
**The Regional Economic Impact
of the
West Piedmont Workforce
Investment Network**

January 2009

 **WEST PIEDMONT
WORKFORCE INVESTMENT BOARD**



Mangum Economic Consulting, LLC is a Richmond, Virginia based firm that specializes in producing objective economic, quantitative, and qualitative analysis in support of strategic decision making. Examples of typical studies include:

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Dr. Mangum earned his Ph.D. in economics at George Mason University in 1995, where he was fortunate enough to receive his training under Nobel Laureate James Buchanan and the team of colleagues Dr. Buchanan had recruited to the Center for Study of Public Choice. He has nearly two decades of experience in quantitative analysis and policy development at the federal and state level.



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804-771-5338

Executive Summary

This report assesses the economic and fiscal impact attributable to the career training and job placement services provided by the West Piedmont Workforce Investment Network in 2007-08. The principle findings from that assessment are as follows:

- 1. The West Piedmont Workforce Investment Network plays a vital role in serving the workforce needs of the West Piedmont region.**
 - The West Piedmont Workforce Investment Network provides workforce services to the cities of Danville and Martinsville, and Henry, Patrick, and Pittsylvania counties.
 - These localities face several challenges as they endeavor to restructure the economy of the West Piedmont region to succeed in the new economic environment of the 21st Century.
 - Between 1990 and 2007, the West Piedmont region lost ground economically as it saw its overall employment drop 21 percent and its average weekly wage fall from 78 to 62 percent of the statewide average.
 - These downward economic trends are attributable to the fact that the region is very heavily dependent on the *Manufacturing* sector, and that sector experienced very heavy regional job losses over the period.
 - If the West Piedmont region is to reverse these downward trends, it must accomplish three things: 1) upgrade the skills of its *Manufacturing* workforce to meet the needs of high-tech manufacturing facilities, 2) attract new industries that will diversify the regional economy, and 3) establish career paths that will provide viable forward looking options for workers with relatively low educational attainment.
 - The one common thread between these tasks is that they all critically depend on the services that the West Piedmont Workforce Investment Network provides.
- 2. The West Piedmont Workforce Investment Network is highly effective at providing career training and job placement services that transition previously unemployed individuals into good paying jobs.**
 - In 2007-08, through its Workforce Investment Act (WIA) program, the West Piedmont Workforce Investment Network was responsible for placing 572 previously unemployed individuals into jobs.

- If self-referred individuals who take advantage of the Core Services provided by the West Piedmont Workforce Investment Network are included, the number of individuals placed into jobs in 2007-08 increases to 1,006.
- Average salaries for these jobs ranged from \$10,004 to \$20,166.

3. The career training and job placement services provided by West Piedmont Workforce Investment Network have a large economic impact on the West Piedmont region.

- The combined pre-tax income of the 572 previously unemployed individuals placed into employment through the West Piedmont Workforce Investment Network's 2007-08 WIA program was approximately \$10.7 million.
- These salaries contributed to the economy of the West Piedmont region in several ways:
 - i. First, they had a direct economic impact of approximately \$10.6 million. This direct economic impact is attributable to the consumption expenditures (*e.g.*, housing, food, clothing, transportation, and entertainment) that these 572 newly employed individuals were able to make because of their salaries.
 - ii. Second, they had an indirect economic impact of approximately \$2.0 million. This indirect economic impact is attributable to the “ripple effect” that the initial consumption expenditures had as they moved through the regional economy (*e.g.*, as those expenditures became someone else's income and were in turn spent on additional consumption, which became someone else's income, etc.).
 - iii. Total economic impact was therefore approximately \$12.6 million. It is important to note that this total economic impact also generated an additional 78 jobs, as well as \$1.0 million in state, local, and federal tax revenue.
- If one broadens the scope of available workforce services to include self-referred individuals who take advantage of the West Piedmont Workforce Investment Network's Core Services, the combined pre-tax income of the 1,006 previously unemployed individuals placed into employment in 2007-08 was approximately \$18.1 million.
- These salaries also contributed to the economy of the West Piedmont region in several ways:

- i. They had a direct economic impact of approximately \$18.0 million and an indirect economic impact of approximately \$3.4 million, for a total economic impact of approximately \$21.4 million
- ii. In addition, this total economic impact was associated with 132 added jobs, along with \$1.7 million in state, local, and federal tax revenue.

4. Comparing the costs associated with these workforce development programs to the economic benefits derived from them shows that benefits far exceed costs.

- In 2007-08, the cost associated with the WIA program services provided by the West Piedmont Workforce Investment Network was approximately \$2.2 million.
- Comparing that cost to the \$12.6 million economic impact associated with the WIA program shows that the benefit/cost ratio is 5.7 – indicating that benefits were almost six times greater than costs.
- If the analysis is expanded to include Core Services, the associated costs rise to approximately \$2.4 million, and the benefit/cost ratio rises to approximately 9.1 – indicating that benefits are more than nine times greater than costs.

5. In conclusion, the workforce services provided by the West Piedmont Workforce Investment Network play a vital role in positioning the West Piedmont region to succeed in the new economic environment of the 21st Century. Moreover, as empirically quantified in this report, even the immediate economic benefit derived from those services is quite substantial.

Introduction

This report assesses the contribution that the career training and job placement services provided by the West Piedmont Workforce Investment Network in 2007-08 made to the economy of the West Piedmont region.¹ This report was prepared by Mangum Economic Consulting, LLC at the request of the West Piedmont Workforce Investment Network.

Background

The West Piedmont Workforce Investment Network serves the cities of Danville and Martinsville, and the counties of Henry, Patrick, and Pittsylvania. A map depicting these localities along with the locations of the Workforce Investment Network's five Workforce Career Centers is provided in Figure 1.²

The primary objective of the West Piedmont Workforce Investment Network is to facilitate economic growth and an increased standard of living in the West Piedmont region through the ongoing development of a skilled workforce. It accomplishes that objective by:

- working with employers to provide workforce training that enhances productivity and enables individuals to move forward in their careers,
- fostering collaborative relationships between industry, education, and community service agencies,
- increasing community awareness of available workforce-related resources, and
- providing a focal point for the integration of regional workforce development programs.

These services are particularly important to the West Piedmont region as it endeavors to restructure its economy to succeed in the new economic environment of the 21st Century.

¹ July 1, 2007 through June 30, 2008.

² The addresses of these Workforce career Centers are as follows: 1) Martinsville-Henry County Center, 6245 730 East Church Street, Suite 24, Martinsville, 2) Danville Center, 707 Piney Forest Shopping Center, Danville, 3) Danville Center (satellite office), 141 Goode Street, Danville, 4) Pittsylvania Center, 13995 U.S. Highway 29, Suite 400, Chatham, 5) Patrick County Center, 108 Blue Ridge Street, Stuart.

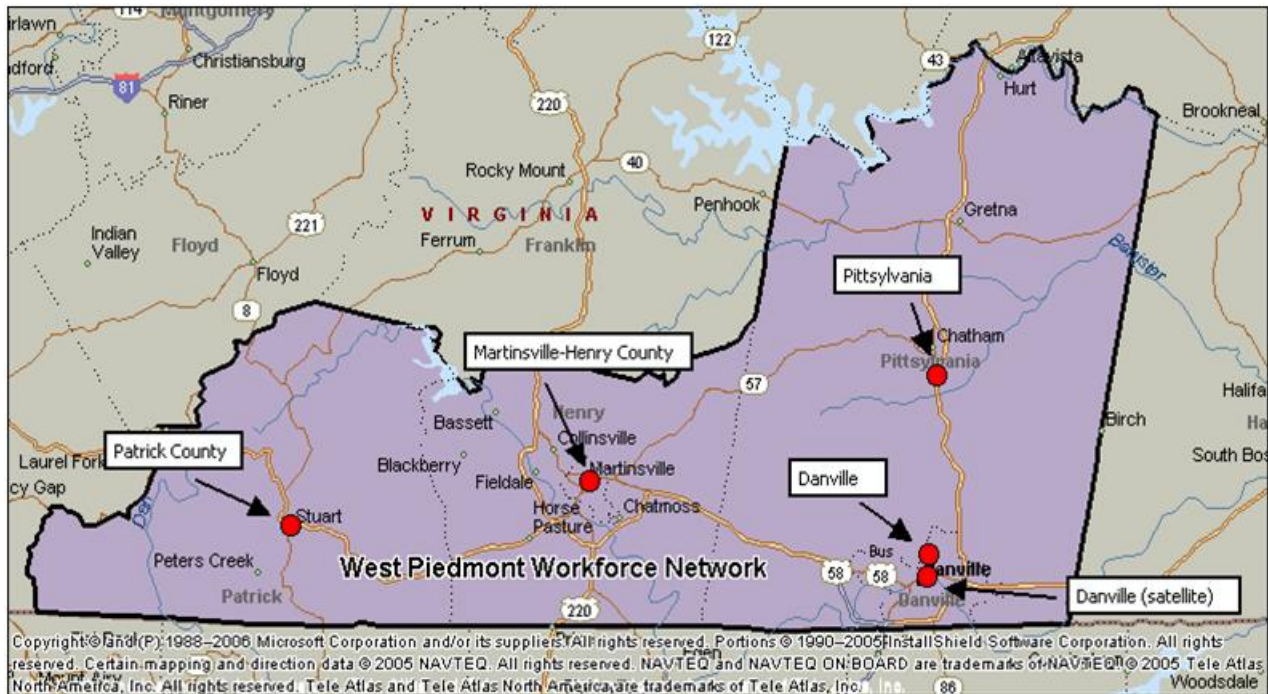


Figure 1: West Piedmont Workforce Investment Network Service Area and Workforce Center Locations

The West Piedmont region faces several challenges. As shown in Figure 2, the region has experienced a steady decline in employment in recent years. Between 1990 and 2007, total regional employment fell from 94,245 to 74,485, a drop of 21 percent. In comparison, over that same period statewide employment in Virginia increased by 30 percent. Moreover, as shown in Figure 3 the West Piedmont region has also lost ground with respect to wages. In 1990, the region’s average weekly wage was \$544 (in 2007 dollars).³ This was equal to 78 percent of the statewide average weekly wage of \$695 (in 2007 dollars). Seventeen years later, in 2007, the region’s average weekly wage had only risen to \$552 (an increase of 1 percent). As a result of this anemic growth, average weekly wages within the region fell to 62 percent of the statewide average weekly wage of \$885 (which had increased 27 percent between 1990 and 2007).

³ All figures have been inflation adjusted using the Bureau of Labor Statistics’ most recent estimates of the Consumer Price Index.

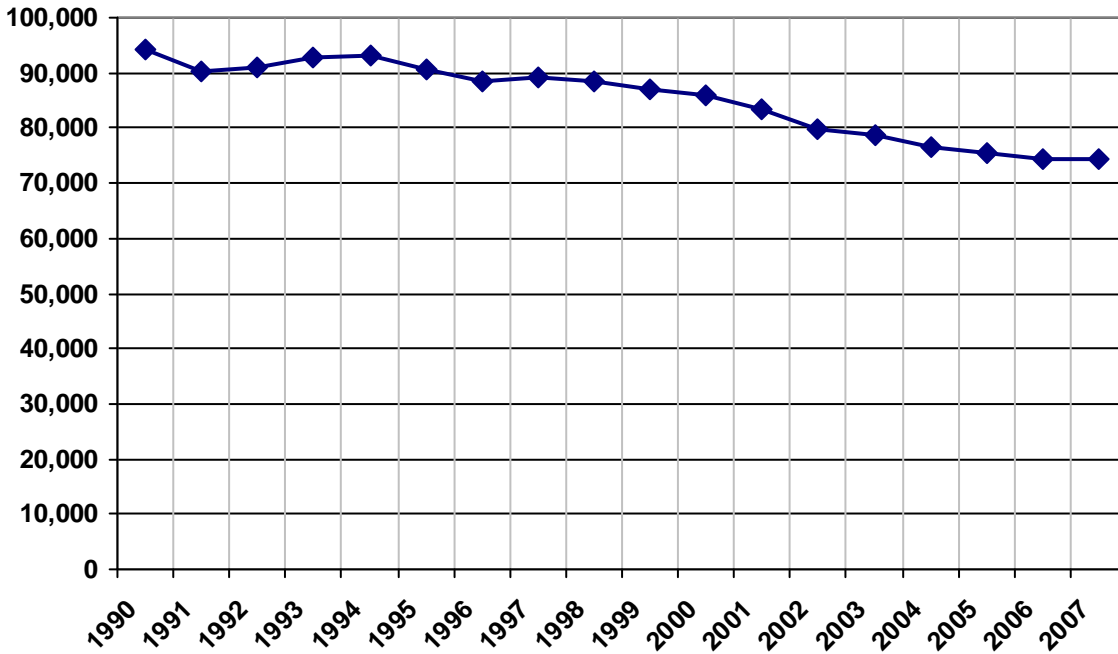


Figure 2: West Piedmont Workforce Investment Area – Change in Total Employment from 1990 to 2007⁴

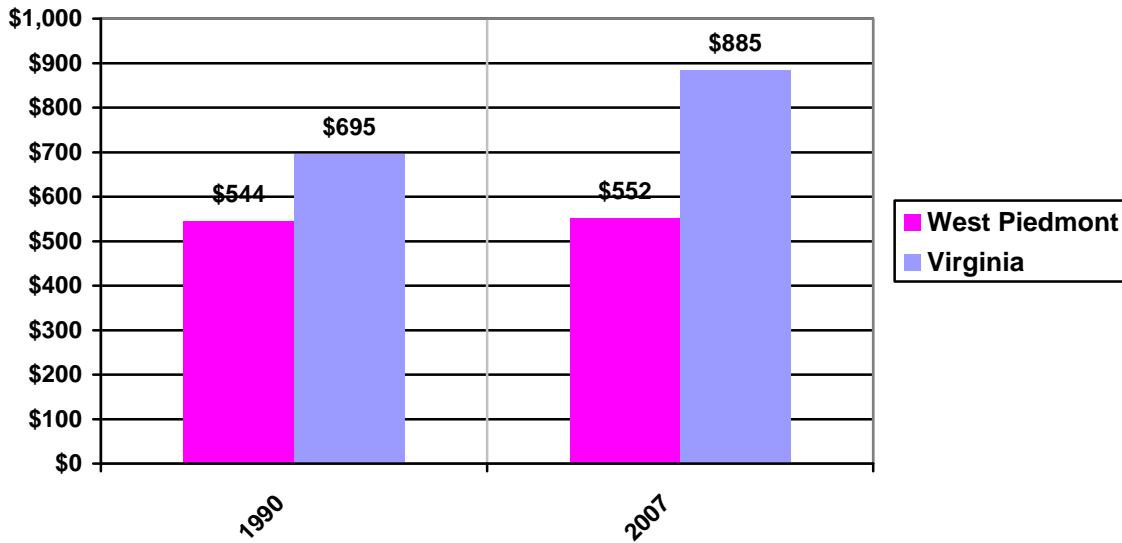


Figure 3: Change in Average Weekly Wages between 1990 and 2007 (2007 dollars)⁵

⁴ Data Source: Virginia Employment Commission

⁵ Data Source: Virginia Employment Commission

Figures 4 and 5 shed some light of what drove these changes in the economy of the West Piedmont region. Figure 4 contrasts regional employment by major industry sector between 1990 and 2007. A review of this graph reveals two important points. First, the regional decline in employment between 1990 and 2007 was driven entirely by very heavy job losses in the *Manufacturing* sector. Regional employment in *Manufacturing* went from 41,558 in 1990 to 17,551 in 2007, a decline of 24,007 jobs or 58 percent. Additional analysis also shows that much of this job loss occurred in the relatively low-skilled textile industry. Between 1990 and 2007, employment in *Apparel Knitting Mills*, *Cut and Sew Apparel Manufacturing*, and *Fabric Mills* declined by 17,127 jobs.

Second, the region's economy is very heavily dependent on the *Manufacturing* sector. In 1990, *Manufacturing* employment accounted for 44 percent of the region's total employment (as compared to 15 percent of total employment statewide). The region's next largest employment sectors that year were *Retail Trade*, with 14 percent of total employment, and *Healthcare*, with 12 percent of total employment. Looking forward to 2007, *Manufacturing* still ranked as the region's largest employment sector, even though its share of total employment had dropped to 24 percent (as compared to 8 percent statewide).

Figure 5 provides a similar comparison for average weekly wages by major industry sector between 1990 and 2007. This graph also reveals some interesting information. Between 1990 and 2007 average weekly wages in the West Piedmont region's *Manufacturing* sector rose from \$596 to \$727 (both figures are in 2007 dollars), an increase of 22 percent. This was the second largest wage increase of any sector within the region, exceeded only by *Real Estate* (23 percent increase), a relatively small sector in terms of employment. In contrast, *Retail Trade* and *Healthcare*, the region's other two major employment sectors, experienced limited to no wage growth between 1990 and 2007 (-1.6 percent and 2.8 percent respectively).

Taken in combination, the data in Figures 4 and 5 indicate that the main reason that the West Piedmont region lost ground economically between 1990 and 2007 was that it experienced very heavy employment losses in the *Manufacturing* sector, and that these losses had a disproportionate impact on the regional economy because *Manufacturing* is not only the region's largest employment sector, but also the only major sector that saw significant real wage growth between 1990 and 2007. It bears note that this experience contrasts markedly with that of Virginia as a whole, where average real wages increased by 27 percent between 1990 and 2007, and the driving force behind that increase was the high-skilled *Professional and Technical Services* sector, which went from 6 percent of total statewide employment to 10 percent, with a 49 percent increase in average real wages.

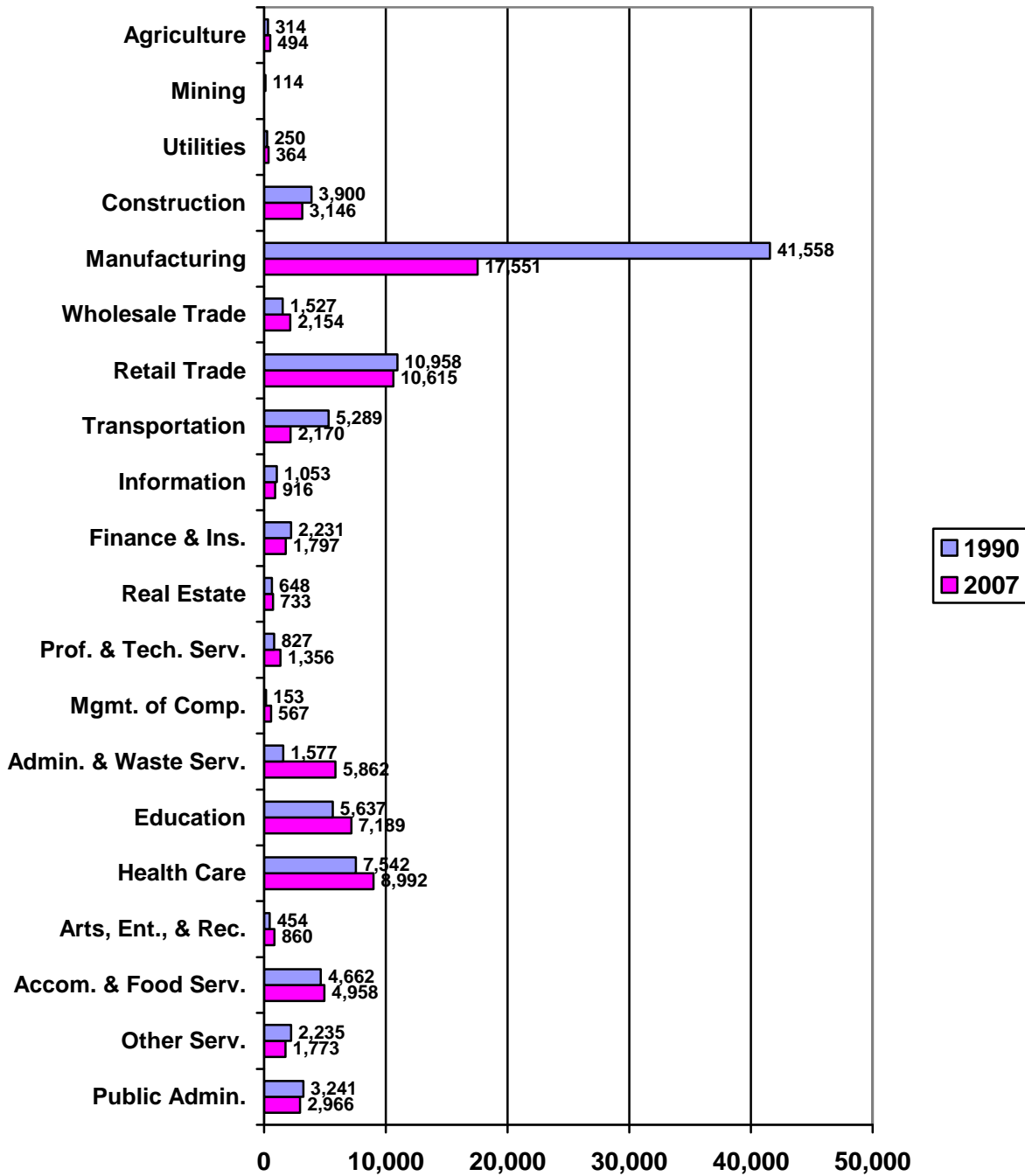


Figure 4: West Piedmont Workforce Investment Area – Employment by Major Industry Sector⁶

⁶ Data Source: Virginia Employment Commission

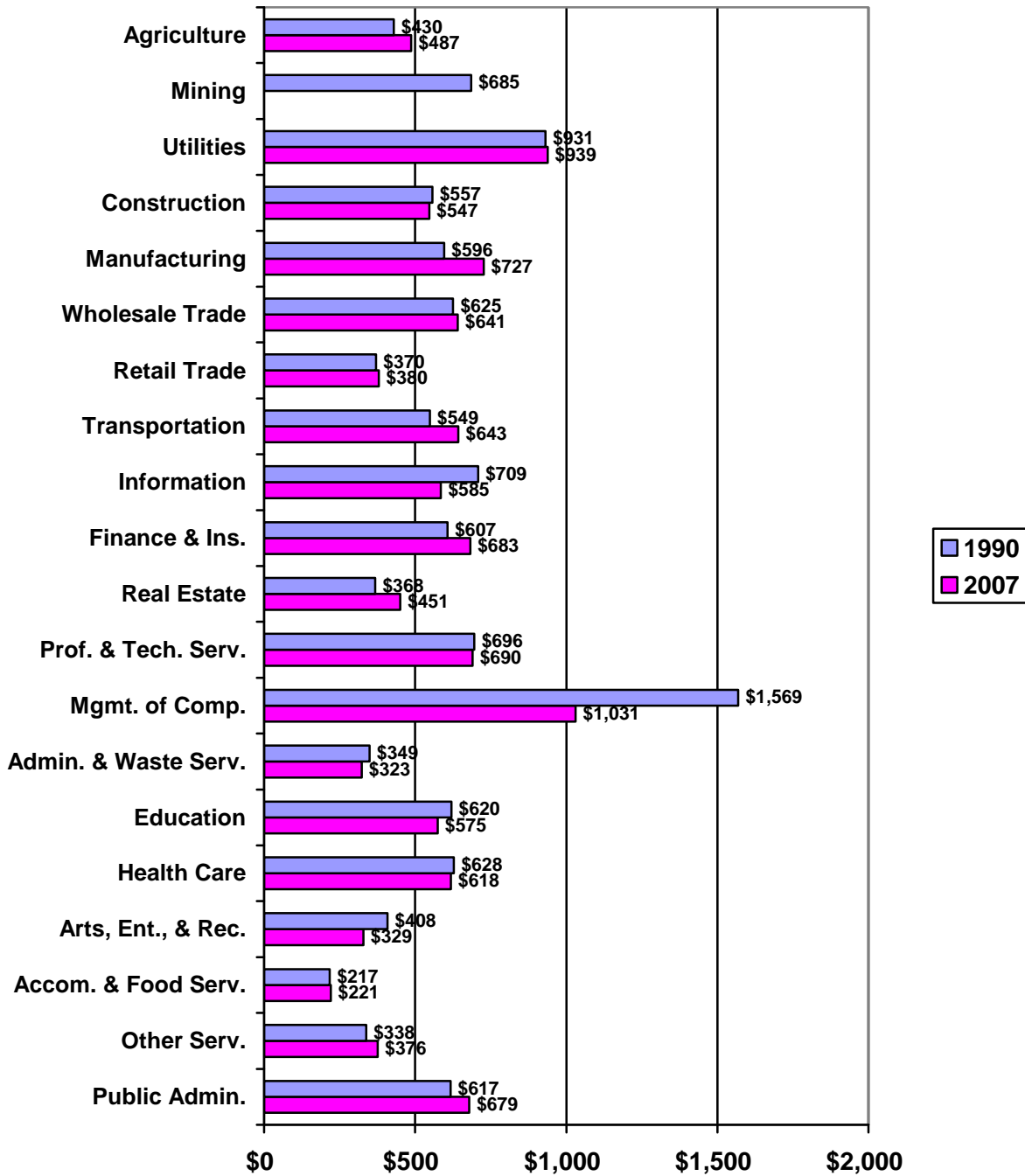


Figure 5: West Piedmont Workforce Investment Area – Average Weekly Wages by Major Industry Sector (in 2007 dollars)⁷

⁷ Data Source: Virginia Employment Commission

The West Piedmont region faces other challenges as well. As shown in Figures 6 through 8, relative to the state as a whole, its population tends to be older, exhibit lower levels of educational attainment, and suffer from higher rates of poverty.

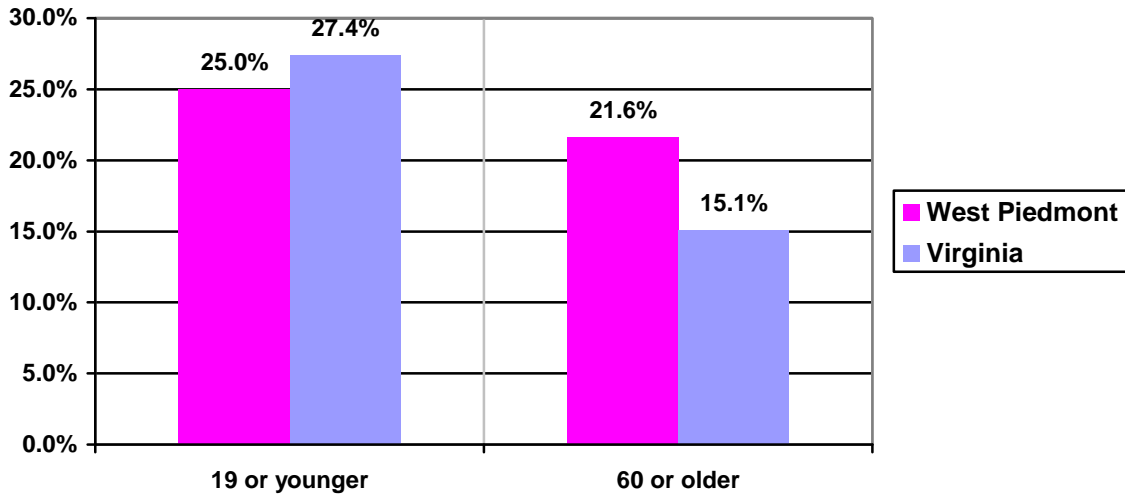


Figure 6: Age Distribution in 2000⁸

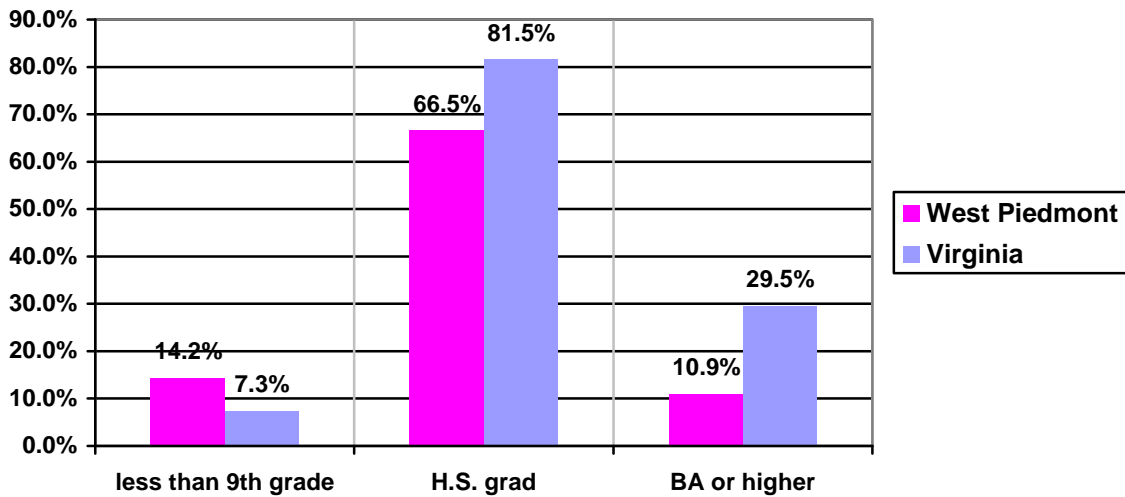


Figure 7: Educational Attainment in 2000⁹

⁸ Data Source: U.S. Census Bureau

⁹ Data Source: U.S. Census Bureau

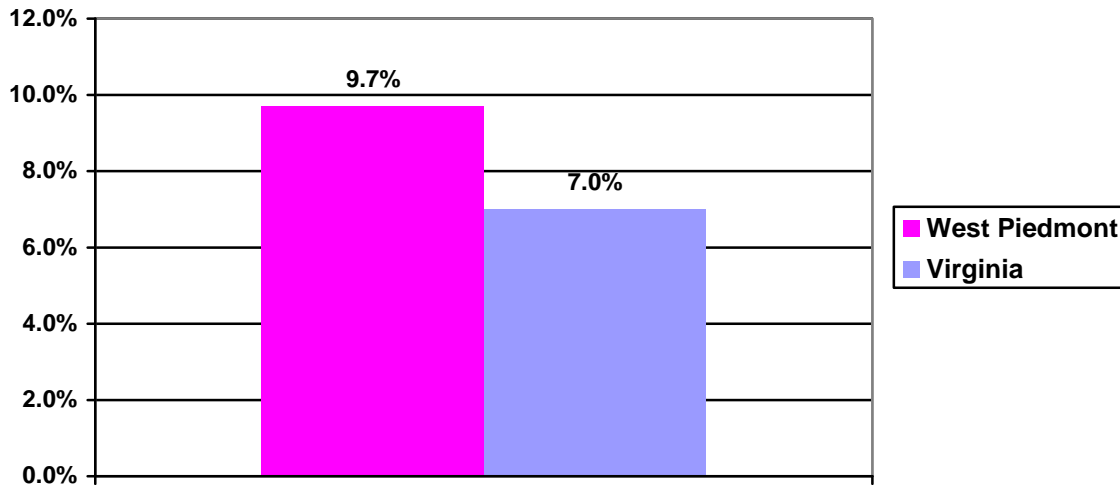


Figure 8: Percentage of Families below the Poverty Level in 2000¹⁰

In sum, the data indicate that if the West Piedmont region is to reverse recent downward trends and achieve greater economic growth and an increased standard of living it must accomplish three things: 1) upgrade the skills of its *Manufacturing* workforce to meet the needs of high-tech manufacturing facilities, like the new Swedwood furniture plant, that have made the *Manufacturing* sector the region’s driving force for wage growth, 2) attract new industries that will diversify the regional economy and reduce dependence on low-skilled manufacturing jobs, and 3) establish career paths that will provide viable forward looking options for workers with relatively low educational attainment. Importantly, the one common thread between each of these tasks is that they all are critically dependent on workforce development and precisely the types of services that the West Piedmont Workforce Investment Network provides.

Services

In 2007-08, the West Piedmont Workforce Investment Network provided career training and job placement services through four separate workforce programs:

- Workforce Investment Act (WIA) Adult Program – provides employment and training services to assist adults (individuals 18 years of age and older) in finding meaningful employment.

¹⁰ Data Source: U.S. Census Bureau

- WIA Dislocated Worker Program – provides employment and training services to dislocated workers (an individual who has been terminated or laid off, or has received notice that they will be terminated or laid off) in finding meaningful employment.
- WIA Youth Program – provides summer and year-round development programs to at risk youth (*e.g.*, dropouts, foster children, juvenile offenders, children of incarcerated parents, and migrant children).
- Core Services – provides self-service tools that assist a job seeker in making an effective job search.

As detailed in Table 1, in 2007-08 these programs were instrumental in transitioning 1,006 previously unemployed individuals into well-paying jobs.¹¹ Out of this number, 572 were placed through the West Piedmont Workforce Investment Network’s WIA programs. The average annual salaries associated with those placements ranged from \$10,004 to \$20,166. In addition to the 572 WIA placements, 424 individuals were placed as a result of the self-service job placement tools provided through the West Piedmont Workforce Investment Network’s Core Services.¹² The average annual salary for those self-referred placements was \$17,034.

Table 1: West Piedmont Workforce Investment Network Job Placements in 2007-08

Program	Job Placements	Average Annual Salary
WIA – Adult	103	\$17,369
WIA – Dislocated Worker	414	\$20,166
WIA – Youth	55	\$10,004
Subtotal	572	
Core Services	434	\$17,034
TOTAL	1,006	

¹¹ *Data Source:* data on placements and associated average annual salaries were obtained from the West Piedmont Workforce Investment Network.

¹² Out of the four jurisdictions reporting data (Danville, Martinsville – Henry County, Patrick County, and Pittsylvania County), one, Martinsville – Henry County, did not report the number of placements attributable to Core Services. As a result, those data were imputed based on averages derived from the other three jurisdictions.

Economic Impact

In this section, we assess the economic impact that the 2007-08 career training, job placement, and other workforce services provided by the West Piedmont Workforce Investment Network had on the economy of the West Piedmont region. The primary nature of that impact had to do with the new income earned by the 1,006 previously unemployed individuals that the West Piedmont Workforce Investment Network was instrumental in transitioning into meaningful employment.¹³ As shown in Table 2, the aggregate annual pre-tax income generated through those placements was approximately \$18.1 million.

Table 2: Consumption Expenditures Attributable to 2007-08 Job Placements

Program	Job Placements	Average Annual Salary	Total Pre-Tax Income	Total Consumption Expenditures
WIA – Adult	103	\$17,369	\$1,789,029	\$1,783,662
WIA – Dislocated Worker	414	\$20,166	\$8,348,850	\$8,290,408
WIA – Youth	55	\$10,004	\$550,202	\$550,202
Subtotal	572		\$10,688,080	\$10,624,271
Core Services	434	\$17,034	\$7,389,721	\$7,367,552
TOTAL	1,006		\$18,077,801	\$17,991,823

Economic impact is generally referred to in terms of “direct” and “indirect.” In this case, the direct economic impact of the \$18.1 million in new income generated by the West Piedmont Workforce Investment Network’s job placements in 2007-08 pertains to consumption expenditures. As previously unemployed individuals exit the workforce programs provided by the West Piedmont Workforce Investment Network and are placed in new jobs, they spend the majority of their newly acquired incomes on rent, food, clothing, and other goods and services. Those consumption expenditures provide an immediate injection into the regional economy. As shown in Table 2, based on recent

¹³ It is important to note that whereas the wages earned by these previously unemployed individuals constitute the primary economic impact of the career training, job placement, and other workforce services provided by the West Piedmont Workforce Investment Network in 2007-08, they are by no means the only economic impact. Although it is beyond the scope of the analysis presented here, a more inclusive definition of economic impact would also include, among other things, the cost of any social assistance that these individuals were receiving while unemployed (*e.g.*, unemployment assistance and food stamps) and no longer required after they were employed. For that reason, the more narrowly focused estimates of economic impact presented in this report should be considered conservative in nature.

data on consumer expenditures from the U.S. Department of Labor, we estimate that the \$18.1 million in annual pre-tax income generated by 2007-08 West Piedmont Workforce Investment Network job placements translated into approximately \$18.0 million in new regional consumption expenditures.¹⁴

Indirect economic impact refers to the ripple effects that an expenditure has as it makes its way through the economy. For example, when the \$18.0 million in new consumption expenditures described above become income for someone else, which is in turn spent, thereby becoming income for someone else, and so on, and so on, and so on. Through this process, one dollar in initial expenditures ultimately generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is called the Keynesian multiplier. Keynesian multipliers are named after John Maynard Keynes, the British economist who studied this phenomenon in the early portion of the last century.

To fully quantify the direct and indirect economic impact associated with the West Piedmont Workforce Investment Network's 2007-08 job placements we employ a commonly used regional economic impact model called IMPLAN.¹⁵ The IMPLAN model uses regional and national economic data to construct regional Keynesian multipliers and uses these multipliers to quantify economic impact. In the estimates that follow, we further disaggregate those impacts into three categories: 1) the economic output, or the dollar value of the impact, 2) the number of additional jobs that are associated with that economic output, and 3) the fiscal impact, or tax revenue generated.

WIA Program

We first look at the economic impact associated with the West Piedmont Workforce Investment Network's WIA program – the program where the West Piedmont Workforce Investment Network directly provided career training and job placement services that enabled an individual to transition from unemployment into a well-paying job. In assessing the likely economic impact attributable to those programs, we employ the following assumptions:

- A total of 572 individuals exited from this program and were placed into jobs in 2007-08.
- The average salary and total pre-tax income associated with this program is detailed in Table 2.

¹⁴ Estimates of consumption expenditures are derived using data from the U.S. Department of Labor's "2006 Consumer Expenditure Survey."

¹⁵ IMPLAN is produced by Minnesota IMPLAN Group, Inc.

- Consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey” for three income categories: \$10,000 to \$14,999, \$15,000 to \$19,999, and \$20,000 to \$29,999.
- All consumption expenditures were made within the West Piedmont region.
- Economic impact is based on a “representative year” and no attempt is made to phase placements in based on actual job start dates.

By feeding these assumptions into the IMPLAN model, we obtain the following estimates of the economic impact that career training and job placement services provided in 2007-08 through the WIA program had on the West Piedmont region. As shown in Table 3, with respect to overall economic output, it is estimated that the combined direct and indirect economic impact from this program was \$12.6 million. In addition, this economic impact generated 78 jobs (it is important to realize that these jobs are primarily in the retail trade, housing, and other service sectors that are typically impacted by household consumption expenditures and are in addition to the 572 placements), and \$1.0 million in state, local, and federal tax revenue.

Table 3: Estimated Economic Impact of WIA Programs

	Direct	Indirect	TOTAL
Output	\$10,624,271	\$2,010,453	\$12,634,724
Employment	58	20	78
Fiscal			\$1,018,373
State and Local Tax Revenue			\$567,012
Federal Tax Revenue			\$451,361

WIA and Core Services Programs

In this section, we add 2007-08 placements from Core Services to the placements attributable to the WIA program. Core Services have an arguably less direct impact on job placement since these services primarily involve self-service tools that assist a job seeker in making an effective job search. In assessing the likely economic impact attributable to the combined 2007-08 placements from both programs, we employ the following assumptions:

- A total of 1,006 individuals exited from these programs (572 from WIA and 434 from Core Services) and were placed into jobs in 2007-08.

- The average salary and total pre-tax income associated with these programs are detailed in Table 2.
- Consumption expenditures are derived using data from the U.S. Department of Labor’s “2006 Consumer Expenditure Survey” for three income categories: \$10,000 to \$14,999, \$15,000 to \$19,999, and \$20,000 to \$29,999.
- All consumption expenditures were made within the West Piedmont region.
- Economic impact is based on a “representative year” and no attempt is made to phase placements in based on actual job start dates.

Again feeding these assumptions into the IMPLAN model, we obtain the following estimates of the economic impact that the combined 2007-08 placements from the WIA and Core Services programs had on the West Piedmont region. As shown in Table 4, with respect to overall economic output, it is estimated that the combined direct and indirect economic impact from these programs was \$21.4 million. In addition, this total economic impact generated 132 jobs (again, it is important to realize that these jobs are in addition to the 1,006 placements), and \$1.7 million in state, local, and federal tax revenue.

Table 4: Estimated Economic Impact of WIA and Core Services Programs

	Direct	Indirect	TOTAL
Output	\$17,991,823	\$3,404,630	\$21,396,453
Employment	97	35	132
Fiscal			\$1,671,838
State and Local Tax Revenue			\$730,020
Federal Tax Revenue			\$941,818

Benefit/Cost Ratio

In 2007-08, the cost associated with the WIA program services provided by the West Piedmont Workforce Investment Network was approximately \$2.2 million.¹⁶ Comparing this cost to the benefits derived from these programs, in terms of total economic output, allows us to calculate a benefit/cost ratio. If the analysis is restricted to the WIA program, that benefit/cost ratio is approximately 5.7, indicating that the benefits derived

¹⁶ *Data Source:* West Piedmont Workforce Investment Network.

from the program are almost six times greater than the costs required to generate those benefits. If the analysis is expanded to encompass Core Services as well, the associated costs increase to approximately \$2.4 million, and the benefit/cost ratio rises to approximately 9.1, indicating that the benefits are more than nine times greater than the costs required to generate them.

Conclusion

The West Piedmont Workforce Investment Network provides workforce services to the cities of Danville and Martinsville, and the counties of Henry, Patrick, and Pittsylvania. These localities face several challenges as they endeavor to restructure the economy of the West Piedmont region to succeed in the new economic environment of the 21st Century. Between 1990 and 2007, the West Piedmont region lost ground economically as it saw its overall employment drop 21 percent and its average weekly wage fall from 78 to 62 percent of the statewide average. These downward economic trends are attributable to the fact that the region experienced very heavy job losses in its *Manufacturing* sector over this period, and these losses had a disproportionate impact on the regional economy because: 1) *Manufacturing* constitutes, by far, the region's largest employment sector, and 2) it was the region's only major employment sector to see significant wage gains between 1990 and 2007.

If the West Piedmont region is to reverse these downward trends and achieve greater economic growth and an increased standard of living, it must accomplish three things: 1) upgrade the skills of its *Manufacturing* workforce to meet the needs of high-tech manufacturing facilities, like the new Swedwood furniture plant, that have made the *Manufacturing* sector the region's driving force for wage growth, 2) attract new industries that will diversify the regional economy and reduce dependence on low-skilled manufacturing jobs, and 3) establish career paths that will provide viable forward looking options for workers with relatively low educational attainment. Importantly, the one common thread between each of these tasks is that they are all critically dependent on precisely the types of services that the West Piedmont Workforce Investment Network provides.

In 2007-08, the workforce development programs provided by the West Piedmont Workforce Investment Network enabled 1,006 previously unemployed individuals to transition into well-paying jobs. Out of that total, 572 of the placements came through the WIA program (a program that directly provides career training and job placement services), and 434 came through Core Services (self-service tools that assist a job seeker in making an effective job search). The average annual salaries associated with those placements ranged between \$10,004 and \$20,166. Moreover, in total the 1,006

placements generated approximately \$18.1 million in annual pre-tax income, and drove an additional \$18.0 million in local consumption expenditures.

In turn, those \$18.0 million in consumption expenditures had a significant additional impact as they rippled through the economy of the West Piedmont region. Focusing first on the 572 placements associated with the WIA program, that impact is estimated to be \$12.6 million in total economic output, 78 additional jobs (these jobs are in addition to the 572 placements), and \$1.0 million in state, local, and federal tax revenue. If we increase the scope of workforce services to include Core Services, the economic impact associated with the resulting 1,006 placements is estimated to be \$21.4 million in total economic output, 132 jobs (these jobs are in addition to the 1,006 placements), and \$1.7 million in state, local, and federal tax revenue.

Finally, comparing these figures to the expenses associated with the WIA and Core Services programs provided by the West Piedmont Workforce Development Network in 2007-08 shows that the benefit/cost ratio is: 1) 5.7 if one excludes Core Services, indicating that benefits are almost six times greater than costs, or 9.1 if Core Services are included, indicating that benefits are more than nine times greater than costs.