Industrialization, Deindustrialization and Re-Industrialization in a Southern U.S. State: Alabama from 1970-2010

by

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Abstract

Over the last fifty years, the U.S. has transitioned through three periods of manufacturing, (a) “The Industrial Period” from 1945-1979, (b) “Deindustrialization of America from 1980-2000, and (c) “Re-industrialization of America” from 2000-present. Since the late 1960's, the United States began to shift to an economy largely dominated with service and knowledge jobs and reduction of labor-intensive manufacturing. Over the past few decades, the subsequent effects of labor-intensive manufacturing employment decline have been observed in all twenty-one industries that make up the U.S. industrial sector.

This raises many questions. Does the Re-industrialization strategy of the American south make-up for the economic downs (increased unemployment, increase income inequality, increase poverty) of the Deindustrialization period? Many scholars assert that the resurgence of income inequality and growing poverty in some advanced industrialized societies is a direct consequence of growing capital-intensive labor manufacturing. Capital-intensive manufacturing promotes capital profits that stimulate economic wealth for a small percentage of the U.S. population, including the south. This “development” issue seems to be shaping up the political agenda of the upcoming state elections across the south, especially in Alabama.

This study empirically compares the levels of income inequality and poverty during the Industrial Period, Deindustrialization Period and the Re-Industrialization period in State of Alabama, as a case study. While there exists a sizeable amount of literature devoted to assessing the general effects of deindustrialization, research has devoted lesser attention to

comparing the soci-economic effect of the Re-industrialization period compared to the previous two periods. This research will address those oversights, as applied particularly to this one Southern state. Utilizing a panel data set of all 67 Alabama counties during the period of 1970-2010, this study indicates that the new Re-industrialization strategy utilized by Alabama has had, in fact, an minimal impact on the growing poverty and income inequality within its borders.

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List of Abbreviations

GDP	Gross Domestic Product
GINI	Gini Coefficient
OLS	Ordinary Least Squares
FEM	Fixed-Effect Model
REM	Random-Effects Model
GLM	Generalized Linear Model
PVRTY	Poverty
SIPP	Survey of Income and Program Participation
GED	General Education Diploma
SBA	Small Business Administration

Chapter 1: Introduction

Section I: Historical Overview of U.S. Manufacturing and its Economic Effects

The nature of the U.S. economy has changed dramatically from the second half of the 20th century. Industrialization transformation today reflects an advanced technological society that embraces machinery as the premier method of manufacturing production versus massive manual blue-collar labor. Over the last fifty years, the U.S. has transitioned through three periods of manufacturing, "The Industrial Period" from 1945-1979, "Deindustrialization of America from 1980-2000, and "Re-industrialization of America" from 2000-present. The Industrial Period was profitable for corporations and their employees. Each period of American economic composition has a detailed characteristic that's comparable by all means.

Has the U.S. regained its economic vigor after suffering cynical downturns as a response to the Deindustrialization period? Has mass production and mass consumption in the U.S. returned to the dynamic compellation where almost anyone searching for a job could find one? During the third quarter of the 20th century, everyone's wages grew, not just those in the top 1 percent, or the top 10 percent (Reich, 2010). This period produced high employment, good productivity, good consumer demand, less service jobs, low welfare and relatively low unemployment. The prosperity of this period was available to all levels of the American workforce and not limited to private corporate business elites.

My intention in the following pages is to identify whether shifting to capital intensive labor in the 21st century is beneficial to Alabama' local economy. In addition, this assessment will highlight any concerns and benefits of the new methods of production, and how local government should respond as we move forward in the new age of technology.

The Industrial Period (1945-1979)

Overall, WWII was a period of premier industrialization in America. America returned from the war with the emergence of factories, rail lines and growing industrial production. During this period, the U.S. produced more than 80,000 tanks, roughly 2 million trucks, and 300,000 planes. “If it was possible to give the middle class a precise birthday, it has to be June 22, 1944. On this day, Franklin Delano Roosevelt signed the Servicemen’s Readjustment Act of 1944” (Lindsey, 2009, p. 36). Slightly after WWII, U.S. manufacturing production trickled down to mass production of houses new homes, textile and apparel, to meet the consumer demands of a growing middle class.

Moreover, Military personnel returned from the war and increased the demand in the automotive, housing, and production industries. This era gained momentum from previous New Deal federal policies that stimulated economic growth (Hansen 1964). The U.S. governmental response was embodied in new fiscal and monetary policy to support economic stimulation and growth for returning soldiers, who will become a large middle class.

The Truman administration enacted the Employment Act of 1946 (Lindsey 2009). This policy was the combination of the full employment bill of 1945 and new congressional amendments that gave responsibility to the U.S. government for employment gains, price stability and prosperity (Ryan & Schlup, 2006). The Employment Act of 1946 promised full employment, increased production, and increased purchasing power. Arthur F. Burns indicated that, “During the nineteenth century, full employment was a dream of a small band of reformers. Today it is a firmly established objective of public policy, through the greater part of the world, including our own country (Klein, 2006, 170). During this period, national policy supported a large standing military and the growth of a strong middle-class. The U.S. gained an international

reputation for having a strong state that promoted economic growth and equality. “Compared to the turbulent 1930’s, this period must be regarded as one of high stability and growth.” (Hansen, 1964, p. 4)

> “The European war boosted United States exports, and soon the nation itself became involved. Before the second World War was over, nearly half our productive resources had been drawn into the struggle. Unemployment vanished. The country came out of the war rich in monetary assets and monetary savings and desperately short of consumers’ durables, houses, business plant and equipment. This laid the groundwork for a vast postwar prosperity.” (Hansen, 1964, p.4)

In the 1950’s Post-war fears and the possibility of reverting to the Great Depression reset America’s economy to a demand-side economy (Garfinkle, 2006). The post-war era was characterized by relatively equal balance of blue-collar workers and white-collar workers that fulfilled industrial job demands and generated large amounts of revenues for the national economy. Simultaneously, labor unions secured contracts and benefits for their members in the industrial sector and provided general prosperity among all levels of the workforce. In retrospect, the U.S. responded to the changing landscape of the American dream and the increasing population (Bluestone & Harrison, 1982).

During the 1960’s, overall real U.S. economic growth averaged 4.1 percent per year. The national GNP expanded by 50 percent over the decade. This permitted the average family to enjoy one third more spendable income by the beginning of the 1970’s (Bluestone & Harrison, 1982). The wealth established through manufacturing stimulated a growing standard of living among the middle class, providing people with a single home mortgage, stable jobs and

pensions; a dynamic true for all levels of education. The emergence of the affluent middle class came from not only hard work and persistence, but the evolution of economic policies that stimulated the middle class to work hard, save and invest.

Deindustrialization Period (1980-2000)

Until the 1980's, America was on the cutting edge of labor intensive manufacturing employment. The 1980's, however, marked the beginning of the Deindustrialization of America. This period experienced vanishing manufacturing employment, fluctuating productivity gains, lower consumer demands, increasing global competition, more service jobs and an increasing welfare state. By the beginning of the decade, sluggish growth and massive disinvestment in America's manufacturing sector became the common story and reality. The underlying problem emerged around the 1980, when the American middle class started being hit by the double whammy of global competition and labor-replacing technologies (Reich, 2010, p. 6)

As a result of foreign direct investment and global competition, America's share of the world's manufacturing exports had fallen more than 25 percent in the 1970's (Bluestone & Harrison, 1984). Productivity gains and greater profits became the predominating factor for corporations, while employment numbers plummeted. Capital-intensive production was becoming the preeminent method of production in America, while labor-intensive manufacturing was becoming a thing of the past. Many middle class jobs became extinct. The manifest result was stagnant wages for most Americans, increasing job insecurity, and steadily widening inequality (Reich, 2010, p.7)

The Reagan Administration brought a new approach to American economic and trade policy with new opportunities for U.S. corporations to shift manufacturing production efforts

abroad, in a quest for cheap labor and increased profits. In addition, new post-Nixon foreign policy reform opened up new relations with China that began a new phase of U.S. foreign direct investment and global outsourcing. Many U.S. corporations shifted their production efforts to Mexico then China, which furthered reduced the amount of full-time jobs in labor-intensive manufacturing. Next, India became the second home to production facilities of many U.S. corporations. This began to have an effect on the size of the U.S. middle class

> "The idea of a declining middle class America circulated within Washington throughout the remainder of the decade. But as the economy continued to grow after the trough 1982 recession, thanks to a combination of Reagan military spending and unprecedented borrowing by consumers and businesses, it became more and more difficult, and seemingly unnecessary; to consider the idea that America was becoming an increasingly polarized society. After all, inequality historically had always fallen during periods of economic growth, as the unemployed returned to work and selective labor shortages began to appear in one or another corner of the country" (Harrison, 1994, 189-90)

> "From the vantage point of the 1990's, it is hard to find any serious observer who does not agree that inequality is on the rise. The polarization of the jobs that employers are making available to people searching for work is cleaving the whole population, white, black anglo, latino, into highly paid haves and more poorly paid, increasingly insecure have-nots" (Harrison, 1994, 189-90).

The growth of U.S. trade with China in particular has an inverse relationship with U.S. workers and the domestic economy. The U.S. has incurred high levels of foreign debt and trade deficit with China over the past two decades. This growing trend had a major impact on U.S. manufacturing employment. Since 2000, the U.S. and China trade relations has eliminated or displaced 1.9 million manufacturing jobs. All told, the U.S. has lost roughly 4 million jobs to Asia and Latin American countries (Harrison, 1994)

Bluestone and Harrison's (1984) Low Road theory gives a road map and explanation to the new global economy. The Low Road is where managers of corporations try to remain competitive in the global market by cheapening labor costs, thereby increasing profits. They move operations to low wage rural areas or to third world countries. Low Road corporations routinely outsource work that used to be performed in house to independent subcontractors who also did not pay decent wages or give benefits (Harrison, 1994). They attempt to get the last bit of energy out of the older technical equipment, rather than steadily retooling, upgrading and increasing personnel. Low Road Corporations aim for the cheapest price for labor, reduction or elimination of benefits and the greatest financial outcome; with no thought to the negative impact this can have on the quality on tomorrow's deliveries or general consumer demand.

The pursuit of the cheapest labor cost is a weakens the local economy and stagnates the current workforce of our nation. Although the U.S. contains superior intellectual capital, the Low Road further encourages manufacturing job reduction, lessens the American job supply, and consumer demand (Bluestone & Harrison, 1984). Disinvestment of human capital, deindustrialization and unfair tax codes is a recipe for economic disaster (Garfinkle, 2006)

According to Congressional Budget Office (2008), capital-intensive manufacturing, or deindusrialization, has failed to maintain the historical employment numbers compared to the

Industrial Period. During the recession of 2001 and its immediate aftermath, employment in the manufacturing sector fell by about 2.9 million jobs, or 17 percent. Pappas (1989) argued that deindustrialization triggered the reemergence of mass unemployment on a scale unknown since the Great Depression, resulting in particularly severe job loss in certain core industrial sectors. According to the U.S. Bureau of Labor (2008), the U.S. experienced a 59 percent job loss in the textile industry, 55 percent in apparel manufacturing and 47.2 percent in leather and allied products manufacturing over the past two decades.

The long-term effect of deindustrialization is a sharp reduction in the earning potential for low skilled workers. Displaced workers who are fortunate to find new work typically land in low-tier jobs characterized by lower wages, limited benefits, no unions and job insecurity and experience a significant, permanent earnings loss (Fallick, 1996; Pappas, 1989). Low-skilled workers typically experience labor transition difficulties and often become marginalized outliers in the labor force. This reality limits their chances of acquiring similar wages in any sector of the economy.

The textile and apparel, steel, and chemical manufacturing accounted for about half of all manufacturing jobs in the 1950's, employing roughly a half million until the 1990's. Globalization and wage pressures eliminated 9 out of 10 of textile and apparel jobs in the south. Manufacturing traditionally provided higher wages for workers with low-skills and limited educational attainment. Large manufacturing corporations provided good incentives and wages for workers with limited skills and education.

Re-industrialization Period (2000-Present)

The current re-industrialization debate has introduced a new dynamic to global production efforts. Global corporations are returning to parts of America and particularly the south, but this looks quite different from the Industrial Period of America. The new face of manufacturing in America is high-tech robotics and machinery that replaces the need for massive human labor. Although manufacturing is returning, it still remains a small portion of the America workforce. The new re-industrialization period in America has overall less industrial employment, unstable productivity gains, higher unemployment and more welfare dependency than the Industrial Period. By 2007, the richest 1 percent took in 23.5 percent of the total national income. The last time the U.S. income was this concentrated was in 1928 (Reich, 2010).

Manufacturing employment has been drastically reduced to only 9 percent of total employment in the U.S. since the 1960's. The Bureau of Labor defines the manufacturing sector as establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. According to the U.S. Bureau of Labor Statistics (2011), U.S. manufacturing employment fell from 19.6 million in 1979 to 11.8 million in 2011. Manufacturing jobs have declined more over the past two decades than during the Great Depression of the 1930's.

Many economists and government officials argue that this is normal for post-industrial transformation and, on the upside stimulates economic growth, productivity gains and consumption. In their optimistic view, cheap labor and higher productivity gains will lower the cost of products and services, thereby stimulating consumer demands. Many global corporations have used this model to increase production rates and reduce labor cost, but fail to meet the consumer demand and GDP patterns of the Industrial Period (Reich, 2010).

Technology and robotics is the modern way of manufacturing production; however, this model overlooks the obvious correlation of manufacturing job reduction and its multiplier effect. Manufacturing has a larger multiplier effect than any other economic sector. According to the U.S. Bureau of Economic Analysis, every $1 spent in manufacturing generates $1.35 in additional economic activity. Robotics and other technologies reduce labor cost for corporations, but does not ensure an increase in consumer demand for many products.

While it is true, the manufacturing sector continues to generate economic productivity, generating almost 1.9 trillion in Gross Domestic Product (GDP), manufacturing's share of the GDP declined from 15 percent in 2000 to 12 percent in 2011 (U.S. Bureau of Labor, 2012). Manufacturing production has lost the economic stimulator effect of previous decades. As of 2011, manufacturing production has made up only 26 percent of total economic growth in the national economy (US Department of Treasury, 2011). There is question of whether globalization really worked, and can the America economy continue to thrive by producing a greater amount of services on an ever-declining manufacturing foundation (Duesterberg & Preeg, 2003, p. 43). The loss of American manufacturing jobs and lower productivity gains warrants new scientific inquiry and discussion of what effects this has for states and localities on their economic stability and reduction of the welfare state.

> "Manufacturing uses less and less of the economy's resources. Manufacturing's value-added in current dollars was 18.7%of the economy in 1987, 18.4% in 1989, and 15.9% in 2000. The same declining trend is apparent in gross output. Manufacturing gross output in current dollars was 34.6% of the economy in 1973 and rose to 35.4 percent in 1979 before falling to 29.2% in 1989 and 26.4 % in 2000. Gross output in manufacturing is

> projected to continue to lose share over the next decade, falling to 24.9% in 2010." (Duesterberg & Preeg, 2003, p. 44)
>
> "Another indicator of manufacturing's declining use of the economy's resources is the sector's share of labor. In 1987, manufacturing jobs represented 17% of all jobs economy wide. The share of manufacturing jobs fell to 16.4% in 1989, and by the year 2000 manufacturing accounted for only 13.1% of jobs. It is expected that in 2010 only 11.7% of all jobs will be in manufacturing" (Duesterberg & Preeg, 2003, p. 44)

One of the features of the re-industrialization period is the growth of employment in the service sector of the economy. The increasing importance and growth of the service sector is one of the most salient and interesting trends in the current U.S. economy. Over the past few decades, the U.S. service sector has surpassed manufacturing sector in employment numbers (Brady & Wallace, 2001). Many scholars argue that the service sector lacks the robustness to absorb the effects of manufacturing employment decline. Liliens's (1982) sectoral shift thesis maintains that declining sectors of the economy typically cause the reallocation of workers across disparate industries to occur slowly at best.

The Bureau of Labor defines the service sector as occupations that include transportation, communications, electric gas and sanitary services, wholesale trade, retail trade, finance, real estate, and other services. The share of the service sector in value-added growth has increased steadily from 60 percent in 1950 to 80 percent in 2000, and it reflects disproportionate growth in both price and real quantity of services (Buera & Kaboski, 2009).

Section II: Social and Community Effects of Industrialization and Deindustrialization in the U.S. and Alabama

The Industrial period of America was a prosperous time for most Americans. Following WWII, America started experiencing growing urbanization and the emergence of new suburban communities across the U.S. Growing industrial jobs simply provided low-skill and uneducated workers with viable financial assets that helped improve their family life and build communities. This standard of living during post-WWII had become leverage of providing people with a simple home mortgage, a stable job and a secure pension (Bluestone & Harrison, 1982) America became the affluent society with a flourishing middle class during the industrial period social unrest and wars.

The 1960's were the Good Times for America. New public policy stimulated an improved performance record and economic vitality in the U.S. Not only did the improved economic activity of the 1960's provide greater opportunities to the middle class of America, but cut poverty in unprecedented measures through new federal policy that supported a robust workforce and the U.S. private corporations business cycle (Vatter & Walker, 1996). Federal policy transformed the way business was performed and opened the way for continuous growth of U.S. manufacturing production. President John F. Kennedy was the first to adopt an incomes policy in the form of wage-price guideposts developed by the Council of Economic Advisers. The guideposts, flanked by sensible supple-side tax measures to stimulate business investment, by training and retaining programs, and the like, helped maintain a remarkable record of price stability in 1961-65; only 1.2 percent inflation (Vatter & Valker, 1996, p. 284).

For nearly 30 years following WWII, the U.S. middle class wealth increased. The American Dream was being realized and visualized through increased consumer spending, car ownership and home ownership. By the 1960's home ownership rose form 44 percent in 1945 to 62 percent in 1960. During the period of 1950 to 1979, the American middle class experienced the greatest period of wealth creation and general prosperity in the history of the nation" (Lindsey, 2009, p. 37)

This era not only increased the wealth of the rich, new U.S. labor strategies influenced migration for many Americans out of rural areas of poverty to new industrial regions more prosperous. Many rural Americans migrated to newly industrial areas and seized new work in mass production manufacturing plants that paid high wages for low-skill labor. The industrial period not only brought substantial growth, but also provided an avenue for viable families and communities. Not only was the time after WWII a time of prosperity for the middle class, it was also a time of economic advancement for the poor (Lindsey, 2009)

The Deindustrialization era attracted extensive media coverage of plant closings across the U.S. Every newscast seemed to contain a story about a plant closing down, another thousand jobs disappearing from a community, or the frustration of blue- collar worker unable to find jobs providing enough income to support their families. In addition, related businesses like restaurants, clothing stores, industrial suppliers barbershops and many other small businesses vanished from communities (Bluestone & Harrison, 1982; Cowie & Heathcott, 2003). Deindustrialization in America has contributed to a systematic disinvestment in major manufacturing employment and the investment in public utilities to be the infrastructure of manufacturing (Bluestone & Harrison, 1982), while broadening the components of a service and knowledge based economy.

Deindustrialization is a process of systematic social and economic change caused by the intended removal or reduction of industrial capacity or activity in a country or region, especially heavy industry or manufacturing sector (Cairncross, 1982; Lever, 1991). As America's change in its economic structure, away from vintage economic policy of the 1940's-60's, contributed to the undeniable presence of greater social-economic decline.

Deindustrialization produced short-term and long-term socio-economic effects within states and localities. Outsourcing U.S. manufacturing jobs produced noticeable soci-economic effects with communities where production plants once existed (Bluestone & Harrison, 1982; Cowie & Heathcott, 2003). In the short-term, deindustrialization increased the number of unemployed or displaced workers (Fallick, 1996). In the long-term, declining manufacturing contributed greatly to a huge jump in communities littered with poverty, uneven income distribution and crime in these areas.

Over the past few decades, many skills obtained in the manufacturing sector have become obsolete. This has led to a good deal of governmental and soci-psychological problems in such communities (Cowie & Heathcott, 2003). Plant closing is not limited to pure economic effects, but also the dismantling of a community's workforce. Deindustrialization was widely viewed as not just a temporary downturn of the business cycle, but as a pitfall for families and their total well-being. The impact on community networks and institutions wrought by plant closings, and the painful realities of job loss, appear very different for workers and their families on the ground (Cowie & Heathcott, 2003).

Moreover, manufacturing employment decline generates a great deal of hardship for many workers and their communities. Social science literature almost unanimously suggests that high levels of poverty are highly correlated to community decline following plant closings, not to

mention rising domestic violence, high school drop-out rates and declining tax revenues. Communities need the wage and tax base provided by fixed capital investment in large scale manufacturing to support their households, schools, parks, clubs, hospitals, civic and religious institutions (Cowie & Heathcott, 2003). Cumulatively, these trends contributed to what Harrison and Bluestone (1988) call the Great U-turn, a reversal of the long-run pattern of decreasing income equality in the Unites States. The pattern of job losses in the industrial sector and the hardships associated consequently appear to contain a different set of problems compared to other areas of the economy.

> "As industries flee, middle- and upper income families began to migrate elsewhere, taking their tax dollars with them. Capital flight freezes localities mobility and leaves a high collection of debt. Throughout the past half century, capital flight, population loss, and persistent poverty have left deindustrialized cities to face a single constant: an inadequate property base to balance its budget at acceptable levels of taxation. Government lacks the necessary tools to deal with fiscal crisis and the effects of disinvestment. In this case of having too little money, politics matters, and to date deindustrialized communities have yet to be served sufficiently well to assure its long-term recovery" (Cowie and Heathcott, 2003, p. 158).

In Alabama, areas once known for textile and apparel manufacturing continue to experience negative impacts on social and economic factors. "Mills supplied enough steady employment to keep most people in Alexander City, AL out of poverty" (Rosin, 2012). Over the past few decades, Russell Corporation in Tallapoosa County was the largest employer in the area, employing approximately 8,000 people at its height. Currently, the Russell Corporation reduced its workforce to approximately 500 employees. Today, Tallapoosa County struggles

with concentrated poverty among the industrial sector of the workforce. According to the Alabama Department of Labor 2012, Tallapoosa County's current unemployment rate was 10.7 percent; only a few points lower than 13 percent two years prior. The local school system reported a 50 percent increase in free and reduced lunch, indicating increasing poverty and diminishing family support.

> "These permanent job losses can be traumatic for the individuals affected. Numerous studies have documented the psychological and financial costs of displacement and have found that the consequences can be devastating for individuals and communities. Many victims of plant closures and mass layoffs experience prolonged periods of unemployment, and, if they find new jobs, they often accept a dramatic cut in their standard of living. Medical studies have shown that dislocated workers exhibit rates of anomie, depression, alcoholism, and heart disease and suicide that far exceed the rates in the general population. The problems are particularly acute for many older dislocated workers because they have had a stable work history (and consequently have rusty job search skills) and a high-paying job and comfortable life style, which cannot be duplicated" (Howland, 1988, p. 2).

Section III: Re-industrialization in Alabama

Currently, the south has become the new face of the re-industrialization phenomenon in the U.S. According to Dr. Joe Sumners, Economic and Community Development Institute, Auburn University, "some jobs are trickling back now that Alabama is shifting its focus to advanced manufacturing, meaning jobs in industries like automobiles and aeronautics that

require a higher degree of skills and training. But traditional manufacturing is unlikely to play the same role in the economy it once did" (Rosin, 2012).

Alabama has been successful in obtaining several world leading automotive production plants. Over the past decade, global automotive industries such as Mercedes Benz, Honda, and Hyundai located in Alabama. In addition, Alabama successfully recruited Airbus, General Electric Aviation and Remington that has projected to provide thousands of new jobs to the local economy. The new large-scale industry in Alabama is predicted to have a major economic impact at the state and local level. Overall, manufacturing employment in Alabama has grown over 6 percent since 2011. Alabama is a leading example of the re-industrialization in the south.

On the other hand, Alabama's total employment in the manufacturing sector is fairly low compared to two decades earlier, despite the states' ability to recruit new innovative global corporations at its present rate in 2014 from 1990. Since 1990, the number of jobs in the manufacturing sector is down 30 percent. According to the U.S. Department of Labor: Bureau Statistics (2012), Alabama total employment figures show a decline from 362,000 manufacturing jobs to roughly 250,000 jobs. The recent re-industrial success of Alabama may be somewhat misleading because there may be short-run or cyclical changes, and the long-run outcomes of the newly acquired manufacturing sector may not yet be apparent.

The new era of manufacturing has several conditions to consider, as high-tech re-industrialization has become the economic replacement to labor-intensive manufacturing in the U.S. and Alabama in particular. Capital-intensive global production operations are able to offset their cost structure by providing lower labor cost in the U.S. south, where there is less job security or benefits, as compared to other countries or high wage areas in the U.S. This is evident in the growing trend of temporary employment agencies in Alabama and throughout the U.S.

Temporary employment agencies provides countless amounts of low-pay labor to manufacturing companies, in an effort to meet high-tech production needs. Such employment provides unstable employment to workers with various degrees of education and skill. In addition, this trend offset the short-run, medium and long-run benefits of economic growth, i.e, profits, stimulated by new manufacturing, and provide an unfavorable comparison to the manufacturing sector from the previous decades.

Purpose and Significance

A rapidly growing literature in the fields of economics and economic development has examined the relationship between deindustrialization, globalization and real wages in the U.S. This research will take a different approach and investigate a targeted component of manufacturing employment decline over the industrial period, deindustrialization period, and re-industrialization perion

Most studies focus on the immediate effects of once pivotal economic period of manufacturing employment. Recent studies tend to rely on decennial data, which only contains two or even three points in time (Lorence, 1991; Lorence & Nelson 1993). There is a lack of research regarding manufacturing employment as it transitions throughout several economic periods in the U.S. Moreover, much of the research work on industrial decline provides case-by-case scenario of qualitative findings and fail to include a sufficient longitudinal study of the phenomenon over time. This gap in the literature limits the understanding of the long-term socio-economic effects of labor shifts identified by an empirical study. Thus, we only have a vague idea of the effects of manufacturing employment decline are not clearly identified.

In addition, the vast majority of existing studies have examined the effects of deindustrialization during the 1980's. Research by Bluestone and Harrison (1982) studied the effects of deindustrialization during this period, focusing on the economic pitfalls created by this phenomenon. Early research viewed the late 70's and 80's a period of major job loss in America. Bluestone and Harrison (1982) characterized the 1970's, a decade in which they claim 38 million jobs were lost, which is deindustrialization with a vengeance. Thus, research has failed to investigate the continued economic pitfalls of the 90's and the new millennium, a period where America's south is beginning to re-industrialize.

The persistence of scholars to limit their examination of deindustrialization to the midwest and east coast generates more inquiries regarding the temporal and spatial effects of deindustrialization in the south. The southern economy has been known for industrial labor; however, the current dynamics of the southern economy differs noticeably. Over the last decades southern states have been one of the main sites for relocation of high-tech industries for European and Asian corporations. This presence of industry in the southern economy has demonstrated a need to research industrial shifts in the manufacturing sector of the workforce.

While the number of empirical questions that need to be researched on this general area are numerous, this study will limit itself to looking at the impact of the three economic periods from 1970 – 2010 on (1) Poverty levels and (2) Income inequality. This study will provide meaningful insight to manufacturing employment trends in Alabama and it relationship to poverty and income distribution.

Research Questions

This study examined the following two research questions:

Q1. What are the effects of manufacturing employment decline on poverty levels, by county throughout Alabama?

Q2. What are the effects of manufacturing employment decline on income inequality levels, by county throughout Alabama?

H1a: A decline in manufacturing employment will have an increase in income inequality.

H2a: A decline in manufacturing employment will have an increase in levels of poverty.

H3a: An increase in Re-industrialization in utilizing new technology will not have a corresponding decrease in income inequality, by county throughout Alabama.

H4a: An increase in Re-industrialization in utilizing new technology will not have a corresponding decrease in levels of poverty, by county throughout Alabama.

Methodology

A forty- year data set (1970 – 2010) has been created to provide and examination to the above questions This study examines all 67 counties in Alabama.

The abovementioned data set will include employment numbers, poverty rates, median income rates, income per capita rates, gini coefficient and several control variables. All data was derived from the U.S. Census Bureau. The analysis of each variable will provide a detailed examination of the economic impacts of manufacturing jobs in Alabama over time. This study aims to discover any trending topics of economic development and growth in Alabama. In addition, this research aims to provide an empirical analysis of the effects of industrial employment decline and restructuring to the social science literature.

Analysis

A Random-Effects (REM) panel data cross-sectional methodology will be utilized as the primary technique employed to empirically test the research questions in this study. This methodology most efficiently provided unbiased estimations for each research question, while considering non-moving or slow-moving dichotomous variables. Furthermore, this method will accommodate time sensitive data that varies across two dimensions (counties and years) rather than just one dimension. This treatment of the effect is meant to accommodate autocorrelation in its broadest sense, where there are nonzero covariances across counties.

Overview of Chapter

Chapter 1 provides an overview of manufacturing jobs contribution to the local economy and its impact on levels of poverty and income inequality. Chapter 2 provides a detailed examination of the existing literature in a broad context as well as a micro examination of the sub-field literature. Thus, this chapter will identify the gaps in the literature that study aims to fill. Chapter 3 is a contextual explanation of the study's methodology. This chapter describes the data, research methodology, dependent and independent variables and statistical methodology used. Chapter 4 will discuss the findings of the analyses performed using the data collected. This chapter will answer all of the research questions and provide support to the discussions in the last chapter. Chapter 5 discuses the results of the research and provides policy implications for economic and community development. Finally, this chapter discusses the limitations and strengths of this dissertation and provides direction for future areas of research.

Chapter 2: Literature Review

Introduction

The chapter will focus on the practical and theoretical literature and variables utilized for this study. The Literature review will cover several substantive areas of the literature: Deindustrialization In America; Globalization; Manufacturing and Poverty; Manufacturing and Income Inequality; Capital Flight and Community Decline; Knowledge Economy and Income Inequality

The first section of this chapter offers detailed definitions and analysis of deindustrialization in America and its impact on social indicators from a broad perspective. It will explore this concept from a historical context to its contemporary contributions and limitations to the local economy. This section will elaborate on the theoretical underpinnings of this phenomenon and offer meaning empirical results from a vast array of social science literature. Deindustrialization constructs the theoretical basis for economic development research and the vitality for studying manufacturing variation in America.

Section two, Globalization, will explore the literature that investigates the effects of globalization. The reviewed literature will assess previous globalization research findings. Although globalization is a broad contextual term, this study will focus on the impact globalization has on manufacturing employment and its subsequent effects on social indicators like income and poverty.

Section three, Manufacturing and Poverty, will focus on research that highlights the direct causality of poverty that's derived from changes in manufacturing employment. Although causal inference is evident in social science research, the theoretical and empirical studies below will offer a comprehensive overview of the relationship between manufacturing employment and

poverty. This section provides meaningful information regarding the previous studies, variable and methodologies used to examine the effects of each period of manufacturing in America.

Section four, Manufacturing and Income Inequality, provides rich information regarding previous empirical studies, variables and methodologies used to assess the relationship between manufacturing employment and income disparities. Specifically for this study, the examined literature will highlight fading manufacturing employment and its impact on the vanishing middle-class in America. This section describes the increasing income gaps in America and constructs the theoretical basis for said research.

Section I: U.S. Manufacturing Decline and its Economic Effects

Social science research during the "Industrial Period" explaining America's capitalist core is well documented is well document. Clark (1940, 1957) attributed the shift to manufacturing employment as a temporal phenomenon; thus, transitioning to further forms of economic development as per capita income increases. Clark concludes, even when the relative demand for manufactures is increasing, we still generally expect, in the long run, a decreasing proportion of the labor force to be employed therein" (Clark 1957, p.494). During the industrial period in America, manufacturing employment was booming and had little need for scientific inquiry investigating social factors. While the economic analysis in the short term may include relative empirical truths about manufacturing variation and shifts In addition, he argues that technological innovations provides more efficient means of production, which produces a greater economic output. Clark (1957) fails to consider the temporal and spatial effects of manufacturing outsourcing in the long run. In comparison, new technological improvements,

robotics and machinery, replace workers, thus causing a decline in the number or physical labor needed for production.

Daniel Bell (1972) predicted a future American society consumed with service jobs, rising consumption, and compensatory entitlement and wars over taxes. Bell (1973) link shifting global interest with manufacturing firms efficiency gains. This dynamic enables corporations to produce more goods with fewer workers. He asserts that U.S. corporations will global investments will drastically impact a sector of the U.S. workforce and its economic contribution to the local economy. His theoretical approach to the changing dynamics of manufacturing in the 70's created a mass inquiry among economist and social science theorists; thus, manufacturing employment has been the focus of many social scientists since the 1980's, as a derivative of pre-existing literature.

One of the older debates surrounding an unproductive economy concerns the decline of manufacturing employment (Bluestone & Harrison, 1984; Bluestone Harrison & Tilly, 1986; Harrison, 1994). Some Scholars assert that low-labor manufacturing employment decline and U.S. disinvestment lead to unproductive economies that deprive localities of a generous flow of tax revenue (Bluestone & Harrison, 1988). The consequences of deindustrialization can be visibly viewed through the social and economic illnesses that remain in communities following plant closings; however, research still remains unclear on the long-lasting effects (Cowie & Heathcott, 2003). These consequences range from unemployment, poverty, deterioration of the middle-class and loss of tax revenue. Despite the cause of capital mobility and its economic aim, former manufacturing cities in America remain shattered, and plagued by displaced workers and ghost town characteristics (Cowie & Heathcott, 2003; Bluestone & Harrison, 1984; Brady & Wilson, 2001; Harrison, 1988). Some scholars hold to the claim that American corporations

outsourcing was taken to replace expensive low skill labor in affluent democracies (Alderson, 1999; Bluestone & Harrison, 1984; Brady & Wilson, 2001; Harrison, 1988; Ress & Hathcote, 2004; Wood, 1994; Yuasa, 2001). This does not mean that corporate managers are refusing to invest, but advances in technology and globalization shifted corporations' investment interest away from the basic industries of our country in a search for cheap labor in third world countries (Bluestone & Harrison, 1994).

Manufacturing employment changes in America during the deindustrialization period is well documented (Alderson, 1999; Alderson & Nielsen, 2002; Bluestone & Harrison 1982; Brady, 2006; Brady, Beckfield, & Zhao, 2007; Brady & Wallace, 2001; Kollemyer, 2009; Kollemyer, & Pichner, 2013; Sanchez & Green, 2007; Ross & Trachter 1990; Wood 1994; Wood, 1995). Empirical research provides various comprehensive models for the theoretical and practical understanding of its economic impact on industrialized democracies. Underlying the high rates of unemployment, the sluggish growth in the domestic economy, and the failure to successfully compete in the international market is the deindustrialization of America (Bluestone & Harrison, 1984). Controversial as it may be, U.S. manufacturing labor market shifts over the past few decades can be traced to the way capital, in the forms of financial resources and of real plant and equipment has been removed from the core of America's capitalist core (Harrison, 1994) It has been diverted from productive investment in our basic national industries into unproductive speculation, mergers and acquisitions, and foreign investment (Bluestone Harrison, 1984). Essentially, deindustrialization is a process of social and economic change caused by the removal or reduction of industrial capacity or activity in a country or region, especially heavy industry or manufacturing industry (Lever, 1991).

Deindustrialization is a plausible explanation for short-term or long-term unemployment, as well as the investable social consequences thereafter (Alderson, 1999; Alderson & Nielsen, 2002; Bluestone & Harrison 1982; Brady, 2006; Brady, Beckfield, & Zhao, 2007; Brady & Wallace, 2001; Kollemyer, 2009; Kollemyer, & Pichner, 2013; Sanchez & Green, 2007; Ross & Trachter 1990; Wood 1994; Wood, 1995). Deindustrialization has caused a major concern for industrialized economies ability to maintain low levels of unemployment. In twenty-three of the most advanced economies, which include the U.S. and France, employment in manufacturing has declined from 28% in 1970 to about 18% in 2010. In the early 1970's, the average OECD, the Organization for Economic Cooperation and Development, country had over a third of its labor force in manufacturing. Pappas (1989) argues that deindustrialization triggered the reemergence of mass unemployment on a scale unknown since the "Great Depression", resulting in particularly severe job loss in certain core industrial sectors. Manufacturing employment decline left workers unemployed for long periods of time or forced to find lower level employment (Alderson, 1999).

Typical unemployment rates in affluent countries have changed considerably over the latter half of the 20th century. Research supports the claim that globalization was undertaken as a pursuit of less skilled labor in the developing countries, which reduced manufacturing employment in affluent countries. These increases coincided with an unmistakable increase in unemployment and wage disparities that trickle down to long-term negative social outcomes (Alderson, 1999; Bluestone & Harrison, 1988; Wood, 1994). Prior to the post-war era, widespread joblessness was rare in affluent countries. By the 1980's deindustrialization pushed rates higher in most advanced economies globally (Bassanini & Duval, 2006; Bassanini &

Duval, 2009; Lilien, 1984). Consequently, the issue of joblessness in America has become a central feature of economic life (Bluestone & Harrison, 1984; Brady & Wilson, 2001).

During the past 25 years, total manufacturing employment has fallen dramatically in the world's advanced economies; thus, causing a noticeable multiplier effect on the local economy (Rowthorn & Ramaswamy, 1997). Many scholars regard this phenomenon with caution and alarm, and identifies it as a major contribution to rising economic decline in the affluent democracies (Alderson, 1999; Alderson & Nielsen, 2002; Bluestone & Harrison 1982; Brady, 2006; Brady, Beckfield, & Zhao, 2007; Brady & Wallace, 2001; Kollemyer, 2009; Kollemyer, & Pichner, 2013; Sanchez & Green, 2007; Ross & Trachter 1990; Wood 1994; Wood, 1995). The previous scholars suggest that localities should consider not only the manufacturing jobs lost during plant closings but also the greater economic impact felt among relative businesses. "All things being equal, a larger manufacturing sector should have a greater multiplier effect in the local economy and create more jobs and income, and ultimately more demand for services (Sanchez and Green, 2007, p.531-32). Large industry is not only the driving force of the economy, but is the lifeline to the small business conglomerates of the world. The big firms, we are told, have become too inflexible, too rigid, and unable to adjust to the brave new world of heightened global competition, where only the fleet of foot, rather than the strong survives (Bluestone & Harrison, 1994, p. 4). Major corporations still dominate the world economy through revolutionary innovation and their access to international markets (Reich, 2010).

Bluestone and Harrison (1982) support the idea that small innovation originating in small firms and entrepreneurial conglomerates depend solely on the power and force of large corporations. Critics argue that small entrepreneurial conglomerates provide the same revenue, power and economic development contribution to globalization as large businesses. Small

businesses and entrepreneurial firms entire nature is that of a spin off. They are reactionary agents to the increasing demands driven by large corporations within a region. Smaller networks are usually the byproduct of large company splits or shareholder disagreements. The spin-off produces a fast growing organization that lacks comparable intellectual innovation, filled with low-skilled labor, and absence of financial resources needed to make as viable a contribution to the global market as large corporations. The successful lifespan and continuous commercializing of products requires the market and distribution power of large firms (Bluestone & Harrison, 1982).

Harrison and McMillian (2011) investigated the impact on U.S. manufacturing employment and changes in foreign affiliate wages. This research responded to the Deindustrialization of America debate, which asserts that U.S. firms are cutting employment at home and shifting employment abroad. It reported that domestic employment of U.S. multinationals contracted nearly 4 million jobs to offshore corporations, possibly foreshadowing the overall reduction in the U.S. multinational employment that accelerated from 1999 onwards (Harrison & McMillian, 2011). During the examined period, the total number of foreign affiliate's employment increased, while domestic real wages decreased. This evidence supports the deindustrialization thesis within the social science literature. Their results show that domestic and foreign employees are substitutes to U.S. labor, which implies a drop in industrial job demand and a concern for local economies. Bluestone and Harrison (1982) in a similar study found that somewhere between 32 and 38 million jobs were lost during the 1970's as the direct result of disinvestment in American business. They argue that direct investment in the contemporary period is being undertaken as a part of a "globalization gambit".

Plant closings produces inevitable social consequences and economic struggles that affect both individuals and their communities (Russo & Linkon, 2009). Russo and Linkon (2009) suggests that plant closings create long-tern financial difficulties for workers and their families. This phenomenon is not limited to Youngstown, Ohio or Gary, Indiana, the focus of this study, but applicable to all regions that experience significant job losses due to offshoring.

Social science research has investigated how economies respond to shock to individual sectors of the U.S. workforce (Lilien, 1982) The sectorial theory asserts that labor markets respond slowly to incidences where jobs are lost in one specific sector. Traditionally, individual employment sectors are generally limited to specific skills and rarely have broad application and utility. Labor patterns have negative effects on the economic stability supported by an active labor market. Drastic shocks to individual sectors of the economy can affect levels of unemployment and have a greater trickle-down effect on other parts of the local economy. As a result, low-skill blue-collar workers are forced to unfamiliar sectors where previous training is obsolete (Bluestone & Harrison, 1982; Clark & Montjoy, 2001). These economic consequences are immediate and long –term. Deindustrialization often pushes unemployment rates too high levels as a result of transitional challenges (Lilien, 1982) Moreover, unfamiliar industries offer less pay for low-skilled labor or require them to perform more advanced jobs, a task assumed to be fundamentally difficult. The skill transition requirement is often limited because of the educational or monetary requirement.

Rowthorn and Well (1987) investigated Deindustrialization and foreign trade. This study concludes that increases in other sectors of the economy and a decline in share of manufacturing causes consequences and irreparable shocks to the economy. Manufacturing employment decline is a structural disequilibrium in the economy that prevents a nation form reaching its growth

potential or full employment of its resources. A deteriorating manufacturing sector sheds into a stagnating economy where lacking economic resources influences poverty and broadening income inequality that cannot be absorbed by the service sector (Alderson, 1999; Rowthorn & Wells, 1987).

Glyn and Rowthorn (1988) use the "slow market" transitions theory to examine the relationship between labor shifts and unemployment. In theory, workers can move between two sectors of the economy, but in practical terms the process in not and absolute reality. Glyn and Rowthorn (1988) empirically investigate the linkage between manufacturing employment and unemployment. This study utilizes data form 19 OECD countries from 1973 to 1985. They report a negative statistical relationship between changes in manufacturing employment and changes in general unemployment rates across their sample. They assert that a rapid decline in industrial employment may create a pool of long-term employed that is not easily removed when jobs are created elsewhere. The members of this pool may be isolated from the central core of the labor market and have little effect on wage bargaining (Glyn & Rowthorn, p.197, 1988)

Kollmeyer (2009) in a recent study analyzes why the world's most economically advanced countries have deindustrialized over the last few decades. This study empirically investigates the causes and ramifications of deindustrialization. Kollmeyer (2009) gives an account of the consequences of deindustrialization through empirical examination of three factors driving the mass manufacturing decline in OECD countries: (1)Rising consumer affluence and its propensity to increase demand for services more than for manufactured goods, (2) faster productivity growth in the manufacturing sector relative to other sectors, and (3) expanding trade linkages between the North and the South of the global economy, which makes offshoring attractive.

Kollmeyer (2009) utilizes a panel data set to empirically test whether globalization likely promotes deindustrialization directly and the negative consequences thereafter. This study simultaneously tests all three explanations for deindustrialization against the actual experiences of 18 OECD countries from 1970 to 2003. The results suggest that globalization has altered the relationship between productivity growth and manufacturing employment in the United States. Thus, firms are able to reduce their labor forces by seizing cheaper global opportunities. Moreover, the practice of outsourcing could account for many of the negative social consequences in the economy. Kellmeyer (2009) insinuates that relocation has real consequences for the affected employees and their long-term economic stability. Particularly for less-skilled workers, jobs in the service sector typically provide less financial resources and job stability compared to the manufacturing sector. Despite its complex causes, the long-term decline of manufacturing employment has undoubtedly forced myriads of formerly blue-collar workers into the service sector, an outcome that raises questions about whether such massive reallocation of labor could occur without pushing unemployment rates and social factors to high proportions (Kollmeyer, 2009; Kollmeyer & Pichler, 2013).

Section II: Globalization

One of the oldest debates in the social sciences surrounds the economic consequences or ramifications of globalization. Some argue that globalization produces negative social consequences to affluent democracies (Alderson, 1999; Anderson, 2001; Brady& Denniston, 2006; Clark & Montjoy, 2001; Rowthorn & Wells, 1987). Proponents argue that globalization has a relatively small impact on manufacturing employment. Several scholars refute the claim

that globalization drives job loss, poverty and uneven income distribution, but provides a broader platform for global economic equality (Bhgwati, 2007; Korpi & Palme, 2003).

As a response to global competition, the U.S. has witnessed tumultuous changes in the way U.S. corporations do business and the U.S. workforce. The effects in turn have undoubtedly unleashed a broader social and political change (Clark & Montjoy, 2001). Previous research identifies technology, rising worker productivity, and economic development patterns as major influences of deindustrialization (Alderson, 1999; Anderson, 2001; Rowthorn and Wells, 1987). The stated work provides evidence that globalization is actually happening.

Relative literature proposes that there is a curvilinear relationship between globalization and manufacturing (Brady & Denniston, 2006). Consequently, this downturn cycle has not produced advanced economic opportunities for local economies, but produced fundamental economic changes that threatened job security, wages and economic well-being of blue-collar workers (Brady & Denniston, 2006, Clark & Montjoy, 2001). The aforementioned increased the saliency of the globalization debate and its contribution to further economic awareness and concern.

Previous research has examined whether globalization has triggered negative consequences for the welfare state (Alderson, 2004). Critics of globalization view it as an economic hindrance to the governments' ability to reduce the expansion of the welfare state. The very idea of globalization raises the concern for rising inequality and poverty that are by no means easy to resolve (Iversen and Cussack, 2000). Globalization produces volatility and uncertainty, while governments respond by expanding social policies to stabilize the economic security of their citizens and politically appease them (Brady, Beckfield & Zhao, 2007, p. 318).

New welfare state research provides a different perspective to globalization and the welfare state (Korpi & Palme, 2003). Analysts note that the welfare state has not experienced noticeable declines as a response to globalization. More specifically, the welfare state expansions in advanced economies are a response to aging populations, constituencies of beneficiaries and political inertia (Bhgwati, 2007). These proponents view globalization as a positive reinforcement to productivity gains derived from new forms of capital-investments (Bhagwati, 2007). Several scholars found that technology, rising worker productivity, and economic development strategies had a greater impact on vanishing manufacturing employment than globalization (Alderson, 1999; Rowthorn & Wells, 1987). Bhagwati (2007) takes a different theoretical approach to globalization. He counteracts the critics of globalization though a comprehensive theoretical examination of its impact on children, women, the poor, democracy, labor rights, the environment and culture. Bhagwati implies that the best solution for poverty and income inequality is integration into the global economy. Bhagwati examines the links between globalization and poverty, child labor, the status of women, democracy, cultural diversity, wages and labor.

Bhagwati (2007) central thesis asserts that globalization stimulates economic growth and growth reduces poverty. The scientific analysis of the effect of trade and poverty is even more compelling. It has centered on a two–step argument: that trade enhances growth, and that growth reduces poverty (Bhagwati, 2007, p. 53). His study asserts that capital restructuring is a positive action for humanity. As a response to the critics of globalization, Bhagwati compelling argument shows how the economic concerns of globalization are often the opposite. Growing economies focus should extend beyond having the incomes of the poor grow. Growing incomes will have little economic impact on the recipient if their access to financial markets is limited, which

extends their probability of borrowing and investment. It is not always true that growth will pull up the poor into gainful employment. Even though growth opens the doors, the traction in the legs of the poor may not be enough to carry them through these doors (Bhagwati, 2007, p. 57).

> "We were also aware that growth had to be differentiated. Some types of growth would help the poor more than others. For instance, as argued more fully below, an outward trade orientation helped the Far Eastern economies in the postwar years to export labor-intensive goods; this added to employment and reduced poverty rapidly. In India, the emphasis on autarky and on capital-intensive projects reduced both growth rates and increase in the demand for labor, so the impact on poverty was minimal." (Bhagwati, 2007, p. 54-55)

There has been a growing concern over the impact of globalization and its ability to sustain high living standards (Krugman & Venables, 1995). Krugman and Venables (1995), investigates the core relationship between real national income loss and globalization. This research empirically evaluates their theory of globalization and its direct correlation to world markets. They assert that the most dramatic feature of the developed landscape was the failure of development efforts to narrow the North-South trade gap, while the most striking feature twenty years later is the contrast between the rapid growth of East Asian economies and the economic troubles of the advanced nations (Krugman &Venables, 1995). Globalization may particularly hurt certain groups but will normally raise the overall real income of every nation. Globalization may be a concern for areas where companies migrated from, but an overall incentive for the

global economy. They assert that global competition creates an even playing field for the developing world that was historically littered with poverty.

The integration of world markets usually produces winners in the global economy (Friedman, 2008). One of the negative effects of globalization is the growing income gap between the haves and have-nots. In context, Freidman defines this comportment, as winner takes all. The winners are doing well in the global economy, while those with marginal to no skills are performing poorly in the new global transformation. The global economy continues to experience branding gaps and disproportionate shares of income. Freidman uses this theoretical application to explain growing disparities of income on all levels.

A decline in manufacturing total employment has a significant negative impact in the demand for low skilled vs. high-skilled employment. Manufacturing's share of employment follows a curvilinear, inverted U-shaped path over the course of development. Alderson (1999) employs a pooled time series dataset of 18 OECD nations from 1968-1992 that investigates the direct effects of capital fight. The results link deindustrialization to the outflow of direct investment and its significant impact on manufacturing total employment. This study argues that a decline in manufacturing total employment has a significant negative impact on the demand for low skilled vs. high skilled employment (Alderson, 1999).

Today, communities are experiencing significant job losses due to offshoring as globalization makes it easier for companies to hire well trained but less expensive workers elsewhere (Sanachez & Green, 2007). Expanding global markets was undertaken partly to replace domestic manufacturing and pursue less-skilled labor in developing countries, thus reducing manufacturing employment in affluent democracies (Brady, Beckfield & Zhao, 2006).

Industrialized democracies economic structure is comprised of a service sector economy, littered with advanced skilled labor and high intellectual employment.

For the past century, America has been on the forefront of economic development and industrialized advancement. However, non-western nations have taken a bigger position in the competition for economic development, as a response to advanced technology and improvements in transportation. Communities' inability to compete in the global market places undue hardships on the local economy and its citizens (Iversen & Cussack, 2001). The availability of software and essential technological tool has been the defining element of global competition. In this new society, millions of people could compete and collaborate more equally, more horizontally and with cheaper and more readily available tools. However, the main challenge to America today is from those practicing extreme capitalism, namely China, India and South Korea (Friedman, 2008). Recently, China and India has become the leader in low-cost manufacturing. China's large population gives them a global advantage and a prime market for industrial dominance. It is legendary for providing its customers with the lowest cost possible. China has used technology, managerial innovation, and perhaps most significantly, low-cost manufacturers (Zakaria, 2010, p. 104). Like-wise, India contains an essential component to economic development. The most striking characteristic of India today is its human capital, a vast and growing population of entrepreneurs, managers, and business savvy individuals (Zakaria, 2010).

Eastern countries are taking advantage of technology and the prominent nature of the ambition gap, education gap and numbers gap in America. Technological change and globalization created a global market for top executive talent and superstars (Atkinson, 2005). Economic development in America has become competitive and has established the nature of complexity. Moreover, broadening income gaps is a result of shifts in the relative demand for

skilled labor across industries and countries, as a response to trade reforms implemented in many less-developed economies during the 1980s and 1990s (Atkinson 2005; Pavcnik, Blom, Goldeberg, Schady, 2004; Piketty, and Saez, 2011).

Section III: U.S. Manufacturing Decline and its Social and Community Effects

Poverty

High rates of joblessness in local labor markets are the most important determinant of poverty (Wilson, 87, et. al). Research shows that poverty is linked to the decline of manufacturing employment and the rise of service employment, suggesting some temporal variability in the impact of economic restructuring on poverty (Bluestone & Harrison, 1982; Brady, 2009; Jargowsky & Bane, 1991;Wilson, et. al. 1987; Wilson & Brady, 2001). Jargowsky and Bane (1991) found that the greatest increases in ghetto poverty occurred mostly in northern deindustrialized cities, while the cities with the largest decline in ghetto poor have experience manufacturing growth. Inner city residence of less-skilled workers drives urban poverty (Blank, 1997). Several scholars argue that industrial restructuring and spatial mismatches between job creation and low-skilled workers drives rates of poverty to proportionate measures (Brady, 2009; Bluestone & Harrison, 1982; Wilson, et.al 1987; Wilson & Brady, 2001). As a response, increasing service sector employment reduces median earning and places industrial workers at an economic disadvantage compared to other parts of the workforce (Lorence, 1991; Sanchez & Green, 2007). Inner city residence of less-skilled workers drives urban poverty (Wilson, et. al. 1987).

Just three decades ago, good paying manufacturing jobs that once provided a living wage for thousands have vanished, replaced by mostly unstable, low-paying service sector jobs, jobs in the underground economy, or no jobs at all (Brady, 2009). A weak labor force, the shift from goods-producing to service-producing industries, the increasing polarization of the labor market into low-wage and high-wage sectors, innovations in technology, the relocation of manufacturing industries and periodic recessions have forced up the rate of black joblessness (Wilson, 2012). The less skilled poor are especially vulnerable to the effects of deindustrialization because manufacturing provides secure, well-paid jobs (Bluestone & Harrison, 1982). Their research viewed traditional manufacturing as the median to economic prosperity for blue-collar workers and its dismissal as the trigger for negative spatial effects. Cities with labor transitions experience a rise in poverty concentrations, poor single-mother-families and an increase in welfare dependency.

"Industrial Restructuring" threatens the sustainability of democratic civic cultures that support even wealth distribution. Cynthia M. Duncan (2000) asserts that civic cultures play a large role in the determination of citizens and economic opportunities for all citizens. Duncan (2000) suggests that government should take a stronger role in education that is the pre-determinant a stable workforce.

"Industrial Restructuring" and structural shifts measured by the availability and distribution of industrial job opportunities powerfully contributed to the rise of jobless poverty in inner-city neighborhoods (Wilson, 1996). He maintains that negative economic changes are the primary explanation for the disadvantaged and impoverished. Communities with concentrated poverty have been especially hit hard by the economic restructuring of a manufacturing based economy to low-wage service sector. The economic transformation in the US over the past few

decades contains fewer high-quality jobs for blue-collar workers with limited skills and education. Labor restructuring leads to concentrated poverty that produces a continuous down spiral of community resources and financial stability (Duncan, 2000). The deterioration of community structures further perpetuates these factors and contributes to long-tern poverty. In essence, jobs and educational resources are depleted due to a lack of financial support; thus, the workforce and future generation is limited in their mobility. Individuals in poor communities reside in a financially deficit place that lacks the proper resources for economic prosperity. Poor communities are often defunded institutions and experience improprieties in other critical resources, therefore, citizens are unprepared for life in a larger technological society (Cowie & Heathcott, 2003).

Jobless environments create communities littered with negative social values prevalent such as poverty and crime (Wilson, 1997). The immobile worker lacks resources to contribute to the economy and is left behind in neighborhoods with concentrated poverty and physical deterioration (Wilson, 87, et. al.). The economic restructuring of America is in part a response to capital mobility and flexibility that produced the age of globalization (Sugrue, 1996). Sugrue (1996) counters the neoclassical assumption that workers can move as capital moves without financial concerns. According to Marx's theory of declining industrial profit, technological innovation enables mobility and flexibility between markets, resulting in greater productivity and capitalist value. This trend has been observed in modern advanced economies.

The spatial mismatch in society explains the visibility of the truly disadvantaged, ghetto poverty and the jobless poor (Brady, 2009). Social scientists developed structural theory to investigate the causality of poverty. Structural theory contends that macro-level labor market and demographic conditions put people at risk of poverty, and cross-sectional and temporal

differences in these structural factors account for variation in market factors (Brady, 2009) Geographic areas affected by structural changes are concentrated with poverty. Brady (2009) found that manufacturing provides well-paid jobs, thus the less skilled workers are more vulnerable to the consequences of plant closings. Brady (2009) asserts that deindustrialization of affluent democracies contributed to comparative historical variation in poverty.

Income Inequality

Long-term structural shifts in economic and demographic relationships are likely causes of income inequality. Research shows that wage gaps between high- and low-wage industries has widened since the 1970's (Freeman, 1986; Katz & Murphy, 1990). Since that period, the US labor market is characterized by uneven regional development (Bluestone & Harrison, 1982), international wage competition, and growing inequality in domestic labor incomes (Bluestone, Harrison & Tilly, 1986).

Uneven economic development is perhaps best reflected in place-to-place differentials in industrial structure that contribute to spatial inequality in wages, unemployment, and underemployment (Freidman & Lichter, 1998). Income inequality between most groups has worsened over the past few decades. Previous research has examined the relationship between capital flight, global competition and uneven distributions of income between wages and profits (Alderson, 1999; Alderson & Nielsen 2002; Chevan & Stokes, 2000; Dadush, Dervis, Milsom & Stancil, 2012; Sanchez & Green, 2007).

Previous empirical studies highlight the relationship between wage consequences and manufacturing employment decline (Alderson, 1999; Alderson & Nielsen 2002; Atif, Srivastav, Sauytbekova, & Arachchige, 2013; Chevan & Stokes, 2000; Sanchez & Green, 2007). "Capital

Flight" or the overflow of direct investment from the advanced industrial countries has generated higher levels of income inequality by accelerating deindustrialization, a factor whose effect on income distribution is well documented in the empirical literature (Alderson, 1999; Alderson & Nielsen 2002; Atif, Srivastav, Sauytbekova & Arachchige, 2013; Chevan & Stokes, 2000; Sanchez & Green, 2007). Previous economic studies state that foreign completion, especially from low-wage countries, greatly increases the incentives to innovate and adopt labor saving machinery, which does profoundly affect the job prospects of unskilled workers. Thus, industrial relocation and technology have a joint effect on wages (Dadush, Dervis, Milsom & Stancil, 2012). While there is difficulty in disentangling the entire explanation for income inequality, uneven wage distribution as a response to globalization and a post-industrial economy is identified as a viable explanation for uneven income distribution across industrialized democracies. Bluestone and Harrison (1982) contend that American workers since the 1970's have been increasingly exposed to low wage global competition that changed the way jobs and wages are constructed in the U.S.

Most OECD countries have seen growing income inequality over the past few decades. The U.S. experienced a marked increase in income and wealth inequality as the old economy exhausted itself of traditional low-skilled manufacturing employment since the 1980's. Therefore, industrialized countries have developed a technology induced manufacturing sector that requires both an increased demand for higher skilled jobs and reduced demand for middle skilled jobs. Bluestone and Harrison (1988) argued that low-skilled manufacturing employment was essential in equalizing income distributions and providing historically unprecedented levels of affluence for ordinary workers. A booming industrial sector with high levels of employment means high wages and positive incentives for the middle class of America.

Manufacturing employment was a ladder into the middle class for immigrant and rural populations in the earlier decades of the twentieth century, and for racial and ethnic minorities more recently. In contrast, Deindustrialization was the largest cause of dramatic rise in income inequality, declining middle class, and displaced low-skilled workers (Chevan & Stokes, 2000). Wilson (1996) contends that declining manufacturing employment opportunities, historically seen in America, is at the very center of the account for inner city decline and wealth disparities. The pattern is quite clear: changes in manufacturing employment exert multiple effects on income ethnic minorities.

A decline in manufacturing employment contributed to growing female family headship that compromise family income stability and equality. The role of women, deindustrialization and the role of labor market institutions in mediating the various pressures for growing inequality that have emerged in the last few decades (Alderson & Nielsen, 2002). Alderson and Nielsen (2002) suggest that female participation in the labor force has contributed to increases in income inequality by inflating the bottom of the earning distribution.

General Interest in patterns of inequality has grown, due to the winners and loosers concept within and between nations (Korzeniewicz & Moran, 2005). Korzeniewicz and Moran (2005) study provides a theoretical framework for exploring and assessing the relationship between growing income inequality and economic growth. The authors Draws from the U-turn theory work of Simon Kuznets (1955) and Bluestone and Harrison (1982). The U-turn theory states that income inequality was most likely to rise as countries begin industrial shifts and respond to globalization. The conceptualization of Kuznets theory is widely used in the social sciences to assess social cost when economic shifts arise. However, observers have noted that some basic assumptions of the hypothesis appear to be invalidated by the combination of

economic growth and relative equity in East Asia and by the resurgence of inequality in key high-income areas (Korzeniewicz & Moran, 2005). Critics suggest that this theoretical perspective lacks support for explaining income distribution levels in rural or poor areas. Mid-twentieth century immigration constraints accentuated competitive pressures in the global market, where most recent cross-nation and longitudinal data imply the contrary.

Over time, growing income disparities between nations have generated strong incentives for outsourcing skilled and unskilled jobs to peripheral countries that in effect overcomes twentieth-century constraints on labor flows (Korzeniewicz & Moran, 2005). Korzeniewicz and Moran (2005) argue a broader alternative position, that economic growth has a significant impact on inequality because such growth entails important compositional effects in the distribution of populations. This new theoretical proposition avows that space and time is the inevitable factor in level income distribution in all nations. The fundamental components of this theory depends on mobilization and migration of blue-collar workers as a response to plant closings

Previous research argues that the growing low-level service sector is not comparable to the traditional manufacturing sectors ability to provide adequate wage levels for middle class vitality (Alderson & Nielsen, 2002; Brady & Wilosn, 2001; Chevan & Stokes, 2000; Lilien, 1984) Economic inequality in society is growing partly by a shifting labor market, industrial restructuring and shifting populations (Chevan & Stokes, 2000). Shifts to the labor market are reliant on unequal sector comparison; therefore, unsure comparable means are available to the portion of the labor force with limited education and skill. Following deindustrialization and growing globalization, the dispersion of wages had a substantial impact on increasing poverty and income inequality in all OECD countries, not surprisingly that poverty and inequality tend to move in unison (Dadush, Dervis, Milsom & Stancil, 2012). Deletion of traditional low-skill

manufacturing fester conditions that limits the ability of low-income individuals to develop skills, abilities, knowledge and habits necessary to fully participate in the labor force, a normative approach to manufacturing variation (Dadush, Dervis, Milsom & Stancil, 2012).

The severity of income inequality has a connection to limited god jobs, intense competition for jobs and a decline in manufacturing jobs for workers with low-skill and education. The recent experience of some industrial societies suggests a radical reversal in income inequality as development happens (Alderson & Nielsen, 2002). Alderson and Nielsen (2002) suggests that traditional manufacturing employment positively influenced individual income and job stability, and has a direct effect on local employment levels, earnings, and income distribution (Friedman & Lichter 1998; Green & Sanchez, 2007; Lorence & Nelson,1993).

There are both substantive and methodological reasons for considering the spatial effects of manufacturing employment decline. Green and Sanchez (2007) found that manufacturing has a significant effect on underemployment and low-earnings for traditional manufacturing employment. Manufacturing employment can affect labor market conditions in nearby locations through labor market standards and competition. This effect is present in income hardship, where manufacturing seems to be able to reduce the percentage of working poor beyond its location. Consequently, the working poor continue to remain unemployed or underemployed. The status of the working poor warrants continuous expansion of the welfare state, as it supports the compelling interest with citizens that hare in the cracks of poverty. Sanchez and Green (2007) findings suggest that it is important to take into consideration the spatial effects of manufacturing employment variation.

Manufacturing Employment and Community Decline

Manufacturing employment reduction in the U.S. and is subsequent impact on communities is well documented (Alderson, 1999; Alderson, 2001; Bluestone & Harrison, 1982, 1984, Bluestone, Harrison, & Tilly, 1988; Brady & Wallace 2001; Grant & Wallace, 1994; Sanchez & Green, 2007). Industrial regions across the US, formerly the routing source of American manufacturing, have been the birthplace of industrial wasteland and community ruins (Grant & Wallace, 1994). Plant closings in a single industry can ripple throughout the local economy, threatening other businesses, weakening the tax base, and undermining the quality of essential services (Bluestone, 1982). Several regions in the U.S. have become the carrying industrial centers that serve as reminders of the economic stability during the industrial period (Bensman & Lynch, 1987). Numerous accounts have documented the impact of plant closing and other aspects of deindustrialization on communities in the Rust Belt region of the US (Bluestone & Harrison, 1982, Bluestone & Harrison, 1984; Brady & Wallace, 2001; Cowie & Heathcott, 2003; Reich, 2010; Staudohar & Brown, 1987).

Capital investment has been insufficient to maintain basic industry or mitigate the apparent abandonment of entire communities (Harrison, 1994). Capital mobility allows corporations to strategically play one group of workers against another, which can conclude to a vigorous competition for survival within communities (Cowie & Heathcott, 2003; Florida, 2011). The ripple effect of manufacturing impacted workers in connected industries, suppliers, and seemingly unrelated industries. Rising unemployment means that the remaining jobs are in high demand, which drives down wages and heightened job insecurity (Cowie & Heathcott, 2003; Florida, 2011).

Deindustrialization has negatively impacted families' income and way of living, which displayed an obvious trickle-down effect on community decline (Staudohar & Brown, 1987). Families who fall victim to brief periods of lost earnings are frequently able to sustain their standards of living through unemployment insurance and savings. Unfortunately for the victims of plant closings, the consequences are often much more severe, ranging from a total depletion of savings to mortgage foreclosures and reliance on public welfare (Staudohar & Brown, 1987). Family loses include deprivation of valuable assets as wells as total income. Bluestone and Harrison (1988) asserts that plant closing consequences experience didn't die out with the depression, but remains to be a contemporary concern for communities following plant closings or employment reduction. Plant closings do not directly address the question of unemployment caused by deindustrialization per se, but layoffs cause severe "social trauma" that eradicates a community's core.

There are many social and economic costs to manufacturing employment decline (Bluestone and Harrison, 1982). The economic cost of manufacturing decline often affects all aspects of the local economy, even in regions where manufacturing is not the core sector. Whether caused by offshoring, outsourcing, new production methods, technological change or privatization, and deindustrialization create economic struggles that affect both individuals and their communities (Youngstown State University Center for Working-Class Studies Report, 2009). This study concluded that deindustrialization harms workers and communities not only by eliminating existing jobs but also by undermining the quality of jobs that remain. Harrison (1994) suggests that small business entrepreneurship is a byproduct of the power and source of large corporations and their demand for services. Lower quality jobs often produce inevitable

social and economic costs to communities. Declining communities with plant closing often experience lower tax revenues and decreases in property value.

U.S. manufacturing over the last fifty years has transformed to the increasing use of advanced automation processes or the transfer to low-wage territories. Cowie and Heathcott (2003) examine the range of responses from local, state and federal government bodies meant to cope with hardships caused by industrial change. They contend that government lacked the necessary tools to deal with fiscal crisis and the effects of disinvestment.

Deindustrialization often leads to long-term social challenges, both immediately and after deindustrialization (Alderson, 1999; Bluestone & Harrison, 1982; Brady 2006; Brady & Wilson, 2001; Sanchez & Green, 2007; Staudohar & Brown, 1987). Extreme social costs are prevalent in communities that rely primarily on one or two key industries. Deindustrialization is not limited to financial decline, but also includes the elimination of the communities' workforce. Social capital is a fundament component of a successful community and an important resource for the attraction of industry to the locality (Putnam, 2003). Social capital is not only people's relationships with each other, but includes the workplace dynamics. Loss of a major industry ripples through the community, affecting other businesses, leading to home foreclosures and increases in crime and reducing the tax base that allows cities to respond to problems like abandoned houses and rising crime rates (Cowie and Heathcott, 2003.) The cost of disinvestment goes well beyond lost wages and foregone productivity. Workers and their families suffer serious physical and emotional health problems when their employers suddenly shut down operations and the community as a whole experiences a loss of revenue needed for supporting police and fire protection, schools and parks (Bluestone and Harrison, 1982, p.11).

The New Knowledge Economy and Income Inequality

The leading edge of the economy in developed countries has become driven by technologies based on knowledge, information production and dissemination (Atkinson, 2005). Emergence of technological innovation has shifted the way production and corporations invest and approach the modern business cycle. U.S. industries have formulated strategies and business models that utilize modern automation processes, which seemingly eliminate the need for more human capital. Many employers are substituting technology for people. New technologies, which emerged in the late 1950's, expanded with the proliferation of personal computers, and then surged dramatically with the widespread use of email and the internet-have considerable potential to remake the nature of the economy (Atkinson, 2005). Technological advancements have changed the global context of business, essentially making the world flat (Druker, 2006; Friedman, 2005). The utilization of knowledge has changed the way businesses hire. Contemporary businesses employ professionals with knowledge-based skills, away from the traditional low-skill manufacturing of the industrial period.

A challenge for local economies is the increasing dependence on knowledge production. Many employers are substituting technology for employees (The Economist: The Great Mismatch, 2011). The increase in the education premium has often been explained by skilled-biased technological change. Knowledge based economies introduce a new complexity to the global workforce. Educational attainment and skills among the workforce must advance at the same pace as technological innovation (Atkinson, 2005). A greater demand for mid-skill labor requires a larger educated labor pool, while low-skilled labor is made obsolete by technology, which decreases the need for less-educated workers (Clark & Montjoy, 2001; Atkinson, 2005). The focus on increasing skilled labor, despite the poor numbers in educational attainment,

creates an emergency case for policy intervention. David Autor, an economist at the Massachusetts Institute of Technology, refers to this transition as the "hollowing out" of middle-grade job, resulting in the "bipolarisation" of the labor market between good jobs and commoditized ones in America and many other rich countries.

Previous research documented the transition underway in advanced industrial nations from an economy based on natural resources and physical inputs to one based on intellectual assets (Hudson, 2006). Globalization and technological innovation are bringing about long-term changes in the world economy and altering the structure of the labor market. As a result, unemployment is likely to remain high in the rich economies even as it falls in poor ones (The Economist: The Great Mismatch, 2011). Rising tension is increasing among middle –class workers who relied on manufacturing employment that dwindled away over the past few decades.

Those thrown out of a job or threatened by the loss of employment may find that the skills they have acquired are not easily transferable to other parts of the economy where employment may be expanding namely, the service and knowledge sector (Alderson, 1999; Iversen & Cusack, 2000). The industrial sector, blue-collar workers, usually encompasses individuals with minimal education. For many, finding comparable work is almost impossible following displacement. Even when employment is available, a job outside one of the traditional sectors often entails a significant loss in income as well as deprivation, at least in part, of pension rights, medical insurance, and other work-related benefits (Esping-Anderson, 1999). New employment usually generates permanent earnings loss (Fallick, 1996). Most advanced industrialized nations will eventually undercut blue-collar workers as they move to a postindustrial economy dominated by intellectualism and services, where productivity gains

come slower than in manufacturing. Increasing number of displaced workers limits the functionality of the economic system's capacity to absorb dislocated workers into other areas of the economy (Bluestone, 1988). As one scholar notes, loss of employment in the traditional sectors entails complete removal from the active labor force (Blossfield, 1993).

Social science research demonstrates that permanently displaced workers and the long-term unemployment faced in the manufacturing labor market (Arulampalam, Gregg, & Gregory 2001; Couch & Placzek, 2010; Jacobson, LaLonde, & Sullivan 2003). Workers displaced from long-term jobs in the early 1980s recession faced large earnings declines upon re-employment and still had 20 percent earning losses at 15 to 20 years after displacement (Von Wachter, Song, & Manchester 2009). Displaced workers in the new economy find career transition impossible because of the intellectual skills require for knowledge employment.

Summary

This literature review reveals the substantial advances of U.S. labor market transitions and its impact on social and economic factors. The comprehensive, interdisciplinary literature provided the reader with and understanding of the potentially profound impact of manufacturing production increasing disinvestment in human capital. This review discussed the pertinent social science literature that specifically highlights capital mobility, labor shifts and globalization's impact on levels of poverty and income inequality. For example, deindustrialization (single plant closings) outlined the immediate impacts of manufacturing variation and warranted an inquiry for the long-term ramifications of plant relocation. Also, Globalization (global industrial competition) outlined immediate and long-term concerns for local governments to remain competitive and ensure a comprehensive workforce. Lastly Knowledge Economy (intellectual

occupations) addressed labor transitions in developed countries based on technology innovation, intellectual knowledge and information production and dissemination. Ultimately, investigation of these factors will provide recommendations for state and local government and provide a catalyst for equal income distribution in the local economy.

A Majority of the literature examined support the notion that declining manufacturing employment has a negative effect on the local economy, which is viewed by rising levels of poverty and income inequality. However, some authors refute the idea of an economy dominated by traditional labor-intensive manufacturing, but conclude that such transitions isolate the low-skill portion of the workforce. These authors suggest transitional policies that require the current and future generations to pursue higher forms of education and skills. The following models in chapter 3 will address the gaps in the previously examined literature and provided meaning additions by answering the following questions: (1) What are the effects of manufacturing job loss on poverty levels, by county throughout Alabama? (2) What are the effects of manufacturing job loss on income inequality, by county throughout Alabama?

Chapter 3: Methods and Research Design

This chapter provides an overview of the research questions, variables, research models, data collection and analysis in this study. The organization of this chapter is as follows: 1) a summary of the literature that leads to the research questions and hypotheses of this dissertation 2) data collection 3) variables and research models utilized to test each research hypothesis 4) statistical methodology used to analyze the data.

Literature Summary

The current literature across several social science disciplines have examined the explanations for manufacturing employment and its impact on social factors such as poverty and income inequality (Bluestone and Harriosn, 1982; Brady, 2009; Freeman, 1986; Jargowsky & Bane, 1991; Katz & Murphy, 1990; Wilson, et. al.; Wilson and Brady, 2001). Although this phenomenon has been examined since the early 80's, this study aims to examine the spatial and temporal effects of manufacturing variation over several decades. This chapter provides an overview of key literature previously discussed in chapter 2 and how it helped develop the research questions, data, variables and research models of this dissertation. Moreover, this study develops a research strategy that empirically tests the causal relationship between manufacturing employment, poverty, income inequality and various control factors. Thus, recommendations for new economic development policies can evolve that offer theoretical and practical support to local governments and communities.

Chapter 2 provided a comprehensive overview of the existing literature on manufacturing employment in America over the past 40 years and its effect on social factors

such as poverty and income. The literature discussed this subject, highlighting specific time periods, offering useful economic development recommendations and ideas for future research. In addition, the literature investigated deindustrialization and its immediate impact on social factors and welfare state expansion.

Methods Literature Summary

As discussed in the previous chapter, the correlation between manufacturing employment and the welfare state is well documented (Aldersen, 1999; Alderson & Nielsen, 2002; Bluestone & Harrison 1982; Brady, 2006; Brady & Wallace, 2001; Brady, Beckfield, & Zhao, 2007; Kollemyer, 2009; Kollemyer, & Pichner, 2013; Ross & Trachter 1990; Sanchez & Green, 2007; Wood, 1994; Wood, 1995). U.S manufacturing employment has made several transitions over the past 40 years. Although research has addressed the relationship between manufacturing job loss, poverty and income inequality, studies have fell to utilize robust regression models to investigate the phenomenon over decades. In addition, previous studies have neglected to investigate the phenomenon's impact at the local level. This study aims to fill those gaps in the literature and provide a useful model to study manufacturing employment's economic and social impact at the local level, as America moves to re-industrialization and investment in it manufacturing core.

Looking at the methodology and research models of related studies, we can conclude that they were constructed with several limitations. There are several reasons that previous studies lack a comprehensive model that includes labor shifts and its long-term impact on social factors. Previous scholars focused their attention on causes of deindustrialization (Bluestone & Harrison, 1982; Brady & Wilson, 2001; Staudohar & Brown, 1987) Globalization (Alderson, 1999;

Alderson & Neilsen, 2001) and the mere macro-level dynamics of national labor market shifts (Sanchez & Green, 2007; Kolleymer, 2009). Economic development happens at the local level. Although state governments play a significant role in tax structures and initial investments made during economic development efforts, the financial and social benefits or losses are felt at the local level. Only a few studies looked at these effects at the local level (Brady & Wilson, 2001; Sanchez & Green, 2007). Other research investigated the national scope of globalization and plant relocation, specifically focusing on national policies such as trade and national exports (Harrison & McMillian, 2011).

Previous research only includes one social factor that is influenced by labor transitions, whether caused by globalization or deindustrialization. Alderson (1999) and Alderson and Neilsen (2001) focused on income inequality at the national level. Although this study provides a comprehensive model that addresses income inequality, its limitations generalizes its findings to nation governments. Specifically, previous studies primarily focus on the impact of global firms, plant closings and globalization on national wealth and income distribution. Since then, the American south is reindustrializing with new global manufacturing enterprises. Economic development happens at the local level; thus, findings generalizable to local government efforts are useful to the successful policy development that will make U.S. states more competitive in the global market.

Previous literature has linked poverty as one of the consequences of labor shifts and plant closings (Brady & Wilson, 2001). Studies that measured poverty stressed a lack of data and pure measure of poverty. Brady and Wilson (2001) model measured the impact of declining total employment within various sectors of the manufacturing sector. However, their analysis utilized the percentage of women and children on welfare, Aid to Families with Dependent Children

(AFDC) and Temporary Assistance for Needy Families (TANF) recipients, as their poverty indicator. Brady and Wilson (2001) based their assumption on male the natural family structure assumption. However, this major assumption leaves a major concern for the true relationship concluded in this study.

The percentage of the labor force in manufacturing has played a significant role in national, state and local economies globally. In the US, the manufacturing sector has provided noteworthy economic shocks to the economy over the past 60 years (Alderson, 1999; Alderson & Nielsen, 2002; Atif et. al., 2012; Brady & Wallace, 2001; Iversen & Cusack, 2000; Kollmeyer, 2009; Korzeniewicz & Moran, 2005; Sanchez & Green, 2007).

Income inequality has been utilized throughout the deindustrialization and globalization literature (Alderson, 1999; Alderson & Nielsen, 2002; Bluestone & Harrison 1982; Brady, 2006; Brady, Beckfield, & Zhao, 2007; Brady & Wallace, 2001; Kollemyer, 2009; Kollemyer, & Pichner, 2013; Ross & Trachter 1990; Sanchez & Green, 2007; Wood, 1994, Wood, 1995). Although it can be found in many forms, all research point to the direct impact manufacturing has on global income distribution. Whether they measure income inequality by median income levels or the gini coefficient, they all share a common argument. Although they provide two different theoretical conceptualizations for the measurement of income distribution, research shows both variables suggesting uneven income distribution within nations due to changes in manufacturing employment.

Research Models

Drawing on pertinent extant studies, this study utilizes a panel research design model to observe the correlation between deindustrialization, demographic and socio-economic factors. This study will use the following model to measure the impact of manufacturing employment on poverty and income inequality levels:

Impact of Manufacturing Variation = f (manufacturing decline, demographic, socio-economic)

To assess the various explanations for manufacturing employment decline against empirical evidence, this research model contains a data set of Census year observations of all 67 counties in Alabama from 1970-2010. Although this study has not been done at the county level, previous studies offer an acceptable model for this study (Alderson, 1999; Brady & Denniston, 2006; Kollemyer, 2009; Kollemyer, & Pichner, 2013).

Modeling with Panel Data

This study utilizes panel data analysis to investigate the correlation between manufacturing employment, poverty and income inequality. This technique is appropriate for the analysis in this study because it provides a means of quantitatively examining historical processes over a period of time. This statistical approach is inspired by several other political science and sociology research that investigates deindustrialization, globalization and its effects on poverty and socio-economic factors in communities (Brady & Wallace, 2001; Kollmeyer & Pichler, 2013).

Panel data analysis used in this study is the same methodology utilized in similar studies (Alderson, 1999; Brady & Denniston, 2006; Kollymeyer, 2009). The use of panel data, can

enhance the power of statistical models, since each variable now varies across two dimensions (counties and years) rather than just one dimension (Kollemeyer, 2009; Kollemyer & Pichner, 2013; Wilson & Butler, 2007). In addition, panel data in this research possess statistical complications that must be adhered to. Structurally and statistically, the use of panel data produces, standard OLS regression techniques, addresses biased and inefficient parameter estimates and inaccurate standard errors. Thus, this model will utilize the fixed-effects or random-effects statistical procedure to address heteroskadisticity and heterokadsticity bias.

Heterogenity bias and homoscedasticity can seriously affect OLS coefficient estimation techniques and provide and inaccurate model for observing the causal relationships observed. The Fixed-effects model and Random-effects models are two commonly used estimation techniques for correcting unmeasured time-invariant factors (Beck and Katz, 1995). There are several theoretical reasons to consider in selecting the appropriate model for this study. First, the FEM model in most cases will reveal unit homogeneity. Under OLS, all counties are constrained to the same intercept. The FEM model displays each county variable as individual specific intercepts. This approach better captures changes over-time, rather across counties, because it infuses unmeasured time-invariant county specific effects that address heterogeneity bias. The FEM model statistical procedure takes the following term:

--- $y_{it=} \boldsymbol{X'}_{it}\boldsymbol{\beta} + \alpha_i + \varepsilon_{it}$

The REM model treats county specifics as a random component of the random-error, rather than county-specific effects as fixed effects to be estimated. The REM model statistical procedure takes the following form:

--- $y_{it=} \boldsymbol{X'}_{it}\boldsymbol{\beta} + \alpha + u_i + \varepsilon_{it}$

Research Questions

This study empirically examines the following two research questions

Q1. What are the effects of manufacturing employment decline on poverty levels, by county throughout Alabama?

Q2. What are the effects of manufacturing employment decline on income inequality levels, by county throughout Alabama?

H1a: A decline in manufacturing employment will have an increase in levels of poverty.

H2a: A decline in manufacturing employment will have an increase in levels of income inequality.

H3a: An increase in Re-industrialization in utilizing new technology will not have a corresponding decrease in income inequality, by county throughout Alabama.

H4a: An increase in Re-industrialization in utilizing new technology will not have a corresponding decrease in levels of poverty, by county throughout Alabama.

Data Sources

For the purpose of this study, a forty-year data set (from 1970 to 2010) has been created. All data was collected from the US Census Bureau.

Government Agency data is preferred since they are primarily audited for error. Reliable and valid data is essential to any empirical study. Government reports provide rich and useful information for the dependent and independent variables of this study. First, Agency data categorize each respective data set as seasonally adjusted or non-seasonally adjusted calculations. Second, they include all necessary information related to total employment levels, which constitute several of the independent variable of this study. Third, Agency data is used to gather income inequality measures (*gini*) and poverty levels (*pvrty*), which contribute to the observation of the key dependent variables in this research.

Dependent Variables

This study uses two dependent variables to examine the causal relationship between manufacturing job reduction on social factors (poverty and income inequality). First, poverty is employed to test the effect of manufacturing employment job reduction on declining wealth. Second, Income inequality is employed to test the effect of manufacturing employment job reduction on uneven income distribution. These variables were selected from previous studies that inferred a negative relationship between Deindustrialization and social factors in the local economy and communities (Bluestone & Harrison, 1982; Cowie & Heathcott, 2003). Thus, Poverty (Pvty), income inequality (Gini) are critical in this study and its findings.

The dependent variable, *poverty,* measures the percentage of a county's population classified as living below the poverty line established by the U.S. Census. Annual poverty rates from the Current Population Survey and the decennial census long form are based on income reported at an annual figure. In the Survey of Income and Program Participation (SIPP), income is reported a few months at a time, several times a year. Therefore, in the SIPP, annual poverty rates are calculated using the sum of family income over the year divided by the sum of poverty thresholds that can change from month to month if one's family composition changes (U.S. Census Bureau). Rising levels of this variable indicate declining levels of manufacturing employment. Figures are drawn from the U.S. Census Bureau database, which compiles national, state, and local data on the latest population data and economic indicators.

Data for the dependent variable, *Gini coefficient of income inequality*, measures the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. The Gini ratio (or index of income concentration) is a statistical measure of income equality ranging from 0 to 1. A measure of 1 indicates perfect inequality; i.e., one person has all the income and rest have none. A measure of 0 indicates perfect equality; i.e., all people have equal shares of income (U.S. Census Bureau) The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. This variable is utilized in this study to test the relationship between inequality and declining manufacturing employment in Alabama counties.

Independent Variables

Previous research on manufacturing employment has reported that the plant closings and the variation in manufacturing employment typology create significant outcomes that affect levels of poverty and income inequality for localities and communities (Bluestone and Harrison,1984; Brady & Wallace, 2001; Kollmeyer, 2011; Staudohar & Brown, 1987). Bluestone and Harrison (1984) indicated that poverty and community decline is inevitable as a result of the changing landscape of America's core manufacturing sector.

The first explanatory variable, *manufacturing employment,* measures a county's percentage of the workforce employed in the manufacturing sector. Declining levels for this explanatory variable indicates rising levels of poverty and income inequality. Manufacturing employment figures are derived from the U.S. Census Bureau database, which compiles employment data within each sector of the U.S. labor force.

The second explanatory variables, *per capita income*, measures a county's per capita income. This variable equals all sources of income in the aggregate, gross domestic product (GDP), divided by total population within a county. This data is derived from the U.S. Census Bureau database.

The next explanatory variable, *retail sales,* measures the sales of retail goods over a stated time period, typically based on extrapolated county data. Retail Sales data is drawn from the U.S. Census Bureau state and county quick facts. Retail sales is watched by both economist and investors. It gives a timely indicator of economic activity. Retail sales is considered a vital pre-inflationary indicator that is derived from Federal Reserve records. This data is utilized in this study to observe individual expenditure rates in each county.

The next explanatory variable, *total population*, measures the total population within each Alabama county. The estimated population is calculated using a component of change model that incorporates information on natural increase (births, deaths) and net migration (net domestic migration, net international migration) that has occurred in an area since the latest decennial census (U.S. Census Bureau) Total population is derived form the U.S. Census state and county quick facts. This variable is utilized in this study to examine the effects shifting populations have on poverty and income inequality within each county.

The next explanatory variable, *percent of government employees*, measure the amount percentage of government employees within each Alabama County. This measure provides an economic indicator for prosperity and growth. According to the World Bank Organization, government size is a derivative of taxes and enterprises in the economy. Thus, government size could affect socio-economic factors in cities and localities. Specifically, this study investigates the percentage of employees in the following 1) Federal Military 2) Federal Civilian Employees 3) State and Local Government Employees

There are several control variables used in this research. These variables are race, gender and education. These variables were created to observe the relationship between the independent variables and each respective control group. This study utilizes education, race and gender constant. First, education level measures the highest level of education attainment. Second, race indicates race distribution across Alabama counties based on the U.S. census categories of race. Third, gender indicates gender distribution across counties in Alabama.

Several dichotomous variables were created for this research. Each variable was utilized to account for other economic, temporal and spatial effects that could have an impact on the explanatory variables. First, a “Black Belt” (blkblt) was created to account for the economic

effects of Alabama black belt counties. In Alabama black belt counties, more than half of the population is black, poor, less educated and unemployed more than other regions of the state. Traditionally, Alabama counties Barbour, Bullock, Butler, Choctaw, Crenshaw, Dallas, Greene, Hale, Lowndes, Macon, Marengo, Montgomery, Perry, Pike, Russell, Sumter, Wilcox were included in the region. According to the U.S. Census, these counties All 17 Alabama black belt counties were coded "1", and otherwise "0".

"Interstate Access" was created to account for the effects of major interstate highway access. The presence or absence of an interstate highway can improve economic performance counties and localities (Ambros & Pol, 1988). The absence of interstate highway access represents one sort of constraint on economic performance within counties. This indicator variable is defined as a county that has a major interstate highway, each coded "1" if the characteristic applies to that case, and otherwise "0".

"Rural" was created to account for the economic effects associated with rural counties. The U.S. Census defines rural as all population, housing, and territory not included within an urban area. The Census Bureau defines urban areas as populations of 50,000 or more people. Thus, the following Alabama counties are listed as rural: Barbour, Bullock, Butler, Chambers, Cherokee, Choctaw, Clarke, Clay, Cleburne, Coffee, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Escambia, Fayette, Franklin, Greene, Jackson, Macon, Marengo, Marion, Marshall, Monroe, Perry, Pike, Randolph, Sumter, Talladega, Tallapoosa, Washington, Wilcox, and Winston. Rural counties are limited in the production, distribution, trade, consumption of limited goods and services across its geographical boarders. Rural economic dynamics could have an inverted effect on soci-economic factors. Thus, this research will account for rural counties and its influence on shifting levels of poverty and income inequality.

Research Models and Variables

The various factors identified in the hypotheses develop the model displayed below in Table 3.1. This model shows seven factors that influences levels of poverty and income inequality in Alabama counties. There are seven independent variables, three dichotomous variables and two dependent variables. Drawing on previous studies, this research uses similar organizational, social and economic factors used by previous scholars. However, the following models focus on the relationship between income inequality, poverty and the previously stated social and economic factors.

To examine the effects of manufacturing employment on levels of income inequality in Alabama counties the following model is utilized:

(1) $y_{ginicoe_{it}} = X_{manuemppc_{it}}\beta_1 + X_{fcgemppc_{it}}\beta_2 + X_{fmgemppc_{it}}\beta_3 + X_{slgemppc_{it}}\beta_4 + X_{tpinccur_{it}}\beta_5 + X_{tpop_{it}}\beta_6 + X_{rsphouse}\beta_7 + X_{blackpct_{it}}\beta_8 + X_{malepct_{it}}\beta_9 + X_{lsthsedu_{it}}\beta_{10} + X_{rural}\beta_{11} + X_{blackbelt_{it}}\beta_{12} + X_{interstate_{it}}\beta_{13} + \alpha + u_i + \varepsilon_{it}$

To examine the effects of manufacturing employment on levels of poverty in Alabama counties the following model is utilized:

(2) $y_{povline_{it}} = X_{manuemppc_{it}}\beta_1 + X_{fcgemppc_{it}}\beta_2 + X_{fmgemppc_{it}}\beta_3 + X_{slgemppc_{it}}\beta_4 + X_{tpinccur_{it}}\beta_5 + X_{tpop_{it}}\beta_6 + X_{rsphouse}\beta_7 + X_{blackpct_{it}}\beta_8 + X_{malepct_{it}}\beta_9 + X_{lsthsedu_{it}}\beta_{10} + X_{rural}\beta_{11} + X_{blackbelt_{it}}\beta_{12} + X_{interstate_{it}}\beta_{13} + \alpha + u_i + \varepsilon_{it}$

Table 3.1
Variables, Definitions, and Sources

Variables	Definitions	Sources
Povline	Total population in poverty	US Census Bureau
Ginicoe	Gini Coefficient Measure	US Census Bureau
Black_pc	Percent of Black population	US Census Bureau
Male_pc	Percent of Male population	US Census Bureau
Tpop	Total population	US Census Bureau
Manuemp	Total number of the population with manufacturing jobs (Thousands of Jobs)	US Census Bureau
Rtearn	Retail Earnings (Millions of US $)	US Census Bureau
Govtemp	Percent of government employees	US Census Bureau
Tpinc	Total Personal Income per Capita	US Census Bureau
Lthsedu	Number of Persons over Age 25 with only a High School Education (In Thousands)	US Census Bureau

Table 3.1 (Continued)
Variables, Definitions, and Sources

Variables	Definitions	Sources
Metro_1970	Dummy for Metropolitan County coded 1, others 0	US Census Bureau
Metro_1980	Dummy for Metropolitan County coded 1, others 0	US Census Bureau
Metro_1990	Dummy for Metropolitan County coded 1, others 0	US Census Bureau
Metro_2000	Dummy for Metropolitan County coded 1, others 0	US Census Bureau
Metro_2010	Dummy for Metropolitan County coded 1, others 0	US Census Bureau
Interstate_1970	Dummy for County with Interstate access coded 1, others 0	US Census Bureau
Interstate_1980	Dummy for County with Interstate access coded 1, others 0	US Census Bureau
Interstate_1990	Dummy for County with Interstate access coded 1, others 0	US Census Bureau
Interstate_2000	Dummy for County with Interstate access coded 1, others 0	US Census Bureau
Interstate_2010	Dummy for County with Interstate access coded 1, others 0	US Census Bureau
Blackbelt	Dummy for Blackbelt county coded 1, others 0	US Census Bureau

Statistical Estimations

To examine the impact of manufacturing employment on poverty and income inequality, a panel data set ranging from 1970-2010 for all Alabama counties has been developed. The resulting panel data contain a maximum of 335 separate observations (n = 67; t = 5). A variety of methods can be utilized to test statistical relationships, however, technique selection is critical for data over time. The statistical methodology used is derived from previous studies that used the same variables to examine similar questions (Alderson, 1999; Brady & Denniston, 2006; Kollymeyer, 2009). This research will take into consideration several statistical concerns associated with time sensitive data.

First, the Hausman test ($\chi 2 = -25.08$) indicated that the random effects model (REM) would be the best model for this study. In addition the REM model is most appropriate model to accommodate variance concerns and multicolinarity among the dicatomous variables created. Theoretically, The REM is most sufficient to the effects of slow moving or stationary dichotomous variables. Second, test for serial correlation was invalid in this case because of theoretical limitation associated with panel data over time. Third, the White's test indicated that this model did not suffer for heteroskedasticity.

Autocorrelation is very common in economic studies. As a response, specific regression techniques are required to account inefficient estimates associated with autocorrelation. The regression model in the generalized model may be consistent, but the conventional estimator of its asymptotic variance is likely to underestimate the true variance of the estimator (Greene, 2010, p. 350). Thus, a robust estimation technique, (REM) is useful in correcting common effects that can lead to serious interference errors. Thus, statistical models appropriate for

durations (Box-Steffensmeier & De Boef, 2006; Box-Steffensmeier & Jones, 2004), panels of time series (Beck & Katz, 1995; Beck, Katz, & Tucker, 1998) is critical. This treatment of the effect is meant to accommodate autocorrelation in its broadest sense, where there is non-zero covariance across counties. Boef & Keele (2008) recommends classes of estimators to ensure that the dynamic model is consistent with the empirical properties of the data. This approach will provide a detailed and structured model that provides accurate estimates considering such statistical issues.

Summary

This chapter provided a complete overview of the research questions, hypotheses, variables, data collection and statistical analysis. To examine the effect of manufacturing employment on socio-economic factor, the chosen methodology was selected for both theoretical and practical reasons. The aim of this statistical analysis is to determine the impact of industrial restructuring in the southern economy and to test if the effects are consistent with previous research findings. Thus, this research utilized panel data cross-sectional design models, REM as the primary model, GLM, and FEM to test each research question. This background information provides a clear pattern of methodology for future research, duplication or critique. The following chapter reports a series of descriptive statistics and the finding from each model used.

Chapter 4: Results

This study examines the relationship between manufacturing employment in all 67 Alabama counties over the past four decades, specifically its impact on poverty and income inequality. The actual data collected ranges from 1970 to 2010 in five-year increments. This chapter reports the finding of this study and provides statistical evidence of the patterns established overt time.

Alabama is among states associated with the Re-industrialization of America. This study's aim was to capture the socio-economic effects of industrial transitions over the past several decades. Table 4.1 reports the percentage of manufacturing employment in the workforce in each respective decade during the time-period examined in this study.

Following that, Table 4.2 provides summary statistics of all dependent and independent variable used in this research including the arithmetic means, standard deviation, and minimum and maximum values. The dependent variable used in this study includes poverty (*pvrty*) and income inequality (*gini*) expressed as percentages. The independent variables in this study include population characteristics, government characteristics, economic and social factors and demographics.

Tables 4.3 and 4.4, reports the regression results of this study. To examine the effects of manufacturing employment, a forty- year data set (1970 – 2010) has been created. A Random-Effects Model (REM) was used as the primary statistical method used in this study. In addition, the Fixed-Effects model (FEM) and Generalized Linear Model (GLM) was used to theoretically accommodate for statistical limitations in the data. Although data over time is subject to spatial correlation and autocorrelation, the amount of data points in this study is not

sufficient enough to accurately utilize sophisticated post-estimation test. Few variable points in time don't demonstrate enough variance over time to get accurate post-estimate results. Thus, each regression technique is utilized to overcome any issues of spacial correlation, autocorrelation, or heterodskicity and compare the outcome of the causal relationship between manufacturing employment, poverty and income inequality.

Overview of Manufacturing Employment

Table 4.1 identifies the number percentage of the total workforce employed in the manufacturing sector from 1970-2010. The data indicated an overall decline in the percentage of manufacturing employment in the total workforce across counties in Alabama during the period of 1970-2010. This data displayed a clear pattern of industrial shifts identified by previous social science literature.

Table 4.1
Percentage of Manufacturing Employment in Alabama, 1970-2010

	1970	1980	1990	2000	2010
Autauga, Al	21.33	21.78	18.79	12.99	6.38
Baldwin, Al	15.22	13.38	12.59	8.42	4.48
Barbour, Al	18.88	22.26	26.26	31.57	24.11
Bibb, Al	32.24	28.07	22.20	12.31	6.14
Blount, Al	20.46	20.23	20.78	16.50	8.80
Bullock, Al	18.79	24.28	23.11	25.77	22.03
Butler, Al	28.83	29.63	25	15.97	9.10
Calhoun, Al	24.36	17.91	17.31	16.50	9.78
Chambers, Al	54.75	50.18	42.54	34.02	7.84
Cherokee, Al	14.07	24.11	18.93	14.71	12.28
Chilton, Al	13.47	14.31	14.78	11.47	9.70
Choctaw, Al	47.07	40.99	41.32	31.17	23.52
Clarke, Al	30.47	23.78	21.43	18.42	13.62
Clay, Al	30.69	38.36	43.57	39.44	25.27
Cleburne, Al	32.61	31.47	25.85	24.55	10.28
Coffee, Al	22.10	23.81	22.34	17.03	14.91
Colbert, Al	34.70	30.13	20.51	15.29	13.06
Conecuh, Al	18.13	16.34	18.27	14.30	8.24
Coosa, Al	23.95	34.96	38.50	38.72	26.29
Covington, Al	31.28	27.37	25.27	17.49	11.163
Crenshaw, Al	16.25	21.55	21.74	7.98	13.35
Cullman, Al	25.12	25.22	19.93	17.57	11.037
Dale, Al	17.62	16.72	17.68	20.21	19.31
Dallas, Al	16.92	24.09	24.68	23.59	16.24
De Kalb, Al	21.03	33.60	38.09	36.69	19.88
Elmore, Al	12.19	12.75	13.40	14.26	8.67
Escambia, Al	25.58	22.38	23.56	19.80	11.41
Etowah, Al	29.84	27.91	21.37	15.52	9.81
Fayette, Al	34.16	37.74	35.25	24.19	12.76

Table 4.1 (Continued)
Percentage of Manufacturing Employment in Alabama, 1970-2010

	1970	1980	1990	2000	2010
Franklin, Al	22.98	25.64	23.62	31.08	25.13
Geneva, Al	16.83	17.18	19.06	9.37	9.48
Greene, Al	6.90	5.43	9.08	9.69	13.28
Hale, Al	15.48	12.72	21.25	22.52	12.07
Henry, Al	19.74	25.05	28.83	24.011	6.85
Houston, Al	18.69	19.15	17.61	11.80	7.43
Jackson, Al	25.36	24.99	28.90	29.40	19.27
Jefferson, Al	20.08	14.20	9.48	7.77	5.37
Lamar, Al	33.34	39.48	39.54	30.98	13.20
Lauderdale, Al	13.06	13.92	18.10	15.62	7.34
Lawrence, Al	12.17	23.23	19.84	16.27	10.72
Lee, Al	24.75	23	18.06	11.47	8.48
Limestone, Al	10.86	21.76	23.27	19.93	8.48
Lowndes, Al	13.47	15.54	17.76	16.14	21.62
Macon, Al	5.12	3.12	2.73	1.79	3.26
Madison, Al	13.62	22.17	21.41	16.25	10.19
Marengo, Al	19.30	19.32	23.54	23.86	16.60
Marion, Al	47.07	45.70	39.48	34.92	21.78
Marshall, Al	27.88	31.44	32.77	30.22	22.90
Mobile, Al	17.96	15.17	12.64	9.56	6.43
Monroe, Al	29.60	36.18	31.23	30.22	18.14
Montgomery, Al	9.45	9.79	8.76	7.57	7.13
Morgan, Al	30.21	27.38	23.69	22.16	17.88
Perry, Al	16.05	12.05	19.07	15.95	11.28
Pickens, Al	27.69	23.08	18.98	15.13	11.19
Pike, Al	15.81	19.12	20.11	15.43	13.63

Table 4.1 (Continued)
Percentages of Manufacturing Employment in Alabama, 1970-2010

	1970	1980	1990	2000	2010
Randolph, Al	34.63	31.57	26.39	25.59	14.34
Russell, Al	17.20	21.28	19.99	22.72	16.68
Shelby, Al	25.40	21.06	18.33	12.63	5.26
St. Clair, Al	20.74	21.84	15.48	12.99	7.65
Sumter, Al	15.88	20.43	18.82	13.37	8.37
Talladega, Al	36.74	31.24	25.16	24.11	22.35
Tallapoosa, Al	48.17	50.20	44.67	31.90	14.73
Tuscaloosa, Al	19.09	14.07	12.59	13.50	11.23
Walker, Al	17.66	12.74	11.59	6.70	5.63
Washington, Al	41.89	37.71	32.23	27.72	19.17
Wilcox, Al	27.81	32.36	26.90	20.95	14.04
Winston, Al	50.13	43.34	38.99	39.31	25.02

Table 4.2 reports the descriptive statistics for each dependent and independent variable used in this study. The sample included census year data for all 67 Alabama counties during the period of 1970-2010. According to Table 4.2, Alabama counties displays and an average income inequality measure of .43 and average 11,400 individuals living below the poverty line during the examined period. For the key explanatory variable, manufacturing employment varied across Alabama counties from 1.80 to 54.76 percent with a standard deviation of 9.94. The descriptive results indicate a decline in manufacturing employment in Alabama since 1970.

Table 4.2
Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min.	Max.
Gini Coefficient	335	.4143018	.41665	.3375	.533
Poverty	335	11362.68	15996.07	1701	119976
Manufacturing Employment	335	20.91548	9.935764	1.797626	54.75854
Federal Civilian Government Employment	335	2.031891	3.535414	.340095	24.37255
Federal Military Government Employment	335	2.532628	3.501151	.733133	46.42227
State and Local Government Employment	335	13.34912	3.645531	4.248905	24.83462
Total Population	335	61.61629	95.58757	8.987	670.614
Per Capita Income	335	14731.42	10127.02	1778	43076
Retail Sales	335	19166.06	7718.214	3261	49615
Black Population	335	28.18657	21.47699	0	85.27157
Male Population	335	48.35197	1.292412	45.49622	56.22268
No High School Diploma	335	.4195074	.1650532	.085498	.741977
Some College	335	.1671102	.0833525	.029849	.35045
Rural Counties	335	.5522388	.4980075	0	1
Black Belt Counties	335	.2089552	.4071705	0	1
Interstate Access	335	.4328358	.4962096	0	1

Tables 4.3 and 4.4 show the results or three regression models utilized to test the effects of manufacturing employment on levels of income inequality and poverty across Alabama counties. In Models 1 and 2, display statistical estimations using the Random-Effect (REM) technique. In addition, the REM model doesn't statistically accommodate issues of spatial correlation, autocorrelation, and heteroscedasticity. Thus, Model 3 and 4 display statistical estimations using the Fixed-Effect technique, and Model 5 and 6 utilize the Generalized Linear Model (GLM) technique to accommodate for those statistical concerns. As anticipated, the coefficients for the main explanatory variable are consistently statistically significant, and they exhibit the expected signs.

One of the main research variables, manufacturing employment deserves special attention here. Table 4.3 reveals that manufacturing employment has a significant association with uneven income distribution in Alabama. The manufacturing coefficient becomes negative in all regression techniques used. The pattern of change indicates that the relationship between these two variables follow a linear path, in which disproportionately increases in manufacturing employment causes a decrease in income inequality across Alabama counties. Counties with incremental changes in manufacturing employment tend to spur uneven income distribution.

The findings clearly infer that manufacturing employment has a moderate impact on income inequality levels. The specifics of this relationship are observed in the beta coefficients of each model utilized. Expressed in absolute terms, the beta coefficient for manufacturing employment is (b = -.00125).

The negative relationship between manufacturing employment and income inequality is consistent with Bluestone and Harrison's (1982) claim that the U-turns in real wages can be explained by the shift in the economy from manufacturing to services. This finding implies that Alabama's local economy is susceptible to a U-turn in real wages and wage dispersion resulting from declines in manufacturing percentage of the total workforce. This outcome likely occurs because of shifting education requirements and increasing capital-intensive production over the past few decades. The education variable shows an upward pattern with rising income inequality levels that supports this claim.

Table 4.3 shows a linear relationship between per capita income and income inequality. Here the beta coefficient for pre capita income is negative in all regression techniques utilized. The pattern of change indicates that the relationship between these two variables follow a linear path, in which disproportionately robust increases in individual income causes a decrease in income inequality across counties in Alabama. The findings suggest that individual income, like rising levels of per capita income, has a slow moving effect on income inequality levels across Alabama counties. The specifics of this relationship become clearer when looking at the individual coefficients for the variable constituting per capita income. Expressed in absolute terms, the beta coefficient for per capita income is (b = 3.54e-06) in each respective model utilized.

Table 4.3 isolates race associated with income inequality levels in Alabama. The REM and GLM models support the claim that rising levels of black populations contribute to increases in income inequality, when all other variables are held constant. Here the beta coefficient for black percent is positive in all models. More specifically, they indicate that the beta coefficient for black percentage is (b = .00079). The pattern of change infers that the relationship between

these two variables follow a linear path, in which disproportionately increases in black percentage causes an increase in income inequality across Alabama counties. The findings exhibits that there is less income among black populations across Alabama counties. This outcome likely occurs because the black population accounts for a smaller percentage of workers in the manufacturing sector. According to a pairwise correlation estimation, not reported, indicates a negative relationship between manufacturing employment and black percentage in across Alabama counties. Here, the beta coefficient for black percentage is (b = -.1965). Combined, these two parameters suggest that race, black population, has a significant correlation with both manufacturing employment and income inequality levels.

Table 4.3 offers a comprehensive view of education, less than a high school education, and its impact on levels of income inequality. The results are consistent with expectations across all regression models utilized. The diagnostics implemented shows a positive correlation between no high school diploma and income inequality. Specifically, the beta coefficients for education, No High School Diploma, (b = .1467) infer that rising levels of high school dropouts has a disproportionate effect on levels of income inequality. These finding supports the Deindustrialization thesis claim that low-skill and low-education labor is becoming seemingly obsolete in the new capital intensive manufacturing sector of the economy.

In addition, Table 4.3 isolates the percentage of individuals with some college education and its impact on levels of income inequality. The results are consistent with expectations across all regression techniques utilized. Each model shows a negative relationship with some college education and income equality. These results infer that as the percentage of college education increases income inequality decreases.

Table 4.3
Regression Estimates of the Effect of Manufacturing Employment on Levels of Income Inequality for 67 Alabama Counties, 1970-2010

Income Inequality	Random Effects Model		Fixed Effects Model		Generalized Linear Model	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
% Manufacturing Employment	-.00125*** (.00017)	-.0014*** (.00019)	-.0015*** (.00021)	-.0012*** (.00022)	-.00095*** (.00016)	-.0011*** (.00017)
% Federal Civilian Government Employment	-.00030 (.00045)	-.00072 (.000454)	.0000758 (.0006442)	-.00072 (.000681)	-.00048 (.00037)	-.00079 (.000382)
%Federal Military Government Employment	-.00087 (.00048)	-.0011 (.000494)	-.00103 (.00066)	-.00139 (.000682)	-.00071 (.000415)	-.00087 (.000432)
%State and Local Government Employment	.00017 (.00046)	-.00054 (.000459)	-.0001183 (.000594)	-.00115 (.00062)	.00038 (.000402)	-.00025 (.000405)
Total Population	.00002 (.00002)	7.71e-06 (.000022)	-.00012 (.000084)	-.00013 (.00009)	.00002 (.00002)	9.05e-06 (.0000161)
Per Capita Income	3.54e-06*** (3.07e-07)	2.91e-06*** (3.09e-07)	4.3e-06*** (3.74e-07)	3.06e-06*** (3.55e-07)	3.54e-06*** (3.22e-07)	2.93e-06*** (3.28e-07)
Retail Sales	1.40e-07 (2.47e-07)	1.74e-07 (2.52e-07)	-9.66e-07 (4.11e-07)	-3.82e-07 (4.42e-07)	5.17e-07** (1.98e-07)	3.72e-07 (2.04e-07)
% Black Population	.00079*** (.00013)	.00083*** (.000127)	-.000154 (.00048)	.000809 (.00049)	.000824*** (.00009)	.00082*** (.000097)
% Male Population	.00087 (.00114)	.000624 (.00119)	.0014 (.00124)	.0010 (.00133)	.0004 (.00114)	.00021 (.0012)

Table 4.3 (Continued)
Regression Estimates of the Effect of Manufacturing Employment on Levels of Income Inequality for 67 Alabama Counties, 1970-2010

Income Inequality	Random Effects Model		Fixed Effects Model		Generalized Linear Model	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
% No High School Diploma	.1467*** (.0183)	---	.1845*** (.02141)	---	.14380*** (.0195)	---
% Some College	---	-.2078*** (.03622)	---	-.222*** (.041)	---	-.2011*** (.03873)
Rural Counties	.0162*** (.0038)	.01913*** (.00385)	---	---	.015*** (.00273)	.0178*** (.0028)
Black Belt Counties	.0213** (.0066)	.02073* (.00654)	---	----	.2253*** (.0046)	.02284*** (.00477)
Interstate Access	-.0090 (.0037)	-.0097* (.00368)	---	----	-.0084** (.00254)	-.009107*** (.00264)
Goodness of fit						
R^2	.7699	.7547	.2357	.5808	---	---
Log-likelihood					840.0917	827.2658
AIC					-4.931	-4.8553

Note: Numbers in parentheses are Standard Errors. Control for time relevant factors are controlled for in all models.
* $p < .05$
** $p < .01$
*** $p < .001$

The second research question examines the relationship between manufacturing employment and poverty levels across Alabama counties. This study explores this issue through the evaluation of levels of poverty, U.S. Census percentage, and manufacturing employment; which allows estimations of county level specifics rather than the state of Alabama in general. Table 4.4 reveals that manufacturing employment has a significant association with poverty levels in Alabama. The manufacturing coefficient becomes negative in all regression techniques used. The pattern of change indicates that the relationship between these two variables follow a linear path, in which disproportionately increases in manufacturing employment causes a decrease in levels of poverty across Alabama counties.

The findings clearly infer that manufacturing employment has a significant impact on poverty levels. The specifics of this relationship are observed in the beta coefficients of each model utilized. Expressed in absolute terms, the beta coefficient for manufacturing employment is (b = -85.490). The results indicated the pattern expected, as theorist suggest, that declining manufacturing has a significant impact on poverty in local economies.

In all three models utilized, total population is significantly related to changes in levels of poverty (Table 4.4). The diagnostic test favored Model 5 and 6, where total population is significant and positive. The pattern in the regression model shows that as the general population increases levels of poverty increases across Alabama counties. The specifics of this relationship are observed in the beta coefficients of each model utilized. Expressed in absolute terms, the beta coefficient for manufacturing employment is (b = 167.696). As stated by previous theorist, local population shifts significantly impacts levels of poverty.

Race relations with poverty across Alabama counties are significant in Model 5 and 6. Table 4.4 indicates that black percentage of the population has unconfirmed effect on levels of poverty. The results support the claim, as suggested by theorist, that labor shifts has a disproportionate effect on levels of poverty among the black population, as are the percentage of less than a high school education and some college.

Table 4.4
Regression Estimates of the Effect of Manufacturing Employment on Levels of Poverty for 67 Alabama Counties, 1970-2010

Poverty	Random Effects Model		Fixed Effects Model		Generalized Linear Model	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
% Manufacturing Employment	-85.490** (31.112)	-103.521** (31.131)	-71.818 (32.373)	115.61** (33.63)	-69.738 (29.235)	-85.677** (29.381)
% Federal Civilian Government Employment	-8.278 (79.432)	-62.661 (78.343)	71.23082 (99.674)	-46.209 (104.035)	-98.965 (67.110)	-135.625 (67.285)
%Federal Military Government Employment	2.702 (85.011)	-16.729 (85.011)	-112.856 (102.849)	-174.251 (110.083)	81.790 (74.539)	58.375 (75.844)
%State and Local Government Employment	69.187 (81.211)	-11.031 (78.964)	16.696 (92.044)	-134.783 (96.609)	78.932 (72.361)	13.402 (71.0801)
Total Population	167.696*** (3.395)	166.079*** (3.8467)	88.828*** (13.03)	85.924*** (13.977)	168.455*** (2.783)	167.441*** (2.828)
Per Capita Income	.0886 (.05345)	.0151 (.0525)	.3450*** (.058)	.1830** (.0541)	.0531 (.0578)	-.0318 (.0577)
Retail Sales	-.06042 (.0437)	-.05141 (.0437)	-.2300*** (.06354)	-.1482 (.0675)	.0127 (.0355)	-.0052 (.0358)
% Black Population	54.703 (22.654)	59.2127* (22.213)	-184.340 (73.788)	-51.181 (74.103)	55.836** (16.755)	55.453** (17.028)
% Male Population	-51.951 (198.495)	-91.462 (202.866)	190.6861 (191.474)	134.116 (203.077)	-264.661 (204.657)	-279.642 (208.136)

Table 4.4 (Continued)
Regression Estimates of the Effect of Manufacturing Employment on Levels of Poverty for 67 Alabama Counties, 1970-2010

Poverty	Random Effects Model		Fixed Effects Model		Generalized Linear Model	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
% No High School Diploma	16146.31*** (3180.608)	---	27747.71*** (3312.583)	---	14397.77*** (3496.272)	---
% Some College	---	-22518.5*** (6146.96)	---	-36433.52 (6226.342)	----	-17109.02 (6807.32)
Rural Counties	660.148 (695.020)	102.731 (674.582)	---	---	808.931 (491.047)	1099.054 (492.841)
Black Belt Counties	-1356.113 (1175.191)	-1421.851 (1148.084)	---	----	-1180.598 (824.918)	-1155.490 (838.308)
Interstate Access	-560.329 (664.136)	-657.598	---	----	-624.717 (457.029)	-714.1186 (463.992)
Goodness of fit						
R^2	.9493	.9482	.6622	.8753	---	---
Log-likelihood					-3213.09	-3218.454
AIC					19.26624	19.298

Note: Numbers in parentheses are Standard Errors. Control for time relevant factors are controlled for in all models.
* $p < .05$
** $p < .01$
*** $p < .001$

This research also tested the following geographical and economic effects of significant interest: (1.) Black Belt Counties (2.) Metropolitan counties (3.) Rural Counties. The regression estimates indicate that all three effects are non-significant. Therefore, we can infer that each effect doesn't impact poverty or income inequality across Alabama counties.

Summary

The main purpose of this study has been to examine the effects of manufacturing employment on poverty and income inequality in Alabama during the time period 1970-2010. The regression results confirmed most of the previous research concerning industrial restructuring characteristics affecting local governments' socio-economic status. This further infers that manufacturing employment has the same general economic effect in southern states compared to other regions of the U.S.

The loss of manufacturing jobs has been well documented, but there has been little attention place on the south, especially Alabama. As this study suggested, this question should be addressed at the individual and local level. Thus, the findings indicated that manufacturing employment, race and education levels effected levels of poverty and income inequality across Alabama counties. Surprisingly, the temporal and spatial effects had a non-significant association with levels of poverty and income inequality

The results suggest that localities should be concerned with the changing landscape of manufacturing production in America and its effect on the welfare state. The regression techniques utilized in this study emphasized rises in poverty and income inequality directly associated with changes in total manufacturing employment, despite the new Re-Industrialization

efforts of Alabama over the past decade. This suggests that there is a rising pattern of increasing socio-economic outcomes across counties in Alabama.

Chapter 5: Discussion

Introduction

The previous chapter explained the empirical relationship between manufacturing employment, social poverty and income inequality in Alabama across counties. This dissertation was based on the examination of this inter-relationship of all 67 counties in Alabama during the period of 1970-2010. Thus, this final chapter will discuss the implications of this research and offer a few valuable policy solutions for scholars and practitioners. Moreover, this chapter will provide economic development strategies that respond to the concerns of poverty and income inequality in a world with uncertain political, economic and technological changes.

Some Implications of this Study

This dissertation reported the expected outcome of manufacturing employment decline in America. The results from this study supported the main Deindustrialization thesis of Bluestone & Harrison (1982) that asserts declining manufacturing employment has a negative economic effect on the general population of the U.S. The premise of this theory also asserts that steep decline in real wages and wage dispersion can be expected from a further shift in the economy from high paying manufacturing to increasing low-wage service employment. According to Bluestone and Harrison (1982), this change will result in a polarized earning distribution rather than the growth of high wage jobs in the manufacturing sector. The Deindustrialization theory infers that high paying manufacturing jobs will be replaced with smart and efficient machinery in the future that will eliminate actual low-skilled manufacturing workers and wages that will not be replaced. That is, a new technological method of production that undertakes enormous new science innovation, capital formation, educational retraining and new forms of labor-

management will be an adequate replacement. Moreover, educational improvements will be a key component in the success of manufacturing, as we move forward in the Re-Industrialization period. The data in this study shows a rise in soci-economic factors as a result of changing manufacturing employment in Alabama since 1970.

Implications for Re-Industrialization in Alabama

The results of this research indicate a concern for the expected implications of Re-industrialization in America with capital-intensive manufacturing production. The results of this study suggest that Re-Industrialization in America with capital-intensive production is not the sole answer for economic prosperity compared to the Industrial Period in America. The data in Alabama show continuous increases in income inequality despite significant Re-Industrial development in Alabama over the past two decades. Therefore, it is imperative to reform existing state policies or create new ones to overcome the negative outcomes of this new phase of capital-intensive production in the state of Alabama.

Addressing some Socio-economic concerns

Currently, there are two competing ideas in the contemporary Re-Industrialization debate. The reality of manufacturing shifts over the past forty years are obvious, but the path forward is questionable. The first theoretical argument is the struggle about how to regain a productive and reasonably large middle class through labor- intensive production like existed in the Industrial Period. The reasoning behind this is that a substantial industrial based middle class is necessary to purchase the goods and services of a renewed industrialized economy. Dr. Robert Reich, University of California Berkley, notes there are two tangible threats to inequality poses to

everyone. The second theory is a premier laissez faire approach to capital- intensive labor, dominated by large amounts of high-tech machinery. For example, the economic development director for Alexander city, states that the local economy is looking strong minds and not strong backs. (Rosin, 2012) So how does that result in more industrial labor and a larger middle class if you use capital-intensive machinery? The implied answer is that this approach will get higher productivity per worker, which equates to greater profits for the owners of the capital equipment and produce more goods and services in the general economy. This action will raise the GDP for the state and generate more tax revue for the government. But notice it doesn't say it will create a larger middle working class. This approach to industrial manufacturing didn't replace the number of jobs relative in size and scope to relative corporations during the Industrial Period. That is restoring and restructuring the middle class will substantial growth in the percentage of the total workforce in manufacturing. The implementation of one or the other of these ideas has and will have major economic, moral, and political consequences.

> Robert Reich (2010) notes that there are two tangible threats that inequality poses to everyone. "One is economic: unless America's middle class receives a fair share, it cannot consume nearly what the nation is able of producing, at least without going into debt……The other is political: widening inequality, coupled with a growing perception that big business and Wall Street are in big cahoots with big government for the purpose of making the rich even richer, gives fooder to the demagogues on the extreme right and the extreme left. They gain power by turning the public's economic anxieties into resentments against particular people and groups. Isolationist and nativist, often racists, are willing to sacrifice overall prosperity for the sake of achieving their ends, such demagogues and the movements they inspire can cause them great harm." (Reich, 2010, p. 127-28)

The findings of this empirical study, reported in chapter 4, should increase the awareness of the notion that declining manufacturing has a direct influence on increasing levels of poverty and income inequality. Also, Re-industrialization has had minimal influence on reversing this

trend. The focus on the evidence is not designed to criticize economic development efforts in Alabama, but to start a conversation about more robust strategies in a world of uncertain political, educational and economic activity. Thus, new education reform, industrial apprenticeships, and tax reform not only has the potential to improve Alabama's local economy and the middle class standard of living, but also provide positive reinforcement for the economic and political objectives that support a thriving middle-class economy led by a small welfare state.

Does the future of the global economy rest in safe arms with the new re-industrialization strategy? The win-win conclusion must include the capacity of government to inherit and withstand economic, political and global economic shifts or catastrophes. The likelihood is hard to ascertain. Over the past several decades, several wars, a recession, threat of a depression, environmental disasters influenced local economies. As a response, many state and localities responded to the uncertainty of future revenues and an increasing demand for governmental services. Thus, a comprehensive and robust economic development strategy must be adhered to.

What does the new re-industrialization strategy mean for Alabama? Following the current pattern, the future of some segments of Alabama's population looks very grim. According to the findings in Table 4.3, inequality of income between the rich and the poor in Alabama across counties has broadened over the past few decades. In response, the government has the ability to influence income distribution and poverty by reforming the current re-industrialization policies that is not working for the best interest for most of the working class in this state. More specifically, these policies are working best for a small segment of the state population. Thus, what might be some ways to reinforce the strategy of re-industrialization by other means?

First, Alabama can directly offset the effects of manufacturing employment decline through education reform. The results in table 4.3 and 4.4, reports that education levels are significant in the debate manufacturing employment decline and rising soci-economic factors. What's needed to improve Alabama's overall economic health? While there is no simplistic approach to successful economic development policy, productive steps to a healthy economic future are possible. I do not assert that the following strategies would remedy the widening income gap and increasing poverty altogether, but they represent plausible policy solutions to an inevitable phenomenon. They would begin the process of restoration to the basic middle class of Alabama.

New Education Reform. The State of Alabama could redistribute appropriations to all school districts more evenly to better implement a new high-tech curriculum. In the current education reform debate, school funding is top priority. Every state constitution refers to public education; however, each state differs in its interpretation of access and funding. To date, most states have seen some form of litigation on the grounds of equitable school funding across school districts. However, there is no universally accepted benchmark for equitable funding. Thus, it is very important to resolve the funding semantics and generalize an effective, efficient and equitable economic solution for Alabama. Experts have proposed that requiring equal funding for each school within a district and allowing each school greater leeway in allocating its budget, including personnel decisions, would improve efficiency (Rebell, 2009). This proposal will provide the financial resource that currently limits Alabama's school districts from providing the new tech training that keeps young people competitive in the new global market. In addition it will foster a sizeable workforce well-equipped to get jobs in the high-tech industry.

Education Appropriation Reform. If followed, this policy recommendation would place more funds into pre-engineering and computer software training and certification at the high school level. This policy strategy would provide full industrial certification upon completing a two-year curriculum, while in high school. Such and effort can be achieved through intensive vocational and career-tech curriculum reform across the state. Currently, Alabama has some competitive career-tech programs, however, the quality of their operation and funding varies widely diverse across school districts. Rich counties are more likely to have state of the art equipment that is up-to-date with the current market and global competition (Rebell, 2009). A strong workforce and job availability is essential for a thriving economy. Thus, the afore stated policy option increases the potential for Alabama to develop an efficient, stable and inclusive labor-force that better supports the re-industrialization policy.

Corporate Apprenticeship Model. Germany also provides a model that might be useful in the Alabama case. Although Germany is not a template for the U.S. because of institutional differences, there is still a lot of theory, practice and policy information to gain. Vocational training in the Federal Republic of Germany provides on the job and vocational training in high schools and technical colleges. Germany's dual system of vocational education and training has been a major factor in their economic success over the past six decades. This program allows high school students to train inside a corporation for three to five days a week and obtain a useful certification for entry into the workforce. Specifically, this system allows access regardless of school qualifications.

> Germany's Dual VET system represents a progression route from school in the general education system and is available as a matter of principle to all young people regardless of the school qualifications they have achieved. It takes place in vocational schools as well as in-company, and is usually of three years duration. A civil law training contract is concluded between the apprentice and the company, guaranteeing extensive VET in a

> state recognized occupation and providing the apprentice with remuneration based on collective wage agreements for the duration of the contract (Schmoch, Rammer & Legler, 2006)

Currently, the German VE system accounts for 25 percent and 79 percent of upper secondary enrollment, but is often ignored during discussion about educational education reform in America…., in Alabama (Canning, Godfrey & Holzer-Zelazewska, 2007). Not only does this system provide solutions to the expanding workforce gap, but offers a policy that distributes the fiscal responsibility between the private and public sector. It has been successful in added many young adults to the German industrial workforce, i.e., a gateway to middle class life.

Several U.S. states, Iowa, South Carolina, and Vermont, have been successfully testing variations of the German model of workforce training programs. Over time, industrial apprenticeship in the U.S. has come to be a proven workforce-training tool. Apprenticeship models in the U.S. has helped businesses meet the demand for skilled workers, while offering workers better wages and better employment outcomes.

> "Policymakers at the state level are also getting behind apprenticeship. Starting in 2007, South Carolina launched Apprenticeship Carolina, and with it a major expansion of apprenticeships in the state. Iowa recently budgeted $3 million per year to help businesses and trade unions pay for the startup costs of apprenticeship programs. In Vermont, Gov. Peter Shumlin (D) has proposed expanding apprenticeships, saying "graduates will have a bright future in Vermont and earn good wages as skilled tradespeople." Indeed, there are a number of steps states can take to promote apprenticeship." (Ayres, Gurwitz, & Schwartz, 2014)

In 2007, South Carolina adopted "Apprenticeship Carolina", a comparable to the German industrial apprenticeship model. This program was a response to a report by the Governor's Workforce Education Task Force that found a persistent skills gap emerging. Apprenticeship South Carolina was able to grow the number of companies in South Carolina that hire apprentices from 90 in 2007 to 603 in 2010. Specifically, the program gives eligible businesses a

1,000 South Carolina for each registered apprentice employed for at least even months during each year of an apprentice's program, for up to four years of such a program (www.apprenticeshipcarolina.com). Employees are able to create crucial recruitment pipelines, decrease costly turnover, influence, mold and shape potential future employees. In addition, South Carolina Apprenticeship provides pays youth while they learn on the job, enhance their value in the workforce, and strengthen their academic success. Several corporations

Alabama currently has 4,435 Apprenticeship programs. However, there is no state supported policy for apprenticeships. In addition, there are no current government subsides offered to the existing and isolated programs across the state. Thus, these programs are limited in their scope due to isolation and limited funding.

Alabama offers fundamental educational opportunities for individuals who have not completed basic education requirements. Currently, Alabama's only option for the equivalent to a high school diploma is the General Education Diploma. After completing GED requirements, students are given the opportunity to pursue a trade skill or post-secondary degree through the Alabama two-year college system *at their own expense; however, job transition is not guaranteed or likely*. After completion, the options for this demographic is limited and provides no certainty for job obtainment and security.

It is important to focus on individuals with no high school diploma for theoretical and practical assertions. Implementing an actual well-funded partnership between the Alabama Department of Post-Secondary Education and Manufacturing corporations across the state is essential to replicating the German Model. In 2010, the state had approximately 450,000 individuals without high school credentials. Retooling this population would be extremely

beneficial to curing this state's workforce inadequacies in a real Re-Industrialization process that can recreate a strong working, middle-class.

According to Norton Garfinkle, a former professor at Amherst College, the Chairman of the George Washington University Institute for Communitarian Policy Studies and Princeton Scientific Capital Management quotes:

> "History teaches us that the future of any democracy depends on a thriving middle class. This is true in both the economic and political sense. From the standpoint of economics, middle-class consumer spending is the primary engine of economic activity and growth. Sustaining the incomes---and therefore the spending—of the middle class is essential to sustaining the growth of the economy as a whole. It is the key to the virtuous economic cycle. From the standpoint of politics, in a democracy the existence of a large vibrant middle class is crucial to political stability. The middle class dream that Americans come to share common aspirations---aspirations that help to mute the differences in wealth, culture, race and ethnicity that might otherwise threaten to tear a democracy apart. To survive, a democracy must also be a community----a society bound by shared values." (Garfinkle, 2006)

A Complementary Alternative to the Re-Industrialization Strategy

Even if Alabama adopts the German model along some of the lines of the above suggestions, this may not provide the desired results given this very large underemployed, unemployed and poorly educated workforce for more imported heavy industry. Thus, there are numerous was to supplement the re-industrialization strategy, which is micro-lending.

Currently, micro-lending programs exist on Alabama; however, there is no state supported policy for micro-lending as a strategy for economic development. In terms of a national scope, The U.S. Small Business Administration (SBA) offers micro-lending to new or existing small businesses as an economic stimulant. SBA micro-lending loans range from a couple hundred dollars up to 50,000. The average loan is approximately 13,000. However, SBA

and Alabama micro-lending programs don't utilize the criteria of the Yunus' model, which is listed below. Thus, these programs are limited in their scope.

Micro-Lending: A tested Globalization strategy. I propose that state and local governments should consider micro-lending as a potential solution, Micro-lending is a strategy to serve a low-income micro-enterprise clientele. Micro-lending increases poor people's access to savings and credit facilities. This strategy is needed because traditional avenues to credit lines for marginalized individuals are limited. The conventional process of small business loans is based on credit viability and the likelihood of successful capital development. Most of America's lower class lack credit worthiness, business development skills and collateral. Bghawhti (2007) states that more than just an increase in middle class jobs is needed around the world because the proper financial resources and acumen is not available to all. The micro-lending proposal gives a feasible solution to stimulate economic mobility and entrepreneurialism among America's poor and marginalized populations.

> "The Grameen Bank started out as a research project in 1976 under the leadership of Dr. Muhammad Yunus. Initially, Dr. Yunus directed his attention toward the poor in an impoverished village near Bangladesh Chittagong University. Aimed at the poorest in the village, Dr. Yunus instituted a micro-capitalistic process to unlock the entrepreneurial of the area's poor and to involve them in the reconstruction of their lives. Since the initial pilot project, the Grameen Bank model has spread to other Bangladesh villages as well as 70 countries throughout Asia, Africa, and the America's. The Grameen Bank model has also inspired the establishment of credit-based micro-enterprises in Canada, Norway, and France. Auwal (1996) estimates that the Grameen Bank model is responsible for the establishment of over 200 micro-lending programs in the U.S." (Kuo- Tsai, 1998).

Micro-lending in this proposal will be fundamentally supported through a collaboration of government, private banks, churches, credit unions and foundations. These institutions will serve as the financial basis for lending to low-income micro-enterprise clientele. Each non-governmental group specific role is to provide entrepreneurial opportunities in exchange for tax abatements and incentives similar to large manufacturing corporations. Marginal tax loss through

abatement and incentives will be gained in wages for the lower and middle class America. Thus, all classes will come out far ahead.

Dr. Muhammad Yunus, Ph.D in Economics from Vanderbilt University, comprised the following Grameen Bank of Bangladesh methodology as used by Project Dungganon for initial program implementation and operation:

- Targeting and site selection -- The project targets areas with a heavy concentration of the poorest of the poor. In keeping with its original objectives, it has chosen to have a 100% female membership.

- Projection meeting -- The branch manager informs residents about the project and its objectives, as well as initial policies and procedures.

- Means testing -- The project manager and loan officers visit the homes of the prospective participants for a personal interview and to assess their economic situation.

- Compulsory Croup Training (CGT) -- Since many of the very poor members of Project Dungganon have had little education, basic training is required for all potential members to assure a thorough understanding of the principles, philosophy, rules and regulations, and procedures of the credit system. The CGT is taught by a field assistant for an hour a day for a minimum period of seven days. The training period itself is also a means for developing patterns for compulsory weekly center meetings and credit discipline.

- Formation of groups by potential borrowers -- During the CGT, potential members form self-selected groups of five. Group members should be neighbors, but not relatives, and they should be of similar age group, educational background, and socioeconomic standing. Each group elects a chairperson and a secretary from among its members, hand the groups are then federated to form a Center.

- Group guarantees -- The intimate group structure provides mutual supports for its members and encourages group discipline. The solidarity of the peer group creates the

atmosphere and the social pressure 5or compliance with the rules and regulations of the project.

- Group recognition test -- The members must pass an oral examination, administered by the branch manager, to ensure that all members know and understand the principles and procedures of the project.

- Loan Proposal -- Each member must submit a simple loan proposal, within the limits of the available loan amount, that explains the intended productive use of the funds. The proposal must be approved initially by the group and the renter before going to the board manager for final approval.

- Close Supervision -- To ensure that members use the credit for the stated purpose and that they maintain a good repayment record, close supervision by the field staff is an ongoing process.

- Staggered Disbursement; the 2-2-1 System -- The two poorest members of the group receive their loans first. After four to six weeks of repayments, two other members are eligible to receive their loans. After an additional four to six weeks of regular payments, the chairperson may take the final turn to borrow.

- Open Conduct of All Business -- Transparency is essential in all aspects of the project in order to share its objectives with the community and to allay suspicions. Transparency also helps group members deal with family objections; husbands can openly listen to meeting activities or watch the transaction of business.

- Compulsory Savings in the Group Fund -- Each group sets up a fund to which all members contribute, both on a voluntary savings basis and as a compulsory 5% "tax" on loans distributed. Loans from the group fund are available to members for personal and family

In addition to following Yunus model of micro-lending, the proposed micro-lending strategy will require several pre-requisites to the lending process. The pre-requisites are the following: 1) Financial Training 2) Continuous Business and Professional Development Education 3) Low-income employment. Each low-income micro-enterprise client will be required to undertake a series of financial training courses provided by the lending institution or an affiliate. This will promote the increase of financial acumen and accountability of loan recipients. Next, Continuous and Professional Development initiatives will provide business strategies and principles from a practical entrepreneurial platform that support individual areas of expertise and competency levels. The main philosophy surrounding micro-lending education insinuates that it stimulates intellectual innovation that produces a prosperous economic life. Thus, the proposed education and micro lending will service Alabamians with a sense of the entrepreneurialism and help develop a small business community in impoverished areas.

Limitations

This study provided valuable insight to the relationship between manufacturing employment and soci-economic factors in Alabama over the past few decades. It provided some theoretical and practical additions to the existing economic development literature. However, limitations are inevitable in any social science research and important to consider while interpreting data. This research has several limitations to identify.

First, economic uncertainty during several recessions may pose some limitations to the use of economic data of this dissertation. Uncertain economic ups and downs has the potential to distort economic indicators. Specifically, there has been several recession boom and bust during

the period of this study. However, the mean trends of the economic indicators of this study are reasonably accurate.

The second limitation to this data is the inability to measure migration across counties or states. This dissertation used county data from Census records that only reports specifics based on districts and tracts. The data in this study do not account for workers who traveled from neighboring counties to work, or workers who migrated to other geographical areas after loosing work. Thus, there is some possibility that the employment variables used in this study might have a possible margin of error that cannot be gauged.

Thirdly, this study was based on Census year data. Thus, annual variations were not tracked during the period of 1970-2010. It is statistically more appropriate to utilize more time intervals for than this study was able to track, however, some of the main independent variables were only offered for every Census year. However, utilizing census data provides a clear pattern that annual data would not have made significant difference in the analysis of the data used. As a result, the selected model was created.

Conclusion

As stated by the economist Robert Reich, all lower and middle class people want a larger share of the national income in an economy able to produce such prosperity (Reich 2010). This dissertation has shown a correlation between economic typology shifts and a growing gap between the rich and the poor. The central hypothesis of this study highlighted the major social and economic concerns for Alabama that has the potential to tear at the core of the basic local economy. Any continuation without consideration will pose a threat to the well being of

everyone, ultimately diminishing the public's trust for the land of the free and the home of the brave.

The finding of this dissertation reported the expected outcome of the rising gap between income levels in Alabama. In recent years, we have witnessed Alabama shift economic development policies to create an environment to attract new global corporations. All this is under challenge today. Despite recent economic development successes, we still see a pattern of concentrated wealth that began after the Industrial period. The new Re-industrialization confronts the traditional American philosophy of opportunity, hard work and prosperity. For decades America has simply provided a basic safety net for the poor and ensured that hard work would secure a decent middle-class standard of living for families and their children.

In the new wave of Re-industrialization, the focus on capital-intensive labor poses questions about its assumptions of revitalizing the working middle class of the states to Industrial Period levels. Instead, the evidence seems to demonstrate that the capital intensive model is moving toward a winner-take-all model, where the top 10 percent of the population has a vast majority of the wealth, thus leaving middle-class working families in a constant struggle to make money for leaving at the poverty line or even survival.

This research has recommended that overcoming the broadening inequality and establishing a strong middle class like the industrial period requires policy reform in the areas of economic development and education. These policy areas can be constructed in ways that overcome political gambits and traditional status quo policies are fully consistent with an equitable, efficient local economy that will grow the economy and tax base of the state of Alabama. Such policy reform places government in the position to shift financial resource to other governmental services rather than to welfare policies that barely support the chronically

poor. Citizens who remain on long-term unemployment, long-term welfare because of limited or inadequate skills constitutes a great burden to the government. New economic and workforce efforts in Alabama must address this concern in an effort to obtain sustainable growth in the future. Otherwise, current trends show that the economic, social and political future of this state does not look bright in the near or distant future.

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