

Thunder Basin Grassland Demographics and Economic Measures

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The following is a discussion of the demographic and economic trends in the Thunder Basin Grasslands during the past 30 years. For purposes of this analysis the Thunder Basin Grasslands is defined as the five-county region including Wyoming Counties of Campbell, Converse, Crook, Niobrara, and Weston. The analysis focuses on three standard measures of demographics and economics: 1) Population, 2) Employment, and 3) Personal Income for the period 1970 to 2000. The data for the analysis came from the U.S. Bureau of Census and the U.S. Department of Commerce's Regional Economic Information System.

Two clarifications are necessary regarding the analysis: First, there are always lags in economic data; while every attempt was made to obtain the most current information for the Thunder Basin Grasslands; there is still at least a year lag in the available economic data. As a result, the analysis does not provide much insight into the impacts of the ongoing Coal bed Methane development in the region. Secondly, while there are a number of similarities in the five counties of the Thunder Basin Grasslands, there are also substantial differences. A complete evaluation of these differences is beyond the scope of this analysis; however, it is important to remember that each of the counties is unique in many respects and has it's own story.

Population

Population is an important measure because the ability to attract and retain people to live, work, plan, and retire is key to the long-term viability of the region. Figure 1 highlights two aspects of population growth in the Thunder Basin between 1970 and 2000: One is population growth; in 2000 there were almost twice as many people living in the Thunder Basin as there were in 1970. The second aspect is the fluctuation in population. In the eight years between 1974 and 1982, the population of the region doubled, then fell by 16% in the five years between 1985 and 1990. Since 1990, the region has experienced fairly modest growth. Much of this fluctuation can be attributed to the cyclical nature of the energy industry in the region. This amount of fluctuation causes stress to people, to communities, to local government, and to the economy.

(Figure 2) Between 1990 and 2000 the population of the Thunder Basin increased by 10.7%. This growth rate was between the U.S. (13.3%) and the Wyoming (8.9%) averages. There was substantial variation between counties with Campbell growing at 14.7% and Niobrara declining by 3.7%.

Population growth comes from one of two sources: One source is natural increase, which occurs due to more births than deaths among residents. The second source is net in-migration, which occurs when more people move into a region than move out.

For the Thunder Basin, over three-fourths of the population increases between 1990 and 2000 was from natural increase, with less than one-fourth from net in-migration (Figure 3). The source of population growth for the Thunder Basin was similar to that for Wyoming but very different than that for Sheridan County where almost all the population growth was from in-migration.

Spatial location is another important aspect of population growth. Between 1990 and 2000 nearly 60% of the population growth in the Thunder Basin occurred in rural areas (outside incorporated towns) with the other 40% in urban areas (Figure 4). Again the location of population growth for the Thunder Basin was similar to that for Wyoming but very different from that for Sheridan County where nearly 70% of the growth was in urban areas. This has important implications for land use issues, especially rural subdivisions.

A final aspect of population considered in the analysis was aging. In 2000, the Thunder Basin population was relatively young, with only 8.9% 65 years of age or older (Figure 5). This compares to 12.7% at the national level and 11.7% at the State level. However, the Thunder Basin population has been aging in recent years. During the boom years, between 1970 and 1980, the population actually got younger with the 65-and-over age group increasing by 15.2% while the overall population increased by 67%. However, between 1980 and 1990 the population aged with the 65-and-over age group increasing by 26.6% while the overall population decreased by two-tenths percent. This trend continued between 1990 and 2000 with the 65 and over age group increasing by 32.7% while the overall population increased by 10.7%.

Employment

Employment is an important measure because of one of the main functions of a region's economy is to provide jobs for its residents. Figure 6 illustrates the trends in employment for the Thunder Basin during the past 30 years. The pattern is very similar to that for population with a combination of growth and fluctuation. In fact since people

are both consumers and producers, population growth is both a cause and effect of employment growth.

Between 1990 and 1999, employment growth in the Thunder Basin increased by 16% (Figure 7). This increase was slightly below the U.S. (17.4%) and the Wyoming (18%) averages. Again, there was substantial variation between counties with Campbell at 19.2% and Weston at 3.4%.

The distribution of employment is an indicator of the economic diversity of the region. Economic diversity represents a measure of the region's vulnerability to economic change. Figure 8 presents economic diversity indices for selected regions. These indices were based on the absolute differences in distribution of employment between the regions and the U.S. If the U.S. economy was indexed at 100, then the Rocky Mountain Region (at 89.6) was about 10% less diverse in 1999. Similarly, the Wyoming economy (at 67.0) was about a third less diverse than the U.S. economy. Finally, the Thunder Basin economy (at 47.4) is less than one-half as diverse as the U.S. economy. The indices also show that Wyoming and the Thunder Basin have become less diverse since 1970 while the Rocky Mountain Region has gained in diversity relative to the national economy.

The lack of diversity in the Thunder Basin economy suggests a high level of specialization since specialization is the opposite of diversity. Figure 9 shows that the Thunder Basin was in fact specialized in a number of areas: First and foremost was mining, which includes oil and gas production. The percent of employment in mining in the Thunder Basin was over 35 times the U.S. average. The Thunder Basin is also specialized in agriculture with the percent of employment in that sector three times the

U.S. average. Following agriculture was construction (1.3 time the U.S. average, government (1.2 times the U.S. average), and agricultural services (1.1 times the U.S. average).

This specialization has led to substantial economic growth in the region, but also substantial economic fluctuations. Specialization has also made the region's economy vulnerable to certain economic changes.

The bottom line for employment is how much do the jobs pay since that is the primary reason most people work. Average Earnings Per Job (AEPJ) in the Thunder Basin has varied with energy development (Figure 10). Between 1970 and 1980 inflation-adjusted AEPJ increased, then declined from 1980 to 1990. Since 1990, the region has seen a modest increase in AEPJ. Compared to Wyoming, the Thunder Basin AEPJ has historically been somewhat higher. Compared to the United States, AEPJ in the Thunder Basin has gone from below the U.S. average in 1970 to substantially above the U.S. average in 1980. Since 1980, AEPJ in the region has not kept pace with the U.S. average. As a result, while the Thunder Basin has been doing better than Wyoming, there has been a growing gap in AEPJ between the Thunder Basin and the U.S. (Figure 11).

Personal Income

Personal income is an important measure because it represents the dollars that regional residents live on. Figure 12 illustrates the trends in personal income for the Thunder Basin over the last 30 years. Again the pattern is similar to that for population and employment, however the magnitudes of the fluctuations are greater. This reflects the fact that many of the changes reflect increases and decreases in relatively high paying mining jobs that tend to amplify the magnitude of the fluctuation in personal income.

Between 1990 and 1999, personal income in the Thunder Basin increased by 24.4% (Figure 13). This growth rate was slightly less than the U.S. (30.1%) and the Wyoming (26.6%) averages. Again there was substantial variation between counties with Campbell at 29.6% and Crook at 11.3%.

The U.S. Department of Commerce divides personal income into three categories: Labor earnings – wages, salaries, and proprietor income; Investment income – dividends, interest, and rents derived from the ownership of assets, and Transfer payments – mostly government payments from Social Security, Medicare, and Medicaid.

In 1999, nearly 70% of total personal income for the Thunder Basin came from labor earnings, with about 20% from investment income, and 10% from transfer payments (Figure 14). The percent of personal income from labor earnings in the Thunder Basin was about 12% higher than for Wyoming and about 40% higher than Sheridan County. In Sheridan County, less than one-half of the personal income came from labor earnings.

Per Capita Income (PCI) is an important general measure of the economic-well-being of residents. PCI in the Thunder Basin has varied with energy development (Figure 15). Between 1970 and 1980, inflation-adjusted PCI increased, then declined between 1980 and 1990. Since 1990, the region experienced a modest increase in PCI. Compared to Wyoming PCI for the region has gone from below the State average in 1970 to above the State average in 1980. Since 1980, PCI in the regions has been below the Wyoming average. Comparison of regional PCI with the U.S. average indicates a similar pattern. As a result there has been a growing gap in PCI between the Thunder Basin and both Wyoming and the U.S. (Figure 16).

Summary and Conclusion

The primary demographic and economic characteristic of the Thunder Basin has been variability. The region experienced rapid growth during the energy boom and substantial declines during the energy bust. Since 1990 the region has experienced more stability and modest growth. However, the region is probably going through another up-turn from the ongoing Coal Bed Methane development in the Thunder Basin. Between 1990 and 2000 most of the region's population growth came from natural increases rather than in-migration. The majority of this population growth occurred in rural areas outside incorporated towns. The region's economy lacks diversity and is particularly specialized in mining and agriculture. It is a natural resource based economy whose residents primarily depend on labor earnings for their livelihood. In recent years both AEPJ and PCI in the region have not been keeping up with the U.S. average. PCI also has not been keeping up with the Wyoming average in recent years.