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Economic Distress and Resurgence in U.S. Central Cities: Concepts, Causes, and Policy Levers

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Abstract:

This paper provides a review of the literature on U.S. central city growth and distress during the second half of the twentieth century.It finds that city growth tended to be higher in metropolitan areas with favorable weather, higher growth, and greater human capital, while distress was strongly correlated with city-level manufacturing legacy. The article affirms that distress has been highly persistent, but that some cities have achieved resurgence through a combination of strong leadership, collaboration across sectors and institutions, clear and broad-based strategies, and significant infrastructure investments. Finally, the article explores measurement issues by comparing two methodologies used to identify poorly performing central cities: comparisons across a comprehensive national cross-section of cities and comparisons within smaller samples of similar cities. It finds that these approaches have produced similar assessments of a city's status, except in some cases where the city's progress has been uneven across time or with respect to alternative criteria.

JEL classifications: R11, R12, R23, R58, O15

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Since the 1990s, scholars in fields such as economics and urban studies have used a variety of statistical techniques to investigate the causes of disparities in growth and resident well-being across U.S. central cities and metropolitan areas. Some of the more recent studies in this literature have focused specifically on the challenges of distressed (also called "weak-market" or " nonresurgent") urban areas: those that have experienced population losses over an extended period of time or whose residents have exceptionally low incomes and high rates of poverty, or both. While employing some core techniques from the prior work, the literature on distressed cities has put a greater focus on identifying policies to reverse negative trends, and authors have turned to case studies to supplement statistical analyses.

This paper starts by reviewing the methodologies, findings, and implications of the literature on central city growth. The studies identify several broad and somewhat intertwined forces that are key to understanding why some U.S. central cities experienced declines in population, employment, and resident economic well-being during the second half of the twentieth century. For one thing, people and employers moved to warmer, sunnier locations. They also moved to less densely settled places, including both younger cities and the outskirts of established cities. Additionally, many manufacturers downsized their workforces or moved their operations to lower-cost locations. While these characteristics were the major factors explaining the relative growth rates of U.S. cities during this period, the literature also finds that cities with more highly educated populations tended to fare better than cities where a large share of the population either did not finish high school or did not go on to college.

The paper then turns to the literature on distressed cities. Of the forces that influenced population, employment, and economic well-being, the declines and shifts in manufacturing employment are arguably the most relevant for explaining city distress. Among all U.S. central cities, those that were heavily industrial experienced the greatest negative shocks in the second half of the twentieth century. They also are the most likely to have weak economies and low family incomes today. Distressed cities suffer from an erosion of physical and social capital, as well as deterioration in their civic infrastructure. Moreover, they have comparatively high

shares of high school dropouts and low shares of residents with college degrees, making them unattractive locations for employers.

In addition to examining the sources and consequences of central city distress, the studies investigate possible remedies. Their conclusions are sobering: reversing these cities' trajectories requires making significant civic and financial investments, and comparatively few places have succeeded in making the transition from distressed to revitalized. Scholars agree that distressed cities need to focus on a broad range of initiatives in order to achieve a significant turnaround in their economies. Most importantly, their public officials, private-sector employers, and nonprofit institutions need to coalesce around a long-term vision and collaborate for a sustained period of time in implementing broad-based revitalization strategies. These include attracting and retaining competitive businesses across a variety of sectors, fostering innovation and knowledge transfer, and improving both human and physical capital.

Finally, the paper compares two different methods of identifying distressed and resurgent cities. One approach is to make comparisons across a comprehensive national cross-section of cities, while the other is to focus on a more limited sample of peer cities that share similar characteristics, challenges, or opportunities. We demonstrate that the two methods yield similar lists of economically troubled cities. They tend to disagree only in cases where cities have made uneven economic progress over time, or where their performance varies substantially across indicators.

The Overall Context: Suburbanization, Sun-Seeking, and the Downsizing of Manufacturing

People's growing preference for suburban and warm-weather locations had a profound effect on the fortunes of U.S. central cities during the second half of the twentieth century. Between 1950 and 1990, the total population of central cities fell by 17 percent even as the total population of metropolitan areas increased by 72 percent (Baum-Snow 2007). Many sizable cities in the Northeastern and Midwestern sections of the country lost residents decade after

decade, while those in Southern and Western sections continued to attract new residents (Glaeser and Shapiro 2003, Rappaport 2003).

Suburban and other less densely populated locations had long offered lower housing costs and more spacious living, but were farther away from the central business districts where many people worked. Starting in the 1950s, major highway and road construction shortened commutes from outer locations to jobs in city centers, and encouraged increased use of automobiles. The spread of air conditioning in the decades after World War II—along with rising preferences for mild winters—prompted people increasingly to favor locations in the South and West over those in the Northeast and Midwest (Rappaport 2007).

Jobs gradually followed people. In the 1950s, 70 percent of all metropolitan-area employment was located in central cities, but by 1990, the central-city share had fallen to 45 percent (Mieszkowski and Mills 1993). As of the mid-2000s, only 21 percent of jobs in the top 98 metropolitan areas were located within three miles of the central business district. For manufacturing, the share was even smaller, 14 percent (Kneebone 2009).

Finally, the decline in U.S. manufacturing employment had a profound negative effect on older industrial cities during this period. As a share of total nationwide employment, manufacturing fell steadily from about one-third in 1950 to just over one-fifth at the end of the 1970s to less than one-tenth in 2010. In absolute numbers, total manufacturing jobs peaked at 19.4 million in 1979, and then fell to only 11.5 million jobs in 2010—fewer than had existed in 1950.[1] Between 1980 and 2000, the Northeast and Midwest both saw declines in manufacturing employment, while the South and West saw gains. Between 2000 and 2010, however, all four sections of the nation experienced very steep drops in manufacturing jobs, partly as a consequence of the Great Recession (Helper, Krueger, and Wial 2012).

[1] The employment data are from the Bureau of Labor Statistics Current Employment Statistics program.

The Additional Role of Skills in City Growth and Decline

While the movement of people and jobs to less densely settled and warmer areas and the nationwide trend of diminishing jobs in manufacturing were the dominant factors affecting city economies during the latter half of the twentieth century, a number of studies point to skills as an additional source of the patterns of city growth or decline observed during this period. Cities with higher shares of educated residents were more successful in attracting residents and economic activity than cities with lower shares of educated residents, all else being equal.

Simon (1998) analyzed the determinants of central city resident employment for 315 metropolitan areas from the 1940s to the 1980s (see Table 1 for a comparison of the studies reviewed in this section). Controlling for initial industry shares, area of the country, and other factors, he found that employment of city residents grew more (or fell less) in cities and metropolitan areas with high levels of human capital. For the 1940s through the 1960s, the study measured human capital by the fraction of the population that had completed at least high school as of the beginning of the decade. In subsequent periods, Simon also accounted for the share of the population that had completed four or more years of college, and found that this variable had a stronger influence on city resident job growth than the share that had completed high school. Along with these findings, the research indicated that the fraction employed in manufacturing at the beginning of the decade had a positive effect on resident employment in the 1950s but a negative effect in subsequent periods.

The 1990s ushered in renewed population growth in some prominent cities that had lost residents for several decades in a row. These selected reversals notwithstanding, Glaeser and Shapiro (2003) documented the high correlation between city growth rates in the 1980s and those in the 1990s as people continued to move to warm, dry places and to places built around cars rather than public transit. In addition to these findings, Glaeser and Shapiro reaffirmed that "[a] primary fact about urban growth is that skills predict growth" (p. 142). Cities with higher shares of both high-school- and college-educated residents tended to experience greater population growth, all else being equal. While Glaeser and Shapiro examined population

trends, another econometric study of the 1990s, Wolman, Hill, Blumenthal, and Furdell (2008), found stronger job growth in cities with higher shares of the population with at least some post-secondary education at the start of the decade.

As noted, Simon (1998) found that a central city tended to have higher resident job growth when the city was located in an area with highly educated residents. Studies focusing exclusively on metropolitan areas found a positive relationship between employment, GDP, and personal income growth and beginning-of-period educational attainment. See Blumenthal, Wolman, and Hill (2009) and Erickcek and McKinney (2006) for research covering the 1990s. Therefore, in addition to their direct effect on city growth, education levels had an indirect effect to the extent that city economies are tied to those of their metropolitan area. Indeed, Hill and Brennan (2005) found that cities whose suburbs experienced high employment growth tended to experience higher rates of employment growth within their boundaries than cities with slowly growing or declining suburbs.[2]

Why Skills Mattered

Despite the pervasive evidence of a positive association between education levels and both city and metropolitan area growth, the reasons for these associations have received relatively little attention from scholars. In the case of metropolitan areas, Glaeser and Saiz (2004) and Glaeser (2005) found empirical support for the reinvention hypothesis, namely that a highly educated population is more inclined and better equipped to refocus the local economy when its existing industries and firms lose market share.

These two studies noted that skills and flexibility are especially critical for metropolitan areas that offer significant amenities that make them attractive places to live but that lack the draw of favorable weather. The residents of such areas are more likely to react to negative economic shocks by creating new businesses in the same area, as opposed to relocating to other areas with stronger economies. The reinvention hypothesis implies that while metropolitan

[2] Hill and Brennan (2005) examined a three-year period starting in the late 1990s. Brennan and Hill (1999) explored city and metropolitan area growth for 1993–1996. They found evidence of decentralization but did not examine the direct effect of metropolitan area employment growth on city employment growth.

areas with highly educated residents may be susceptible to economic downturns, migration away from these locations tends to be modest and of relatively short duration.

By contrast with their findings for metropolitan areas, Glaeser and Saiz did not find consistent evidence that city growth depends on having a highly skilled population residing within the city. On the other hand, their research indicated that having higher levels of high school dropouts was a predictor of central city decline. The authors concluded that "poverty [may be] perceived as an increasingly negative amenity because of social problems or a higher tax burden" (p. 49). In other words, cities with large shares of low-skilled and less-educated residents could experience outmigration of middle-income families, which—if extensive enough— would in turn trigger long-term declines in population, house prices, and other factors that sustain quality of life. In a similar vein, Glaeser, Scheinkman, and Shleifer (1995) found some evidence that city poverty led to suburbanization.[3]

In addition to skills, authors have tested the effects of other potential influences on city and metro growth, including more comprehensive measures of industry mix and diversity, the presence of entrepreneurs and small businesses, labor costs and regulations, government spending and tax policies, government structure, and crime (see Table 1 for more details). While some studies found significant effects for some of these factors, the overall results are not as conclusive as those for education. More systematic testing is needed, including use of alternative time periods, geographic concepts (distinguishing cities from their metropolitan areas), and measures of growth (distinguishing among population, employment, income levels, and output).

Policy Implications

To summarize the econometric evidence, the strongest influences on the relative fortunes of U.S. central cities in the second half of the twentieth century were their locations and

[3] Erickcek and McKinney (2006) found that metropolitan areas with more local governments had higher rates of personal income growth in the 1990s, controlling for human capital and a broad range of other structural, quality-of-life, and trend variables. They conjectured that having more localities was associated with intraregional migration on the part of residents and employers "from high-tax, high-public-activity cities to low-cost, low service-provision suburbs" (p. 240).

economic histories—in other words, predetermined attributes. Scholars agree that higher levels of educational attainment were a positive influence on central city growth during this period, but further research is needed to validate the limited evidence on the mechanisms through which schooling mattered and the extent to which city-level educational policies or finances came into play. Non-educational policies—either at the city, regional, state, or even national level—also may have been conducive to attracting or retaining either highly educated residents or employers requiring skilled workforces, but the available econometric studies have not delved deeply into these issues.

Erickcek and McKinney (2006) noted that a key obstacle to using regression analysis to develop policy recommendations is that local governments vary widely in terms of their powers and responsibilities. What may be under the control of city government in one part of the nation may be heavily determined by another level of government (such as an independent school district, county, or regional economic development authority) elsewhere. Moreover, Erickcek and McKinney observed that local governments tend to articulate their policies in terms of broad goals that could potentially be addressed by multiple, specific levers. These circumstances make it difficult for researchers to collect comparable nationwide information on the policies affecting local economies.

Erickcek and McKinney used cluster analysis to sort metropolitan areas into groups sharing similar changes in characteristics during the 1990s, and then applied the results to analyzing which kinds of places overperformed and underperformed the personal income growth predicted on the basis of regression analysis. They found that the metro areas that grew faster than expected were overrepresented in two of their eight groupings: "growing university/government/business complexes" and "growing new economy places," the latter of which was characterized by an overrepresentation of state capitals. The authors recommended the use of case studies to investigate the roles of anchor institutions in fostering regional growth. A similar combination of regression analysis, cluster analysis, and case studies could be used to study central cities. Taken as a whole, the research on cities by Wolman and various co-

authors described in the following section bears some resemblance to the Erickcek and McKinney approach.

Turning Around the Economies of Distressed Cities

A number of recent studies have focused specifically on cities that have faced particularly difficult challenges and whose economies exhibit substantial distress. These include cities that have experienced chronic declines in population or economic activity, or whose residents have low levels of economic well-being, or both.[4] Many of these cities are located in the Northeast or Midwest, and have economies that were heavily reliant on manufacturing. The studies, discussed in further detail below, investigated whether or not some of the especially challenged cities subsequently experienced better economic performance than others and, if so, what factors contributed to their regeneration (see Table 2 for an overview of key findings). Echoing some of the prior conclusions, authors have found that distressed cities were more likely to have experienced a positive turnaround if more of their residents had a postsecondary education or if the surrounding area was growing. Beyond these factors, the analyses tended to conclude that reversing the trajectory of a distressed city requires making complex, systemic changes in governance and development strategies. The studies highlight the importance of a broad range of investments in social, physical, and human capital. The number of distressed cities that have recovered in any meaningful way has been small. Limited sample sizes have prevented the authors from systematically testing alternative hypotheses concerning useful policy levers. For this reason, they have drawn on case studies as a supplement to statistical analyses.

Population, Employment, and Wage Declines: Causes and Responses

Feyrer, Sacerdote, and Stern (2007) studied the counties and metropolitan areas most adversely affected by the massive losses of steel- and auto-related jobs in the late 1970s and early 1980s. They noted that, as defined by total jobs lost in a five- or 10-year period, the Rust

[4] In general, areas with declining population may have either higher or lower levels of resident economic well-being than areas with growing population (Fodor 2012).

Belt shock was among the largest U.S. economic disasters in the past 50 years. Comparing the areas hit hardest by the Rust Belt shock to those that were relatively unaffected, the authors found that the effects of the steel and auto job cuts were longer-lasting and larger in some respects than in others. The loss of high-paying manufacturing jobs resulted in a sharp narrowing of the gap between the per capita income levels in the shock counties and other U.S. counties, but the average unemployment rate in shock counties returned to normal after a period of about one decade. As a group, the shock counties suffered long-lasting declines in population and even more pronounced declines in amenities and general appearance. For example, the number of eating and drinking places fell both absolutely and in per capita terms. The authors surmised that the dearth of new restaurants and bars—even after the local economy had stabilized—reflected the lack of innovation that accompanied population stagnation in the affected Rust Belt communities. More broadly, they pointed to possible agglomeration effects in the production of physical amenities such as public infrastructure.

Contrary to the general findings on the effects of human capital on local growth, Feyrer, Sacerdote, and Stern found that Rust Belt counties with higher education levels were not buffered from auto- and steel-related job losses. The average magnitude of their job declines was not smaller than that for counties with lower education, nor was the duration of the declines any shorter. In the longer term, counties located in warm, sunny locations or near a large, vibrant metropolitan area were more likely to reverse their shock-induced population losses. The study did not address policies that could have been used to stem population declines and their effects on Rust Belt areas lacking these inherent locational advantages.

An additional study by Friedhoff, Wial, and Wolman (2010) examined metropolitan areas that had specialized in manufacturing in 1980 and had experienced manufacturing job losses between 1980 and 2005. On the whole, these areas experienced much slower employment and average wage growth than the nation from 1980 to 2005. The authors used shift-share analysis to measure the degree to which each metropolitan area's growth could be attributed to national trends, the area's industry mix, and other area-specific factors. They concluded that wage declines in these areas were largely the result of their manufacturing reliance, but that

employment losses were mostly due to other metropolitan-area-specific factors. While not discussing the composition of the area-specific factors, the authors noted that they were generally negative in the Midwest and Northeast and positive in the South. Finally, with respect to policy, Friedhoff, Wial, and Wolman cautioned against economic development initiatives seeking to replace manufacturing jobs with jobs in advanced services industries. Instead, they found that manufacturing and nonmanufacturing jobs were complementary: metropolitan areas with the smallest manufacturing declines also saw the greatest growth in nonmanufacturing employment, including the advanced services component of nonmanufacturing.

Addressing Population Losses

In order to help identify policies that could potentially serve to reverse population losses, Hill, Wolman, Kowalczyk, and St. Clair (2012) compared cities that experienced persistent decline to those that had rebounded after a period of decline. The authors studied economic and demographic patterns in 395 major U.S. cities, of which 165 experienced population declines for a period of time between 1960 and 2010. Among these cities were 65 "positive-turnaround" cities, which managed to add residents toward the end of the 50-year period, and in some cases even surpassed their previous peak population levels. Hill, Wolman, Kowalczyk, and St. Clair found a role for skills and innovation: the positive-turnaround cities tended to have higher resident education levels and more research-oriented universities. Noting that the growing cities were much younger on average than the shrinking cities, but that the positive-turnaround cities tended to be slightly older than the remaining shrinking cities, the authors suggested that part of their turnaround might be due to investments in infrastructure modernization. Likewise, the fact that positive-turnaround cities had lower crime rates than the other categories of shrinking cities later in the sample period suggested that crime-reduction may have contributed to their success.

Combatting Low Incomes and Widespread Poverty

To identify distressed cities, Wolman, Hill, Blumenthal, and Furdell (2008) considered the economic circumstances of city residents in addition to indicators of city growth. Applying a

methodology developed in Furdell and Wolman (2006), the authors characterized approximately 300 central cities according to the economic well-being of their inhabitants (as measured by indicators such as median family income, poverty, and unemployment) and their economic performance during the prior decade (as measured by indicators such as growth in jobs, payrolls, and business establishments). Those that fell into the bottom one-third in both categories were designated as "weak market" cities.[5] Not surprisingly, disproportionate shares of the weak-market cities in both 1990 and 2000 were located in the Northeast and Midwest.

The authors compared the 17 places designated as weak-market cities in 1990 but not in 2000 to the 39 cities in this category in both years. They found that the former group had a higher share than the latter of adult residents with at least some post-secondary education and a lower share of adults with only or less than a high school degree. Their family and racial structures also differed: cities with greater economic well-being and better economic performance had lower shares of single-parent and black households than those that remained weak market cities.

As for local policy differences, Wolman, Hill, Blumenthal, and Furdell acknowledged that they were not able to include a comprehensive set of public policy variables in their statistical analysis. Furthermore, they expressed doubt as to whether such an exercise could identify the effects of public policies over a relatively short period of time such as a single decade. Based largely on complementary case studies of cities that had either overperformed or underperformed between 1990 and 2000 relative to beginning-of-decade expectations (Wolman, Hill, Atkins, Blumenthal, and others 2007), they pointed to a complex set of factors that determine where households and businesses choose to locate. The authors indicated that "[e]ffective leadership and civic engagement more broadly constructed, rather than government activity more narrowly construed, often were seen to be the critical factors in a city's vitality" (Wolman, Hill, Blumenthal, and Furdell, p. 168). The case studies also highlighted the

[5] Furdell and Wolman (2006) used cluster analysis to group cities according to their overall economic health, and then compared the results to results based on analyzing the indexes of resident economic well-being and city economic performance.

importance of creating a well-articulated vision that was sustained over time and backed by resources.

An additional study by Furdell, Wolman, and Hill (2005) used a similar methodology to quantify the likelihood of recovery and find determinants of success between 1980 and 2000. Aside from the level of distress in 1980, the only significant factors associated with distress in 2000 were low shares of employment in manufacturing and in finance, insurance, and real estate. Although Furdell, Wolman, and Hill found that educational attainment did not affect the probability of a city becoming (or remaining) distressed between 1980 and 2000, they noted that increases in the percentage of the population with at least some college education did improve cities' performance on some indicators of well-being (including unemployment, labor force participation, and per capita income).

The studies by Wolman, Ford, and Hill (1994) and Wolman, Hill, and Furdell (2004) addressed the degree to which improvements in central business districts benefited city residents. In each of these studies, the authors queried economic development experts about the degree of revitalization in approximately 50 cities whose population had either decreased or increased only modestly one decade earlier and whose residents had had a low level of economic well-being 10 years earlier.

The authors found no correlation between the objective indicators and expert opinion in the 1980–1990 period, and only moderate agreement in the 1990–2000 period. For the 1990–2000 period, they noted that the experts appeared to put a high weight on downtown redevelopment in the form of office buildings, retail stores, and tourist attractions. Although many of those polled indicated that such projects would lead to improved economic outcomes, the residents of the cities they perceived as successfully redeveloped in fact had not generally experienced greater improvement in economic conditions than the residents of cities not identified as successful. The question of whether or not such redevelopment projects lead to improvements in the longer run—as well as what types of ancillary measures would be required in order for them to benefit the residents of the city to any noticeable degree—was not taken up by the authors.

Finally, a study by St. Clair, Wial, and Wolman (2012) addressed chronic distress in metropolitan areas. Defining a chronically distressed region as one with substantially lower employment or GDP growth than the nation for at least eight consecutive years, the authors found that about one-quarter of the areas had experienced chronic distress at least once between the 1970s and the mid-2000s. Using regression analysis, they found that metropolitan areas were more likely to be chronically distressed if a greater share of their adult population had only a high school degree or less, if they had a greater degree of income inequality,[6] and if they were small and located far from a large metropolitan area.[7]

St. Clair, Wial, and Wolman (2012) also tested for the factors that made regions more likely to recover from chronic distress, but they noted that the low number of cases prevented them from finding statistically significant results via regression analysis. Their overall conclusion was that investments in physical, human, and social capital were critical, confirming other studies. They indicated that "[w]ithout resources to draw upon—be they in the form of an educated population or seed money for investments—metropolitan areas in the United States have few opportunities to escape a cycle of decline" (pp. 30–31).

The Challenges of Small to Mid-Sized Industrial Cities

Although not specifically aimed at examining distressed cities, recent studies by Federal Reserve System researchers investigated why some older industrial cities have outperformed others in recent decades. These analyses focused on small groups of cities that could be considered peers as of a given starting date, and then traced their economic progress or decline during the sample period.

Kodrzycki and Muñoz (2009a, 2013) examined population growth and changes in resident well- being in 26 mid-sized cities that had above-average reliance on manufacturing as of 1960 and that remained the central city of their metropolitan area at least until 1980. All of the cities satisfying the criteria were located in the Northeast, Midwest, or Upper South. Compared

[6] In measuring income inequality, the study did not distinguish the effect of having a relatively large share of the population in poverty as opposed to having a relatively large share of the population with very high income levels.
[7] The study defined a large metropolitan area as one with a population of one million or more.

with the benchmark city of Springfield, Massachusetts, the 10 cities that showed more improvement (or less deterioration) between 1960 and the mid-2000s as well as higher levels of resident economic and social well-being at the end of the period were identified as "resurgent cities."[8]

Confirming the findings of others, Kodrzycki and Muñoz found that having an especially large share of resident employment in manufacturing as of 1960 reduced the likelihood of resurgence. However, the current differences in manufacturing intensity and broader measures of industry mix between the resurgent and the nonresurgent cities were minimal. This result is in accord with the conclusions of Friedhoff, Wial, and Wolman (2010) and Atkins, Blumenthal, Edisis, Friedhoff, and others (2011) who found that formerly manufacturing-dependent regions were more likely to prosper if they hosted firms that were highly competitive within their industries. Strategies that entailed the development of growing, high-paying niches within either manufacturing or nonmanufacturing (or both) offered greater promise than ones centered on choosing between manufacturing and nonmanufacturing.

Kodrzycki and Muñoz found that on average the resurgent cities had more highly educated populations (especially four-year-college-educated) by the 2000s than the nonresurgent cities, after starting with similar average levels of educational attainment 50 years earlier. As is true of the literature in general, the authors did not address the sources of the higher educational attainment in the resurgent cities—for example, the shares of school-aged children in these cities that went on to complete high school or college versus migration patterns that led to less out-migration of highly educated adults or to greater out-migration of less educated adults. Such follow-on research could provide valuable guidance to policymakers.

Using case studies to detect commonalities among the resurgent cities, Kodrzycki and Muñoz essentially concurred with the conclusions summarized in Wolman, Hill, Blumenthal,

[8] The study was conducted as part of "Toward a More Prosperous Springfield," a multi-year commitment on the part of the Federal Reserve Bank of Boston to support the economic revitalization of Springfield, Massachusetts, a city in its District. Springfield is the fourth largest city in New England, and both the city and its metro area have one of the highest rates of concentrated poverty in the country (Berube 2008, Green 2008, and Kneebone, Nadeau, and Berube 2011).

and Furdell (2008). They found that the resurgent cities shared the following characteristics: leadership on the part of key institutions or individuals, collaboration among the various constituencies with a stake in economic development, long-term planning and periodic re-evaluation of the plan, extensive infrastructure improvements, and development of new industries and city identities. Kodrzycki and Muñoz noted that citywide resurgence did not result in commensurate resurgence in their economically disadvantaged neighborhoods. For this reason, these cities often developed specific initiatives to help poor neighborhoods after the other aspects of their revitalization strategies were in place.

Mallach (2012, 2013) studied 13 smaller industrial cities in Pennsylvania, New Jersey, and Delaware, and noted that their economic paths had varied significantly since the 1980s.[9] Using indicators pertaining to social and economic well-being, housing and neighborhood strength, and the local economy, Mallach divided the cities into four categories. The strongest cities exhibited resilience, defined as the ability to recover from negative shocks and find new sources of growth. These cities had all capitalized on their locational advantages, albeit using somewhat different approaches. Mallach attributed the relative success of the resilient cities to a similar set of factors as noted in the other case studies: leadership, vision, continuity, and the pursuit of a long-term, sustained and focused redevelopment strategy. One of the other groups of cities—which Mallach referred to as "declining but stable"— comprises those that experienced population declines but not the "massive flight of the middle class or the collapse of the retail sector" (Mallach 2012, p. 57).[10] Mallach suggested that further study is warranted of the factors that prevented these cities from losing their vitality to the extent that other nonresilient cities in his sample had.

[9] All of the cities are located in the Philadelphia Federal Reserve District.

[10] This category is reminiscent of the "company towns left behind but still socially stable" cluster in Erickcek and McKinney (2006).

Insights from Alternative Methodologies to Identify Economically Distressed Cities

Although there is considerable overlap in the measures used to gauge economic distress and resurgence, there are also some differences across the studies. Moreover, the analyses focus on different samples and time intervals. This section investigates the degree to which using alternative reference groups, criteria, and timeframes results in conflicting assessments of which distressed cities have rebounded, and which remain severely challenged. For tractability and to aid the comparisons, we focus primarily on the 26 mid-sized manufacturing-dependent cities identified in Kodrzycki and Muñoz (2009a). Most of these cities appear in the studies of city decline and distress by Wolman and co-authors that use larger nationwide samples. We confirm that there is a high degree of overlap between the lists of "distressed," "weak," and "nonresurgent," as well as between the lists of "nondistressed," "moderate/strong," and "resurgent" cities.[11] We also examine insights from the peer-city analysis of Kodrzycki and Muñoz and the national-sample approach of Wolman and co-authors, both individually and collectively.

Using Peer Cities to Gauge Resurgence

Kodrzycki and Muñoz (2009a) focused on a benchmark city that had a high degree of concentrated poverty (Springfield, MA), and compared that city to a designated sample of peer cities as of a base year (specifically, 25 cities that were similar to Springfield in 1960). The cities are listed in the first column of Table 3.

The starting date of 1960 was chosen because it represented a time when the economic well-being of Springfield and peer city residents was similar to the U.S. average. For example, in 1960, the average median family income in the 26 cities was just slightly (6 percent) above the national figure. The peer group cities were chosen, based on industry composition, population, and regional role, to represent cities with broadly similar opportunities and challenges.

[11] For a comparison of alternative methodologies to determine the degree of distress or weakness, see Furdell and Wolman (2006).

Each of the cities in Kodrzycki and Muñoz (2009a; hereafter referred to as the "KM cities" or the "KM sample") had a greater share of their employed residents working in manufacturing in 1960 than the national average. As already noted, the share of manufacturing jobs nationally has decreased dramatically since the early 1960s, and the total number of people employed in the manufacturing sector is currently lower than it was at that time. In addition, manufacturing work has shifted increasingly to suburban areas, making it harder for city residents to access the jobs in this sector.[12] Industries such as financial, technical, and professional services that that have expanded in urban locations frequently have different educational and skill requirements than are needed in traditional manufacturing work. Springfield and its peer cities faced significant challenges in preparing their residents for new job opportunities.

Most of the cities in the KM sample had between 100,000 and 250,000 residents from 1960 to 1980, although a few had larger populations in 1960 before shrinking in size. Previous research noted that small and mid-sized cities were adversely affected when mergers and acquisitions resulted in transfers of corporate headquarters to larger metropolitan areas (Erickcek and McKinney 2006). Furthermore, smaller cities tended to encounter greater difficulties attracting new businesses and skilled workers than large cities (Henderson, Kuncoro, and Turner 1995, Costa and Kahn 2000). Their more limited visibility and political power may also have hindered their ability to obtain financial resources to support redevelopment.

Finally, each KM sample city remained the primary urban center of its metropolitan statistical area (MSA) from 1960 to 1980. Similar-sized cities located on the fringes of large cities may find themselves either benefiting or suffering from spillover effects, whereas the cities in

[12] Kodrzycki and Muñoz (2009b) found that manufacturers made dramatic cuts in jobs located within the city of Springfield during the period 1980 to 2005–2007. The number of city residents working in manufacturing also fell, but not as sharply. The percentage of Springfield residents working in manufacturing declined from 29.6 percent in 1980 to 13.1 percent in 2005–2007 while manufacturing's share of total employment located in the city went from 28.2 percent to 6.4 percent during the same period. Various factors served to constrain city residents' access to the relocated manufacturing opportunities, including transportation difficulties, poor connections to hiring networks, and skills mismatches.

the KM sample tended to have a more independent role in determining their economic development.

As in the Wolman studies, Kodrzycki and Muñoz (2009a) used both levels and changes in economic indicators to define the relative success of cities in their sample. Their 10 resurgent cities were Evansville (IN), Fort Wayne (IN), Grand Rapids (MI), Greensboro (NC), Jersey City (NJ), New Haven (CT), Peoria (IL), Providence (RI), Winston-Salem (NC), and Worcester (MA); (see the second column of Table 3).

As a first cut, resurgent cities were defined as those showing better economic performance than Springfield in each of the following respects as of the mid-2000s: median family income, change in median family income ranking since 1960, poverty rate, percentage point change in poverty rate since 1980, and percentage change in population since 1960 (the indicators and tentative designations are shown in the third through last columns of Table 3).[13] The authors considered population change to be a less definitive indicator than median income or poverty because cities have differing opportunities to annex adjacent land, depending on state and local laws.

For the final determination, the authors considered broader indicators of resident well-being, both objective and subjective. Three of the cities ultimately selected for the resurgent category—Providence, New Haven, and Evansville—actually had population losses from 1960 to the mid-2000s that were slightly larger than Springfield's, but they showed other evidence of successful transformation. In particular, Providence and Evansville showed major improvements since 1960 in median family income relative to the other cities.[14] In general, all three of these cities appeared to have more positive reputations in the media and in various

[13] As a result of applying these objective criteria, Rockford—a nondistressed city in the Wolman studies—was not considered a resurgent city. Rockford had comparatively high median family income and a comparatively low poverty rate throughout the sample period. However, the change in its median family income ranking and the increase in its poverty rate were comparable to Springfield's.

[14] Another positive development cited in Kodrzycki and Muñoz (2009a) was the sharp reduction in crime in New Haven. The city had the third highest crime rate of all 26 cities in 1975 but only the 9th highest crime rate in 2000, according to statistics obtained from the U.S. Department of Justice, Federal Bureau of Investigation (FBI). Kodrzycki and Muñoz noted a further sharp reduction in crime between 2000 and 2007. In the course of updating their information on the peer cities, the authors recently discovered that the 2007 crime rate reported for New Haven pertained to only a seven-month period, and therefore likely had the effect of sharply overstating the drop in crime that occurred after 2000.

urban comparisons than Springfield. For example, starting in the early 1980s, Providence undertook a series of major rehabilitation projects that transformed the downtown area and enabled it to be promoted as the "Renaissance City." These building and infrastructure projects were likely a key reason why Wolman, Hill, and Furdell (2004) found that one-third of economic development experts polled deemed that Providence had been successfully revitalized. Moreover, Evansville and New Haven each won an All-America City Award in the 2000s. Each year, the National Civic League uses these awards to recognize a small number of cities whose citizens work together and achieve uncommon success in addressing citywide challenges.

The economic performance of the 10 resurgent cities was not as strong as that of the national economy over the past five decades. In 1960, the average median family income in the resurgent cities was $5,700, similar to the U.S. figure. In 2005–2007, their average was only 82 percent of the U.S. median. Similarly, the average population poverty rate deteriorated from 16 percent in 1980 to over 19 percent in 2005–2007[15]; this latter reading was six percentage points higher than the U.S. average. Finally, only one-half of the resurgent cities managed to stem population losses between 1960 and 2005–2007.[16]

Nonetheless, a comparison of the resurgent and the nonresurgent cities indicates the magnitude of the difference in economic circumstances that had arisen over a half-century. In 2005–2007, the average median family income in the nonresurgent cities was only 64 percent of the U.S. median and about $10,700 lower than in the resurgent cities. The average poverty rate in the nonresurgent cities was nearly 7 percentage points higher than in the resurgent cities, and the nonresurgent cities lost about one-quarter of their population between 1960 and 2005–2007 (versus a total net increase in the resurgent cities).

The research casts doubt on whether geography or statewide policies were the major contributing factors to successful resurgence. While the two North Carolina cities (Greensboro and Winston-Salem) doubtless benefitted from the gradual movement of the U.S. population

[15] In 2008–2010, average median family income in the resurgent cities was 83 percent of the U.S. median and the average population poverty rate was 21 percent (Kodrzycki and Muñoz 2013).

[16] In contrast to these trends in income, poverty, and population, the resurgent cities saw increases in educational attainment over time. By the 2000s, the average share of resurgent city residents who had completed four years of college exceeded the U.S. average (Kodrzycki and Muñoz 2013).

away from cold-weather areas and the pro-growth policies adopted at the state level, Connecticut, Massachusetts, New Jersey, Indiana, Michigan, and Illinois each had at least one resurgent city and at least one nonresurgent city. The authors concluded that mid-sized cities can ultimately play an important role in determining their economic fates, but did not attempt to quantify the extent to which the differences between the nonresurgent and the resurgent cities can be explained by policies or resources.

City peer groups can be chosen using different criteria and methods. For example, Mallach (2012, 2013) used geographic location, city size, and original manufacturing intensity. In a large national sample, peers could be identified through statistical techniques such as clustering or propensity score matching. Similarly, within the chosen peer group, the degree of city success can be measured using different criteria from those used by Kodrzycki and Muñoz or Mallach.

City Distress and Recovery in the National Context

Wolman and various co-authors determined which cities were in economic distress by comparing nationwide samples of cities at various points in time. Distressed (or weak) cities were those that were in the bottom one-third of the sample according to their score on a composite index of economic health. Most of the studies used data on current median household income, poverty, unemployment, and population change during the prior decade to form the composite index. Some also took into account per capita income and labor force participation.

Table 4 shows the conclusions of Wolman and co-authors regarding the KM cities at three points in time: 1980 (two studies), 1990 (one study), and 2000 (three studies). The most striking finding is that there were virtually no changes in city status (relative to the other cities in the nationwide sample) between 1980 and 2000. For the KM sample, all of the cities that were identified as distressed in 1980 remained distressed in 2000.[17] For the entire sample of 98 cities

[17] A caveat is that there were some ambiguities in the status of two of the KM cities. In 1980, Springfield was distressed according to Wolman, Ford, and Hill (1994) but nondistressed according to Furdell, Wolman, and Hill (2005). In 2000, Akron was classified as distressed by Wolman, Hill, Furdell (2004) and as not distressed by Furdell, Wolman, and Hill (2005).

in Furdell, Wolman, and Hill (2005), the correlation between the distress indexes in 1980 and those in 2000 was 0.86.

Wolman, Ford, and Hill (1994) and Furdell, Wolman, and Hill (2005) provided evidence on the status in 1980 of 23 and 19 of the 26 KM cities, respectively. [18] Fourteen of these cities were deemed distressed: Akron (OH), Bridgeport (CT), Dayton (OH), Flint (MI), Gary (IN), Hartford (CT), Jersey City (NJ), New Haven (CT), Paterson (NJ), Providence (RI), Rochester (NY), Springfield (MA), Syracuse (NY), and Youngstown (OH).[19] The remaining nine cities were not distressed: Allentown (PA), Erie (PA), Evansville (IL), Fort Wayne (IN), Grand Rapids (MI), Greensboro (NC), Peoria (IL), Rockford (IL), and Worcester (MA). Between 1980 and 1990, none of the cities changed from distressed to nondistressed (Wolman, Hill and Furdell 2004). Winston-Salem (NC) was added to the analysis as a nondistressed city in 1990.

Similarly, there were no further changes in the lists of the distressed and nondistressed cities between 1990 and 2000 (Wolman, Hill, and Furdell 2004 and Furdell, Wolman, and Hill 2005).[20] Using a slightly different methodology, Furdell and Wolman (2006) characterized resident economic well-being in 2000 as weak in all of the distressed cities except Akron.[21]

Analysis of Results

On the whole, Table 4 demonstrates the high degree of agreement between the conclusions of Wolman and co-authors and of Kodrzycki and Muñoz (repeated in the last column) regarding the 25 cities for which results are available under both approaches.[22] Seven cities emerged as relatively successful—that is, nondistressed or having moderate or strong resident well-being according to Wolman and co-authors and resurgent according to Kodrzycki-Muñoz: Evansville, Fort Wayne, Grand Rapids, Greensboro, Peoria, Winston-Salem, and Worcester. Many more cities were deemed mostly unsuccessful (distressed, having weak

[18] Allentown, Erie, Peoria, and Youngstown were not included in the Furdell, Wolman, and Hill (2005) sample.
[19] See footnote 17 concerning Springfield.
[20] Some cities analyzed in 1990 were not analyzed in 2000. See footnote 17 concerning Akron.
[21] For a city's resident economic well-being to be rated weak, it had to place in the bottom one-third of the 302 cities examined. Akron was ranked 183, earning it a rating of "moderate."
[22] Of the KM cities, only Waterbury was not included in any of the studies by Wolman and co-authors. Others were included in at least one, and sometimes all, of the studies.

resident well-being, and nonresurgent): Allentown, Bridgeport, Dayton, Erie, Flint, Gary, Hartford, Paterson, Rochester, Springfield, Syracuse, and Youngstown.[23]

The two approaches resulted in disagreement about the status of six cities. Further examination reveals that relatively small changes in time period or criteria would have resulted in a consistent categorization in at least one-half of these cases. For example, as noted above, New Haven was nonresurgent based on the statistical criteria used by Kodrzycki-Muñoz. The authors shifted the city to the resurgent category based on its strong economic indicators and being recognized as an All-American City in the 2000s. The designation of Providence as a resurgent city depends critically on the choice of end date. The city had unusually strong economic performance in the first half of the 2000s, beyond the period covered in any of the Wolman studies. On the other hand, Providence was hit harder than most other KM cities during the Great Recession of 2007–2009, beyond the period covered by Kodrzycki and Muñoz. A final example is South Bend, deemed nonresurgent by Kodrzycki-Muñoz. South Bend barely made the cutoff for moderate resident economic well-being in 2000, according to Furdell and Wolman (2006), and had weak economic growth during the 1990s (see Table 5).[24]

Furdell, Wolman, and Hill (2005) found that, on the whole, economic conditions in the distressed cities were further behind those of nondistressed cities in 2000 than they had been in 1980. Among those in the KM sample, one-half showed both deterioration in resident economic well-being and declines in city population between 1980 and 2000 (Table 5). Only Jersey City improved along both dimensions, albeit not enough to be judged nondistressed. The residents of several of the distressed New England cities—Bridgeport, New Haven, and Providence—experienced some improvement in economic well-being during the 1980s. These cases suggest that reporting on alternative criteria and sample periods is particularly valuable for studying cities that place somewhere in the middle of the continuum of most distressed to least

[23] Of these cities, Allentown and Erie were categorized by Wolman, Ford, and Hill (1994) as nondistressed in 1980, but having weak residential well-being by Furdell and Wolman (2006). They were not included in any of the other studies of distress. See footnote 17 concerning Springfield.
[24] South Bend ranked 196 out of 302 cities.

distressed. Ultimately, a sharper focus on the areas of relative strengths and weaknesses may lead to better policy prescriptions for this set of cities.

Further work is still needed to pinpoint both the initial shocks that triggered distress and the reasons why similar shocks had more severe effects on some central cities than others. The Rust Belt shock that started in the late 1970s was very likely the main contributor to economic distress for Flint, Gary, and Youngstown.[25] Two of the *nondistressed* cities in the KM sample—Erie and Fort Wayne—are located in Rust Belt Shock counties, and several others are within close proximity to Rust Belt shock counties.[26] Thus, an interesting research question is why the serious declines in auto- and steel-related jobs in the late 1970s and 1980s did not precipitate distress in these cities, as they did elsewhere. A new strand of literature has begun to explore the general topic of urban and regional resilience (Hill, St. Clair, Wial, Wolman, and co-authors 2012). Most of the distressed cities included in the KM sample are not located in Rust Belt Shock counties, so their troubles likely stemmed from earlier downsizings and relocations in a broad range of manufacturing industries.[27] Job losses in these cities likely occurred for myriad reasons, including the movement of manufacturing activity to lower-cost locations, the declining demand for defense equipment as major wars ended, and the growing obsolescence of products in which they had specialized.[28] To our knowledge, no studies assess the relative importance of these triggers.

Concluding Observations

Older industrial cities continue to face important challenges, and they struggle to find the right paths to grow and improve the economic well-being of their residents. Researchers

[25] In the 1960–1980 period, all three of these cities experienced slight improvement in their median-family-income rankings within the KM sample. Their rankings plummeted in the 1980–2000 period (Flint went from third to 23rd, Gary from 6th to 21st, and Youngstown from 17th to 25th).

[26] The cities in this latter group are Allentown, Evansville, and Grand Rapids.

[27] In a study of large U.S. cities starting in 1970, James (1990) concluded that distress rose abruptly during the 1970s but did not receive national policy attention until later in the decade.

[28] Selected examples may be found in the case studies in Kodrzycki and Muñoz (2009a). Browne and Sass (2000) documented the decreasing competitiveness of New England textile mills that had been built beside waterways and railroad tracks, as compared with newer Southern facilities that were able to benefit from improvements and expansions to airports, highways, and electric power grids financed by the federal government during the Second World War.

and practitioners have sought answers concerning the determinants of these cities' degree of success. Studies looking at factors that influence growth or resiliency find that educational attainment is a key determinant of future economic well-being. Numerous studies reviewed in this paper also point to the positive correlation between central cities and their region's growth. Regardless of the sample and methodology used, most distressed older industrial cities have yet to revitalize. Long-lasting effects of employment and population losses that these cities started to experience several decades earlier continue to hinder their growth. Having a strong civic infrastructure, leadership, and cross-sector collaboration seem to be important ingredients to transform these cities' economies.

This review of the literature on distressed and resurgent cities revealed continued gaps in knowledge. Somewhat to our surprise, researchers' understanding of the structural relationship between human capital and central city economic conditions remains far from complete. Further work is needed to illuminate the contributions of city and metropolitan area educational institutions and of both intraregional and interregional migration to determining the distribution of skills within and across cities. The differing types of shocks to manufacturing employment and the varying economic consequences of apparently similar shocks across cities are additional topics that deserve further research. Finally, policymakers at the city, regional, state, and national levels would benefit from more analysis of the effectiveness of specific policy tools to improve the economies of distressed cities.

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Table 1: Findings on the Determinants of City and Metropolitan Area Growth									
Authors and Date	Sample	Time Period	Methodology	Key Success or Growth Measure	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Blumenthal, Wolman, and Hill (2009)	224 metropolitan areas with populations of at least 50,000 in 1990 and 2000.	1990-2000.	Regression analysis.	Employment growth (by place of work) and GDP growth.	Educational attainment (college) positively associated with growth (but some college unrelated to growth).	Manufacturing location quotient positively associated with growth.	Warmer climate positively associated with growth.		Population size and right-to-work laws positively associated with growth. Economic age, average wage, and percent black negatively associated with growth.
Erickcek and McKinney (2006)	267 metropolitan areas with population of 1 million or fewer in 1990.	1989/1990-1999/2000.	Regression analysis, cluster analysis.	Personal income growth.	Educational attainment (college) positively associated with growth.		Warmer climate and lower precipitation negatively associated with growth, after controlling for region of the country and historical trends.	Some evidence that higher number of local governments in the metropolitan area associated with more intraregional migration.	Presence of nationally growing industries, establishments employing 20-49 workers, and successful entrepreneurs positively associated with growth. Greater government activity (growth in city expenditures and government employment) positively associated with growth. Per capita income negatively associated with growth. Cluster analysis indicated positive role for private and educational anchor institutions and state government.
Glaeser (2005)	Boston, other cities and metropolitan areas.	1630-2003, correlations for 1920-1980 and 1980-2000.	Historical economic analysis, correlations.	Population growth, housing prices.	Educational attainment (college) positively correlated with growth 1980-2000, especially in cold metropolitan areas.	Manufacturing share of employment (at end of period) negatively correlated with growth 1920-1980.	Warmer climate positively correlated with growth 1920-1980.		City taxes (relative to income, at end of period) and density negatively correlated with growth 1920-1980.
Glaeser and Saiz (2004)	Cities with population over 30,000 in 1970, and 318 metropolitan areas.	1970-2000.	Regression analysis.	Population growth and selected analysis of wage, income, and housing value growth.	Educational attainment (high school, college) positively associated with growth, especially in cold areas without significant immigration. High school education more strongly associated with city growth, while college education more strongly associated with metro area growth.	Manufacturing share of employment negatively associated with growth.	Warmer climate positively associated with growth.		Population size negatively associated with growth.

Table 1: Findings on the Determinants of City and Metropolitan Area Growth									
Authors and Date	Sample	Time Period	Methodology	Key Success or Growth Measure	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Glaeser and Shapiro (2003)	Cities with more than 25,000 inhabitants (935 as of 1980 and 1,060 as of 1990), and 275 metropolitan areas.	1980-1990, 1990-2000.	Correlations, regression analysis.	Population growth. Also city (but not metro) employment and per capita income growth.	Educational attainment (high school, college) positively associated with growth.	Manufacturing share of employment negatively associated with metro area growth, but not associated with city growth.	Warmer climate positively associated with growth.		Density negatively associated with growth for cities, but not for metro areas.
Glaeser, Scheinkman, and Shleifer (1995)	203 U.S. Cities that had over 1,000 housing units with a nonwhite head in 1960, and 133 corresponding metropolitan areas.	1960-1990, 1970-1990 versus 1950-1970.	Regression analysis.	Population growth. Also city (but not metro) employment and per capita income growth.	Educational attainment (especially high school, but also college) positively associated with growth.	Manufacturing share of employment negatively associated with growth for 1960-1990 and 1950-1970, but insignificant for 1970-1990.	Location in the West or South positively associated with growth, suggesting weather (along with other regional characteristics) positively related to growth.	Some evidence that city poverty leads to suburbanization.	Unemployment and per capita income negatively associated with growth. "No striking results" on the association between growth and government expenditure or revenue.
Hill and Brennan (2005)	100 central cities and corresponding metropolitan areas.	1998-2001.	Correlations.	Employment growth (by location of work).	Educational attainment positively correlated with growth.			Central city growth positively associated with regional growth.	
Simon (1998)	315 metropolitan areas, including separate data on central cities versus remaining parts of the metropolitan area.	1940-1986 in 10-year increments (six years for 1980-1986).	Regression analysis.	Employment growth (by residence of the jobholder).	Educational attainment (high school, especially college) positively associated with growth, especially over multiple decades.	Manufacturing share of employment positively associated with growth in 1950-1960, otherwise negatively associated with growth.		Educational attainment in surrounding area associated with employment growth within the city.	Services share of employment positively associated with growth.

Table 1: Findings on the Determinants of City and Metropolitan Area Growth									
Authors and Date	Sample	Time Period	Methodology	Key Success or Growth Measure	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Wolman, Hill, Blumenthal, and Furdell (2008)[1]	268 central cities with populations of at least 50,000 in 1990 and 2000, and at least one of the following in 2000: the primary city in the metro area; population of at least 50% of that of the primary city in the metro area; population of at least 150,000. Separate data for metropolitan areas.	1990-2000.	Regression analysis.[1]	Employment growth (by location of work), earnings growth, and GDP growth.	Educational attainment (college) positively associated with growth.	Manufacturing location quotient positively associated with metropolitan area growth, but not city growth.	Warmer climate positively associated with metropolitan area growth, but not city growth.		Economic diversity, metro population size, and air connectivity positively associated with growth. State right-to-work laws positively related with metropolitan area growth, but not city growth. Economic age, increases in dependent share of population, and average wage negatively associated with growth. Crime rate negatively associated with city growth, but not metro area growth. Percent black negatively associated with metropolitan area growth, but not city growth.

Note: Unless otherwise specified, determinants of growth are for the beginning of the period studied .

[1] Wolman, Hill, Blumenthal, and Furdell (2008) provide a typology and comparison of cities, and a regression analysis. The regression results are summarized in this table. The typology and comparison results are summarized in Table 2.

Table 2: Findings on Distress and Resurgence in Cities and Metropolitan Areas									
Authors and Date	Sample	Time Period	Methodology	Key Measure of Distress or Resurgence	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Feyrer, Sacerdote, and Stern (2007)	1,439 counties with population of at least 10,000 in 1977, and 260 metropolitan areas.	"Shock" (1977-1982), "recovery" (1982-1987), "total" (1977-1987), and "subsequent" (1987-2004).	Regression analysis.	Employment, employment rate, and population change. "Shock counties" had 2% or more of total employment due to auto/steel job losses, while "successful" counties had 10% or greater population growth 1977-2004.	Educational attainment (college) not related to size of shock or recovery.		Warm weather positively associated with growth.	Proximity to large city associated with success.	
Friedhoff, Wial, and Wolman (2010)	114 metropolitan areas that had at least 20.1% of employment in manufacturing as of 1980 (1 percentage point higher than national average) and lost manufacturing jobs (both total number and as a percent of employment) between 1980 and 2005.	1980-2005.	Shift-share analysis.	Employment growth and wage growth.		Sample areas experienced slow wage and employment growth relative to nation. Slow wage growth in sample metro areas attributable to national manufacturing industry trends. Slow employment growth in sample metro areas partially attributable to national manufacturing industry trends. Manufacturing job growth positively associated with non-manufacturing and advanced services job growth.	Areas in the Midwest had slow employment and wage growth, while areas in the Northeast had slow employment but not slow wage growth. Areas in the South had slow wage growth, but rapid job growth relative to the rest of the sample. Metropolitan area-specific characteristics were generally associated with employment declines in the Northeast and Midwest and employment gains in the South.		
Furdell, Wolman, and Hill (2005)	98 central cities with populations of at least 125,000 in metropolitan areas of at least 250,000.	1980-2000.	Comparison of city-level statistics, regression analysis.	Poverty rate, unemployment rate, change in population over the preceding decade, and median household income. "Distressed" cities were in the bottom third of this distribution.	Educational attainment (at least some college) not associated with likelihood of recovering from distress, but associated with some improvements in unemployment, labor force participation, and per capita income.	Higher end-of-period manufacturing share associated with less distress.	Location in New England associated with distress, suggesting possible effect of weather.		Higher end-of-period employment share in finance, insurance, and real estate associated with less distress. Lower dependent population share associated with improvement in poverty rate and income.

Table 2: Findings on Distress and Resurgence in Cities and Metropolitan Areas									
Authors and Date	Sample	Time Period	Methodology	Key Measure of Distress or Resurgence	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Hill, Wolman, Kowalczyk, and St. Clair (2012)	395 central cities that met at least one of the following criteria in 2000: population of at least 50,000 and the primary city in the metropolitan area; population of at least 50% of that of the primary city in the metropolitan area (in 1990 or 2000); population of at least 150,000.	1960-2010.	Correlations, regression analysis, differences in means.	Population growth. "Shrinking central cities" lost population in the past 50 years and past decade, "positive-turnaround cities" lost population for a period but reversed this trend, and "growing central cities" gained over the past 50 years and past 20 years.	Educational attainment (college) positively associated with growth and regeneration. Positive-turnaround cities had higher educational attainment and more research universities than either growing or shrinking cities.	Manufacturing share of employment negatively associated with growth and resurgence.	Warmer climate associated with growth. In some East South Central states, warm temperature negatively associated with growth (suggesting a trend toward moderate, not just warmer, temperatures).	City growth positively associated with metropolitan area growth.	Right-to-work legislation positively associated with growth. Economic age, crime, and share of residents who are black negatively associated with growth.
Kodrzycki and Muñoz (2009, 2013)	26 cities with the following characteristics in 1960: population roughly between 100,000 and 250,000, manufacturing share of employment 30 percent or greater, and central city of a metropolitan area.	1960-2000s.	Comparison of city-level statistics, case studies of resurgent cities.	Median family income, poverty rate, population growth, and reputation from experts. "Resurgent" cities had highest values for these indicators.	Educational attainment (high school, especially college) linked to resurgence. Collaboration between research universities and local communities also related to resurgence.	High initial manufacturing share impeded resurgence, but current manufacturing level unrelated to success.			Strong leadership, collaboration among key stakeholders, long-term planning, significant infrastructure improvements, and development of new industries and new identities associated with resurgence.
Mallach (2012, 2013)	13 small manufacturing cities in Pennsylvania, New Jersey, and Delaware.	1950-2000s.	Comparison of city-level statistics.	Social and economic well-being, housing prices and neighborhood strength, and the local economy. "Resilient" cities had highest ranks in these indicators.				Proximity to a large city sometimes linked to resurgence, with the largest cities (such as New York) creating positive spillovers but other cities (such as Philadelphia) causing drain.	Sustained vision and redevelopment strategies, coupled with strong leadership, important to city growth.
St. Clair, Wial, and Wolman (2012)	361 metropolitan areas.	1970s-2007.	Regression analysis (cross-section and panel).	Employment and GDP growth. Chronically distressed regions had slow employment/GDP growth relative to the national economy over seven consecutive years, while regions that recovered experienced chronic distress, followed by nationally-comparable employment/GDP growth for seven consecutive years.	Low educational attainment (defined by the percentage with a high school degree or less) associated with chronic distress.			For small cities, isolation from large metropolitan areas associated with chronic distress.	Higher income inequality and higher average wages positively associated with chronic distress.

Table 2: Findings on Distress and Resurgence in Cities and Metropolitan Areas									
Authors and Date	Sample	Time Period	Methodology	Key Measure of Distress or Resurgence	Findings on Determinants of Growth				
					Human Capital	Manufacturing	Weather	City/Metro Area Linkages	Other
Wolman, Hill, Blumenthal, and Furdell (2008)[1]	302 central cities that met at least one of the following criteria in 1990 or 2000: population of at least 50,000 and the primary city in the metropolitan area; population of at least 50% of that of the primary city in the metropolitan area; population of at least 150,000. Separate data for metropolitan areas.	1990-2000.	Comparison of city-level statistics.[1]	Economic well-being (growth in employment, payrolls, and business establishments) and resident well-being (per capita income, household income, poverty, unemployment, labor force participation). "Weak market cities" ranked in the bottom third of cities for these indicators, while "transitional weak market cities" were "weak market" cities in 1990 but not in 2000.	Educational attainment (high school, college) correlated with higher levels of well-being and improvement in well-being.	Manufacturing share of employment negatively correlated with well-being.		Strong metropolitan economy positively correlated with city well-being.	Share of metropolitan area employment and home ownership rate positively correlated with well-being and improvement in well-being. Income inequality, percent of single-parent households, racial segregation, and percent black negatively correlated with well-being and improvement in well-being. Historical trend and beginning-of-period economic well-being associated with improvement. Strong leadership key to growth.
Wolman, Hill, and Furdell (2004)	48 "distressed" cities, chosen from 145 cities with population equal to or greater than 125,000 as of 1990.	1990-2000.	Comparison of city-level statistics.	Poverty rate, unemployment rate, median household income, and prior decade change in population. "Distressed" cities were in the bottom third of this distribution. "Successfully revitalized" cities identified by experts.					Development projects in central business districts related to the impression of resurgence. Impression of resurgence largely uncorrelated with objective growth criteria.
Wolman, Ford, and Hill (1994)	50 "distressed" cities, chosen from 152 cities in metropolitan areas of 250,000 or greater in 1980.	1980-1990.	Comparison of city-level statistics.	Poverty rate, unemployment rate, median household income, prior decade change in per capita income, prior decade change in population. "Distressed" cities were in the bottom third of this distribution. "Successfully revitalized" cities identified by experts.					Overall impression of resurgence uncorrelated with objective growth criteria.

Note: Unless otherwise specified, determinants of growth are for the beginning of the period studied.

[1] Wolman, Hill, Blumenthal, and Furdell (2008) provide a typology and comparison of cities, and a regression analysis. The typology and comparison results are summarized in this table. Regression results are summarized in Table 1.

Table 3: Key Economic Indicators for Springfield and Peer-Group Cities, 1960 to 2005–2007												
		Median family income				Population Poverty Rate			Population			Memo:
		1960	2005–2007	1960	2005–2007	1980	2005–2007	Percentage point change 1980 to 2005–2007			2005–2007 as a percentage of 1960	
	Kodrzycki-Muñoz City Status[1]	Percent of U.S. median		Rank (1=highest)		Percent			1960	2005–2007		Status based on objective indicators only[2]
Akron, OH	Nonresurgent	114.2	69.0	5	16	15.0	21.4	6.4	290,351	200,172	68.9	N
Allentown, PA	Nonresurgent	106.9	67.1	11	17	11.7	22.3	10.6	108,347	108,900	100.5	N
Bridgeport, CT	Nonresurgent	105.7	76.8	15	9	20.4	19.2	-1.2	156,748	130,748	83.4	N
Dayton, OH	Nonresurgent	110.7	58.9	8	21	20.8	29.6	8.8	262,332	146,762	55.9	N
Erie, PA	Nonresurgent	101.3	69.5	22	15	13.4	24.3	10.8	138,440	100,393	72.5	N
Evansville, IN	Resurgent	93.6	76.9	25	8	12.2	17.8	5.6	141,543	113,627	80.3	N[3]
Flint, MI	Nonresurgent	112.0	55.5	7	23	16.9	33.2	16.3	196,940	108,304	55.0	N
Fort Wayne, IN	Resurgent	114.7	89.4	4	3	11.0	13.9	2.9	161,776	249,830	154.4	R
Gary, IN	Nonresurgent	106.1	56.7	12	22	20.4	33.2	12.8	178,320	86,723	48.6	N
Grand Rapids, MI	Resurgent	107.2	75.2	10	11	13.5	21.9	8.4	177,313	193,671	109.2	R
Greensboro, NC	Resurgent	103.3	87.8	19	4	12.8	18.7	5.9	119,574	237,423	198.6	R
Hartford, CT	Nonresurgent	105.8	51.0	14	26	25.2	31.5	6.3	162,178	118,655	73.2	N
Jersey City, NJ	Resurgent	105.1	80.1	17	6	21.2	17.4	-3.8	276,101	234,914	85.1	R
New Haven, CT	Resurgent	103.6	71.9	18	13	23.2	24.0	0.8	152,048	123,507	81.2	N[3]
Paterson, NJ	Nonresurgent	97.9	63.3	23	19	25.2	24.5	-0.7	143,663	142,443	99.2	N
Peoria, IL	Resurgent	105.3	90.7	16	2	12.3	16.9	4.7	103,162	111,351	107.9	R
Providence, RI	Resurgent	89.6	70.2	26	14	20.4	27.2	6.9	207,498	170,220	82.0	N[3]
Rochester, NY	Nonresurgent	112.4	54.8	6	24	17.5	30.0	12.5	318,611	199,697	62.7	N
Rockford, IL	Nonresurgent	121.3	78.7	1	7	10.3	20.2	9.9	126,706	147,794	116.6	N
South Bend, IN	Nonresurgent	118.1	73.5	2	12	12.1	21.6	9.5	132,445	98,516	74.4	N
Springfield, MA	**Nonresurgent**	**105.9**	**65.2**	**13**	**18**	**17.8**	**27.7**	**9.9**	**174,463**	**148,136**	**84.9**	**N**
Syracuse, NY	Nonresurgent	110.4	59.0	9	20	18.4	30.7	12.3	216,038	139,896	64.8	N
Waterbury, CT	Nonresurgent	115.5	76.0	3	10	14.1	18.8	4.7	107,130	108,554	101.3	N
Winston-Salem, NC	Resurgent	93.9	85.6	24	5	16.4	18.6	2.2	111,135	213,889	192.5	R
Worcester, MA	Resurgent	102.5	92.4	20	1	14.4	18.3	3.9	186,587	165,965	88.9	R
Youngstown, OH	Nonresurgent	101.6	52.9	21	25	18.2	29.6	11.4	166,689	68,592	41.1	N
Average												
All cities		106.3	71.1			16.7	23.6	6.8	173,698	148,795	91.7	
Resurgent cities		101.9	82.0			15.7	19.5	3.7	163,674	181,440	118.0	
Other cities		109.1	64.3			17.3	26.1	8.8	179,963	128,393	75.2	

Source: U.S. Bureau of the Census. County and City Data Book (1960), American Community Survey (2005–2007).

[1] Classified as described in text.

[2] R = Resurgent, N = Nonresurgent

[3] Different from Kodrzycki-Muñoz city status.

Table 4: Categorization of Kodrzycki-Muñoz Peer Cities in Selected Studies of Central City Distress, 1980 to 2000							
	1980		1990	2000			
Study	Wolman, Ford, and Hill (1994)[1]	Furdell, Wolman, and Hill (2005)[2]	Wolman, Hill, and Furdell (2004)[2]	Wolman, Hill, and Furdell (2004)[2]	Furdell, Wolman, and Hill (2005)[2]	Furdell and Wolman (2006)[3]	Memo: Kodrzycki-Muñoz City Status[4]
Measure	Distressed City?	Distressed City?	Distressed City?	Distressed City?	Distressed City?	Residential Economic Well-being	
Akron, OH	yes	yes	yes	yes	no	moderate	Nonresurgent
Allentown, PA	no	n/a	n/a	n/a	n/a	weak	Nonresurgent
Bridgeport, CT	yes	yes	yes	yes	yes	weak	Nonresurgent
Dayton, OH	yes	yes	yes	yes	yes	weak	Nonresurgent
Erie, PA	no	n/a	n/a	n/a	n/a	weak	Nonresurgent
Evansville, IN	no	no	no	no	no	moderate	Resurgent
Flint, MI	yes	yes	yes	yes	yes	weak	Nonresurgent
Fort Wayne, IN	no	no	no	no	no	moderate	Resurgent
Gary, IN	yes	yes	n/a	n/a	yes	n/a	Nonresurgent
Grand Rapids, MI	no	no	no	no	no	moderate	Resurgent
Greensboro, NC	no	no	no	no	no	strong	Resurgent
Hartford, CT	yes	yes	yes	yes	yes	weak	Nonresurgent
Jersey City, NJ	yes	yes	yes	yes	yes	n/a	Resurgent
New Haven, CT	yes	yes	yes	yes	yes	weak	Resurgent
Paterson, NJ	yes	yes	yes	yes	yes	n/a	Nonresurgent
Peoria, IL	no	n/a	n/a	n/a	n/a	moderate	Resurgent
Providence, RI	yes	yes	yes	yes	yes	weak	Resurgent
Rochester, NY	yes	yes	yes	yes	yes	weak	Nonresurgent
Rockford, IL	no	no	no	no	no	moderate	Nonresurgent
South Bend, IN	n/a	n/a	n/a	n/a	n/a	moderate	Nonresurgent
Springfield, MA	yes	no	yes	yes	yes	weak	Nonresurgent
Syracuse, NY	yes	yes	yes	yes	yes	weak	Nonresurgent
Waterbury, CT	n/a	n/a	n/a	n/a	n/a	n/a	Nonresurgent
Winston-Salem, NC	n/a	n/a	no	no	n/a	moderate	Resurgent
Worcester, MA	no	no	no	no	no	moderate	Resurgent
Youngstown, OH	yes	n/a	n/a	n/a	n/a	weak	Nonresurgent
Total Number of Cities in Study	152	98	145	145	98	302	26
Number of Kodrzycki-Muñoz Peer Cities:							
Included in Study	23	19	19	19	19	22	26
Classified as Distressed, Weak, or Nonresurgent	14	12	12	12	12	12	16

n/a = not available

[1] Lowest one-third according to index of urban health, measured by unemployment rate, poverty rate, median household income, prior decade change in per capita income, and prior decade change in population.

[2] Lowest one-third according to index of municipal distress, measured by unemployment rate, poverty rate, median household income, and prior decade change in population.

[3] Classified by thirds (weak, moderate, and strong) according to residential economic well-being index, measured by unemployment rate, poverty rate, median household income, per capita income, and labor force participation rate.

[4] Classified as described in text.

Table 5: Changes in Economic Performance of Kodrzycki-Muñoz Peer Cities in Selected Studies of Distressed Central Cities, 1980 to 2000					
	Deterioration 1980-2000		Deterioration 1980-1990	Economic Condition 1990-2000	
Metric	In Resident Economic Well-being[1]	In City Growth Indicators[2]	In Resident Economic Well-being[3]	City Economic Condition Index (Growth in City Economy)[4]	Memo: Kodrzycki-Muñoz City Status[5]
Study	Furdell, Wolman, and Hill (2005)	Furdell, Wolman, and Hill (2005)	Wolman, Ford, and Hill (1994)	Furdell and Wolman (2006)	
Akron, OH	no	yes	yes	weak	Nonresurgent
Allentown, PA	n/a	n/a	---	weak	Nonresurgent
Bridgeport, CT	yes	yes	no	weak	Nonresurgent
Dayton, OH	no	yes	yes	weak	Nonresurgent
Erie, PA	n/a	n/a	---	weak	Nonresurgent
Evansville, IN	---	---	---	weak	Resurgent
Flint, MI	yes	yes	yes	weak	Nonresurgent
Fort Wayne, IN	---	---	---	weak	Resurgent
Gary, IN	yes	yes	yes	n/a	Nonresurgent
Grand Rapids, MI	---	---	---	moderate	Resurgent
Greensboro, NC	---	---	---	strong	Resurgent
Hartford, CT	yes	yes	yes	weak	Nonresurgent
Jersey City, NJ	no	no	no	n/a	Resurgent
New Haven, CT	no	yes	no	weak	Resurgent
Paterson, NJ	yes	no	no	n/a	Nonresurgent
Peoria, IL	n/a	n/a	---	weak	Resurgent
Providence, RI	yes	no	no	weak	Resurgent
Rochester, NY	yes	yes	yes	weak	Nonresurgent
Rockford, IL	---	---	---	weak	Nonresurgent
South Bend, IN	n/a	n/a	n/a	weak	Nonresurgent
Springfield, MA	---	---	yes	weak	Nonresurgent
Syracuse, NY	yes	yes	yes	weak	Nonresurgent
Waterbury, CT	n/a	n/a	n/a	n/a	Nonresurgent
Winston-Salem, NC	n/a	n/a	n/a	moderate	Resurgent
Worcester, MA	---	---	---	weak	Resurgent
Youngstown, OH	n/a	n/a	yes	weak	Nonresurgent
Total number of cities	33	33	50	302	26
Number of Kodrzycki-Muñoz peer cities:					
Included in study	12	12	14	22	26
Classified as Deteriorating, Weak, or Nonresurgent	8	9	9	19	16

n/a = not available
--- = Not applicable

[1] Among the 33 distressed cities in 1980, lack of improvement in the majority of resident economic well-being indicators, including unemployment, median household income, poverty rate, labor force participation, and per capita income.

[2] Among the 33 distressed cities in 1980, declines in population. All distressed cities saw job growth 1980-2000.

[3] Among the 50 distressed cities in 1980, below-average change in index of economic well-being.

[4] Among 302 cities, divided into thirds (weak, moderate, and strong) based on growth in employment, annual payroll, and number of business establishments.

[5] Classified as described in text.