

**Looking Back to Look Forward:
What Can We Learn About Urban Development from Philadelphia's 350 Year History?**

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Introduction

Many observers of Philadelphia view the city as failing. The 1990s marked the fifth consecutive decade of population decline, and the 1,517,550 people counted in the 2000 census left the city two percent below its 1910 level. When the population has not been so small in almost a century and the median house price of \$59,700 (also from the 2000 census) is well below replacement cost, it is not unreasonable to conclude that something has gone awry.

However, it is important to understand that changes which challenge the foundations of a city's prosperity are not uncommon, and some cities never fully recover from them. For example, Philadelphia is one of eight of the largest 15 cities as of 1950 that lost population in each of the five ensuing decades as manufacturing deurbanized. Other cities have been more successful in responding to similar shocks. One recent economic history of Boston shows that city's current rejuvenation represents the third time it has had to reinvent itself.¹ And, New York City recovered from a loss of over 800,000 people in the 1970s to achieve its highest population ever in 2000, along with skyrocketing house prices.²

¹ Glaeser (2005).

² It is important to resist the temptation to interpret these differences through a lens in which growth in one place is viewed as good and decline as bad. As Robert Margo much more eloquently writes in his discussion, there is no reason to believe that Philadelphia's decline is inefficient. Some places adapt well and thrive in response to shocks, while others do not—for all sorts of reasons. One way to think about this is to ask whether we should favor the use of federal resources to reverse Philadelphia's decline. The answer from economics is 'no'. There was no significant social loss to the nation from the decline of Dodge City after the rise of railroads made it less efficient to drive cattle to market on horseback, and the same is likely to be true for Philadelphia following the deurbanization of manufacturing. Economists do not favor subsidizing failing firms in competitive industries, reasoning that it is better for their resources to be deployed in more productive enterprises. If the market for the location of firms and households is competitive, and it certainly appears to be, the same should hold for declining cities. That said, there could be special transition costs in an urban context. A city that is failing because of (say) poor political leadership may result in valuable durable assets such as housing stocks being depreciated far faster than optimal. While that social loss indicates we want collections of fixed assets efficiently managed even in

This paper investigates the changing economic conditions that have buffeted Philadelphia over its long history and analyzes how and why it responded to those shocks in the ways it did. While heavily influenced in its focus by urban economics, this paper is a historical analysis at its core. Besides suffering the disadvantage of an author who is an urban economist, not a historian of the economic or more traditional kind, focusing on the urban history of one place has the drawback of not supplying the data that readily allow comparison across different cities to test some model of growth or decline.

While standard statistical analysis cannot be done in this context, a detailed investigation of a single city does have its advantages. For example, it affords the opportunity to evaluate the actions of certain groups (e.g., political leadership) or the adoption of certain policies (e.g., the local wage tax) that usually are not possible in the standard statistical investigation. By providing a richer picture of the underlying context in which certain people operated or policies were adopted, a deeper understanding of their roles hopefully can be achieved.

Philadelphia's history shows that it became a great urban center because it was twice able to reinvent itself following shocks to its fundamental economic underpinnings. The first occurred at the end of the 18th century when New York supplanted Philadelphia as the nation's trading and financial capital. The other soon followed early in the 19th century when the westward expansion of the country and the rise of railroads facilitated the proliferation of competing regional production centers in a much larger nation in which Philadelphia no longer was the keystone connecting the states. Despite these challenges, Philadelphia was to thrive as a manufacturing center and remain the country's

the face of an exogenous trend decline, it seems likely that any resource injection to the failing area would not be productive, absent some truly enforceable agreement for fundamental reform.

second city until Chicago supplanted it in 1890. During this time, the city rapidly diversified its industrial base, and its history is consistent with the proposition that cities benefit from economic diversity.³

A series of shocks throughout the 20th century, including the deurbanization of manufacturing, the rise of household and firm mobility that allowed both suburbanization and the spread south and west to warmer climates, and racial problems and white flight, set the city on a path of long-term decline that has not been reversed to this day. The modern decline of Philadelphia appears to have begun by 1920, with most subsequent growth associated with temporary factors such as war production during the 1940s.

The remainder of the paper not only provides the historical detail behind the two instances of urban regeneration and the more recent case of continued decline, but presents a template of factors that help account for how and why the city responded to external shocks at different times in its history. When Philadelphia was able to successfully respond in the past, an important reason significant change could result was the presence of a large and relatively high skill work force. Having an appropriately talented and flexible labor pool helps make it feasible for entrepreneurs to start new lines of business. One also needs a cost-effective and transparent local business environment in which such entrepreneurial risk-taking activity is encouraged and can be appropriately rewarded.

Philadelphia's inability to reinvent itself in the second half of the 20th century reflects problems in both areas. The city has lagged its key northeastern competitors of Boston and New York by any of the standard measures of human capital for many decades. Its 39 percent share of adults who did not graduate from high school now is

³ Jacobs (1969).

double Boston's 20 percent share according to 2000 census data. The fact that this differential has continued to widen is important and potentially foreboding in an era in which human capital and skills have become the key drivers of urban growth.

In addition, the city has not been able to provide essential infrastructure and public services at low cost for nearly half a century. While this trait is shared by many large urban centers, the problem is acute in Philadelphia. Taxes are very high and are not offset by the provision of high quality services. Compounding this is a poorly conceived local tax system that relies heavily on wage taxes, the economic incidence of which falls on city employers because they must pay competitive wages to labor that is highly mobile within the metropolitan area. The local wage tax has been well above 3 percent for three decades and effective property taxes have averaged over 2.5 percent over the same period, with one recent study concluding that increases in the rate of the local wage tax cost the city over 20 percent of its employment base between 1971-2001.⁴ With high human capital service sector firms (e.g., finance, insurance, law) likely to be very mobile within a metropolitan area, the shift from manufacturing to services probably heightens the importance of the quality of local public sector.

While corruption is much on the minds of Philadelphians today because of a couple of high profile scandals, this paper concludes that is not a primary reason the city has become such a costly place in which to live and work. Three other forces have combined to create a large and inefficient system of transfers that is chiefly responsible for the city's high cost structure. They are powerful local public employee unions that are very successful rent-seekers, weak local politics that allow parochial neighborhood-

⁴ See Haughwout, et. al. (2004). Large effects such as this are consistent with the best recent research which concludes that the regulatory environment for business can have economically significant impacts on the location of manufacturing activity (Holmes (1998)).

specific desires to help drive non-wage or benefit spending, and poverty-related responsibilities associated with being a county government in a state that never made up for reduced federal aid to cities.

Philadelphia's difficulty in responding to negative shocks in its modern era also appear to reflect the declining value of geography in influencing the fate of urban areas. The city's two earlier transitions were aided by geography in important ways that have not been nearly as helpful in modern times. One is in terms of proximity. The city was greatly helped by its centrality in the colonial era. Being part of the Keystone State connecting the northern and southern colonies, Philadelphia was near to both. However, this general aspect of location has become much less valuable in modern times with falling transportation costs. Another sense in which geography has played a key role in Philadelphia's history is in terms of its local physical features. The city is sited between two great rivers that had a huge impact on its growth, and long attracted manufacturers who valued the lower shipping costs that water access afforded. The value of this aspect of location also dropped substantially over the second half of the 20th century as transportation costs fell and manufacturing first deurbanized and then went abroad.

These factors starkly illustrate how the context in which the economic meaning and value of location has changed. This is important because cities are all about location is the sense that everyone and everything has to be somewhere. And, in the modern era of high factor mobility, firms and households do not need to be in places with traits such as river access. Other features of the local landscape, such as the skill of the labor force and the cost effectiveness of the city are more important to how the city responds to

negative shocks such as the deurbanization of manufacturing. However, before studying Philadelphia's more recent decline, the city's earlier successes are reviewed.

The Founding of Philadelphia and Its First Growth Phase

William Penn's vision for Philadelphia was a great one from the beginning. The 1683 plan he had drawn up included a large rectangular grid with 29 north-south streets running the two miles between the Delaware and Schuylkill rivers and seven east-west streets. Broad and High streets were designed to be 100 feet across, wider than any street in London at the time.⁵ While it would be over a century before people and businesses spread across all these streets in any real density, Penn planned for expansion.

Growth did come and rapidly, as Philadelphia was the largest city in British North America by 1750. While the town was well known as a refuge for Quakers escaping persecution in England, by the early 1700's many poor Scots who were able to travel within the British Empire after the Act of Union between Scotland and England, Presbyterians from Ulster Ireland, and Germans fleeing from continental wars had come to the city and its surrounding areas.

Philadelphia's economic ascendance was based primarily on the productivity of its rural environs in growing wheat for export.⁶ That wheat, not tobacco, was grown played a vital role in the development of a big city in Penn's colony. Wheat must be transformed into flour before export, so there was a need to coordinate among the farmer, the miller, and the ultimate (often foreign) purchaser. A merchant class rose to provide

⁵ See Twiss-Garrity's chapter on "Double Vision: The Philadelphia Cityscape and Perceptions of It" in Hutchins (ed.) *Shaping a National Culture The Philadelphia Experience, 1750-1800* for more on Penn's plan and the geography of the early city.

⁶ This is why the seal of the city includes a sheath of grain.

classic middleman services, including price discovery and coordination among distinct groups of producers.⁷ This was in contrast to what happened in the Chesapeake colonies of Virginia and Maryland. With their tobacco being shipped without such a complex and distinct intermediary production process, plantation owners tended to deal directly with London merchants. Because the latter served the middleman function regarding export and import routes, there was no need for a large seaport town to develop in Maryland or Virginia, and none did for quite some time.

While this accounts for why a city grew up around the site of Philadelphia and not Baltimore or Jamestown, it does not explain why Philadelphia quickly came to dominate New York and Boston as a commercial center. The reasons for that are twofold: (a) the productivity of Philadelphia's agricultural hinterland was superior to that of Boston; and (b) Philadelphia was able to serve a much larger hinterland than New York because it did not have to deal with the militarily powerful Iroquois confederation that dominated the lines of communication to New York City's north; New York could not fully exploit its agricultural region at the time because of security problems.

This led to the development of a large and diversified local economy of farmers, millers, artisans, financiers, ship builders and operators, all feeding into the merchant sector. As the West Indies moved towards increased specialization in sugar, Philadelphia was able to provide flour for foreign export (not just domestically to other colonies), with England providing the third leg of the exchange by paying for the sugar and then shipping manufactured goods back to Pennsylvania. The complexity of the three-way trade only increased the value of the merchant services provided in Philadelphia. A virtuous cycle developed in which the strong demand for wheat allowed the local farmers

⁷ Warner (1968).

to pay higher wages for hired help. Demand for labor was so high that the time indentured servants had to provide in exchange for passage to the colonies and living quarters fell to four years.⁸ This greatly facilitated the Scottish, Irish, and German immigration mentioned above.

By 1750, Philadelphia's port was much busier than Boston's or New York's. With specie scarce in America at that time, financial capital was accumulated from trade remissions. Hence, Chestnut Street became the colonies' *de facto* financial capital. Somewhat paradoxically, Philadelphia was aided in this respect by the Seven Years' War (1756-1763). This potentially was a grave threat to the physical security of the city, but it also brought substantial British military spending and shipping through Philadelphia to drive the French out of Fort Duquesne (the site of Pittsburgh).⁹ Governmental function was added to the mix in the second half of the 1700's, as Philadelphia hosted continental and constitutional congresses and served as the capital of the initial confederation and the new nation after the Revolutionary War.

The affluence and economic diversity of the early city are striking. There was "commonplace prosperity" and free entry was available into virtually any line of business or craft.¹⁰ This is not to say that there were no attempts to restrict entry—the carpenters and cordwainers (i.e., shoemakers) did—but they were unsuccessful. And, there were numerous occupations represented in the city. In one 1774 survey from the so-called Middle Ward of the city, there were 71 occupations among 275 persons including a wide variety of trades and services.¹¹

⁸See Schweitzer (1994) for a review of the city's early economic development.

⁹Price (1974).

¹⁰Warner (1968, p. 8).

¹¹*ibid* (Table IV, p. 18).

While the physical city and its cultural life in this era sometimes are characterized in dour or dull terms, typically attributed to the influence of Quakerism, the openness of the city to new ideas and people is well characterized by its acceptance of many of Franklin's ingenious ideas to improve the community and can be readily seen in the descriptions provided by Franklin in his *Autobiography*.¹² The comparison of colonial Philadelphia and Boston by the historian Michael Zuckerman also is instructive in this regard.¹³ He concludes that a prime reason Boston did not have nearly as many voluntary associations for social, scientific, and commercial betterment was because Philadelphia's upper class was not as well established and did not have as strong a sense of social solidarity. In Zuckerman's view, the pluralistic culture of Philadelphia allowed for more rapid development because it was more receptive to new ideas and concepts.

By no means does this imply that Philadelphia was a perfect city or society, but it does emphasize it was thriving economically and growing.¹⁴ While there is debate as to the true population of Philadelphia on the eve of the Revolutionary War, Sam Bass Warner and other historians suggest that nearly 24,000 individuals resided in the city and its immediate environs as of 1775.¹⁵ This was more than double the best population estimates for fifty years earlier.

The Response to Adverse Economic Changes Following Victory in the Revolutionary War: From a Trading to a Manufacturing City

¹² Some of Franklin's legacies, including his scheme for fire insurance and the Library Company of Philadelphia, survive to the present day. See Frick (1994) for more on the latter.

¹³ Zuckerman (1994).

¹⁴ Rosswurm (1994) describes class tension in colonial Philadelphia. Slavery also existed in the city through the Civil War.

¹⁵ Warner (1968).

Philadelphia was at the pinnacle of economic and political power in British North America when the Revolutionary War began. The war itself caused much damage and dislocation for the city. However, war-related damage was not the main problem Philadelphia faced when victory finally came. Much has been written about Philadelphia ultimately 'losing' the national capital, but victory brought two more important changes that directly challenged the underpinnings of the city's long-run prosperity.

One was the release of energy from the war effort that led to rapid expansion of the new nation to the west. This broke the power of the Iroquois and allowed a more complete commercial exploitation of New York's agricultural hinterland. Urban development of the type that had occurred earlier in Philadelphia resulted, this time in an area with a superior harbor. Not only was New York's harbor closer to England and Europe, it was less likely to be closed by ice in the winter.¹⁶

The second major change was the disruption in trade patterns that had been very favorable for Philadelphia. The French West Indies were opened to American shipping, but the trade with the British West Indies that Philadelphia had serviced was gone. Soon thereafter, the Napoleonic Wars (1799-1815) reduced trade with continental Europe (and the West Indies to some extent). To make matters worse for a big grain exporter like Philadelphia, at the end of the Napoleonic Wars the British Parliament passed the Corn Law which barred the importation of wheat on a duty free basis unless prices rose above a certain threshold.

As early as 1790, New York had achieved parity with Philadelphia in trade with England. One detailed study of the early economic development of Philadelphia reports

¹⁶ New York's harbor could be accessed from the Atlantic Ocean, with Long Island Sound providing ample protection from the occasional furies of the Atlantic. Getting into and out of Philadelphia by water required a time-consuming trip up an inland river (the Delaware River) that froze during the winter.

that between 1789 and 1794, 533 ships sailed from the British Isles to New York versus only 352 to Philadelphia.¹⁷ Within a decade, there were 333 sailings from Britain to New York over 18 months during 1806-07, and only 132 to Philadelphia over the full 24 months of those two years.

Part of the reason for New York's rise was due to its ability to capture the Irish market. Flaxseed was exported for Ireland's linen market, and it had to be shipped by late winter for early spring planting in Ireland. The greater frequency of ice blockages along the Delaware River and in Delaware Bay hurt Philadelphia in this respect. Icing also harmed Philadelphia's ability to capture the southern cotton trade to England. The peak arrival time for cotton in southern ports was in mid-winter. It was relatively difficult then to get it to Philadelphia for shipment to England. By 1811, Philadelphia was exporting only 3,000 bales--about one-fifth of New York's 15,000 bales.¹⁸ With this dominance in trade and shipping, the nation's financial capital shifted from Chestnut Street to Wall Street.

New York also had excellent communications with London, as it was the terminus of the official British trans-Atlantic packet boat¹⁹, and its merchant class was energetic. For example, New York pioneered an auction system that guaranteed the sale of goods on the wharf to the highest bidder.²⁰ It also introduced packet lines along the eastern seaboard which provided much the same services as other traders, but did so on regularly specified days. Some historians interpret these developments as indicative of

¹⁷ Lindstrom (1978).

¹⁸ *ibid.* (p. 38).

¹⁹ *ibid.*

²⁰ New York required a duty to be paid if the goods were offered for sale. The fact that there was a significant cost to withdrawing the goods if the seller did not like the price virtually guaranteed they would be sold.

commercial neglect or decadence on the part of Philadelphia and energy and industry on the part of New York.²¹ There is no doubt about the latter, but as to the former, others such as Diane Lindstrom and Michael Zuckerman conclude that Philadelphia's loss of trade primacy more reflects the fundamental economic forces described above, not some uncommon complacency in its business class. New York's innovations regarding auctions and the Black Ball packet line to southern ports came in the second decade of the 19th century. This is well after the loss of Philadelphia's commercial hegemony began, as Philadelphia's foreign exports fell from 136 percent of New York's over the 1791-95 period to an average of 68 percent over the 1803-1810 period.²²

New York's dominance in domestic and foreign shipping then grew inexorably over the next three decades, but it is a mistake to interpret this as being due to lethargy on Philadelphia's part in not responding to New York's innovations in trade. Rather, Philadelphia's behavior reflects a recognition of the fundamentally different conditions that made New York a more efficient trading center.²³ Moreover, the city did not go the way of other shipping centers such as Salem, Newport, or Providence and enter into long-term relative decline.²⁴

Philadelphia fairly rapidly shifted its capital and energy towards manufacturing. Doing so allowed it to grow enormously and to remain the nation's second city for nearly

²¹ See Albion (1931) in particular.

²² These data are based on federal customs records analyzed in Lindstrom (1978). She reports similar changes for registered tonnage and other duties.

²³ This is not to imply that none of Philadelphia's pain was self-inflicted. For example, there was relatively high taxation in the form of pilot duties and fees for movement along the Delaware River. Lindstrom (1978) notes that any ship of over a certain tonnage had to pay even if a pilot was not taken on board. In contrast, New York had a simpler coastal licensing requirement. In addition, the state of Pennsylvania imposed a 0.5% duty on auction sales after Philadelphia had copied New York's system.

²⁴ Salem town, MA, Newport town, RI, and Providence town, RI, were ranked 7th, 8th, and 9th, respectively in terms of urban population in 1790. Philadelphia's ability to preserve its relative and absolute ranking in the face of New York's becoming the trading and financial capital of the nation was far superior to theirs.

a century. Philadelphia was America's largest textile city from the Revolutionary War through 1850. By 1840, virtually none of this output came from household production.²⁵ New technologies and industrialization permitted this. Even more impressive was the city's rise as a producer of metals and machinery. Some of this expertise was evident in the Mars Works and the Eagles Works which produced different types of machinery, some of it for the textiles businesses in town—a clear example of agglomeration spillovers at work. By the 1830's, Philadelphia's Baldwin and Norris locomotive works had garnered international acclaim for its trains and train engines. Philadelphia also became a leader in chemicals and chemical-related industries by mid-century.

Not only was much capital invested in local manufacturing, it was put to good use. The capital invested per worker was 19 percent higher in Philadelphia than in the U.S. as a whole by 1840, with output per worker being nearly 48 percent higher.²⁶ This does not reflect a lethargic business and leadership group, but a daring one, as there was nothing preordained about the U.S. becoming the world's leading industrial nation.²⁷

In leading the way in this regard, Philadelphia was able to exploit certain advantages it possessed. One was a large pool of local capital that needed to be invested in something other than local shipping and commerce. Another was a broad base of skilled artisans that had developed to serve the needs of a large trading center. Manufacturing production in the late 18th and early 19th century was nothing like the highly mechanized assembly lines we associate with Henry Ford. Good skills were required of the workers, not just of the product designers. In this case, the city was able

²⁵ Lindstrom (1978).

²⁶ Lindstrom (1978, p. 47).

²⁷ Doerflinger (1986, Ch. 8 especially) has a detailed description and analysis of Philadelphia's diversification into manufacturing.

to use its relatively high quality human capital base to respond to the decidedly negative shock to its shipping and commercial base and become a manufacturing center.

This shift also was facilitated by the development of steam power. Philadelphia had plentiful water from its two major rivers, but the drop in elevation along their routes was not so large as to make the use of water power truly effective before the advent of steam. One 1864 study noted that Philadelphia had 14 steam-powered factories as early as 1832 and 179 stationary steam engines in operation in 1838. The latter figure was claimed to be the highest in the nation.²⁸

The essential vitality of Philadelphia as a city is evident not only in its response to a seriously negative economic shock to its primacy as a trading and merchant center, but in how it dealt with a public health crisis around the same time. Yellow Fever epidemics were a problem for all urbanized areas of that era. In 1793, Philadelphia experienced an especially severe attack that killed nearly 1-in-10 residents.²⁹ Little was known about the true cause of the fever, but many believed that a better water supply would lessen, if not prevent, future outbreaks. For that reason, as well as the fact that people felt existing water supplies had become inadequate for fighting fires, a movement arose to secure a new source of water.³⁰ That source ended up being what is known today as the Fairmount Water Works, which supplied water from the Schuylkill River. This project was expensive and technically challenging, and it took two full decades to bring it to fruition. Philadelphia was the test case for the development of public water works in the United States. New York and Boston were not to build their own until the 1840s. Just as

²⁸ Lindstrom (1978, pp. 48-49).

²⁹ The estimates of deaths caused by the disease are approximate. See the discussion in Miller (1982, pp. 180-188). For a more detailed examination of the epidemic and its short-run impact on the city, see John Powell's (1949) book, *Bring Out Your Dead: The Great Plague of Yellow Fever in Philadelphia in 1793*.

³⁰ Richardson (1982).

Philadelphia led the way towards manufacturing and industrialization in the private sector, it responded vigorously to challenges on its public side.

This belies the notion that Philadelphia ‘failed’ in any meaningful way in this era. By the time of the first census in 1790, Table 1 (Panel C) documents that the city had grown by 73 percent since the eve of the Revolution to 28,522 people, with Philadelphia County (which sets the current boundary of the city) having 54,388 residents.³¹ Over the next thirty years, Philadelphia’s population continued to expand even as it lost its status as the nation’s leading port and commercial city. It grew by 124 percent, with that for Philadelphia County expanding by an even larger 152 percent. In terms of shares of the nation’s population, that of the city fell from 0.7 percent to 0.6 percent; that of the county remained steady at 1.4 percent (see Panel B). Thus, amidst daunting economic change and challenge, Philadelphia was able to grow with the country and maintain its share of a rapidly expanding national population.

Maintaining Primacy As a Manufacturing City: 1820-1920

The shifting of capital and energy towards manufacturing was to prove prescient, especially after New York’s completion of the Erie Canal in 1825. This expanded New York’s trading reach into the interior of the nation via the Great Lakes, and cemented its position as the leading port and financial center in America.

Philadelphia initially tried to compete in the canal business, but geography soon showed the effort would not be successful. Linking Philadelphia to the west by canal was

³¹ In 1790, Manhattan (or New York County) was larger than the city of Philadelphia proper, but Philadelphia County had more people than Manhattan and Brooklyn combined (i.e., New York and Kings counties). It is in this sense that Philadelphia was the largest urban area at the time of the first national census.

a much more formidable exercise than for New York. The Allegheny Mountains to the west of Philadelphia meant a much greater and steeper increase in elevation had to be confronted. This was a very costly problem given the engineering and technical capacity of the time. Moreover, once one got as far west as Harrisburg, it became feasible to ship goods down the Susquehanna River, which flows into the Chesapeake basin. It was just this that helped Baltimore take off as a significant city in the 19th century.³² Thus, by 1830, Philadelphia no longer was the obvious natural shipping point even for goods from central Pennsylvania.

The rise of rail transport about this time provided another serious challenge to the city. Railroads made it possible for a host of competing regional production centers to develop and compete with Philadelphia as a manufacturing center. Stated differently, railroads lowered the value of Philadelphia's central location in America by sharply reducing shipping costs. However, the story of rail's impact is not so simple because the city ultimately was able to use this new form of transportation to its advantage. For example, rail allowed Philadelphia, not just its competitors, to be linked more cheaply to other markets.³³ Due to the Pennsylvania Railroad Company, Philadelphia became a key link on the north-south train route between New York and Washington. This company, whose headquarters was in Philadelphia and which ultimately became the largest

³² For example, it doubled in population in the 1820s, while Philadelphia grew by only 38 percent. See Wainwright (1982) for more on the rise of Baltimore as a port and shipping center.

³³ The importance of the railroads for Philadelphia's continued economic health is illustrated by how they quickly vanquished the canals as the prime way to ship goods. Immediately after the Philadelphia & Reading Railroad began operations in the Philadelphia area in 1842, the Schuylkill Navigation Company cut rates for shipment on its canal by two-thirds. By 1847, the Reading Railroad carried more tonnage than the Erie Canal at about half the cost (Geffen (1982, p. 322)).

corporation in the United States, also helped ensure the city was well connected to the west.³⁴

The city also was able to use rail to exploit a different location advantage that was to become extremely important in the industrialization of America—namely, proximity to the coal fields of eastern Pennsylvania. Not only did the rise of coal as an energy source increase shipping through Philadelphia, it helped facilitate the move to steam power, which played to the city’s strength as a rising manufacturing power.³⁵ The significance of its good rail connections in a rapidly expanding country became increasingly obvious in the 1850s when the Pennsylvania Railroad completed its line to Pittsburgh, allowing the trip to be made in thirteen hours.³⁶ With its good rail communications to the rest of the country, Philadelphia was able to compete with New York in the scale of domestic (not foreign) commerce for the first time since the completion of the Erie Canal.³⁷

Before the Civil War, there were 260 factories producing just cotton and woolen goods.³⁸ On the eve of the Civil War in 1860, Philadelphia was the fourth largest city in the western world.³⁹ Its 565,529 people were fewer than New York’s 813,660 residents⁴⁰ and well below the approximately two million residents of London and the 1.5 million people living in Paris, but still larger than the other great capitals of Europe. Not only did

³⁴ Other firms such as the Reading Railroad also played meaningful roles in the city’s development.

³⁵ Wainwright (1982, p. 269).

³⁶ Geffen (1982).

³⁷ Beers (1982).

³⁸ Geffen (1982, p. 326).

³⁹ Weigley (1982).

⁴⁰ That does not include Brooklyn’s 279,113 people, as the five boroughs were not to be consolidated into the modern city of New York until the turn of the century. See Table 1.

the city keep growing throughout the remainder of the 19th century, but its share of the nation's population increased from about 1.5 percent in 1800 to 1.7 percent in 1900.⁴¹

By any reasonable standard, this was a very successful city, and it was so because it continued to deal effectively with new challenges faced in a rapidly changing environment. That the city's industrial workforce was best characterized as one of skilled and semi-skilled workers is noteworthy. There were relatively few producers of primary iron and steel products, but advanced facilities such as the Baldwin Locomotive Works employed nearly 3,000 workers just before the Panic of 1873.⁴² Effectively, Philadelphia tended to specialize in more complex, intermediate and finished goods. Just as Philadelphia proved agile in changing itself from a shipping center to a manufacturing center, diversifying into higher end production (i.e., machinery, locomotives, chemicals) that could not be copied very easily elsewhere helped it survive the rise of canals and the loss of its central location nationally. In this, its skilled workforce appears to have proved very valuable once again.

This helps explain a second key feature of the city—namely, that it was not the magnet for immigration that some other urban areas were.⁴³ Many immigrants were unskilled and they tended to migrate disproportionately to places where primary production was done. As early as 1850, Philadelphia's foreign born population share was well below that of New York and Boston. Census data from that year show that 29 percent of residents in Philadelphia County were foreign born, compared to 38 percent

⁴¹ See Table 1. These numbers are for the county, and, thus, are not affected by the political consolidation of the city in the 1850's.

⁴² Beers (1982, p. 429).

⁴³ *ibid.*

and 47 percent for Boston's Suffolk County and New York County (Manhattan), respectively.⁴⁴

Another aspect of city life that bears mentioning amidst this time of economic expansion is the reputation Philadelphia developed for political corruption. Corruption developed out of one-party rule—by the Republican Party at this point in the city's history. Local politics then were a thoroughly Republican affair because that was the party of protection. Tariffs were viewed as essential for the well-being of local manufacturing, so most Philadelphians were for whoever supported tariff protection, and that was the Republicans. The virtual impossibility of political defeat appears to have led to some very corrupt behavior in Philadelphia (and Pennsylvania more generally), and Lincoln Steffens memorialized it in his muckraking classic of 1903, "Philadelphia: Corrupt and Contented".⁴⁵

Steffens had a particularly low opinion of Philadelphia and Philadelphians:

⁴⁴ See the data at the University of Virginia's historical census browser at <http://fisher.lib.virginia.edu/collections/stats/histcensus/>. Philadelphia's hostility to Catholics at the time probably played a role, too. After nearly a century of relative religious tolerance, Philadelphia became home to what some historians term the "Protestant Crusade" in the 1840s. Major riots in the summer of 1844, following significant economic dislocation associated with tariff reductions in 1841 and 1842 that harmed local manufacturing, were characterized by intense anti-Catholic violence. The worst mob violence, which occurred after a July 4th celebration, killed fifteen people and injured another fifty, with Geffen (1982) reporting that as many as 5,000 militia had to be used to quash the violence. Philadelphia, which also helped spawn the nativist movement of Know-Nothingism, became known as a place that was inhospitable to Catholic immigrants from Ireland and Italy. How much worse Philadelphia was than New York City or Boston, where anti-Catholic violence also occurred is difficult to measure. That it contributed to the lower rate of immigration to the city seems reasonable, but the impact of its higher-end manufacturing employment base seems even more influential.

A more important consequence of the 1844 riots was the impulse it provided for consolidation of the city with its surrounding entities (e.g., Kensington, Southwark, etc.). The smaller communities did not have effective police forces, and that summer highlighted the downside of that defect. Better coordination, especially in the area of public safety, was an influential force behind the creation of the modern city whose boundaries are coterminous with those of the county.

⁴⁵ Steffens wrote a series of articles on municipal corruption in six cities (Chicago, Minneapolis, New York, Philadelphia, Pittsburgh, and St. Louis) for *McClure's Magazine* at the turn of the century. His piece on Philadelphia was published in July of 1903. All quotations and references are from the 1957 American Century Series publication that presented the collection of the six articles in the book *The Shame of the Cities*.

“But it was not until I got to Philadelphia that the possibilities of popular corruption were worked out to the limit of humiliating confession. There is nothing like it in the country, except possibly, in Cincinnati. Philadelphia certainly is not merely corrupt, but corrupted, and this was made clear.”⁴⁶

“... good people there defend corruption and boast of their machine.”⁴⁷

“‘The people’ seem to prefer to be ruled by a known thief rather than an ambitious reformer.”⁴⁸

He described politicians from Harrisburg and Philadelphia involved in the looting of a gas company (the so-called Gas Ring) throughout the 1860s and 1870s that generated much public outrage. This public opposition led to a change in the city charter, but Steffens described how this process was cynically manipulated by the state Republican boss, Matthew Quay, to discipline and replace the Philadelphia Republican boss, James McManes, with a more pliable leader. Thus, the change was superficial with a more sophisticated corruption replacing what Steffens called the ‘Tweed stage of corruption’.

Steffens goes on to describe a system of “lawful graft”⁴⁹ by which the political bosses allied with various firms to reap profits from the city and engaged in what he termed the ‘macing’⁵⁰ of private companies that fell out of political favor.⁵¹ In addition, teachers had to pay the Republican machine for the privilege of obtaining their teaching certificates. Finally, vote fraud was especially rampant, largely because the local ward bosses had the luxury of being able to turn in their own voter lists to the election offices. With this virtually unlimited ability to pad the rolls, the bosses could deliver any number

⁴⁶ *ibid* (p. 10).

⁴⁷ *ibid* (p. 136).

⁴⁸ *ibid* (p. 158).

⁴⁹ *ibid* (p. 148).

⁵⁰ *ibid* (p. 156).

⁵¹ As the term suggests, ‘macing’ involved the deliberate destruction of private wealth. In one example Steffens provided, local politicians first sold out personal interests in a company that fell into disfavor, then formed a competitive enterprise and compelled the old firm to buy them out or sell out. Fully or partially regulated enterprises such as the street railway companies appear to have been particularly susceptible. The political bosses also appear to have had significant stakes in key construction companies.

of votes needed when the actual residents did not behave in the way or numbers anticipated. Steffens considered the vote fraud so massive as to constitute effective disenfranchisement, and he compared the machine treatment of white Philadelphians to that afforded African-Americans in southern states.

Steffens did not see any existing force that would lead to meaningful change. He viewed somewhat independent organizations such as the University of Pennsylvania as co-opted by the need to go along with the machine in order to get key state and local appropriations passed. Steffens documented this by quoting Penn's Provost that he had declined to join a reform movement because "... it might impair his usefulness to the University."⁵² While Steffens could be breathtakingly wrong in some of his predictions, he was correct about the staying power of the machine.⁵³ The Republicans did lose the mayor's office in 1911, but they quickly regained their dominance and won eleven consecutive elections until Joseph Clark brought the Democrats to power in 1952.

One lesson to be learned from the last half of the 19th and early part of the 20th centuries is that even gross corruption need not bring down a city. From 1860-1900, Philadelphia's population grew by 85 percent from 565,529 to 1,293,697, and its share of the national population was virtually unchanged, varying from 1.7-1.8 percent. From 1900-1920, the city grew by another 41 percent to over 1.8 million people. This outcome is not peculiar to Philadelphia, but also can be seen in New York which continued its extraordinarily strong growth amidst the depredations of Tammany and Boss Tweed. Similarly, Boston continued growing through the worst excesses of the Curley regime.⁵⁴

⁵² *ibid* (p. 148).

⁵³ His most famous erroneous prognostication can be seen in his comment following a 1919 visit to Russia to the effect that he 'had seen the future and it works'.

⁵⁴ Glaeser and Shleifer (2005).

As to why public corruption was not more costly to these cities, it is important to recognize that these were very productive places that were generating substantial economic rents. Manufacturers in particular tended to have significant capital invested in fixed assets, and so were not very mobile. As long as corruption was not so undisciplined as to demand more than the total rents associated with a project or business, the activity could go on because private investors still could earn a competitive rate of return. That strong growth occurred during the heydays of the Republican machine indicates that side payments to the Quay machine may have functioned at least somewhat like lump sum taxation. This is not to recommend this as a way to finance municipal government, but to note that conditions appear to have been such that it does not appear to have been especially destructive economically.

Coal, railroads, and iron and steel were the foundations of Philadelphia's economic strength, with a diversified industrial base serving the city well.⁵⁵ While the turn of the century still was a time of expansion, the beginning of a decline in the rate of industrial growth was evident as early as 1910-1920 for what the local Chamber of Commerce proudly (and accurately) billed as the "Workshop of the World".⁵⁶ There was no absolute decline yet, but Philadelphia had begun to underperform national averages. Abernathy identifies three reasons: (a) certain mass production industries were moving to more central locations for better national distribution, as well as for cheaper

⁵⁵ In addition to its famous locomotive and ship building companies noted above, Burt & Davies (1982) claim that the city's various iron foundries produced about one-third of the nation's manufactured iron in various forms (locomotives, nuts, bolts, propellers, etc.). Textiles remained important, accounting for one-fifth of the city's manufacturing operations and over one-third of its jobs (Burt & Davies (1982)). Commerce was no longer dominant, but the city remained a significant port, with much coal being shipped to and through it. The latter half of the 1800s also is the time when the city's greatest retail empires were formed. Names still known today such as Wanamaker, Strawbridge & Clothier, Gimbel, and Lit transformed retailing with their development of department stores.

⁵⁶ Abernathy (1982).

labor; hence, the phenomenal growth of Chicago which overtook Philadelphia as the nation's second city in 1890;⁵⁷ (b) the first cotton goods factories were built in the South just after the turn of the century; this is the beginning of a major negative demand shock for Philadelphia—the deurbanization of textiles manufacturing; and (c) the emergence of a wave of consolidation in certain industries such as banking, retail, and advertising; in many cases, Philadelphia loses out to New York or other regional production centers.

It is possible that corruption also played a role in this underperformance. If the local political machine overstepped its bounds because it did not realize that the increased competition and higher mobility implied by each of the three factors just discussed lowered the scope for transfers from local businesses before exit (or not entering) became economically feasible, then some of the early relative decline should be attributed to the local government, not to exogenous external shocks. New historical research is needed to know if this factor was relevant earlier in the 20th century.

There was no one shock that could materially weaken the city because it was not a one industry town. However, a series of factors did combine to greatly weaken Philadelphia. And, for the first time in the city's long history, it proved unable to respond successfully. While the city's population was to peak in 1950 at 2,071,605 people, its strongest decadal growth rate since 1920 was 7.4 percent, and it suffered population declines in six of the eight ensuing decades. Hence, 1920 more properly is viewed as the last peak for the city.⁵⁸ It is to the long decline since then that we now turn.

⁵⁷ In the 1910's and 1920's, Philadelphia's population expanded by 17.7 and 7.0 percent, respectively. This pales in comparison to Chicago's growth rate of 23.6 and 25.0 percent, respectively.

⁵⁸ Robert Margo's discussion in this volume presents evidence of a relative decline in manufacturing productivity dating to the Civil War era. This suggests that future research should look even further back in time for the genesis of the city's decline.

The Long Decline Since 1920 and the City's Failure to Remake Itself

There were at least four well-known challenges that Philadelphia and other older, northern, manufacturing centers faced in the modern era. They include the rise of the automobile which favored the suburbs and newer cities, the deurbanization of manufacturing, racial and social problems that developed first and most severely in large central cities, and much higher mobility that allowed firms and households to take greater advantage of warmer and/or lower cost places.

These reflect significant economic and social challenges, but a reasonable person could argue that their combined weight did not exceed the magnitude of the threat posed by the forces that cost the Philadelphia of 1750 its trading primacy. And, some of its most closely situated competing urban centers (e.g., Boston and New York City) have not experienced the same long-term decline. Moreover, the city's absolute and relative decline is not part of a broader regional pattern as illustrated in Figures 1 and 2 which plot aggregate population and population shares in the nation for the Philadelphia metropolitan area and for the suburban counties of the area.⁵⁹ Figure 1 shows that the suburban population has expanded throughout the 20th century, and by enough to counterbalance the city's population loss since 1950. Figure 2 documents that the suburban share of national population has held steady since 1960, although that for the metropolitan has fallen because of the sharp decline in the city of Philadelphia itself.

⁵⁹ The five counties constituting the Philadelphia Primary Metropolitan Statistical Area (PMSA) are used here. They include Philadelphia County, which is coterminous with the city, and four suburban Pennsylvania counties (Bucks, Chester, Delaware, and Montgomery). In recent decades, Philadelphia has become part of a bigger Consolidated Metropolitan Statistical Area (CMSA) that includes suburban counties from neighboring states. Including the relevant New Jersey and Delaware suburbs does not change the basic patterns seen in Figures 1 and 2, although absolute population numbers are bigger, of course.

There are a number of hypotheses for why the city has not responded as vigorously as in the past, some suggested by the urban growth literature in economics and some by historians and sociologists. The remainder of this section reviews them.

Culture: Quakers, the 'Philadelphia Gentleman', and Indifference to Commerce

The impact of Quakerism and the rise of a gentlemanly local culture that was indifferent to commerce have been posed as reasons for Philadelphia's decline, including its fall from being the leading commercial city in the nation.⁶⁰ For example, much of the original gentry of colonial Philadelphia, which included many Quakers, did not participate in the shift from trading to manufacturing in the late 18th and early 19th centuries.⁶¹ Even so, there was a plentiful enough supply of entrepreneurial skill and financial capital to allow Philadelphia to become America's leading manufacturing city and to remain the nation's second city for almost another century. If an indifference or hostility to commerce by Quakers ever was going to have a major influence, it would have been during or just after the colonial period when their population share was high and political power still strong.

Baltzell's study of the development of a 'Philadelphia gentleman' around the end of the 19th century more closely matches the beginning of the modern city's decline. Economists tend to be skeptical of explanations founded on exogenous changes in tastes, and there is good reason to suspect that the loss of commercial zest in the city's upper classes identified by sociologists was driven by the city becoming a relatively less attractive place in which to do business. However, there is no powerful test (of which I

⁶⁰ Numerous chapters from two recent historical anthologies, *Philadelphia A 300-Year History* and *Shaping a National Culture The Philadelphia Experience, 1750-1800*, provide examples from a historical perspective. See Baltzell (1958, 1979) for classic statements in the sociological literature.

⁶¹ Rosswurm (1994).

am aware) that discriminates between whether Philadelphia underperformed (say) Chicago primarily because of the ‘gentlemanly ways’ and ‘Main Line’ culture of its business and social leadership versus deteriorating economic fundamentals associated with the loss of its central location in the nation, the rise of cheap textile manufacturing production sites in the South, and/or a corrupt local political machine that may have overstepped its bounds at the end of the 19th century.

Foreign Immigration

Philadelphia did not have to worry much about relatively low rates of foreign immigration to the city throughout much of the 19th century. As discussed above, its high end manufacturing growth strategy required higher skilled labor, and native Americans appear to have been a better match for it. However, times clearly have changed, and some local groups argue that a pro-immigration policy would well serve the city.⁶² In addition, it has been documented that many cities, some without high human capital bases, grew rapidly in the 1990’s due to foreign immigration.⁶³

While it certainly makes sense for the city to ensure that it is not seen as hostile to the foreign born, especially those with good skills, it would not be correct to imply that Philadelphia’s long-run decline is due in any meaningful way to its relatively low population share of the foreign born. As already noted, there are deep historical reasons for this. More generally, cities need new residents—domestic or foreign—to grow and it should be attractive to both. Immigration did account for about 30 percent of national population growth in the 1990s, and Philadelphia experienced an uptick in foreign

⁶² For example, see the October 2000 report *Immigration in Philadelphia: A Call to Action* issued by the Eastern Division of the Pennsylvania Economy League.

⁶³ Glaeser and Saiz (2003).

immigrants that decade, seeing its share of the foreign born rise from 6.6 to 9.0 percent.⁶⁴

The fact that Philadelphia remains relatively unattractive to domestic and foreign migrants suggests looking to common factors that could explain both facts.

Race

Philadelphia has had a relatively large African-American population for over a century, so it is important to consider the role that race might have played in the city's modern era. Even before the upsurge in domestic migration brought the local African-American population share to seven percent in 1920 (ranking it first among large northern cities), W.E.B. DuBois had published his classic analysis, *The Philadelphia Negro: A Social Study*⁶⁵, that effectively began a huge academic literature on race and cities.⁶⁶ The African-American population share continued to rise throughout the 20th century. By 1950, it was 18.2 percent; over a quarter of the population was black by 1960; and the latest numbers from the 2000 census show just over a 43 percent share for African-Americans.

The meaning of Philadelphia's attractiveness as a destination for African-Americans, especially early in the century, for future economic development is not straightforward to interpret. Population growth generally is a positive signal about a place, and there is evidence from economic historians that African-American migration to

⁶⁴ Nearby competitors such as Boston and New York remain more attractive to foreign immigrants. Boston's foreign born share not only already was much higher in 1990 at 20 percent, it increased to 26 percent in 2000 according to census data. New York's share rose from 28 to 36 percent over the same time period. For Boston, New York, and Philadelphia, virtually all net population growth can be attributed to foreign immigrants. However, the latent demand for the first two cities obviously is much stronger.

⁶⁵ DuBois (1899).

⁶⁶ For more on DuBois's influence on this area, see the various chapters in Katz and Sugrue (eds., 1998).

the north exhibited positive selection prior to the First World War.⁶⁷ In addition, DuBois was keenly aware of the social and economic differences within the African-American population and pioneered the study of the black middle and upper classes. His 1899 study documented rising education levels among black migrants to Philadelphia (see Chapter VIII, especially).

Still, it seems highly likely that past slavery and on-going discrimination in education and labor markets meant that any large group of African-Americans would have relatively low levels of education and human capital accumulation. Thus, the average skill level of the 134,000 African-Americans living in Philadelphia in 1920 most probably was relatively low. This is noteworthy for its potential implication regarding what was happening economically in the city in the early part of the century.

Philadelphia did not attract disproportionate shares of foreign immigrants in the 19th century, at least partially because their relatively low education and skill levels were not a good match for the city's higher end manufacturers. Unfortunately, it is not possible to determine convincingly whether the city's attraction to African-American migrants early in the 20th century might have been at least partially due to some change in underlying economic conditions that made Philadelphia a better match for lower skill workers.⁶⁸

As will be documented more fully below, Philadelphia did not have a highly educated population by national standards as early as 1940 (the first year for which consistently good education data is available). And, educational achievement is a strong

⁶⁷ See Collins (1997) and Margo (2000), for example, although these studies are not specific to Philadelphia.

⁶⁸ It also is possible that some of the migration was in response to an upsurge in war production for the First World War. More historical research is needed to determine this.

predictor of growth in recent decades.⁶⁹ Moreover, the gap between Philadelphia and its northeastern competitors of Boston and New York City in terms of its best- and least-well educated citizens has widened substantially in recent decades (always to Philadelphia's detriment). This suggests that the import of the rise in African-American population share early in the century was not race *per se*, but the relatively low skill base of the workers.

This is not to conclude that race has had no direct impact on Philadelphia in its modern era. There are extensive academic literatures on segregation and discrimination in urban housing markets⁷⁰ and white flight more generally⁷¹ that suggests race could be directly influential. While there is no debate about whether metropolitan areas such as Philadelphia are residentially segregated⁷², there is contention about the extent to which white flight has been racially motivated. The latter issue is a difficult empirical problem because many factors that likely are determinants of location (e.g., car ownership, income, etc.) also are correlated with the racial composition of an area. The literature indicates it would be a clear overstatement to attribute all, or even most, of the rising black population share in the city to white flight. However, it seems equally unwise to dismiss this effect entirely simply because it is difficult to identify a racial impact convincingly by current econometric standards. Hence, some part of Philadelphia's weak response to negative shocks in the modern era should be attributed to a racial factor that

⁶⁹ Glaeser and Saiz (2003).

⁷⁰ Kain (1968) is one of the leading early studies.

⁷¹ Frey (1979) has an early analysis and extensive bibliography.

⁷² They are. See Cutler and Glaeser (1997) for recent estimates.

can be sensibly referred to as white flight. Concomitantly, some of the suburban expansion depicted in Figure 1 should be attributed to the same source.⁷³

Over the long run, the increasingly large African-American population also has had important political implications for the city. After the Democratic Party finally overturned the long Republican reign in 1952, African-Americans become a powerful constituency, with W. Wilson Goode becoming the first black mayor in 1984. Because it will be argued below that deteriorating local public sector fiscal conditions have helped make the city less attractive, the role that African-American political power might have played in this must be considered.

There is plenty to criticize regarding spending discipline and overall fiscal management by the city's black political leadership. For example, it is well-documented that the Goode administration ran six consecutive deficits, squandering the surplus left by his predecessor and precipitating a default scare in the early 1990s.⁷⁴ The city's second African-American and current mayor, John Street, also has presided over a string of deficits that have depleted the surplus left by his predecessor. That said, the data do not support the conclusion that racial politics is an especially important cause of the city's longer-term fiscal profligacy. Historical developments in the local public sector clearly show that the genesis of Philadelphia's high municipal spending and cost structure predates any significant African-American political control.⁷⁵

⁷³ In recent work, William Collins and Robert Margo (2004) have tried to get at this issue by looking at the effects of urban riots on population growth. They find that the presence of severe riots is strongly positively correlated with increases in black population share, with regression estimates indicating a 3-6 percent increase in black share if a severe riot occurred. However, they also provide evidence that change was underway prior to the riots themselves.

⁷⁴ Inman (1992, 1995).

⁷⁵ The final report of the Philadelphia Tax Reform Commission (2003) provides the details. The city's adoption of a local wage tax dates back to 1939. Its rate had reached 3 percent by the end of the 1960s, and it reached its historic peak of nearly 5 percent in 1983, just before Wilson Goode entered office. The

Human Capital, Work Force Quality, and Consumer Cities

One of the more important implications of the recent urban growth literature is that skill has become an increasingly influential determinant of an area's economic fortunes. It has been shown that the fraction of highly educated people (the percentage of college graduates is a typical measure) is a strong predictor of whether a metropolitan area grew in recent decades, especially if it is located in a cold weather climate.⁷⁶ A similar relation exists at the city level, but those authors maintain that this proxies for a very strong correlation between the share of poorly educated people (the percentage without a high school degree is their measure) and *negative* growth at the jurisdictional level. Stated differently, high levels of human capital matter for the metropolitan area that defines the labor market. However, avoiding lower levels of human capital seems even more important for cities within a given labor market area.

At the level of the metropolitan area, it is only since 1990 that Philadelphia has been a relatively high human capital labor market region. And, the top panel of Table 2 shows that it still lags Boston and New York in this regard. In 1940, the Philadelphia metropolitan area was right at the national median in terms of the 4.7 percent of its adult population with a bachelor's degree. Boston and New York had 1-2 percentage point higher fractions of this highly educated group, which put them at or above the 75th

effective abandonment of the centralizing reforms of the Clark administration and the return to a more parochial, neighborhood-based politics also began early in the 1960s, almost two decades before Goode became mayor. And, the very strong trend growth in real compensation of municipal workers identified by Inman (1995) is clearly evident in the Tate and Rizzo administrations, well before African-American political power became more dominant.

⁷⁶ Glaeser & Saiz (2003).

percentile of the 304 metropolitan areas in the sample for 1940.⁷⁷ Thirty years later in 1970, the Philadelphia metro area's population share of college graduates was slightly above the median at 10.7 percent, but still below the sample mean, and the gap with Boston and New York had grown. In 1980, the metropolitan area was above the mean for all metropolitan areas, but it is only after 1990 that it enters the top quartile of the sample in terms of local shares of highly educated people.

At the city level, the data are much less encouraging. The middle panel of Table 2 reports the share of adults without high school degrees since 1970 for a large sample of over 700 cities, as well as for Philadelphia, Boston, and New York City. While the high school 'dropout' rate has declined considerably since 1970, note that Philadelphia's share actually rose in the 1990s. Moreover, Philadelphia always is in the top quartile of the sample. And, in absolute terms, the difference between its share and those for Boston and New York City are greater in 2000 than they were in 1970. The gap with Boston is especially large. While barely one-fifth of Boston's adult population did not have a high school degree in 2000, nearly 39 percent of Philadelphians over the age of 24 had not graduated high school.⁷⁸ The bottom panel of Table 2 reports the share of adults who are college graduates, this time at the city level. Philadelphia fares poorly by this metric, too. It is always well below the median and mean for the city sample, and has not improved relatively over the past thirty years. With respect to Boston and New York, it looks increasingly less well-educated.

⁷⁷ Albert Saiz kindly provided all the data reported in this subsection. Metropolitan areas were not officially defined then. Definitions based on 1999 boundaries determined by the Census Bureau are used for all the figures reported in Table 2.

⁷⁸ This sorting by skill or income is predicted by Glaeser and Gyourko (2005). With wages for low skill individuals not varying much across areas, they are attracted to declining cities because housing becomes very cheap in such places.

Figures 3 and 4 plot the relationships at the city level between different levels of educational achievement and population growth since 1970 for cities with at least 200,000 residents. Figure 3's graph using the fraction of the population with college degrees is consistent with previous work that places with greater concentrations of college graduates in 1970 grew more over the next three decades.⁷⁹ The underlying regression results imply that a 1 percentage point higher share of college graduates in 1970 is associated with a 7.7 percentage point higher population growth over the next thirty years.⁸⁰ Note that Philadelphia and most of the other older, manufacturing centers in the Northeast and Midwest are very near the regression line. It is only in the Sunbelt regions that we see population growth well in excess of that predicted by the initial period stock of the well educated.

Figure 4 reports the analogous relationship using the initial period fraction of adults without high school degrees. The greater the initial period share of the least-well educated, the lower is population growth. In this case, a one percentage point higher share of high school dropouts is associated with a 2.7 percentage point lower population growth over 1970-2000. Once again, Philadelphia is right on the regression line, along with most of its old manufacturing competitors.

If one thought that human capital as represented by these educational achievement measures was the only relevant factor influencing urban growth, Figures 3 and 4 suggest that Philadelphia's low (i.e., negative) population growth over at least the last three decades can be explained almost entirely by this factor. While this obviously is not a complete model of growth, it does highlight the power of skill in predicting urban

⁷⁹ Glaeser and Saiz (2003).

⁸⁰ There are 64 cities in the sample. The $R^2=0.37$.

growth. It also indicates that this factor has put Philadelphia at an important disadvantage relative to better educated/skilled cities such as New York and Boston in responding to the negative shocks that hit all the old manufacturing centers. That is, Glaeser and Saiz are correct in that skills matter more now, and Philadelphia's adult population has been and remains relatively unskilled.

It is noteworthy that this fact remains even though the downtown area of the city has developed attributes of a high human capital, consumption agglomeration along the lines identified in recent urban economics research into 'consumer cities'.⁸¹ Over the past two decades, this part of the city has attracted the young and the highly educated. A recent study of this area's demographics documents that 62 percent of its adult residents (25+ years old) are college graduates. And, the fraction of 25-34 year olds is double that in most other neighborhoods.⁸² Amidst overall city decline, this clearly is a thriving area as indicated by the large amount of residential construction. The September 2004 *Residential Development* report of the Central Philadelphia Development Corporation notes that there have been over 6,400 residential units brought to market since 1998 in the downtown area (mostly apartments and condominiums).⁸³

There is no doubt that this is a positive development for the city, as consumption agglomerations look to become even more valuable and productive. However, the population shares by educational achievement reported just above for the city as a whole clearly indicate that this is not a mass phenomenon. That the city continues to shrink in

⁸¹ Glaeser, Kolko, and Saiz (2001).

⁸² See the November 2004 *Growing Smarter* report published by the Central Philadelphia Development Corporation and the Center City District for the details. The report can be accessed on the Center City District's web site at www.centercityphila.org/home.

⁸³ This report also can be downloaded from the Center City District web site at www.centercityphila.org/home.

aggregate and continues to lose ground in terms of its highly educated population share to its key northeastern competitors suggests one cannot expect localized consumption agglomerations alone to reverse the decline.⁸⁴

A missed opportunity in the financial services sector provides an illuminating example of why Philadelphia remains a relatively low education city. The development of the mutual fund industry represented the democratization of finance. In addition, mutual fund companies did not have to be located near the elite investment banking community in Manhattan, providing a huge new opportunity for financial services employment outside of New York City.

The two largest mutual fund companies in the world are Fidelity Investments, headquartered in downtown Boston, and The Vanguard Group, headquartered in Malvern, PA, a suburb of Philadelphia. Vanguard's founders used to be located in Philadelphia. One of the firm's early leaders, Jack Bogle, noticed that it was very difficult for investors to beat average market returns over any appreciable length of time, an insight that was confirmed by academic studies in the late 1960s and early 1970s. He also astutely concluded that he could sell market indexes without charging fees as high as those of actively managed funds. Practically speaking, Bogle was an entrepreneur who was able to take an idea that was current in academic circles and bring it to the market place. That is the essence of how Boston transformed itself from a declining textiles manufacturer into a city filled with human capital-intensive businesses.

⁸⁴ Somewhat related is the issue of whether social capital might help account for some of Philadelphia's low growth. Knack and Keefer (1997) look at the issue across countries and find that countries with higher levels of 'trust' and other social norms and more ethnically homogeneous populations tend to have higher and more equal incomes. The question of causality aside, little is known about what is happening to most measures of social capital over time across urban areas within the U.S.

Bogle and Vanguard ended up developing their great firm, and a thriving financial services sector, in the suburbs of Philadelphia. At least one of the reasons was that the firm's business strategy required it to be the low cost producer, as their index approach could be readily copied by others. Being the low cost producer from a base inside the city was virtually impossible because of Philadelphia's high cost structure. It is to that issue that we now turn.

Poor Public Finance, High Costs, and Strong Unions

The continued existence of a local wage tax is just one indication that the city's leadership has been unable or unwilling to comprehend that the future would lie with companies that had most of their value tied up in the human capital of their employees, not physical plant and equipment. Standard tax incidence theory indicates that the burden of this local tax falls on city firms, not their workers who are mobile throughout the metro-wide labor market.⁸⁵ Hence, the larger the fraction of a company's total costs that are reflected in the wage bill, the greater the burden of this tax. Stated differently, the more human capital-intensive the firm, the more onerous the tax. It is difficult to imagine

⁸⁵The economic burden of a tax falls on the party least able to avoid it. Given that people can move among jobs across jurisdictions within a metropolitan area more readily than firms can relocate themselves, the firms are least able to avoid the tax. Over the long run, firms do 'avoid' the tax by reducing hiring or hiring less than they would otherwise, and ultimately, by locating new starts and spinoffs outside the taxing jurisdiction. This is how the tax leads to lower levels of economic activity in the city than would result otherwise. In the very long run, this is why the tax is borne by local homeowners. In order to keep some marginal firms in the city, land values must decline. Finally, it is worth emphasizing that this distinction between legal and economic burden obviously applies to the taxes paid by suburban commuters, as the Philadelphia tax is on commuters not just residents. Other cities such as New York that have followed Philadelphia in imposing a local wage tax have not imposed it on non-residents to the extent that Philadelphia has. [From 1969-1999, New York City commuters with labor income in the city paid a flat tax on their labor earnings. However, its rate was much lower than Philadelphia's.] Presumably, this is due to some combination of politics at the state level and a deeper understanding of the distinction between legal and economic tax incidence.

a worse choice of tax instruments for a single municipality in an age when such firms are at the core of economic growth.⁸⁶

An inefficient tax mix is a part, but far from the totality, of Philadelphia's inability to provide essential infrastructure and public services at low cost. From early on in the modern era, the city engaged in schemes that either raised taxes or took revenues from the future to balance the current budget. Philadelphia, like almost all governmental units coming out of the Great Depression, found itself with significant fiscal deficits in the late 1930s. Philadelphia's was about \$30 million in 1938, and it initially dealt with the problem by borrowing from an entity called the Reconstruction Finance Corporation. The collateral it pledged to this entity was the annual rent received from the gas utility.⁸⁷

The city soon decided to impose the first local wage tax in the nation. A 1.5 percent levy was authorized in 1938, but a series of disputes prevented its immediate use. After surviving legal challenge, a tax very much like the one still extant was passed at the end of 1939. It quickly became important fiscally, raising 28 percent of all city and school district revenues.⁸⁸ From 1940-1947, the wage tax share of revenues increased from 28 to 37 percent. The 1960s marked a major increase in rates, as the wage tax doubled from 1.5 to 3.0 percent via three increases that decade. By 1969, the wage tax was responsible for more than half of all local tax revenues. By July 1983, the rate peaked at 4.96 percent for residents and 4.3125 percent for non-residents. Since then, it

⁸⁶ The local business privilege tax, although less well known, provides an even starker example of a poorly designed tax for a municipality in an age when firm mobility is high. For firms such as those in the legal and accounting sectors that are organized as partnerships, the base for this tax is all partnership income, including that generated outside the city. Philadelphia long has been known for being home to national law firms. The economic burden of this tax largely falls on the partnership headquartered in Philadelphia, as these firms must pay competitive wage rates to partners in New York or Boston. With an increasingly suburbanized client base, these law firms have strong incentives to avoid this tax by exit and expansion outside the city, and the evidence suggests this is happening.

⁸⁷ See Tinkcom (1982) for the details and more on the city during the Great Depression.

⁸⁸ See the Philadelphia Tax Reform Commission (2003) for the details.

has declined slightly to just over 4.5 percent for residents and just under 4 percent for non-residents. Modest declines in the rate are set to occur over the coming decade that would reduce it further, although it still will remain above 3 percent under current plans.

Recent research covering the 1971-2001 period confirms that the high local wage tax has not been counterbalanced by lower effective property tax rates, as the average effective rate has been estimated to be over 2.5 percent.⁸⁹ Additional evidence has been provided on the onerous nature of the tax environment in the form of ‘revenue hill’ estimates which relate how much tax revenue is raised from a small change in taxes.⁹⁰ Since at least 1990, Philadelphia has been near the top of its revenue hill, indicating that higher taxes have not been generating much of an increase in tax revenues to the city. Being at or near the top of the revenue hill indicates a willingness to forgo substantial economic activity in return for small increases in tax revenues.

How important is this to the fortunes of the city? Andrew Haughwout and his coauthors conclude that Philadelphia lost over 172,000 jobs, or about 25 percent of its current employment base, between 1971-2001 due to increases in the rate of the city wage tax.⁹¹ Furthermore it appears that incremental cuts in the wage tax would create new jobs at little or no net economic cost to the typical taxpayer.⁹²

Robert Inman’s 1995 analysis of municipal budgets over the three decades leading up to the fiscal crisis of September 1990 that brought the city to the brink of bankruptcy provides essential insight into the factors driving the other side of the

⁸⁹ Haughwout et. al. (2004).

⁹⁰ Inman (1992, 1995) and Haughwout et. al. (2004).

⁹¹ Haughwout, et. al. (2004). Those authors also estimate that the series of small reductions in the rate since 1996 has saved nearly 30,000 jobs. Overall city employment has fallen, so their results indicate the decline would have been worse without the drops in the wage tax.

⁹² *ibid.*

municipal fisc—namely, long-term spending trends. Controlling for individual mayor effects, he finds an economically large increase of over \$15 per resident per year (in \$1994) in the real compensation of local public employees.⁹³ To help put this in perspective, consider that in fiscal year 2003 the average wage for Philadelphia’s 24,000 municipal workers was just over \$50,000 for a total payroll of \$1.28 billion.⁹⁴ Assuming an average of 1,700,000 residents over the sample period, the \$15 per capita annual real pay trend amounts to \$25.5 million per year or \$765 million over Inman’s three decades of data. This rising trend clearly has a lot to do with the high spending by the city, and reflects the strength of the city’s public employee unions.⁹⁵

However, strong unions are not the only factor driving increasing real spending in the city. The aforementioned analysis also reports a 4 percent per year real growth in purchases of goods and services by the city. Much of this is poverty related, and is a burden that Philadelphia bears because it is a county, not just a city. The problem for the city arises from the state’s unwillingness to make up for the fall in federal support for cities that dates back to the late 1970’s.⁹⁶

⁹³ The study spans the terms of Joseph Tate (1962-1972), Frank Rizzo (1972-1980), William Green (1980-1984), and the first six years of Wilson Goode’s two terms (1984-1992).

⁹⁴ Public school teachers are not included in these figures.

⁹⁵ A strong union effect also is apparent in construction costs in the private sector. Among the fifty largest markets in the nation, Philadelphia had the sixth highest construction costs in 2000, being 20 percent above the sample average according to data from the R.S. Means Company, a data provider and consultant to the building industry (see Gyourko and Saiz (2004a) for the details). Unions are strong in Philadelphia’s building trades, and Gyourko and Saiz (2004b) report results indicating that Philadelphia’s relatively high union concentration in the construction industry is materially responsible for its high construction costs. Regressing the log change in real single family construction costs over 1986-2000 against the construction sector unionization rate in 1986 for a large sample of cities finds that the initial period unionization rate accounts for 40 percent of the variation in ensuing cost growth in the sample. Real construction costs declined by 11 percent nationally over this time period, with Philadelphia being one of only four markets in which real construction costs rose.

⁹⁶ Federal aid to cities peaked in fiscal year 1977. Some states made up for the entirety of the federal decline. Inman’s (1995) estimates indicate that Pennsylvania only made up 61 cents on the dollar, so that the city’s overall aid position has deteriorated.

The same analysis also reports a significant increase in non-labor spending on neighborhood services (that are not poverty related) over the final 15 years of the sample. This coincides with the onset of a much more demographically representative city council⁹⁷, and also reflects a tradition in government that affords much power to city council members elected at the neighborhood level. It is very difficult for any mayor to govern without assuaging this localized power.⁹⁸

Other research provides evidence of some capitalization of successful local public sector rent-seeking into local land prices.⁹⁹ In theory, this could provide a mechanism to discipline the process. However, there are large coordination costs across property owners that seem likely to prevent that outcome. Some jurisdictions minimize the effective costs of public sector union wage premia by hiring higher quality workers.¹⁰⁰ However, there is no evidence this is the case in Philadelphia. In fact, unions clearly were able to negotiate very favorable terms in previous contracts.¹⁰¹

Corruption also helps define the quality of the local public sector, but side payments to politicians are not the dominant direct cost of city government to businesses or households that they well may have been a century ago. The vast majority of resources that are redistributed in the modern era are directed towards public workers, the

⁹⁷ The percentage of African-American and Hispanics on the city council rose from 18 to 41 percent from 1975-1990 (Inman (1995, p. 382)). The precipitating event was the Abscam bribery scandal which resulted in the convictions of white city council members (along with a U.S. Senator from New Jersey), thereby opening the way for more minorities to serve on city council.

⁹⁸ It would be inappropriate not to note the administration of William Green amidst this discussion. He cut spending on the labor budget, did not increase city purchases of goods and services in real terms, and left his successor with a small surplus. His popularity was such that he announced he would not run for reelection in the third year of his four-year term.

⁹⁹ Gyourko and Tracy (1989).

¹⁰⁰ Gyourko and Tracy (1991).

¹⁰¹ In one case discussed in Gyourko and Tracy (1989), the union representing the city's sanitation workers was able to negotiate the right to veto the introduction of new technology that would allow the use of fewer people per truck. Thus, not only are costs high, but at least in some cases, the effective service flow from a unionized worker is lower.

poor, and neighborhood projects--not individual politicians. That said, corruption is much on the minds of Philadelphians today, so it merits further examination, especially since it will be concluded that corruption is not the primary reason for Philadelphia's inability to reverse its decline.

The Clark administration, which brought the Democrats to power in 1952, infused city government with an energizing spirit of reform. The 1950s saw local Democrats copy the 'brain trust' concept from the Roosevelt Administration and begin the professionalization of the municipal civil service in Philadelphia. However, by the early 1960s, the Tate administration had returned the city to neighborhood-based politics from its reform period.¹⁰² Ultimately, just as happened with Republican dominance following the Civil War, the sense of invincibility associated with what now is thirteen straight mayoral victories for the Democrats appears to have spawned behavior of a type that Lincoln Steffens would have no trouble recognizing.

While this is not the place for a detailed examination of public corruption in Philadelphia, whether plainly illegal or the 'lawful graft' noted by Steffens, it is not difficult to find examples. One famous case dating back to the Rizzo administration in the 1970s involves the signing of a 'no-audit' clause regarding health care expenses for a municipal workers union. This deal effectively barred the city from challenging any such expenses associated with the local public union. One does not need a vivid imagination to see the potential for fraud in such an arrangement. The union leader was later indicted and ultimately went to jail for various crimes associated with that contract.¹⁰³ Two newer

¹⁰² Inman (1995).

¹⁰³ The union leader, Earl Stout, was convicted on 40 counts of conspiracy, racketeering, theft, and mail fraud in May of 1990. While many of the convictions were not related to health care matters, some clearly

cases are illustrative of more recent political dealings in the city. One involves secret payments of at least \$17 million by a local public utility to a charity established by a state senator from Philadelphia.¹⁰⁴ The other is a major federal investigation of city contracting that included the bugging of the current mayor's office by the FBI and is ongoing as this paper is being written.¹⁰⁵

Moreover, Steffens' line about leading Philadelphians 'defending corruption and boasting of their machine' still applies, as evidenced by current Pennsylvania Governor (and former two-term mayor) Edward Rendell's public defense of the secret arrangement whereby millions of dollars were secretly transferred to a charity established and controlled by the state representative noted above. Two recent statements by the Governor on this matter are particularly illuminating in this regard:

"Gosh, I'm outraged that I didn't think of it first."

"You can quarrel about his methods, but he is not the first legislator or government official to squeeze [a corporation] when he thought it would benefit the public."¹⁰⁶

were. See the May 5, 1990, *Philadelphia Inquirer* story "Stout Found Guilty of Stealing, Son, Ex-Union Worker Also Are Convicted" by Gary Cohn and Walter F. Roche, Jr. for the details.

¹⁰⁴ This situation involves a, heretofore, secret agreement whereby State Senator Vincent Fumo, who represents a district in south Philadelphia, obtained multimillion dollar payments from the local electric utility (named PECO) to a charity the senator established. These payments were arranged at the time the state of Pennsylvania deregulated energy prices. See the January 7, 2004, *Philadelphia Inquirer* article, "2 Groups Linked to Fumo Got Millions", for the initial story reported by Craig R. McCoy. A series of articles by McCoy and other *Inquirer* reporters followed with added details. The entire set can be accessed by searching on the name Fumo on the *Inquirer's* web page. The utility has recently announced a new corporate policy banning such secret payments in the future. See the April 28, 2004, *Philadelphia Inquirer* article "Peco Wrong to Keep Gift Secret, Chief of Parent Firm Says" by Mario F. Cattabiani and Craig R. McCoy for those details. Mr. Fumo faced opposition in the Democratic primary, but defeated his challenger easily, and won reelection.

¹⁰⁵ The story on the bugging of Mayor John Street's office broke in early October of 2003, just prior to the mayoral election. For an early piece on the discovery, see the October 9, 2003, *Philadelphia Inquirer* article "FBI Steps Up Probe" reported by Emilie Lounsberry, Mark Fazlollah, and Clea Benson. A host of stories followed with more details on the probe. Polls at the time suggested a close race between Mayor Street and his challenger, Sam Katz. The revelation of the bugging is widely credited with helping Mayor Street's campaign. He won reelection in a landslide.

¹⁰⁶ Both quotes are from a January 28, 2004, article in the *Philadelphia Inquirer* headlined "Governor Defends Fumo Deals with Utilities" reported by Mario F. Cattabini. Mr. Cattabini attributes the first line to

Corruption or other completely legal forms of self-dealing could be quite costly to Philadelphia in the modern era. There are fewer rents available to transfer to politicians, partly because some have already been appropriated by the local public workforce and other constituencies, and partly because there are fewer rents in aggregate due to reduced demand for the city. In such an environment, a corrupt public sector could more easily overreach and have real negative effects on the local economy. In addition, stiffer legal and social costs make it difficult for corruption to be transparent. To the extent that corruption or even legal self-dealing is not predictable, transparency within the local economy is reduced, thereby raising the risk premium required for doing business in the city. In a world with highly competitive agglomerations existing elsewhere, it is much easier today than it was in the past to eliminate the risks associated with a lack of transparency simply by avoiding the more corrupt places.¹⁰⁷

However, even if Philadelphia ended all such behavior in its public sector, it would remain a high cost place in which to live and work. This is not to defend the present ethical environment or to claim that it has no costs, as it does. It is only to emphasize that the more important issue is that the city has not been able to discipline a system of redistribution that has expanded enormously, and now includes an entrenched public sector, a parochial neighborhood-based politics, and a large concentration of the

a statement made by Governor Rendell at a December 2003 event at which State Senator Fumo announced his reelection campaign. The second quote was made at a January 27, 2004, session with reporters.

¹⁰⁷ Less commented on by the press and urban scholars, but possibly much more important in terms of economic transparency (or a lack thereof), is the apparently extensive *ad hoc* negotiation of public subsidies on a deal-by-deal basis. Many of the subsidies flow through an entity called the Philadelphia Industrial Development Corporation (PIDC), but there are no consistent, historical data available that would allow a neutral third party even to document the aggregate size of the subsidies over time, much less to perform a competent cost-benefit analysis. The size and scope of some recent deals suggest that this is an issue in need of future research. At the very least, the extensiveness of these deals signals that there is little or no recognition, in city hall or in the larger business community, that the opportunity cost of these subsidies always is reducing the high local tax rates on the entire community.

metropolitan area's impoverished households. Stories on corruption and self-dealing local politicians garner more headlines, but it seems unlikely those factors constitute the more influential determinant of the low quality of Philadelphia's local public sector. Indeed, if one could choose between today's public sector and that described by Steffens a century ago, Matthew Quay's machine probably would be preferable. That machine was more corrupt, but it appears to have been able to transfer resources more efficiently. The modern city has some corruption, along with a much larger and very inefficient system of redistribution. The bulk of the transfers occurring in the modern era—whether to local public employees or to the poor—can only be affected by taxes that operate against productive margins. In a world in which the factors of production have become very mobile, this can be very damaging. In this regard, Philadelphia has performed poorly, as it no longer is able to provide essential infrastructure and key public services at reasonable cost.

Summary and Conclusions

Philadelphia became a great city because it was twice able to overcome the challenges arising from changing economic conditions. In both cases, there was a recognition that fundamental change was required. In the first instance, New York's harbor was better and nothing could or would alter that fact, so it was Philadelphia that would have to adapt. That recognition is the foundation for all the other factors that helped lead to successful responses in the past. Without it, change (which always is difficult) is likely to be resisted, and insufficient energy put into discovering other viable paths to growth.

When Philadelphia has successfully responded, an important reason significant change could result was the presence of a large and relatively high skill work force. Having an appropriately talented and flexible labor pool helps make it feasible for entrepreneurs to start new lines of business. One also needs a cost-effective and transparent local business environment in which such entrepreneurial risk-taking activity is encouraged and can be appropriately rewarded. Clearly, such an environment existed at the end of the 18th century and around the middle of the 19th century.

While the challenges facing Philadelphia in the second half of the 20th century were great, the city's inability to reinvent itself is at least partially due to weakness in all these areas, compounded by white flight from a city with a large African-American presence. For far too long, Philadelphia and its leadership did not fully come to terms with the permanent nature of the decline in the demand for the city as a manufacturing center. It remains unclear to this day whether the implications of the vast increase in the mobility of both capital and labor over the past fifty years are well understood by Philadelphia's leadership.

That these were huge challenges is evidenced by the fact that virtually all the old manufacturing centers lost population between 1950 and 1980, with the 1970s being the decade of greatest loss for most places (Table 1). It was in the 1980s that places like New York and Boston began to adapt successfully. Philadelphia's inability to understand that the future lay with firms like Vanguard rather than in manufacturing provides a telling illustration of why the city's experience has been different from that of Boston.¹⁰⁸ In the same vein, Philadelphia's use of a wage tax and its generally high tax burden

¹⁰⁸ Moreover, one should not be fooled by the relatively small increases in population for Boston and New York. Latent demand for these cities is much higher, as evidenced by their skyrocketing house prices.

relative to nearby, attractive suburbs is informative about how well it truly understands what increased mobility means in the modern world. Boston may not be a low tax area, but there is not nearly as great a financial advantage for a firm to be across the Charles River in (say) Cambridge, MA, as it is for Vanguard to be in the suburbs of Philadelphia.

Perhaps the most serious long-term consequence of not recognizing the need for fundamental change is the absence of an appropriately skilled workforce for a rapidly changing economy. The dramatically widening differentials in the fraction of the populations of Philadelphia, Boston, and New York that are college graduates starkly illustrate this fact. We now know that one sensible strategy would have been to focus on human capital development. That could have been done in a variety of ways. One is by investing in upgrading the skills of the local workforce and the education of young residents. Another is to pursue policies that make the city attractive to high human capital workers and their employers who were not yet in the city.

Not having done either very well early on in the process is, with hindsight, the biggest failure of the reform movement led by Joseph Clark and the local Democratic party. They cleaned up local politics and brought much needed professionalism to city government for a brief period, but they never understood the true nature of the economic challenge facing the city. Nor were they able to provide successors who, with the passage of time, should have been better able to comprehend what had changed.

In the 1990s, the Rendell Administration did show it understood the importance of developing amenities that made Philadelphia more of a 'consumer city' in the sense understood by recent urban economics research. However, the Rendell Administration was unwilling or unable to carry out the radical reform that would have been necessary to

lower significantly the city's high cost structure, and it does not appear its successor will do so. An imminent municipal default crisis was avoided and the wage tax was lowered slightly, but not enough to require structural change in the way the city was organized or run. The useful change that did occur during the Rendell administration now can be seen to have been enough to avoid catastrophe and to improve things a bit, but not enough to reverse the fundamental state of decline. As with the Clark administration, there were good intentions and some real improvements made, but there was not enough institutional strength to maintain the momentum.

In sum, the city has yet to come to terms with the new urban economics in which it is not some fixed location advantage such as being on a river that makes a place productive, but attributes that attract valuable workers and the firms that need them. In the old world, firms had to be in the city to exploit the river and realize lower production and shipping costs. The workers followed. In the new world in which transportation costs are so much lower and mobility is so much higher, firms can produce almost anywhere. They need high quality workers much more than they need any specific city or location. In this new world, cities that are not cost effective or that do not otherwise provide attractive environments for high quality workers and their firms decline. That is the economic history of Philadelphia for much of this century.

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Table 1: Population, Share, and Growth Rates--Philadelphia and Key Competitors

Panel A: Population

| Year | Philadelphia City | Philadelphia County | New York County- Kings County- | | Boston City | Suffolk County | Chicago City | Cook County |
|------|-------------------|---------------------|--------------------------------|-----------|-------------|----------------|--------------|-------------|
| | | | New York City | Manhattan | | | | |
| 1790 | 28,522 | 54,388 | 33,131 | 33,111 | 4,549 | 18,320 | 44,865 | |
| 1800 | 41,220 | 81,009 | 60,515 | 60,489 | 5,740 | 24,937 | 28,015 | |
| 1810 | 53,722 | 111,210 | 96,373 | 96,373 | 8,303 | 33,787 | 34,381 | |
| 1820 | 63,802 | 137,097 | 123,706 | 123,706 | 11,187 | 43,298 | 43,940 | |
| 1830 | 80,462 | 188,797 | 202,859 | 202,589 | 20,535 | 61,392 | 62,163 | |
| 1840 | 93,665 | 258,037 | 312,710 | 312,710 | 47,613 | 93,383 | 95,773 | 4,470 |
| 1850 | 121,376 | 408,762 | 515,547 | 515,547 | 138,882 | 136,881 | 144,517 | 29,963 |
| 1860 | 565,529 | 565,520 | 813,669 | 813,660 | 279,113 | 177,840 | 192,691 | 112,172 |
| 1870 | 674,022 | 674,022 | 942,292 | 942,292 | 419,921 | 250,526 | 270,802 | 298,977 |
| 1880 | 847,170 | 847,170 | 1,206,299 | 1,206,299 | 599,495 | 362,839 | 387,927 | 503,185 |
| 1890 | 1,046,964 | 1,046,964 | 1,515,301 | 1,515,301 | 838,547 | 448,477 | 484,780 | 1,099,850 |
| 1900 | 1,293,697 | 1,293,697 | 3,437,202 | 2,050,600 | 1,166,582 | 560,892 | 611,417 | 1,698,575 |
| 1910 | 1,549,008 | 1,549,008 | 4,766,883 | 2,762,522 | 1,634,351 | 670,585 | 731,388 | 2,185,283 |
| 1920 | 1,823,779 | 1,823,779 | 5,620,048 | 2,284,103 | 2,018,356 | 748,060 | 835,522 | 2,701,705 |
| 1930 | 1,950,961 | 1,950,961 | 6,930,446 | 1,867,312 | 2,560,401 | 781,188 | 870,536 | 3,376,438 |
| 1940 | 1,931,334 | 1,931,334 | 7,454,995 | 1,889,924 | 2,698,285 | 770,816 | 863,248 | 3,396,808 |
| 1950 | 2,071,605 | 2,071,605 | 7,891,957 | 1,960,101 | 2,738,175 | 801,444 | 896,615 | 3,620,962 |
| 1960 | 2,002,512 | 2,002,512 | 7,781,984 | 1,698,281 | 2,627,319 | 697,197 | 791,329 | 3,550,404 |
| 1970 | 1,948,609 | 1,948,609 | 7,894,862 | 1,539,233 | 2,601,012 | 641,071 | 735,190 | 3,366,957 |
| 1980 | 1,688,210 | 1,688,210 | 7,071,639 | 1,428,285 | 2,240,419 | 562,994 | 650,142 | 3,005,072 |
| 1990 | 1,585,577 | 1,585,577 | 7,322,564 | 1,487,536 | 2,300,664 | 574,283 | 663,906 | 2,783,726 |
| 2000 | 1,517,550 | 1,517,550 | 8,008,278 | 1,537,195 | 2,465,326 | 589,141 | 689,807 | 2,896,016 |

Notes:

1. Political consolidation of the original city of Philadelphia and its neighbors occurred in the 1850s. By 1860, the boundaries of the city and the county are coterminus. This is why the city population jumps so discretely between 1950 and 1860.
2. Prior to 1900, New York City consisted only of Manhattan (or New York County). Since then, the outer boroughs have been consolidated into the modern city we know today. As with Philadelphia in the 1850s, that is why there is such a dramatic jump in city population between 1890 and 1900.

Table 1 (cont'd.) *Panel B: Population Share in Nation*

| Year | Philadelphia | | New York County- | | | Boston | | Chicago | |
|------|--------------|--------|------------------|-----------|----------|--------|--------|---------|--------|
| | City | County | City | Manhattan | Brooklyn | City | County | City | County |
| 1790 | 0.007 | 0.014 | 0.008 | 0.008 | 0.001 | 0.005 | 0.012 | | |
| 1800 | 0.008 | 0.015 | 0.012 | 0.012 | 0.001 | 0.005 | 0.005 | | |
| 1810 | 0.008 | 0.016 | 0.014 | 0.014 | 0.001 | 0.005 | 0.005 | | |
| 1820 | 0.006 | 0.014 | 0.012 | 0.012 | 0.001 | 0.004 | 0.004 | | |
| 1830 | 0.006 | 0.015 | 0.016 | 0.016 | 0.002 | 0.005 | 0.005 | | |
| 1840 | 0.006 | 0.015 | 0.018 | 0.018 | 0.003 | 0.005 | 0.006 | 0.000 | 0.001 |
| 1850 | 0.005 | 0.018 | 0.022 | 0.022 | 0.006 | 0.006 | 0.006 | 0.001 | 0.002 |
| 1860 | 0.018 | 0.018 | 0.026 | 0.026 | 0.009 | 0.006 | 0.006 | 0.004 | 0.005 |
| 1870 | 0.018 | 0.018 | 0.025 | 0.025 | 0.011 | 0.007 | 0.007 | 0.008 | 0.009 |
| 1880 | 0.017 | 0.017 | 0.024 | 0.024 | 0.012 | 0.007 | 0.008 | 0.010 | 0.012 |
| 1890 | 0.017 | 0.017 | 0.024 | 0.024 | 0.013 | 0.007 | 0.008 | 0.018 | 0.019 |
| 1900 | 0.017 | 0.017 | 0.046 | 0.027 | 0.016 | 0.008 | 0.008 | 0.023 | 0.025 |
| 1910 | 0.017 | 0.017 | 0.052 | 0.030 | 0.018 | 0.007 | 0.008 | 0.024 | 0.026 |
| 1920 | 0.017 | 0.017 | 0.053 | 0.022 | 0.019 | 0.007 | 0.008 | 0.026 | 0.029 |
| 1930 | 0.016 | 0.016 | 0.057 | 0.015 | 0.021 | 0.006 | 0.007 | 0.028 | 0.033 |
| 1940 | 0.015 | 0.015 | 0.057 | 0.014 | 0.021 | 0.006 | 0.007 | 0.026 | 0.031 |
| 1950 | 0.014 | 0.014 | 0.053 | 0.013 | 0.018 | 0.005 | 0.006 | 0.024 | 0.030 |
| 1960 | 0.011 | 0.011 | 0.044 | 0.010 | 0.015 | 0.004 | 0.004 | 0.020 | 0.029 |
| 1970 | 0.010 | 0.010 | 0.039 | 0.008 | 0.013 | 0.003 | 0.004 | 0.017 | 0.027 |
| 1980 | 0.007 | 0.007 | 0.031 | 0.006 | 0.010 | 0.002 | 0.003 | 0.013 | 0.023 |
| 1990 | 0.006 | 0.006 | 0.029 | 0.006 | 0.009 | 0.002 | 0.003 | 0.011 | 0.021 |
| 2000 | 0.005 | 0.005 | 0.028 | 0.005 | 0.009 | 0.002 | 0.002 | 0.010 | 0.019 |

Table 1 (cont'd.) *Panel C: Population Growth Rate*

| Year | Philadelphia City | Philadelphia County | New York City | New York County- Manhattan | Kings County- Brooklyn | Boston City | Suffolk County | Chicago City | Cook County |
|------|-------------------|---------------------|---------------|-------------------------------|---------------------------|-------------|----------------|--------------|-------------|
| 1790 | | | | | | | | | |
| 1800 | 0.445 | 0.489 | 0.827 | 0.827 | 0.262 | 0.361 | -0.376 | | |
| 1810 | 0.303 | 0.373 | 0.593 | 0.593 | 0.447 | 0.355 | 0.227 | | |
| 1820 | 0.188 | 0.233 | 0.284 | 0.284 | 0.347 | 0.281 | 0.278 | | |
| 1830 | 0.261 | 0.377 | 0.640 | 0.638 | 0.836 | 0.418 | 0.415 | | |
| 1840 | 0.164 | 0.367 | 0.542 | 0.544 | 1.319 | 0.521 | 0.541 | | |
| 1850 | 0.296 | 0.584 | 0.649 | 0.649 | 1.917 | 0.466 | 0.509 | 5.703 | 3.253 |
| 1860 | 3.659 | 0.383 | 0.578 | 0.578 | 1.010 | 0.299 | 0.333 | 2.744 | 2.341 |
| 1870 | 0.192 | 0.192 | 0.158 | 0.158 | 0.504 | 0.409 | 0.405 | 1.665 | 1.414 |
| 1880 | 0.257 | 0.257 | 0.280 | 0.280 | 0.428 | 0.448 | 0.433 | 0.683 | 0.736 |
| 1890 | 0.236 | 0.236 | 0.256 | 0.256 | 0.399 | 0.236 | 0.250 | 1.186 | 0.962 |
| 1900 | 0.236 | 0.236 | 1.268 | 0.353 | 0.391 | 0.251 | 0.261 | 0.544 | 0.543 |
| 1910 | 0.197 | 0.197 | 0.387 | 0.347 | 0.401 | 0.196 | 0.196 | 0.287 | 0.308 |
| 1920 | 0.177 | 0.177 | 0.179 | -0.173 | 0.235 | 0.116 | 0.142 | 0.236 | 0.269 |
| 1930 | 0.070 | 0.070 | 0.233 | -0.182 | 0.269 | 0.044 | 0.042 | 0.250 | 0.304 |
| 1940 | -0.010 | -0.010 | 0.076 | 0.012 | 0.054 | -0.013 | -0.008 | 0.006 | 0.020 |
| 1950 | 0.073 | 0.073 | 0.059 | 0.037 | 0.015 | 0.040 | 0.039 | 0.066 | 0.110 |
| 1960 | -0.033 | -0.033 | -0.014 | -0.134 | -0.040 | -0.130 | -0.117 | -0.019 | 0.138 |
| 1970 | -0.027 | -0.027 | 0.015 | -0.094 | -0.010 | -0.081 | -0.071 | -0.052 | 0.071 |
| 1980 | -0.134 | -0.134 | -0.104 | -0.072 | -0.139 | -0.122 | -0.116 | -0.107 | -0.043 |
| 1990 | -0.061 | -0.061 | 0.035 | 0.041 | 0.027 | 0.020 | 0.021 | -0.074 | -0.028 |
| 2000 | -0.043 | -0.043 | 0.094 | 0.033 | 0.072 | 0.026 | 0.039 | 0.040 | 0.053 |

Table 2: Education Levels--Metropolitan Areas and Cities

*Panel 1: Percent of 25+ Year Olds with Bachelor's Degrees, Metropolitan Areas
Mean, Interquartile Range, and Select Areas*

| | 1940 | 1970 | 1980 | 1990 | 2000 |
|-----------------|------|------|------|------|------|
| Mean | 4.9 | 11.2 | 16.4 | 19.8 | 23.5 |
| 25th Percentile | 3.7 | 8.7 | 12.6 | 15.1 | 18 |
| 50th Percentile | 4.7 | 10.1 | 15.1 | 18.7 | 22.6 |
| 75th Percentile | 5.7 | 13.1 | 18.9 | 22.9 | 27.6 |
| Philadelphia | 4.7 | 10.7 | 16.7 | 22.6 | 27.7 |
| Boston | 5.6 | 12.7 | 20.3 | 27.8 | 33.8 |
| New York | 6.5 | 11.8 | 18.7 | 24.6 | 29.2 |

*Panel 2: Percent of 25+ Year Olds without High School Degrees, Cities
Mean, Interquartile Range, and Select Cities*

| | 1940 | 1970 | 1980 | 1990 | 2000 |
|-----------------|------|------|------|------|------|
| Mean | | 42.5 | 31 | 24 | 20.2 |
| 25th Percentile | | 33.9 | 22.1 | 16.2 | 13.1 |
| 50th Percentile | | 43.5 | 31.1 | 23.6 | 19.2 |
| 75th Percentile | | 51.5 | 38.9 | 30.1 | 24.9 |
| Philadelphia | | 60 | 45.7 | 35.7 | 38.8 |
| Boston | | 46.5 | 31.6 | 24.3 | 21.1 |
| New York | | 53.1 | 39.8 | 31.7 | 27.7 |

*Panel 3: Percent of 25+ Year Olds with Bachelor Degrees, Cities
Mean, Interquartile Range, and Select Cities*

| | 1940 | 1970 | 1980 | 1990 | 2000 |
|-----------------|------|------|------|------|------|
| Mean | | 12.8 | 18 | 22.2 | 25.6 |
| 25th Percentile | | 7.6 | 11.3 | 14.3 | 16.2 |
| 50th Percentile | | 10.8 | 15.5 | 19.3 | 22.4 |
| 75th Percentile | | 15.2 | 22 | 27.3 | 31.8 |
| Philadelphia | | 6.8 | 11.1 | 15.2 | 17.9 |
| Boston | | 10.3 | 20.3 | 30 | 35.6 |
| New York | | 10.6 | 17.3 | 23 | 27.5 |

Notes:

1. Metropolitan area sample includes 304 areas in 1940, and 318 areas from 1970-2000.
2. City sample includes 723 cities from 1970-2000.

Figure 1: Philadelphia Metro Area and Suburban Population Over the 20th Century

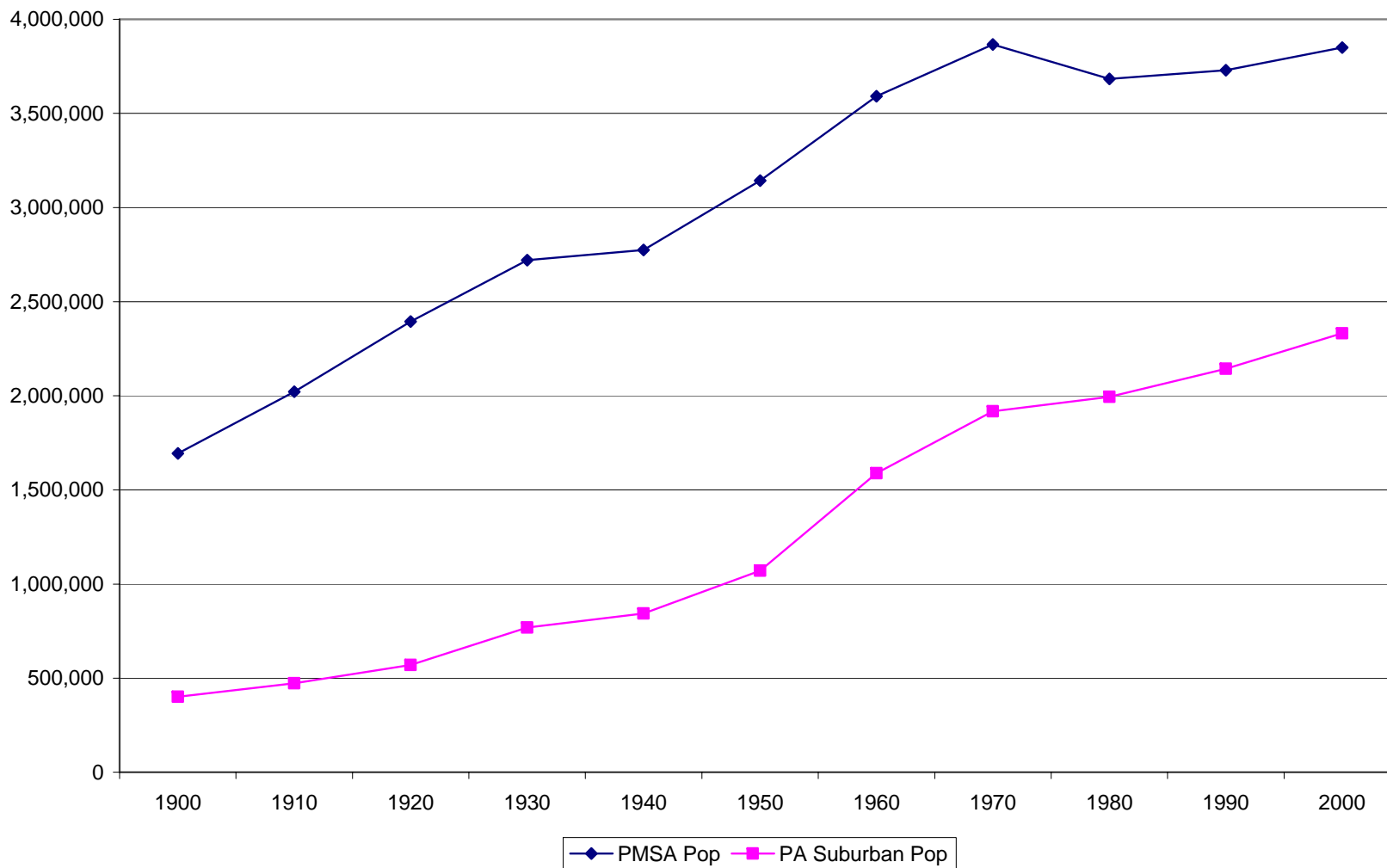
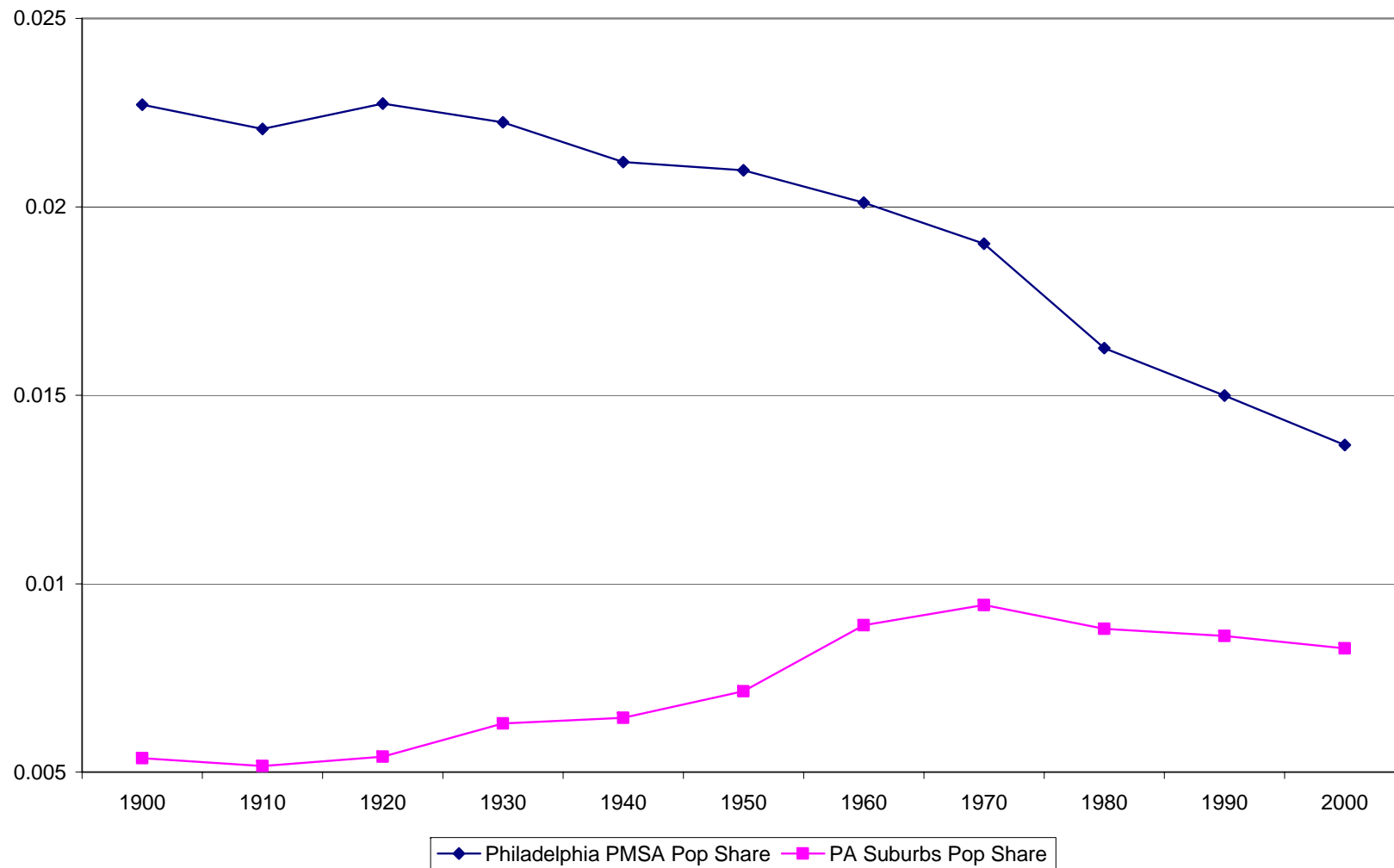


Figure 2: Philadelphia Metro Area and Suburban Population Shares Over the 20th Century



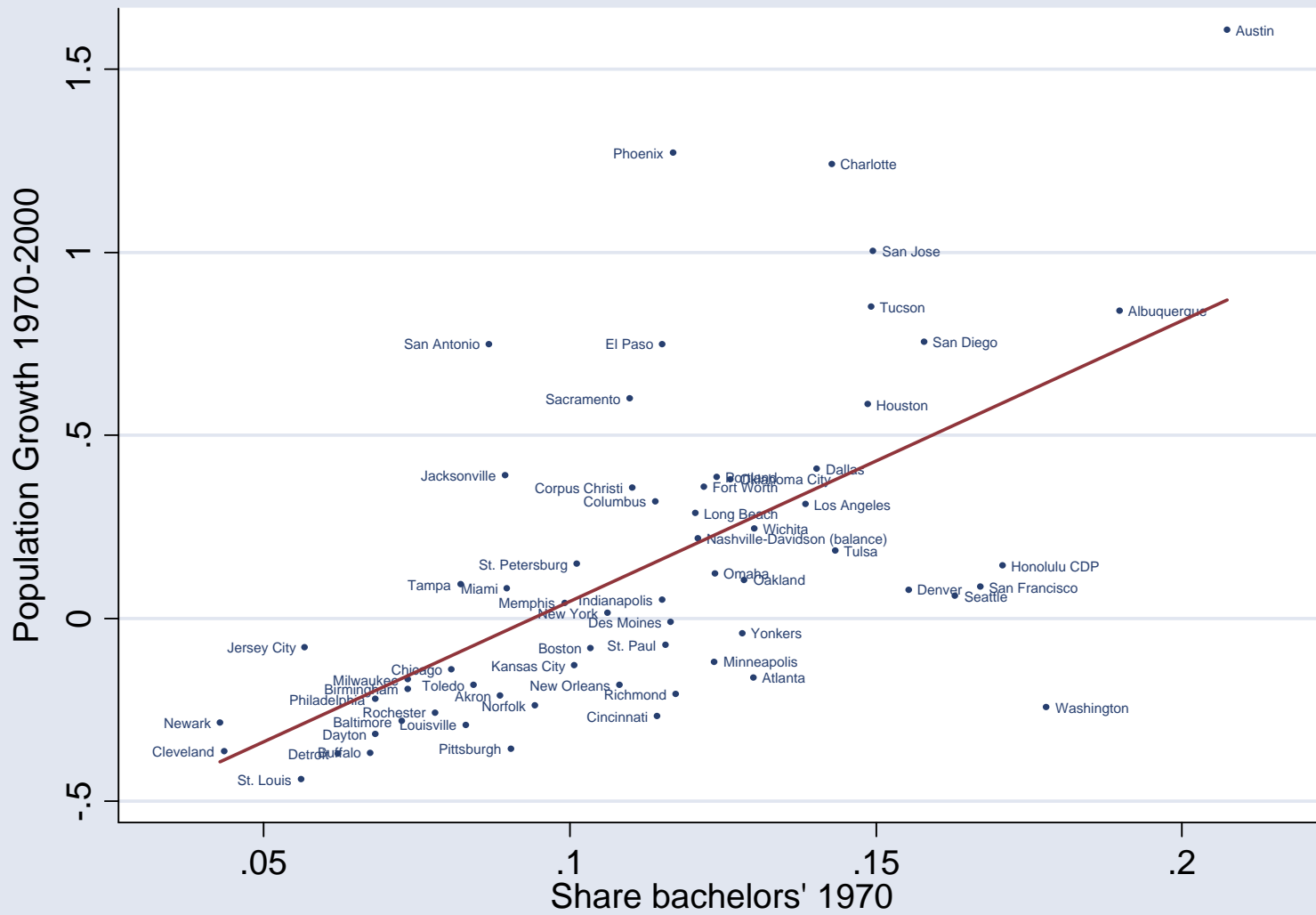


Figure 3: Highly Educated Workers and Growth

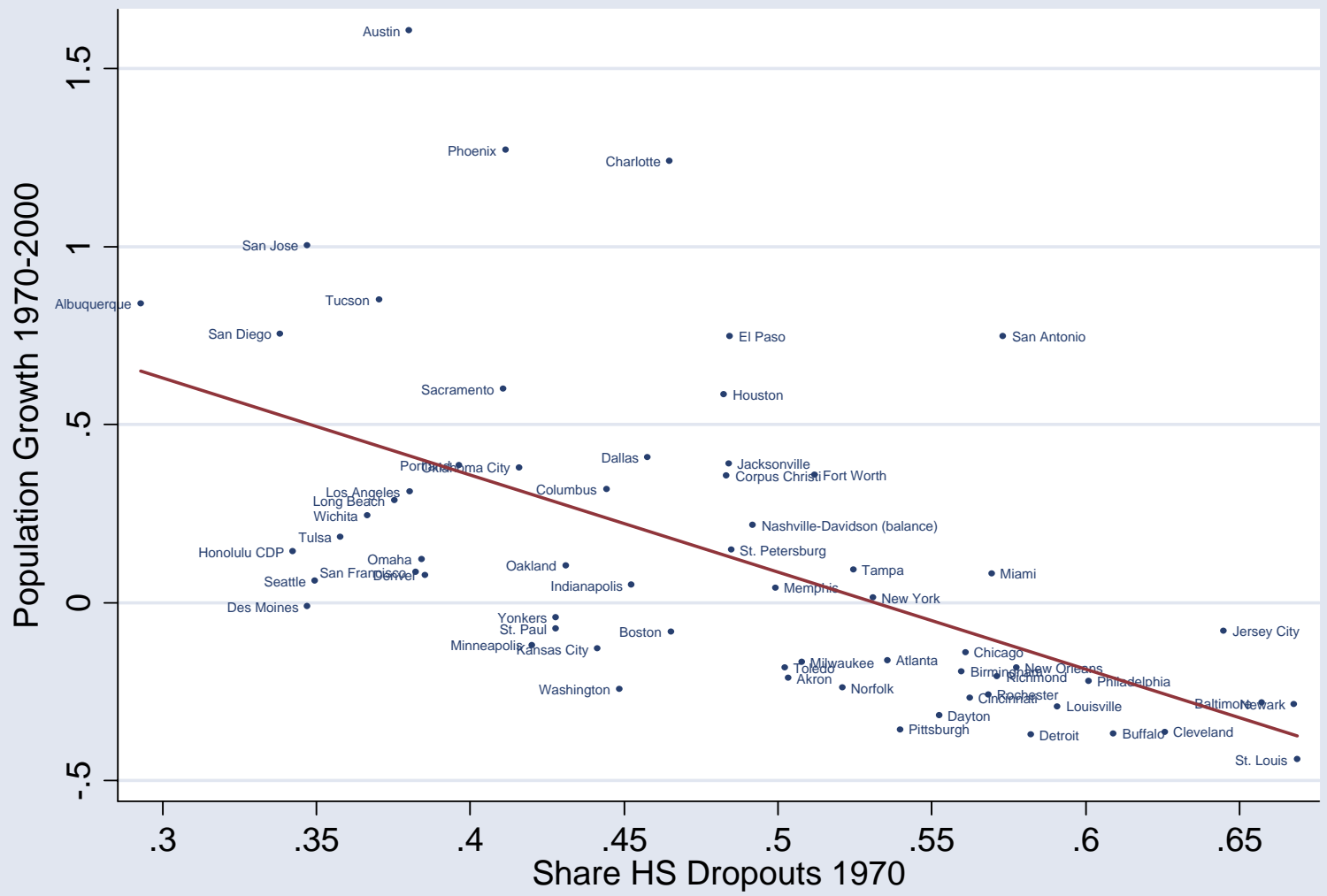


Figure 4: Poorly-Educated Workers and Growth