

MAJOR TRENDS FACING NORTH CAROLINA

**IMPLICATIONS FOR OUR STATE
AND**

**THE UNIVERSITY OF NORTH
CAROLINA**

University of North Carolina Tomorrow



**Economic Change in North Carolina:
Implications for Workforce Development**

Prepared For:
The University of North Carolina Tomorrow
Commission

**ECONOMIC CHANGE IN NORTH CAROLINA:
IMPLICATIONS FOR WORKFORCE DEVELOPMENT**

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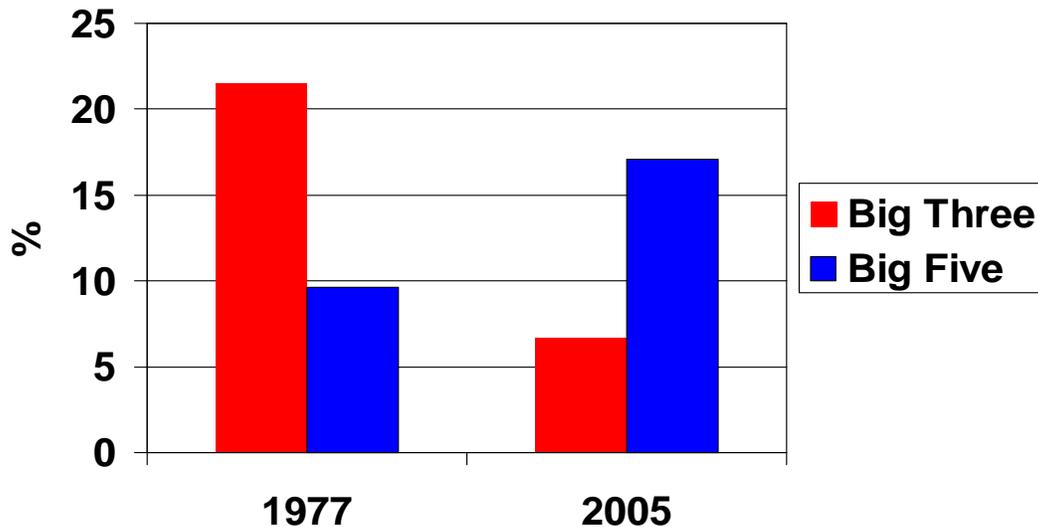
To paraphrase an old auto advertisement, "this is not your father's North Carolina economy." The "Big Three" industries of tobacco (both farm-level leaf production and cigarette manufacturing), textiles (including apparel), and furniture (including lumber and paper) led the state through much of the 20th century. As recently as 1977, the Big Three directly accounted for one-fifth of the state's economic output and two-thirds of all manufacturing output. Subsidiary and supplier firms grew up around the Big Three, and the industries were responsible for much of private commerce and public revenue in the state.

But changes in the economy worked against the Big Three in the late 20th century. The incidence of smoking dropped, trade barriers fell, communication and transportation technologies improved, and world trade dramatically increased. Much of the economic foundation of the Big Three in North Carolina was based on the availability of low cost labor - labor that became available when agriculture was mechanized. Yet at the end of the 20th century, with a globalized economy now a reality, low cost labor was not in North Carolina - it was in Asia, Eastern Europe, and Central and South America - and that labor could be easily accessed and used.

Consequently, the Big Three in North Carolina has shrunk, today accounting for only 7% of the state economy, and with projections putting its contribution at 4% within a decade. In the past thirty years, industries of the Big Three have cut over 300,000 jobs in our state.

Fortunately, new industries developed in North Carolina - in technology, pharmaceuticals, banking, food processing, and vehicle parts - the new "Big Five." In fact, the rise of the Big Five in the late 20th century and early 21st century paralleled the decline of the Big Three (Figure 1). In the late 1970s, the Big Five made up only 10% of the state economy; today output from these five industries directly accounts for 17% of the state economy and more of manufacturing than the Big Three. "Tobacco Road"

Figure 1. Big Three and Big Five Shares of N.C. Economy



Source: author's calculations from U.S. Commerce Dept. data.

has now turned into highways leading to computers, prescription drugs, banks, meat products, and car components.

Besides differing in type of output, the "new economy" industries of the Big Five differ in their labor requirements. More skilled and higher educated workers are required, especially in technology, pharmaceuticals, and banking, than traditionally was the case for the Big Three. The firms

compete not with low labor costs, but with high productivity (output compared to input) rates. The industries of the Big Five also make use of collaborative research relationships with institutions of higher learning.

As North Carolina moved from the Big Three of the 20th century to the Big Five economy of the 21st century, the changes are evident by the industrial and occupational characteristics of the workforce (Table 1). By industry, workers have moved out of agriculture and manufacturing and into finance and services. Perhaps more telling is how the occupational mix has changed. Between 1970 and 2005, the percentage of North Carolina workers in professional and managerial occupations almost doubled, while those in service occupations increased by 50%. Conversely, the proportion in farming and in traditional "blue collar" occupations (crafts workers and operatives) collectively dropped by 20 percentage points. One important corollary of this change is the implication for educational requirements. Professional and managerial positions, many jobs in the service sector, as well as employment in finances, require educational training beyond high school.

The large increase in the worldwide supply of labor brought about by globalization, combined with the increased value of educated workers in the

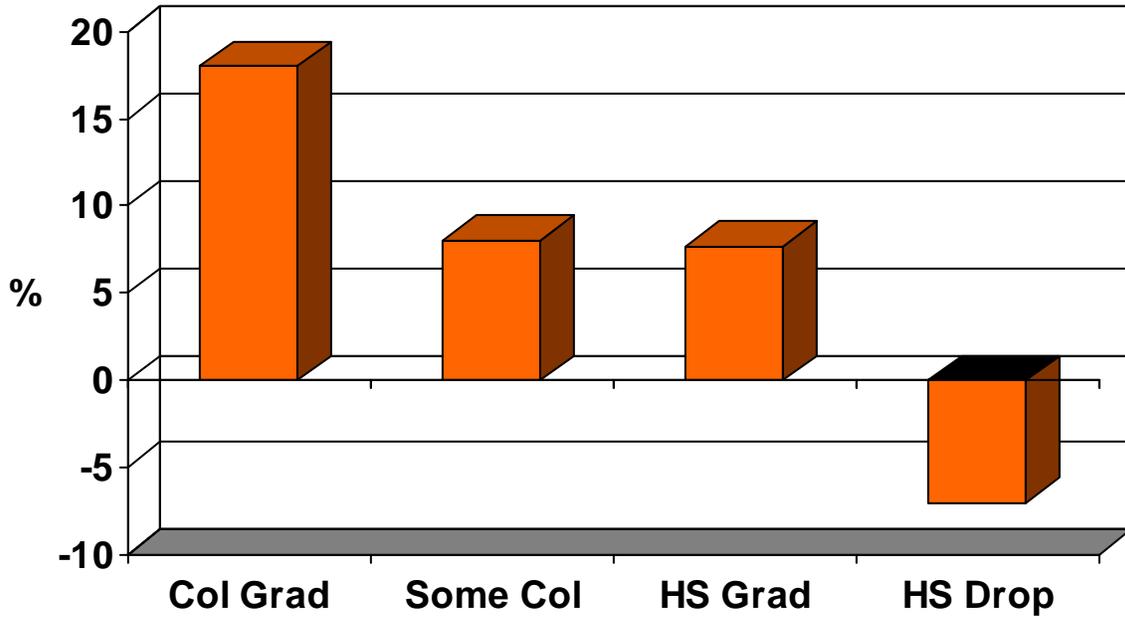
Table 1. North Carolina Employment by Industry and by Occupation, 1970 and 2005 (all workers 14 and over) - Percent of Total

	1970	2005
Industry		
Agril, forest, fish, mining	5.1%	0.9%
Construction	6.2%	6.0%
Manufacturing	33.6%	14.8%
Transp, comm., public util.	5.2%	5.9%
Whole. & retail trade	16.7%	16.1%
Finance	3.3%	5.0%
Services	20.9%	45.3%
Government	3.4%	5.7%
Unclassified	5.6%	0.3%
Occupation		
Professional & managers	17.7%	32.3%
Service	10.3%	15.8%
Sales and clerical	19.0%	24.2%
Farming	4.2%	0.8%
Crafts workers	18.3%	11.5%
Operatives	24.8%	15.4%
Unclassified	5.7%	0.0%

Source: U. S. Census Bureau.

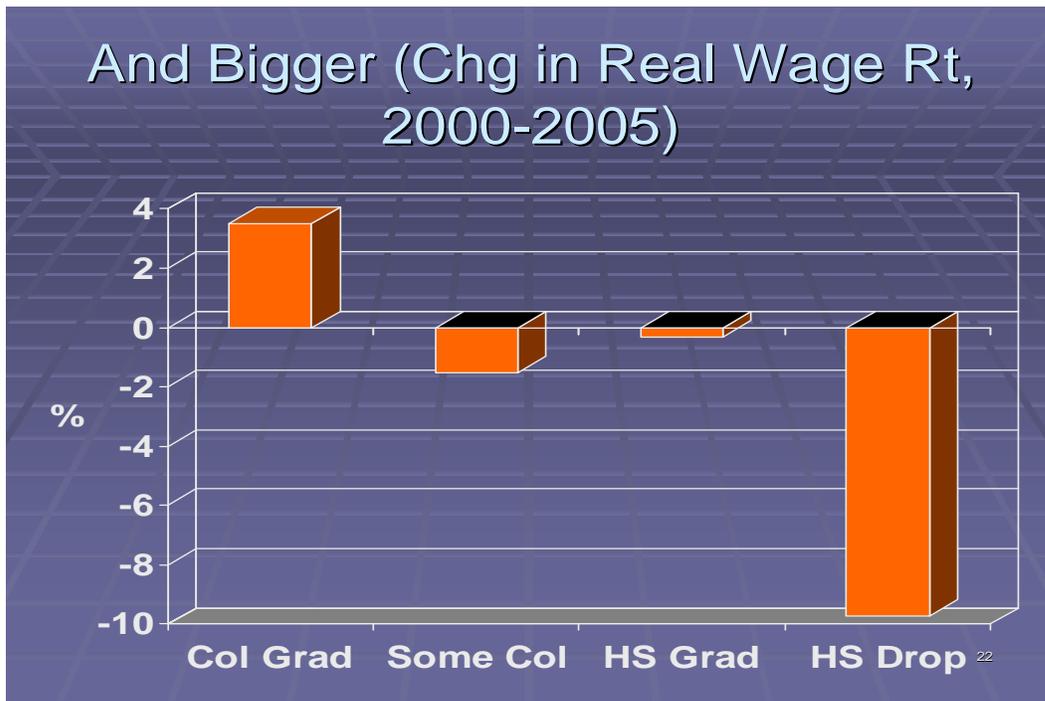
knowledge based economy, have had profound implications on the earnings of workers in North Carolina with different educational levels. Not only do more educated workers earn more, but their wage gains have been greater in the last quarter century (Figure 2). Even more significant, since 2000 - which many economists date as the beginning of full-fledged globalization - only North Carolina workers with a college degree have achieved wage rate gains exceeding inflation (Figure 3).

Figure 2. Percentage Change in Inflation-Adjusted Wage Rate for N.C. Workers by Educational Background, 1980-2005



Source: U.S. Census Bureau

Figure 3. Percentage Change in Inflation-Adjusted Wage Rate for N.C. Workers by Educational Background, 2000-2005

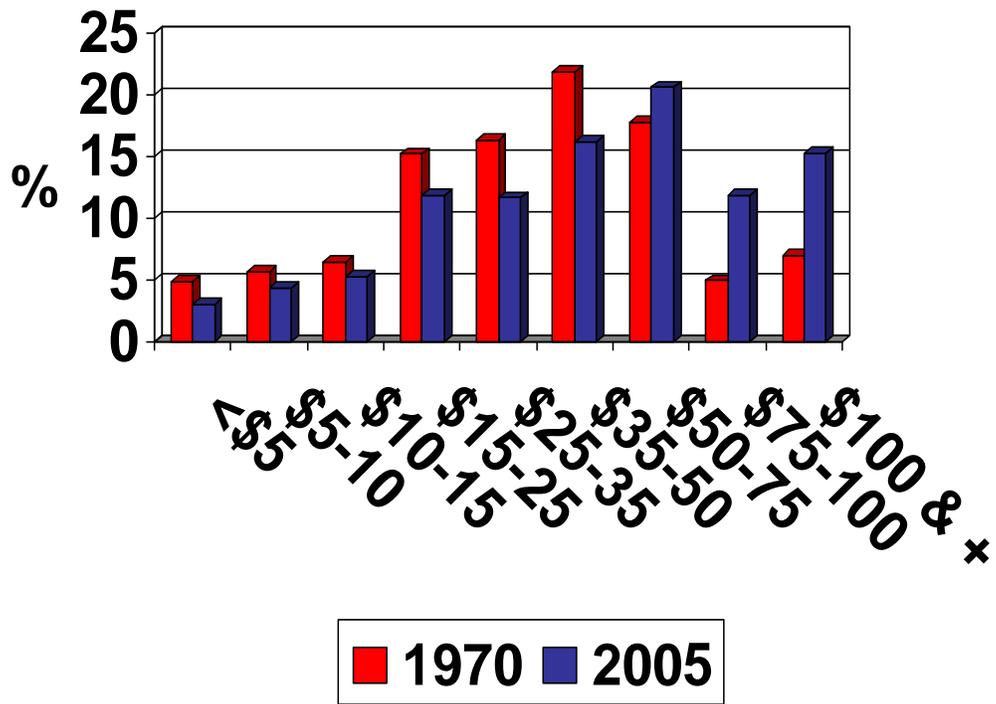


Source: U.S. Census Bureau.

These changes have created an "educational divide" in North Carolina, where workers with education and training have moved up the economic ladder, while those without those characteristics have stagnated or fallen behind. This divide can be seen in the changing income distribution of households in the state (Figure 4). The income ranges in the figure have all been adjusted for the changing purchasing power of the dollar between 1970 and 2005, so they are directly comparable. While in general there has been an upward movement in the income distribution, the biggest changes have been (1) a large increase in the proportion of households with higher levels of income and (2) a significant decline in the proportion of households with middle level incomes. In other words, the proportion of North Carolina households with "top incomes" has expanded but the proportion with "middle incomes" has shrunk. This "hollowing out" of the income distribution has increased the relative "distance" between those with lower incomes and those with higher incomes. Middle incomes, and the supporting middle income jobs, have become a smaller piece of North Carolina's economic pie.

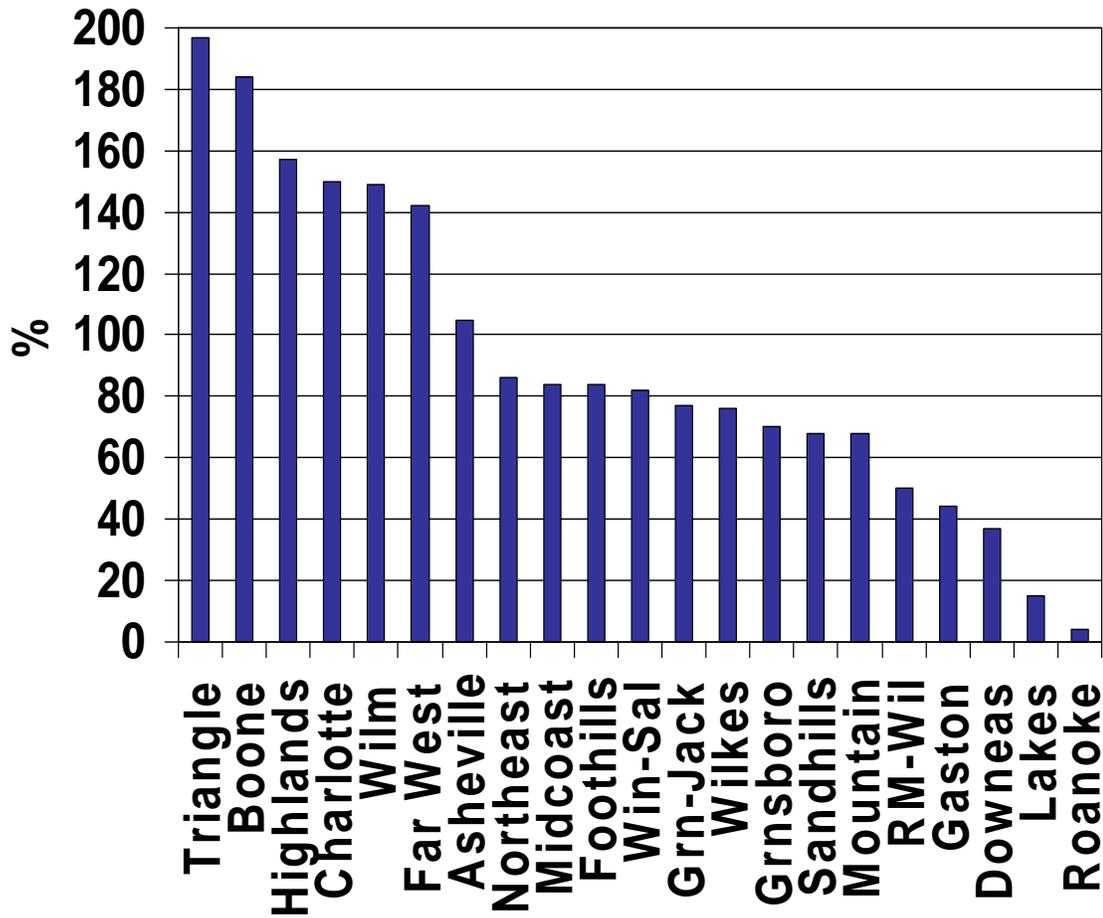
The "divide" can also be seen geographically in Figure 5, which shows employment growth from 1970 to 2004 for regions of the state. Metropolitan regions, like the Triangle and Charlotte, and resort or

Figure 4. Distribution of North Carolina Households by Income, \$2005.



Source: U.S. Census Bureau.

Figure 5. Employment Growth in North Carolina Regions (%), 1970 - 2004.



Source: U.S. Census Bureau.

retirement areas, such as Boone and Asheville, have had the greatest increases in jobs. Statistical analysis of these differences shows a strong correlation of economic growth with educational levels of the workforce, as well as with improvements in those educational levels.

Forecasters and analysts who look ahead and attempt to predict the economy and workplace of the future see these trends continuing, resulting in more of a "bipolar" job distribution. The fastest employment growth will occur in both higher skilled (and higher paying) and lower skilled (and lower paying) jobs. The Employment Security Commission of North Carolina sees the fastest growing positions to be in the high-paying fields of business and finance, computer science and mathematics, and health care, but also in the lower-paying fields of food preparation, health care support, and cleaning and maintenance. Similarly, the North Carolina Commission on Workforce Development projects the percentage of new jobs created from 2007 to 2017 requiring education beyond high school, and the percentage requiring no high school, will each significantly exceed their proportion of existing jobs in 2007, while the percentage new jobs requiring only a high school degree will be half that of its proportion in 2007 (Table 2). Importantly, to fill the demands for more educated workers, the Commission estimates North

Table 2. Job Distribution and Forecasted Job Growth by Education by Education Level in North Carolina

	2007 Job Distribution	Forecasted Distribution of New Jobs, 2007-2017
Advanced Degree	3.2%	5.3%
4-Yr. College Degree	13.7%	19.7%
2-Yr. College Degree	7.7%	13.1%
High School Degree	41.0%	21.5%
No High School Degree	34.4%	40.4%

Source: North Carolina Commission on Workforce Development

Carolina will have to produce **15,000 more bachelor degreed and higher** workers annually and **19,000 more two-year degreed** workers annually *than currently is occurring.*

And what if we don't create the required number of workers with these skills and training? Then the private sector jobs will likely go elsewhere, either in the U.S. or to foreign countries such as China and India that are rapidly increasing their supply of workers with higher degrees. Public sector jobs (teachers, nurses, public safety officers, social service workers) will remain in the state, but they will be filled by less qualified individuals, consequently implying that the services provided in those positions will be of lower standards.

Education is now the single most important economic characteristic of individuals. Differences in educational background now account for a large part of observed differences in socio-economic outcomes, at both the individual and regional levels. By extension, this means education is the great "leveler" in today's society, providing - although not guaranteeing - opportunities for economic advancement.

References

Employment Security Commission of North Carolina. "Occupational Projections", www.ncesc.com

North Carolina Commission on Workforce Development. *State of the North Carolina Workforce: An Assessment of the State's Labor Force Demand and Supply, 2007-2017.*