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THE EFFECT OF ECONOMIC RESTRUCTURING ON URBAN DISTRESS IN

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate School
at The Ohio State University

By

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****

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ABSTRACT

The United States has experienced a profound change during the past several decades, namely economic restructuring. This shift has been defined by a loss of manufacturing jobs (deindustrialization) and an increase in service-sector positions (postindustrialization). During the same period, many American cities fell into distress. Many scholars and politicians blamed the rise in urban distress on economic restructuring. Others identified deindustrialization as a cause of the urban crisis and growth in the service sector as a chance of recovery. This study examined the effect of deindustrialization and economic restructuring on economic and social distress from 1970 to 1980 and 1980 to 1990. It also tested the relationship between economic distress and social distress. All U.S. cities with populations of 25,000 or more in 1970, 1980, and 1990 were included in the analysis. I examined effects for all cities first. I then examined size effects by dividing cities into large and small. Finally, I accounted for regional differentiation by analyzing cities of the Rustbelt, Old South, and New Sunbelt separately. Structural equation models with latent variables were used to analyze the data.
Results of the measurement model demonstrate that social distress is reliably measured with rates of crime, female-headed families, high school noncompletion, and crowded housing. Economic distress may be measured reliably with rates of unemployment and family poverty as well as median family income. Though economic restructuring may be reliably measured with change in manufacturing jobs and change in service-sector jobs, these variables were considered separately to avoid the obscuring of effects.

The causal models revealed several general findings. First, economic distress was causally prior to social distress. Second, deindustrialization led to an increase in economic distress across all categories of cities. Third, growth in service-sector employment alleviated economic distress. Finally, economic restructuring did not have a direct effect on social distress. The effect of economic restructuring on social distress occurred through its effect on economic distress.
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CHAPTER 1

INTRODUCTION

The world economy is restructuring. Corporate headquarters and their related services are concentrating in a few cities. Manufacturing activity that once occurred in cities is now contracted out to peripheral locations, leaving many areas deindustrialized (Hicks 1985; Sassen 1989, 1991; Walton 1993). With increases in transportation and communication technologies, home-workplace distinctions are blurring. Since World War II we have seen recessions, recoveries that fail to restore jobs in manufacturing to pre-recessional levels, long periods of sluggish productivity growth, an increasing reliance on the service sector for net employment growth, a functional reorganization of the metropolis, and increased economic competition from equally and less developed countries (Hicks 1985).

The United States is not insulated from this transformation. In the past two decades, Americans have witnessed fundamental changes in city economies, namely deindustrialization, or declining employment in manufacturing, and postindustrialization, or growth of the services and information sectors. In fact, since 1970, the United States has experienced a 25-year structural decline in manufacturing employment² (Romo and Schwartz 1995). At the same time, many large American cities fell into crisis. In the urban core, unemployment and poverty soared² and many social problems including
crime, public health, and educational effectiveness escaped government efforts to alleviate them. Exacerbating the decay, shrinking tax bases in economically and socially distressed cities produced fiscal problems that led cities such as New York and Cleveland to the brink of bankruptcy in the mid 1970s.

Despite intense difficulties in the urban core, the overall trajectory of development in the United States has demonstrated an improvement in the quality of life. Americans can expect to live longer, healthier lives than their parents and grandparents. Whereas the modal job of the early twentieth century involved physical, and often dangerous labor, we now work in air conditioned offices. In the United States, and in fact throughout the industrialized world, more people achieve college educations than ever and fewer babies die before their first birthdays. These improvements have continued through years of deindustrialization and economic restructuring. Thus a question arises, what, if any, effect do deindustrialization and economic restructuring have on economic and social conditions in cities of the United States? It is this question that forms the central theme of this research.

The theories of political economy and human ecology lend insight into the consequences of deindustrialization for American cities. Proponents of both perspectives agree that loss of manufacturing jobs has potentially devastating effects on individuals and communities as losses in the manufacturing sector may lead to increased unemployment and a decline in wages. In addition, displaced workers may require advanced training to secure new positions in another sector.
However, human ecology and political economy theories espouse different positions on the future of postindustrialization. Human ecology rejects the proposition that uneven development, endemic to any major structural transformation, is detrimental to human welfare in the long run (Kasarda and Crenshaw 1991). Ecological theory views uneven development as the temporary result of community adaptations to changes in the social and economic environments. Advocates of this theory argue that the concentration of economic activity leads to greater efficiency and productivity thereby benefiting the entire system by increasing its carrying capacity over time (Hawley 1950, 1968).

Communities experience stages of equilibrium as they evolve from simple to more complex forms of organization. In essence, human ecologists state that individuals and communities will adapt to the new postindustrial economy.

Human ecologists argue that the growth of the postindustrial, or services and information, sector is a natural progression in economic development that will slowly mitigate the negative social and economic consequences of deindustrialization (Hicks 1985). Human ecology lends itself to the prediction that, in the long run, the rise of the service economy will either have no effect on urban distress or that it will slightly alleviate distress over time through its effect on the fiscal capacity of cities and the economic well being of their residents. Although human ecology recognizes that people are not equally prepared to adapt to the postindustrial economy, the theory proposes that negative effects of deindustrialization may be alleviated through time due to the economic multipliers of service industries (Kasarda 1985; Moore and Laramore 1990).
Political economy theory, on the other hand, emphasizes the effects of social inequality on individuals and communities. Economic restructuring, political economists argue, will result in a bifurcated economy in which individuals are stratified into high and low-paying positions. The theory also states that a new urban hierarchy will develop with a few global cities dominating the world. In essence, political economy theory implies that the growth of the service sector is detrimental to the well being of cities. Though this research does not explicitly test human ecology and political economy theories, it is informed by them.

The urban crisis of the 1960s increased interest in measuring levels of urban distress in the 1970s. In response, several researchers have devised indexes to measure urban distress. Some include economic measures only (Ricketts and Sawhill 1980), some add educational efficacy (Nathan and Adams 1976) while others include demographic characteristics (Neal and Bunce 1995). However, no study includes all of these dimensions. In response, I conceptualize urban distress as comprising an economic and a social component. Economic distress is measured with family poverty, median family income, and unemployment. Social distress is operationalized as the crime rate, female-headed families, educational efficacy, and housing quality.

In sum, the purpose of this research is to test the effects of deindustrialization and economic restructuring, which involves both loss of manufacturing jobs and gains in service sector employment, on both the economic and the social components of urban distress. In addition, I will test these effects for city size and region. Economic restructuring is a
profound and seemingly unstoppable process in American society. Like the Industrial Revolution of the early twentieth century, it affects not select populations, but the entire country. As such, we must discover the effects, whether positive or negative, on urban distress. This information is vital to communities for the development of sound job creation strategies. City officials must understand the potential effects of increases in service sector employment on the well being of their populations in order to optimize business development and industry relocation policies. Knowledge of the effects of economic restructuring on urban distress is also vital to the federal government in assessing the need for welfare and job training programs. In addition, it will enhance urban scholars' understanding of the forces affecting American cities into the twenty-first century. Finally, individuals need to understand the macroeconomic situation in the United States in order to choose careers that will thrive in next several decades. We are doing our fellow citizens a disservice if we encourage them to achieve financial security through low-skilled manufacturing jobs, for these job have all but disappeared.

The research in this dissertation is organized as follows. Chapter 2 reviews previous research relevant to the study of urban distress and economic restructuring, including deindustrialization and the rise of the service sector. It concludes with the statement of hypotheses that will guide this research. In Chapter 3, I describe the data and methods used to test the hypotheses. Chapter 4 details the results of these tests of the general models of effects of deindustrialization and economic restructuring on urban distress. Chapter 5 reveals the findings of sub-models for the effects of loss of manufacturing employment and
increases in service employment for large and small cities. Similarly, Chapter 6 presents results of the sub-models that examine effects of both deindustrialization and restructuring on distress for cities of the Rustbelt, Old South, and New Sunbelt. In Chapter 7, I apply the findings to a discussion of urban distress in a broader context and present an agenda for future research.
CHAPTER 2
LITERATURE REVIEW AND HYPOTHESES

The notion of an *urban crisis* in U.S. cities has occupied a central position in research and a recurrent position in politics for the past four decades. The urban crisis began with the 1960s race riots (Gottdiener 1985). This decade marked the first time that U.S. cities housed a disproportionate number of poor and minority residents. The urban crisis was later associated with the outmigration of middle class businesses and white residents from central cities (Berry 1973), the subsequent isolation of poor minorities (Wilson 1985, 1987, 1996), the deconcentration of central city manufacturing (Kasarda 1983, 1985), and fiscal disparity among city governments (Monkkonen 1985).

In her review of federal response to urban decay, Paula McClain (1995) states that between 1964 and 1966, the federal government passed legislation to address problems of unemployment, housing, poverty, education, and public health in cities. However, after his election, President Nixon declared the urban crisis over. Many of the programs designed to tackle the urban crisis were then dismantled. As a result, urban problems were forced into the periphery of public policy discussions. The Los Angeles riots of 1992 revived discussion of the urban crisis. Both President Bush and Democratic rival Bill Clinton visited the city to express concern over the urban crisis (Dreier 1995). The
media depicts the urban crisis of the 1990s as one of violence. However, violence is intertwined with conditions of poverty, overcrowding, unemployment, neighborhood disintegration, and poor schools (McClain 1995).

Urban scholars identify deindustrialization as a cause of the urban crisis. Deindustrialization resulted in the disappearance of many manufacturing jobs from American cities. This led to long-term unemployment, declining family incomes, loss of health insurance and pension rights, increased crime, lost tax revenue, and diminished social services (Bluestone and Harrison 1982; Kasarda 1985; Hill and Negrey 1987). However, this relationship has not yet been systematically tested on a large sample of cities.

Undoubtedly deindustrialization is disruptive to cities in which it occurs and to individuals who are displaced from manufacturing jobs. However, deindustrialization may represent a step in an advanced economy’s progress toward greater productivity. Growth in service-sector employment is another step. In contrast to structural manufacturing decline, the replacement of manufacturing jobs with those in the service sector offers a potential chance of recovery.
THEORETICAL FRAMEWORK

Political Economy

The effect of economic restructuring on urban distress is informed by two theories, political economy and human ecology. Political economy theory emerged during the 1960s to explain the development of the urban crisis (Gottdiener 1986; Walton 1993). This perspective examined social change and urbanization in terms of the way societal processes and structures advantage some groups and disadvantage others. It focused on studies of urban poverty, housing segregation by race, the urban fiscal crisis, and deindustrialization. Sharon Zukin (1980) became the first scholar to apply the phrase “new urban sociology” to this perspective. However, the new paradigm became increasingly multidisciplinary and international in orientation and became known as political economy.

Political economists propose that societies are differentiated according to their modes of production (Jaret 1983). Like Marxists, they identify inequalities among classes based on ownership of, or subordination by the means of production. Political economists state that in the United States and Western Europe, the process of capital accumulation determines societal development (Gottdiener and Feagin 1988). The acquisition of these profits leads to urban crises. This process is controlled by individuals who control labor; thus a power differential exists among classes.

Political economy theory is more concerned with effects of social inequality than with the importance of technology and functional necessity in shaping urbanization trends. It is not concerned with “technological determinism” but with political systems
and power monopolies. But political economist David Smith (1995) agrees that changes
in key technologies, dominant industries, and basic transportation systems do play a
profound role in the physical and social environments.

In his 1995 article comparing the political economy and human ecology
perspectives, Smith establishes five basic assumptions of political economy. First, cities
are shaped by their location and involvement in a hierarchical global system that is
characterized by unevenness. Second, the world system is marked by competitive
capitalism in which actors attempt to outbid each other for access to capital, cheap labor,
and resources. This leads to a concentration and migration of populations and
infrastructure within and between cities. Third, capital is transported easily while cities
are fixed. As a result, investment and disinvestment profoundly affects cities. Hill (1977)
illustrates this with assumption with two fundamental principals of capitalist development:
1.) the law of increasing firm size which states that concentration and centralization of
capital accumulation are intrinsic to the process of capitalist growth and that as capitalist
enterprises expand, they become complex, multidivision organizations with elaborate
vertical chains of command and 2.) the law of uneven development that holds that contrasts
between regions and between central cities and their suburbs is a product of capitalists’
freedom to invest anywhere they wish and industrialists’ strategies of creating surplus labor
supplies. The fourth assumption of political economy is that politics and government play
a role in determining the flow of capital. The market is not completely free. Finally,
knowledge of spatial and temporal context is vital to the understanding of urban
development.
In terms of economic restructuring, political economy theory predicts that the rise of the postindustrial economy will result in service sector dominance that will ultimately create a two-tiered system of employment with increasing proportions of high and low wage jobs (Stanback et al. 1981; Bluestone and Harrison 1982; Stanback and Noyelle 1982). Proponents of this perspective argue that some cities and residents suffer disproportionately in the postindustrial economy and that they will become entrenched in a subordinate position in the urban and employment hierarchies respectively (Jaret 1983; Walton 1987; Smith 1995). Specifically, activities associated with finance and economic control concentrate in a few great cities while production increasingly decentralizes. Thus political economists view deindustrialization and postindustrialization as causally related as concentration of financial and business services is required by the fragmentation and decentralization of manufacturing to nonmetropolitan areas and less developed countries (Sassen 1989, 1991; Walton 1993). Political Economy identifies this disarticulated, or uneven, development as the cause of urban distress. It predicts that these problems will worsen over time. At its extreme, it predicts the disappearance of the middle class (Thurow 1984).

Political economists argue that the fundamental shift from manufacturing to services and information is qualitatively different from economic upheavals of the past because industrialization allowed much wider participation by members of society. Research on New York (Mollenkopf 1983; Sassen-Koob 1991) and Los Angeles (Soja, Morales, and Wolff 1983; Sassen-Koob 1984) demonstrates a new economic and social dualism within the largest metropolitan areas. Rapid growth of advanced corporate
services and high technology manufacturing is occurring simultaneously with the growth of new downgraded economic sectors (i.e. sweatshops, restaurants, luxury consumption). This polarized growth creates distinct social spheres. These groups have different systems of social production and organization, yet they exist in the same space.

According to Matthew Drennan, "The decline of New York and the rise of New York are not neatly contained in separate sequential time frames—they are concurrent phenomena with some common technological causes." (1991, p. 40). Thus, according to Political economy theory, New York is actually two cities at once—one based on producing and moving products and on corporate headquarters, which is in decline, and one based on producer services marketed internationally, which is prospering.

In sum, political economy theory contributes several dimensions to the study of economic restructuring. First, it reminds us that postindustrialization differs in some respects from the transformation of the Industrial Revolution. Many of the jobs created by industrialization provided middle class salaries while requiring little formal education and few skills. It thus allowed wide participation by members of society. High paying jobs in the postindustrial sector, in contrast, require higher levels of education and skill. Thus, according to political economy, economic restructuring results in unequal outcomes for individuals. Second, political economists predict that a new urban hierarchy will emerge. Cities that house headquarters of financial and information industries (such as New York and Los Angeles) will dominate.
Human Ecology

Political Economy theory is useful in explaining the rise of the urban crisis and the formation of a global hierarchy of cities as a result of postindustrialization. Another perspective, human ecology, enhances our understanding of the ways in which communities adapt to the disruptive changes inherent in economic restructuring. Human ecology is the study of human societies which are composed of three elements and their interrelationships: the human population, its environment, and its sociocultural system (Schwirian 1993). Its roots lie in the work of Charles Darwin. A naturalist, Darwin recognized the interrelation among many species (1859) and stated that a species must either adapt to its environment or become extinct. Similarly, Herbert Spencer identified human society as analogous to an organism (1852) as its success depended upon relationships among its various components. He noted that as density increases, so does the division of labor. Durkheim extended this theory with the notion that greater density leads to increased division of labor which, in turn, leads to increased occupational specialization (1893). He identified the root cause of increasing specialization as competition through demographic pressure (see also Boserup 1965 for an alternative explanation). In order for humans to survive in this changing social environment, this required adaptation in the form of innovation and specialization. In addition, humans in modern society must cooperate in order to survive.

The ideas of Darwin, Spencer, and Durkheim influenced Robert Park, founder of the Chicago School of Sociology (see Park, Burgess, and McKenzie 1925). He applied Darwin's concepts to city life. Park believed that division of labor lessened human
dependence on the physical environment and recognized that humans were uniquely capable of inventing mechanisms to modify their physical environment to fit their needs. Though his research focused on social disorganization, Park agreed with Durkheim that increased specialization deepened the need for cooperation among humans for survival.

In the next generation of human ecology, Amos Hawley, formalized assumptions about human nature and established five principles of ecological organization (1968). Hawley stated that humans inherently strive to preserve and enhance their lives to the greatest degree allowed by the prevailing circumstances. In essence, humans seek to maximize their well being. Perhaps even more importantly, Hawley discussed the prominence of adaptation as a human characteristic. He stated, “there is no known restriction on the kind or extent of refinement of activity in which he can engage” (1968, p. 331).

In addition to these assumptions of human nature, Hawley proposed five principles of ecological organization, two of which inform the present study. The Principle of Key Function states that a system’s connection to its environment is based primarily on a small number of activities, or key functions. These key functions provide the core sustenance for the local area. The productivity of the key function determines the carrying capacity of the population. Highly productive key functions free human capital to become involved in other activities. As a result, the greater the productivity of the key functions, the greater the specialization and the greater the carrying capacity of the society. Hawley defines this as the Principle of Differentiation.
According to the ecological perspective, the main problem confronting the human population is survival in its sometimes hostile environment. Societies develop a sociocultural system to enhance their adaptation. Human ecology is a holistic approach in that it views all life as a single system that must interact with its social and physical environments. Humans share a reciprocal relationship with their environments. They both affect and are affected by the environment. Ecology recognizes the existence of continuous change in human societies, and thus the need for continual adaptation to insure human survival. Kasarda and Irwin illustrate this with the statement. “Equilibrium is never achieved, however, since macroeconomic conditions are rarely stable for sufficient periods and because local competitive factors are always at work” (1991. p. 735). Stated another way, humans both adapt to their environment and mold their environment to fit their needs.

The process of adaptation to change requires time. Thus, ecological theory recognizes the potentially detrimental short-run effects of rapid society-wide structural change. This is the case with deindustrialization. Massive loss of manufacturing jobs increases the unemployment rate. This leads to loss of income for individuals and families and loss of revenues for cities. However, once a society has had time to adapt to the new situation, greater stability should be reached. In the case of economic restructuring, when young Americans realize that the country’s economic future, at least for the time being, resides in the service sector, they will acquire the education and training needed to obtain such positions. Displaced manufacturing workers may choose to migrate to the location of new or relocated manufacturing jobs or retrain for service-
oriented jobs. The culture of American society will incorporate the notion of service sector employment as vital to well being. This process also occurs on the community level. The outmigration of industry leaves infrastructure waiting to be filled by other activities. The existence of such facilities may lead to innovative individuals to take advantage of such opportunities. In essence, we will adapt to the new economic environment. I predict that this will alleviate the effects of deindustrialization by decreasing economic and social distress.

In addition, ecological theory identifies economic restructuring as an evolutionary process. The result of this process is a more efficient and productive system. Failure to evolve, especially in a global economy, would result in a decreased carrying capacity. In essence, the ability of the system to serve its members would decreased. In this respect, ecologists echo the sentiments of Joseph Schumpeter who stated:

...innovation's role as the source of supranormal profit makes it the fundamental impulse that sets and keeps the capitalist engine in motion...The process of industrial mutation-if I may use that biological term-that incessantly revolutionizes the economic structure from within, incessantly creating a new one. This process of creative destruction is the essential fact about capitalism. (1947, p. 82)

Thus, human ecologists realize that there is a price to be paid for economic restructuring, namely job losses in the manufacturing sector. However, adaptation to the postindustrial economy will purportedly benefit the society as a whole.

Like political economy theory, human ecology also recognizes that not everyone fares equally in a new regime. Ecologists agree that shift in employment from goods to service-based has undermined the role cities played as staging grounds for integration of
new, unskilled workers. But ecologists argue that base problem is a mismatch between worker skills and job location. Specifically, the postindustrial economy requires a different set of skills than did the goods-production system. Workers trained in manufacturing cannot find jobs in the service sector for which they either are qualified or at the level of pay they received in manufacturing.

Despite its consequences for some individuals, human ecology embraces uneven development. The idea is akin to the economic notion of competitive advantage. That is, different areas possess combinations of characteristics that make them more amenable to some activities than others. This includes the level of education of the population, natural resources, proximity to markets, tax structure, and political climate. The ecological perspective holds that unfettered development, which will be necessarily uneven, will lead to greater efficiency and productivity. This, in turn, will result in an increased capacity that is beneficial to all member of the system, despite their unequal positions in that system.

Human ecology theory also recognizes that suburbanization of jobs and firms affects income and poverty by producing a mismatch between where the jobs are located and where the population in need of jobs is located (Birch 1975; Kasarda 1976, Steinnes 1982; Hicks 1985; Kasarda and Friedrichs 1986; Baldassare 1992). Firms often migrate to other regions as in the case of the Rustbelt to Sunbelt shift of the 1970s and 1980s (Ornstein 1983; Glickman and Glassmier 1989; Hauser 1991; Venkatesh 1994; Hooks and Bloomquist 1992) or move overseas (Harrison and Bluestone 1988). Such structural economic reorganization presents serious problems for low skilled workers (Sassen
It is very difficult for them to find jobs to replace those that emigrated from the city. This presents policy makers with an acute set of problem that must be addressed in order to save these communities and residents.

However, the issue faced by policy makers is one of helping the disenfranchised acquire the skills they need to adapt to the postindustrial economy. It is neither appropriate nor desirable to force the trajectory of development backwards in time. Without economic restructuring the United States would become technologically stagnant, productivity would decrease, and the economy would succumb to foreign competition. The consequences would be manifested in a decreased standard of living and decreased ability to provide for the disenfranchised. Ecologists recognize that a sweeping transformation such as restructuring will inevitably harm some individuals and groups. Rather than maintaining the status quo by resisting change, and thus harming the entire society, we must address the problems of the individuals negatively affected by economic restructuring.

In the tradition of human ecology, researchers view the uneven development arising from restructuring as a temporary result of community adaptations to changes in the social and economic environments (Kasarda and Crenshaw 1991). However, the current situation is not remarkably different from that of the industrial revolution which created some very famous Horatio Alger-type legends of entrepreneurs. This theory argues that the growth of the postindustrial sector is a natural progression in economic development which will slowly mitigate the negative social and economic consequences of deindustrialization (Hicks 1985). Research demonstrates that communities that rely on
younger, more vibrant economic activities that are adapted to the postindustrial era and face less foreign competition are in a better position to survive recessions (Kasarda and Irwin 1991). Services generally fit these criteria. Similarly, others suggest that, on the national level, deindustrialization is not a negative phenomenon but rather "the natural consequence of the industrial dynamism in an already developed economy" (Rowthorn and Ramaswamy 1997, p. 1). However, this does not preclude the notion that substantial job loss in manufacturing creates acute problems in affected cities. Rather the idea is that a country that fails to evolve will stagnate. Though speaking of a different country during a different era, August Losch, vehemently advocated a timeless policy of evolution and adaptation. His ideas vividly illustrate the human ecology's spirit of adaptation. Losch warned of the dangers of loyalty to outdated modes of production with the statement:
entity. The health of its components is inextricably intertwined with the well being of the whole. Thus human ecology is not a zero-sum perspective. It recognizes that the less fortunate will fare better in a society with a higher carrying capacity. The strength of the carrying capacity is dependent on the competitiveness of the society in its social and physical environment, in this case, the international marketplace. The human ecological perspective encourages growth, change, and adaptation as opposed to tradition and stagnation.

Despite disagreements on the future of restructuring, scholars agree that economic restructuring represents a major structural transition from a manufacturing-based to a service-based economy. Thus, irrespective of potential benefits of economic restructuring, the process exacts a toll on individuals and systems ill equipped to adjust quickly. In the short run, deindustrialization may be associated with increased unemployment, decreased standards of living and rising income disparities when the service sector fails to fully absorb displaced workers. This transition is disruptive to individuals who lack the skills to adapt to the new postindustrial arrangements (Hicks 1985). Loss of manufacturing jobs has led to decline in real wages and in a decreased standard of living for the urban working class (Koritz 1991). On the community level, restructuring may result in rising levels of family poverty. Areas relying heavily on manufacturing employment, namely the East North Central Region, suffered disproportionately from the loss of manufacturing employment (Hill and Negrey 1987; Goe and Shanahan 1991). However, as this research will test, negative effects of
economic disruption may be alleviated or overcome by the economic recovery offered by gains in the postindustrial sector.

**URBAN DISTRESS**

This research disaggregates the phenomenon of urban distress into its social and economic components. Research by Schwirian, Nelson, and Schwirian (1995) finds it theoretically and statistically appropriate to conceive of and measure economic distress with the poverty rate, unemployment rate, and medial family income. Similarly, social distress is composed of percent of households headed by single women, the crime rate, educational efficacy, and the percentage of houses crowded. The study also demonstrates that economic distress is causally prior to social distress.

This research extends the Schwirian, Nelson, and Schwirian model by examining the effect of economic restructuring on economic and social distress. Figure 1 summarizes this model. Economic restructuring is a complex process of structural economic change. It involves a dismantling phase of deindustrialization and a recovery phase of postindustrialization. Deindustrialization occurs through disinvestment in goods-production activities and is manifested in the loss of manufacturing jobs. Postindustrialization involves the increasing importance of the services sector to an area’s economic well being. It is manifested in increased service sector employment. In most American cities, deindustrialization occurred first and was followed by a period of job growth in the postindustrial sector. Economic distress consists of family poverty,
unemployment, and median family income. Social distress includes crime, housing quality, educational efficacy (high school dropout rate), and family structure.

ECONOMIC DISTRESS

The model of economic distress is based on the distribution and use of income and resources in cities. It includes rates of poverty and unemployment as well as median family income. Both today's human ecologists (Kasarda 1993, 1985, 1983; Schwirian 1991) and new urban sociologists (Walton 1993) have expressed elements of the economic stress model in their research.

At the heart of the economic distress model lies the argument that major urban problems are linked causally to low incomes and improper use of resources by both individuals and city governments (Netzer 1970; Imboscio 1993). This has been exacerbated by deindustrialization. The widespread decline in manufacturing jobs translates into increased unemployment and lost income for individuals and families. It also undermines the ability of cities to provide services for residents.

According to the economic distress model, low income has both a direct and an indirect effect on social distress. The direct effect is upon the low income people themselves and the economically marginalized minority populations, many of whom either live in or just above poverty. The lack of sufficient financial resources precludes the low income and poor from accessing the goods and services required for a high quality standard of living. Without money they are unable to purchase adequate housing in safe neighborhoods, good schools, proper medical care, and other high-quality goods.
and services popularly associated with a high quality of life. The limited consumption of amenities by low income and poor residents results in them being put seriously at risk for a wide range of personal pathologies including drug and alcohol addiction, poor physical and mental health, violence, family dissolution, and participation in deviant or criminal groups including gangs and countercultures (Tussing 1975; Block 1979; Kessler and Cleary 1980; Wilson 1985; Curry and Spergel 1988; Taylor and Covington 1988; Wallace 1993). They also tend to lose the social support system of family and friends that normally buffers members of the community from personal pathologies. Consequently, these residents experience debilitating social isolation that exacerbates the serious personal problems they face. In Wilson's (1987) terms the urbanites truly disadvantaged in the city's economic competition form an underclass whose marginalized position economically, residentially, and politically dooms them to high levels of social distress and lack of mobility options.

Research by Nelson, Schwirian, and Schwirian (1999) concludes that economic distress is a significant predictor of social distress in large U.S. cities. Economic and social distress may share a reciprocal relationship such that economic distress leads to social distress which then further exacerbates economic distress. Specifically, high levels of social distress in a city may lead corporate decision-makers to identify the area as having a poor business climate. This would deter job companies from locating there and worsen the level of economic distress. However, this model, like the present research, recognizes poor economic conditions as a cause of social problems.
In sum, the economic stress model is embedded in the argument that economic restructuring affects employment, employment affects income, and income affects behavior and life conditions. Thus, loss of industry causes loss of jobs, loss of jobs creates unemployment and underemployment, unemployment and underemployment lead to low income and poverty, and low income and poverty create social and personal pathologies. In short, economic stress leads to social distress. On the other hand, the great rise in available service sector positions presents possibilities for recovery from economic distress.

**Unemployment**

The rate of unemployment is considered a general measure of economic well being (Devine, Shelly, and Smith 1988). On the national level, the unemployment rate has fluctuated during the past three decades. In 1975, corresponding with the oil crisis, the United States experienced 9 percent unemployment, a rate three times higher than in the 1960s. This represented the end of 30 years of widely-distributed gains in workers’ real incomes and the beginning of two decades of economic hardship (Wetzel 1995). Two recessions in the early 1980s brought the most severe economic contraction since the Great Depression with an average unemployment rate of 10 percent.

Though unemployment lessened in the post-recession years, it was not equally distributed across economic sectors. Manufacturing suffered great losses due to severe foreign competition. A number of new jobs were created in the goods-producing industries. However, the new positions required skilled workers with the flexibility to work high technology machines. In addition, consumer spending for services increased.
relative to durable goods. Like the new manufacturing jobs, high quality service positions required higher levels of education and good quantitative and verbal skills. In short, deindustrialization led to the disappearance of manufacturing jobs and therefore to increased unemployment. The second phase of economic restructuring, replacement of lost manufacturing jobs with service jobs, decrease unemployment for some. Unfortunately many residents of distressed central city neighborhoods did not possess the high levels of education and training required to fulfill the newly-created postindustrial jobs.

Isolated inner-city residents may not benefit directly from economic restructuring with respect to labor force participation. One of Wilson's central theses is that unemployment is even more duplicitous than poverty in destroying communities and creating urban distress (1987, 1996). On the neighborhood level, massive unemployment destroys connections to the larger society and leads to an increase in social disorganization. Other researchers have linked joblessness with poverty, an increase in crime (Chircos 1987; Wilson 1987; Land, McCall, and Cohen 1990; Land, Cantor, and Russell 1994), and the adoption of a culture of poverty which develops a negative feedback that affects future prosperity (Lewis 1961, 1968; Gastil 1971; Banfield 1974; Curtis 1975). Research on the effect of unemployment on urban problems has focused on large cities. In contrast, this research is concerned with the effect of deindustrialization and postindustrialization on unemployment as one aspect of economic distress in a broad range of cities, not solely the country's largest.
The rate of family poverty is a second indicator of economic distress. The study of poverty has captured the attention of scholars and policy makers alike. Despite the use of public assistance programs, poverty has increasingly concentrated in America's central cities (Kasarda 1993). In his book *The Truly Disadvantaged* (1987), William Julius Wilson reports that between 1970 and 1980, the number of people living in poverty areas (defined as census tracts with poverty rates of 20 percent or higher) increased by 40 percent in the five largest cities while the number of people living in high-poverty areas (at least 40 percent poor) grew by 69 percent. Studies by Jargowsyk and Bane (1991), Hughes (1989) and Weicher (1990) corroborate these findings.

The trend of increasing poverty concentration affects geographic locations and population groups differently. Research demonstrates that poverty is concentrated among minority groups, especially African Americans (Massey and Eggers 1990; Kasarda 1993). Regionally, the largest increase in poverty (from 15.5 percent in 1980 to 19 percent in 1990) occurred in the Midwest (Frey 1994). Similarly, Kasarda (1993) found the nation's most distressed tracts in large cities of the Northeast and Midwest. These neighborhoods were not solely characterized by high poverty rates, but also by high rates of high school dropout, out-of-wedlock births, persistent joblessness, welfare dependency and racial and ethnic segregation that reinforced poverty. This increase in poverty corresponds temporally and geographically with deindustrialization, which began in the 1960s and occurred disproportionately in the Northeast and Midwest. Between 1979 and 1984, more than 5 million workers were permanently displaced due to job losses in
manufacturing as the result of a decreased demand for domestically-produced goods (Wetzel 1995). Such workers tend to experience significant losses of income before, during, and after job loss. They often have firm-specific knowledge that is not easily transferred to another company (Wetzel 1995). This often results in displaced workers falling below the poverty line, at least until they acquire the training necessary to secure another position, perhaps in the service sector.

**Median Family Income**

The economic contribution of income to social distress argued by the model operates by the fact that the low income population limits the city's fiscal resources that could have been applied to the solution of urban problems (Petersen 1976: Bahl 1984). A large low income population is a contributing factor to an inadequate city tax base.

Indeed, low income is part of today's urban fiscal crisis; the other half is the soaring costs for infrastructure replacement, improvement, and addition and for city services, many of which are in response to the needs and behaviors of the poor. The economic disruption of deindustrialization is hypothesized to lower median family income, thereby contributing to an increase in economic distress. However, the recovery phase of economic restructuring, gains in service sector employment, may return median family income to pre-transformation levels thereby alleviating distress.

**SOCIAL DISTRESS**

Research by Schwirian, Nelson, and Schwirian found it statistically and theoretically appropriate to measure social distress with the following variables: crime,
female-headed families, educational efficacy, and crowded housing. These social
problems are also regularly included in studies of quality of urban life (e.g. Nathan and

Crime

Public opinion polls show that crime is perceived as the most important urban
problem (Shannon, Kleniewski, and Cross 1991; Covington and Taylor 1991). The fear
of crime, though often exaggerated by many people (Ward, LaGory, and Sherman 1986;
Jutcovich and Cox 1990), reflects the widespread concern among city dwellers of the
threat of random violence generated by the continuous urban drug war (Donnelly 1989).
Recent reductions in crime rates have had little impact on the perception of crime as a
serious problem that reflects a breakdown in social order (Fisher 1991; Miethe 1995;
Perkins and Taylor 1996). In fact, fear of crime has reached such high levels, especially
among women, the elderly, and minorities (Glaser 1994; Ferraro 1996; Haghigh and
Sorensen 1996) that it has been dubbed a "moral panic" (Platt 1994; Chambliss 1994,
1995). In addition to fear, urbanites respond to crime and disorder with demoralization
and anger which diminish the quality of their lives (Skogan 1990).

Urban crime is complex. Crimes in the city are not uniformly distributed within or
among cities (see Land, McCall, and Cohen 1991; Shihadeh and Ousey 1996). As
Miethe and Meier (1994) report, crimes are more heavily concentrated in areas with high
poverty rates, high unemployment, poor housing, single-parent families, and excluded
minority groups (for a discussion of the relationship between economic and social
depprivation and crime, see Land, McCall, and Cohen 1991; Massey and Denton 1993;
Warner and Pierce 1993; Samson and Wilson 1995; Krivo and Peterson 1996; Shihadeh and Flynn 1996). It is in the link of crime to the disadvantaged, in the fear that crime generates among community members, and in its potential indication of the breakdown in community social control that any investigation of environmental social distress must consider the overall city crime situation. Cities with high crime rates are simply more stressful places in which to live than are cities with low crime rates.

Though unsupported by research, there is today a widespread perception that serious crime is ever increasing, that it has reached an all-time high, and that this reflects one facet of a general breakdown in the social order (U.S. Federal Bureau of Investigation 1994). High levels of crime are not new in American cities: indeed, in the early 1900s some slum neighborhoods in New York City were considered to be so unsafe that police would only enter them in armed pairs. It is in the link of crime to the disadvantaged, in the fear that crime generates among the rest of the community members, and in potential high crime is as a proxy measure for the breakdown in community social control that any investigation of environmental social distress must consider the overall city crime situation.

The rise of the postindustrial economy has been blamed for an increase in crime and youth gang activity (Jackson 1991). The reasoning lies in the link between crime, poverty, and the Mismatch Hypothesis. Central city residents who once earned an adequate living working in unskilled or low-skilled manufacturing jobs were unable to adjust to the postindustrial economy whose jobs require higher levels of education at commensurate salaries.
In addition, research by Shihadeh and Ousey (1996) applies a demographic component to the effect of economic restructuring on crime rates in cities. They report that the suburbanization of people and industry is a highly selective process that left behind, "an isolated population of minorities, blacks in particular, anchored to center-city areas with bleak economic prospects and a shrinking low-skill job base" (p. 650). Serious crime is disproportionately concentrated among these populations. This represents an extension of Wilson's concept of the truly disadvantaged (1987). Wilson identifies increased reliance on welfare and increased proportions of female-headed households as results of the isolation of inner city residents at the hands of the outmigration of middle class residents and entry-level manufacturing jobs. Similarly, an increase in the crime rate is another result of the social dislocation caused by the transformation of the U.S. economy from manufacturing to service-based. Thus, with an increase in deindustrialization, we should expect to see an increase in the crime rate.

**Female-Headed Families**

The next dimension of social distress is the relative concentration of families headed by women. In 1960, 90 percent of children under age 18 lived in two-parent families. By 1993, this decreased to 70 percent (Farley 1996). This placed a greater number of children at risk for poverty as 47 percent of mother-only families live below the poverty line while only 9 percent of two-parent families do so (U.S Bureau of the Census 1990).

High concentrations of female-headed families in cities are usually taken by social researchers as an indicator of broken families, fractured local community, and crumbled
city social structure (Sampson 1987; Wilson 1987; Anderson 1990; Massey and Denton 1993; Krivo and Peterson 1996). In addition, it is considered a sign of the disintegration of informal social control (Sampson 1985). Family disruption, often measured by female-headed families, is positively related to crime measures (Sampson 1985, 1986; Sampson and Groves 1989; Smith and Jarjoura 1988, 1989). Therefore, high rates of female-headed families are related to a breakdown in informal social control which then lead to an increase in crime. These relationships link female-headed families to community social disorganization.

Research shows that intact biological families tend to offer social, economic, and psychological advantages that no other family form can. Furthermore, many argue, the disadvantages for children of single-parent families spill over into above average rates of health problems, poor school performance, and problems with crime and the criminal justice system (Moynihan 1993).

Not all researchers are as negative in their view of the effect of single motherhood on children (see Acock and Demo 1994). However, most agree that female headed families encounter more difficulties than intact families (McLanahan and Sandefur 1994). Thus, communities with larger concentrations of female headed families suffer relatively higher levels of social distress (Smith and Jarjoura 1989).

Educational Efficacy

The 1990 census revealed the continuation of a century-long trend of increasing average educational attainment among the U.S. population (Mare 1995). Elementary and secondary school attendance approached parity among racial and ethnic groups.
However, differences persisted at the high school and college levels. In addition, factors such as family income, parents’ educational attainment, and family structure and size continue to affect children’s educational attainment. These factors do not occur at random, but rather tend to cluster in communities. As a result, U.S. cities differ in the education levels of their populations.

Educational attainment is intimately linked with outcomes in the postindustrial economy, both for individuals and cities. Cities with large concentrations of comparatively less educated residents are not likely to be competitive in attracting the high technology-high income industries of the newly-emerging global economy. In his study of the determinants of successful competition among cities for jobs, Kasarda and Irwin find that a well-educated workforce is paramount (1991). Without these new high-income jobs, city populations will be doomed to the low wage hourly service positions expanding in many places. Wilson recognizes the impact of the economic transformation on education with the statement, “Education and training are considered more important than ever in the new global economy” (p. 28). Thus, we should expect to see an increase in aggregate levels of education as a result of economic restructuring.

Housing Quality

Housing quality is another area of concern in cities. The simplistic argument that residential crowding leads to social and psychological pathologies has been largely discredited by social researchers (Michelson 1976; Baldassare 1979; Krupat 1989). Nevertheless, it is clear that overcrowding accompanies other negative factors such as the social powerlessness of its residents, the low economic standing and poor opportunities
for advancement, and the poor health conditions and prospects (Phillips 1996). As such, it is an indicator of the inability of residents to secure adequate housing. Some researchers may prefer to use the percentage of housing stock built before 1940 as an indicator of poor housing quality. However, recent research considers residential crowding a fundamental index of overall housing quality for a population (Spain 1990). It is one of the primary measures of housing quality as it indicates difficulty in establishing and maintaining autonomous living quarters (Myers and Wolch 1995). Cities with comparatively large proportions of their population in crowded housing are more stressful places in which to live.

Taken together, crime, housing, educational efficacy, and family composition are four fundamental areas in which social distress is manifest in many cities. Each of these problems in itself is a significant source of social distress for cities. By extending human ecology theory, I predict that the loss of jobs in the manufacturing sector weakens urban residents' economic base and city governments' ability to provide for their citizens. Increases in economic distress then result in greater social distress. In short, human ecology claims that deindustrialization increases urban economic distress. However, I argue that the full cycle of economic restructuring, namely the replacement of lost manufacturing jobs with service jobs, will benefit urban residents and governments economically and therefore alleviate economic and social distress. With respect to the relationship between economic and social distress, I present the following hypothesis:

1. Net of other effects, high levels of economic distress are associated with high levels of social distress.
ECONOMIC RESTRUCTURING

In the past two decades, Americans have witnessed fundamental changes in community economic structure, namely deindustrialization, or decline in manufacturing employment, and the rising prominence of the services and information sector via increased employment. These transformations are collectively referred to as economic restructuring. Restructuring has many causes including regional migration and suburbanization of employment within the United States, increasing productivity in the manufacturing sector that decreases the need for production workers, and loss of jobs to overseas plants.

Research is divided as to the long-term effects of economic restructuring. Some argue that a social system dependent upon the service sector will result in increased inequality (Stanback 1979; Bluestone and Harrison 1982; Thurow 1984). Others state that postindustrial hegemony is a natural stage in economic evolution (Rowthorn and Ramaswamy 1997) that will lead to a disappearance of class issues (Bell 1976) and reduce inequality (Blumburg 1980). Regardless of its eventual effects, economic restructuring disrupts community economic organization in the short run. It requires a period of adjustment in which individuals who lose manufacturing jobs at the hands of deindustrialization must either retrain for new positions in the service sector or migrate to relocated manufacturing plants. Often, workers must achieve advanced levels of education and acquire different sets of skills. This period of transition may be marked by loss of income and increased family poverty on the community level.
DEINDUSTRIALIZATION

In their groundbreaking *Deindustrialization of America*, Bluestone and Harrison define deindustrialization as “the widespread, systematic disinvestment in the nation’s basic productive capacity” (1982, p. 6). They identify this as the cause of job loss in manufacturing. Others argue that technological innovation, not disinvestment, has resulted in increased productivity to the extent that many workers have been automated out of their jobs (Rowthorn and Ramaswamy 1997). Though disagreeing on its causes, both groups identify job loss in manufacturing as the manifestation of deindustrialization.

Community-specific deindustrialization is a complex phenomenon resulting from the disappearance of manufacturing jobs due to automation or migration overseas, a shift in population and manufacturing activity from the Rustbelt to the Sunbelt, and the migration of manufacturing employment from central cities to suburbs. As a result, economic restructuring has not affected all sections of the country equally. The negative impact of deindustrialization occurred disproportionately in the East North Central region (Hill and Negrey 1987; Markusen 1988) and in areas with a heritage of reliance on manufacturing (Goe and Shanahan 1991). In less than 30 years, cities of the Rustbelt region lost 41 percent of their manufacturing employment while Sunbelt cities gained 270 percent in production jobs (Schwab 1991). Within the Rustbelt, the East North Central region suffered the most acute losses. During the same period, the Midwest experienced the greatest increase in family poverty in the nation (Kasarda 1993).
Globalization

The issue of migration of manufacturing plants overseas has occupied a dominant position in American politics in the past decade. Scholars debate the role of globalization in deindustrialization. One side argues that the increased integration of the world economic system has contributed to the loss of manufacturing jobs in the United States (Bluestone and Harrison 1982; Brown and Julius 1994). Similarly, Wood (1994, 1995) and Freeman (1995) argue that goods imported from poor countries are produced in labor intensive plants and displace many employees in advanced economies.

But dissention exists among those who share this perspective. Some, like Ross Perot, identify the migration of manufacturing activity as a national crisis that must be addressed. During his 1992 presidential election campaign, Perot reassured citizens of his dedication to fighting this trend. Others deem the farming out of manufacturing activity to overseas plants as a necessary step in the evolution of an industrial society (Bell 1973; Klein 1983; Lawrence 1983; Hicks 1985; Rowthorn and Ramaswamy 1997). This process of disinvestment theoretically transplants capital from less to more productive areas. Hicks (1985) attributes loss of manufacturing jobs to the rise of the global economy. However, he argues that the U.S. has not lost productive capacity, but rather the high rates of job growth in manufacturing and insulation from foreign competition. Unlike Perot, Hicks identifies foreign competition as a necessary and desirable force in the U.S. economy (see also Sassen 1991, p. 10). He states, “Only enhanced competitiveness can ensure the health of an industry for whose products there is a demand. While healthy industries may not lead to employment growth, uncompetitive
industries will certainly not do so” (1985, p. 79). Similarly, Thurow (1980) argues that the U.S. should actually increase capital flight in order to maximize its productive capacity and remain competitive in the international market.

However, other research reports that the overall level of deindustrialization in the United States is not the result of migration of industrial plants or of international North-South trade, but differential rates of productivity growth in the manufacturing and services sectors (Rowthorn and Ramaswamy 1997). Manufacturing activity has become increasingly capital intensive. This has resulted in continual productivity growth. As a result, increasingly fewer workers are needed per unit of output. Service-sector activities are becoming increasingly productive. However, they lag behind manufacturing and therefore require a larger workforce.

These seemingly antagonistic explanations of deindustrialization may be synthesized. Industries. especially those producing newly-developed products, develop in areas of highly skilled labor. Through time production becomes standardized. As a result, companies no longer require skilled labor and thus seek cheap unskilled labor. In addition, technological innovations in transportation and communication simultaneously increase productivity in manufacturing and make international division of labor possible. These advances decrease the cost of transporting final products and refocus cost-effectiveness strategies on reducing labor expenditures. As a result, corporations are able to farm out low-skilled manufacturing jobs to plants in developing countries (see Vernon 1977).
Regional Development

In his Ecological-Evolutionary Theory, Lenski (and Nolan 1984) hypothesizes that an area's technical and economic heritage sets the trajectory of its development. Though he examines the development of states, the ideas are applicable to smaller ecological units, such as regions. The basic premise is that an area's characteristics at the onset of industrialization direct its outcomes. More generally, the past influences the future. Lenski illustrates this sentiment with the statement, "change is a cumulative process in which earlier developments influence the course of later developments" (1984, p.2). This becomes more complex in US cities because they are subject not only to their own heritages, but also to the national culture, mass migration, and the federal and state governments.

However, a study of urban history reveals that the Rustbelt, Old South, and New Sunbelt had different sets of physical, social, technological, and economic attributes and developed during different historical eras. Cities of the Rustbelt developed largely along waterways as this was the most effective mode of transportation at the time. Atlantic Coast cities began as port cities and became commercial centers for trade with Europe. River cities west of the Appalachian Mountains developed in the early 1800s and grew rapidly with the advent of the steam boat in 1820. These cities were laid out in a gridiron pattern and had high population densities (Wade 1957). Cities of the Great Lakes area of the Rustbelt developed during the 1850s as industrial powerhouses due to their location near vital coal and iron resources and good intra-regional transportation and commercial linkages which were established in the previous period (Wade 1964b; Hill 1977).
In the antebellum period, Southern cities formed an "urban perimeter" pattern (Wade 1964b). These cities acted as administrative centers for the interior of the South. By 1700 cities had developed along the Atlantic Coast from Boston to Charleston. But, the unique climate, geography, and agriculture of the South had set these cities on different patterns of development from the North as early as the Colonial Period (Schwab 1991). The land south of Chesapeake Bay contained fertile soil and a climate mild enough to grow staple crops of tobacco and rice on large plantations. These conditions were also conducive to the use of slave labor. Rivers also cut deep into the regions interior, allowing the development of cities inside the perimeter. Wade states that even though the South had ties to a capitalist economy (the North) it was a feudal society in which the "aristocratic feudal lords" were more concerned with sustaining their social positions than with developing railroads and industry. This disarticulated development between the North and South persisted after the Civil War such that, by the 1960s, urban scholars proclaimed Southern cities to be 15 to 20 years behind their northern neighbors. This is no longer the case. During World War II billions of federal dollars were spent developing defense industries in southern cities.

Despite its rapid development, the South continues to experience ramifications of its economic, technological, and social history. It is still dependent on agriculture, oil, and gas which makes it vulnerable to boom and bust cycles. Corporate headquarters, located predominantly in the North, control economic activity in Southern cities. Finally, some argue that federal investment has transformed the South "from a poor agricultural region to a poor industrial region" (Schwab 1991, p. 136).
The Southwest is home to the nation's most rapidly growing metropolitan areas (Phoenix, Tucson, Dallas, and Houston). Unlike their northern and eastern neighbors, these cities grew to metropolitan status after World War II. They developed in a more technologically advanced society than did Rustbelt and Old Southern cities. Southwestern cities relied on the automobile rather than rivers, canals, or railroads, for transportation. One manifestation of this is the diminished role of the downtown area as a center of economic activity. The invention of the microchip and innovations in the aerospace industry had profound effects on Southwestern cities. These industries require a small but highly skilled labor force. They do not need the infrastructure of the large Northeastern or Midwestern plants. As a result, these industries are free to locate on the basis of markets, beneficial business climates, and recreational amenities. Despite the region's booming economy, Sunbelt cities are not problem free. They suffer from urban sprawl, water shortages, smog, and a fragile desert ecosystem.

In conducting the regional analyses, I test the effect of changes in manufacturing and service sector employment on economic and social distress in cities of the Rustbelt and cities of the Old South and New Sunbelt. Past research deems it reasonable to predict that the effect of restructuring will be more profound on Rustbelt cities as they have suffered far greater levels of deindustrialization, on average, than have cities of the New Sunbelt. It is widely accepted that cities of the Northeast and Midwest have traditionally been much more reliant upon manufacturing activity than their neighbors to the South and West. Many Rustbelt cities developed during the Industrial Revolution and reflect that in their key function (Hawley 1968). In essence, economic disruption inherent in the
restructuring of employment has been more extreme in the North as compared to the West and Southwest. Similarly, I expect that economic restructuring will have a greater impact on economic distress in cities of the Old South as compared to cities of the New Sunbelt.

The Growth of the Sunbelt

World War II shifted the balance of manufacturing activity from the Rustbelt to the Sunbelt. It is a common misconception that the Federal Government neglected the Rustbelt in defense spending during World War II. Even though the government invested heavily in defense industries such as airframe, ordnance, and shipbuilding and in civilian industries of petroleum and aircraft parts, government investment was actually concentrated in the established manufacturing centers of the North and East (Hooks and Bloomquist 1992). However, these established industries did not fare as well in the postwar period as did the new industries. Therefore, the state's role in the growth of the Sunbelt and decline of the Rustbelt was not due to magnitude of investment or to uneven distribution of defense spending but to the growth rate of specific industries in the postwar period.

In the 1960s and 1970s however, the Federal Government overburdened Northeastern and Midwestern cities in order to grant tax breaks to Sunbelt cities (Ornstein 1983). Though Rustbelt cities fought regional tax inconsistencies in the 1960s, efforts to halt the area's decline and slow growth of the newly-developed West and Southwest proved futile. As a result, cities of the Rustbelt lost many residents and even more manufacturing jobs from 1970-1980 (Perry and Watkins 1978; Bluestone and Harrison
1982; Sawers and Tabb 1984; Glickman and Glassmier 1989). In addition, many researchers concluded that the high cost of production in the Northeast relative to the South and West contributed to the outmigration of industrial plants, beginning in the 1960s (Romo and Schwartz 1995. Evidence also suggests that regions with high wages and high unionization rates had high levels of industrial decline.

Deindustrialization is not exclusively a Northeastern problem. Loss of manufacturing jobs also occurred in cities of the Old South in the 1980s due to foreign competition. In 1982 an Alabama development official stated, “Industrial jobs are going out the back door faster than we can get them in the front door” (Cobb 1990, p.36).

Migration of Jobs to Suburbs

World War II defense spending also played a role in the migration of employment from central cities to suburbs. Silverman (1989) reports that the Federal Government concentrated investment in cities of the Rustbelt at the beginning of the war. Workers migrated in mass to take advantage of employment opportunities. This eventually overburdened the housing, transportation, and public health infrastructures of the old industrial cities. Employees in defense plants began to abandon jobs due to crowding and lack of adequate housing. Federal policy makers recognized the need to locate defense industries outside central cities which also provided a variety of untapped resources. With the exception of cities of the South and West, the government invested about 200 to 400 percent more in suburbs than in central cities (Silverman 1989, p. 159).

The suburbanization of employment that began in the 1940s increased rapidly in the 1960s. Industry migration occurred largely due to the decreased importance of
distance and increased emphasis on land as a cost factor. Berry and Kasarda (1977) note that between 1960 and 1970 suburbs of the 100 largest metropolitan areas experienced a 29 percent increase in blue-collar jobs while central cities lost 13 percent. Similarly, suburbs gained 67 percent in white-collar positions while central cities gained only 7 percent. Thus many of the manufacturing jobs that remained in the Midwest migrated to suburbs. The available white-collar jobs required levels of education beyond those attained by central city residents. This resulted in a structural mismatch between the skill levels of central city residents and skill requirements of the new jobs (Kasarda 1976; Moore and Laramore 1990; Kasarda 1993). Without transportation to manufacturing jobs in the suburbs, those with less education suffered increased levels of unemployment and decreased family incomes.

In sum, previous research on deindustrialization leads to the following hypotheses:

2. Net of other effects, loss of manufacturing jobs leads to an increase in economic distress.


4. Net of other effects, loss of manufacturing jobs leads to a greater increase in economic distress in Rustbelt cities than in cities of the Old South.

5. Net of other effects, loss of manufacturing jobs leads to a greater increase in economic distress in Rustbelt cities than in cities of the New Sunbelt.
RISE OF SERVICE SECTOR DOMINANCE

In addition to deindustrialization, the process of economic restructuring involves an increase in the proportion of the labor force employed in the service sector. In 1960, 56 percent of America's labor force was employed in the service sector. By 1994 this had increased to 73 percent (Rowthorn and Ramaswamy 1997). Producer services have emerged as key industries in major cities (Sassen 1990). For example, in 1985 jobs in finance and real estate (FIRE), business and legal services, and communication accounted for 26.4 percent of all private sector employees in New York City, 20.3 percent in Chicago, and 17.8 percent in Los Angeles as compared to 15 percent for the nation as a whole (Sassen, 1988).

Some scholars reject the term postindustrial on the grounds that manufacturing output continues to comprise a high percentage of GDP and is vital to the United States' competitiveness in the global marketplace (see Hicks 1985 and Cohen and Zysman 1987). However, researchers tend to use postindustrial to indicate the predominance of employment in corporate, public, professional, and nonprofit service. (Mollenkopf and Castells 1991)

An increase in the proportion of the labor force employed in services is also occurring in most of the world's advanced economies. This is largely attributable to increasing productivity in manufacturing but also to global economic competition, technological revolutions, the increasing importance of finance relative to production, and third world migration into core cities of the first world (Mollenkopf and Castells 1991).
Manufacturing activity may be defined as "technologically progressive" because it can be easily standardized, thus the information necessary information may be formalized and replicated (Baumol, Blackman, and Wolff 1989). Services, on the other hand, vary widely with respect to potential productivity growth. In general, productivity increases more rapidly in the manufacturing sector than in the service sector. In a detailed study of national-level deindustrialization, Rowthorn and Ramaswamy (1997) found that increased productivity in the manufacturing sector relative the service sector is responsible for decline in manufacturing jobs (see also Hicks 1985). At the current stage of development, service industries tend toward labor intensity while manufacturing industries tend toward capital intensity. Stated another way, at equal levels of productivity, the service sector requires more employees than manufacturing. In the United States, manufacturing has been so successful that it has innovated its way out of the need for a large proportion of the labor force. This has resulted in a shift in employment out of manufacturing and into services. This leads to these hypotheses:

6. Net of other effects, growth in service-sector jobs alleviates economic distress.

7. Net of other effects, economic restructuring does not have a direct effect on social distress.

8. Net of other factors, economic restructuring has a greater effect on economic distress in Rustbelt cities than in Old Southern cities.

9. Net of other factors, economic restructuring has a greater effect on economic distress in cities of the Old South than cities of the New Sunbelt.
URBAN SCALE EFFECTS

Classically, the traditional model of Urban Scale is emerged from the work of Toennies ([1887], 1957), Wirth (1938), Simmel (1950), and Milgram (1970). According to the model, as the scale of the city increases, social pathologies increase. In turn, the quality of urban life diminishes. Scale traditionally has been argued to be reflected in three things: population size, residential density, and population heterogeneity (Wirth 1938). According to the model, as these three factors increase the differentiation of the population increases. People of different racial and ethnic heritages with different customs, values, and norms live in common space. This leads to the deterioration of primordially-based social supports and close relationships of community life and their replacement with formal social control mechanisms and impersonal bureaucratic organizations. As a result of the shift in life from emphasis on traditional, communal relationships to unpredictable, bureaucratic, and impersonal organizations, city life becomes disorganized, chaotic, anomic, harsh, and characterized by weak social ties.

The modern approach to urban scale concerns the effect of demographic changes on city life: specifically the concentration of poor into highly distressed neighborhoods. This occurs disproportionately in large central cities. Wilson identifies the outmigration of non-poor whites and an increase in the number of residents in poverty neighborhoods that have become poor as the causes of this isolation (1987). Massey, Gross, and Shibuya found corroborating evidence to Wilson’s statement that outmigration of non-poor blacks also increased the concentration of poverty in urban neighborhoods in the 1970s (1994;
see also Coulton, Chow, and Pandey 1990 and Jargowsky and Bane 1990 for more evidence on the effect of outmigration of non-poor on the concentration of poverty in large cities). They discovered that this trend reversed in the next decade so that the emigration of poor blacks exceeded that of non-poor blacks. Despite this change, the concentration of poverty continued as poor people also immigrated into distressed areas.

Economic restructuring has had a tremendous impact on large cities. Due to space requirements and high land costs manufacturing jobs have all but disappeared from the country's largest cities. In addition, the postindustrial economy that sustains major cities demands a highly-trained and highly-educated workforce. Thus economic restructuring has been devastating to individuals lacking such credentials and especially to those who reside far from entry-level employment. However, large cities also have a greater adaptive capacity than small cities. This is largely due to the proliferation of key functions in large cities relative to small cities. Key functions are the central economic activities that sustain an area by linking the system with its physical and social environments (Hawley 1968). The existence of many key functions leads to greater stability within an area because losses in one key function may be more easily absorbed by other sustaining activities. Small cities tend to have fewer key functions than large cities. In essence, large cities enjoy economies of scale, or agglomeration economies, while small cities have smaller, less diverse, and more specialized economies and are therefore more vulnerable. A recession or fluctuation in the product cycle may have devastating effects on cities that rely on a handful of key functions to employ its citizens. For example, many small cities, such as Flint, Michigan, that relied predominantly on the
automotive industry during the 1970s suffered massive job losses due to
deindustrialization in that industry. Flint's economy was not diversified enough to
absorb the displaced workers.

The greater densities of large cities also yield economies of agglomeration in
which people and capital move more freely than in lower-density areas. As a result, I
predict that small cities actually suffer greater distress due to the loss of manufacturing
jobs, per job lost, than large cities. Large cities tend to have a more diverse economic
base. This leaves small cities at a disadvantage when it loses jobs in the manufacturing
sector.

In addition, the postindustrialization phase of economic restructuring may effect
large and small cities differently. At least in the short run, economic restructuring is
disruptive. Large cities have traditionally served as seedbeds of technological innovation.
These innovations often create new jobs. In addition, the deconcentration of
manufacturing jobs began to occur in large cities in the early twentieth century. This is
no coincidence. Advances in transportation and communication made the migration of
manufacturing jobs out of central cities possible. As a result, large cities have had several
decades to adjust to a service-based economy. The large number of key functions in large
cities relative to small cities also serves to allows them to absorb displaced labor more
efficiently. This leads to the following hypotheses:

10. Net of other effects, loss of manufacturing jobs leads to a greater increase in
economic distress in small cities than in large cities.

11. Net of other effects, economic restructuring has a greater effect on the level of
economic distress in small cities than in large cities.
In sum, this research seeks to test the effect of economic restructuring on urban distress. Urban distress consists of an economic and a social component. Economic distress is measured by rates of poverty and unemployment and median family income while social distress includes the percent of female-headed households, the crime rate, educational efficacy, and crowded housing. Economic restructuring is a two-part process including the dismantling of manufacturing employment and the increasing prominence of service sector employment. This structural change is disruptive and requires time for people and communities to adapt. Thus, it is hypothesized that deindustrialization has a positive effect on urban distress (in essence, increasing distress). The complete process of restructuring, replacement of lost manufacturing jobs with service jobs, should increase distress in the early period (1970-1980) but alleviate distress in the later period (1980-1990). In addition, sub-models are tested to examine differential effects of deindustrialization and economic restructuring for large and small cities and for cities of the Rustbelt versus cities of the Sunbelt.
CHAPTER 3

DATA AND METHODS

This chapter provides an overview of research methods used to analyze the relationship among economic restructuring, economic distress, and social distress. I begin with a brief discussion of the data and a presentation of variables used in the analysis. I also describe the measurement of the latent constructs of social distress, economic distress, and economic restructuring. Next, I test the measurement model and discuss the causal models that will be analyzed to test relevant hypotheses. The chapter concludes with a preview of chapters 4 through 7, which present the results.

DATA

Data were obtained from the County and City Data Book (CCDB) (1994, 1984, 1979, and 1972). The unit of analysis is the city and includes all cities in the United States with populations of 25,000 or more in 1970, 1980, and 1990. A city must have this threshold population in all time points to be included in the analysis. This yields a total of 875 cities.
VARIABLES

Social Distress

Table 1 presents the definitions of variables used in the analysis. The latent construct of social distress is measured with four variables: the percent of families headed by single women, the rate of serious crimes, the percent of the population with less than a high school education, and the percent of houses that are crowded. These measures directly correspond to the social problems discussed earlier and are regularly included in studies of quality of urban life (see e.g., Neal and Bunce 1994).

The rate of families headed by single women is hypothesized as an indicator of social distress in all communities. Past research demonstrates that female-headed families are associated with higher rates of crime, poverty, and a breakdown of social control.

Serious crime contributes to social distress. It creates distrust, dissatisfaction, and fear among residents. The link between crime and disenfranchised populations and in crime’s potential as a proxy measure for the breakdown in community social control renders it a vital aspect of environmental social distress. In this analysis, the crime rate includes the number of serious crimes, as identified by the FBI’s Uniform Crime Reports, per 100,000 population. These crimes include murder, rape, aggravated assault, robbery, burglary, larceny, and motor vehicle theft.

Educational efficacy is the third variable hypothesized to measure social distress in American cities. A highly-educated labor force is vital to a city’s well being in the postindustrial economy. Communities with a high percentage of high school dropouts are
unequipped to compete for high-tech jobs. In this analysis, the high school dropout rate is measured as the percentage of the population aged 25 and over who have not achieved a high school diploma.

Residential crowding is measured as the percentage of occupied dwellings of year-round use with more than 1.01 persons per room. It is often considered a measure of the quality of housing stock in a city and of the residential condition of residents.

**Economic Distress**

To measure the latent construct *economic distress*, three variables were obtained for each city at each of the three census years: median family income, percent of families below poverty, and percent of the labor force unemployed. These measures are widely acknowledged to be fundamental measures of economic difficulties for urban communities (Schwirian, Nelson, and Schwirian 1995).

The rate of unemployment is considered a general measure of economic well-being. Cities with high unemployment are thought to be more stressful places in which to live compared with cities of low unemployment. Unemployment is measured as the percentage of the civilian labor force not employed but looking for work.

Family poverty is hypothesized as a second indicator of economic distress. The poverty threshold for a family of four was $7,413 in 1979 and $14,763 in 1993. In constant 1983 dollars, this translates to $9,555 for 1970 and $10,389 for 1993.

Finally, low median family income is thought to be a contributor to economic distress. A large low income population is a contributing factor to an inadequate city tax base, and therefore to economic distress. In addition, cities with low-income populations
are often called upon to provide expensive services for needy residents. For comparability across time, median family income was adjusted for inflation using the Consumer Price Index (CPI). The CPI uses the period of 1982-1984 as the standard to which other years are set. In the present research, the data for median family income in 1980 was measured in 1983. Therefore, only the median family income figures for 1970 and 1990 were adjusted. The 1970 values were multiplied by 2.726 and the 1990 values by .807 to set median family income at constant 1983 dollars for each year (see Statistical Abstracts 1992. Table 737).

**Economic Restructuring**

Economic Restructuring is a latent construct that represents a profound change in an economic system, in this case cities. It is operationalized by the variables deindustrialization and postindustrialization. Deindustrialization is measured with loss of manufacturing jobs. This has become the most popular indicator of deindustrialization (Hill and Negrey 1987). Data for the manufacturing industry conform to the definition of the Standard Industrial Classification (SIC), issued by the Office of Management and Budget. The SIC identifies manufacturing activity as the mechanical or chemical transformation of inorganic or organic substances into new products. Postindustrialization is measured with increases in service sector jobs. This consists of the service industry, which includes business, legal, personal, dental, engineering, automotive repair, recreation, agricultural, surveying and hotel services as well as retail and wholesale employment.
To capture the change in manufacturing and service jobs over time, I created an index using the following formula:

\[
\text{(manufacturing jobs } t_1 / \text{manufacturing jobs } t_2) \times 100
\]

A score of less than 100 indicates that the city lost manufacturing jobs from time one to time two. A score of 100 means that the city neither gained nor lost manufacturing jobs while a result of greater than 100 indicates that the city gained manufacturing jobs. The same equation was used to create an index of change in service sector jobs. Job change indexes were created for both the 1970 to 1980 and 1980 to 1990 time periods.

In addition to the latent constructs of social distress, economic distress, and economic restructuring, three demographic variables were used as controls. They include percent minority, population size, and population density. Percent minority is measured as the sum of percent black and percent Hispanic. Population is logged in each year to diminish the magnitude of deviation. Density is measured as the number of people residing in a city per square mile.

METHODS

The models used in this research are tested using structural equation models with latent variables. The structural equations were solved using Bentler's EQS program (Bentler 1985; Bollen 1989). Past research on large cities by Schwirian, Nelson, and Schwirian (1995) demonstrates that the latent construct of economic distress is reliably measured using the family poverty rate, unemployment rate, and median family income. It also reveals that social distress is reliably measured with rates of crime, high school
dropout, female-headed families, and crowded housing. Finally, the study finds that economic distress is causally prior to social distress.

This study examines the effect of economic restructuring on economic and social distress. Since economic restructuring is a process involving change, I used changes in manufacturing and service-sector jobs from 1970 to 1980 to predict levels of social distress and/or economic distress in 1980. I then used changes in manufacturing and service jobs from 1980 to 1990 to explain levels of social and/or economic distress in 1990.

This research extends the study by Schwirian, Nelson, and Schwirian in several ways. First, it examines all U.S. cities with populations of at least 25,000 while Schwirian et al. consider only large cities. Second, the present analysis applies the issue of economic restructuring to an explanation of social and economic distress. Finally, it questions the extent to which process affecting social and economic distress differ by city size and regional location.

The present study hypothesizes that the latent factors of social distress, economic distress, and economic restructuring are reliably represented by the variables discussed in the previous section. Two issues arise in evaluating models with latent variables. The first is the adequacy of the nine variables to measure the three latent constructs of social distress, economic distress, and economic restructuring. The second issue is the extent to which the substantive hypotheses are supported. In response to the first concern, I employed an analysis strategy that involved examination of two models: the null model and the comparison model. Model M₀, or the null model, assumes that the data consist of
12 uncorrelated random vectors. The comparison model, $M_1$, is used to determine whether the hypothesized latent variable structure is consistent with the data. (For a discussion of this approach, see Saris and Stronkhorst 1984; Bentler 1985; and Bollen 1989). Figure 3 presents a summary of the latent constructs and their underlying measures.

**Null and Measurement Models**

Results of the test of the Measurement Model revealed that, for both the 1970 to 1980 and the 1980 to 1990 periods, the factors loaded as hypothesized. The social distress factor was hypothesized to be comprised of the percents of female-headed families, high school dropouts, crowded housing, and the crime rate. All variables loaded onto the social distress factor as predicted. As presented in Tables 3.2 and 3.3, the high school dropout rate and percent of female-headed households had the highest loadings on social distress. But all of the loadings for social distress were high, at least .777.

The economic distress factor was created using rates of family poverty and unemployment as well as median family income. As predicted, each of these variables loaded well on the economic distress factor. The rate of family poverty had the highest loading on the economic distress factor, although each variable exceeded .770. Finally, manufacturing and service-sector employment created the economic restructuring factor. The loadings for the job change variables were no less than .808 for each decade.

Tests were conducted to determine the fit of the measurement model for each time period. In the 1970-1980 era, the model had a chi-square of 989.4 with 52 degrees of freedom while the independence model had a chi-square of 113871 with 66 degrees of
freedom. This yielded a change chi-square of 11738 with 14 degrees of freedom. With this information, it is concluded that the model change is significant at the .001 level and that it fits the data significantly better than the null model, which hypothesizes no relationship among the variables in each factor. In addition, the Bentler-Bonnett normed and nonnormed fit indexes provide an indication of model fit. The indexes range from 0 to 1 with a higher score indicating a better model fit. The normed index is affected by sample size such that in small samples, the score may not reach 1.0 even when the model is correct. This is not an issue in the current study as the sample size is no less than 800 cities. In the 1970-1980 model, the normed fit index was .992 and the nonnormed index was .990.

The results for the 1980-1990 model were similar. As seen in Table 3.3, the measurement model had a chi-square of 992.9 with 52 degrees of freedom while the independence model reached 120073 with 66 degrees of freedom. This resulted in a change chi-square of 119151 with 14 degrees of freedom. The measurement model was thus significant at the .001 level. In addition, the Bentler-Bonnett normed fit index was .992 and the nonnormed index was .993.

To further test the applicability of the latent constructs, I computed the omega reliability scores for each factor. The equation for calculating omega reliability is:

$$\Omega = \frac{2 \sum T + \sum h^2}{2 \sum T + N}$$
where $T$ is the bivariate correlation, $h$ equals the factor loadings, and $N$ is the number of variables in the factor. Generally, a score of .7 or higher indicates a highly reliable factor. The omega reliability scores were calculated for social distress and economic distress in 1980 and 1990 and for economic restructuring in the 1970-1980 and 1980-1990 time periods.\textsuperscript{12}

The omega reliability scores appear in Table 3.4. In the first period (1970 to 1980) the social distress factor had a reliability score of .79. The reliability score for economic distress was .88 while the score for economic restructuring reached .80. The omega reliability scores were similar for the 1980 to 1990 period (.78, .94, and .73 respectively). This demonstrates that social distress may be reliably measured with percent of female-headed households, crime rate, crowded housing, and rates of high school dropout. Economic distress is reliably measured with percent of family poverty, the unemployment rate, and median family income. Likewise, economic restructuring may be reliable measured using changes of manufacturing and service jobs.

This research tests several causal models to explain urban distress. Each model is tested for both the 1970 to 1980 and 1980 to 1990 time periods for all cities, large and small cities, and cities of the Rustbelt, Old South, and New Sunbelt. At the expense of space, the models were partitioned in this manner because it yielded more complete information than, for example, analyzing interaction terms. One could assess the effect of the interaction of region and deindustrialization or economic restructuring to determine the relationship. However, creating a separate model for each region allows a comparison of the unstandardized regression coefficients across regions and across time. In essence,
it enhances the understanding of the slope of the restructuring/distress relationship in each area. Due to their different trajectories of development, it is highly likely that the effects of deindustrialization and economic restructuring will differ in cities of the Rustbelt, Old South, and New Sunbelt. The same is also true of small and large cities as they have each had different experiences with economic restructuring.

The first causal model of the analysis, the Deindustrialization Model, assesses the effect of deindustrialization on economic distress and of economic distress on social distress. In this model, I propose that economic distress has a direct effect on social distress. I also predict that the loss of manufacturing jobs has a significant effect on economic distress. However, I argue that it has only an indirect effect on social distress. This model is summarized in Figure 2. The deindustrialization model is tested for all cities, for large and small cities, and for cities of the Rustbelt, Old South and New Sunbelt from 1970 to 1980 and 1980 to 1990.

The next two models add change in service sector jobs to the equation. This provides a test of economic restructuring. Model 2 is presented in Figure 4. This is essentially a chain model in which economic restructuring (measured as the indexes of change in manufacturing jobs and change in service sector jobs) affects economic distress while economic distress affects social distress. In essence, the model predicts that economic restructuring does not directly affect social distress but does so indirectly through economic distress. In this model as well as subsequent models, I separated the indicators of economic restructuring into their individual components of change in manufacturing jobs and change in service jobs. Although restructuring is accurately
conceived of as including both components. to consider them together may cloud important findings. It is conceivable that changes in the manufacturing sector have a greater impact on economic distress than do changes in the service sector, or vice versa. It is also possible, though not likely, that the effects are in the opposite direction. Some urban researchers have argued that the service sector provides many low-wage and a few high-salary jobs. In this case, an increase in service sector jobs would lead to an increase in economic distress through lower median family incomes and higher family poverty. Separating the indicators of economic restructuring prevents the occlusion of such results and allows a more thorough analysis of the causes of distress.

In addition, theory mandates that this effect must be considered separately in each of the two time periods. Restructuring involves two processes, deindustrialization, or loss of manufacturing jobs, and postindustrialization, or gain in service sector jobs. In essence, economic restructuring includes a tear down phase (deindustrialization) and a recovery phase (postindustrialization). As a result, I predict that growth of service-sector jobs alleviates economic distress.

In addition to the chain model of restructuring, economic distress, and social distress, I propose a model to assess the possibility that economic restructuring causes social distress directly. The Direct Effects Model is summarized in Figure 5. I predict that changes in manufacturing and service sector employment do not directly affect social distress. Rather, I argue that Model 2, the Chain Model, best captures the reality of economic job changes in U.S. cities. Testing is necessary, however, as the link between restructuring and social distress is clouded in the literature. Many studies allude to the
notion that there is a direct cause but the relationship has not been tested. The chi-square statistic is used to determine whether the chain model and the direct effects model significantly differ. If they do not, I will assume that social distress is best conceptualized as caused by economic distress directly and by economic restructuring indirectly. This test is conducted for both the 1970 to 1980 and 1980 to 1990 time periods as the relationship between economic restructuring and social distress may not be constant over time.

Region Effects

Within this framework of the chain and direct effects models, I analyze sub-models for region. Analyses were conducted for cities of the Rustbelt, Old South, and New Sunbelt regions. In addition to the theoretical justification, discussed in the previous chapter, this was done for conventional and empirical reasons. Some researchers may prefer the use of a city's age as opposed to region. City age is generally marked by the year the city's population reached 50,000. For the purposes of this type of research, however, regional location represents a "residual category" that represents unmeasured factors like historical conditions, age of city, climate, and natural resources (South and Poston 1982, p. 192). Age alone would not capture all of these conditions. National urban policy has been geared toward regional considerations (Kasarda 1980). Regional variations have traditionally been considered a defining characteristic of the metropolitan system (Vance and Smith 1954). In addition, other urban scholars have incorporated region into studies of economic restructuring (see for example, Hill and Negrey 1987;

The data provide an empirical justification for analyzing region. San Francisco is an old city. But its experience with changes in manufacturing employment mirror those of New Sunbelt cities as opposed to Rustbelt or Old South cities. For example, San Francisco lost only 8,600 manufacturing jobs from 1970 to 1980. Unlike their eastern counterparts, San Francisco gained back all but 500 of these jobs from 1980 to 1990. Similarly Atlanta and Columbus, Ohio shared inner-regional experiences with their neighbors as opposed to cities their age. Atlanta, considered a flagship city of the South, and Columbus, Ohio, a tertiary-sector city, experienced losses in manufacturing employment during both periods as did their inner-regional neighbors.

Finally, as discussed in Chapter 2, different experiences of the Rustbelt, Old South, and New Sunbelt with development deem it wise to divide the analysis by these regional categories. Cities of the Rustbelt and Old South generally developed before their Western neighbors. The Rustbelt was the first region to adopt mass manufacturing, an experience that would later hinder its transition to the post World War II economy. The Old South suffered arrested development due to its dependence on agriculture for sustenance and the North for capital. Finally, the New Sunbelt occupied the most advantageous position as most of its cities developed efficient new high technology manufacturing in the computer and aerospace industries.
Urban Scale Effects

In addition, I employ sub-models to test the effect of deindustrialization and postindustrialization on economic and social distress in large cities (population > 100,000) and small cities (population < 100,000). Research demonstrates that the urban crisis has continued and worsened in America's largest cities (those with populations of 100,000 and over) (Nelson, Schwirian, and Schwirian 1998). Indeed large cities have been plagued by a number of ailments including outmigration of middle-class residents, loss of jobs to the suburbs, and fiscal disparity.

However, large cities also have a greater adaptive capacity than small cities. As discussed in Chapter 2, this is largely due to the proliferation of key functions in large cities relative to small cities. Cities with many key functions may experience greater stability during structural economic changes because losses in one key function may be more easily absorbed by other central activities. Small cities tend to have fewer key functions than large cities. In essence, they are more specialized and therefore more vulnerable. In response, I predict that small cities experience greater distress due to the loss of manufacturing jobs than large cities.

Finally, it is necessary to test the effects of restructuring on economic and social distress, taking into account city size. Economic restructuring is disruptive, at least in the short run. Throughout U.S. history, large cities have housed research and development activities that have created technological innovations and, with them, new jobs. In addition, the deconcentration of manufacturing jobs occurred first in large cities. As a result, large cities have had several decades to adjust to a service-based economy.
The large number of key functions in large cities relative to small cities also serves to allows them to absorb displaced labor more efficiently. In extending the logic of the effect of deindustrialization on small cities, I hypothesize that economic restructuring has a greater impact on economic and social distress for small cities than for large cities.

**Analytical Strategy**

Chapter 4 presents the results of the test of the models for all cities and for both time periods. The analysis of all models for large and small cities is revealed in Chapter 5. The final results section, Chapter 6, details the analysis and findings of the models as cities of the Rustbelt, Old South, and Sunbelt.
Table 3.1

Variable List and Descriptions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Distress</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female-Headed Families</td>
<td>FHH</td>
<td>Percentage of families headed by a single female</td>
</tr>
<tr>
<td>Crime Rate</td>
<td>CRIME</td>
<td>Number of serious crimes per 100,000 population</td>
</tr>
<tr>
<td>High School Dropout</td>
<td>HSD</td>
<td>Percent of people over age 25 not enrolled in school and not a high school graduate</td>
</tr>
<tr>
<td>Household Crowding</td>
<td>CRWD</td>
<td>Percent of occupied housing units with 1.01 or more persons per room</td>
</tr>
<tr>
<td><strong>Economic Distress</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Poverty</td>
<td>POOR</td>
<td>Percent of families below the poverty line</td>
</tr>
<tr>
<td>Unemployment</td>
<td>UNEMP</td>
<td>Percent of civilian labor force not employed but looking for a job</td>
</tr>
<tr>
<td>Median Family Income</td>
<td>MFI</td>
<td>Median Family Income, adjusted by Consumer Price Index</td>
</tr>
<tr>
<td><strong>Economic Restructuring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Index for Manufacturing</td>
<td>CIMFE</td>
<td>Number of Manufacturing Jobs at Time 2/Number of Jobs at Time 1 multiplied by 100</td>
</tr>
<tr>
<td>Jobs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Index for Number of</td>
<td>CISRE</td>
<td>Number of Service Sector Jobs at Time 2/Number of Service Jobs at Time 1</td>
</tr>
<tr>
<td>Service Jobs</td>
<td></td>
<td>multiplied by 100</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
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<td></td>
</tr>
<tr>
<td>Percent Minority</td>
<td>PMINOR</td>
<td>Sum of percent black and percent Hispanic</td>
</tr>
<tr>
<td>Population (log)</td>
<td>POP</td>
<td>Log of population size</td>
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<tr>
<td>Density</td>
<td>DENS</td>
<td>Population divided by land area in square miles</td>
</tr>
</tbody>
</table>
Table 3.2

Loadings of Variables on Hypothesized Factors, All Cities, 1970-1980

<table>
<thead>
<tr>
<th>Variables</th>
<th>Social Distress</th>
<th>Economic Distress</th>
<th>Economic Restructuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Dropout</td>
<td>8.52</td>
<td></td>
<td>8.17</td>
</tr>
<tr>
<td>Crime</td>
<td>.500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Crowding</td>
<td>.696</td>
<td></td>
<td>8.68</td>
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<td>Service-Sector Employment</td>
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<td>8.27</td>
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* Initial estimate set to 1.0

Independence chi-square = 118371.8, d.f. = 66
Model chi-square = 989.4, d.f. = 52
Chi-Square change = 11738.2, d.f. = 14, difference significant beyond .001
Bentler-Bonett Normed = .992, Nonnormed = .990, CFI = .992
### Table 3.3

**Loadings of Variables on Hypothesized Factors, All Cities, 1980-1990**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Social Distress</th>
<th>Economic Distress</th>
<th>Economic Restructuring</th>
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<tr>
<td>High School Dropout</td>
<td>.870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime</td>
<td>.642</td>
<td></td>
<td></td>
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<tr>
<td>Household Crowding</td>
<td>.584</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female-Headed Families</td>
<td>.810</td>
<td></td>
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<tr>
<td>Unemployment</td>
<td></td>
<td>.917</td>
<td></td>
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<tr>
<td>Median Family Income</td>
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<td>-.893</td>
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</tr>
<tr>
<td>Family Poverty</td>
<td></td>
<td>.957</td>
<td></td>
</tr>
<tr>
<td>Manufacturing Employment</td>
<td></td>
<td></td>
<td>808</td>
</tr>
<tr>
<td>Service-Sector Employment</td>
<td></td>
<td></td>
<td>808</td>
</tr>
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Independence chi-square = 120073.7. d.f. = 66  
Model chi-square = 922.9. d.f. = 52  
Chi-Square change = 119150.8. d.f. = 14. difference significant beyond .001  
Bentler-Bonett Normed = .992. Nonnormed = .991. CFI = .993
Table 3.4

Omega Reliability Scores for Social Distress, Economic Distress, and Economic Restructuring Factors

<table>
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<tr>
<td>Social Distress</td>
<td>.79</td>
<td>.78</td>
</tr>
<tr>
<td>Economic Distress</td>
<td>.88</td>
<td>.94</td>
</tr>
<tr>
<td>Economic Restructuring</td>
<td>.80</td>
<td>.73</td>
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CHAPTER 4

This chapter examines three theoretical models used to analyze economic and social distress for all U.S. cities with populations of at least 25,000. Analyses were conducted for the 1970 to 1980 and 1980 to 1990 periods. As seen in Chapter 3, analyses of the measurement model revealed that economic distress was reliably measured with family poverty, unemployment, and median family income. It also found that social distress was reliably measured using female-headed families, high school dropout rate, crime, and household crowding. Finally, the measurement model tested the factor of economic restructuring as consisting of the indexes of manufacturing job change and service-sector job change.

The first causal model addressed in this chapter, the Deindustrialization Model, empirically evaluates the effect of loss of manufacturing jobs on economic distress. The Chain Model examines the relationship between economic restructuring and economic distress. Finally, the Direct Effects Model tests the relationship between economic restructuring and social distress. All of the causal models test the effect of economic distress on social distress. The results of these analyses provide evidence to assess the following hypotheses:
Hypothesis 1: Net of other effects, high levels of economic distress are associated with high levels of social distress.

Hypotheses 2: Net of other effects, deindustrialization leads to an increase in economic distress.

Hypothesis 3: Net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period.

Hypothesis 6: Net of other effects, growth in service-sector jobs alleviates economic distress.

Hypothesis 7: Net of other effects, economic restructuring does not have a direct effect on social distress.

Summary Statistics for Variables

Table 4.1 presents descriptive statistics for all variables used in the analysis. It is worth examining these figures to understand the economic and social situation in American cities since the 1970s. Specifically, social distress worsened over time. The percentage of households headed by women increased from an average of 11.4 percent in 1980 to 19.3 in 1990. The crime rate also increased by an average of about 500 serious crimes per 100,000 population during this period. Similarly, household crowding increased slightly from an average of 4.3 percent in 1980 to 5.4 percent in 1990. In the social distress category, only the high school dropout rate improved (from 30.6 percent in 1980 to 23.7 percent in 1990).

The situation of economic distress is more encouraging. Two of the indicators of economic distress showed improvement between 1980 and 1990. The unemployment was the exception. It increased slightly from an average of 6.5 percent in 1980 to 6.8 percent in 1990. However, the percent of families living in poverty decreased by an
average of 1.7 percent. In addition, the median family income, adjusted for inflation, was about $9,000 higher in 1990 than in 1980.

Finally, the indexes of job change in the manufacturing and service sectors reveal generally positive trends. In the 1970 to 1980 period, U.S. cities, on average lost manufacturing jobs (index = 98.9). However, cities replaced these manufacturing jobs in the later period (index = 104.5). As expected, the change index for service sector jobs shows substantial gains in both periods. In the early decade, the change index for service-sector jobs was about 159. Job growth in the service sector continued into the next decade as job change index reached an average of about 132.

**Deindustrialization Model**

After determining that the hypothesized factor structure was supported by the data, the next evaluated the deindustrialization model (M2). Results of this model are presented in Table 4.2. The deindustrialization model tests Hypothesis 1 which states that, controlling for other factors, high levels of economic distress are associated with high levels of social distress. It also assesses Hypothesis 2 that, all else equal, a loss of manufacturing jobs leads to an increase in economic distress which, in turn, results in an increase in social distress. Finally, this model tests Hypothesis 3 which predicts that deindustrialization has a greater effect on economic distress in the 1970 to 1980 time period than in the 1980 to 1990 period.

The Deindustrialization model fit the data as hypothesized. The Bentler-Bonnett indexes exceeded .990 for both the 1970 to 1980 and 1980 to 1990 time periods, indicating a strong model fit. In addition, the chi-square change between the Null Model
(M₈) and the Deindustrialization Model (M₂) is significant. This indicates that the
Deindustrialization Model fits the data significantly better than the model of
independence.

Table 4.2 also provides the information to evaluate the substantive issues of
Hypothesis 1, the extent to which loss of manufacturing jobs affects economic distress
and the effect of economic distress on social distress. The data revealed that, controlling
for the demographic variables, economic distress had a statistically significant effect on
social distress in both time periods. The Beta for economic distress was a strong .865 in
the 1970 to 1980 and .819 in the 1980 to 1990 decade. Thus, a city’s experience with
unemployment, family poverty, and median family income greatly impacts its resulting
social distress.

This model also tested the relationship between manufacturing jobs and economic
distress. The Betas for manufacturing employment were significant in both decades
(Beta = -.413 for 1970 to 1980 and -.313 for 1980 to 1990). An examination of the
unstandardized regression coefficients reveals that loss of manufacturing jobs led to a
greater increase in economic distress in the 1970s (b = -.241) than in the 1980s (b = -.182). These results indicate that loss of manufacturing employment leads to an increase
of economic distress on average across all U.S. cities. In addition, a comparison of these
coefficients reveals that the loss of manufacturing jobs led to a greater increase in
economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. The
differences in the slopes was also significant. As a result, Hypothesis 3, that

72
deindustrialization exerted a greater influence on economic distress in the earlier period than in the later period, was supported.

In sum, the Deindustrialization Model provides support for Hypothesis 1. In essence, net of other factors, high levels of economic distress are associated with high levels of social distress. The model also validates Hypothesis 2, which states that, all else equal, deindustrialization leads to an increase in economic distress. Finally, the Deindustrialization Model supported Hypothesis 3, that, net of other factors, loss of manufacturing jobs influenced economic distress more profoundly in the 1970 to 1980 decade than in the 1980 to 1990 period.

**Chain Model**

The Chain Model is pictorially represented in Figure 4. Basically, this model adds service-sector employment activity to the Deindustrialization Model. It tests Hypothesis 1, that economic and social distress share a positive and direct relationship. The model also assesses Hypothesis 6, that the growth of service sector jobs alleviates economic distress. Although analysis of the Measurement Model demonstrated that economic restructuring can be reliably measured as a factor consisting of manufacturing and service-sector employment activity. I have separated the factor into its individual components for this analysis. This was done to prohibit the occlusion of results that may occur in cases in which changes in one sector cancels out changes in the other.

Results of the Chain Model are presented in Table 4.3. The models for both decades fit the data significantly better than the null models. The Bentler-Bonett indexes, normed and nonnormed, ranged from .990 to .998. This indicates a very good model fit.
As in the Deindustrialization Model, economic distress is a significant predictor of social distress. The Beta of .766 in for 1970-1980 and .787 for 1980-1990 indicate that, controlling for size, density, and percent minority, cities that suffer economic distress will then likely suffer social distress as well. In addition, the Betas for the economic restructuring variables were significant. As might be expected given the results of the Deindustrialization Model, loss of manufacturing jobs had a significant impact on economic distress. However, loss of service jobs also significantly affected economic distress. Results of the Chain Model support Hypotheses 1 and 3. In essence, high levels of economic distress are associated with high levels of social distress (Hypothesis 1). In addition, the data show that growth in service-sector jobs alleviates economic distress (Hypothesis 6).14

**Direct Effects Model**

The Direct Effects Model is summarized conceptually in Figure 5. This model examines the question of whether economic restructuring has a direct effect on social distress in U.S. cities (Hypothesis 7). Results for the Direct Effects Model are illustrated in Table 4.4. An examination of the chi-square statistics reveals that the model fits the data significantly better than the independence model at both time periods. The Bentler-Bonett normed and nonnormed fit indexes and the comparative fit index all exceeded .990. As a result, I concluded that the Direct Effects Model fit the data well.

As in the previous models, economic distress significantly predicts social distress. The strong Beta of .725 for the 1970 to 1980 and .864 for the 1980 to 1990 reveals that cities that experience high levels of economic distress in the form of high unemployment,
lower median family income, and high family poverty can expect to suffer high levels of social distress. An examination of the effects of manufacturing employment reveals mixed results. In the 1970 to 1980 period, the Beta for manufacturing jobs is not significant in explaining social distress. However, the Beta of -.075, though small, is significant in the later period. Thus, cities that lost manufacturing employment from 1980 to 1990 could expect to suffer higher levels of social distress as a result. This pattern is not sustained in the case of service sector employment. Despite the overall fit of the model for both periods, service sector employment was not a significant predictor of social distress. Thus the argument made by some urban scholars that the increasing dominance of the service sector increases social blight is not supported.

In sum, this chapter has examined four models addressing the issues of social and economic distress. As seen in Tables 4.5 and 4.6, all models fit the data well. In essence, they all achieved fit indices of no less than .990. Analysis revealed that economic distress is reliably measured by rates of unemployment and family poverty and by median family income. Social distress is reliably constructed from rates of high school dropout, female-headed families, crime, and household crowding. Finally, economic restructuring can be reliably considered as including changes in manufacturing employment and service-sector employment. However, in this analysis economic restructuring was analyzed using the individual components so as not to occlude potential differences between manufacturing and service activities. In addition to measuring reliabilities, I demonstrated that measurement models using these factors fit the data well.
Next, I tested the three substantive models. Each model supported Hypothesis 1. that high levels of economic distress are associated with high levels of social distress. The Deindustrialization Model revealed that, as hypothesized, loss of manufacturing jobs plays a significant role in the increase of economic distress in American cities and that economic distress significantly impacts social distress. The Chain Model added service-sector employment activity to the analysis. It revealed that losses in both the manufacturing and service sectors exacerbate economic distress. This negates the notion that service sector activity increases economic distress in U.S. cities. The model also revealed that economic distress is a significant and strong predictor of social distress. Finally, I tested the Direct Effects Model. Analysis of this model led to the conclusion that service jobs did not significantly impact economic distress but that losses of manufacturing jobs did have a significant effect on economic distress in the 1980 to 1990 period. As in previous models, economic distress continued to be a cause of social distress. Thus, social distress increases, on average, in American cities from the 1970s to the 1990s. While deindustrialization was a factor in later period, this was not due to economic restructuring.

The next two chapters will subdivide the cases in order to gain a better understanding of the processes affecting economic and social distress in American cities over the past three decades. Chapter 5 will examine the phenomenon of economic and social distress in large cities and small cities to determine whether large cities suffer disproportionately, as some have claimed. Chapter 6 will tackle the question of whether Rustbelt cities, which have been traditionally dependent on manufacturing activity, have
experienced a greater degree of economic and social distress at the hands of economic restructuring, than have Sunbelt cities.
### Table 4.1

#### Variable Means and Standard Deviations for All Cities

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<td>Mean</td>
<td>SD</td>
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<td>Maximum</td>
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<td>11.6</td>
<td>3.6</td>
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<td>3220</td>
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<td>38379</td>
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<td>0</td>
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<td>5.6</td>
<td>55.4</td>
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<td>2.8</td>
<td>1.7</td>
<td>24.6</td>
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<td>V6: Median Family Income</td>
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<td>4919</td>
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<td>V8: Manufacturing Job Change Index</td>
<td>98.9</td>
<td>78.3</td>
<td>.00</td>
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<td>40.4</td>
<td>.00</td>
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<td>.00</td>
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<td>40.8</td>
<td>29.8</td>
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<td>V10: Population (log)</td>
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<td>4.4</td>
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<td>.35</td>
<td>4.4</td>
<td>6.9</td>
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<td>V11: Percent Minority</td>
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<td>19.0</td>
<td>0.4</td>
<td>96.5</td>
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<td>21.3</td>
<td>0.7</td>
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<td>3544</td>
<td>101</td>
<td>39709</td>
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<td>3613</td>
<td>130</td>
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<td>Social Distress</td>
<td>Economic Distress</td>
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<td>b</td>
<td>Beta</td>
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<td>.865***</td>
<td>.041</td>
<td>.966</td>
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<td>Population (log)</td>
<td>.068**</td>
<td>.018</td>
<td>.047</td>
<td>x</td>
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<tr>
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<td>.011</td>
<td>.325</td>
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<tr>
<td>Density</td>
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<td>.017</td>
<td>.051</td>
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<td>Manufacturing Employment</td>
<td>x</td>
<td>x</td>
<td>x</td>
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</table>

N 824 824
R² .79 .17 .79 .10

* p < .05
** p < .01
*** p < .001

1970-1980 Model
Independence chi-square = 115305.4, d.f. = 55
Model chi-square = 759.5, d.f. = 43
Chi-Square change = 114545.9 d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .993, Nonnormed = .991, CFI = .993

1980-1990 Model
Independence chi-square = 116117.7, d.f. = 55
Model chi-square = 741.5, d.f. = 43
Chi-Square change = 115376.2, d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .993, Nonnormed = .991, CFI = .993
Table 4.3


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<td>.077</td>
<td>.160</td>
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<td>.030</td>
<td>x</td>
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<td>Manufacturing Employment</td>
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<td>x</td>
<td>x</td>
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<td>Service Sector Employment</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-169***</td>
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N: 824
R²: .62

* p < .05  
** p < .01  
*** p < .001

1970-1980 Model
Independence chi-square = 116729.1, d.f. = 66
Model chi-square = 916.8, d.f. = 47
Chi-Square change = 115812.3, d.f. = 19. Difference significant beyond .001
Bentler-Bonett Normed = .991, Nonnormed = .988, CFI = .992

1980-1990 Model
Independence chi-square = 120073.7, d.f. = 66
Model chi-square = 820.7, d.f. = 47
Chi-Square change = 115812.3, d.f. = 19. Difference significant beyond .001
Bentler-Bonett Normed = .992, Nonnormed = .990, CFI = .993
### Table 4.4


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<td>b</td>
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<td>.034</td>
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<td>.293***</td>
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<td>N</td>
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<td>R$^2$</td>
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* p < .05  
** p < .01  
*** p < .001

1970-1980 Model:  
Independence chi-square = 119544.1, d.f. = 66  
Model chi-square = 925.8, d.f. = 47  
Chi-Square change = 118618.3, d.f. = 19, difference significant beyond .001  
Bentler-Bonett Normed = .991, Nonnormed = .989, CFI = .992

1980-1990 Model:  
Independence chi-square = 119023.2, d.f. = 66  
Model chi-square = 819.0, d.f. = 47  
Chi-Square change = 118204.2, d.f. = 19, difference significant beyond .001  
Bentler-Bonett Normed = .992, Nonnormed = .990, CFI = .993
### Table 4.5

**Goodness of Fit Measures, 1970-1980 All Cities**

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>Bentler-Bonnett normed</th>
<th>CFI</th>
</tr>
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<td>M₀: Null</td>
<td>118371</td>
<td>66</td>
<td></td>
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<tr>
<td>M₁: Measurement</td>
<td>989.4*</td>
<td>52</td>
<td>.992</td>
<td>.992</td>
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<tr>
<td>M₂: Deindustrialization</td>
<td>845.5**</td>
<td>42</td>
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<td>.993</td>
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<tr>
<td>M₃: Chain</td>
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<td>47</td>
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<td>.992</td>
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<tr>
<td>M₄: Direct Effects</td>
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<td>47</td>
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</table>

*Difference from M₀, $\chi^2, p < .001$

**Difference from M₂, $\chi^2, p < .001$
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<th>Model</th>
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<th>df</th>
<th>Bentler-Bonett normed</th>
<th>CFI</th>
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</thead>
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<td>$M_1$: Measurement</td>
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<td>.992</td>
<td>.993</td>
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<td>$M_3$: Chain</td>
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<td>$M_4$: Direct Effects</td>
<td>913.0</td>
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<td>.992</td>
<td>.993</td>
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</tbody>
</table>

*Difference from $M_0$, $\chi^2, p < .001$

**Difference from $M_2$, $\chi^2, p < .001$
CHAPTER 5
RESULTS FOR LARGE AND SMALL CITIES

This chapter empirically evaluates the phenomenon of social and economic distress for large and small American cities separately. I first present results for large cities, beginning with the descriptive statistics for all variables used in the analysis. I then discuss the Deindustrialization and Chain Models that predict the effects of manufacturing job change and/or service job change on economic distress and the effect of economic distress on social distress. I then present the analyses of the Direct Effects model that tests the relationship between changes in manufacturing and service employment and economic distress on social distress. These models are presented for both the 1970 to 1980 and 1980 to 1990 time periods to assess potential changes in the impact of economic restructuring on urban distress throughout the past two decades.

After addressing all models as applied to large cities, I turn attention to the experience of small cities with economic and social distress. Finally, I compare the effect economic restructuring on distress in large and small cities. Overall this approach yields an assessment of the following hypotheses:

Hypothesis 1: Net of other effects, high levels of economic distress are associated with high levels of social distress across all city types.

Hypotheses 2: Net of other effects, deindustrialization leads to an increase in economic distress in large and small cities.
Hypothesis 3: Net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period.

Hypothesis 6: Net of other effects, growth in service-sector jobs alleviates economic distress.

Hypothesis 7: Net of other effects, economic restructuring does not have a direct effect on social distress.

Hypothesis 10: Net of other effects, deindustrialization leads to a greater increase in economic distress in small cities than in large cities.

Hypothesis 11: Net of other effects, economic restructuring has a greater effect on the level of economic distress in small cities than in large cities.

LARGE CITIES

Table 5.1 presents descriptive statistics for the factors of social and economic distress, job change in the manufacturing and service sectors, and control variables. In total, 170 cities maintained populations levels of at least 100,000 from 1970 to 1990. With the exception of the high school dropout rate, the examination of social distress reveals that social conditions in large U.S. cities worsened, on average, from the 1970s through the 1990s. Specifically, the level of female-headed households increased from 13.1 percent in the early period to 21.9 percent in 1990. Household crowding also increased from 4.9 percent to 7 percent. Similarly, the crime rate worsened from 1980 to 1990 from an average of 8,181 to 9,051 crimes per 100,000 people. The level of high school dropouts, however, improved from 32 percent in the 1970 to 1980 period to about 25 percent in from 1980 to 1990.

The level of economic distress also generally worsened in large cities during the past two decades. Unemployment rose from 6.8 percent to 7.2 percent. In addition, the
percentage of families in poverty increased from 11.1 in the early period to 12.3 in the later. On the positive side, median family income increased from 1980 to 1990, even when adjusted for inflation.

Finally, Table 5.1 reveals trends in economic restructuring and demographic trends. The index of manufacturing job change reveals that, on average, large cities experienced a percentage increase in manufacturing employment. In terms of net change in manufacturing employment, large cities lost manufacturing jobs. This occurred because a few giant cities were responsible for huge absolute losses in manufacturing employment. As presented in Table 5.2, for example, New York City alone lost 228,600 manufacturing jobs from 1970 to 1980 and 92,900 from 1980 to 1990. In fact, manufacturing job loss was so concentrated in large U.S. cities that from 1970 to 1980 the ten biggest "losers" were responsible for 64 percent of total loss. (Ordered by magnitude of manufacturing job loss, they were New York, Chicago, Philadelphia, Detroit, Cleveland, Dayton, Baltimore, Indianapolis, Milwaukee, and St. Louis.) Though that figure decreased to 53 percent in the next decade, a few cities continued to bear the brunt of job losses in the goods production center. (The top ten cities in terms of manufacturing job losses in the 1980 to 1990 period were New York; Houston; Chicago; Nashville; Philadelphia; Lansing, MI; Seattle; Los Angeles; Pittsburgh; and Columbus, GA.) In terms of service job change, five of the top ten losers of manufacturing jobs also lost service jobs in the earlier decade. From 1980 to 1990, only one of these cities lost service jobs in addition to their tremendous loss of manufacturing positions.
In addition, the standard deviation for changes in both service sector and manufacturing jobs was quite large in the 1970 to 1980 period (60.4 and 51.4 percent respectively). Thus, it is clear that large U.S. cities encountered a wide range of experiences with economic restructuring with some enjoying tremendous growth and others potentially devastating losses.

In terms of demographic changes, large American cities have become home to a larger percentage of minority residents. They have also become slightly less densely populated.

**Deindustrialization Model**

Results of the Deindustrialization Model are summarized in Table 5.3. This model as applied to large cities is used to assess several hypotheses. First, the model tests Hypothesis 1 that, all else equal, high levels of economic distress are associated with high levels of social distress. I also employ the model to test Hypothesis 2 that, controlling for other factors, deindustrialization leads to an increase in economic distress. Next, the model assesses Hypothesis 3 that, all else equal, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. Finally, the results of the Deindustrialization Model for large cities are compared with those for small cities to analyze Hypothesis 10 that, all other factors equal, loss of manufacturing jobs leads to a greater increase in economic distress in small cities than in large cities.

As anticipated, the Deindustrialization Model fit the data well for both time periods. In the 1970 to 1980 analysis, the Bentler-Bonett normed index was .997.
indicating a very good model fit. The Bentler-Bonett nonnormed index and the Comparative fit Index (CFI) met or exceeded .997. In addition, the chi-square change between the null model and the Deindustrialization Model was significant. The model for the 1980 to 1990 period fit the data almost as well. The fit indices of this model were only .001 less than in the earlier period. The chi-square change between this model and the independence model was also statistically significant.

Columns one through four aid in the evaluation of the substantive issues of the Deindustrialization Model. The data demonstrated that, when controlling for the demographic variables, economic distress significantly affected social distress in both time periods. The Beta for economic distress was a very strong .957 for the 1970 to 1980 analysis and .830 for the 1980 to 1990 analysis. Thus, economic distress contributes greatly to the understanding of social distress in large cities. Specifically, a city that suffers high unemployment and family poverty rates and relatively low median family income is also likely to suffer higher rates of female-headed families, crime, and crowded housing as well as lower rates of high school graduation. This evidence supports Hypothesis 1, that high levels of economic distress are associated with high levels of social distress.

This model also examined the relationship between change in manufacturing employment and economic distress. In both periods, loss of manufacturing jobs significantly impacts economic distress. The Beta of -.238 for the 1970 to 1980 period indicated a strong relationship between deindustrialization and the increase in economic distress. This relationship was also strong in the next decade (Beta = -.363). As a result,
these data supported Hypothesis 2. Specifically, as in the analysis for all cities, deindustrialization in the form of manufacturing jobs loss lead to an increase in economic distress in large U.S. cities during the 1970s and 1980s.

Comparing the unstandardized regression coefficients of the index of manufacturing job change for both decades allows an assessment of Hypothesis 3. This predicts that the effect of deindustrialization on economic distress will be greater in from 1970 to 1980 than from 1980 to 1990. The $b$ for manufacturing job change was -.238 in the earlier decade and -.214 in the later period. Though deindustrialization did have a greater impact on economic distress in the 1970 to 1980 period, the difference was not significant. As a result, Hypothesis 3 cannot be supported.

Chain Model

The Chain Model examined the effect of both changes in manufacturing employment and service employment on economic distress, and, in turn, the effect of economic distress on social distress in large cities. It was used to test Hypothesis 1 that, all else equal, high levels of economic distress were associated with high levels of social distress. The model also assessed Hypothesis 6. This predicted that growth in service-sector jobs would alleviate economic distress. Finally, I employed the Chain Model to test Hypothesis 11 that, net of other factors, economic restructuring impacted small cities more profoundly than large cities. Results of the Chain Model are presented in Table 5.4. The models fit the data well for both time periods. All fit indices reach or exceed .995. In addition, the chi-square change statistics are significant for both the 1970-1980 and the 1980-1990 models beyond the .001 level.
As in the Deindustrialization Model, economic distress significantly predicted social distress. Betas of .291 for the 1970 to 1980 period and .372 for the 1980 to 1990 period indicate that, after controlling for demographic variables, cities that experienced economic distress also suffered social distress. Interestingly, the Betas for percent minority exceeded those for economic distress in both periods (.626 and .699). Though it is beyond the scope of this research, it is worth noting that even when controlling for economic distress, cities with large minority populations are more likely to experience social distress. Density was also a significant predictor of social distress. Even within large cities, higher populations densities were associated with greater levels of social distress. The evidence of a direct positive relationship between economic and social distress provides support for Hypothesis 1.

The Chain Model also tested the relationship between economic restructuring and economic distress. The Beta for change in manufacturing jobs was not significant in either period. In essence, deindustrialization had no significant impact on economic distress in large U.S. cities throughout the past three decades. Change in service-sector employment, however, was significant in the 1980 to 1990 period, but not in the earlier period. The Beta of -.319 indicated that large cities that gained service-sector jobs enjoyed decreased levels of economic distress. This evidence stands in contrast to a literature that indicts service-sector positions as low-skill, low-wage jobs and provides support for Hypothesis 6. An assessment of Hypothesis 11 will be presented in conjunction with the results for small cities later in the chapter.
Direct Effects Model

The previous two models tested the effect of deindustrialization and economic restructuring on economic distress and of economic distress on social distress. The Direct Effects Model, however, asks whether economic restructuring directly effects social distress in large U.S. cities. It therefore provides a test of Hypothesis 7, that all else equal, economic restructuring does not have a direct impact on social distress. As in the Deindustrialization and Chain Models, the Direct Effects Model also assesses Hypothesis 1, that high levels of economic distress are associated with high levels of social distress.

Results of the Direct Effects Model are summarized in Table 5.5. Overall, the Direct Effects Models fit the data well. The Bentler-Bonett normed fit index reached .997 in the 1970-1980 analysis and .996 in the 1980-1990 analysis. The nonnormed and CFI indices were almost equally high. The chi-square change statistics were significant in both periods as well.

An examination of the standardized regression coefficients for economic distress revealed interesting results. In the earlier period, the Beta for economic distress revealed it as a significant predictor of social distress. Amazingly, economic distress did not exert a significant impact on social distress in the 1980 to 1990 period. As a result, Hypothesis 1, that high levels of economic distress yielded high levels of social distress, was supported in the 1970 to 1980 period but not in the 1980 to 1990 period.

Change of manufacturing jobs was an insignificant predictor of economic distress in both periods. The other indicator of economic restructuring, change in service-sector employment, was also nonsignificant. As a result, Hypothesis 7, that economic...
restructuring had no significant direct effect on social distress, was supported for both decades. In conclusion, the Direct Effects Model as applied to large cities did not enhance the understanding of causes of social distress, with the exception that we now know that it is not caused by economic restructuring.

SMALL CITIES

Descriptive statistics for all variables used in the analysis of social distress in small cities are presented in Table 5.6. Small cities were defined as those with populations of less than 100,000. This yielded a total of 834 cities in the earlier period and 655 in the later period. On average, social distress worsened from the 1970 to 1980 period to the 1980 to 1990 period. The crime rate increased by an average of 800 serious crimes per 100,000 population. The incidence of female-headed households increased from 11 percent to 18.5 percent. The rate of crowded households also increased, from about 4 to 5 percent. As in large cities, the rate of high school dropouts decreased from about 30 percent to about 24 percent.

With the exception of median family income, economic distress also worsened slightly from the 1970-1980 to the 1980-1990 periods. Unemployment increased, though by only .2 percent. Family poverty increased from 8.6 percent to 10.1 percent. Median family income, adjusted for inflation by the consumer price index, increased during the period of investigation.

Table 5.6 also summarizes descriptive data for the economic restructuring variables. Small U.S. cities lost manufacturing jobs in terms of absolute numbers. About
186,000 jobs were lost from 1970 to 1980 and about 95,000 from 1980 to 1990. However, the burden of these losses was carried by a few cities. As seen in Table 5.2, from 1970 to 1980, the ten small cities with the greatest manufacturing jobs losses were accountable for 23 percent of the total manufacturing job loss for all small cities. (Ordered by magnitude of job loss, they were Anderson, IN; Kokomo, IN; Cicero, IL; Linden, NJ; Waterloo, IA; Skokie, IL; Hammond, IN; East Chicago, IN; Saginaw, MI; and Johnson, PA. Notice all cities were located in the Rustbelt.) This is rather amazing considering that 460 cities were considered in the calculation. The concentration of manufacturing job loss in small cities actually increased to almost 25 percent in the 1980 to 1990 period. (From 1980 to 1990, the ten largest losers of manufacturing jobs were East Chicago, IN; Fort Smith, AR; Binghamton, NY; Kalamazoo, MI; Saginaw, MI; Dubuque, IA; Santa Clara, CA; St. Joseph, MO; Lancaster, OH; and Richland, WA.) The index of change in manufacturing jobs measures the percentage of losses or gains for each city. Thus it takes into account the baseline level of jobs in each city so as not to allow these scale effects to enter into the analysis.

An examination of the change indexes in the manufacturing and service sectors reveals some differences between the sectors. On average, small cities experienced increases in both indexes in both time periods. However, the service sector gained at a much larger rate than the manufacturing sector. In the 1970 to 1980 period, the change index for manufacturing jobs was about 120. The index reached 162 for the service sector. Gains in manufacturing jobs decreased in the 1980 to 1990 period (index = 104.4). This period also witnessed a slow-down in the increase of service-sector jobs. In
absolute numbers, small cities gained a total of 1,847,637 service-sector jobs from 1970 to 1980 and 1,722,624 from 1980 to 1990. Thus, gains in service jobs continued, though at a slower rate.

Finally, the descriptive data reveal that small U.S. cities, like their larger neighbors, became home to a larger proportion of minority residents than they had in the past. They also became less densely populated. About 20 cities that were defined as small in 1980 passed the 100,000 threshold by 1990 and were counted as large cities in the analysis of the later period.

**Deindustrialization Model**

Results of the Deindustrialization Model are summarized in Table 5.7. The model was applied to small U.S. cities to test several hypotheses. First, the Deindustrialization Model used to assess Hypothesis 1. that, all else equal, high levels of economic distress were associated with high levels of social distress in the 1970 to 1980 and 1980 to 1990 time periods. Second, it tested Hypothesis 2. that deindustrialization led to an increase in economic distress in small cities. Third, the model assesses Hypothesis 3. that net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. Finally, I used the Deindustrialization Model to examine Hypothesis 10 which stated that, net of other effects, loss of manufacturing jobs led to a greater increase in economic distress in small cities than in large cities.

The Deindustrialization Model fit the data as hypothesized in both periods. The fit indexes in the 1970 to 1980 period were lower than in the later period. However, all
three indexes were no lower than .990, indicating a good model fit. In addition, the chi-square change scores were significant at both times.

As anticipated, social distress in small cities, as in large cities, was significantly affected by economic distress. This held true in both decades of inquiry. The Beta for economic distress was .841 in the 1970 to 1980 period and .849 in the 1980 to 1990 period. These results provided support for Hypothesis 1, that high levels of economic distress led to high levels of social distress. I therefore concluded that in small American cities, high unemployment and family poverty and low median family income are significant predictors of crime, crowded housing, female-headed families, and low rate of high school graduation.

As seen in Table 5.7, the index of manufacturing employment change significantly affected economic distress in both time periods. From 1970 to 1980, the Beta for manufacturing job change was a strong -.372. This indicated that small cities that lost manufacturing jobs experienced an increase in unemployment and family poverty and a decrease in relative levels of median family income. The Beta for manufacturing change was also significant (-.248) in the 1980 to 1990 decade. As a result, it is clear that in small U.S. cities from 1970 to 1980 and 1980 to 1990, deindustrialization significantly increased levels of economic distress.

A comparison of the unstandardized regression coefficients for the index of manufacturing job change for both decades tests Hypothesis 3, that the effect of deindustrialization on economic distress will be greater in from 1970 to 1980 than from 1980 to 1990. The $b$ for manufacturing job change in the 1970 to 1980 period was -.229.
In the 1980 to 1990 period, it had decreased to -.159, indicating that loss of manufacturing jobs had a greater impact on economic distress in the earlier decade. However, the difference was not significant. As a result, Hypothesis 3 cannot be supported in the case of small cities.

Analysis of the Deindustrialization Model applied to small cities, along with its previously discussed application to large cities, provided a test of Hypothesis 10. This states that, net of other factors, loss of manufacturing jobs leads to greater economic distress in small cities than in large cities. The rationale behind this hypothesis is that small cities generally have less diverse economies than large cities. As a result, they are less resilient to fluctuations in individual sectors of the economy. As examination of the unstandardized regression coefficients demonstrated that within each city type, deindustrialization had a deleterious effect on economic distress. However, a comparison of the unstandardized regression coefficients revealed that large cities actually experienced greater increases in economic distress at the hands of deindustrialization than did small cities. The \( b \) for the manufacturing change index in the 1970 to 1980 period was -.229 for small cities and -.238 for large cities. In the 1980 to 1990 era, the disparity increased to -.159 for small cities and -.214 for large cities. Thus, large cities experienced a 30 percent greater increase in economic distress from manufacturing job loss than did small cities. A test of these differences, however, revealed that they were not significant. These data resulted in the rejection of Hypothesis 10, that, all else equal, loss of manufacturing jobs led to greater economic distress in small cities than in large cities.
Chain Model

The Chain Model incorporated the change in service sector jobs as a predictor of economic distress. In essence, it examined the effect of economic restructuring on economic distress and, in turn, the effect of economic distress on social distress. As a result, the Chain Model tested Hypothesis 1, that high levels of economic distress led to high levels of social distress. It also assessed Hypothesis 6, that all else equal, growth in service-sector positions alleviated economic distress. The comparison of the results of the Chain Model for small cities with those for large cities provided evidence to assess Hypothesis 11. It states that, all other factors equal, the effect of economic restructuring on economic distress is greater in small cities than in large cities.

Results of the chain Model are presented in figure 5.8. The model fit the data well in both periods of analysis. The Bentler-Bonett indexes as well as the CFI all met or exceeded .990 for both time periods. In addition, both chi-square change statistics were significant. Thus, in both periods the data fit the model significantly better than they fit the null models.

The Chain Model was then used to test the relationship between economic restructuring and economic distress. Results demonstrated that economic distress was a significant predictor of social distress in both the 1970 to 1980 and 1980 to 1990 analyses. The Beta was a strong .761 in the earlier period. In the later years, percent minority had more explanatory power in explaining social distress than did economic distress (percent minority = .668, economic distress = .359). However, economic distress remained a significant factor in explaining social distress.
In addition to addressing the effect of economic distress on social distress, the Chain Model examined the effect of economic restructuring on economic distress. In the 1970 to 1980 period, both change in manufacturing jobs and change in service jobs were significant predictors of economic distress. The Beta of -.216 for the index of service employment change revealed that small cities that lost jobs in this sector suffered increased levels of economic distress. Similarly, the Beta of -.190 for the index of manufacturing job change demonstrated that loss of manufacturing jobs led to an increase in economic distress from 1970 to 1980. In the next decade, only the index of manufacturing job change was significant in explaining economic distress. The Beta of -.123 indicated that, controlling for changes in service-sector employment, loss of manufacturing jobs led to an increase in economic distress in small U.S. cities.

A comparison of the unstandardized regression coefficients provides partial support for Hypothesis 11. It stated that, all other factors equal, economic restructuring had a greater effect on levels of economic and social distress in small cities than in large cities. Tables 5.4 and 5.8 contain these results. As previously discussed, economic distress was a significant predictor of social distress for both large and small cities in the 1970 to 1980 period. However, small cities experienced greater increases social distress than large cities with a given increase in economic distress during the 1970s ($b = 1.328$ and $b = .652$ respectively). In the 1980 to 1990 period, this relationship changed such that large cities experienced higher increases in social distress with an increase in economic distress. In terms of economic restructuring, the relationship between changes in manufacturing and service-sector employment were stronger in small cities from 1970.
to 1980. In fact, the economic restructuring variables were not significant predictors of economic distress in large cities during this period. Both variables were, however, significant for small cities (manufacturing $b = -0.133$, service $b = -0.144$). In the 1980 to 1990 period, only change in service-sector employment was significant in the case of both large and small cities. Manufacturing employment was nonsignificant. But loss of service jobs more profoundly affected economic distress in large cities ($b = -0.134$, small city $b = -0.052$). But this difference is not statistically significant. These results provide support for Hypothesis 11 in the 1970 to 1980 period. In essence, during the 1970s, small cities experienced greater increases in social distress with job losses in manufacturing and service than did large cities. However, in the following decade, the service-sector component of economic restructuring affected economic distress more intensively in large cities than small cities.

In addition, the Chain Model as applied to small U.S. cities provided evidence to support Hypothesis 1. In essence, high levels of economic distress led to high levels of social distress. The model also determined that Hypothesis 6, that growth in service-sector jobs alleviated economic distress, was sound.

**Direct Effects Model**

The direct Effects Model examined the potential effect of economic restructuring on social distress. The model was employed to assess Hypothesis 1, that high levels of economic distress led to high levels of social distress. The Direct Effects Model also tested Hypothesis 7, which stated that no direct effect existed between economic restructuring and social distress.
Table 5.9 summarizes the results of the Direct Effects Model. The fit indexes demonstrated that the model fit the data well for both periods. Though not as large as the Deindustrialization and Chain Models, the fit indexes reached at least .986. The chi-square change scores also indicated that the models fit the data significantly better than the null models.

Analysis of the Direct Effects Model revealed economic distress as a significant predictor of social distress in both decades. The Beta for economic distress was largest in magnitude in both equations (.731 and .753). This was followed by percent minority (.421 and .373). In the 1970 to 1980 analysis, neither the change index in manufacturing employment nor the change index for service-sector employment was significant. However, the 1980 to 1990 analysis demonstrated that, controlling for levels of economic distress, the change index of service employment, and the demographic variables, loss of manufacturing jobs was a significant predictor of social distress. Thus, as in the analysis of all cities in Chapter 4, the Direct Effects Model demonstrates that economic restructuring does not significantly impact social distress directly during the 1970s. However, deindustrialization significantly contributed to social distress in small cities during the 1980s.

In sum, the Direct Effects Model provided support for Hypothesis 1. In essence, small cities with high levels of economic distress also tended to experience high levels of social distress. It also provided partial support for Hypothesis 6, which stated that, net of other effects, economic restructuring had no direct effect on social distress.
SUMMARY AND LOOK AHEAD

In Chapter 5, I evaluated the effect of deindustrialization and economic restructuring on economic distress and the effect of economic distress on social distress for large and small cities. I found heightened levels of economic distress in both large and small cities from the first period to the second. Similarly, social distress tended to worsen in both city types in the years under investigation.

Analysis of the Deindustrialization Model demonstrated that loss of manufacturing jobs significantly increased economic distress in both large and small cities throughout the decades studied. However, the test of difference of \( b \)s revealed that small cities did not suffer disproportionately, as hypothesized. In addition, the effect of economic distress on social distress was not significantly different in small and large cities.

The test of the Chain Model resulted in a partial support of Hypothesis 11. In essence, economic restructuring did not exert a significantly stronger impact on the economic distress of large cities than small cities. However, change in service-sector jobs affected economic distress at a significantly higher level in large cities than small cities from 1980 to 1990. This evidence provides support for the service-sector component of economic restructuring discussed in Hypothesis 11. It also supported Hypothesis 6, that all else equal, growth in service-sector employment alleviated economic distress. In this model, economic distress proved a significant cause of social distress in both large and small cities throughout the decades of analysis. These differences were not significant.
As in the analysis of all cities, the Direct Effects Model indicated that service-sector employment was not a direct cause of social distress in either time period. Similarly, changes in manufacturing employment did not significantly affect social distress in large cities. However, loss of manufacturing employment was a significant predictor of social distress in small cities during the 1980 to 1990 time period.

Chapter 6 will present results of the Deindustrialization, Chain, and Direct Effects Models by region. Specifically, I will examine the relationships among changes in the manufacturing and/or service sector, economic distress, and social distress for cities of the Rustbelt, Old South, and New Sunbelt. Analysis of these models will provide a test of Hypotheses 2 which states that, net of other effects, loss of manufacturing jobs leads to a greater increase in economic and social distress in Rustbelt cities than in Old South or New Sunbelt cities. I will also address Hypotheses 7 and 8. They predict that, all else equal, economic restructuring has a greater effect on levels of economic and social distress in Rustbelt cities than in Old South and New Sunbelt cities and that economic restructuring has a greater effect on levels of economic and social distress in cities of the Old South than those of the New Sunbelt.
Table 5.1

Variable Means and Standard Deviations for Large Cities

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<td>Maximum</td>
<td>Mean</td>
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<td>Maximum</td>
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N = 170
R² = .95

1970-1980 Model:
Independence chi-square = 77562.3, d.f. = 55
Model chi-square = 220.4, d.f. = 43
Chi-Square change = 77341.9 d.f. = 12, difference significant beyond .001
Bentler-Bonett Normed = .997, Nonnormed = .997, CFI = .998

1980-1990 Model:
Independence chi-square = 63790.9, d.f. = 55
Model chi-square = 242.3, d.f. = 43
Chi-Square change = 63438.1 d.f. = 12, difference significant beyond .001
Bentler-Bonett Normed = .996, Nonnormed = .996, CFI = .997

♦ p < .05
♦ ♦ p < .01
♦ ♦ ♦ p < .001
### Table 5.4


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<td>Service Sector Employment</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>.176</td>
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| N                         | 170  | 190 |
| R²                        | .51  | .06 | .75  | .11 |

* * p < .05
** p < .01
*** p < .001

#### 1970-1980 Model:
- Independence chi-square = 83663.4, d.f. = 66
- Model chi-square = 145.6, d.f. = 47
- Chi-Square change = 83517.8 d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .997, Nonnormed = .997, CFI = .998

#### 1980-1990 Model:
- Independence chi-square = 65072.2, d.f. = 66
- Model chi-square = 261.8, d.f. = 47
- Chi-Square change = 64810.4 d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .997
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* p < .05  
** p < .01  
*** p < .001

1970-1980 Model:
Independence chi-square = 83531.2, d.f. = 66  
Model chi-square = 240.5, d.f. = 47  
Chi-Square change = 83290.7, d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .997, Nonnormed = .997, CFI = .998

1980-1990 Model:
Independence chi-square = 65072.2, d.f. = 66  
Model chi-square = 169.1, d.f. = 47  
Chi-Square change = 64810.4, d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .997
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<td>R²</td>
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* p < .05  
** p < .01  
*** p < .001

1970-1980 Model:
Independence chi-square = 52422.7, d.f. = 55
Model chi-square = 465.9, d.f. = 43
Chi-Square change = 51956.8 d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .991, Nonnormed = .990, CFI = .992

1980-1990 Model:
Independence chi-square = 58057.1, d.f. = 55
Model chi-square = 464.2, d.f. = 43
Chi-Square change = 57592.9, d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .996, Nonnormed = .996, CFI = .997
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N: 655
R²: .74

1970-1980 Model:
- Independence chi-square = 54219.5, d.f. = 66
- Model chi-square = 562.4, d.f. = 47
- Chi-Square change = 53657.1, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .990, Nonnormed = .987, CFI = .990

1980-1990 Model:
- Independence chi-square = 58791.7, d.f. = 66
- Model chi-square = 397.6, d.f. = 47
- Chi-Square change = 58394.1, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .992, Nonnormed = .989, CFI = .992
Table 5.9


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| N                         | 655       |          | 634       |          |
| R²                        | .73       |          | .74       |          |

* p < .05
** p < .01
*** p < .001

1970-1980 Model:
- Independence chi-square = 54219.5, d.f. = 66
- Model chi-square = 476.9, d.f. = 47
- Chi-Square change = 53742.6, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .989, Nonnormed = .986, CFI = .990

1980-1990 Model:
- Independence chi-square = 58791.7, d.f. = 66
- Model chi-square = 4002.2, d.f. = 47
- Chi-Square change = 58391.5, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .992, Nonnormed = .989, CFI = .992
CHAPTER 6

RESULTS FOR RUSTBELT, OLD SOUTH, AND NEW SUNBELT CITIES

This chapter examines the relationships among social distress, economic distress, and economic restructuring for cities of different geographic regions. For this analysis, I divided the country into three mutually exclusive and exhaustive areas: the Rustbelt, Old South, and New Sunbelt. See appendix A for a list of cities in each region.

In evaluating the different experiences of these regions with respect to the decline of manufacturing jobs and distress, I present the Deindustrialization Model. Next, I expand the model to include the effect of economic restructuring on economic distress and of economic distress on social distress. The economic restructuring factor is addressed by using changes in manufacturing and service-sector jobs. This is the Chain Model. Finally, I employ the Direct Effects Model to determine whether economic restructuring has a direct effect on social distress. Each of the three models is discussed for both the 1970 to 1980 and 1980 to 1990 time periods to account for potential changes over time in the relationships among economic restructuring, economic distress, and social distress. In addition, I compare results for Rustbelt, Old South, and New Sunbelt cities. This will result in an assessment of the following hypotheses:

Hypothesis 1: Net of other factors, high levels of economic distress are associated with high levels of social distress across all regions.
Hypothesis 2: Net of other factors deindustrialization leads to an increase in economic distress in all regions

Hypothesis 3: Net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period.

Hypothesis 4: Net of other factors, cities of the Rustbelt experience greater increases in economic distress from deindustrialization than do cities of the Old South.

Hypothesis 5: Net of other factors, cities of the Rustbelt experience greater increases in economic distress from deindustrialization than do cities of the New Sunbelt.

Hypothesis 6: Net of other factors, growth in service-sector jobs alleviates economic distress

Hypothesis 7: Net of other factors, economic restructuring does not have a direct effect on social distress.

Hypothesis 8: Net of other factors, economic restructuring has a greater effect on economic distress in Rustbelt cities than in Old Southern cities.

Hypothesis 9: Net of other factors, economic restructuring has a greater effect on economic distress in cities of the Old South than cities of the New Sunbelt.

RUSTBELT CITIES

Table 6.1 presents descriptive statistics for the factors of social and economic distress and for changes in manufacturing and service-sector employment and the demographic control variables. Throughout the three decades under investigation, 403 cities in the Rustbelt maintained population levels of at least 25,000. Examination of trends in variables comprising the social distress factor reveals that distress increased from the 1980s to the 1990s. The crime rate increased from 5,891 in 1980 to 6,670 in 1990 (from 11.6 percent to 19.8 percent). Household crowding increased very slightly from an average of 3 percent to 3.1 percent. The percentage of female-headed families
increased by 70 percent between 1980 and 1990. By 1990, nearly one fifth of families were headed by single women. The exception in the case of social distress is the prevalence of dropping out of high school. In 1980, Rustbelt cities had an average high school dropout rate of 32 percent. This decreased to about 24 percent by 1990.

Trends in levels of economic distress were less clear during the period under investigation. On average, the unemployment rate decreased from 7.2 percent to 7.0 percent from 1980 to 1990. Similarly, the average median family income, adjusted for inflation, increased from $21,315 to $30,094. However, the level of family poverty increased from an average of 8.4 percent in 1980 to 9.9 percent in 1990.

In addition, Table 6.1 presents trends for economic restructuring and the demographic control variables. On average, the change index reveals that Rustbelt cities lost manufacturing jobs from 1970 to 1980 and from 1980 to 1990 (95.1 and 96.8 respectively). This translated into a manufacturing job loss of 1,492,700 between 1970 and 1980. Cities of this region continued to suffer job losses throughout the next decade. But the decline had decreased to 770,500.

True to their name, Rustbelt cities bore the brunt of manufacturing job loss in the United States. From 1970 to 1980, 82 percent of all manufacturing job losses to U.S. cities occurred in the Rustbelt. Even within the region, job loss was concentrated in a few cities. During the 1970 to 1980 period, nearly 50 percent of all manufacturing job losses within the Rustbelt took place in ten cities (see table 6.2). (Order by magnitude of decline, they are: New York, Chicago, Philadelphia, Detroit, Cleveland, Dayton, Baltimore, Indianapolis, St. Louis, and Milwaukee.) These same ten cities were
responsible for 40 percent of the total manufacturing job losses to all cities of the United States.

Though deindustrialization of the Rustbelt continued in the 1980s, job loss decreased by 50 percent. Despite the slowdown, Rustbelt cities continued to experience a disproportionate amount of deindustrialization. From 1980 to 1990, Rustbelt cities suffered about 60 percent of all manufacturing job losses in American cities. Within the region, losses remained concentrated in a few cities. From 1980 to 1990, 41 percent of the region's loss of manufacturing positions occurred in ten cities. Half of these were cities remained on the top ten list from the previous decade. In addition, these cities bore one fourth of the total manufacturing job losses to U.S. cities.

Despite the decline of manufacturing employment in Rustbelt cities, tremendous gains were made in the service sector. From 1970 to 1980, the change index for service-sector jobs was 138.3. This means that, on average, Rustbelt cities experienced a 38 percent increase in service employment. Though smaller in the 1980 to 1990 period, these cities continued to gain service jobs (change index = 130.7). The lower number does not indicate a slowdown in job growth, but rather a higher baseline level of jobs in the later decade. Rustbelt cities actually added 953,984 service-sector jobs from 1970 to 1980 and 1,611,310 from 1980 to 1990, a difference of 657,326 jobs.

The demographic picture of the Rustbelt revealed similar trends to those of the country as a whole. The percent minority in Rustbelt cities increased on average from 13.8 percent to 17.5 percent. Cities of the region became less densely population (from
4.807 persons per square mile in 1980 to 4.603 in 1990). In addition, the logged population of Rustbelt cities remained stable at 4.8.

**Deindustrialization Model**

Results of the Deindustrialization Model for Rustbelt cities are presented in Table 6.3. This model comprises one part of the test of Hypothesis 2 which states that, net of other effects, loss of manufacturing jobs leads to a greater increase in economic and social distress in Rustbelt cities than in cities of the Old South. The model was also used to assess Hypothesis 3, that net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. It also analyzes Hypothesis 4 which states that deindustrialization results in a greater increase in economic distress in Rustbelt cities than in New Sunbelt cities. These hypotheses will be assessed after the results for Old South and New Sunbelt cities have been discussed.

In both periods of investigation, the Deindustrialization Model fit the data well. In the 1970 to 1980 analysis, the Bentler-Bonett normed and nonnormed fit indexes and the CFI met or exceeded .995. In the later decade, the fit indexes reached at least .997. In addition, the chi-square change statistics were significant in both periods (99.579 and 130.942). This indicated that both models fit the data significantly better than the models of independence.

An examination of the standardized regression coefficients revealed that, when controlling for the demographic variables, economic distress had a significant direct effect on social distress in both time periods. The Beta for economic distress was a very
strong .807 for 1970 to 1980 and .812 in the 1980 to 1990 decade. Thus Rustbelt cities
that experienced high unemployment and family poverty and a low median family
income were likely to suffer higher levels of social distress. It is interesting to note that
percent minority was not a significant predictor of social distress in the earlier decade.
This represents the first case among all analyses thus far that percent minority is
nonsignificant. In addition, density and logged population size were not significant in the
1970 to 1980 period but were significant in the later period.

The Deindustrialization Model also tested the relationship between change in
manufacturing employment and economic distress. In both periods, a loss of
manufacturing employment led to an increase in economic distress in Rustbelt cities. The
Betas of -.233 and -.219 indicated a fairly strong relationship between deindustrialization
and economic distress. The unstandardized regression coefficients were identical (-.163)
in both periods.

In sum, the Deindustrialization Model provides support for Hypothesis 1, which
states that, net of other factors, high levels of economic distress are associated with high
levels of social distress. The model also supports Hypothesis 2. In essence,
deindustrialization led to an increase in economic distress in cities of the Rustbelt during
the 1970s and 1980s. Finally, the Deindustrialization Model failed to support Hypothesis
3, that loss of manufacturing jobs had a greater impact on economic distress in the 1970
to 1980 period than in the 1980 to 1990 period. Results of the Deindustrialization Model
will be compared to results of the model applied to cities of the Old South and New
Sunbelt later in the chapter in order to assess Hypotheses 3 and 4.
Chain Model

The Chain Model tests the effect of changes in manufacturing and service-sector employment on economic distress and the effect of economic distress on social distress. Using this model I test Hypothesis 1 which states that controlling for other factors, high levels of economic distress are associated with high levels of social distress. Irt also tests Hypothesis 6. that, all else equal, growth in service-sector employment alleviates economic distress. Finally, the model tests Hypotheses 7 and 8. which state that economic restructuring exert a greater impact on economic distress in Rustbelt cities than either Old South or New Sunbelt cities. As in the Deindustrialization Model, Hypotheses 7 and 8 will be assessed after results for the Old South and New Sunbelt are presented.

Results of the Chain Model are summarized in Table 6.4. The fit indexes indicated that the model fit the data well. All indexes reached or exceeded .995 for the 1970 to 1980 analysis and .996 for the 1980 to 1990 test. The chi-square change scores led to the conclusion that in both periods the model fit the data significantly better than the independence model.

As in the cases of large and small cities discussed in Chapter 5. economic distress significantly predicted social distress. The Betas of .829 for 1970 to 1980 and .345 for 1980 to 1990 indicate a strong relationship. Thus. Rustbelt cities that experienced high levels of economic distress also tended to suffer high levels of social distress. A t-test comparing the unstandardized regression coefficients (bs) demonstrated that economic distress was a significantly better predictor of social distress in the early period than in the later decade. This indicates that a process in addition to unemployment, family
poverty, and median family income level affected social distress in Rustbelt cities during the 1980s.

A review of the economic restructuring component of the Chain Model revealed that change in manufacturing employment was a significant factor in the explanation of economic distress in the 1970 to 1980 period. The Beta of -.298 indicated that, even when changes in service-sector employment were controlled, loss of manufacturing jobs led to an increase in economic distress in Rustbelt cities. The other component of economic restructuring, change in service jobs, was not a significant predictor of economic distress.

The Chain Model for Rustbelt cities provides support for Hypothesis 1, which states that cities that suffer high levels of economic distress also experience high levels of social distress. In addition, Hypothesis 6 predicted that economic restructuring would alleviate economic distress. Full support for the hypothesis requires the significance of the index of service-sector job change. This condition was not met. However, it is clear that, contrary to a common belief, employment growth in the service sector does not increase economic distress.

**Direct Effects Model**

The Direct Effects Model, seen in Table 6.5, was the final model used to analyze Rustbelt cities. This model tested Hypothesis 1, that high levels of economic distress are associated with high levels of social distress. The Direct Effects Model also assessed Hypothesis 7, which states that, net of other factors, economic restructuring does not have a direct effect on social distress. Results of the fit indexes indicate that the model fits the
data well for each decade. The Bentler-Bonett normed and nonnormed indexes and the CFI reached at least .995 in the 1970s model and .997 in the 1980s model. The chi-square change statistic also demonstrates that the Direct Effects Model fit the data significantly better than the independence model for both periods.

Examination of the standardized regression coefficients addresses the substantive issues of the Direct Effects Model. Economic distress exerted a significant influence on social distress during the 1970s, even when deindustrialization and demographic factors were controlled. The Beta of .798 indicated that Rustbelt cities that had high levels of economic distress also experienced high levels of social distress. A review of the deindustrialization variable, however, revealed that loss of manufacturing jobs did not have a significant direct impact on social distress.

Similarly, the effect of economic distress on social distress was significant in the 1980 to 1990 period. The standardized regression coefficient of .671 indicated a strong relationship such that Rustbelt cities that experienced high levels of economic distress also tended to have high levels of social distress. As expected, the economic restructuring measures of change in manufacturing jobs and change in service-sector jobs was not significant in predicting social distress.

In sum, analyses of Rustbelt cities revealed that economic distress was a significant predictor of social distress from 1970 to 1980 and 1980 to 1990. thus. the analysis supported Hypothesis 1. Deindustrialization, exacerbated economic distress which then increased social distress. However, when change in service-sector employment was added (the Chain Model), change in manufacturing jobs ceased to be a
significant predictor of economic distress. Thus it seems that the replacement of lost manufacturing jobs with service-sector jobs in Rustbelt cities nullified the deleterious effects of deindustrialization. Finally, the Direct Effects Model supported Hypothesis 7 as changes in manufacturing and service employment did not have a direct effect on social distress.

**OLD SOUTH CITIES**

Descriptive statistics for cities of the Old South are listed in Table 6.6. A total of 148 cities of the Old South retained populations of at least 25,000 from 1970 to 1990. Trends in economic and social distress were similar to those of the Rustbelt. Rates of crime and female-headed households increased between the 1970s and 1980s. The number of serious crimes per 100,000 people increased from 7730 in 1980 to 9787 in 1990. The rate of female-headed families increased by 72 percent during these two decades (from 13 percent to 23.4 percent). In addition, the percentages of crowded houses decreased slightly from 4.8 percent in the 1970 to 1980 period to 4.6 percent in the 1980 to 1990 era. However, the rate of high school dropout decreased from averages of 36.7 percent to 27.7 percent.

As in Rustbelt cities, economic distress indicators revealed mixed trends. The unemployment rate increased from 6.4 percent in 1980 to 7.2 percent in 1990. Similarly, family poverty increased from averages of 13 percent to 14.6 percent. However, the average median family income of Old Southern cities increased by about $7,000 when adjusted for inflation.
The indexes of economic restructuring indicated that, on average, cities of the Old South gained manufacturing jobs from 1970 to 1980 and from 1980 to 1990. Like their northern neighbors, Old Southern cities suffered deindustrialization in the form of lost manufacturing jobs. From 1970 to 1980 these cities lost a total of 154,100 manufacturing positions. Ten cities carried the burden of about 51 percent of these losses (see Table 6.2). (These cities were: Baton Rouge; Jackson, MS; Portsmouth; Birmingham; Atlanta; Memphis; New Orleans; Clarksville; Knoxville; and Burlington.) The number of lost manufacturing jobs increased to 183,900 in the 1980 to 1990 period. About 65 percent of these losses were attributed to ten cities. (Ordered by magnitude of job loss, they are: Nashville; Columbus, GA; Fort Smith, AR; Louisville; Chattanooga; Wilmington, NC; New Orleans; Meridian, MS; and Miami.) As in the Rustbelt, deindustrialization in the Old South was also heavily concentrated in a few cities.

On average, cities of the Old South successfully replaced lost manufacturing jobs with those in the service sector. The change index for Old Southern cities reached an average of about 164 in the 1970 to 1980 period and about 136 in the following decade. Though the percentage of service-sector jobs added decreased, the absolute numbers of new jobs increased. From 1970 to 1980, the number of service jobs grew by 884,629. The restructuring process gained momentum in the next decade, adding 1,016,711 service positions in Old Southern cities. Finally, cities of the Old South became home to a higher percentage of minority residents from the 1970s to the 1980s. These cities also became larger but, on average, less densely populated.
Cities of the Old South fared worse on nearly all indicators than their northern neighbors in the Rustbelt. The high school dropout rate in the Old South was about 15 percent higher than in Rustbelt cities in both decades. The crime rate reached a full 2,000 crimes higher while household crowding and female-headed families were several percentage points higher in the Old South. In terms of economic distress, these cities faced a lower average unemployment rate in the 1970s than Rustbelt cities. However, cities of the Old South had much lower median family incomes and higher rates of family poverty in both decades.

**Deindustrialization Model**

Table 6.7 contains results of the analysis of the Deindustrialization Model. This model tests Hypotheses 2, 3 and 4. Hypothesis 2 predicts that, net of other factors, deindustrialization leads to an increase in economic distress across all regions. Hypothesis 3 indicates that, net of other effects, loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. Hypothesis 4 compares this relationship for Rustbelt and Old Southern cities. It predicts that cities of the Rustbelt experience greater increases in economic distress from deindustrialization than do cities of the Old South.

The fit indexes for the Deindustrialization Model reached no less than .995 in the 1970 to 1980 period and .996 in the 1980 to 1990 period. The chi-square change statistic was significant for both periods as well. This indicated that the data in the Deindustrialization Model fit the data well and that the model was significantly better than the model of independence.
An examination of the regression coefficients revealed that, when controlling for the demographic variables, economic distress was a significant predictor of social distress for cities of the Old South. The standardized regression coefficient of .476 for the 1970 to 1980 period indicated a strong relationship between a Southern city's experience with economic distress and social distress. The magnitude of this relationship was even higher (.801) in the 1980 to 1990 period.

The Deindustrialization Model also tested the effect of loss of manufacturing jobs on economic distress. In the 1970 to 1980 period, the Beta for the index of manufacturing jobs change was -.205. This relationship was significant. Thus, cities of the Old South that lost manufacturing jobs tended to experience an increase in economic distress. The relationship between deindustrialization and economic distress was not significant, however, in the later decade. As a result, a test of the unstandardized regression coefficients to assess Hypothesis 3 cannot be conducted.

An assessment of Hypothesis 4 requires a comparison of the Deindustrialization Model for Rustbelt cities and Old Southern cities. The unstandardized regression coefficient for manufacturing job change was -.163 for Rustbelt cities and -.100 for Old Southern cities. Therefore loss of manufacturing jobs translated into a greater increase of economic distress in the Rustbelt than in the Old South. However, this difference was not statistically significant. In the 1980 to 1990 period, change in manufacturing jobs was a significant predictor of economic distress in Rustbelt cities but not in Old Southern cities. This provides support for Hypothesis 4, that deindustrialization has a greater influence on economic distress in the Rustbelt than in the Old South.
Chain Model

As in previous analyses, the Chain Model tested the effect of economic restructuring on economic distress and the effect of economic distress on social distress (Hypothesis 1). The model also assessed Hypothesis 8, which predicted that economic restructuring exerted a greater effect on economic distress in Rustbelt cities than in Old Southern cities. Finally, the model addresses one component of Hypothesis 9 which examines the different effects of economic restructuring on economic distress for cities of the Old South and New Sunbelt.

Results of the Chain Model appear in table 6.8. The Bentler-Bonett normed and nonnormed fit indexes and the CFI all meet or exceed .995 for the 1970 to 1980 analysis and .996 for the 1980 to 1990 model. In addition, the chi-square change statistics were significant for each analysis. This indicated that the Chain Model fit the data significantly better than did the model of independence.

Though the 1970 to 1980 model fit the data well, the hypothesized variables were not significant predictors of distress. Specifically, economic distress was not a significant factor in the explanation of social distress. The index of manufacturing job change was also non significant as a predictor of economic distress.

The later period, however, yielded different results. In this case, economic distress was a significant predictor of social distress. The Beta of .275 indicated that cities of the Old South that had high levels of economic distress also had high levels of social distress. Though significant, the magnitude of this unstandardized regression coefficient was lower for cities of the Old South ($b = .541$) than in cities of the Rustbelt.
(b = .670). However, the difference between these coefficients was not statistically significant.

The variables measuring economic restructuring, the change indexes of manufacturing and service employment, were significant in explaining the level of economic distress in the 1980 to 1990 period. However, their signs were opposite each other. The Beta of .235 for the change index of manufacturing jobs indicates that an increase in manufacturing jobs led to an increase in economic distress. This seems counterintuitive. However, further research is needed to explain this anomaly. The Beta of -.250 for the change index of service-sector jobs demonstrates that a loss of these positions increases economic distress. This provides evidence against the good manufacturing/bad service jobs dichotomy. Rather, this analysis suggests that service jobs benefited cities of the Old South in the 1980s to the extent that job growth in this sector alleviated economic distress.

A comparison of these results to those of the Chain Model for Rustbelt cities sheds light on Hypothesis 8. In the 1970 to 1980 period, loss of manufacturing jobs, when controlling for change in service-sector jobs, led to an increase in economic distress in Rustbelt cities. However, this relationship was not significant in Old Southern cities. In the 1980 to 1990 period, no significant relationship was found between economic restructuring and economic distress in the Rustbelt. In the Old South, however, an increase in manufacturing jobs and a decrease in service-sector jobs led to an increase in economic distress.
Direct Effects

The Direct Effects Model examined the effects of economic distress, change in manufacturing employment and change in service-sector employment on social distress directly. Specifically, it tests Hypotheses 6. that, all else equal, economic restructuring exerted no direct effect on social distress. Results of the analyses are presented in Table 6.9. The three indexes of fit indicated that the model fit the data well. In the 1970 to 1980 analysis, the indexes were no less than .994. The model for the next decade fit the data even better as the fit indexes reach at least .996. The chi-square change statistics were significant for each period as well. As a result, it was concluded that the Direct Effects Model fits the data significantly better than did the independence model.

An examination of the standardized regression coefficients answered the substantive questions addressed by the Direct Effects Model. In the 1970 to 1980 period, economic distress had a significant effect on social distress. even when changes in manufacturing and service-sector employment were controlled. The magnitude of the relationship was a strong .527. This indicated that cities that experienced high levels of economic distress also tended to have high levels of social distress. regardless of their experience with economic restructuring. The economic distress/social distress relationship was also strong in the next decade (Beta = .697). This evidence supports Hypothesis 1. In essence, economic distress directly affected social distress. In addition, a test of the difference in the unstandardized regression coefficients for economic distress between Rustbelt (b = .167) and Old Southern cities (b = 1.128) revealed that. in the
1980 to 1990 period, economic distress exerted a significantly stronger effect on social
distress in cities of the Old South than in the Rustbelt.

The change indexes for manufacturing and service-sector jobs were used to test
the relationship between economic restructuring and social distress. In the 1970 to 1980
period, the change index for manufacturing jobs was not a significant predictor of social
distress. However, the change index for service employment was significant. The Beta
of -.189 indicates that cities of the Old South that lost service-sector jobs suffered higher
levels of social distress, even when controlling for economic distress. In the later period,
the situation reversed. Service-sector employment changes no longer exerted a
significant affect on social distress. But manufacturing job change did. The Beta of -.166
provides evidence that Old Southern cities that lost manufacturing jobs from 1980 to
1990 suffered an increase in social distress, controlling for other factors. These data lead
to the conclusion that Hypothesis 7 cannot be supported for cities of the Old South.

NEW SUNBELT

I now turn to an analysis of an area I call the New Sunbelt. This includes 292
cities in states of the Southwest and West. Table 6.10 contains descriptive statistics for
cities of the New Sunbelt. Trends in economic and social distress mirrored those
experienced by Rustbelt and Old Southern cities. One component of social distress, the
rate of high school noncompletion improved from 1980 to 1990. On average, it
decreased from 25.7 percent to 21.3 percent. But the other three indicators demonstrated
an increase in average social distress for New Sunbelt cities. The crime rate increased
from an average of 6.786 to 7.149. Household crowding increased substantially from 5.7 percent to 8.8 percent. Finally, the prevalence of female-headed families increased from an average of 10 percent to 16.4 percent.

In terms of economic distress, average median family income increased from 1980 to 1990. However, unemployment and family poverty increased, thereby exacerbating economic distress. The rate of unemployment increased slightly from an average of 5.6 percent to 6.3 percent while family poverty increased from about 8 percent to about 10 percent.

Cities of the New Sunbelt fared quite well with economic restructuring. In fact, it may be argued that, on average, these cities experienced constant growth across all sectors rather than restructuring. Of course, individual cities of the New Sunbelt deviated from this model. For example, ten cities bore the burden of more than half of all manufacturing job loss in the region from 1970 to 1980 and about 57 percent in the next decade (see table 6.2). The change index for manufacturing jobs reached 153 in the 1970 to 1980 period. This indicated that the average city of the New Sunbelt added manufacturing jobs from 1970 to 1980. The rate of manufacturing job growth decreased in the next decade to 108. However, in terms of absolute job growth New Sunbelt cities gained 542,500 manufacturing jobs from 1970 to 1990.

The New Sunbelt cities’ success with growth in the service sector was even greater. The change index for service-sector positions reached 186 during the 1970s and about 130 during the 1980s. This translated into an additional 2,249,020 service-sector jobs.

Demographic trends in cities of the New Sunbelt deviated slightly from those of the Rustbelt and Old South. New Sunbelt, on average, cities grew larger. They also became more densely populated. Similar to the rest of the country, the population of these cities became more racially and ethnically diverse. The percent black and Hispanic increased from an average of about 21 percent to about 26 percent.

Examination of descriptive statistics for all three regions yielded several observations. Generally, cities of the Old South have experienced the most social and economic distress during the past three decades. Old Southern cities had the highest average level of high school dropouts followed by the Rustbelt. Cities of the Old South had by far the highest crime rates and percentages of female-headed households. However, New Sunbelt cities had higher rates of household crowding. The Old South offered the lowest average median family incomes. They also had the highest family poverty rates of the three regions. Rustbelt cities had the highest unemployment rates in 1980. This was most likely due to massive deindustrialization. But Old Southern cities took a slight lead in unemployment in 1990. Economic restructuring exerted the most impact in Rustbelt cities, followed by cities of the Old South. Finally, the New Sunbelt was the most successful region in terms of job growth.

**Deindustrialization Model**

The Deindustrialization Model was tested for cities of the New Sunbelt to determine whether the loss of manufacturing jobs affected economic distress (Hypothesis
2). This model also assessed the effect of economic distress on social distress, thereby testing Hypothesis 1. The model also provided a test of Hypothesis 3, that loss of manufacturing jobs has a greater impact on economic distress in the 1970 to 1980 period than in the 1980 to 1990 period. Comparison of the results of this model with those of the Deindustrialization Model applied to the Rustbelt provides evidence to assess Hypothesis 5. This hypothesis predicts that cities of the Rustbelt experience greater increases in economic distress from deindustrialization than do cities of the New Sunbelt.

Results of the model appear in Table 6.11. The overall fit of the Deindustrialization Model was good. In the 1970 to 1980 decade, the Bentler-Bonett normed and nonnormed fit indexes and the CFI were all at least .989. In the next decade, they reached no less than .995. The chi-square change statistics were significant for both decades indicating that the model fit the data significantly better than the models of independence.

An examination of the standardized regression coefficients demonstrated that economic distress significantly impacted social distress in both periods. The Betas of .745 in the 1970 to 1980 period and .841 in the next decade indicated that New Sunbelt cities that experienced high levels of economic distress also had high levels of social distress.

In addition, the change index of manufacturing jobs was significant in both periods. The Beta was a strong -.310 for the 1970s and -.402 for the 1980s. The difference in the unstandardized regression coefficients between the decades was not significant. These results demonstrate that deindustrialization had a deleterious effect on
economic distress in New Sunbelt cities, even when demographic factors were controlled. The effect of loss of manufacturing jobs on economic distress was similar in cities of the New Sunbelt, Old South, and Rustbelt. The difference between the unstandardized regression coefficients among all regions was not significant. Therefore, even though on average New Sunbelt cities experienced job growth across economic sectors, those in which deindustrialization occurred suffered increases in economic distress.

In review, the Deindustrialization Model as applied to cities of the New Sunbelt provided support for Hypotheses 1 and 2. In essence, high levels of economic distress are associated with high levels of social distress. In addition, deindustrialization leads to an increase in economic distress. The model did not, however, support Hypothesis 3, that loss of manufacturing jobs had a greater impact on economic distress during the 1970s than in the 1980s. Comparing these results with those for the Rustbelt allows assessment of Hypothesis 5. For both regions and both periods, change in manufacturing jobs was a significant predictor of economic distress. Thus, in Rustbelt and New Sunbelt cities, loss of manufacturing jobs led to an increase in economic distress. However, a test of the unstandardized regression coefficients revealed that the differences in magnitude were not significant. As a result, Hypothesis 5 cannot be supported.

Chain Model

Table 6.12 contains results of the Chain Model. This model tests the effect of economic restructuring on economic distress and of economic distress on social distress (Hypothesis 6). It also assesses Hypothesis 9, that, all else equal, economic restructuring
has a greater effect on economic distress in cities of the Old South than in cities of the New Sunbelt.

The Chain Model fit the data well for both decades. The three fit indexes reached at least .989 in the 1970 to 1980 model and .995 in the 1980 to 1990 model. Both chi-square change statistics were significant as well. It is therefore concluded that the Chain Model fit the data significantly better than the model of independence.

Unlike the cases of Rustbelt and Old Southern cities, the effect of economic distress on social distress was not significant in the 1970 to 1980 period. In addition, the economic restructuring variables, change index of manufacturing and change index of service jobs, were not significant predictors of economic distress. In the following decade, economic distress was significant in explaining social distress. The Beta of .362 indicates that cities of the New Sunbelt that experienced high levels of economic distress also had high levels of social distress. This effect was similar to that in Rustbelt and Old South cities during the same decade. A test of the unstandardized regression coefficients revealed that differences among regions in the effect of economic distress on social distress were nonsignificant. No evidence was found that economic restructuring affected economic distress. Both the change index of manufacturing jobs and the change index for service jobs were nonsignificant in the 1980 to 1990 period.

In comparing the results with those for the Chain Model for Old Southern cities, Hypothesis 9 is partially supported. In New Sunbelt cities change of manufacturing and change of service jobs was nonsignificant in both periods. In Old Southern cities both indicators of economic restructuring were significant in the 1980 to 1990 period. Thus,
from 1980 to 1990, economic restructuring had a greater impact on economic distress in Old Southern cities than in New Sunbelt cities.

**Direct Effects Model**

The Direct Effects Model tests the relationship between economic restructuring and social distress. In doing this, the model provides evidence to test Hypothesis 7, that economic restructuring does not have a direct effect on social distress. It also assesses the effect of economic distress on social distress when economic restructuring is controlled (Hypothesis 1). Results are summarized in Table 6.13. In the 1970 to 1980 period, economic distress exerted a significant impact on social distress, even when changes in manufacturing and service-sector employment were controlled. The Beta of .519 indicates that, regardless of a New Sunbelt’s experience with restructuring, a high level of economic distress yields a high level of social distress. In terms of the economic restructuring variables, the change index of manufacturing employment was significant while the change index of service-sector employment was not. The Beta of -.189 demonstrates that cities of the New Sunbelt that suffered deindustrialization also experienced higher levels of economic distress.

Economic distress remained a significant force in social distress in the following decade. The Beta of .302 indicated a continuance of the relationship between economic and social distress. However, the relationship between loss of manufacturing jobs and economic distress ceased in the 1980 to 1990 model. In addition, the change index of service-sector employment was nonsignificant.
In sum, the Direct Effects Model for New Sunbelt cities provides support for Hypothesis 1. In essence, New Sunbelt cities that experience high levels of economic distress also tend to suffer high levels of social distress. The model also partially supports Hypothesis 7 that economic restructuring does not have a direct impact on social distress. The exception is that deindustrialization had a deleterious effect on social distress in the 1970 to 1980 period, even when controlling for changes in service-sector employment.

SUMMARY AND LOOK AHEAD

Chapter 5 analyzed the Deindustrialization, Chain, and Direct Effect Model for all cities while Chapter 6 divided the analysis by city size. In this chapter, I have presented results of each model for cities of the Rustbelt, Old South, and New Sunbelt regions. With the exception of the high school dropout rate and median family income level, I found increased average levels of social and economic distress for each region over time. A comparison of regions revealed that cities of the Old South tended to suffer, on average, higher levels of social and economic distress than their neighbors to the north and west.

Analysis of the Deindustrialization Model confirmed that loss of manufacturing jobs exerted a detrimental force on economic distress in all regions and in both decades. The only exception was the Old South from 1980 to 1990, in which deindustrialization had no significant impact on economic distress. The Chain Model added service-sector employment activity to the analysis. The model affirmed that economic distress significantly affected social distress in Rustbelt cities during the 1970s and the 1980s. In cities of the Old South and the New Rustbelt, economic distress played a significant role
in the level of social distress in the later period only. Finally, as revealed in the Direct
Effects Model, economic distress was a significant predictor of social distress, even when
economic restructuring was controlled. This relationship persisted across region and time.
The Direct Effects Model revealed regional differences in the relationship between
changes in manufacturing and service-sector employment and social distress. In the
Rustbelt, economic restructuring had a direct effect on economic distress, but not on
social distress. Cities of the Old South sustained an increase in social distress as a result
of loss of service jobs in the 1970s and loss of manufacturing jobs during the 1980s.
New Sunbelt cities, in contrast, felt a direct impact on social distress due to loss of
manufacturing jobs in the 1970 to 1980 period.

Chapter 7 will address these findings, and those from Chapters 4 and 5, in greater
detail. In it, I will interpret results of the empirical analyses for all cities, city size, and
region in terms of the hypotheses and current literature on distress and economic
restructuring.
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<td>Employment</td>
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*p < .05
**p < .01
***p < .001

1970-1980 Model:
Independence chi-square = 99578.9, d.f. = 55
Model chi-square = 324.5, d.f. = 43
Chi-Square change = 99364.4 d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .996

1980-1990 Model:
Independence chi-square = 130941.7, d.f. = 55
Model chi-square = 281.4, d.f. = 43
Chi-Square change = 130660.3, d.f. = 12. difference significant beyond .001
Bentler-Bonett Normed = .997, Nonnormed = .997, CFI = .998
Table 6.4

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<tr>
<td>Service Sector Employment</td>
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N = 403
R² = .85  .09  .66  .01

* p < .05
** p < .01
*** p < .001

1970-1980 Model:
Independence chi-square = 83406.3, d.f. = 66
Model chi-square = 270.4, d.f. = 47
Chi-Square change = 83135.9 d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .996

1980-1990 Model:
Independence chi-square = 131078.4, d.f. = 66
Model chi-square = 284.2, d.f. = 47
Chi-Square change = 130794.2, d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .997, Nonnormed = .996, CFI = .997
### Table 6.5


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<td>.691</td>
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<td>-.013</td>
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<td>.005</td>
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<td>Population (log)</td>
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<td>.027</td>
<td>.071*</td>
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<td>.417</td>
<td>.479***</td>
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<td>.057</td>
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<td>.014</td>
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</table>

| N                          | 403       |         |         | 403       |         |
| R²                         | .85       |         |         | .70       |         |

* * p < .05  
** p < .01  
*** p < .001

1970-1980 Model:
- Independence chi-square = 83477.2, d.f. = 66
- Model chi-square = 273.6, d.f. = 47
- Chi-Square change = 83203.6, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .996

1980-1990 Model:
- Independence chi-square = 131078.4, d.f. = 66
- Model chi-square = 367.0, d.f. = 47
- Chi-Square change = 130711.4, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .997, Nonnormed = .997, CFI = .998
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<td>Mean</td>
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<td>F1: Social Distress</td>
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<tr>
<td>V1: High School Dropout</td>
<td>36.7</td>
<td>9.1</td>
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<td>V2: Crime Rate</td>
<td>7730</td>
<td>2826</td>
</tr>
<tr>
<td>V3: Household Crowding</td>
<td>4.8</td>
<td>2.7</td>
</tr>
<tr>
<td>V4: Female-Headed Families</td>
<td>13.6</td>
<td>3.7</td>
</tr>
<tr>
<td>F2: Economic Distress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V5: Unemployment</td>
<td>6.4</td>
<td>1.9</td>
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<td>V6: Median Family Income</td>
<td>17235</td>
<td>2843</td>
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<td></td>
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<td>V8: Manufacturing Job Change</td>
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<td>63.3</td>
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<td></td>
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<td>59.4</td>
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<td>4.8</td>
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<td>V11: Percent Minority</td>
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<td>Standard Error</td>
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<td>Economic Distress</td>
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<td>.539</td>
<td>x</td>
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<td>Population (log)</td>
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<td>.051</td>
<td>.083</td>
<td>x</td>
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<tr>
<td>Percent Minority</td>
<td>.217*</td>
<td>.156</td>
<td>.310</td>
<td>x</td>
</tr>
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<td>Density</td>
<td>- .388***</td>
<td>.049</td>
<td>- .249</td>
<td>x</td>
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<td>x</td>
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<td>.050</td>
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<td>Employment</td>
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<td>-.100</td>
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1970-1980 Model:
Independence chi-square = 40935.6, d.f. = 55
Model chi-square = 107.9, d.f. = 43
Chi-Square change = 40827.7 d.f. = 12. Difference significant beyond .001
Bentler-Bonett Normed = .995, Nonnormed = .995, CFI = .996

1980-1990 Model:
Independence chi-square = 64132.4, d.f. = 55
Model chi-square = 138.0, d.f. = 43
Chi-Square change = 63994.4 d.f. = 12. Difference significant beyond .001
Bentler-Bonett Normed = .997, Nonnormed = .996, CFI = .997
### Table 6.8

**Standardized Regression Coefficients for the Chain Model (M_2) Predicting Economic Distress and Social Distress in Old South Cities, 1970-1980 and 1980-1990**

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<thead>
<tr>
<th>Variable</th>
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<td>.275*** .144 .541</td>
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<td>Population (log)</td>
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<td>-.160 x</td>
<td>.058 .074 .060</td>
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</tr>
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<td>-.126 x</td>
<td>.502*** .201 1.074</td>
<td>x x x</td>
</tr>
<tr>
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<td>.525*** .065</td>
<td>.336 x</td>
<td>.602*** .060 .554</td>
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</tr>
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<td>Manufacturing</td>
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<td>.026 x x x</td>
<td>.235* .067 .135</td>
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<tr>
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<td>.139 .059</td>
<td>.075 x x x</td>
<td>.250* .046 -113</td>
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<td>Employment</td>
<td>x x x</td>
<td>x x x</td>
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| N | R² | 148 | .35 | .02 | .69 | .12 |

* p < .05
** p < .01
*** p < .001

**1970-1980 Model:**
- Independence chi-square = 42440.7, d.f. = 66
- Model chi-square = 210.0, d.f. = 47
- Chi-Square change = 42230.7 d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .995, Nonnormed = .995, CFI = .996

**1980-1990 Model:**
- Independence chi-square = 64591.2, d.f. = 66
- Model chi-square = 133.2, d.f. = 47
- Chi-Square change = 64458.0, d.f. = 19, difference significant beyond .001
- Bentler-Bonett Normed = .996, Nonnormed = .996, CFI = .997
Table 6.9


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<td>.937</td>
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* p < .05
** p < .01
*** p < .001

1970-1980 Model:
- Independence chi-square = 42440.7, d.f. = 66
- Model chi-square = 127.4, d.f. = 47
- Chi-Square change = 42313.3, d.f. = 19. difference significant beyond .001
- Bentler-Bonett Normed = .995, Nonnormed = .994, CFI = .996

1980-1990 Model:
- Independence chi-square = 64591.2, d.f. = 66
- Model chi-square = 142.9, d.f. = 47
- Chi-Square change = 64448.3, d.f. = 19. difference significant beyond .001
- Bentler-Bonett Normed = .996, Nonnormed = .996, CFI = .997
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<th>Mean</th>
<th>SD</th>
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<th>Maximum</th>
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<td>1.6</td>
<td>13.2</td>
<td>6.3</td>
<td>2.3</td>
<td>2.4</td>
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<td>1.4</td>
<td>30.4</td>
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<td>29.0</td>
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<td>4.9</td>
<td>.36</td>
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<td>6.5</td>
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<td>19.0</td>
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<td>95.9</td>
<td>25.8</td>
<td>21.3</td>
<td>1.2</td>
<td>98.5</td>
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<td>Beta</td>
<td>Standard Error</td>
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<td>.035</td>
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<td>Percent Minority</td>
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<td>.101</td>
<td>.174</td>
<td>x</td>
</tr>
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<td>Density</td>
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<td>-.089</td>
<td>x</td>
</tr>
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<td>Manufacturing Employment</td>
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<td>-.038</td>
<td>-.139</td>
<td>x</td>
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<td>.85</td>
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* * p < .05  
** p < .01  
*** p < .001

** 1970-1980 Model:**  
Independence chi-square = 24958.7, d.f. = 55  
Model chi-square = 176.0, d.f. = 43  
Chi-Square change = 24782.7, d.f. = 12, difference significant beyond .001  
Bentler-Bonett Normed = .990, Nonnormed = .989, CFI = .991

** 1980-1990 Model:**  
Independence chi-square = 88279.9, d.f. = 55  
Model chi-square = 305.2, d.f. = 43  
Chi-Square change = 87974.7, d.f. = 12, difference significant beyond .001  
Bentler-Bonett Normed = .996, Nonnormed = .995, CFI = .996
Table 6.12

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* p < .05
** p < .01
*** p < .001

1970-1980 Model:
Independence chi-square = 25577.1, d.f. = 66
Model chi-square = 187.5, d.f. = 47
Chi-Square change = 255393.6 d.f. = 19. difference significant beyond .001
Bentler-Bonett Normed = .989, Nonnormed = .987, CFI = .991

1980-1990 Model:
Independence chi-square = 93793.4, d.f. = 66
Model chi-square = 334.8, d.f. = 47
Chi-Square change = 93354.6, d.f. = 19. difference significant beyond .001
Bentler-Bonett Normed = .995, Nonnormed = .994, CFI = .996
Table 6.13

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* p < .05
** p < .01
*** p < .001

1970-1980 Model:
Independence chi-square = 25577.1, d.f. = 66
Model chi-square = 205.5, d.f. = 47
Chi-Square change = 25371.6, d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .988, Nonnormed = .986, CFI = .990

1980-1990 Model:
Independence chi-square = 93793.4, d.f. = 66
Model chi-square = 346.5, d.f. = 47
Chi-Square change = 93446.9, d.f. = 19, difference significant beyond .001
Bentler-Bonett Normed = .995, Nonnormed = .994, CFI = .996
CHAPTER 7

DISCUSSION AND CONCLUSIONS

This research has examined the effect of economic distress on social distress and the effects of deindustrialization and economic restructuring on both economic and social distress in U.S. cities. Analyses were conducted for all cities with populations of at least 25,000, for large and small cities, and for cities located in the Rustbelt, Old South, and New Sunbelt. This chapter presents a summary and discussion of the findings. I also extend an agenda for future research. To recapitulate, the following hypotheses were tested in this study:

1. Net of other effects, high levels of economic distress are associated with high levels of social distress.

2. Net of other effects, loss of manufacturing jobs leads to an increase in economic distress.


4. Net of other effects, loss of manufacturing jobs leads to a greater increase in economic distress in Rustbelt cities than in cities of the Old South.

5. Net of other effects, loss of manufacturing jobs leads to a greater increase in economic distress in Rustbelt cities than in cities of the New Sunbelt.

6. Net of other effects, growth in service-sector jobs alleviates economic distress.
7. Net of other effects, economic restructuring does not have a direct effect on social distress.

8. Net of other factors, economic restructuring has a greater effect on economic distress in Rustbelt cities than in Old Southern cities.

9. Net of other factors, economic restructuring has a greater effect on economic distress in cities of the Old South than cities of the New Sunbelt.

10. Net of other effects, loss of manufacturing jobs leads to a greater increase in economic distress in small cities than in large cities.

11. Net of other effects, economic restructuring has a greater effect on the level of economic distress in small cities than in large cities.

In general, social distress worsened in U.S. cities from the 1970s to the 1980s. Rates of crime, female-headed families and crowded housing increased, on average, across all cities as well as in subclassifications of cities. Percentages of high school dropouts were the exception. In large and small cities as well as cities of the Rustbelt, Old South, and New Sunbelt, the rate of high school noncompletion decreased from 1970 to 1980. Across all subsections of cities, those of the Old South experienced the greatest social distress, on average, during the 1970s and 1980s. In addition, large cities were more distressed than small cities.

In terms of economic distress, U.S. cities also experienced slightly elevated levels of unemployment from 1970 to 1980. The rate of family poverty also worsened during the two decades. However, the average level of median family income increased considerably from 1970 to 1990. Regionally, cities of the Old South were the most economically distressed. Large cities, regardless of region, also experienced greater levels of economic distress than small cities.
Finally, this research demonstrated that the United States experienced terrific changes with respect to employment. American cities became less reliant upon manufacturing jobs and increasingly dependent upon the service-sector to provide jobs for their residents.

Results of the factor analysis indicate that social distress may be reliably measured with percent of female-headed households, crime rate, crowded housing, and rates of high school dropout. Economic distress is reliably measured with percent of family poverty, the unemployment rate, and median family income. Likewise, economic restructuring may be reliable measured using changes of manufacturing and service jobs. These results corroborate those of the Schurman, Nelson, and Schurman (1995) study of the nation's largest cities. However, the causal models used in the analysis addressed the change indexes of manufacturing and service-sector jobs separately in order to prevent the occlusion of potential differences between the two forces.

**Does Economic Distress Affect Social Distress?**

Table 7.1 contains a summary of the effect of economic distress on social distress. Overwhelmingly, the analyses indicate that a positive relationship exists between these two phenomenon. All models support Hypothesis 1, that net of other effects, high levels of economic distress are associated with high levels of social distress.

Within each equation for the Deindustrialization Model, economic distress was a strong predictor of social distress. A comparison of the unstandardized regression coefficients reveals that cities with high levels of economic distress suffered similar increases in social distress. Therefore, regardless of city type or location, cities that
experienced high levels of family poverty and unemployment and low relative median family income experienced exacerbated levels of female-headed families, problems with rates of high school dropouts, crime, and household crowding.

Three exceptions are noted in this relationship. Results of the Chain Model indicated that no significant relationship existed between economic and social distress in cities of the Old South during the 1970 to 1980 period or in cities of the New Sunbelt during the 1980 to 1990 period. This indicates that other forces impinged on social distress in these cities.

**Does Deindustrialization Affect Economic Distress?**

The deindustrialization of U.S. cities has many causes. They include increased productivity, migration of plants overseas, a shift in population and manufacturing activity from the Rustbelt to the New Sunbelt, and the migration of manufacturing employment from central cities to suburbs. Regardless of its impetus, deindustrialization is manifested in the loss of manufacturing jobs. The East North Central region of the Rustbelt bore disproportionate losses of manufacturing jobs as did (Hill and Negrey 1987; Markusen 1988) other cities with a heritage reliance on manufacturing (Goe and Shanahan 1991). Both human ecology and political economy theories propose that loss of manufacturing jobs has potentially devastating effects on individuals and communities.

As illustrated in table 7.2, the Deindustrialization Model provides evidence to support Hypothesis 2. With the exception of Old Southern cities in the 1980 to 1990 period, loss of manufacturing jobs had a deleterious effect on economic distress. In all cases, loss of manufacturing employment exerted a greater influence on economic
distress during the 1970s than the 1980s. Within the context of city size, large cities suffered greater increases in economic distress at the hands of deindustrialization than did small cities. Regionally, in the 1970 to 1980 period, rustbelt cities experienced greater increases in family poverty and unemployment and greater decreases in median family income due to deindustrialization than did cities of the Old South and New Sunbelt.

This pattern changed in the next decade. From 1980 to 1990, the loss of manufacturing jobs led to greater increases in economic distress in cities of the New Sunbelt followed by cities of the Rustbelt. In sum, deindustrialization was harmful to U.S. cities in which it occurred. It caused more damage in terms of economic distress in large cities than in small cities. Finally, among the three regions, loss of manufacturing jobs affected cities of the Rustbelt most negatively in the 1970s. In the next decade, deindustrialization had a more negative impact on cities of the New Sunbelt than those of the rustbelt or Old South. However, the New Sunbelt contained the smallest number of cities of any region that lost manufacturing jobs. The Rustbelt, on the other hand, housed the greatest number of deindustrializing cities. Thus, cities in the New Sunbelt that did experience losses in the manufacturing sector suffered greater increases in economic distress than did their eastern neighbors. However, overall, the rustbelt suffered more as a greater proportion of its cities deindustrialized.

The theories of human ecology and political economy informed the prediction of the deleterious effect of deindustrialization. The ecological perspective identifies survival in a potentially hostile environment as the central problem faced by human populations. Certainly, deindustrialization, at least in the short run, created a hostile environment in
the sense of dramatic and swift change. Political economists recognize that
deindustrialization affects cities disproportionately, thereby creating uneven
development. In addition, both perspectives cite the dislocation of manufacturing
workers at the hands of deindustrialization as a cause of urban blight.

**Does Economic Restructuring Affect Economic Distress?**

Human ecology theory argues that the growth of the postindustrial sector is a part
of the evolutionary process in economic development that will eventually alleviate the
negative social and economic consequences of deindustrialization (Hicks 1985). In
response, this research tested the effect of economic restructuring, as measured by
changes in employment in the manufacturing and service sectors, on economic distress.

Table 7.3 contains a summary of the effect of economic restructuring on
economic distress. Even when changes in service jobs are held constant,
deindustrialization may have a negative impact on cities. In the 1970 to 1980 period,
such was the case in small cities, those of the Rustbelt region, and in the average of cities
overall. However, this relationship did not continue into the next decade in Rustbelt and
small cities. In the 1980 to 1990 period, the loss of manufacturing jobs negatively
impacted economic distress in U.S. cities overall. The case of Old Southern cities
presents an anomaly. During the 1980s, growth of manufacturing sector employment was
associated with higher levels of economic distress. This is the only subcategory of cities
in which manufacturing jobs appear to be harmful to the cities’ economic well-being. It
is possible that many manufacturing jobs that migrated south from the Rustbelt were low-
skilled and low-paying positions. However, further research is required to adequately address this issue.

In some cases, the effect of deindustrialization on economic distress ceases when changes in service-sector employment are controlled. In particular, during the 1970 to 1980 decade, large cities and those of the Old South and New Sunbelt did not experience an increase in economic distress once changes in service-sector employment were controlled. We know from an examination of raw data that, on average, these cities added thousands of service jobs during this period. Thus the replacement of lost manufacturing jobs with those in the service sector are mediating the deleterious effects of deindustrialization on unemployment, family poverty, and median family income.

It is interesting to note that during the 1970s cities of the Rustbelt experienced enhanced levels of economic distress due to the loss of manufacturing jobs, even when controlling for changes in service-sector employment. Thus, despite growth in the service sector, deindustrialization had a negative impact on Rustbelt cities. However, this relationship ceased in the next decade. During the 1980s economic restructuring was not a significant predictor of economic distress in Rustbelt cities. When controlling for changes in service-sector employment, deindustrialization did not have a deleterious effect on economic distress. Growth in the service-sector mediated the negative effects of deindustrialization.

In addition, economic restructuring had different effects in small and large cities. Small cities experienced greater increases in economic distress from changes in manufacturing and service-sector jobs during the 1970s than did large cities. Small cities
rely on a smaller number of key activities for economic stability. Fluctuations brought about by economic restructuring have a potentially devastating impact in small cities because they lack the economic diversity to absorb displaced labor. This effect weakened in the 1980 to 1990 period such that changes in manufacturing jobs had no effect on economic distress in either large or small cities. Also during the 1980s, large cities experienced greater increases in economic distress than small cities with losses of service-sector employment.

Despite recent questions as to the ability of service jobs to absorb losses in manufacturing, evidence suggests that service-sector employment growth is good for cities. In fact, deindustrialization had a negative effect on economic distress in 5 of the 12 analyses while loss of service-sector positions negatively impacted economic distress in half of the models. Despite changes in manufacturing employment in the 1970 to 1980 period, increases of service-sector jobs decreased economic distress in all cities as well as in small cities. In the next decade, growth of service-sector employment alleviated economic distress across all cities and in subcategories of both small and large cities and in cities of the Old South.

Political economy theory predicts that the rise of the postindustrial economy will result in a service sector hegemony that will ultimately then create a bifurcated system of employment with high and low wage jobs (Stanback et al. 1981; Bluestone and Harrison 1982; Stanback and Noyelle 1982). As Sassen (1989, 1991) notes, the concentration of finance and economic control in a few global cities will exaggerate the uneven development. Political economists argue that cities and residents fare unequally in a
postindustrial economy such that some will lapse into precarious positions with respect to employment (Jaret 1983; Walton 1987; Smith 1995). They identify this disarticulated development as the cause of urban distress. It predicts that these problems will worsen over time. A test of this prediction is beyond the scope of this research. However, evidence suggests that increases of service-sector employment is good for cities. It decreases economic distress.

**Does Economic Restructuring Affect Social Distress?**

In addition, this research questioned whether economic restructuring directly affected social distress. The Direct Effects Model was employed to determine the effect. In essence, I wanted to assess the potential effect of changes in manufacturing and service-sector employment on levels of female-headed families, crime, high school dropouts, and crowded housing. Table 7.4 summarizes the results. Overwhelmingly, economic restructuring did not have a direct effect on social distress. However, there were some exceptions. During the 1970 to 1980 decade, cities of the New Sunbelt that lost manufacturing jobs experienced increased levels of social distress. In the next decade, analyses for all cities, small cities, and those of the Old South revealed this trend. Thus, regardless of these cities' experiences with changes in service-sector employment, deindustrialization led to enhanced levels of social distress.

In terms of the service-sector component of economic restructuring, only cities of the Old South during the 1970s experienced changes in social distress due to changes in service employment. This was due to loss of service-sector jobs. In essence, cities of the Old South that lost service jobs from 1970 to 1980 experienced heightened levels of
social distress. Stated another way, Old Southern cities relied on the service sector to employ residents and alleviate social distress. Service-sector jobs were vital to cities of the Old South in the 1970s to the extent that their loss led to higher levels of female-headed families, crime, high school noncompletion, and household crowding. These results provide evidence against the suspicion of some urban scholars that service-sector jobs are detrimental to the welfare of individuals and communities.

In sum, this research yields several basic conclusions. First, economic distress causes social distress in all types of cities. Table 7.5 depicts these results for the Deindustrialization, Chain, and Direct Effects Models. Specifically, cities that experience high rates of unemployment and family poverty and low median family incomes are also likely to suffer high rates of female-headed families, crime, and household crowding as well as low high school completion rates. Second, deindustrialization is bad for cities. Loss of manufacturing jobs increases economic distress which then increases social distress. Table 7.6 summarizes this effect by city type and year. However, when changes in service-sector employment are taken into account (ie. controlled), deindustrialization does not have a negative impact on social distress in some types of cities. Fourth, growth in service-sector jobs is good for cities. Losses in service-sector employment lead to increased levels of economic distress. This can be easily seen in Table 7.7. Finally, economic restructuring directly affects economic distress, but not social distress. The effect of ER on social distress is through economic distress. A few exceptions exist in which deindustrialization directly affects social distress. However, only one case was noted in which changes in service-sector employment affected social distress. In cities of
the Old South from 1970 to 1980, a loss of service-sector jobs led to an increase in social distress. This provides further evidence that growth in the service sector is beneficial to cities.

**Future Research**

This study represents one facet of the relationship between fundamental economic changes and distress in American cities. The models tested here must be applied to other countries with advanced industrial economies to see if the American experience is unique. Politicians and scholars across the globe are now complaining of the ill effects of deindustrialization and economic restructuring. At the same time, general social indicators demonstrate increased quality of life. Research is required to assess whether economic restructuring has an impact on well-being.

I plan to research the effects of postindustrial dominance on economic and social distress. Specifically, I want to examine the effect of reliance on "good" white-collar jobs—professional, managerial, and FIRE (Finance, Insurance, and Real Estate)—on economic and social distress in cities. I want to assess whether this creates a bifurcated economy that offers high and low paying jobs but few in the middle range or whether it increases the carrying capacity for the whole unit, thereby benefiting all.

I also plan to study the effect of a heritage of reliance on manufacturing on cities’ experiences with economic restructuring. We know that some industrial cities, such as Pittsburgh, have successfully made the transition to the postindustrial economy while others, like Buffalo, have been less so.
Finally, though not of theoretical interest in this study, a central finding of the analyses was the link between percent minority and urban distress. The relationship between percent Hispanic and African American populations was significant and contributed to the prediction of economic and social distress across all models. These populations seem to represent a category of distressed people. Further research is needed to examine the experiences of these groups in different types of cities.
Table 7.1

Summary of Model Results for Effect of Economic Distress on Social Distress, Standardized and (Unstandardized) regression Coefficients

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Table 7.2  

Summary of Model Results for Effect of Deindustrialization on Social Distress, Standardized and (Unstandardized) regression Coefficients

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|       | 1980-1990                                      |
|       | Smaller Rustbelt                               |
|       | Old South                                      |
|       | New Sunbelt                                    |
|       | All Large                                      |
|       | Deindustrialization yes                         |
|       | Yes                                            |
|       | Yes                                            |
|       | No                                             |
|       | Yes                                            |
|       | Yes                                            |
|       | Yes                                            |

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Table 7.7

Does Economic Restructuring Affect Economic Distress?

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Table 7.8
Does Economic Restructuring Affect Social Distress?

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<td>Small</td>
<td>Rustbelt</td>
<td>Old South</td>
<td>New Sunbelt</td>
<td>All</td>
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NOTES

1 Structural employment is the number of workers needed to operate all existing manufacturing establishments with 25 or more employees at full capacity for a single eight-hour shift. Romo and Schwartz conclude that expansion of manufacturing activity in the 1960s and 1970s was due to the intensified use of existing plants and not to an increase in structural employment.

2 The poverty rate for the United States as a whole increased from 12.3 percent in 1975 to 15.0 percent in 1982 while the poverty rate for central cities increased from 15.0 percent to about 20 percent in the same period (Ganz 1985).

3 The rapidly deteriorating fiscal situation in New York City led to an official-declared crisis from 1975 to 1976 (Sassen 1991).

4 This research examines U.S. cities as opposed to metropolitan statistical areas (MSAs). Unlike MSAs, cities are politically autonomous entities that are responsible for economic and social distress within their boundaries. For this reason, media attention has focused on the condition of cities. An examination of the effect of economic restructuring on distress in MSAs might cloud interesting findings as central cities and suburbs may have vastly different experiences with restructuring.

5 The political economy perspective discussed in this research developed in sociology and political science and is distinct from economic political economy.

6 Uneven development refers to the idea that economic restructuring produces unequal outcomes among communities. Negrey and Zickel (1994) created a typology to capture these differences. They categorize the experiences with restructuring among U.S. metropolitan areas into six types: Classical Deindustrializing, Stable Centers in Transition, Innovation Centers, New Service Centers, New Manufacturing Centers, and a nameless category in which the area gained manufacturing employment and lost population.

7 Italics added.

8 In some contexts, this could be considered a destructive phase. Certainly many individuals, families, and communities have suffered from deindustrialization. However, deindustrialization may be a necessary phase in the progression of an advanced industrial society (see Rowthorn and Ramaswamy 1997). For this reason, I choose the term dismantling rather than destructive.
The Sunbelt region encompasses states south of the 37th parallel. The Snowbelt includes states east of the Mississippi River and north of the Mason-Dixon Line. It is also known as the heartland or the Rustbelt.

This includes Illinois, Indiana, Michigan, Ohio and Wisconsin.

The percent of female-headed households is considered by some researchers as a measure of economic distress rather than social distress. In this study, it is included as an indicator of social distress due to its link with social disorganization. However, I ran a factor of economic distress that included family poverty, median family income, unemployment, and female-headed households. The loading of female-headed households was slightly higher on economic distress (.878 for 1980 and .890 for 1990) than on social distress (.810 for 1980 and .868 for 1990). However, I used the percent of female-headed households in the social distress factor for theoretical reasons.

The omega is considered a good all-around measure of reliability while alpha is more conservative and is considered to be a lower bound for reliability.

I incorporated the interaction effect between the change index of manufacturing jobs and the change index of service-sector jobs into the analysis to determine its effect on economic distress. This was done in both the Deindustrialization and Chain Models. Results indicated that the interaction variable did not have a significant impact on economic distress. Furthermore, the resulting model did not fit the data as well as the Deindustrialization and Chain Models that analyzed the manufacturing and service-sector job change variables separately. In response, I present the later two models in this chapter.

I also tested the Chain Model using the ratio of service-sector job change to manufacturing job change as the predictor of economic distress. Results indicated that, in the 1970 to 1980 period, the ratio exerted a significant impact on economic distress such that increases in service jobs relative to manufacturing jobs were associated with increased economic distress. In the 1980 to 1990 period, however, the ratio of job change was not a significant predictor of economic distress. Further research is needed to assess this relationship.
BIBLIOGRAPHY


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APPENDIX
FIGURE 1: Conceptual Model of the Effect of Economic Restructuring on Economic Distress and Social Distress

- Change in Manufacturing Employment V8
- Median Family Income V6
- Unemployment V5
- Educational Efficacy V4
- Crime V2
- Housing Quality V3
- Family Structure V4
- Change in Service-Sector Employment V9
- Poverty

Economic Distress

Social Distress
FIGURE 2: Model of the Effect of Deindustrialization on Economic Distress and Social Distress

Controls:
V10: Population (log)
V11: Percent Minority
V12: Density
FIGURE 3: Model of the Latent Constructs and Indicators of Social Distress, Economic Distress, and Economic Restructuring

- Economic Restructuring
  - Change in Manufacturing Employment
  - Change in Service Sector Employment
- Economic Distress
  - Poverty
  - Median Family Income
  - Educational Efficacy
  - Unemployment
- Social Distress
  - Crime
  - Housing Quality
- Family Structure

Controls
V10: Population (log)
V11: Percent Minority
V12: Density
FIGURE 4: Chain Model of the Effect of Economic Restructuring on Economic Distress and Social Distress

Change in Manufacturing Employment V8

Change in Service-Sector Employment V9

Median Family Income V6

Unemployment V5

Educational Efficacy V1

Crime V2

Housing Quality V3

Family Structure V4

Poverty

Economic Distress

Social Distress

Controls:
V10: Population (log)
V11: Percent Minority
V12: Density
FIGURE 5: Causal Model of the Direct Effects of Manufacturing Job Change, Service Job Change, and Economic Distress on Social Distress

Median Family Income \( V_5 \)

Unemployment \( V_6 \)

Educational Efficacy \( V_1 \)

Crime \( V_2 \)

Family Poverty \( V_7 \)

Change in Manufacturing Employment \( V_9 \)

Change in Service Sector Employment \( V_8 \)

Housing Quality \( V_3 \)

Family Structure \( V_4 \)

Economic Distress

Social Distress

Controls:
\( V_{10} \): Population (log)
\( V_{11} \): Percent Minority
\( V_{12} \): Density