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Boston has had its fair share of triumphs and downturns as an economy. However, it has uniquely recovered through every cycle stronger than it was before. Examining Boston's historic timeline, Glaeser found that the city was able to recover as a direct result of their skilled work force, providing evidence that human capital is the ultimate economic driver for long-run urban health. In Professor Edward Glaeser's article, *Reinventing Boston*, he analyzes how Boston has survived and reinvented itself during each economic downturn.

During times of economic trouble in Boston's history, the workforce proved able to innovate and transform towards the next generation's economy. In the early nineteenth century, Boston championed a maritime economy in an unconventional manner. After realizing that New York and Philadelphia had superior ports, Boston instead provided the skilled work force needed to sail shipping boats all over the world. Soon, however, shipping switched from sail to steam powered boats in the late nineteenth Century. Around the same time period, there was a great influx of Irish immigrants to Boston. The Irish immigrants created an opportunity to turn the city into an industrial powerhouse and Boston capitalized, as it became a successful factory town. As technology improved, factories moved elsewhere, and the Boston economy declined. In the late twentieth Century, an innovative information economy sprung up driven by the dense mass of universities within Boston's boundaries and has led the city to its current economic success. Furthermore, students receive their degrees and decide to make Boston their home, placing the city among the highest percentage of residents with college degrees.

When analyzing a city's economic history, Glaeser states, "*Conventionally, there are 3 ways of measuring urban success: Population Growth, Income Growth and Housing Price Growth.*" These three variables interact to create positive or negative correlation towards economic success. For example, in principle, increasing demand for a city leads to higher population, which ultimately causes housing

Nora Boneham has also significantly contributed to the elaboration of this chapter.

prices to rise. High housing prices increase the household wealth of current owners, while also demanding a higher wealth from prospective residents who wish to settle in the city. This results in an overall population of residents with greater net worth. Glaeser also points out that greater productivity within a city correlates with all three factors increasing, as well. This basic economic principle can best be observed when the opposite is true. A failing economic driver such as the automobile industry caused Detroit to lose much of its population, alongside a vast decrease in income and housing prices. To further analyze these common measures of urban success, Glaeser adds one more significant variable to his research. He seeks to find significance in the relationship of schooling as it might correlate with the three common variables previously mentioned.

In *Reinventing Boston*, Glaeser analyzes the relationships between the traditional measures of urban success in Boston by taking data from the US Census, as well as from County Business Patterns Questionnaires. He first importantly discovers absolutely no significance between Boston's population and urban economic success. In fact, Boston's population rose steadily until 1950, when it declined until 1980, and has risen ever so slightly since then. However, when compared to the growth rate of the US overall, Boston's population growth has been on a steep decline since the turn of the twentieth Century. This can be attributed, Glaeser believes, to Boston's colder climate. As air conditioning became more popular in the 1950s and 1960s, there was an influx of people moving out of cooler states and into warmer ones. In addition, transportation became more accessible, meaning easier travel to see family and more convenient access to recognizable goods from your previous home in the colder climate. With a correlation coefficient of 48 %, Glaeser discovers that for every 1 % of temperature rise in mean January temperature, population growth rate increases by 2.3 %. However, it is important to note that there is no relationship between skills and growth in cities that received positive shocks because of warmer climate or immigration. Among cities that received negative shocks, such as cold weather, the correlation between growth and skills is over 70 %.

Boston has an extremely inelastic housing supply, meaning that small changes in population greatly affect housing prices. Consequently, with the recent increase in population, some urban success might be attributed to this inelasticity. At the time of the study, there was very little increase in new housing supply, partly due to construction costs being greater than housing prices. In addition, Boston's very strict zoning constraints, directly impacts the city's housing elasticity. To give further evidence of the effects of housing elasticity, Glaeser provides the counter-example of Texas. The state, overall, has very little zoning constraints, allowing for a huge increase in housing supply with a small effect on housing prices, despite the increase in demand. While there is a strong possibility that inelasticity has been a driver for Boston's housing prices, the highest correlation Glaeser found was the relationship between housing prices and college degrees within the state of Massachusetts as a whole. With a correlation coefficient of 78 %, the results show that for every 1 % rise in the population with college degrees, housing prices

increase by 1.5 %. Therefore, Glaeser concludes that schooling has an extraordinarily significant impact on Massachusetts housing prices.

Taking all of Glaeser's research into account, three important lessons can be learned from Boston's urban success. The first is that rising population does not automatically result in a booming economy. Rather, housing prices can be a greater indicator. The second, more important lesson is that skilled and highly educated workers result in greater potential for economic recovery. Finally, economies should be more diverse, rather than relying on a single industry, such as the automobile.

It is important to note that Glaeser's paper was written in 2004, providing opportunity for further research to analyze Boston's economy during the great recession. Was the information economy able to thrive as measured by the common urban success variables? Was the economy still diverse enough to adapt and bounce back, as it has shown throughout history? These are important questions to answer as the United States looks towards revitalizing the country's troubled cities through an emphasis on human capital and economic diversification.

Glaeser's article forms an intriguing connection to Chap. 1 of Arthur O' Sullivan's book, *Urban Economics* (2012). In the opening chapter, O' Sullivan points out the three conditions that must be satisfied for a city to exist: agriculture surplus, urban production, and transportation for exchange. Throughout the article, Glaeser touches upon each of these characteristics. Boston's initial survival depended on the agricultural surplus the town could provide to other colonies and the West Indies. Urban production is illustrated in the sailing and financial skills the population provided in the early nineteenth century and the factory success provided by the end of that century. Boston's convenient location to the Charles River and the Atlantic Ocean allowed for both local and global transportation exchange.

2.1 Multiple Choice Questions

1. According to Glaeser (2005), what is the most important aspect of Boston's consistent economic recoveries?

- a) Population Growth
- b) Geographic Location
- c) Immigration
- d) **Human Capital**

Explanation Boston's human capital has been critical throughout Boston's history. Skills with sailing ships enabled the city to reinvent itself as a global maritime center. Yankee technology and Irish labor together fueled industrialization. And today more than ever, Boston's skills provide the impetus for economic success in technology, professional services and higher education. Human capital is most

valuable to a city during transition periods when skills create flexibility and the ability to reorient towards a new urban focus.

First, it is important to note that there isn't a correlation between population and urban economic success, when it comes to Boston. Boston's population saw huge growth until about 1950, when it declined until 1980. During the decline, however, Boston recovered itself by utilizing its educated human capital to introduce an economy that thrives on information, which includes law and financial sectors. This illustrates that a decline in population doesn't necessarily produce urban success. Second, geographic location wasn't the reason why Boston recovered in the early nineteenth Century since seafaring human capital from Boston was what kept the economy going. Lastly, immigration only assisted Boston during the late nineteenth Century economy crisis with the influx of Irish immigrants. However, the other two recoveries didn't depend on immigration but consistently on human capital instead.

2. According to Glaeser (2005), what factors cause the Boston population growth to significantly lag behind the United States population growth in the early twentieth century?

- a) Technological improvements improved life in hot states to a greater extent than colder states.
- b) Transportation technology eliminated the advantages of northern states, which had once thrived because of proximity to natural resources and rivers.
- c) Urban population density declined as the rise of the automobile allowed for sprawling in the Boston area.
- d) Manufacturing left the dense cities for the suburbs for the advantages of cheaper labor cost and lower transportation costs.
- e) **All of the Above**

Explanation A series of technological improvements disproportionately improved life in hot states. Most obviously, the air conditioner made it possible to live comfortably. As the cost of moving goods plummeted by over 90 % in real terms during the twentieth century, advantage in locating themselves close to natural resources disappeared and people/firms moved to places that were distinguished mainly by their advantages as consumer cities instead. The rise of the automobile inevitably meant that people would increasingly move to lower density communities that could be designed around the new technology. Indeed, much of twentieth Century urban histories can be seen as the rise of decentralized communities. The correlation between a city's density in 1920 and its use of public transportation 60 years later is more than 50 %. Manufacturing firms left cities for suburbs, which could easily be accessed by trucks since transportation and labor costs are cheaper in the suburbs.

3. According to Glaeser (2005), what factors contribute to the extremely inelastic housing supply in the Boston area?

- a) Construction cost being greater than housing prices.
- b) Strict zoning constraints by the Boston government.
- c) Lenient zoning restriction for new development.
- d) **a and b**
- e) a and c

Explanation Housing supply is completely inelastic when the cost of constructing a new home is more expensive than the resulting house price, which is the case in Boston for most of the 1980–2000 period. The other factor for the inelastic housing supply is the strict zoning constraints imposed by the Boston government. The comparison Glaeser utilizes with Texas explains this point clearly as in 2002 Texas approved 160,530 construction permits while Massachusetts only gave out 16,875. In Texas, the zoning restrictions are lenient which results in more housing developments and a more elastic housing supply. In Massachusetts, the strict zoning leads to less development and less housing which is a primary factor in the inelastic housing supply of Boston.

References

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