn of the twentieth century, Philadelphia had become one of the United State’s greatest industrial cities. Some referred to the city as the Manchester of America; others termed it simply the “Workshop of the World” (Nash 152).
Problems on the Home Front

Philadelphia’s intense industrial success proved difficult to maintain, however, particularly as the dynamics of manufacturing began to shift away from favoring urban locations. In 1937, Philadelphia began to see its first declines in manufacturing strength relative to the nation as a whole, as illustrated in Figure 3. Absolute indicators of Philadelphia’s industrial health also started to sour: as shown in Figure 4 (following page), the number of manufacturing establishments and workers employed both dropped precipitously between 1905 and 1977—even as Philadelphia’s inflation-adjusted value produced increased. This apparent contradiction between shrinking employments and increasing value produced and hints at the dire predicament of Philadelphia’s manufacturers, who were closing city plants and shedding workers in a desperate attempt to keep pace with firms in other parts of the country. This was the initial stage of Philadelphia’s massive deindustrialization.
The reasons for Philadelphia’s deindustrialization are well-documented in academic literature, largely because they are the same reasons behind every other major American city’s deindustrialization: the urban environment—in particular, the urban industrial environment—was simply obsolete.

Much of this sudden obsolescence had to do with rapid advances in automation and computerization. Philadelphia was a city built by mechanization\(^2\)—and so

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\(^2\)To be clear, mechanization is the process of building machines to enhance worker productivity. A machine that cuts metal down into strips appropriate for producing nails is an example of mechanization. Automation is the process of building machines to eliminate repetitive human labor—for example, a machine that puts nails into boxes. Computerization is the integration of computers and sensors to allow
contained an industrial architecture optimized for mechanized manufacturing. The majority of these buildings were multi-story structures suited for mechanized manufacturing processes carried out in discrete sections, similar to the factory depicted in Figure 5 (Arthur 1). A printing firm, for instance, might situate their presses on the first floor. The output to the presses would then be sent to the second floor for folding and finishing. Materials would then be moved to the third floor for gluing and binding, before being brought down to the first floor again to be shipped to the customer. Though this genre of plant and process design was appropriate to technology available in the 1920s, it was inadequate and inappropriate for the automated manufacturing technologies introduced in the 1940s—particularly those that introduced continuous manufacturing processes, in which a product moved continuous through a manufacturing line instead of stopping at the end of each segment (Kinnard 31). Continuous movement requires a continuous path of motion, which is difficult to achieve in a multi-story space (30). The columns used as structural supports in many multi-story industrial buildings (as shown in Figure 6) introduce further complications to the problems of installing bulky automated machinery and setting up continuous automated machines to make decisions on their own, requiring only human input of the highest order (i.e. how many boxes of nails to make).
conveyor systems (31). These challenges in introducing automated and computerized manufacturing processes to Philadelphia’s aging stock of industrial buildings rendered these structures functionally obsolescent— that is, outmoded due to “changing requirements of specific industries” (Arthur 1).

Beyond their ability to accommodate modern manufacturing processes, single-story buildings held several other advantages over multi-story buildings for manufacturers of the 1940s and 1950s. Perhaps the largest advantage was cost: studies have shown that the cost per-square foot of building area for a single-story building is much lower than that of a multi-story building since they require a more extensive structural support system (Kinnard 31). Construction experts say that, on average, a multi-story building loses 10% of its space to stairwells and elevators—meaning that every usable square foot in a single-story building requires the construction of 1.1 square feet of space in a multi-story structure (Hamer 67). Single story buildings are said to promote experimentation and variation in production processes “because heating and ventilation can usually be handled more efficiently” and since “the layout and flow of goods is considerably more flexible than…in multi-story structures” (Kinnard 31).
It is clear that single-story buildings offered a distinct competitive advantage over aging multi-story buildings that were coming due for major renovations. Philadelphia, however, was ill-equipped to offer land suitable for single-story construction, particularly in the 1940s, just as firms were starting to consider moving to a single-story plant (Institute 1). Indeed, a 1956 land-use study undertaken on behalf of the Planning Commission found that the “need for space” was one of the largest factors prompting industry to leave the city (Ibid.). Even if manufacturers could assemble enough contiguous parcels or find a plot large enough for a sprawling one-story factory, the cost of land in the city of Philadelphia was significantly higher than the cost of an equivalently-sized building site in the surrounding suburban area. The lower cost of land in the suburbs also meant that firms could buy additional land surrounding their site to allow for future expansion—usually impossible in the city due to financial constraints and land-use restrictions. This ability to lock in land for future expansion at a lower price made plant locations in the suburbs a particularly lucrative investment.

The migration of urban manufacturers to suburban locations was only made possible by shifts in the logistics of manufacturing. Traditionally, industrial location had been defined by the location of railways, which were used to move materials and products in and out. Accordingly, older cities such as Philadelphia were planned for the logistics of railways and incorporated extensive rail with enhanced service for industrial areas (see Figure 7 for a map of Philadelphia’s rail system.) But, by the mid-1950s, truck transportation over interstate highways had eclipsed rail as the primary means of transportation for both raw materials and finished products. As one economist explains,
“the increasing use of road transportation, made possible by the internal combustion engine and the construction of modern highway systems has taken this flexibility a stage further, giving every factory the opportunity for direct access to most customers and many sources of material without the necessity for transshipment...enroute” (Gishlick 70). Cities, which had been laid out to maximize industrial proximity to the railroad, could not offer manufacturers the same degree of flexible access to highways. Some manufacturers left because the advent of highways allowed them to; other industries, such as freight warehouses, were forced to leave the city because of this transition to a truck-based transportation network (Kinnard 30).

The same highways that enabled industrialists to move their plants also enabled city residents to move their homes to the suburbs. During the 1940s and 1950s, millions of working-class Americans fled central cities to escape problems of crime, poverty, and urban blight—as well as perceived problems of race. They chose to insulate themselves in “pastoral” subdivisions, which had a three-fold effect on urban industry. First, some industrial owners chose to move to the suburbs themselves, and decided to bring their firms along with them. This phenomenon had a particular impact on small- to medium-
sized firms where location decisions are often made based on owners’ “purely personal” reasons (Gishlick 13). Other firms found that their workforce had moved to the suburbs, and so these manufacturers decided to move as well, in order to maintain ready access to their labor pool (Kinnard 29). Finally, some manufacturers realized that the majority of their customer base had relocated to the suburbs—and so decided to relocate themselves in order to minimize the cost of transporting finished products to their customers (29).

As more and more firms left the city for the suburbs, a decision to leave the city became increasingly less radical. As firms in the city saw the success of those in the suburbs, they became increasingly “foot-loose” in their locational decisions and began to “consider locations previously unthinkable” in suburban locations (Ibid.). A steady stream of businesses continued to leave the city until finally, in 1972, the number of
manufacturing establishments in the surrounding four-county\textsuperscript{3} was equal to the number of manufacturers within the city itself (see Figure 8). It was only at this point that the true, massive extent of Philadelphia’s deindustrialization was revealed.

\textit{The Response to Deindustrialization}

Initially, planners attributed the systemic decline in manufacturing to cyclic fluctuations in Philadelphia’s economy. In a 1949 report on the state of Philadelphia’s industry, the city’s Planning Commission noted that “during the years between 1940 and 1947, Philadelphia’s manufacturing employment ceased to decline relative to the nation. On the basis of this experience, and having in mind Philadelphia’s favorable industry composition, we anticipate that Philadelphia’s percentage of total national employment will remain roughly stationary from the present until 1980\textsuperscript{4}” (Institute 1).

Soon, however, Philadelphia’s city government realized that they were caught in the middle of a massive deindustrialization—and it was unlikely that the economic “fluctuations” would tip back in the city’s favor. Similarly, they also recognized that “firms moving to the suburbs were influenced by the available of large land areas” and that “Philadelphia will ‘lose’ industry to the suburbs far more rapidly than in the past unless it is possible to make some effort to meet the need of industrial land” (\textit{Ibid.}). In the early 1950s, it was determined that Philadelphia had “barely enough industrial land

\textsuperscript{3} The four-county suburban area of Philadelphia is defined as Bucks, Chester, Delaware, and Montgomery counties.

\textsuperscript{4} This projection could not be further from the truth: between 1949 and 1982, Philadelphia’s share of national manufacturing employment dropped approximately 164%, from 2.29% of the total manufacturing employment to 0.29% of total manufacturing employment.
to meet its probably requirements in the next 15 to 25 years, provided that all potential
available land is developed and put into use”—and certainly did not have enough land
to meet the demands of industry if the trends towards sprawling single-story plants
continued (Ibid.).

In response, the City of Philadelphia established the Philadelphia Industrial
Development Corporation (PIDC) in 1958 as “Philadelphia’s official agency for
industrial development within the city” (Carpoletti 1). The corporation was charged
with keeping “Philadelphia’s growing old line industries at home, and [making] the city
a welcome environment for incipient and newcoming industries” (48-9). In order to
accomplish these tasks, PIDC was established as a redevelopment authority responsible
for overseeing they city’s industrial “Land Bank,” a collection of city-owned vacant land
that was “designated for industrial use and transferred to [PIDC] by ordinance of the
City Council” (48). PIDC was to market this land to industry at its discretion, and then
deposit the proceeds of these sales into a “Development Revolving Fund” which would
be used “to replenish the City’s stock of industrial land as privately-owned land became
available” (Ibid.). The land bank and revolving fund concepts were quite novel:
“Philadelphia [was] the first city in the country to attempt utilizing publicly owned
lands for productive use via these methods” (Ibid.).

As a redevelopment authority, PIDC was also tax exempt—meaning that “any
mortgage loan that a commercial lending institution made to a firm through PIDC could
be made at a lower interest rate than a conventional loan made directly to the firm” (49-
50). Once PIDC had more firmly established itself, it began to act as a conduit for low-
interest loans to industrial concerns looking to expand, relocate, or invest in capital equipment—the idea being that “dollar savings on PIDC [could] help many firms who would otherwise find conventional mortgage rates economically unfeasible” (50). In 1967, however, the U.S. Treasury Department revoked PIDC’s tax-exempt status—which halted all industrial development on private land (53). A year later, PIDC established the PIDC Financing Corporation (PIDC-FC) in cooperation with the state government to allow Philadelphia to participate in the statewide Pennsylvania Industrial Development Authority (PIDA) low-interest loan financing program (55). This permitted PIDC to resume the financing of private land and capital acquisition—an operation that still continues today. PIDC still remains Philadelphia’s primary industrial development financing firm, though it has also started to offer a portfolio of technical assistance services designed to help owners of small- to mid-sized firms navigate the complexities of industrial financing and real estate (PIDC 1995). PIDC also owns and operates two industrial parks and is responsible for administering the newly-created Philadelphia Naval Business Center designed to attract business and industry to the former Navy Yard (PIDC 2005).

PIDC refers its clients seeking workforce development assistance, help with strategic planning, and technical questions about manufacturing processes to the Delaware Valley Industrial Resource Center (DVIRC) (Ibid.). DVIRC, founded in 1988 by the Pennsylvania Department of Commerce, is a technical assistance organization dedicated to improving “the competitiveness of small- and medium-sized manufacturers through world class strategies, operational innovations, and regional
economic and workforce development initiatives” (DVIRC “About”). The organization hosts a variety of formal, informal, and one-on-one events designed to assist smaller manufacturers with technical issues—particularly issues of strategic planning and process innovation (Ibid.). One of DVIRC’s principal initiatives is the promotion of “lean manufacturing,” which incorporates changes in “leadership, culture, strategy, and customer focus” to “identify and eliminate waste through continuous improvement by flowing the product at the pull of the customer in pursuit of perfection” (DVIRC “Lean”). Essentially, “lean manufacturing”—and DVIRC—aims to eliminate all possible waste, and channel these wasted personnel and resources into innovation and growth.

Together, DVIRC and PIDC comprise Philadelphia’s industrial development initiatives—DVIRC handling technical questions of development, and PIDC assisting with the financial aspects of industrial growth. These organizations constitute Philadelphia’s direct response to deindustrialization.

So far, we have surveyed the factors leading to Philadelphia’s eminence as a manufacturing center, traced the city’s deindustrialization, and become familiar with Philadelphia’s formal response to industrial decline and migration. Here, conventional narratives of Philadelphia’s industry and processes of deindustrialization come to a close, implicitly assuming that the city’s dogged pursuit of a service-based economy has rendered industry irrelevant. But the story of Philadelphia’s industry is not yet complete.
Thus far, we have been introduced to the challenges that ultimately led to Philadelphia’s deindustrialization, as well as to Philadelphia’s immediate response to deindustrialization. Usually, this point concludes the story of Philadelphia industrial decline and demise—and traditionally serves as the departure point for an account of Philadelphia’s attempts at encouraging a service economy in the wake of urban renewal.

But pursuing this conventional narrative ignores fascinating questions of industrial development. How has industry in the city changed since 1972? Do modern industries still face the same challenges that manufacturers of the 1950s and 1960s did as the city deindustrialized? How have some firms managed to persist through the city’s massive deindustrialization? How do they continue to survive today? In attempting answers to these questions, the author conducted in-depth interviews with representatives from both Bartash and Tastykake, our working case studies. Bartash Printing was represented by Mr. Michael Simon, the company’s president. Mr. Vince Melchiorre, a Senior Vice President and Chief Marketing Officer, represented Tasty Baking Co.

From these interviews, several key advantages and disadvantages to the city readily emerged. This chapter begins by enumerating the present-day advantages and disadvantages of the city, and then continues on to examine how Bartash and Tastykake addressed disadvantages and leveraged advantages of the city to weather some of
Philadelphia’s most difficult years for manufacturers, before concluding with a discussion of factors in firm survival.

**Advantages of the City**

If roughly 1,100 manufacturing firms still persist in Philadelphia today, there must be some degree of competitive advantage to operating a factory in the city. From interviews with leaders in the printing and food manufacturing sectors, six key advantages emerge: strength of workforce, transportation accessibility, branding power, industrial infrastructure, and access to industrial development funds.

*Strength of Workforce*

Both Bartash and Tastykake cite their workforce as a strongly competitive advantage of the city, speaking to an exceptionally loyal, hard-working, and dedicated group of employees. At Tastykake, Melchiorre says that his staff’s loyalty is often manifested in their employment tenure. “We have people who work here for their entire lives,” he says. “Now, we get the children of the people who worked for us.”

Melchiorre and Simon both suggest that part of this intense loyalty is due to the fact their workforces are intensely local. Most of their employees live nearby, and so are more deeply invested in the surrounding community—as well as their place of employment. Simon explains that “A lot of the workforce that we had [at the time of our decision to move]—and still do have—are coming from this general area. We have a
strong African immigrant population, primarily from Mali. A lot of them still live
within this general vicinity.” This very local, high-quality workforce is one of the
primary reasons why Simon’s predecessors at Bartash “decided that it made more sense
to stay [in West Philadelphia] to see what we can do,” he says. According to Simon, you
cannot simply expect to find that sort of committed, local workforce in the suburbs.

The employees at both companies are credited with much of each firm’s success.

At Bartash, Simon explains that four years ago the company had roughly $15 million in
sales. This year, the company will likely exceed $40 million in sales. In these four years,
“the equipment hasn’t changed, but what’s really changed is the people.” During
Bartash’s first years of expansion and growth, the company just “couldn’t get the work
out:” the effective press capacity was simply insufficient for the number of jobs being
scheduled. But, by “investing in people” through training, hiring more supervisors,
and providing incentives for meeting goals, the “guys have gotten better and faster” and
they have more than doubled the volume of business on their presses without adding
any additional capacity (Simon). At Tastykake, too, Melchiorre praised employees for
helping to streamline production processes and working to meet tighter production
turnarounds. “[Despite inherent inefficiencies in the plant], we’ve found ways to be
pretty darn efficient in the facility that we’re in,” says Melchiorre. “I think a lot of that
goes back to the workforce, and a bunch of people who are really committed and
dedicated to the company.” Both Simon and Melchiorre agree that they have found
exceptionally diligent and clever workforces—and both agree that they could only have
found these workers in the city.
An urban workforce represents a competitive advantage, too, because of their knowledge of the city. As Mr. Melchiorre observes, this knowledge is particularly crucial in the marketing Tastykake’s the final product:

“We have a lot of routes in the city, and the best people to run them would be people who know the city and understand the city. I don’t want some fifty-year-old suburban dude to come in here just because he has the money and buy a route in West Philadelphia. He’ll fail, because he doesn’t know the neighborhood, he doesn’t understand the clientele, and he doesn’t know how to work it as well as someone from the neighborhood” (Melchiorre).

Most suburban employees simply are not equipped with a working knowledge of the city that would allow them to sell products or navigate city streets without training.

The exceptionally hard-working, local, and loyal workforce is one of the strongest competitive advantages of the city—after all, a manufacturing firm is only as strong as its employees.

Accessibility to Transit Networks

In traditional location theory\(^1\), much of the advantage of one location over another lies in a particular site’s access to transportation (Gishlick 7). The site with the lowest incoming and outgoing transportation costs is the most advantageous site. In locally-oriented businesses like Bartash and Tastykake where customers are dispersed across the region, transportation costs are roughly the same from any regional location (for example, the cost of distributing Tastykakes across the region from Center City is

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\(^1\) Location theory is branch of economic theory that endeavors to identify the most economically advantageous site for a business. For an introduction to the subject, see the classic: Weber, Alfred. *Theory of the Location of Industries*. Chicago: University of Chicago Press, 1929

Or the more general:

not appreciably different from the cost of distributing them from King of Prussia).

Though there are slight variations in absolute costs, the transit cost at the most local level comes mainly in overall convenience and efficiency. The optimal site at the local level is one that allows for exceptionally convenient access to the region’s transportation network, even if absolute transportation costs are slightly higher (Ibid.).

Given the successes of our case studies, it should not be surprising that both Bartash and Tastykake viewed efficient and convenient access to highways and arterial streets as major advantages of their locations in the city (Melchiorre, Simon). Both of these businesses are highly dependent on regional trucking for their supply chains and distribution networks, and so being able to situate a factory a minute or two from access to several primary regional highways is highly advantageous. Though the suburbs also offer easy access to highways, they usually only provide access to one specific route—not to the core of the I-76, I-476, I-676, and I-95 web, as is the case in a centrally situated Philadelphia location.

Mr. Simon from Bartash also points out that there is more robust support for city roads—particularly arterial streets and highways. “Access in and out is excellent. We’re really never at a point where we can’t get out [because of snow]”—which Simon says may not always be the case in a suburban location. The reliability of snow removal on arterial streets is a key advantage for Bartash, whose line of business requires that the plant be reliable accessible so that timely materials can be delivered to the customer.

Surprisingly, access to rail networks was cited as an advantage of the city—even though empirical locational studies have suggested that the advent of trucking and
Interstate highways rendered access to rail obsolete as a “significant” locational advantage (Gishlick 71). Tastykake, however, still receives many of its “high-volume” ingredients like sugar by rail (Melchiorre). Though Bartash does not actively use its rail siding, it continues to pay the annual fee to keep the spur active (Simon). Bartash used to receive much of its paper supply by rail, until trucking costs fell below the cost of shipping the paper rolls by rail. Occasionally, however, the price of transporting the paper by rail dips below the cost of trucking the paper. Bartash can easily take advantage of these savings, given its easy access to rail. Both case study firms saw access to rail as a key advantage that was not readily available in the suburbs.

“Branding” Power

As manufacturing enterprise within the city limits becomes increasingly rare, being a manufacturing firm in the city can have real marketing and public relations benefits. In other words, a firm’s urban plant location can become a selling point unto its own. This is not unlike the phenomenon of locating a business or manufacturing plant in order to gain a “prestige” mailing address. Here, however, manufacturing firms seek to capitalize on their status as a business in the city (or in Philadelphia) more than any particular mailing address.

As Mr. Melchiorre explains of Tastykake, “In the final analysis, we’re so ingrained in Philadelphia that [a move to the suburbs] would be pretty traumatic.” Melchiorre observes that “there’s such an affinity to [Tastykake]” in Philadelphia that the company often receives free marketing and promotion from Philadelphians who are enthusiastic about Tastykake because it is a Philadelphia company. As a “strong
brand,” Tastykake markets itself not only on the basis of its current product, but also based on its reputation. An important part of Tastykake’s history and reputation is its identity as a uniquely “Philadelphian” product. Tastykake makes sales (and receives much positive press attention), simply because it is a Philadelphia company. Moving the company to the suburbs would destroy this “branding” power by destroying the Tastykake’s identity as a “Philadelphia” company (Melchiorre). As Mr. Melchiorre explains, “We’re a Philadelphia institution, and I think that there’s something about being here and staying here. I don’t think [that a move] would be good for our consumer base, and our reputation—but I also don’t think it’s good for our people and our culture. We’re a big part of the city.”

Companies such as Bartash whose public identity is not quite as directly invested in Philadelphia’s identity, can benefit from their status as a “city” brand under policies that require other businesses and organizations to buy their products and services from city-based firms. The University of Pennsylvania, for example, requires that the institution purchase supplies and services from businesses in West Philadelphia where possible—and names Bartash Printing as an “approved vendor” for printing services (UPenn). Thus, while Bartash does not market itself as a “city” business, these purchasing preferences effectively mark it as a “city” brand. In these cases, the power of the “Bartash” brand is linked to power of the “Philadelphia” brand.

**Industrial Infrastructure**

Conventionally, the city’s industrial infrastructure and stock of industrial real estate is thought to be one of its biggest liabilities: few consider the decaying and
“functionally obsolescent” buildings often found in older industrial cities to be attractive to industry (Kinnard 32). This observation makes sense: why would businesses pay to renovate and rehabilitate (or even demolish) old urban industrial structures, when they could build a custom manufacturing facility to order in the suburbs on empty land?

Most manufacturers making economically rational decisions would not choose an urban location, since the cost of new construction in the suburbs is often less than the cost of demolishing and rebuilding or renovating structures in the city. This not only has to do with higher land costs and higher costs of construction, but also delays introduced by a more bureaucratic permitting system and an excessively slow system for processing requests for zoning variances.

But, the city is often an excellent deal for manufacturers who are able to locate existing facilities within the city that meet their needs. Bartash, for example, was able to find a new facility near its old plant that contained ample space and was constructed with the specialized reinforced floors required to support printing presses (Simon). With the help of PIDC financing, Bartash was able to acquire, repair, and adapt the facility to its uses at a lower cost that constructing a new facility—either in the suburbs or the city (Ibid.). Here, the industrial infrastructure in the city became an advantage: Bartash was able to reuse existing facilities at a lower cost that constructing a new plant. For Bartash, “the building itself was a large factor” in their decision to remain within the city, demonstrating that existing industrial infrastructure is not always a liability (Ibid.)

In promoting the development of urban industry, it is important to ensure that usable facilities are available to businesses looking to expand or relocate their operations:
otherwise, businesses will not stop to consider the potential cost benefits of an utilizing an existing urban location, and will simply construct new plants in the suburbs instead.

**Prohibitive Cost of Relocation**

Relocating a manufacturing firm is an expensive proposition. This not only has to do with the cost of moving bulky, heavy, and awkward industrial equipment—but also with indirect costs of a relocation. Kinnard explains in his guide to industrial real estate that manufacturing plants are usually characterized by their immobility:

“Because moving industrial equipment and inventory is extremely expensive, most industrial organizations choose to minimize their geographic movement as much as is consistent with efficient and profitable operations. Aside from direct out-of-pocket expenses, interruption of the production process also results in a loss during the period surrounding the move. Therefore, despite pressures from changing location factors and from obsolescence, a high degree of immobility characterizes most industrial locations.” (17).

As Mr. Simon from Bartash points out, these moving costs are magnified for small- to medium-sized manufacturing firms. When Bartash moved, Simon says that it “was anarchy, it was hell on earth for about six months. It was a nightmare, where we were literally running between both places [to produce finished products].” In these smaller concerns, there is less excess capacity sitting idle—and almost certainly no alternative or backup facilities. Bartash Printing, for example, owns four press lines, all of which are in continuous use during peak periods (Simon). The company also owns a variety of finishing and post-press equipment, all of which is in constant use except for scheduled “dark days” when maintenance is performed (*Ibid.*) Though Bartash retains enough
redundancy to ensure that they can still produce a product if a press or finishing line were to break down, they do not have enough excess capacity to allow them take a press offline for more than a few days and still serve all of their customers effectively. Therefore, if Bartash were to relocate, they would either have to purchase at least one new press—or temporarily reduce their workload while they relocated their operations.

Small- to mid-size manufacturers such as Bartash usually do not have the capital available to completely duplicate their machine inventory. This is particularly true for the printing industry, where sunken capital costs for new presses are enormous. They also have no way of reducing their workload, other than to simply reject jobs—unlike larger manufacturers, they have no alternative facilities to route jobs to. If a company does not have the capital to duplicate its resources and instead elects for an incremental relocation, time must be spent shuttling materials and products between the two plants until the new facility is fully operational. This can become prohibitively costly and inefficient—particularly if the new plant is located in the suburbs. These costs often deter expansion. In Bartash’s case, Simon says “We could use the extra space...[but]...the problem with moving is that you can’t just move. You have to buy another press, because you can’t afford to shut down a press for that amount of time. You’ve got to have to have another already up and running and ready to go, and that’s an enormous investment in and of itself.”

There are also indirect costs of relocation—for example, the cost of training a new workforce. Given that much of their workforce is intensely invested in the neighborhoods surround the plant, both Bartash and Tastykake agree that few of their
workers would be willing—or even able—to follow their plant to a suburban location (Ibid.). “I think we would [lose a lot of our workforce if we moved out of the city]. A lot of people live in the city, they live pretty close to [our factory]—they don’t travel very far,” explains Mr. Melchiorre. Hiring and training a new workforce would not only be an expensive proposition, but also one that could be detrimental to company culture and product quality: without experience and knowledge of a particular firm’s conventions and practices (and without sufficient numbers of mentors), workers may have difficulty achieving high levels of quality. As Mr. Melchiorre observes, “if we ever moved out of here, we lose that knowledge base [of the workers].” The cost of losing this knowledge is particularly high in firms like Tastykake (and, to some extent, Bartash), where workers must learn a unique, specialized manufacturing process.

Moving a manufacturing concern is not a proposition to be taken lightly—and so the city holds an advantage over the suburbs for firms already in the city, simply by incumbency. It is easier to expand an existing facility in the city than it is to move, either elsewhere in the city or somewhere else altogether. If an urban firm must move to a larger facility, it is much more efficient and cost-effective to move somewhere nearby in the city than it is to move to the suburbs, particularly if there is no alternative facility that can handle some of the work while machinery and inventory is incrementally relocated.
Access to Industrial Development Funds

Mr. Melchiorre says that access to industrial development grants and loans is one of the key advantages of being located in the city for Tasty Baking. Interestingly, Tasty Baking has never been involved in PIDC’s low-interest facility loan program—though it has taken part in several innovative workforce development programs led by the Delaware Valley Industrial Resource Center and the Commonwealth of Pennsylvania. Most recently, Tastykake worked with the Commonwealth to assist “young urban residents” in securing $60-80,000 loans to purchase Tasty Baking routes. Tastykake also participates in a program with the DVIRC that provides funding for training bakery workers. In both cases, significant industrial development funds have been advanced to help improve Tastykake’s performance and efficiency—and to promote entrepreneurship and innovation. Melchiorre is particularly excited about the programming that will help young urban residents to procure routes, since he thinks that this may help to enhance Tastykake sales within the city.

When Bartash moved into its existing facility, the purchase of the building was financed in part by low-interest PIDC loans. Recently, the company also received low-interest loans from PIDA to replace some of its press equipment. Simon cited this assistance from PIDC and PIDA as another “large factor” in his company’s decision to remain within the city of Philadelphia.

Whether the funding is provided by the Commonwealth, DVIRC, or PIDC, companies choosing to locate manufacturing facilities in the city are eligible for a wide variety of low-interest loans and grants. Though these are mainly designed to offset the
higher cost of doing business in the city, they also represent a distinct advantage since they can also be harnessed to advance business goals (Gishlick 20).

The Competitive Disadvantages of the City

Even with the advantages that the city has to offer, business are choosing to relocate out of the city or are going out of business entirely—suggesting perhaps that there are significant disadvantages to locating a manufacturing firm in the city. Surprisingly, interviews did not identify the traditional disadvantages that spurred the city’s deindustrialization: for instance, access to highways, suburbanization, and multi-story factory buildings were not mentioned as critical disadvantages. The interviews were able to isolate other key disadvantages, however: crime, taxes, and the difficulties of expansion all surfaced as critical arguments against locating a firm in the city.

Crime and Fear

Crime—and the fear of crime—is a classic critique of the city that has often served as a catalyst for suburbanization. Though Tasty Baking has not reported any real problems with crime, Simon says that, in recent years, criminal activity in the neighborhood has proved to be quite problematic. Usually the neighborhood’s “bark is worse than its bite,” according to Simon. However, when Mayor Street’s Safe Streets initiative displaced drug dealers and gangs from Woodlawn Avenue, they simply moved a few blocks south and set up shop near Bartash. For the six months that followed, crime was particularly severe: Simon reports seeing a drive-by shooting,
witnessing a gun battle in the street, and finding two dead bodies dumped in the company’s parking lot. “[The crime] was starting to freak everybody out, which is understandable,” explained Simon. By installing a $50,000 security system featuring a series of security cameras around the perimeter of the building, and by improving fencing around the facility, Simon was able to allay the fears of many employees. Some, though, are still afraid of the neighborhood (Simon).

Beyond spooking existing workers, Simon says that this also makes recruiting new employees more difficult. “There’s many people that have come, looked at us, and didn’t even drop an application, just kept driving, because they were frightened—for lack of a better word—of the neighborhood” (Simon). Convincing potential recruits that the neighborhood is safe enough to work in is often a challenge for Simon. In some ways, he sees this as a valuable screening process for his employees, however: “It’s good because [the people you get are] the type of people who don’t care and don’t let [the neighborhood] bother them—they have maybe a stronger fortitude in that respect, which I admire—as opposed to someone who needs to be nicely pampered. You’re here to do a job.”

Crime—and fear of crime—can indirectly precipitate other problems, such as parking. Simon explains that “one of the bigger challenges we have now is parking. We’ve got so many people now, and we can’t find [on site] parking now.” Though there is ample parking on the city streets, “people are afraid to park on the street [outside the perimeter fence], which I understand—especially if you’re a woman” (Simon). If crime were less prevalent in the neighborhood, parking would not be an issue, however.
Whether it manifests itself in parking woes, trouble recruiting new employees, or difficulties in making current employees feel safe at work, crime is unquestionably a competitive disadvantage of the city—particularly since suburban locations rarely require companies to deal with significant issues of crime or fear of crime.

**Taxes**

In addition to state and federal taxes, several local taxes are levied upon manufacturers located with the City of Philadelphia—putting these firms at a significant competitive disadvantage as compared to their suburban counterparts. The main tax imposed upon city businesses is the Business Privilege Tax—a two-part tax comprised of both a 2.1 mil\(^2\) Gross Receipts Tax on all revenue collected, and a 6.5% tax on net taxable income (City 2004). The Gross Receipts Tax is particularly difficult for small businesses, Simon explains, because the tax is calculated on *gross receipts*—that is, before expenses are deducted. In an extreme example, a company might collect $1 million in revenue and make $1,500 in profit—but still be charged $2,100 in gross receipts taxes alone, since the tax is based on gross income. This is a heavy tax burden for many small businesses, who often collect fairly significant revenues—but run very small profit margins. In the suburbs, there are no net income taxes for businesses (Philadelphia Forward). Further, the average gross receipts tax in 2003 was 0.35 mills—six times less than Philadelphia’s current rate (*Ibid.*). This vast business tax differential makes the suburbs an extremely attractive location simply on the basis of taxes.

\(^2\) A mil represents the amount of tax per $1,000 of value. For instance, a 15 mil tax on $2,000 would be $30 (15x2).
In addition to Business Privilege Tax, a City Wage Tax\(^3\) is taken out of each employee’s paycheck: 4.331\% is withheld from the pay of City residents; 3.8197\% from non-resident pay (City 2004 1). Often, business owners—including Simon—find it difficult to hire the most talented employees, simply because they do not want an additional 3.8\% withheld from each week’s paycheck. “It just adds an extra barrier, an extra objection for some people” (Simon). To recruit the most promising hires, it is frequently necessary to promise a higher salary to offset the Wage Tax, Simon says: “sometimes you have to overcompensate for [the tax], which costs you more money.” The need to overcompensate workers in order to offset the cost of the Wage Tax also serve to deter employers from locating their business in the city, as they do not want to deal with the expense or bother associated with the city’s high Wage Tax. Further, they do not want the tax taken out of their own paychecks. Philadelphia’s Wage Tax is more than five times higher than the average Income Tax assessed in the suburban counties (Philadelphia Forward).

Philadelphia, of course, also assesses an 82.64 mil Real Estate Tax upon the assessed value of manufacturers’ properties (City 2004 1).

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\(^3\) The Wage/Earnings tax is assessed in lieu of an income tax.
The full extent of the competitive disadvantage brought by city taxes rapidly becomes apparent when one considers the tax liability on a manufacturer that takes in $5 million in revenue and generates $500,000 in profit. Without regard to the Wage Tax or property taxes, the taxes assessed in the City of Philadelphia would amount to $43,000—while the average suburb tax would be a mere $1,750 (See Figure 10). Taxes, indeed, are a strong competitive disadvantage of the city.

**Difficulties of Expansion**

The density of industrial land in the city is often said to be advantageous, for it reduces the cost of providing infrastructure and is sometimes known to produce unique economies of scale. The same density, however, can prove a major competitive disadvantage when it precludes on-site expansion.

Most urban manufacturers are sited on parcels tightly bounded by streets, railroads, and neighboring factories: the little open space that does exist is often devoted to parking lots or loading areas. This severely limits the possibilities for expansion—and thus the functional life of the facility. Tastykake, for instance, has found its ability to expand and create the optimal production space constrained by land boundaries: “I think we would be more efficient if we had a single-story operation, but we don’t have the land to do that here,” said Melchiorre. “We’re down to the point where we’re constricted by the streets and the railroad.” Through innovation, Tastykake has found ways to optimize its existing multi-story structure. “We’ve found ways—it’s been pretty interesting, whether it’s running conveyors in different ways or moving things between
floors” (Melchiorre). Still, Tastykake is forced to run in a sub-optimal facility because of land constraints on construction and the exorbitant direct and indirect costs of moving.

Bartash, too, has found itself boxed in—but by surrounding factories, instead of by streets and railways. Bartash’s facility is well over its designed capacity, so much so that the company is forced to use boxcars sitting on its rail siding for overflow storage. But there is simply not room to expand, given that the existing structure is pushed up against the property line on three sides. Purchasing the neighboring plants and demolishing them to expand is simply beyond Bartash’s means, according to Simon. So Bartash is left to use its existing land more inventively until it is eventually forced to move to a larger facility. Recently, it constructed a Quonset hut over a former parking and loading area to serve as a storage area for completed print jobs. Simon says this will buy Bartash some more time before needing to find a new facility—but no more than four or five years.

By contrast, suburban industrial locations usually feature expanses of green space around factories—useful not only for aesthetic purposes, but also because it allows the suburban firms to easily and cost-effectively expand their facilities without having to invest in a full relocation. The city’s inability to offer this flexibility to urban manufacturers is a significant competitive disadvantage.

Survival of the Fittest: How do firms survive?

Simply considering the advantages and disadvantages of the urban environment in isolation does not tell the full story of modern industrial challenges, however. The
most critical issues lie in the interplay between advantages and disadvantages mediated by the manufacturing firm itself: in other words, the true value of investigating contemporary strengths and weaknesses of the city lies in understanding how firms can leverage advantages and mitigate disadvantages in order to survive. This section begins by briefly surveying a casual study examining relationships between transportation, crime, and firm survival, and concludes by examining factors that allowed Tastykake and Bartash to survive.

**Transportation, Crime, and Survival: An Empirical Investigation**

A good deal of data on firm survival is indirectly available from the historic series of state *Industrial Directories*, a series of yearly publications which list the name and address of all Pennsylvania companies, classified by industry. By entering the name and address of all commercial printing companies found in Philadelphia County in 1922, 1940, 1959, 1975, and 2004, the author was able to create a database of 1,557 companies that allows one to directly trace a company’s survival (and migration) between 1922 and 1940. A brief summary of survival rates appears in Figure XX. These rates are surprisingly low, suggesting a remarkably high turnover rate among commercial printing firms.

This database of firm survival was then used in a brief empirical study by the author that was designed to test for casual relationships

<table>
<thead>
<tr>
<th>Period</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-2004</td>
<td>10.9%</td>
</tr>
<tr>
<td>1959-2004</td>
<td>7.1%</td>
</tr>
<tr>
<td>1940-2004</td>
<td>3.2%</td>
</tr>
<tr>
<td>1922-2004</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

**Figure 10** Survival rates of Philadelphia printing establishments over various time windows. Low survival rates indicate high degrees of turnover—and significant urban challenges. Rates represent the percentage of firms that persisted through the specified time window (Author’s calculation using *Industrial Directory* data).
between firm survival, access to transportation networks, and crime. All 1,557 companies were geocoded\(^4\) onto a digital map of Philadelphia, allowing the author to use spatial analysis software to assess the relationship between the surviving firms, transit networks, and crime data. Microsoft Access and Microsoft Excel were used to separate the firms that survived between 1975 and 2004 and those that didn’t survive into two distinct datasets.

**Using ESRI’s ArcGIS GIS software**, the average distance from both surviving firms and non-surviving firms to the highway and rail networks\(^5\) was calculated. The result, summarized in Figure 11, indicates that proximity to transportation networks is indeed correlated with firm survival. Non-survivors had a longer average direct distance\(^6\) to both highways and railroads, suggesting a relationship between the distance to a transportation network and firm viability. (See Figures 12 and 13 on the following

<table>
<thead>
<tr>
<th></th>
<th>Survivors 1975-2004</th>
<th>Non-Survivors 1975-2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVE Distance to Highway</td>
<td>3,524.7 ft</td>
<td>3,843.5 ft</td>
</tr>
<tr>
<td>AVE Distance to Active Railroad</td>
<td>2,179.1 ft</td>
<td>2,445.2 ft</td>
</tr>
<tr>
<td>AVE Shootings 2001-2004, 2,500 ft radius</td>
<td>47</td>
<td>49</td>
</tr>
<tr>
<td>MAX Shootings 2001-2004, 2,500 ft radius</td>
<td>178</td>
<td>231</td>
</tr>
</tbody>
</table>

**Figure 11** Transit network proximity, crime, and commercial printing firm survival 1975-2004. Data indicates that firms close to transportation networks survive in greater numbers, and that a higher incidence of crime in the area surrounding a firm reduces changes of survival (Author’s calculations using *Industrial Directory* data).

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\(^4\) Geocoding is the process of using Geographic Information System (GIS) software to associate an address with a discrete point on a map by searching through a database of known addresses and then deriving the address’ latitude and longitude. Essentially, this can be thought of as sticking virtual “pins” onto a map.

\(^5\) These digital basemaps of Philadelphia were obtained from the Pennsylvania Spatial Data Access archive, which can be found at [http://www.pasda.psu.edu](http://www.pasda.psu.edu).

\(^6\) These distances would have been further increased if a full network analysis was conducted to find the *street* distance to a transit network. Unfortunately, a true network analysis was beyond the scope of this study.
Figure 12 Printing firm survival vs. rail network. Companies symbolized with a large green dot survived between 1974-2004. Spatial analysis determines that these surviving firms are, on average, closer to railroads than firms that did not survive.
Figure 13  Printing firm survival vs. highway network. Companies symbolized with a large green dot survived between 1974-2004. Spatial analysis determines that these surviving firms are, on average, closer to highways than firms that did not survive.
pages for maps depicting survivors and transit networks, where these relationships can also be established visually). Interestingly, proximity to the active rail network is also predictive of firm survival—implying that the City’s rail network may still have some degree of utility.

Once the transit network analysis was complete, work began on analyzing the relationship between crime rates and firm survival. Working under the assumption that a shooting incident occurring within five blocks of an establishment is sufficient to raise concerns, a 2,500 ft radius was established around each of the firms. Then, ArcGIS was used to count the number of shooting incidents occurring within 2,500 feet of a printing establishment between 2001-2004. Firms that survived had a slightly lower average incidence of shootings within 2,500 ft; they also had a significantly lower maximum incidence. This suggests that lower crime rates may facilitate a firm’s continued operation in Philadelphia.

Certainly, this brief study is not rigorous enough to establish a firm causal relationship between transportation networks or crime and firm survival. Nor does it address the issue of firm migration—firms that moved their operations outside of Philadelphia County during the study period are also classified as “non-survivors.” Still, it does suggest casual relationships that help to illuminate trends identified in qualitative interview data.

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7 Also assuming that the average length of a city block is 500 ft.
8 This data on shootings was culled from a previous study the author conducted for the Philadelphia Inquirer. See “Shootings Ravage City Neighborhoods,” <http://go.philly.com/shooting/>. 
Case Studies

Data from the case studies certainly corroborates—and expands upon—trends observed in the empirical analysis of firm survival. We begin our consideration of the case studies by assessing their ability to take advantage of the city’s strengths while limiting its disadvantages, and conclude with an assessment of the contribution of innovation to survival.

Exploiting Advantages of the City

Tastykake and Bartash, as strong survivors of Philadelphia’s deindustrialization, have clearly been able to leverage at least some of the advantages of the city in developing their business.

Both Bartash and Tastykake have taken advantage of financial assistance provided by PIDC and DVIRC. Bartash has frequently used low-interest loans from a variety of sources to upgrade its presses and facilities (Simon). For Bartash, these low-interest loans are “not free money, but it’s the next best thing” (Ibid.). Tastykake has made extensive use of workforce training grants and low-interest loans to enhance the skills of its existing employees and to cull additional drivers for its distribution routes. By participating in these industrial development programs, both firms have made effective use of one of the city’s chief competitive advantages.

Tastykake has also efficiently utilized Philadelphia’s competitive advantage as a “brand name.” Melchiorre says that the fact that Tastykake is located in Philadelphia has offered it distinct “PR advantages” that it often leverages in advertising and
information campaigns. For instance, in its corporate literature, the company repeatedly references its images as a “true Philadelphia success story” in order to capitalize on many city residents’ affinity to successful city institutions (Tastykake “About”). Tasty Baking has successfully integrated its identity as a Philadelphia manufacturer into its public image, so that it might take full advantage of the city’s “brand name.”

Both Bartash and Tasty Baking have also effectively leveraged the Philadelphia’s workforce, another key competitive advantage of the city. The two firms have a strong relationship with their employees, which allows them to more effectively utilize their workforce’s loyalty, skills, and determination. Indeed, both Melchiorre and Simon agree that their companies not be as successful if their workforce was not as dedicated and highly skilled as their current set of employees.

**Mitigating Disadvantages**

Perhaps more important than a firm’s ability to most effectively exploit the city’s competitive advantage, however, is its ability to mitigate and defuse the city’s specific disadvantages and prevent them from interfering with business operations.

For instance, when Bartash found itself in the midst of heavy drug-related crime several years ago, it immediately contacted its City Council representative. At the same time, the company spent more than $50,000 to install a security system incorporating electronic locks and a comprehensive surveillance system in order to ensure the safety of their employees and allay fears. The facility was made so secure that Simon says that

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9 For more detail, see discussion of these incidents in the preceding section regarding crime as an urban disadvantage.
the company is sometimes referred to as “Fort Bartash” in the surrounding neighborhood. Efforts by the City Council on behalf of Bartash spurred the Philadelphia Police into motion. Increased patrols and enforcement in the surrounding area sharply reduced the crime even below previous levels (See Figure 14). By proactively addressing the issue with their City Council representative and quickly moving to install an upgraded security system, Bartash was able to relieve the concerns of its employees and prevent the situation in the surrounding neighborhood from adversely affecting normal business operations. Here, Bartash was able to effectively mitigate an urban competitive disadvantage.

Both Tastykake and Bartash have also worked diligently to overcome the disadvantages posted by their limited opportunities for physical expansion. Instead of resigning themselves to existing production processes for lack of expansion space, both companies have actively worked to creatively maximize existing space—and have not allowed these space constraints to impede their efforts to streamline and experiment within their manufacturing processes. By using their space effectively and creatively,
both companies have been able to mitigate disadvantageous restrictions on physical expansion of their factories.

**The Importance of Innovation**

Beyond their ability to exploit the strengths of the city and overcome disadvantages, there is another common thread that ties Tastykake and Bartash together—as well as many of the other 1,100 businesses still that exist today: innovation. The firms that did survive have always been ready to experiment, innovate, and critically examine their operations in pursuit of greater efficiency, higher profits, and a better product. Perhaps the best way to illustrate the importance of innovation to survival is to examine the role of innovation in our two case studies.

**Bartash’s Reinvention**

To a large degree, Bartash’s corporate reinvention and innovation was spurred by the loss of a major contract in 1995. Prior to this, the weekly shopping circular of Shop-Bag, a local supermarket chain, constituted almost a third of Bartash’s business (Bennett). In the mid-1990s, Shop-Bag’s parent company decided to consolidate the chain’s circulars with another chain that it owned—and sent the circular printing contract out for re-bid. Bartash, then a tiny company with small economies of scale, knew that it would not be able to compete for the contract. Facing the loss of $2 million of its $5 million in annual sales, Bartash decided that it needed to set out in a new—and innovative—direction (Bennett).
Simon boldly set out to capture the color niche publication market in the Philadelphia region. These small, highly targeted publications were a lucrative market for the Bartash, since their small- to medium-sized press runs could easily be accommodated using the existing presses. But, most of these publications were digitally prepared and produced—requiring Bartash to complete overhaul its pre-press department and invest in new computer technologies.

As the company’s client base grew, it operations “organically” grew along with customer demands (Simon). A mailroom was added to prepare bulk mailings, as well as finishing and inserting lines. Previously, these functions had been handled by external contractors—but, as demand increased for the services, Simon sensed a new market and decided to expand to bring some of these operations in-house. At the same time, Bartash also added dozens of press units to their production line—allowing not only higher throughput, but also more color pages in any given publication. Over the course of 10 years, they expanded from the 12 original press units to 42 units, while experiencing an attendant increase in sales from $5 million annually to $40 million in annual sales.

Even through the expansion, Simon says that he always kept a close eye on efficiency and productivity—and has worked to enhance efficiencies through innovative management. Simon implemented a goal-based production system, in which all print jobs are graded by a supervisor on waste, speed, and efficiency. Incentives are defined for certain grade goals—sometimes these incentives are realized as bonuses, other times they come in the form of investments in the workers: for instance, after recently meeting
a yearly efficiency goal, Simon installed air conditioning for workers in the press room. Simon also continues to insists on process innovation to improve efficiency. Recently, direct-to-plate machines were installed in the pre-press departments to produce printing plates directly from computer files. While expensive, these eliminated the manual process of photographing and then developing printing plates—which considerably improved the efficiency and speed of the pre-press process, allowing greater throughput on the presses.

Simon has also pushed Bartash to establish stronger contacts in the regional market. The advent of both digital publishing and the Internet has allowed Bartash to expand its reach, since customers no longer have to deliver mechanicals\textsuperscript{10} directly to the plant. By actively pursuing leads and helping actually new customers to digitize their production workflow, the company has developed a customer base that runs from Connecticut through Florida. This innovation in reaching regional customers has greatly expanded the Bartash’s potential customer base.

This constant innovation has certainly come at a price: namely, lower profits.

“We spent a lot of money and capital: almost everything we make in a year is reinvested right back into this company.” But, Simon says, this is critical to success: “You constantly have to keep reinvesting in technology.” He adds that reinvesting in employees is also critical to success: small investments in training and supervision can dramatically increase productivity and reduce waste, Simon claims.

\textsuperscript{10} Physical page layouts (that is, a board with a page to be printed out on top of it) are known in the printing industry as “mechanicals.”
Here, Bartash has accomplished its success through a combination of innovation in process, product, and market—as well as through the consistent application of sound business practices.

**Process Innovations at Tastykake**

Though innovation has been a critical component of Tastykake’s success, it has come mainly in the form of process innovation—rather than innovation in the firm’s product or market. This, Melchiorre, says, is a bit strange for a baking company:

“I worked at Peppridge Farm for three and a half years before I came here, and innovation was important to us—it was the lifeblood of the business. So, if you didn’t have that new Milano, and that new goldfish, and all those new things every year, you were in trouble. The interesting part about Tastykake is that there’s been some level of innovation—but, other than getting into the donut business, none of it has been big. This company was built on and is still pretty much dependent on the Krimpet, the cupcake, the candy cake, and the pie.”

So, though there have been slight shifts and many additions to the Tastykake product line (including the addition of a “diet” series) Melchiorre doesn’t think the companies success in its product line has been rooted in as “much innovation as a really good quality product at a really good price.”

But, innovations and increased efficiencies in manufacturing operations have also had a major part in the company’s success. Much of this change was spurred by a revolution in the 1950s and 60s where the power dynamic between commercial bakers and retailers was inverted. Prior to the 1950s, commercial bakeries “were used to controlling distribution and controlling varieties” (Melchiorre). If a store didn’t sell
enough Tastykake products in a given week and too many stale packages had to be removed, distributors would reduce the number of packages on the store’s shelf. Now, major stores demand that shelves are completely filled at all times—even if replacing stale packages proves to be a major expense for Tastykake. “From an economic standpoint, this means that our stale [costs] are higher—which means that we’ve got to manage our costs more efficiently, which means that the supply chain has to run a lot tighter” (Melchiorre). By implementing innovative strategies to run the manufacturing and distribution operations more efficiently, Tastykake was able to effectively shift with the marketplace as it transitioned from a manufacturer’s market to a retailer’s market.

Tasty Baking has also shifted along with marketplace as it has become increasingly regional. By opening distribution routes through Pittsburg, Cleveland, and parts of West Virginia, Tastykake has started to tap into a larger and more lucrative market. Regionalization is “a decent change,” says Meclchiorre, “but all of those new territories and markets are incremental sales. I think that it keeps us healthy; it lets us be able to stay here and afford our bakeries. It’s a bigger part of our future than part of our past.” These innovations in market areas—however slight—are the sorts of innovations that must be made if a company is to remain successful in an increasingly dynamic marketplace.

As at Bartash, efficiency is paramount at Tastykake. “We operate the company really efficiently and really tightly, and we’re always worried about profitability. We’ve made a lot of changes [since] this management team has been here three years…” These
changes, innovations, and increased efficiencies are some of the major factors that have allowed Tastykake to survive for so long.

Both of our case studies demonstrate that manufacturers can survive, regardless of challenges in the external environment and marketplace—as long as sound, innovative, and progressive business practices are employed. A brief consideration of the Philadelphia weaving industry’s demise reminds us of the consequences when industries fail to innovate and adapt to change.

*The Philadelphia Weaving Industry*

Philadelphia’s upholstery and drapery weaving industry is one of the city’s oldest manufacturing sectors. For some time, Philadelphia was widely known for producing the top-quality woven upholstery and drapery. According to a textile industry expert, “the upholstery fabrics produced in Philadelphia represent a high type of technical designing and weaving skill” (Balderston 7).

Yet, by the 1930s, the weaving industry found itself in dire trouble. In the mid-1920s, new weaving firms started to spring up in the “rural towns of New Jersey” and in the South (10). In these new plants, “workers received lower wages for longer hours of work, and weavers frequently ran more than one loom,” and so these firms could produce upholstery and drapery for a fraction of a Philadelphia factory’s cost (*Ibid.*) Philadelphia manufacturers, however, were unwilling to make fundamental changes in their production processes. Some tried to slash prices, but, saddled with high-cost union labor, the Philadelphia firms were simply unable to compete.
In the early 1930s, the leaders of Philadelphia’s upholstery weaving industry asked scholars at the Wharton School to offer their thoughts on how the industry might be salvaged. In their final report, the professors implored the Philadelphia manufacturers to adapt their factories to changes in the market place and to consider innovations in the production processes: “The problem here, therefore, is not merely a local one; it is the problem of an older community seeking a satisfactory adjustment to a changed situation involving more severe competition. If the manufacturers and the unions in Philadelphia do nothing but ‘let nature take its course,’ the study of the Philadelphia upholstery industry points to a difficult path for both employers and workers (163).

Few manufacturers, however, were willing to take the Wharton professor’s advice, and insisted that the problems in the industry were only an anomalous blip in the market (Ibid.). The firms that did not choose to adapt were slowly eliminated one by one—until there were only 24 left in 2002. These 24 establishments that persist remain as a sober reminder of the importance of investment, innovation, and adaptation.

In this chapter, the model of industrial challenges has been pushed beyond that of the traditional deindustrialization model, and revised to more accurately reflect the problems and issues facing manufacturing today. Our case studies remind us that if a firm is to survive in the city, it must be innovative, it must implement sound business practices, and it must be able to harness the advantages of the city to its own ends while mitigating the urban environment’s challenges. This, however, leaves us with one
important gap in our understanding of this updated version of the deindustrialization narrative: how have these shifts in challenges and problems impacted the current state—and future prospects—of printing and food manufacturing as a whole in Philadelphia?
CHAPTER THREE

The Current State and Future Prospects for Philadelphia’s Industry

How have the challenges facing industry detailed in the previous section impacted the decline of Philadelphia’s manufacturing industries? What can statistics tell us about the state of Philadelphia’s manufacturing base once the era of deindustrialization had passed? Where are Philadelphia’s manufacturing industries headed? This chapter uses data from the U.S. Census Bureau’s Census of Manufactures\(^1\) to present a variety of indicators—both reported and calculated by the author—to discuss the current state, historical trends, and future prospects for both Philadelphia’s industries as a whole, as well as the individual printing and food manufacturing sectors.

**Prospects for Industry in Philadelphia**

Since 1972, manufacturing has continued its precipitous decline in Philadelphia—both in absolute terms, and relative to the United States as a whole. At

\(^1\) Formally part of the Economic Census since 1992.
the height of its industrial strength in 1914, Philadelphia had 8,454 manufacturing establishments; in 2002, only 1,142 remained (See Figure 15, previous page). In 1905, Philadelphia was once home to 3.3% of the nation’s manufacturers; in 2002, it contained a mere 0.33% of all manufacturing firms (See Figure 16). In 1905, Philadelphia accounted for 3.99% of the total manufacturing output for the United States; in 2002, the city was responsible for 0.29% of the nation’s total output.

With the decline in the number of manufacturing establishments there has been an attendant reduction in the number of employees (See Figure 17). Philadelphia now employs 42,922 persons in factories; this stands in sharp contrast to Philadelphia’s

![Figure 16](image_url) Philadelphia’s position relative to the nation as a whole, 1905-2002. Manufacturing has continued to slowly decline, even after the conventional narrative of deindustrialization ends.

![Figure 17](image_url) Employment in Philadelphia manufacturing concerns, 1905-2002. A sharp drop in manufacturing employment echoes the abrupt decline in the number of city manufacturing establishments.
peak employment: 328,630 persons in 1947.
Interestingly, the average number of employees per firm—which peaked at 65 in 1967—has returned to levels similar to those at the turn of the century (See Figure 18). Data indicates that Philadelphia currently has a slightly higher average firm size than the nation—a healthy sign, given that Philadelphia’s average firm size shrank below the nation’s during its period of deindustrialization.

Inflation-adjusted value produced by Philadelphia manufacturers has also returned to levels similar to those at the turn of the century: Figure 19, showing changes in value produced over time, shows an anomalous blip at the center. This blip, which begins near the onset of Philadelphia’s period of massive deindustrialization, likely

Figure 18 Average number of workers per firm, Philadelphia vs. United States. The size of the average Philadelphia firm tracks quite nicely with the size of the average U.S. manufacturer, except for a large dip in Philadelphia’s average size at the end.

Figure 19 Philadelphia’s inflation-adjusted value produced. A peak in the 1960s suggests manufacturers desperately trying to keep up with the competition before dying or leaving.
represents existing manufacturers attempting to thin their workforce and cut costs in an attempt to compete with other national and international concerns. As these businesses died off or left the city, Philadelphia’s inflation-adjusted value produced has returned to a nominal level.

None of these indicators, however, suggest a future expansion of Philadelphia’s manufacturing enterprise. If anything, they suggest a continued decline—or a stagnation for several years. Standard regression models applied to indicators such as the number of firms or the number of employees yield negative (or zero) predictions, indicating that a more nuanced model incorporating environmental variables is necessary to correctly forecast trends in manufacturing. Such analysis, unfortunately, is beyond the scope of this thesis.

**Prospects for Printing and Food Manufacturing**

Trends for the printing and food manufacturing sectors strongly resemble the trends for Philadelphia as a whole: both of these industries saw sharp decreases in both the number of firms and the number of employees between 1905 and 2005. As

![Figure 20](image-url) Number of printing and food manufacturing establishments in Philadelphia, 1905-2002. The small increase in food manufacturing between 1992-1997 is likely an error due to changes in industry classification schemas.
shown in Figure 15, both sectors declined alongside Philadelphia as a whole. A closer look at these industries in Figure 20 reveals a more nuanced pattern of decline. The small increase in the number of food manufacturing establishments can likely be attributed to error introduced by the Census Bureau’s transition from the SIC to NAICS industrial classification systems. The printing industry has declined at an almost constant rate since 1963.

Average firm size indicators are of some interest in Philadelphia’s printing and food manufacturing industries. Figure 21 shows Philadelphia’s average printing firm size, plotted against the national average for printing firm size.

![Figure 21](image1.png)

Figure 21  Average size of printing firm, 1905-2002. Philadelphia’s printers employ fewer workers than is average for the country, and are significantly smaller than the average city manufacturer.

![Figure 22](image2.png)

Figure 22  Average size of Philadelphia food manufacturing firms, 1905-2002. Philadelphia well exceeded the national average size of a food manufacturer, until the number of employees per firm crashed in 1997.

2 For more information on issues raised by this transition, see the Census Bureau’s NAICS website at <http://www.census.gov/epcd/www/naics.html>.
and the average size of a Philadelphia firm. This chart reveals that the average printing firm in Philadelphia is much smaller than the average Philadelphia firm. It also shows that, since 1937, the average Philadelphia printing company has had fewer employees than the average U.S. printing establishment. The firm size for food manufacturing, shown in Figure 22, demonstrates that Philadelphia’s food manufacturing companies were, on average, larger than the average U.S. food manufacturing company until 1992—at which point Philadelphia’s average food manufacturing firm size sharply declined. Since 1947, an average food manufacturing firm has been larger than the average Philadelphia firm.

Though forecasts for the printing and food manufacturing industries are almost as dismal as forecasts for Philadelphia’s manufacturing enterprise as a whole, these sectors are increasing as a proportion of all city manufacturers. These sectors have been declining at a rate slower than the total decline of manufacturing in Philadelphia—and so have increased their share of manufacturing in the city as a whole, as evidenced in Figure 23.
Capital Investment and the Future of Printing and Food Manufacturing

The future of the printing and food manufacturing industries in Philadelphia becomes especially grim when the issue of capital investment is considered. Capital expenditures—the money spent annually on machinery, facilities, and other items used in the manufacturing process (excluding raw materials)—are critical to the health of a manufacturing concern. As the case studies in Chapter 2 demonstrated, ongoing reinvestment is a key part of growing and sustaining a manufacturing firm in a dynamic marketplace. Failure to make these adjustments and adaptations can cause a firm to become less efficient or less capable than its competitors—as evidenced by the brief study of Philadelphia’s weaving industry at the conclusion of Chapter 2.

Since data on capital investments into businesses started being collected in 1963 as part of the Census of Manufactures, the ratio of capital expenditures to revenue collected in Philadelphia has always lagged behind the national average for both the

![Figure 24](image-url)
printing and food manufacturing sectors (see Figure 24). Furthermore, between 1992 and 1997, capital expenditures fell in both sectors. Not only are capital expenditures proportionally low, but they are moving in the wrong direction. Though it is possible that these lower capital expenditures are a result of the high tax burdens imposed on Philadelphia businesses, these low levels of investment are troubling.

It is clear that Philadelphia’s printing and food manufacturing are not properly investing in their future, which further diminishes these sectors’ chances for future growth and success.

The Future of Land Use: A Study in Spatial Analysis

In Chapter 1, a case was made for the competitive advantage of the single-story building. If single-story buildings are indeed advantageous, long-term trends in industrial location should reflect a migration away from areas containing multi-story buildings to areas with a high percentage of single-story buildings. By extension, we should be able predict future land use patterns if this is indeed true.

To test this hypothesis, a dataset was developed containing the names and addresses of 1,557 printing establishments found in the 1922, 1940, 1959, and 1975 editions of the state Industrial Directory and the 2004 edition of Dalton’s Metro Philadelphia Directory. Using ESRI’s Spatial Analyst, a density raster was generated for each year based on the address data, so that the density of printing establishments could be tracked over time. The completed density maps, found in Figures 25-29 (following

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3 For more information, see the “Competitive Disadvantages of Taxes” discussion in Chapter 2.
4 This same dataset was used to perform the empirical analysis in Chapter 2 suggesting loose correlations between transit networks, crime, and firm survival.
5 The raster represented a Kernel density with a cell size of 100 ft. and a search radius of 2,500 ft.
Figure 25  Density of commercial printing establishments in 1922.
Figure 26  Density of commercial printing establishments in 1940.
Figure 27  Density of commercial printing establishments in 1959.
Figure 28  Density of commercial printing establishments in 1975.
Figure 29  Density of commercial printing establishments in 2004.
pages), use an equal interval classification scheme to control for fluctuations in the total number of printing establishments between data points.

It is clear from the series of maps that the nucleus of Philadelphia’s printing industry originated in Center City. From there, it spread northward, westward, and, most recently into northeast Philadelphia. To tease out more subtle relationships between the 1922 and 2004 rasters, Spatial Analyst was used to calculate a difference raster. This raster was then imported into ArcScene to create a three-dimensional map depicting the changes in density between 1922 and 2004 (see Figure 30).

**Figure 30** A three-dimensional rendering of Philadelphia depicting changes in the density of printing establishments between 1922 and 2004. Red and orange represent decreases in density; hues of blue increases in density. The three-dimensional height indicates magnitude. The large “crater” in Center City represents the most significant decline in density in the study. This map may suggest that businesses are choosing to migrate away from industrial areas primarily comprised of multi-story facilities to areas such as the Northeast, where most industrial buildings are single-story.
The data appears to support the assertion that printing firms are migrating towards areas where there are more single-story structures. As illustrated on the map, there has been an extremely sharp decline in Center City—an area characterized by multi-story structures—and increases in the density of establishments in West Philadelphia and Northeast Philadelphia, areas with high concentrations of single-story buildings. Though direct causation is difficult to establish without additional data, the patterns observed do support the original hypothesis.

This shift in density is also likely due in part to changes in real estate prices between 1922 and 2004. As depicted in Figures 31 and 32, a series of maps illustrating changes in Philadelphia residential real estate prices between 1998 and 2004, the value of Center City properties has substantially increased as the district has become increasingly residential, increasingly corporate, and increasingly upscale. Many printing firms looking for a new location would likely be deterred by high real estate prices in Center City: unless a manufacturer needed direct access to clients in Center City, there would be little reason to pay the premium for locating in the district. These firms may have instead found locations in West Philadelphia or Northeast Philly. Some printing companies that rent space in Center City may also have been displaced by rising rents spurred by the area’s gentrification.

Regardless of the reasons for the density shifts, the maps clearly indicate that printing companies are increasingly favoring locations outside of Center City. In crafting industrial development programs, then, it is important to remember this spatial preference.
Figure 31  Residential home sale prices in 1998, showing Center City properties as significantly more valuable than the surrounding areas.
Figure 32  Residential home sale prices in 2004, showing Center City properties as even more valuable. This suggests that printing firms may be deterred from locating their establishments in Center City (unless, of course, their customer base resides in Center City) given the higher real estate prices. (Data from a previous study by author for The Philadelphia Inquirer.)
All of the indicators surveyed in this chapter speak to an urban industrial in
distress, desperately attempting to recover from a precipitous decline. The numbers
make it clear that Philadelphia’s manufacturing base will continue to decline—or, in the
very best case scenario, stagnate—for the foreseeable future. The dismal state of
Philadelphia’s manufacturers is not a point of contention. But there is one obvious
question that remains here, though: is there anything that can be done to help reverse
the decline of manufacturing within Philadelphia?
Census data presented in the previous chapter clearly indicates that Philadelphia industry still continues to decline today—suggesting that Philadelphia’s industrial development programs are ineffective.

Yet, we have seen PIDC and DIVRC’s success at the level of the individual firm in our case studies. These industrial development programs played a significant role in assisting with the development and growth of both TastyKake and Bartash—and were even identified as competitive advantages of the city. At the individual level, it seems that two-pronged assistance from PIDC and DVIRC can be successful. The problem, however, is that PIDC and DVIRC’s industrial development programming does not address the fundamental problems lurking behind industrial failure and migration.

Even in the early days of PIDC, critics pointed to slippages in Census statistics as indicative of PIDC’s failure to address the true problems of industrial development in the city. “…Statistical data…cannot lend credence to the hypothesis that the PIDC has indeed solved the problem of industrial exodus. The most definitive fact that could be stated concerning PIDC efforts is that it has cut the magnitude of industrial loss” (Carpoletti 58). The fact that industry continued to decline sharply, after Carpoletti wrote in 1971 lends even more credence to his critique of PIDC’s failure to address the root problems causing industrial exodus.
So if PIDC-style investment initiatives are ineffective at combating the total problem of industrial disinvestment, how then do we address Philadelphia’s problems of industrial retention and development?

*Encouragement of capital investment beyond real estate.*

In the latter part of Chapter 2, the importance of capital reinvestment was underscored in accounts of our case studies. Both companies recognized that, unless they continued to invest in updated technology and more efficient production processes, they would not survive.

Other urban manufacturers are no different in their need to constantly reinvest, update, and enhance their facilities and processes. Yet, data present in Chapter 3 shows that Philadelphia is reinvesting a significantly smaller share of its revenues than the United States as a whole. Philadelphia’s leaders must recognize this shortcoming, and move to address it.

This failure to properly reinvest in facilities and production has already brought the demise of many Philadelphia manufacturers. A 1990 Planning Commission study of industry in Philadelphia found that “the majority of manufacturing firms and jobs lost to the city…is not due to firms moving out of the city, but rather to the shutdown of older, outmoded firms” (PCPC 1990 45). The report posits that most of these firms closed due to “poor management and lack of capital for modernizing plants and equipment,” (*Ibid.*). It is important to note that the critical point of failure for these businesses was not the regional economics of suburbanization, but rather the lack of
reinvestment in Philadelphia’s manufacturing establishments. The city cannot blame anyone else—or any external factors—for these failures.

Programs such as PIDC do encourage capital reinvestment by offering low-interest loans—but mainly to those interested in upgrading their facilities or investing in real estate. The programs that exist to support investment in machinery and production processes merely act as *facilitators*, rather than *catalysts* for capital reinvestment. That is, the loans serve to facilitate existing reinvestment plans—rather than stimulate new capital investment plans in companies that have not been doing enough to reinvest.

PIDC reinvestment programs do not reach out to firms that have been insufficiently reinvesting in their future; rather, they only reinforce the reinvestment patterns of companies that have been making judicious capital investments.

Philadelphia’s leaders must work to develop some sort of policy instrument to stimulate capital investment in companies that are not making sufficient investments on their own. For instance, a tax abatement for firms that are directing more than, say, 6.5% of their revenues into capital reinvestment might encourage capital expenditures in manufacturing firms that might not otherwise choose to reinvest. Regardless of its ultimate form, the city must move to develop programming that encourages meaningful reinvestment in areas of the firm beyond simple real estate investment.

We have seen the positive outcomes of solid investment practices in our case studies. The city—and other authoritative institutions—must encourage others to make similar reinvestments if they are to have any hope of retaining and developing industry within Philadelphia.
Realign the industrial development models with current challenges.

The contemporary advantages and disadvantages of the city cataloged in Chapter 2 are particularly noteworthy in that they are fundamentally distinct from the challenges of the urban environment that spurred deindustrialization (introduced in Chapter 1). This suggests that Philadelphia has transitioned to a sort of “post-deindustrialization” phase that presents unique challenges distinct from those in the 1950s and 60s.

Indeed, the biggest problems facing Philadelphia manufacturers have shifted more towards problems of the “urban environment” genre (such as crime, taxes, and blight) than problems of an economic sort or a regional sort (as in the classic understanding of deindustrialization). With the assistance of PIDC’s low-interest loans, some of the economic challenges of locating in the city (such as higher construction costs and higher land costs) are mitigated. Suburbanization is a much less powerful force than it was in the 1950s or 60s. With the issues of economics and suburbanization largely addressed (or rendered irrelevant), there is a greater emphasis on remaining problems of the “urban environment.”

As early as the 1950s, the UPenn Urban Studies Institute recognized that “a general complaint of industrialists regarding location in the City of Philadelphia has been directed toward the ‘Urban Environment.’ This complaint seems to express not only a dissatisfaction with run-down and obsolete buildings and with congestion, but also a dislike of dirt, dilapidation, and slum conditions in general” (Institute 104). The institute’s report published in 1956 urged planners to consider that slums areas around
factories could very well serve as an impetus for their suburbanization (104). Twenty
years later in 1971, an MBA student at Drexel also warned that “the deteriorating City
environment…must be improved before industry will genuinely feel at home in
Philadelphia. Individuals as well as industry will not long remain in an environment
characterized by economic and social decay” (Carpoletti 58-9). From interviews
conducted with industry leaders, it is clear that not much has changed in Philadelphia
since either of these warnings were issued.

Wider academic works—such as a 2002 study of industrial firm migration in
Europe—have echoed these casual observations that blight can induce industrial
migration. After controlling for other variables, researchers found “…that firms that
face a high location-stress and/or see an urgent need for their present environment to be
revitalized will tend to have a high mobility likelihood” (Pellenbarg 138). Simply put,
firms that face challenges such as crime or blight are highly likely to move away from
such problems.

Thus, the idea that the urban environment has something to do with firm success
and failure is not novel. But the idea that development programming might incorporate
measures to address broader urban problems is—particularly in Philadelphia.

From the start of its intervention in industrial development, the City government
viewed the problems in industry through a very narrow lens. The challenges facing
manufacturers were thought of as isolated, parochial problems specific to industry—and
certainly never considered part of a broader urban system. This view of “industrial
problems” as distinct from “neighborhood problems” or “urban problems” persists
today, and serves as one of the most significant barriers to progress in industrial
development. Until the City realizes that manufacturers are affected by taxes, crime,
blight, and other urban problems in similar ways as residents, Philadelphia will
continue to slowly bleed off manufacturing enterprise.

PIDC’s programming must be re-oriented to consider problems with the “urban
environment” as legitimate issues that will either force manufacturers out of the city—or
simply drive them out of business. PIDC must understand industry and manufacturing
as but one small piece in a larger urban mosaic, a piece that is inextricably bound up
with issues raised by other pieces of the mosaic. PIDC must modernize its perspectives
on industrial challenges to move beyond the classic model of deindustrialization and
towards addressing the new, contemporary challenges identified in Chapter 2.

Encourage innovation among manufacturers.

Innovation is just as important to a manufacturer’s success as sound
reinvestment. If a firm is not constantly assessing its practices and tuning them to
produce the best product for the maximum profit, it will soon be eclipsed by a
competitor who is continually innovating. Philadelphia’s weaving industry is a prime
eexample of this concept: Southern textile manufacturers eventually drove Philadelphia’s
weavers out of business when they refused to innovate or adapt their methods to a
changing marketplace.¹

The first chapter of this study underscored the importance of innovation in
Philadelphia’s ascent to industrial renown—and the unique circumstances that fueled

¹ For more details on the demise of Philadelphia’s textile industry, see the final section of Chapter 2.
this innovation. Though the Franklin Institute has now become a tourist attraction and the network of small manufacturing firms working collectively collapsed when the city deindustrialized, innovation is still as vital as ever to the health of the City’s manufacturing sector.

Many businesses, such as Bartash and Tasty Baking, have been firmly committed to meaningful, continuous innovation for some time. But others—and certainly those who have found themselves “outmoded”—have lagged behind. Here, again, we see a critical gap between facilitation and encouragement in PIDC and DVIRC programming. DVIRC is certainly well equipped to provide technical assistance and ideas to promote innovation, and PIDC is able to help finance the capital requirements of these innovation and development programs. But this development programming merely facilitates the work of companies already looking to innovate; it does not encourage those who are failing to innovate to reassess their products and processes.

As with problems of reinvestment, those concerned with industrial development in Philadelphia must find ways to encourage firms to engage in meaningful innovation of both process and product. Otherwise, “outmoded” factories will continue to disappear and shut down when overtaken by innovative competitors who have been able to realize significant efficiency and quality gains.

Here, we find ourselves with a series of recommendations designed to tackle some of the current root problems that result in industrial migration and firm failure if left unaddressed. Implementing these suggestions will not, of course, restore
Philadelphia to its post of “Workshop of the World,” for the globalization of industry over the past several decades has shifted the heavy manufacturing that served as Philadelphia’s industrial foundation overseas. Further, it will be exceedingly difficult to attract new industrial investment to the City of Philadelphia in an increasingly competitive global economy. But, this does not preclude the city from pursuing industrial development by retaining, strengthening, and growing existing local firms. By addressing the urban problems of crime, lack of available industrial land, and taxes—and by encouraging innovation and reinvestment—Philadelphia may be able to stem the steady decline in its industrial base to pursue a citywide program of industrial development, rather than industrial disinvestment.
Works Cited


