7.9.09

Economic Impact of Virginia Tobacco Commission

Defining Revitalization of Tobacco-Dependent Communities and Measuring Progress

The Tobacco Commission wants to measure its progress toward its statutory mission of "revitalizing tobacco dependent communities." To that end, this report

1. Defines revitalization and suggests metrics to measure the progress of the tobacco-dependent communities in Virginia,
2. Concludes that publically available data are adequate for measuring the Commission's progress toward revitalization,
3. Suggests that sufficient time has elapsed to measure the short-term economic impact of Commission efforts.

Prepared for

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I. Background

The Virginia Tobacco Indemnification and Community Revitalization Commission (Commission) wishes to measure its progress toward its statutory mission of "revitalizing tobacco-dependent communities" with a companion objective of making improvements in the deployment of Commission funds. Created in 1999, the Commission has made investments in 1,065 projects. Many of these projects remain works in progress, resulting in a delayed economic impact.

Chmura Economics & Analytics (Chmura) was retained to assist the Commission in accomplishing the following tasks as they relate to the tobacco-dependent communities:

1. Define revitalization of tobacco-dependent communities and identify metrics to measure it
2. Determine whether internally-created data are adequate for measuring progress toward revitalization or if publicly available data are best suited to the task
3. Assess whether sufficient time has elapsed to measure the economic impact of Commission efforts to be revealed by that data
4. Establish an appropriate, reader-friendly format for periodic presentation of the findings from item 1.

The remainder of the report provides the results and support for the conclusions proposed by Chmura. The next section proposes a definition of economic revitalization, metrics for measurement of progress over time, and an overview of the economic condition of the tobacco-dependent communities. The third section identifies issues around the data and measurement of the economic impact of the Commission's investment. The final section proposes a format for periodic presentation of these findings as well as recommendations for program assessment improvements observed.

II. Defining Economic Revitalization

Economic revitalization is the goal of many regional strategic plans as well as government programs that seek to help slow-growing or depressed regions become more competitive.[1] The definition of economic revitalization differs depending on the characteristics of the region, such as urban, rural, and inner city.

Economic revitalization can be defined for the tobacco-dependent communities in Virginia as

a more stable, diversified, and growing economy that leads to higher living standards.

Consequently, metrics are needed to measure the following four terms:

1. **More Stable** – less fluctuations during recessions as well as expansions in the business cycle
2. **More Diversified** – less dependence on volatile industries or one or two industries
3. **Growing Economy** – increasing employment

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[1] See for example, the strategic plan of Kalamazoo, Michigan (**http://www.iedconline.org/EDAmerica/Spring2005/kalamazoo_4.html**) or the Community Economic Revitalization Board Rural Program in the state of Washington (**http://www.ofm.wa.gov/study/03_AppendixB_Program17.pdf**).

4. **Higher Living Standards** – increases in annual average wages that reduce the gap with the state and/or nation

Metrics are needed to track the progress of the Commission toward its goal of revitalization. Chmura proposes that the Commission use the following six indicators, of which four measure the outcomes of change and two measure drivers of change:

1. Outcomes are coincident measures of activity that gauge current conditions.

    a. **Job creation** as measured by the percentage change in employment reflects a "growing economy."
    b. **Workforce participation rate** as measured by the number of working age adults that are employed and unemployed[2] divided by the population of working age adults reflects "a more stable economy" because higher participation rates are associated with less transfer payments such as disability and unemployment insurance.
    c. **Wealth** as measured by annual average wages that lead to "higher living standards."
    d. **Diversity** as measured by the percentage of employment in the top 10 private employers in the region is associated with "a more stable, diversified economy."

2. Drivers are leading indicators of activity—they point to future change in the economy and underpin revitalization.

    a. **Capital investment** as measured by the total capital investment per resident[3] of the tobacco-dependent region in Virginia leads to increased productivity in the region that, in turn, results in a "growing economy" and "higher living standards."
    b. **Education level** as measured by associate degree awards per capita because more citizens with an associate's degree or higher leads to a "growing economy" and "higher living standards."

Supplementary detail on the source of each metric is found in the Appendix 1.

Metrics should also be measured relative to a benchmark to put progress into perspective. Chmura recommends the benchmark for the Tobacco Region be made up of all counties and cities in Virginia less the Tobacco Region and the three largest metropolitan areas in the state (Northern Virginia, Virginia Beach-Norfolk-Newport News, and Richmond).

An additional consideration for the Commission is whether to measure the metrics for the total tobacco-dependent region or to separate the Southside and Southwest. Although an argument can be made to track the average for the entire region, doing so may hide the divergent trends in the two separate regions that may lead to different strategies regarding the types of investments funded by region. For example, a lower education level in Southwest compared with Southside might encourage Southwest policymakers to grant more college scholarships. In addition, some indicators such as diversity will appear more favorable when measured in a larger area and will mask the true underlying conditions.

The following review of the historic economic conditions of Southside and Southwest, which makes up the tobacco-dependent communities of Virginia, suggests that metrics for the two regions should be tracked separately.

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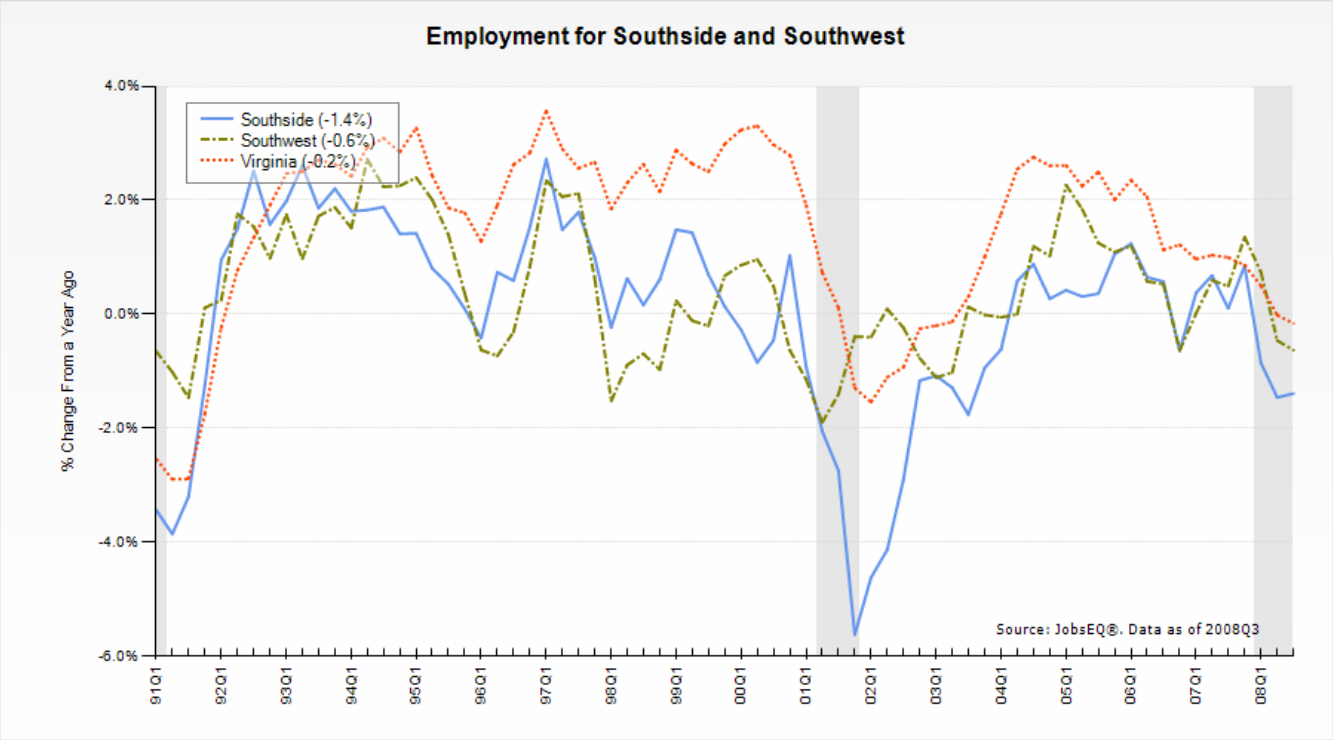
[2] Unemployed is defined as individuals actively seeking a job.
[3] Source of population data: http://www.coopercenter.org/demographics/.

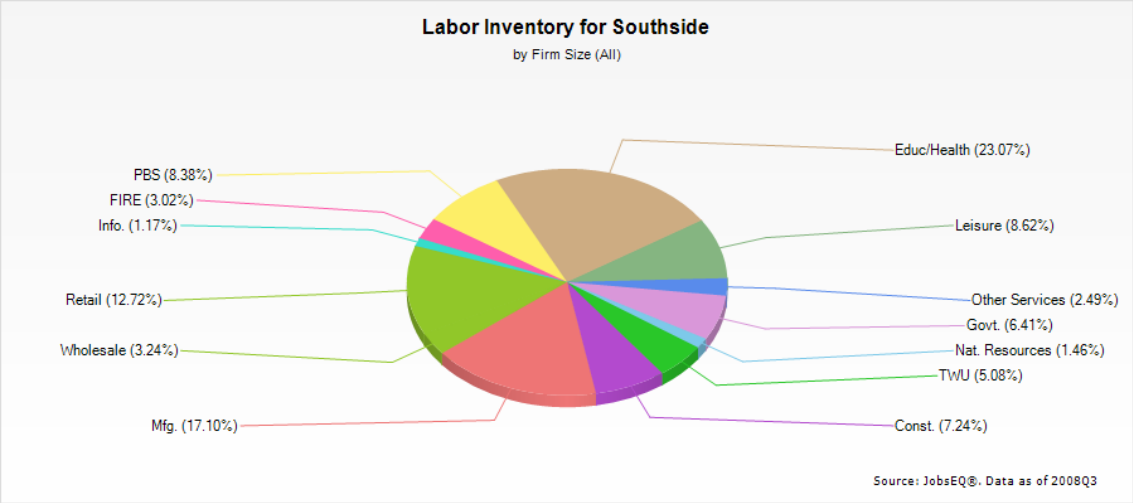
Economic Condition of Southside and Southwest

The latest employment figures show that Southside and Southwest are declining at a pace faster than the state. Based on the latest data from the third quarter of 2008, employment in Southwest is down 0.6% from a year ago compared with 1.4% in Southside and 0.2% in the state. The 0.8 percentage point difference between the two regions reflects differences in industry mix.

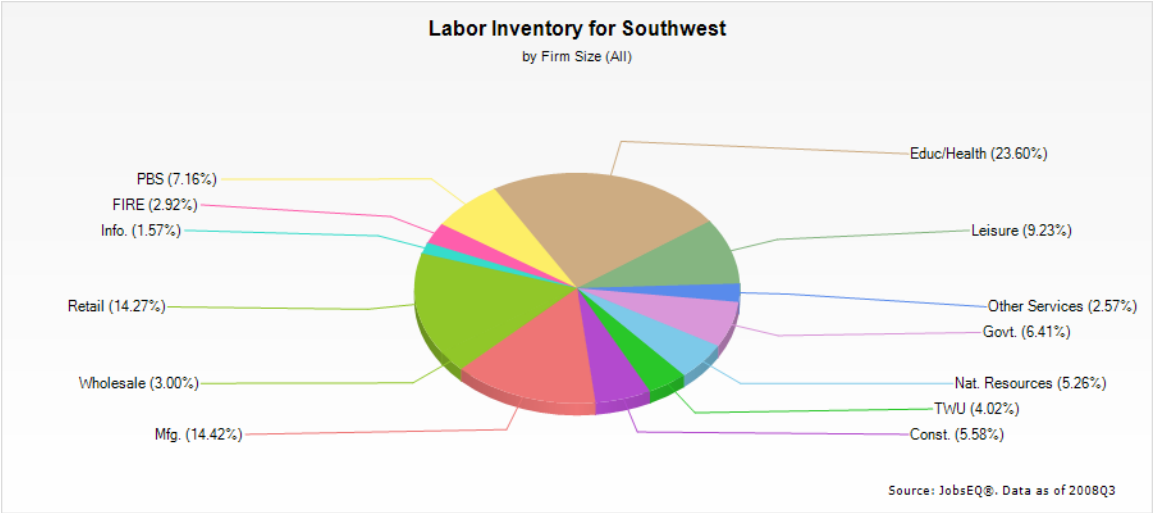


Employment in the economies of Southside and Southwest Virginia has historically been more volatile than that of the state and the nation (grey-shaded areas represent recessions). As shown in the chart below, both regions have grown at a slower year-over-year pace than the state for most quarters since 1991. Moreover, the region is typically more volatile than the state, evidenced by wider swing in total employment, including more periods when employment in the region is contracting. The late 1990s are an example when the nation and the rest of Virginia were experiencing high employment growth due to the technology boom while Southside and Southwest experienced little employment growth and periods of contraction.

The volatility in Southside and Southwest Virginia is partially due to its mix of industries. As of the third quarter of 2008, 17.1% of the people in Southside Virginia worked in the volatile and contracting manufacturing sector compared with 14.4% in Southwest and 7.4% in the state. Although Southwest's dependence on manufacturing is smaller than that in Southside, it is more dependent on the coal mining sector, which is also volatile due to fluctuations in oil prices and in long-term decline caused partially by gains in productivity. The natural resources sector (includes coal mining) employs 5.3% of the workers in Southwest compared to 1.5% in Southside and 0.6% in the state. In contrast, the more stable, fast growing, and high paying professional business services (PBS) sector makes up only 8.4% of employment in Southside and 7.2% in Southwest compared with 18.6% in the state.



Note:
PBS = professional business services
FIRE= finance, insurance, and real estate
TWU = transportation, warehousing, and utilities



Note:
PBS = professional business services
FIRE= finance, insurance, and real estate
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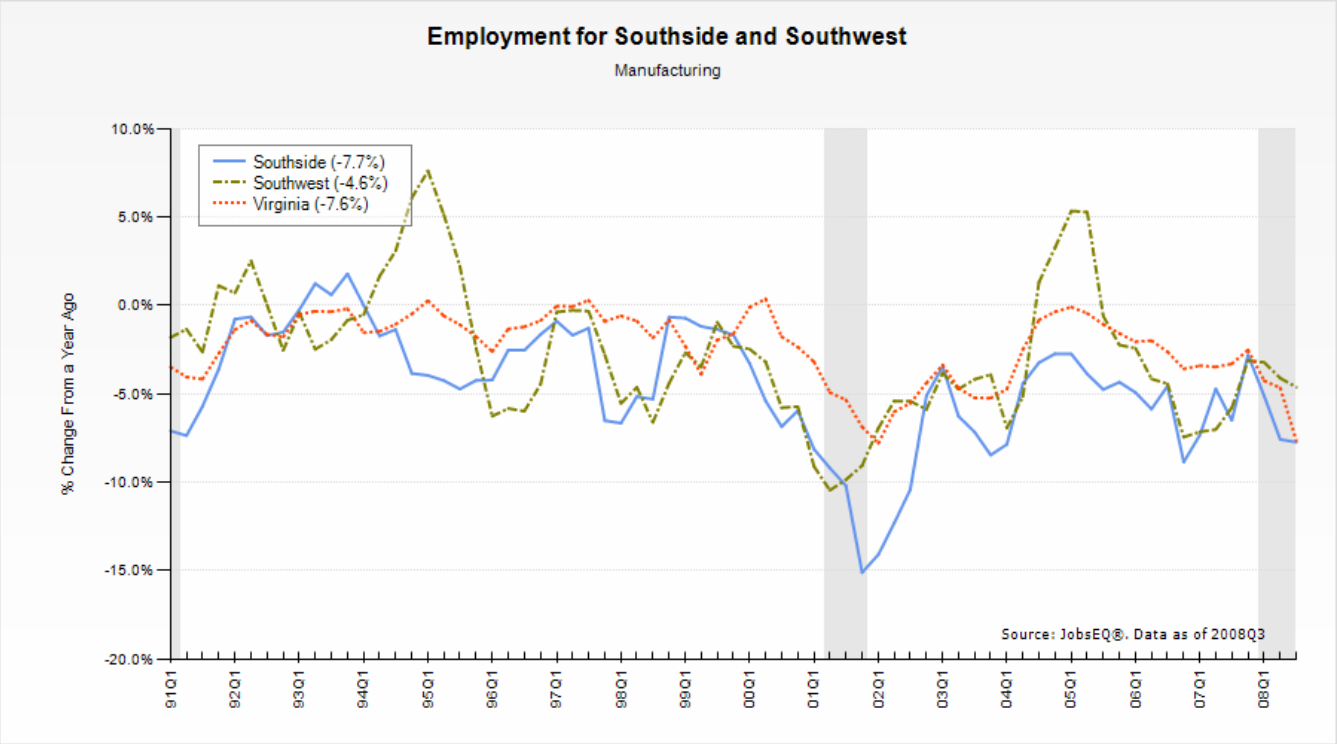
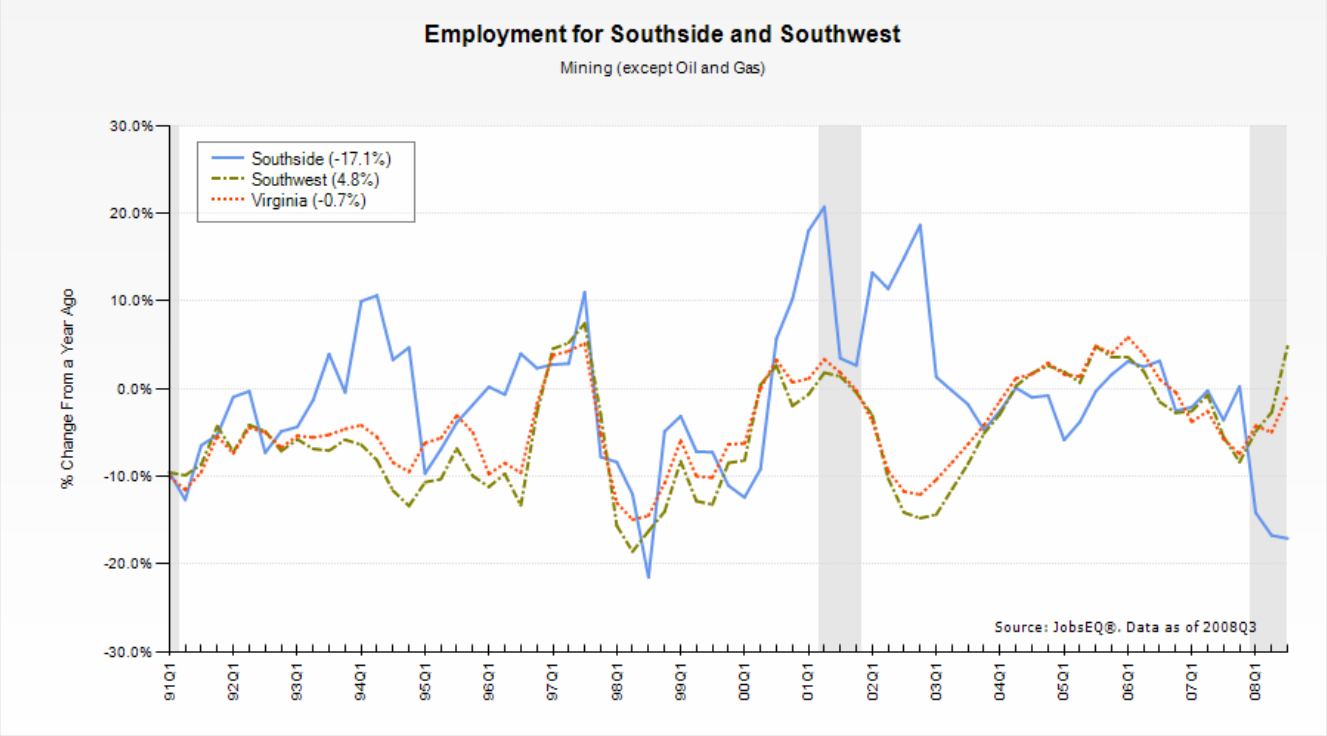
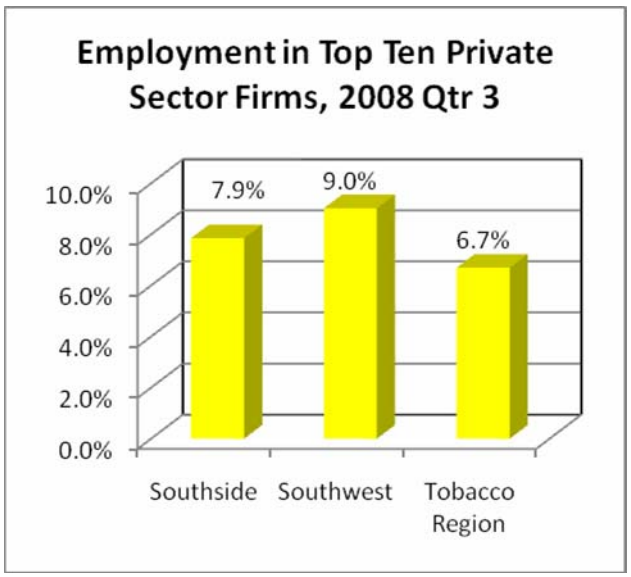
As shown in the chart below, manufacturing employment has contracted on a year-over-year basis in Southside and Southwest during almost every quarter since 1991. In fact, since 1990, manufacturing employment contracted by 46,000 in Southside and 13,400 in Southwest. In addition, manufacturing employment is also more volatile than that of total employment and typically contracts at a sharp rate during recessions, which are represented by the grey-shaded periods in the chart.



Mining (mostly coal mining) in Southwest Virginia is also relatively volatile when compared to all industries and has been contracting for the most part on a year-over-year basis in the region since 1991. In contrast to manufacturing, however, growth in coal mining is also dependent on oil prices. Leading up to and during the 2001 recession and in the current recession, for example, mining employment in Southwest increased as high oil prices caused a substitution of coal for oil. Since 1991, coal mining jobs have declined by nearly 7,500 in Southwest Virginia.

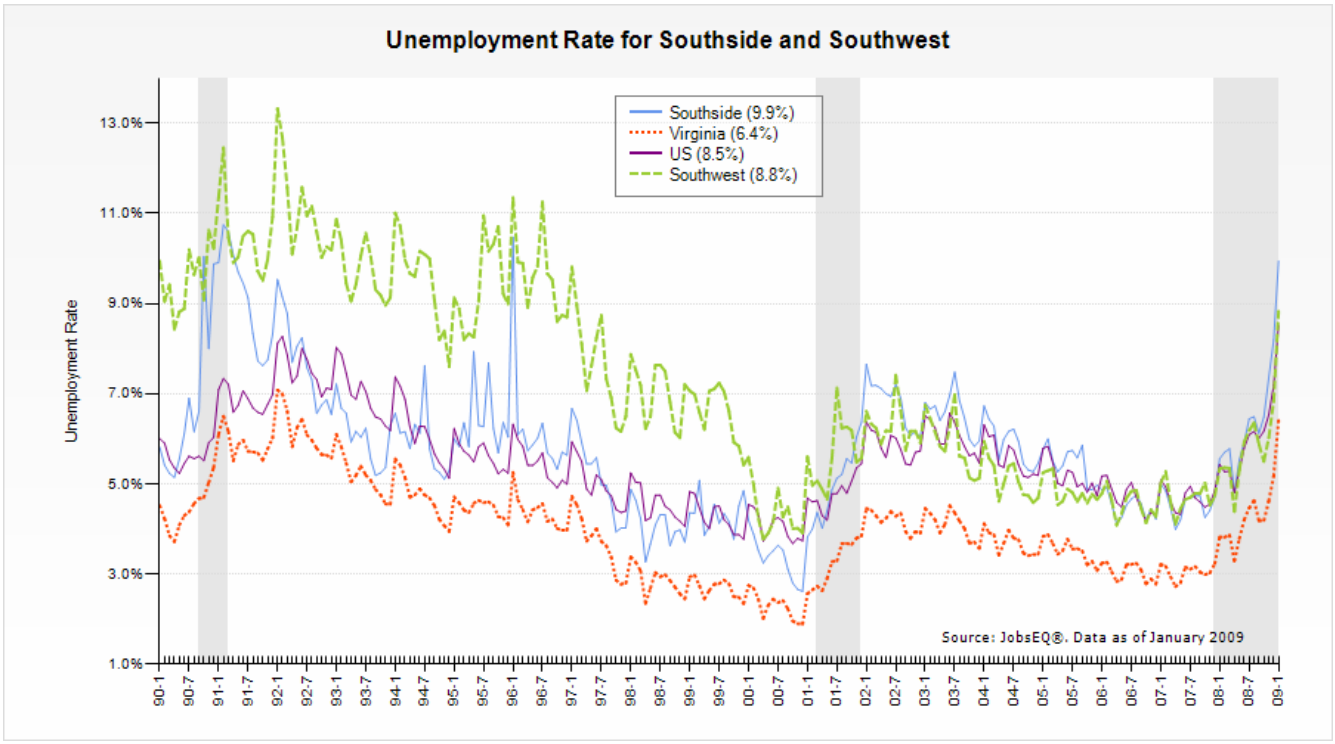




An additional factor that leads to volatility in many rural areas is dependence on a small number of employers. When one large employer goes out of business, the region can suffer considerable stress as retailers and other businesses see significant losses when the unemployed workers pull back on spending.

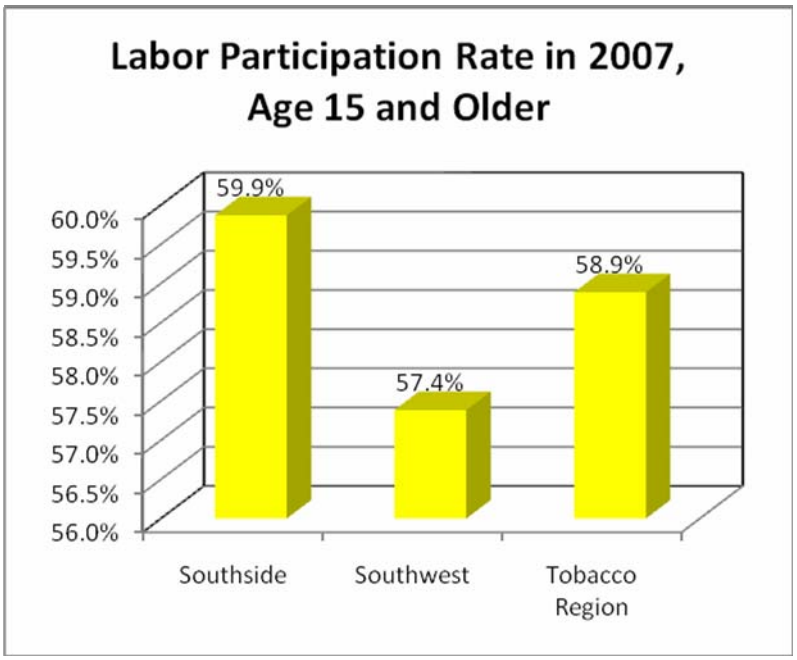
The percentage of workers in the ten largest private sector firms is one measure of diversity. As shown in the chart here, Southwest with 9.0% of its workers in the ten largest firms is less diverse than Southside where 7.9% of the employees work at the top ten firms. By comparison, 6.7% of all Tobacco Region employees[4] and 4.1% of employees in the state work at one of the top ten private sector firms.

The volatility of the industry mix in Southside and Southwest Virginia along with the lack of depth for alternative employment has led to an unemployment rate that has been higher than the state and often higher than the nation. Based on Data through January 2009, the unemployment rate in Southwest was 8.8% compared with 9.9% in Southside and 6.4% in Virginia.



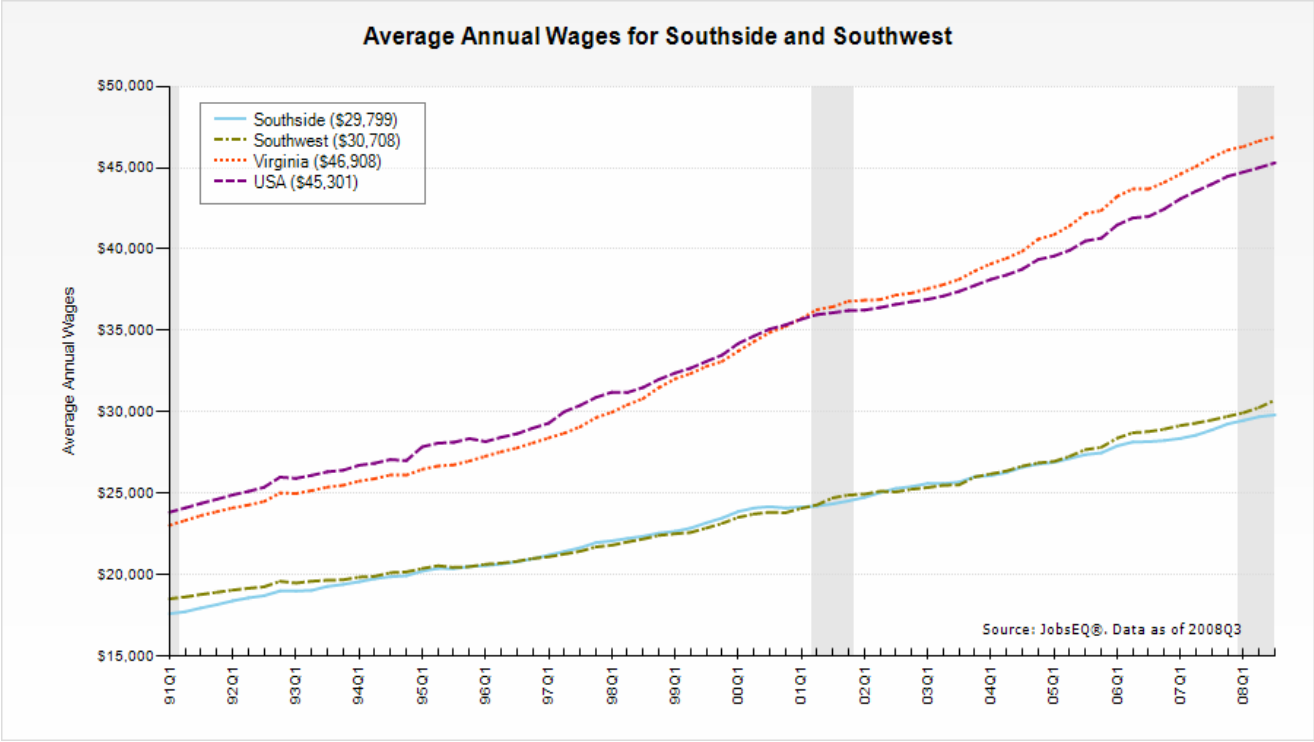
[4] The regional diversity measure can be smaller than either region because when they are combined the employment base is much larger relative to the size of the ten largest firms.

The labor force participation rate of a region provides additional insights into the health of a region. The participation rate, which is defined as the percentage of individuals aged 15 and older who are either working or looking for work in a region, reflects the willingness and ability of people in a region to work. Participation rates are generally higher in regions where there is less dependence on social programs such as disability and unemployment insurance.



The labor force participation rate diverges significantly between Southside and Southwest. It is lowest in Southwest (57.4%) in 2007 compared with 58.9% in the entire Tobacco Region and 59.9% in Southside. The Virginia labor force participation rate was 67.6% in 2007.

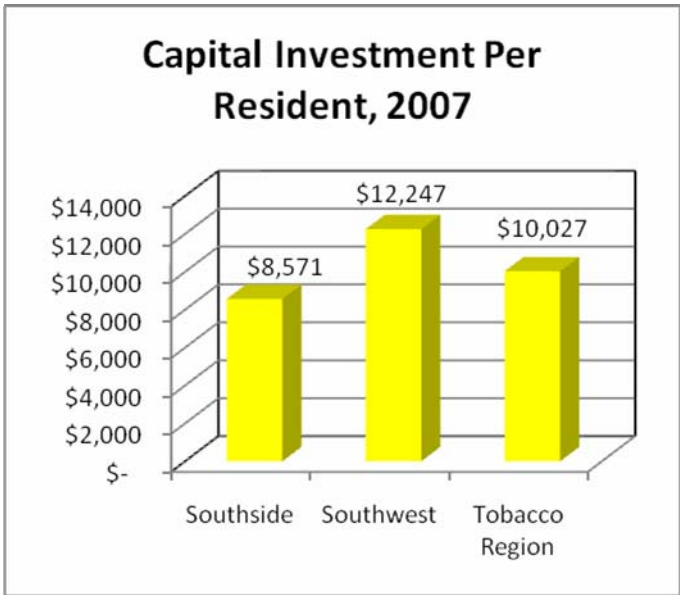
Annual average wages is the one metric where Southside and Southwest are very similar. The annual average wages for Southside and Southwest Virginia have historically been lower than that of the state. As shown in the chart below, the pace of growth in Virginia wages has been faster than that in Southside and Southwest. The decline in manufacturing and mining jobs in Southside and Southwest Virginia has contributed to the widening gap with the state average because manufacturing and mining



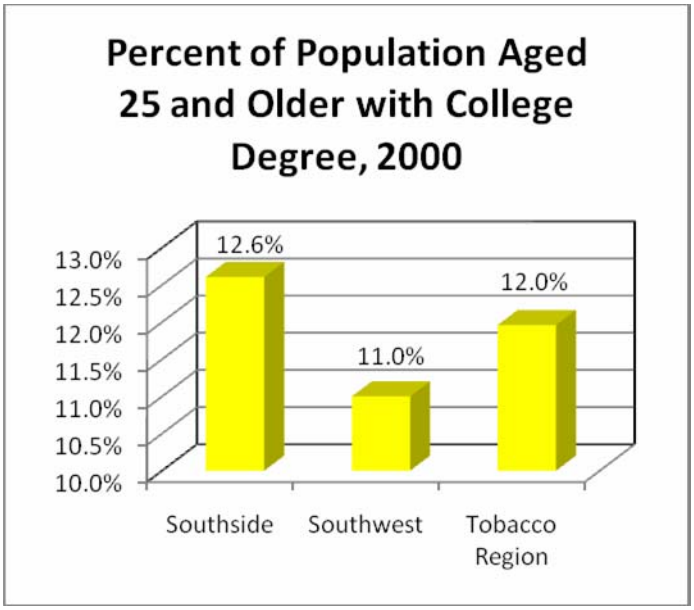
represent some of the highest wages in the region; and those job losses have not been replaced with equally high-paying jobs. In Southside, manufacturing firms paid an average annual $37,747 in the third quarter of 2008 compared with the average wage of $29,769 for all industries. Similarly, manufacturing firms in Southwest paid

$35,916 during the same period compared to $30,654 for all industries. Mining industries pay even higher wages: $50,904 in Southside and $59,815 in Southwest in the third quarter of 2008.

Two drivers of growth that are proposed as metrics to measure revitalization in the Tobacco Region also differ enough in Southside and Southwest to support measuring the two regions separately. Capital investment per resident was a much higher $12,247 per person in Southwest in 2007 compared to $8,571 in Southside and $10,027 in the entire Tobacco Region.



In contrast, the percent of the population aged 25 and older with a college degree was 12.6% in Southside in 2000, compared to 11.0% in Southwest and 12.0% in the entire Tobacco Region.[5]



[5] The U.S. Census Bureau's American Factfinder has 2007 college education statistics for some localities in Virginia, but many rural areas are not covered by the survey.

III. Available Data and Measurement Issues

The Tobacco Commission started using a grants database called GIFTS in the fourth year of its grant making to collect and tabulate information about awards.[6] At a minimum, the GIFTS database collects the following information about each award:

1. Name of organization
2. Address
3. Tax identification number
4. Type of organization (local government, economic development organization, non-profit, etc)
5. Project title
6. Request date (date application was received)
7. Requested start date
8. Anticipated project end date
9. Award date
10. Request amount
11. Total project cost
12. Award amount
13. Project leader name & contact information
14. Grant status (pending, active, closed)
15. Assigned staff
16. Text field for miscellaneous notes re: meeting minutes/committee action
17. Project description
18. Evaluation (staff's recommendation and committee recommendation)
19. Coding
    a. Fund
    b. Program area
    c. Geographic area served
    d. Type of support
20. Any affiliations with other contacts/organizations
21. Payments (amount, date, check #, payment #, type – advance or reimbursement)
22. Status of requirements (legal documents, reporting, budget revisions, etc)

In addition, each award is categorized into one of the following six categories based solely upon the committee or fund[7] from which the award was recommended:

1. Agribusiness
2. Economic Development (separate Committees for the Southside and Southwest)
3. Education – Project support for workforce facilities, training equipment, scholarships, workforce programs/operations, GED/adult basic education, etc.[8]

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[6] Important historical information was entered (grantee, project title, grant award, etc.) for all awards that were granted prior to obtaining GIFTS.

[7] The categories are by funds and not by "type" because a project may receive multiple awards from different committees, but for the same activity.

[8] Each of these awards is further classified regarding the program supported: kindergarten through high school, community college, undergraduate, graduate degree/research oriented, workforce development/certificate program, GED.

4. Special projects
5. Technology
6. TROF

The GIFTS database provides a baseline of information about the timing, size, and type of grants that have been awarded; but it does not provide enough information to determine the economic impact of the grant on the locality. Additional data could be required from the recipient such as expected economic impact (employment and wage gain, for example) and then historical data to show if the impact accrued. Self-reported data, however, can be problematic. Changes in personnel at local areas over the life of the project can make collection of data difficult. Moreover, validating the information provided by the recipient could be time consuming and costly; perhaps even requiring addition staff for the Commission.

In the remainder of this section, a summary of the grants awarded by the Commission since 2000 is provided as well as an assessment of the possibility of using publically available data along with the information from the GIFTS database to assess the economic impact of grants on the Tobacco Region.

Data Summary

From fiscal year 2000 through fiscal year 2009, the Commission awarded 889 grants.[9] As shown in Table 1, the number of awards varied from 9 during the Commission's first full year of operation to 148 in fiscal year 2006. One hundred five grants were awarded in the latest fiscal year, 2009, which ends in June.

Documentation and the grant applicant processes were not fully developed until 2003. For that reason, the first three years of data are not included in some of the analysis that follows.

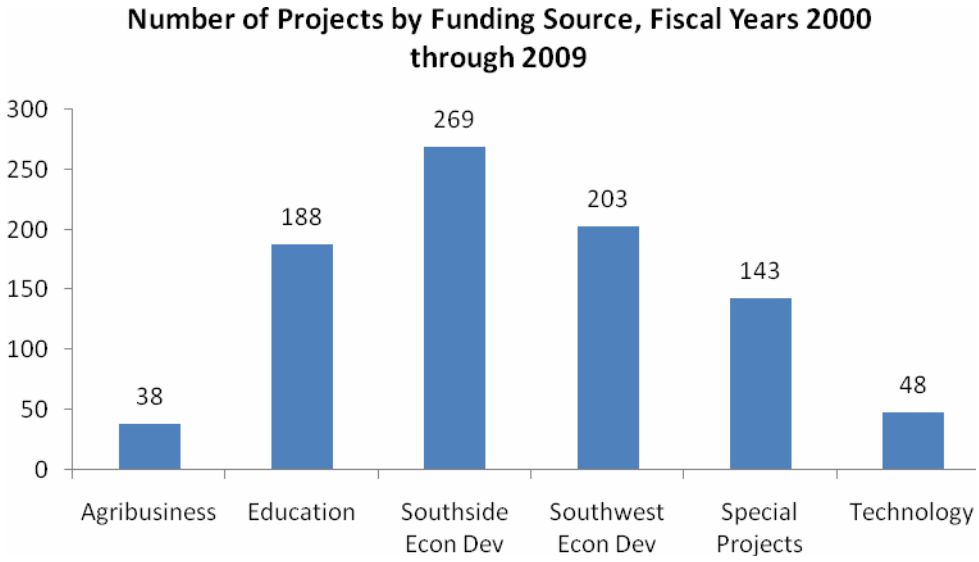
Table 1: Tobacco Commission Project Summary

Fiscal Year	Number of Award	Total Grant Amount	Average Grant Amount
2000	9	$17,600,000	$1,955,556
2001	76	$35,280,683	$464,220
2002	73	$21,942,436	$300,581
2003	100	$38,828,667	$388,287
2004	102	$37,338,326	$366,062
2005	66	$25,373,588	$384,448
2006	148	$92,476,980	$624,844
2007	109	$46,574,620	$427,290
2008	101	$74,954,665	$742,125
2009	105	$104,366,952	$993,971
Total	**889**	**$494,736,917**	**$556,509**

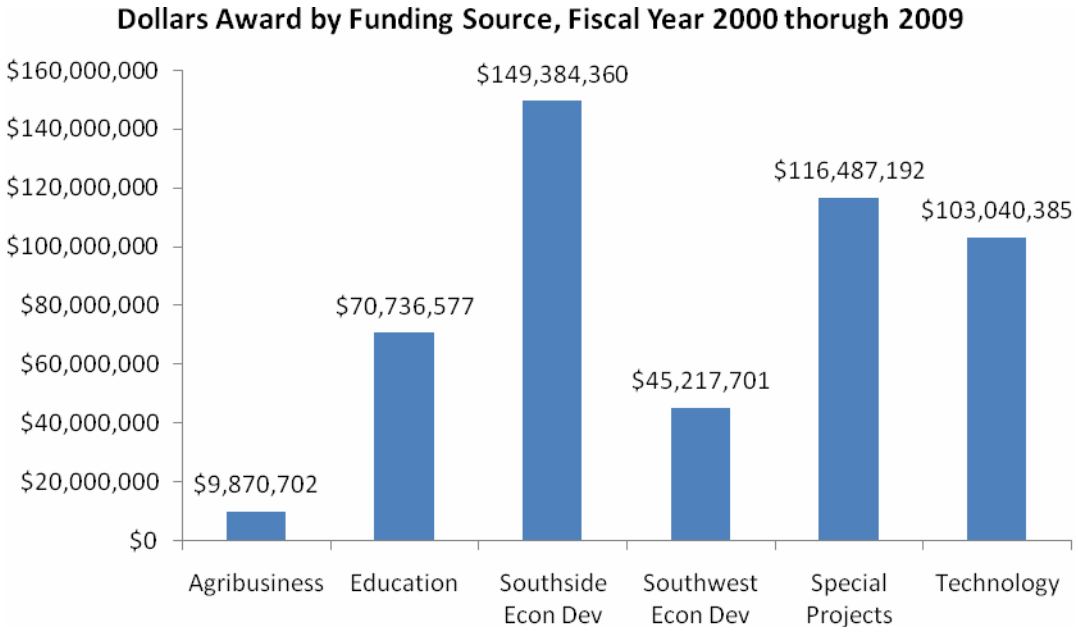
Awards have averaged $556,509 per project since 2003. The averages have varied from a low of $300,581 in fiscal year 2002 to a high of $993,971 in 2009. In most cases, however, the Commission grants are only a fraction of the amount needed to take the project to fruition. Based on self-reported information from grantees, since 2003, Commission funds have been leveraged by nearly six fold to turn $494.7 million in grants into projects costing over $5.5 billion if all the matched funds reported by the grantees were collected.

[9] TROF grants are not included in this analysis.

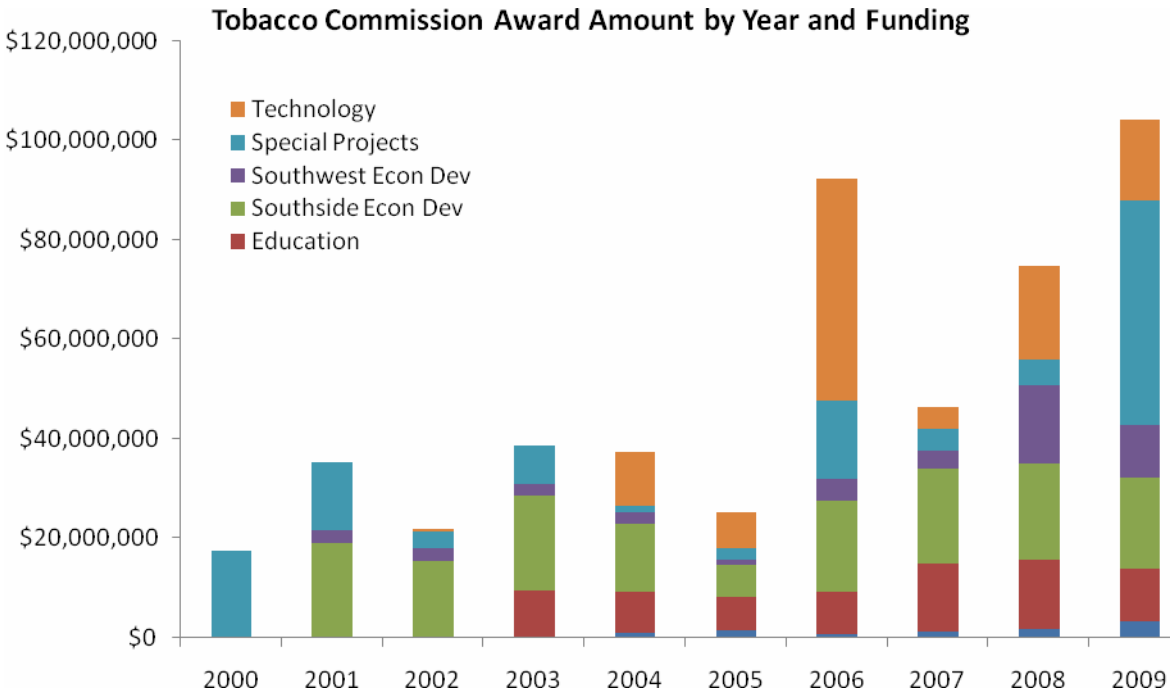
The grants from the Commission were awarded by different committees, or sources. As shown in the following chart, the greatest number of projects since 2000 was awarded for economic development in Southside and Southwest Virginia. With 188 projects, education is the next most awarded category. Agribusiness received the least amount of awards (38) followed by technology (48).



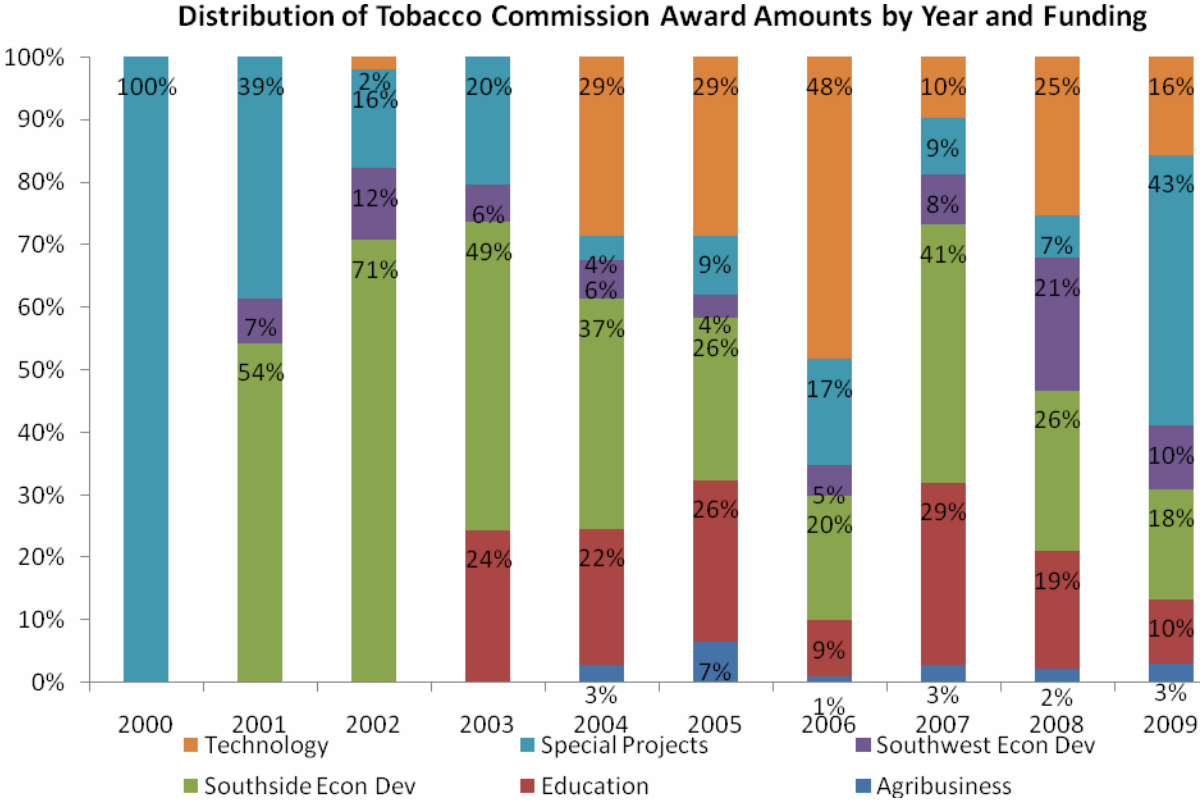
In terms of total grant amount, Southside economic development was awarded $149.4 million from fiscal year 2000 through 2009, followed by special projects ($116.5 million), and technology ($103.0 million). Despite a large number of projects, the total award amount for Southwest economic development was $45.2 million, indicating a relatively small average size for those projects.



The type of grants based on total amount awarded by the Commission has varied over time (see chart below). The first technology grant was awarded in 2004 and the first education grant was awarded in 2003. Otherwise, most grant types were awarded throughout the history of the Commission.



Fifty percent or more of the dollar amount of awards were classified as economic development (both Southside and Southwest) during the first three years of the Commission. Technology grants received the largest percentage of awards by dollars in 2005 and 2006 at 29% and 48%, respectively. The dollars invested in economic development was once again the largest percentage of awards in 2007 and 2008 at 49% and 47%, respectively. Special projects received the largest dollar amount of awards in fiscal year 2009.



The funding source will not provide sufficient information to identify the economic impact of Commission awards on indicators such as job creation. For example, both economic development grants and education grants can be used to build higher education centers. They may have similar economic impacts, but they belong to two different funding categories. Likewise, estimating the economic impact of scholarships and building higher education centers require two different approaches. Using the same methodology on both because they were awarded by the education committee would lead to misleading results.

A more accurate way to assess the economic impact of Commission grants is to classify them by how they are spent. The following 12 usage categories can be used for the analysis:[10]

[10] In future analysis, Chmura recommends combining some of those categories into 4 to 5 major spending categories. For example, site-work and facility can be grouped as construction spending; water/sewer and broadband can be grouped as infrastructure; cost share, loan programs and operating support can be combined as operation.

1. Land Purchase – land purchases and related fees such as title.
2. Facility – includes purchase, construction, or renovation of a building
3. Equipment – purchase of equipment along with installation fees
4. Site Work – clearing, grading, road work curbs, gutters, etc.
5. Infrastructure (Water/Sewer) – items that relate to the installation or repair of utility lines or wastewater treatment facilities
6. Architecture and Engineering (A/E) - architecture or engineering professional services
7. Studies – impact study, feasibility study, operating plan, marketing plan, research, etc.
8. Broadband – items that relate to the design and installation of broadband (fiber or wireless)
9. Operating Support – soft costs; start-up assistance for salaries, supplies, rent, etc.; marketing support
10. Loan Programs – funds used by a grantee to lend; generally for revolving loan programs for small business start-up and expansion
11. Cost Share[11] - generally used within Agribusiness program; dollar-for-dollar match to entice participation in value-added programs
12. Scholarship – awards to students to attend school

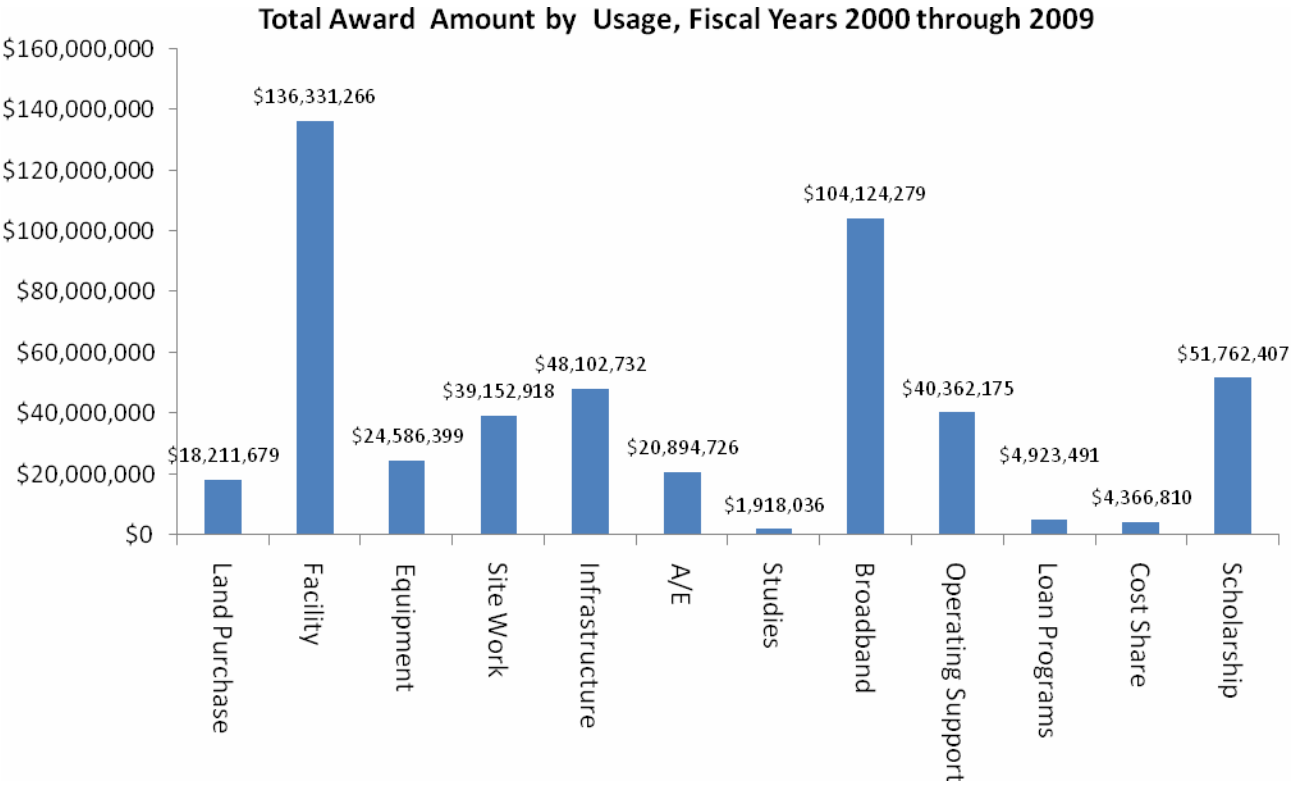
The following table indicates the number of awards in each of the above 12 spending categories. Among those, the largest number of awards is for operating support with 201. The next largest amount of awards is 121 for equipment purchase, and 113 awards for architecture and engineering (A/E). This information will help to evaluate whether there are enough grants (observations) to potentially perform an analysis for individual programs such as infrastructure or facility, which will be discussed later

Table 2: Grant Awards by Type

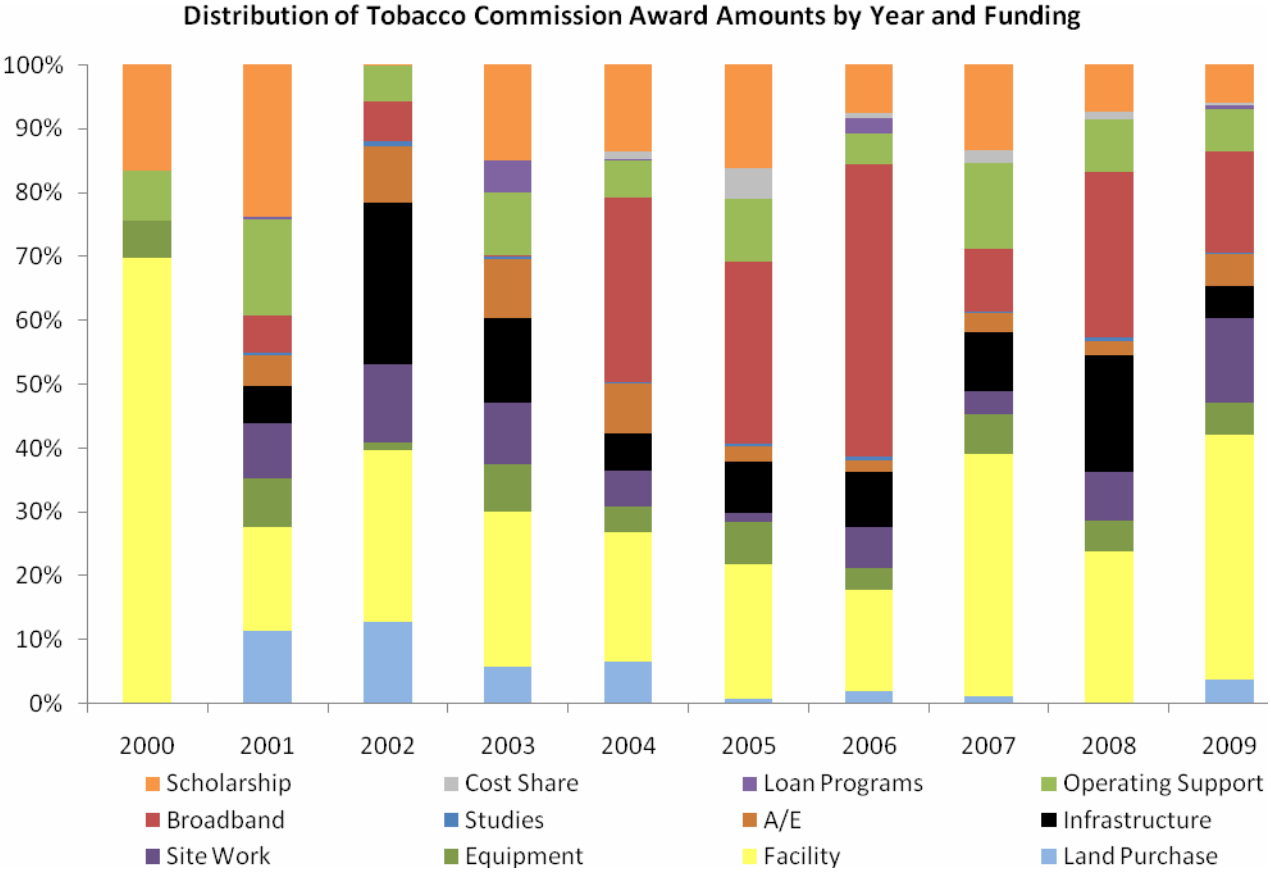
Spending Category	Number of Awards
Land Purchase	37
Facility	27
Equipment	121
Site Work	96
Infrastructure(Water/Sewer)	94
Architecture/Engineering	113
Studies	34
Broadband	58
Operating Support	201
Loan Programs	8
Cost Share	16
Scholarship/Internship	106
Source: Tobacco Commission	

[11] Cost share is generally used within the agribusiness program. It is a dollar-for-dollar match ($1 Commission: $1 private producer) to entice participation in value-added programs

The dollar amount of awards granted by usage is, not surprisingly, highest for high-dollar items such as facilities and broadband. Facility spending amounted to $136.3 million from fiscal year 2000 through 2009, followed by broadband ($104.1 million), and scholarship ($51.8 million). Sizable awards were also made for infrastructure, operating support, site work, and equipment.



The type of grants awarded by the Commission based on total amount has varied over time (see chart below). Spending on facilities was a large component of Commission awards over each of the last nine years. Spending on broadband is rather new, accounting for sizable percentages only after the 2004 fiscal year. In fiscal year 2009, facility, broadband, and site work accounted for the majority of award spending.



Evaluation of Data Adequacy

Grant Thornton and ASR Analytics performed an assessment in 2008 of the economic impacts and federal costs of Economic Development Administration (EDA) investments in construction programs.[12] After a rigorous review of the literature on measuring the economic impact of public investment on local economies, Grant Thornton and ASR Analytics developed a method for EDA to use publicly available data rather than self-reported information from grant awardees to assess the economic impact of its investments. The remainder of this section considers whether a similar process can be used by the Commission to assess the impact of its investments on tobacco-dependent regions in Virginia.

[12] Grant Thornton and ASR Analytics, "Construction Grants Program Impact Assessment Report," Volume I – Report on Investigation and Results and Volume II – Appendix A, Peer Reviewed Impact Assessment Paper, September 30, 2008, U.S. Department of Commerce, Economic Development Administration.

The EDA methodology only estimates the economic impact of construction investments[13] that are completed projects. Construction investment is grouped into the following five project outcomes: business incubators, commercial structures, roads and other transportation, industrial park infrastructure, and community infrastructure. Measuring the economic impact of construction projects was most-likely chosen because the multiplier is expected to be larger than that related to other awards such as research or trade adjustment for firms.

Only completed projects are assessed by EDA because the region does not start receiving the bulk of the economic impact until the project is complete. Moreover, EDA wanted to measure the permanent jobs created rather than capture temporary jobs created during the construction phase. EDA used grants awarded from fiscal year 1990 through fiscal year 2005 from across the country which resulted in more than 4,200 grants or observations for their model.

Table 3: Project Completion	
	Number Awards
Completed more than 5 Years	173
Completed more than 4 Years	265
Completed more than 3 Years	347
Completed more than 2 Years	439
Completed more than 1 Year	520

By comparison, the Commission awarded 891 projects from fiscal year 2000 to fiscal year 2009. Of those, 621 projects were completed, and 361 of those projects involved construction. However, the EDA measurement process can also be used for grants not related to construction. For all completed Commission projects, some were concluded recently and no public data are available for measuring their impacts. As Table 2 shows, 520 of the projects were completed more than one year ago, and 439 were completed more than two years ago.

The following criteria are used in the EDA study to filter projects out in order to better isolate the economic impact:

1. Projects were completed more than 5 years
2. For counties receiving multiple awards, total awards are aggregated
3. Counties were chosen based on having 5 years following project completion and three years preceding project completion where they did not receive other EDA grants
4. Counties with similar characteristics but without projects during the analysis timeframe were included as a control

Since secondary (public) data, such as employment, wages, etc., are used in the model at the county and city level, the observations for the model will be at the that level. As a result, the number of counties/cities with completed projects is smaller than the amount listed in Table 2 as multiple projects in one county will be aggregated into one observation.

The number of observations that can be used to construct a model in Virginia is listed in Table 3. In the Commission database, only 71 counties/cities have projects that were completed more than 5 years. If all Tobacco

[13] Construction grants were defined as those that are "made for the acquisition or development of land and improvement for use for a public works, public service, or development facility including the design, engineering, purchase or rehabilitation of such a facility." Source: Grant Thornton and ASR Analytics, Volume 1, page 7.

Region localities are included regardless of whether they have Commission awards, the number of observations increases to 126 for a 5-year model. In contrast, if the EDA filter is applied such that only those counties without Tobacco projects in the following 5 years after completion are included, then only one county (Floyd) fits the criteria.

Table 4: Estimated Number of Observations in Model

	County with Completed Projects	With EDA Filter	All County in Tobacco Region	All Rural Counties	All Counties Outside Big Three Metro
Completed more than 5 Years	71	1	126	207	267
Completed more than 4 Years	99	1	168	276	356
Completed more than 3 Years	127	4	210	345	445
Completed more than 2 Years	157	8	252	414	534
Completed more than 1 Year	187	27	294	483	623

Since the Tobacco Region is small, many localities have been awarded grants in consecutive years. For that reason, it is almost impossible to apply the EDA filter. Without the filter, however, the results may be muddied in terms of which Commission project is driving the economic growth because it is difficult to determine whether the job creation is caused by completed projects or projects in the following years. This will limit the ability of the Commission to make policy changes based on the results of the model but will still enable the Commission to measure the economic impact of its grants.

There are two additional considerations in model building that impact the number of observations based on the makeup of the control group.[14] One option is to include all rural counties in Virginia (those counties not included in any of the eleven metropolitan statistical areas (MSA)), as well those Tobacco Region cities and counties in the region. Using this method, 207 observations are available for a 5-year model, 276 observations for a 4-year model, etc. Another option is to include certain MSA cities or counties such as those in Bristol, Harrisonburg or Roanoke; but excluding cities and counties in the three largest MSAs in Virginia---Northern Virginia, Hampton Roads, and Richmond. In that case, 267 observations are available for a 5-year model and 356 observations for a 4-year model, and so forth.

With the dataset described in Table 3, it is more feasible to evaluate the short-term economic impact (1-3 years), rather than the long- term impact (5 years and beyond), as more observations are available to build the econometric model. In the EDA study, all observations were associated with projects that were completed more than 5 years ago. If the EDA definition is used, there will be only 126 observations, if the model is built only with Tobacco Region counties. But the observations can increase to 267 if all counties outside the biggest three MSAs are included.

An adequate model can be built with 267 observations. It may even be possible to obtain statistically significant results modeling the impact with 4 to 5 years of completion. If understanding the long-term effects are the goal of the Commission, then waiting one more year for an additional 89 observations would be prudent..

[14] The control group should be a group of counties that is as similar as possible to the Tobacco Region counties. The control is needed to control for the impact of events such as off-shoring manufacturing that are having a particularly negative impact on rural areas in the nation.

The above discussion addressed whether there is enough data to build an econometric model to estimate the economic impact of overall tobacco commission grant. Another related question is whether it is possible to use a modeling approach to estimate the impact of individual grant categories, such as facility, equipment, or infrastructure. Currently, all Tobacco Commission grant are categorized into twelve spending categories. Table 2 indicates that the largest category—operating support—has only 201 grants. Chmura is not optimistic that individual impact of different grant type can be estimated with such smaller number of grants. However, there is potential that in addition to overall model, Chmura can estimate the impact of broad categories. One example is construction spending when all grants in site work, facility, architecture and engineering are combined. Chmura will be able to make a definite assessment when those broad categorizations are finalized.

Although this analysis suggests that a model can be created to measure the economic impact of Commission grants on Tobacco-dependent communities, the following risks may prohibit statistically significant results:

1. The small size of the region may create issues such as an occurrence that coincidentally happens during the same year of the grant that drives economic growth. An example could be a large economic development success or a large business closing.[15]

2. If many of the observations are related to grants that are small in dollar size, the significance on the entire county or city will be small.

3. The economic impact from some grants, such as education, may take longer to materialize.

4. Grants for workforce issues such as up-skilling may have a greater impact on overall wages then on employment.

5. The number of observations may be reduced in a detailed analysis of the other rural areas if it becomes apparent that not all of the counties/cities are similar enough to the tobacco-dependent localities.

[15] Some of these events can be controlled in the regression if the information about the event is identified.

IV. Scorecard

Tobacco Region Revitalizataion: Current Scorecard

	Benchmark	Trend	Tobaccco Region	Trend	Southside	Trend	Southwest	Trend
Job Creation (2008 Quarter 3)								
Percentage Change in Employment From Year Ago	-0.59	↓	-1.1	↓	-1.4	↓	-0.6	↓
Workforce Paticipation Rate (2007)								
Percent Working Age Adults	63.7	↓	58.9	↑	59.9	→	57.4	↑
Wealth (2008 Quarter 3)								
Annual Average Wages Relative to the State	$39,049	↑	65.0%	↑	64.4%	↑	65.9%	↑
Diversity (2008 Quarter 3)								
Percent Employment in Top 10 Private Employers	6.1	→	6.7	↓	7.9	↑	9.0	↓
Capital Investment (2007)								
Capital Investment Per Resident	$13,707	↓	$12,122	↑	$8,571	↑	$12,247	↑
Education (2007)								
Associate Degree Awards per 1,000 Population	5.9	↑	3.33	↓	2.51	↓	4.58	↓

Tobacco Region Revitalization: Last Period Scorecard

	Benchmark	Tobaccco Region	Southside	Southwest
Job Creation (2007 Quarter 3)				
Percentage Change in Employment From Year Ago	1.17	0.3	0.1	0.5
Workforce Paticipation Rate (2006)				
Percent Working Age Adults	64.2	58	59.3	55.9
Wealth (2007 Quarter 3)				
Annual Average Wages Relative to the State	$37,976	64.1%	63.7%	64.5%
Diversity (2007 Quarter 3)				
Percent Employment in Top 10 Private Employers	6.0	6.4	8.1	8.8
Capital Investment (2006)				
Capital Investment Per Resident	$13,771	$11,752	$8,331	$11,714
Education (2006)				
Associate Degree Awards per 1,000 Population	5.5	3.68	2.99	4.8

Note: Total associate degree awards in 2007 were 1,576 in Southside, 1,886 in Southwest, and 33,892 in Virginia. Total associate degree awards in 2006 were 1,868 in Southside, 1,968 in Southwest, and 31,974 in Virginia.

The Benchmark Region is defined as all counties and cities in Virginia less the Tobacco Region and the three largest metropolitan areas in the state (Northern Virginia, Virginia Beach-Norfolk-Newport News, and Richmond).

Appendix 1: Data Sources

The ideal metrics to measure progress of Southside and Southwest Virginia toward economic revitalization will include data that are timely and do not undergo significant revision. For example, education level by county is available from the U.S. Census. However, the indicator is only updated every ten years for rural counties. For that reason, annual associate degree awards per capita is used as the measure of education—the latest data available are 2007.

Proposed indicators, their source, and periodicity are shown in the table below.

Proposed Indicator	Source	Periodicity
Job creation - employment	Virginia Employment Commission (quarterly census of employment and wages)	Quarterly
Workforce participation rate – working age adults that are employed and unemployed divided by the population of working age adults	Virginia Employment Commission (unemployment report) and University of Virginia Weldon Cooper Center (population aged 15 and older)	Annually
Wealth – annual average wages relative to the state wages	Virginia Employment Commission (quarterly census of employment and wages)	Quarterly
Diversity – percentage of employment in the top 10 private employers	Virginia Employment Commission (special data request)	Quarterly
Capital investment – total capital investment per capita	Virginia Department of Taxation annual report (capital investments as estimated from tangible personal property, machinery and tools, and merchants' capital assessed values) University of Virginia Weldon Cooper Center (population)	Annually
Education level – number of associate degree awards per 1,000 population	National Center for Education Statistics (associate degree awards) University of Virginia Weldon Cooper Center (population)	Annually