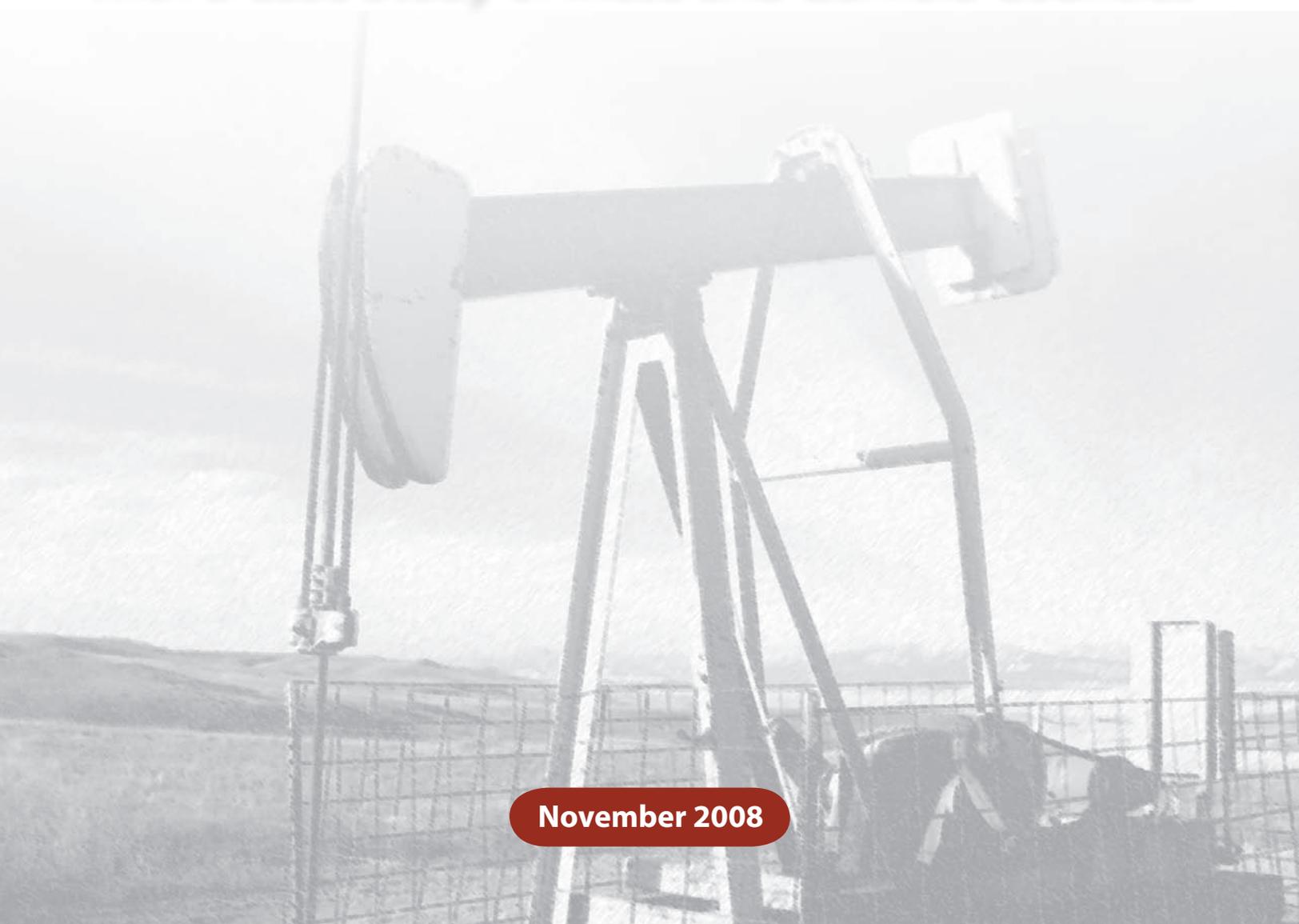


A Report from the *ENERGY AND THE WEST* Series by



Impacts of Energy Development in Colorado

With a Case Study of Mesa and Garfield Counties



November 2008

Impacts of Energy Development in Colorado

With a Case Study of Mesa and Garfield Counties

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ABOUT HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions in the West.



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ABOUT THE *ENERGY AND THE WEST* SERIES

This report is the fifth in a series—*Energy and the West*—published by Headwaters Economics on the topic of energy development. This series is designed to assist the public and public officials in making informed choices about energy development that will benefit the region over the long term.

The reports in the Energy and the West series, listed below, cover the policy context for energy development in the West and the resulting impacts to states, counties, and communities viewed from the perspective of economic performance (i.e., jobs, personal income, wages) and fiscal health (i.e., state and county budgets, revenue and expenses). The series also includes state and local area case studies, which highlight benefits and costs in greater detail.

Titles in the *Energy and the West* series:

- Energy Development and the Changing Economy of the West
- U.S. Energy Needs and the Role of Western Public Lands
- Fossil Fuel Extraction as a County Economic Development Strategy: Are Energy-focusing Counties Benefiting?
- Energy Revenue in the Intermountain West: State and Local Taxes and Royalties from Oil, Natural Gas, and Coal
- Impacts of Energy Development in Colorado, with a Case Study of Mesa and Garfield Counties
- Impacts of Energy Development in Wyoming, with a Case Study of Sweetwater County
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INTRODUCTION

This report explores how significant fossil fuel energy development is in Colorado and on the West Slope. It also examines whether the state and western Colorado are benefiting from renewed energy development. And it considers the implications of superimposing rapid energy development on top of a more diverse and already thriving economy.

Colorado has experience with surging energy development. In the 1970s and early 1980s, the state underwent rapid growth in the development of oil resources followed shortly after by a bust that had negative repercussions for the state as a whole. On the West Slope, Exxon's closure of its oil shale Colony Project in 1982, after operating for only 18 months, devastated the regional economy and left local governments dangerously overextended in their growth-oriented commitments.¹

The current surge in fossil fuel energy development in Colorado is different than past energy booms. The most important difference from an economic perspective is that the state economy has grown and diversified over the last 25 years. Today's Colorado economy is substantially larger, more diverse, and less subject to the boom and bust cycles that characterize states with a heavy reliance on resource extraction—Wyoming, for example. Energy development now plays a small role in the overall state economy.

The West Slope's recovery from the early 1980s parallels broader economic trends in Colorado and the West where high amenity areas that offer a mix of transportation infrastructure, recreational opportunities, attractive scenery, and in some cases affordability have successfully developed a thriving service- and knowledge-based economy, and captured retirement and investment dollars in recent decades.² The West Slope region successfully trades on quality of life as a way to attract and retain new residents and businesses across a range of industries.

Today, Colorado's West Slope is once again the focus of intensive energy development, this time centered on the extraction of natural gas. This recent surge comes on top of the ongoing amenity boom in the region. These two economies uneasily coexist with each other as they compete for scarce resources.

Communities and local governments are caught in the middle. They benefit from new economic opportunities and government revenue, but also struggle with the spiraling cost of living and the expense of providing basic services. The region is wrestling with how to adapt to the sheer pace of change and the growing industrialization of a rural landscape.

Whether Colorado and the West Slope ultimately benefit from the current energy surge is an open question at this point. This report sheds light on the pros and cons of high-paced energy development in the context of an already thriving economy. The questions that follow structure our discussion on the impact of fossil fuel energy development on Colorado and the West Slope.

Questions Answered in this Report:

1. How does fossil fuel energy development fit into today's Colorado economy?
2. What role does energy development play in Mesa and Garfield counties?
3. Does Colorado do a good job taxing fossil fuel energy extraction?
4. What are the implications of superimposing an energy surge on top of an existing boom?

SUMMARY FINDINGS**Jobs and personal income from industries associated with the extraction of fossil fuel resources are a small part of the overall Colorado economy.**

Colorado has the largest economy in the Intermountain West. It also has one of the most diverse. Energy development accounted for 1 percent of all employment and 2 percent of total personal income in the state in 2005. In a state with over 3 million jobs in 2005, less than 27,000 were directly related to the mining sector, which includes energy development. Colorado's economy generated \$175 billion in personal income in 2005; mining, including energy development, accounted for \$4 billion of that total. While a small part of the state's economy, mining and energy development jobs are, on average, the highest paying (\$83,213 in 2005) in the state.

The economic recovery of the West Slope after the last energy bust was dramatic and today the region is much more economically diverse. Renewed energy development now competes with economic sectors responsible for this recovery.

Services and professional sectors, construction, and non-labor income drove gains in jobs and income in Mesa and Garfield counties throughout a period of recovery that followed the energy bust of the early 1980s. In the early 2000s, the development of natural gas in the area reignited the energy sector and led to significant new jobs and income. Mining and energy sector wages are among the highest wages in the area.

Rapid growth in the natural gas industry has pushed unemployment levels to historically low levels, spurred rapid in-migration, led to fierce regional competition for labor, and increased the cost of living. For example, the unemployment rate dropped to 2.2 percent in Garfield County in 2007 (more than 2 percentage points lower than the national average) and the average price of a home in the county increased by 30% between 2000 and 2007 (see pages 25 and 36). Although mining and energy wages have risen significantly, wages in the rest of the economy have not kept pace (when mining wages shot up by 39% between 1997 and 2001 in Garfield County, all other wages rose by only 12%, see page 26). This has enabled the natural gas industry to compete successfully for labor from other industries, and put pressure on other workers as the cost of living increases.

Energy development in Colorado demands massive new investment by local government in services and infrastructure. Current state and local tax policies are not providing sufficient revenue to meet growing demands.

Colorado has the lowest effective tax rate on oil and natural gas (6.2%) when compared to Wyoming (15.9%), New Mexico (15.0%), Montana (10.4%), and Utah (9.9%). In addition, Colorado's tax structure unnecessarily exaggerates the volatility of revenue from energy development. Local governments rely heavily on property taxes to fund service delivery (more than half of Garfield County's total revenue), but the lag between the activities that create new demands and when property tax revenues are actually received makes it difficult to keep pace with surging service demands.

Mesa and Garfield counties face significant unfunded capital facilities needs, and are exposed to uncertain and volatile revenue streams from energy production. The ability of these counties to meet basic needs will therefore depend on creative local solutions, some of which are in place, while others are currently being explored. Ultimately, the ability to meet growing demands, while necessary, is insufficient to maintain long-term fiscal health. Neither county has excess revenue it can apply to long-term savings or investments to support the rest of economy.

The challenge and opportunity on the West Slope is to manage the surge in natural gas development so that it expands regional employment, wages, and tax revenue without undercutting affordability, an attractive environment, and the health of local government finances.

The most recent evidence suggests that the natural gas surge on the West Slope is making it harder, not easier, for other sectors of the regional economy to thrive. Yet it is today's more diverse industry mix that brought the region out of its last energy bust, and currently sustains most households on the West Slope.

Three key challenges face Mesa and Garfield counties—cost of living and housing, competition between energy sector and local businesses for employees, and fiscal shortfalls and exposure—because they point to conflicts that affect longer-term economic success. They also represent areas where concerted action today could make a significant difference in the future competitiveness of the West Slope.

METHODS

Definition of Mining

When we use the term “mining” in our *Energy and the West* series, we refer primarily to jobs and income associated with the development and extraction of oil, natural gas, and coal (fossil fuels). Because of restrictions placed on the level of detail available from the U.S. Department of Commerce and the Bureau of the Census, it is sometimes not possible to separate minerals mining from fossil fuels mining. In the five energy development states—Colorado, Montana, New Mexico, Utah, and Wyoming—mentioned in this report, the bulk (over 80%) of “mining” is related to energy development. For more information, refer to [Appendix 1](#).

This report employs a combination of approaches including analysis of published social and economic data; research in secondary literature, government documents, and the regional press; and qualitative interviews with local people.

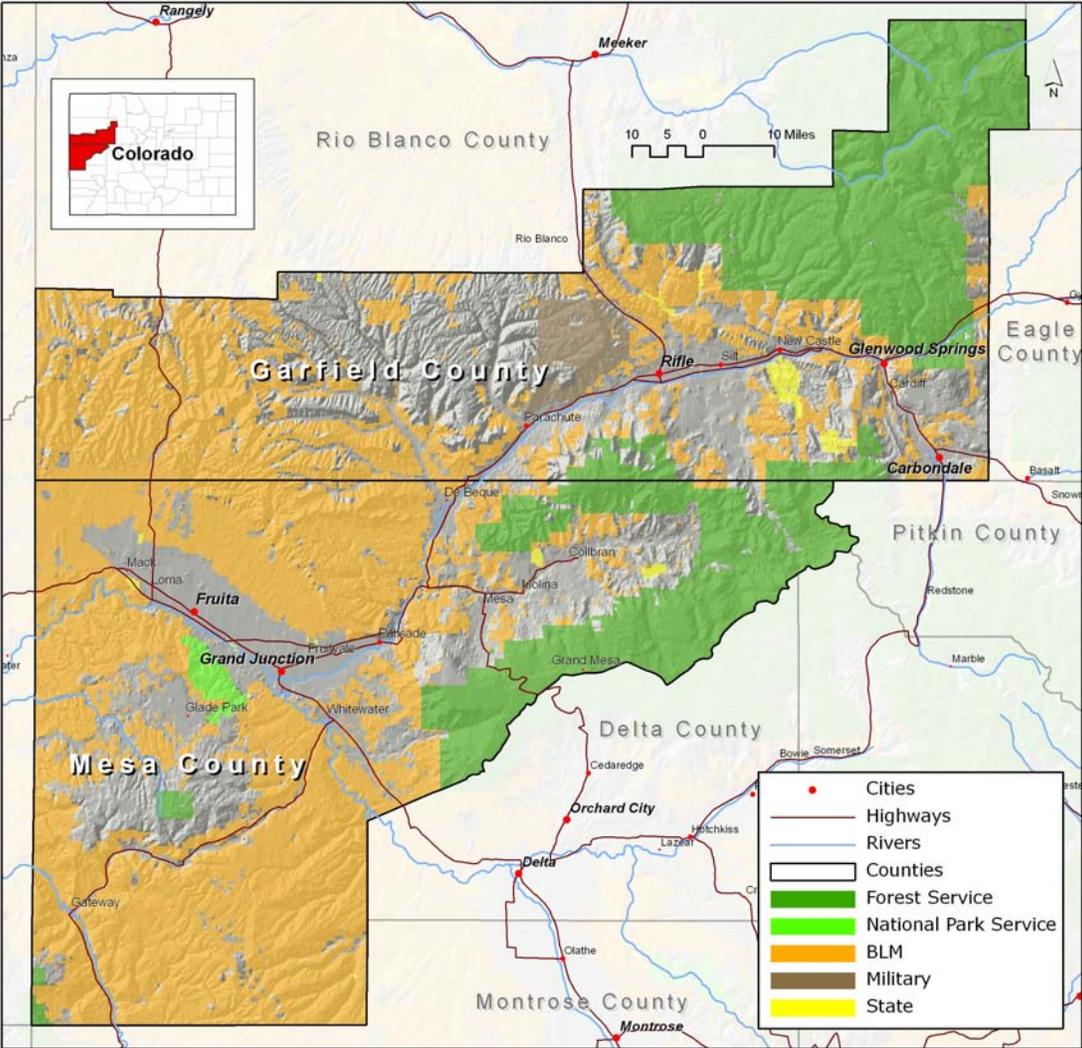
Published data were obtained from:

- U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information Service (BEA/REIS).
- U.S. Department of Commerce, Bureau of the Census: 1990 and 2000 Census of Population and Housing (Census).
- U.S. Department of Commerce, Bureau of the Census: County Business Patterns (CBP).
- U.S. Department of Labor, Bureau of Labor Statistics (BLS).

Using the Economic Profile System (EPS), we produced detailed socioeconomic profiles for the two case study counties, an aggregate profile of the two-county area, and a detailed state-level profile.³ These profiles are available for download from our web site: www.headwaterseconomics.org/energy.

In addition, Headwaters Economics research staff conducted interviews with local leaders, government staff, elected officials, and other individuals knowledgeable about development in Mesa and Garfield counties. In-person interviews were conducted in the summer of 2007. Phone interviews were conducted in the winter of 2008.

Map 1. Mesa & Garfield Counties



HOW DOES FOSSIL FUEL ENERGY DEVELOPMENT FIT INTO TODAY'S COLORADO ECONOMY?

To grasp the role of the current energy surge for the state of Colorado, it is useful to consider the broader economic history of the state over the past few decades. Here we provide a snapshot of key trends in demographics, employment and personal income, and diversification that offer a context for understanding the role of energy development at the state level.

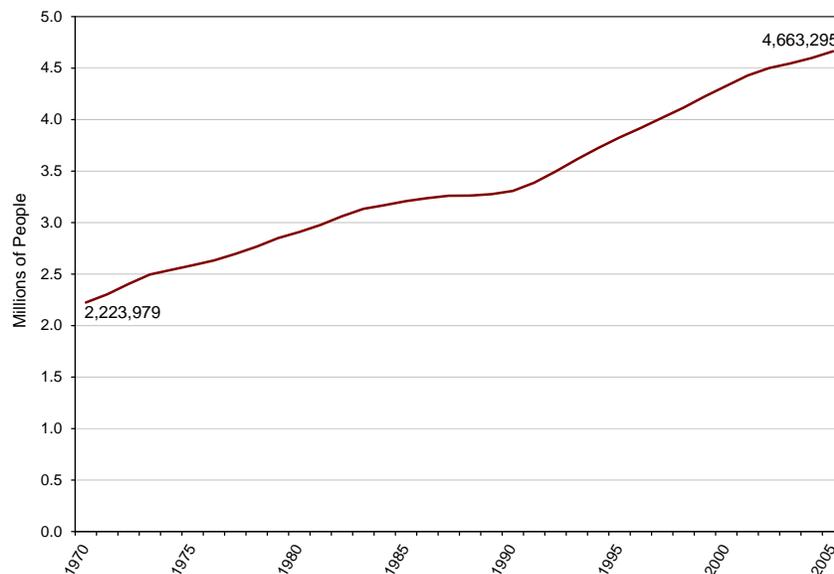
Demographic and Economic Trends, 1970 to 2005

Demographics

Colorado has the largest population of any of the five energy-producing Intermountain West states we analyze in the *Energy and the West* series. Figure 1 shows that the total population of Colorado has more than doubled over the last 35 years, growing from 2.2 million to 4.6 million people between 1970 and 2005. The annual average growth rate for the period 1970 to 2005 was 2.1 percent, compared to 1.1 percent for the nation.

Colorado's population growth has been steady, with the exception of the late 1980s, when the growth rate leveled off. The state was negatively affected by the national recessions and energy bust in the early 1980s. By the early 1990s, population growth began again and accelerated. In the 1990s alone, Colorado added over one million people, and grew at an average annual rate of 3.1 percent.⁴ Growth has continued but been more moderate since the national recession and fallout from the technology bubble of the early 2000s.

Figure 1. Population Growth in Colorado, 1970–2005⁵



Employment and Income

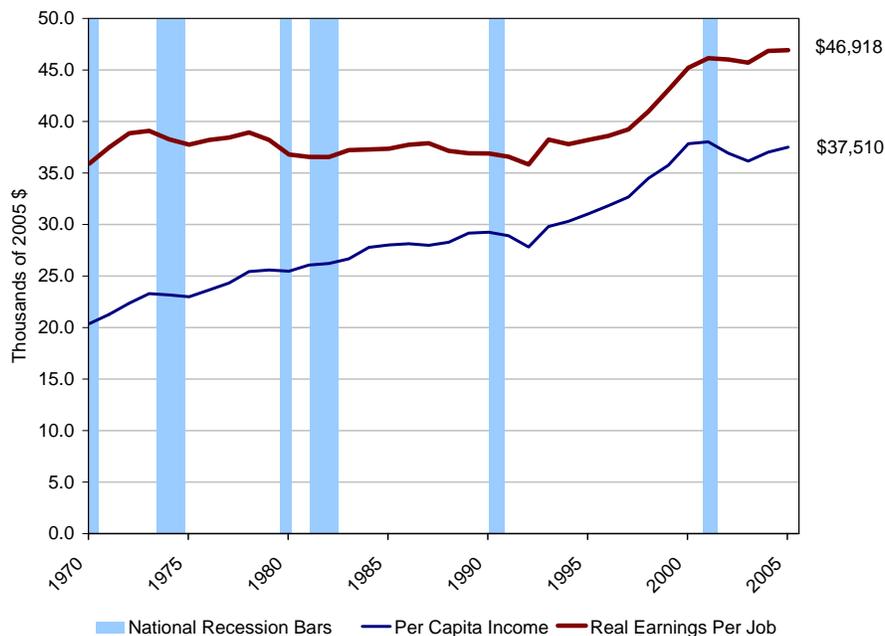
The Colorado economy over the last 30 years has been a strong performer by national standards, bolstering the state’s ability to retain and attract residents. Here we present trends in the types and volume of personal income in the state for the period 1970 to 2000, and for 2005. (The break represents a change in way income data has been collected and reported at the industry level in 2001, from the Standard Industrial Classification system (SIC) to the North American Industry Classification System (NAICS), by government agencies.)

In Colorado, from 1970 to 2005, the total number of jobs nearly tripled (1.9 million new jobs), while total personal income almost quadrupled (130 billion new dollars). Colorado’s economy has grown significantly faster than the national economy.

Figure 2 shows what this has meant for earnings per job and per capita income in Colorado over the last 35 years. (Vertical blue bars represent periods of national recession.) Earnings per job (red line), adjusted for inflation, grew by over \$11,000 from 1970 to 2005. Wages were more or less static until the early 1990s, when they rose dramatically until the turn of the century. In 2005, state average earnings per job were \$46,918, above the national average of \$45,817.⁶

Per capita income (blue line), adjusted for inflation, grew by over \$17,000 over the last 35 years. This increase has been steady and accelerated in the 1990s. Per capita income declined in the early 2000s following the decline in market capitalization associated with the aftermath of the technology bubble. Per capita income was \$37,510, above the national average of \$34,471.⁷

Figure 2. Earnings Per Job and Per Capita Income Trends in Colorado, 1970–2005⁸



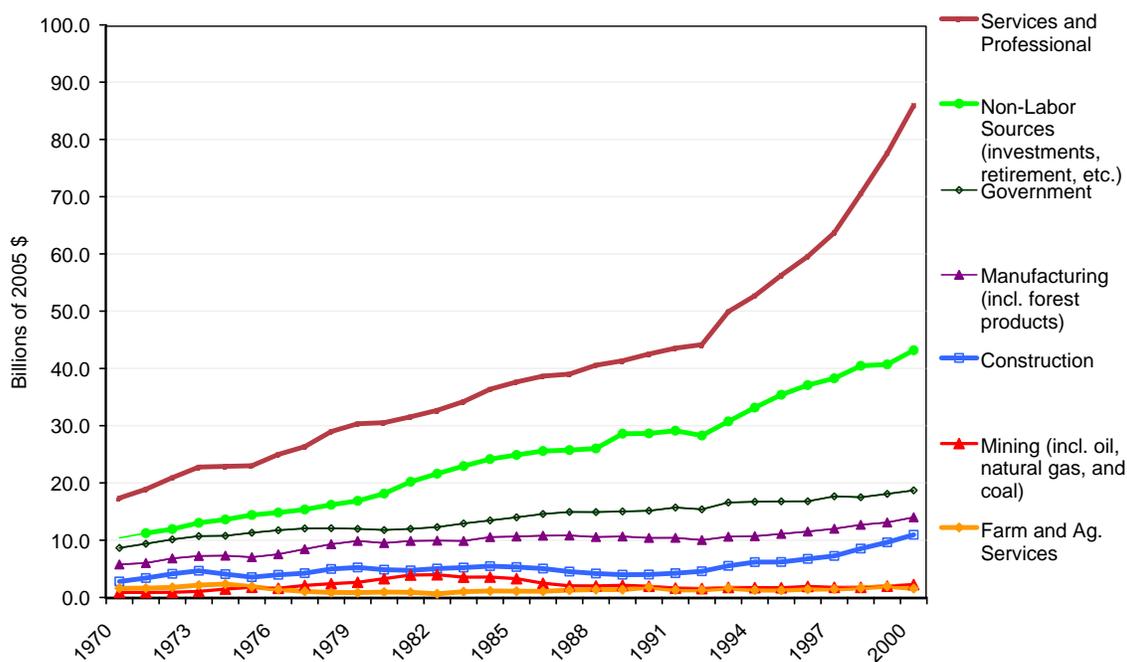
Performance by Sector

The growth in earnings and per capita income are directly related to the changing economy and shifting demographics of the state. The performance of different sectors in Colorado’s economy is consistent with the region-wide economic transformation—the development of a services- and knowledge-based economy, and growing importance of retirement and investment dollars—described in our companion report, *Energy Development and the Changing Economy of the West*.

Figure 3 shows these trends by major industry sector. The fastest growing sectors were a mix of service and professional industries—jobs in these sectors generated 64 percent of all new personal income from 1970 to 2000, and amounted to 53 percent of total personal income in 2000. This was followed by non-labor income, which accounted for 26 percent of new personal income over three decades, and 26 percent of total personal income in 2000.

In contrast, mining, which includes energy development, accounted for 1.9 percent of total personal income in 1970 and 1.4 percent in 2000. This industry contributed 1.2 percent of all new income generated in the state over the 30 years from 1970 to 2000.

Figure 3. Historical Trends in Personal Income by Source in Colorado, 1970–2000 (SIC) ⁹



Key Terms:**Services**

Much of the growth in labor earnings in the U.S. economy over the last two decades has been in “services,” a term defined in various ways by different researchers and organizations. Historical data organized by the U.S. Department of Commerce according to the Standard Industrial Classification (SIC) did a poor job of describing the growth in services, particularly many of the modern, high-tech, and knowledge-based occupations. When using historical data (1970 to 2000), we define services broadly as “Services and Professional” to underscore that service occupations consist of a combination of high-paying and low-paying professions, mixing physicians with barbers, and chambermaids with architects and financial consultants.

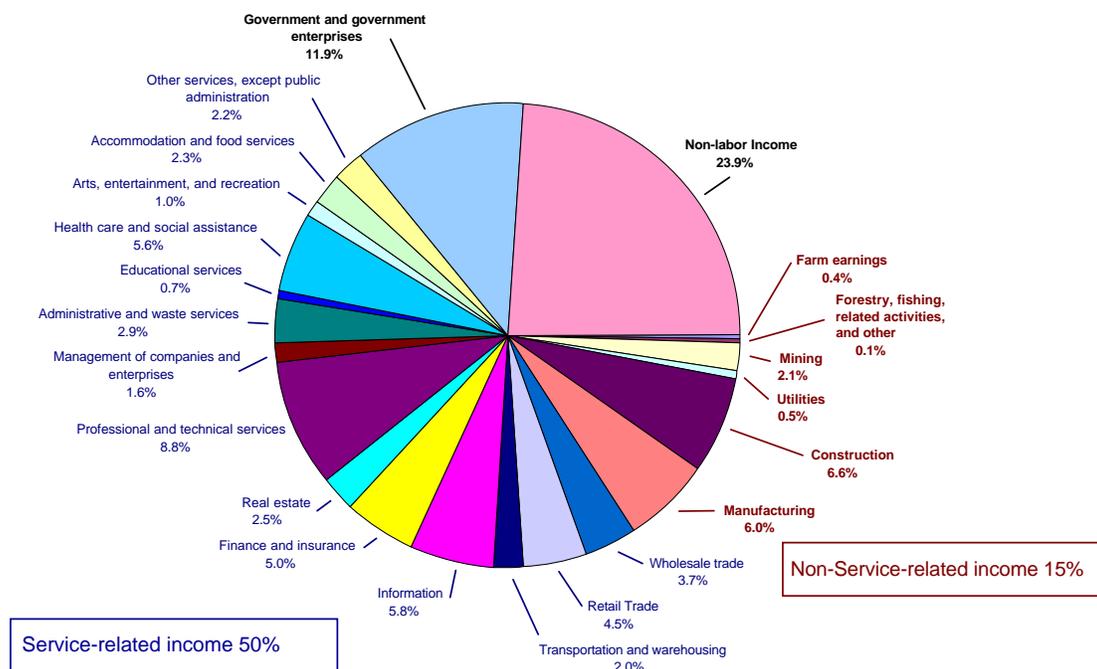
After 2000, the U.S. Department of Commerce switched to the North American Industrial Classification System (NAICS). When using recent data, we display information on services the same way the U.S. Department of Commerce does, by each of its subcategories: Information, Finance and Insurance, Professional, Scientific and Technical Services, etc. (Part of the reason government agencies switched classification systems was to develop a better structure for reporting the rapid growth in service sectors.)¹⁰

Non-labor Income

Non-labor income consists of transfer payments, and dividends, interest, and rent. Transfer payments are commonly referred to as retirement money because the majority of transfer payments nationwide consist of retirement and age-related payments. It also includes public assistance, medical benefits, and veterans benefits, among others. Dividends, interest, and rent are referred to as money earned from investments. Dividends consist of payments by corporations to stockholders; interest is money earned from mutual funds, municipal bonds, private pension funds, and other earnings from deposits in financial institutions; and rent includes income from rental property, imputed rent of owners of farm dwellings, royalties from patents, and other similar income.¹¹

Figure 4 shows the contributions of various sectors to total personal income in 2005. The overall picture has not changed since 2000, despite the surge in fossil fuel energy development. Mining, including energy development, accounted for 2.3 percent of total personal income in 2005.¹² Energy development is a volatile industry characterized by large swings, both upwards and downwards. Since 1970 the industries in this sector have contributed a high of 5.0 percent in 1981 and a low of 1.2 percent in 1998 to total personal income in the state.¹³ While important, especially to local areas, mining and energy development constitute a small proportion of the overall Colorado economy.

Figure 4. Sources of Personal Income in Colorado, 2005 (NAICS)¹⁴



These findings are consistent with two important West-wide trends. The economy of the West has grown and diversified in recent decades and, with only a few exceptions, has made a transition away from a heavy reliance on resource extraction. The principal sources of prosperity in the region are now related to a modern service, or knowledge-based, economy, and retirement and investment dollars.

Along with this transformation, the economic role of public lands has changed since the 1970s. Rather than simply serving as a repository of raw materials to be extracted, today's public lands play an important role by providing recreational opportunities and scenery that attract and retain a growing population and businesses increasingly free to choose their location—for more on the changing competitive position of the economy and public lands in the West, see our companion report *Energy Development and the Changing Economy of the West*.¹⁵

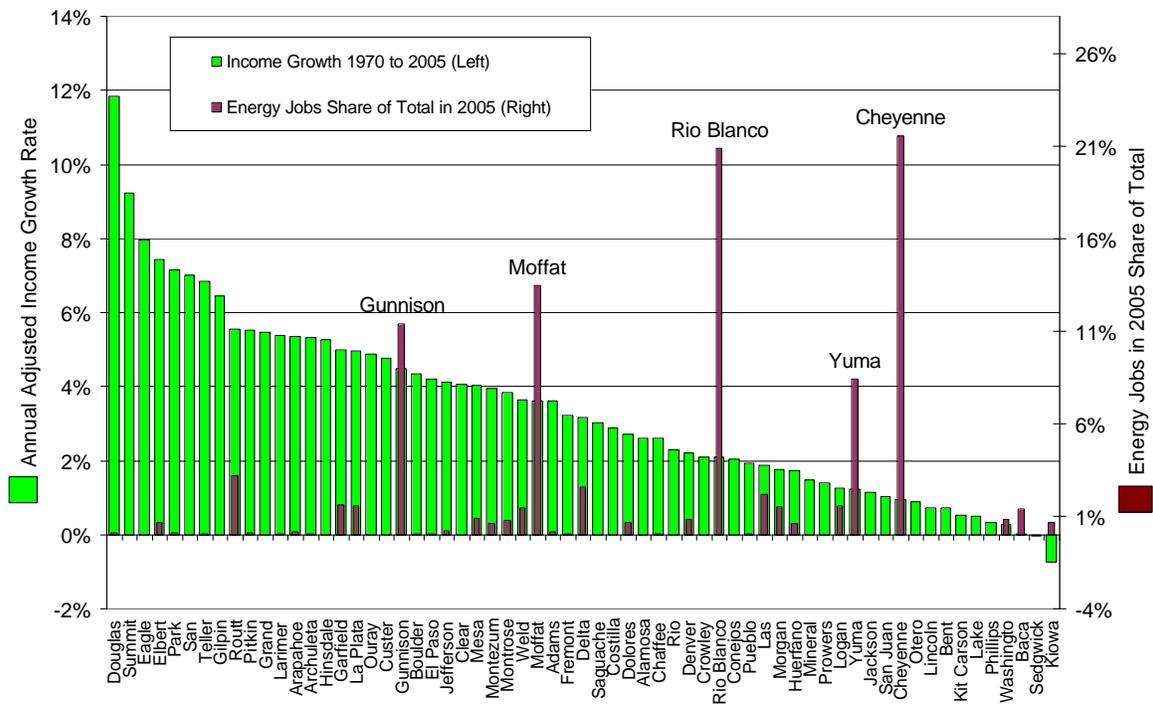
Diversification

One key to long-term economic prosperity is diversity in the makeup of economic sectors. Sector diversity supports economic resilience, especially when a leading economic sector declines, and allows economies to adapt more successfully to changing competitive pressures.¹⁶ Colorado’s economy has been vulnerable to volatility in single industries, though it is more diverse today than in the past.

Two recent episodes of dependence-related decline coincide with periods of economic stagnation. The energy bust of the 1980s resulted in stalled economic growth during the middle years of that decade. More recently, the collapse of the technology bubble in the early 2000s, which disproportionately affected the information and manufacturing sectors, flattened overall employment and personal income growth in the state for several years.

Slower long-term economic growth in less diverse local economies can be seen in Colorado at the county level. Figure 5 compares all Colorado counties ranked from fastest growing to slowest growing from 1970 to 2005 (left axis), and energy jobs share of total employment in 2005 (right axis). Counties that specialize in energy development, Cheyenne and Rio Blanco counties for example, generated less total personal income growth over the long term.

Figure 5. Reliance on Energy Employment and Personal Income Growth, Colorado Counties, 1970–2005¹⁷



Today, Colorado has a much larger and more diverse economy than in the past. The rapid growth of service-related occupations, and retirement and investment income in the 1990s—driven in large part by the shifting competitive advantage of the U.S. economy and Colorado’s success at attracting and competing for high skill jobs and income—account for this growth and industry diversification.

In 2005, the Federal Reserve’s Industrial Structure Index score for Colorado was 4.74. By comparison, the scores for other energy-producing Intermountain states in 2005 were: Montana (16.51), New Mexico (22.83), Utah (2.33), and Wyoming (132.56).¹⁸ A lower score means the state’s economy more closely resembles that of the nation, which is a benchmark for industry diversity. A higher score indicates greater variance from the U.S. industry mix and points to single-industry dependencies.

In Colorado today, sources of employment and personal income track the U.S. closely. However, some differences remain. Compared to the U.S., Colorado has more jobs in construction, professional, scientific and technical services, and information services. The state has only slightly more mining, including energy development, than the U.S.

In 2005, mining and energy development were small enough at the state level—information services alone were roughly three times as large—that they did not have the ability to pull the state down, or turn it into a top economic performer of their own accord.

Wages by Industry

We have seen that earnings per job and per capita income have risen substantially in the state, especially in the 1990s. The growth of higher-paying service industries, and retirement and investment income account for most of this increase.

Table 1 shows wages by industry for major industries in 2005. The employment figures only count wage and salary employees (i.e., not proprietors) and exclude the value of benefits such as health care. Sectors with wages that are 20 percent above or 20 percent below the average wages across all sectors are marked by green and red highlighting, respectively.

Mining, which includes energy development, pays the highest average wages in the state at \$83,213. However, this sector accounted for only 1 percent of wage and salary jobs in 2005.

Table 1. Wages and Employment by Sector in Colorado, 2005 (NAICS)¹⁹

	Employment	% of Total	Average Annual Wages
Total Private & Public	2,189,516	100%	41,601
Total Private	1,843,544	84%	41,593
Goods-Producing	342,654	16%	48,178
Natural Resources and Mining	31,966	1%	55,708
Agriculture, forestry, fishing & hunting	14,960	1%	24,441
Mining	17,007	1%	83,213
Construction	160,101	7%	41,488
Manufacturing (Incl. Forest Products)	150,586	7%	53,692
Service-Providing	1,500,890	69%	40,089
Trade, Transportation, and Utilities	408,872	19%	35,778
Information	77,437	4%	68,643
Financial Activities	153,677	7%	55,019
Professional and Business Services	316,173	14%	53,939
Education and Health Services	221,957	10%	38,055
Leisure and Hospitality	257,395	12%	17,039
Other Services	65,118	3%	28,758
Unclassified	262	0%	43,805
Total Public	345,972	16%	41,645
Federal Government	52,649	2%	60,764
State Government	68,236	3%	44,990
Local Government	225,087	10%	36,159

Wages are shaded in green when they are more than 20% higher than the wages for all sectors and in red when they are less than 20% lower.

Table 1 indicates that Colorado has successfully cultivated higher-paying service jobs. The state is well-represented in service sectors that pay above average wages. These include information (\$68,643), financial activities (\$55,019), and professional and business services (\$53,939). The state also has low-paying service sectors, notably leisure and hospitality services (\$17,039) which are often part time and/or seasonal.

Summary Findings

Colorado's population and economy are fast growing. Over the last 35 years, the state more than doubled its population, almost tripled the number of jobs, and nearly quadrupled total personal income. The state is among the fastest growing in the West, and outpaces the nation.

A mix of services and professional industries, and retirement and investment income are attracting new people and driving economic growth. From 1970 to 2000, service-related and professional occupations accounted for 64 percent of the growth in personal income, and in 2005 they constituted 59 percent of total personal income in the state.

Colorado has traded successfully on a range of assets—educational institutions, natural amenities and recreation, and transportation and telecommunications infrastructure—to cultivate high-paying jobs in new and emerging economic sectors, as well as retirees and investment income since the 1990s.

As a result of this growth and transformation, average earnings per job and per capita income are sharply up. In addition, the state's economy is more diverse, and now more closely mirrors the industrial structure of the nation as a whole.

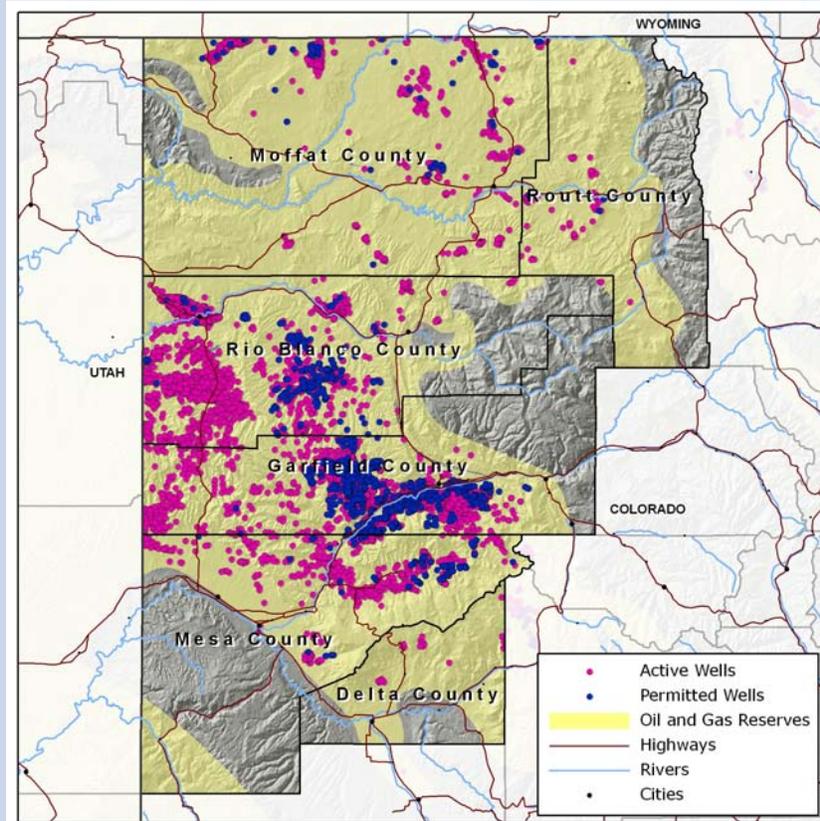
The growth and diversification of the state's economy has made the state less responsive to the fortunes of the mining and energy sectors. The booming 1990s, when the state generated almost 900,000 new jobs, saw mining and energy development lose more than 9,000 jobs.

Since 2000, fossil fuel energy development is growing again, but remains a small portion of the overall state economy. In 2005, mining, including energy development, accounted for 0.9 percent of all employment, and 2.3 percent of total personal income in Colorado. These industries do not have the ability to pull the state down, or turn it into a top economic performer of their own accord.

Production and Policy Background

Straddling a constellation of nationally significant geological formations, Northwestern Colorado has a long history of hydrocarbon-based resource extraction. Currently, the region is experiencing a surge in natural gas development, spurred by federal policy, market opportunity, and technological change.

MAP 2. Oil and Natural Gas Activity in Northwest Colorado, 2008

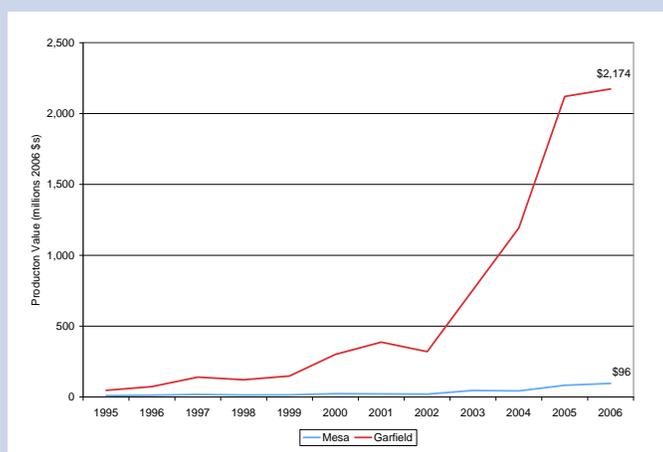


Well location and status based on data from Colorado Oil and Gas Commission, downloaded 10-16-08

The surge in drilling activity in Northwest Colorado that began in the early 2000s is part of the longer history of oil and natural gas development in the region.²⁰ Since 2002, the volume of natural gas extracted from the area has quadrupled. A 2008 consultant's report projects that in the next three decades Northwest Colorado will add up to 50,000 wells to the existing 7,500 wells operating in the four-county region in 2007.²¹ An unsuccessful attempt to develop oil shale resources within the Piceance Basin was launched in the context of the 1970s national energy crisis and abandoned abruptly in 1982. The region's oil shale resources are once again the subject of significant current speculation and research.

Figure 6 shows the increase in values accruing from oil and natural gas extraction in Mesa and Garfield counties since 1995. In Garfield County alone, production values have risen from less than \$500 million in 2002 to \$2.1 billion in 2006.²² Garfield County is projected to add roughly 1,000 new wells per year for the next 20 years—bringing the number of wells from 4,500 in 2007 to more than 17,000 in 2020 when the industry anticipates completing the expansion and development phase in the county.²³ Fewer wells are forecast in Mesa County, but as a regional hub providing many social and other services, the county is highly sensitive to trends in the regional energy industry.

Figure 6. Oil and Natural Gas Production Value, Mesa and Garfield Counties, 1995–2006²⁴



Federal policies, culminating in the Energy Policy Act of 2005, have targeted the area as a key natural gas reservoir and potentially critical oil shale reserve. (See our companion report, *U.S. Energy Needs and the Role of Western Public Lands*, for more background.²⁵) With the exception of the recently completed planning effort by the White River Field Office, the region's three Bureau of Land Management field offices have been so overwhelmed by the pace of lease offerings by the Department of the Interior in Washington, D.C. that planning has suffered. One result is that local governments have had little guidance from federal comprehensive planning documents to understand or prepare for the cumulative impacts of the energy surge.²⁶ Garfield County Manager Ed Green told the *Denver Post* in 2007 that "we don't know where we need to build new roads because we don't know where they're going to drill."

In response to this flurry of development activity, the state has re-examined its oversight of oil and natural gas activities. This began with a change in the make-up of the Colorado Oil and Gas Conservation Commission (COGCC) to reflect a more balanced set of state interests. Charged with drafting new rules for oil and natural gas development in the state, the commission released draft rules targeted at improving oversight and monitoring of oil and natural gas activities in March, 2008. The principal goals of the changes are to insure greater planning and oversight of permitting, tighter environmental protections, and improved coordination with local government. The draft rules remain in hearings and negotiations.²⁷

Coloradans voted on two ballot measures in November 2008 concerning revenue from energy development. Amendment 58 proposed to repeal severance tax incentives and to change the distribution formulas affecting how revenue is disbursed within the state. A competing initiative, Amendment 52, would have left the incentives in place and proposed a different set of changes for revenue distribution. Both amendments failed to pass by wide margins.

While the future viability of oil shale development remains highly speculative, in the Final Environmental Impact Statement issued in September 2008, the BLM-preferred alternative would open up about 360,000 acres in the state of Colorado for commercial leasing.²⁸ Five oil shale research and development projects are currently underway in the Piceance Basin.²⁹

In all, local jurisdictions on the West Slope face an enormous amount of activity, and considerable contingency about whether and how certain extractive activities will happen, under what conditions, and with what revenue implications. These uncertainties create challenges for local government trying to plan effectively for the future, and for businesses making investment decisions.

WHAT ROLE DOES ENERGY DEVELOPMENT PLAY IN MESA AND GARFIELD COUNTIES?

In this section, we consider economic indicators for Mesa and Garfield counties. Population, employment, and income trends are discussed in order to build context for analyzing the current energy surge and its impacts. In addition, we present data that explore the interplay between the energy economy and other economic sectors.

Demographic and Economic Trends, 1970 to 2005

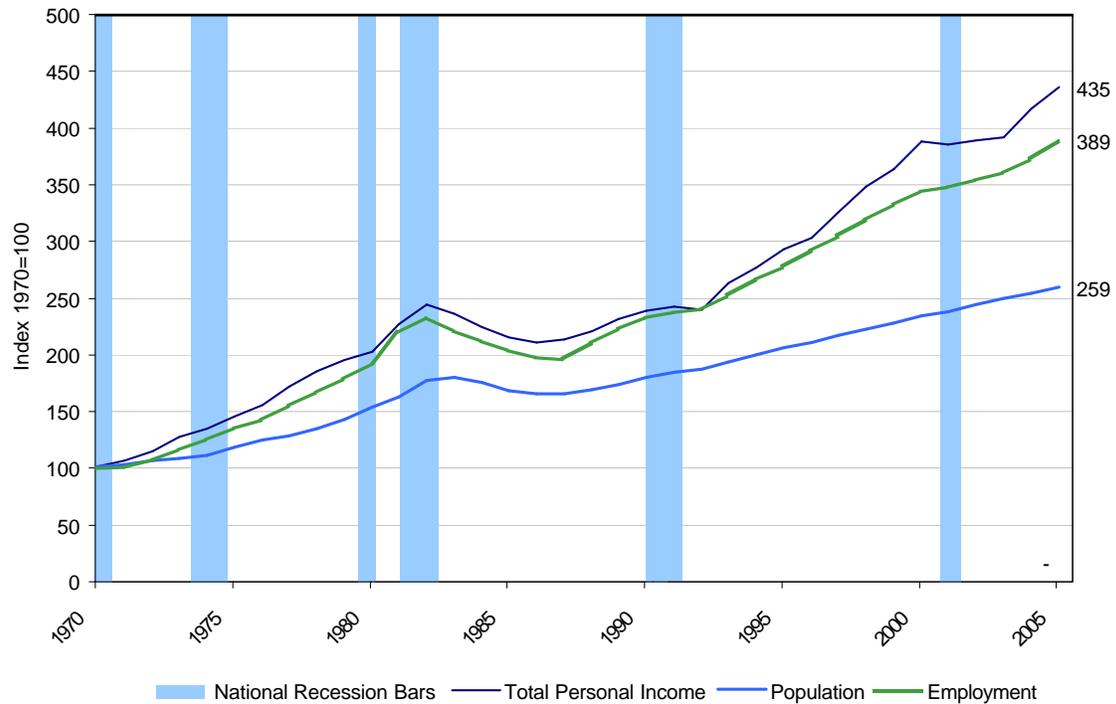
Figure 7 shows trend data on population, employment, and personal income growth combined for Mesa and Garfield counties, indexed to 1970 as a baseline. (National recessions are marked by light blue vertical bars.)

The populations and economies of Mesa and Garfield counties grew steadily in the period 1970 to 2005, except for three periods of recession, when growth stalled or reversed—the worst of which came after the last energy bust and lasted for most of the 1980s.

Population growth in Mesa and Garfield counties has outpaced growth in Colorado and the nation. During the period 1970 to 2005, Mesa County added 75,267 people and grew at an average annual rate of 2.5 percent. During the same period, Garfield County added 34,809 people and grew at an annual rate of 3.5 percent. The 2007 population estimate for Mesa County was 139,082, and for Garfield County the estimate was 53,631.³⁰

Both Mesa and Garfield counties suffered with the collapse of the Exxon Colony Project in 1982, and this is reflected in the net loss of population in both counties of more than 10,000 people (or a little over 8% of the area's total population) from 1983 to 1986. The area's subsequent strong economic recovery led to consistent rates of population growth from the late 1980s through the early 2000s, outpacing the state and nation.

Figure 7. Population, Employment and Income, Mesa and Garfield Counties (combined), 1970–2005, (indexed to 1970)³¹



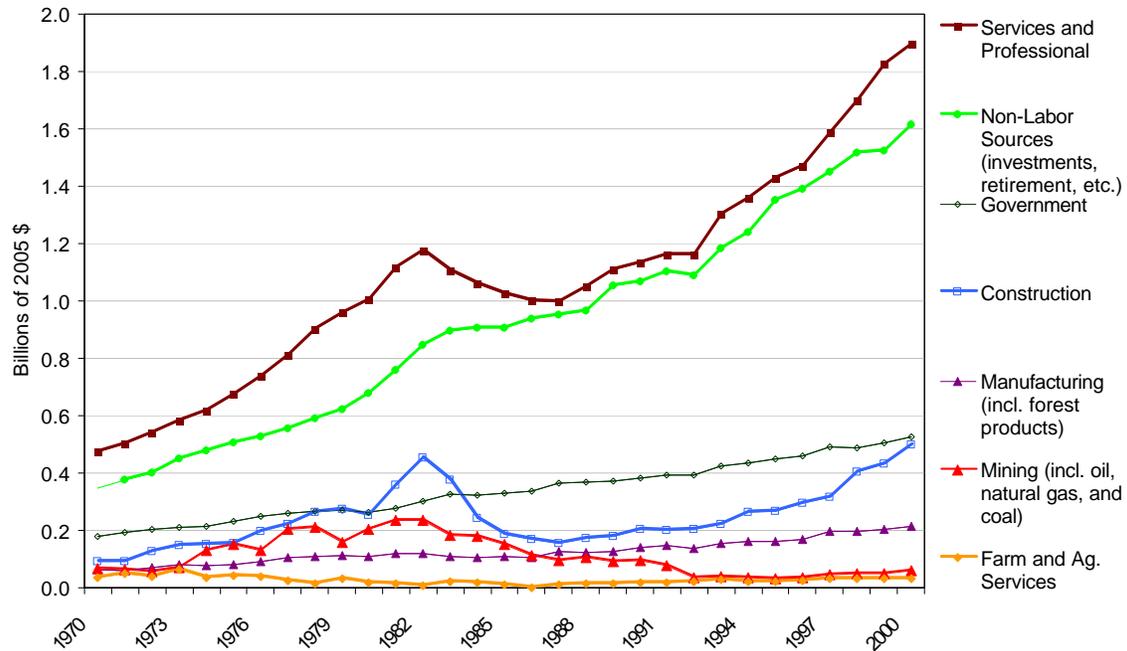
The employment and income trend lines shown in Figure 7 also clearly mark the oil shale run-up in the 1970s, followed by the decline from the bust that lasted from 1982 through the mid- to late-1980s, when trends reversed. From 1982 to 1987, employment fell by over 11,000 jobs (a 16% drop) and personal income fell by \$385 million (a 13% drop).

Strong growth in the 1990s and beyond subsequently followed, though vulnerability to national business cycles remain. (Light blue vertical lines represent national recessions.) Employment and personal income growth in Mesa and Garfield counties exceeded population growth, and outpaced Colorado and the nation.

Income Sources

Figure 8 shows the contributions of major economic sectors to total personal income, combined for Mesa and Garfield counties, for the period 1970 to 2000. Not surprisingly given state and region-wide trends, services and professional sectors, non-labor income, and construction were the driving industries and sources of new income throughout the period.³²

Figure 8. Historical Trends in Personal Income by Source in Mesa and Garfield Counties (combined), 1970–2000 (SIC)³³



The volatility caused by the energy economy in the 1980s is evident, not just in mining and energy development (red line) but also for construction (blue), and services and professional industries (brown). For the 1980s, the fortunes of the regional economy were in fact tied to energy development, with painful consequences. However, starting in the late 1980s, the rest of the economy took off despite continued declines in mining and energy development—in effect the larger economy de-coupled from the energy industry, and area communities established a new competitive position.

From 1987 to 2000, services and professional sectors added over 29,000 new jobs (67% of new jobs) and almost \$900 million in new income (42% of new income). During the same period, non-labor income added \$663 million in new income (31% of new income), and construction added almost 8,000 new jobs (18% of new jobs) and \$345 million in new income (16% of new income).

This recovery started five years after the mining sector entered its decade-long decline, and represents a diversification of the economy in the region, leading to above average employment and personal income growth.

While the initial recovery was boosted by special projects in the 1980s, ultimately the city of Grand Junction and surrounding area became a major service center, attracted retirees with high quality natural amenities and affordable housing, and retooled its construction industry to meet the needs of smaller businesses and home building. The Mesa County Economic Development Council worked hard to attract new firms to Grand Junction and later to help local firms expand. Tourism was a key driver in Mesa County's growth during the 1990s and into the 2000s. Designation as a metropolitan statistical area in 2000 and the arrival of national retail and restaurant chains bolstered Grand Junction's role as a regional service center.³⁴

The Glenwood Springs and Grand Valley areas went through a similar transformation. Garfield County evolved in part into a destination in its own right, but more dramatically into a service and housing center for the amenity booms taking place in the Roaring Fork and Eagle valleys.

This transformation is evident in the construction industry. After steep mining-caused declines, construction income was relatively stable during the 1980s, in part because of large one-time projects, including clean-up of former uranium mining activities in Mesa County and completion of the Interstate 70 passage through Glenwood Canyon in Garfield County. Then in the early 1990s the industry shifted to residential and related commercial construction in response to the demand for housing, and retail and office space fueled by retirees, amenity migrants, service workers, and new business owners.³⁵

Income by Industry Trends

Figures 9 and 10 chart personal income by source for Mesa and Garfield counties, respectively, during the period 1970 to 2000. In both counties, services and professional industries, and non-labor sources of income have grown far more than other sectors.

In Mesa County, non-labor income is close to equal to income from the services and professional sector as a share of total personal income. The sizeable presence of retirees in the Grand Junction area may account for strong non-labor income growth.

In Garfield County, the growth in income from the services and professional sector has outpaced non-labor sources in recent years. Garfield shows greater volatility over time in part because the Exxon Colony Project was centered in Parachute, and also because its economy, as measured by employment and income, is less than half the size of and more specialized than the larger and more diverse economy in Mesa County.

Mesa's economy grew more slowly than the Garfield economy since the recovery beginning in 1987. While Grand Junction in Mesa County was maturing as a regional retail and service center, and developing as an attractive and affordable market for retirees and mobile businesses, Garfield County was more closely tied to the booming resort economies in Eagle and Pitkin counties and developed a supporting relationship, providing housing and labor. This is particularly evident in construction, where personal income doubled from 1995 to 2000.

Figure 9. Historical Trends in Personal Income by Source in Mesa County, 1970–2000 (SIC)³⁶

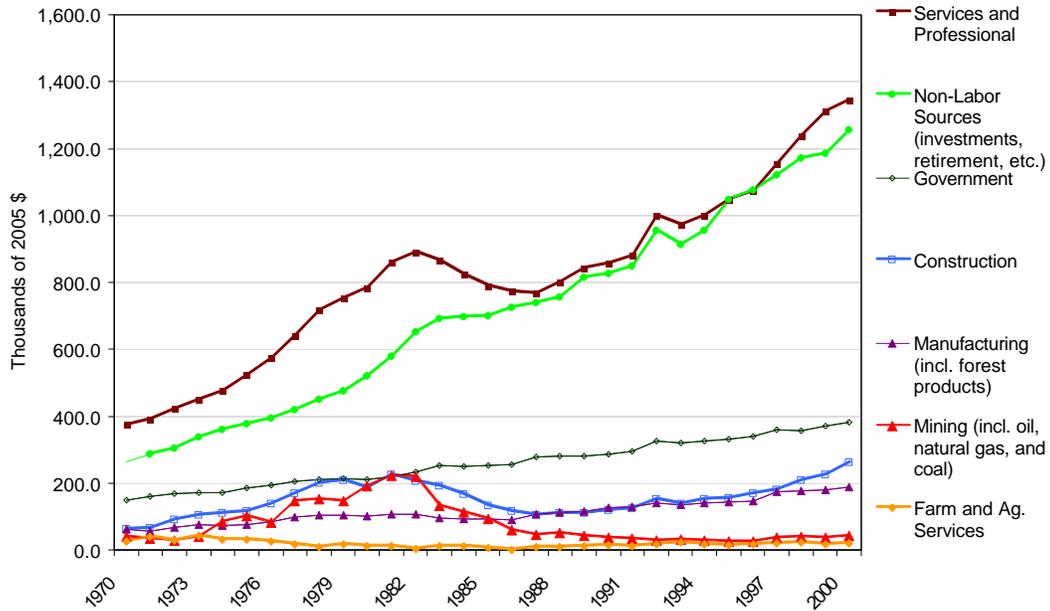


Figure 10. Historical Trends in Personal Income by Source in Garfield County, 1970–2000 (SIC)³⁷

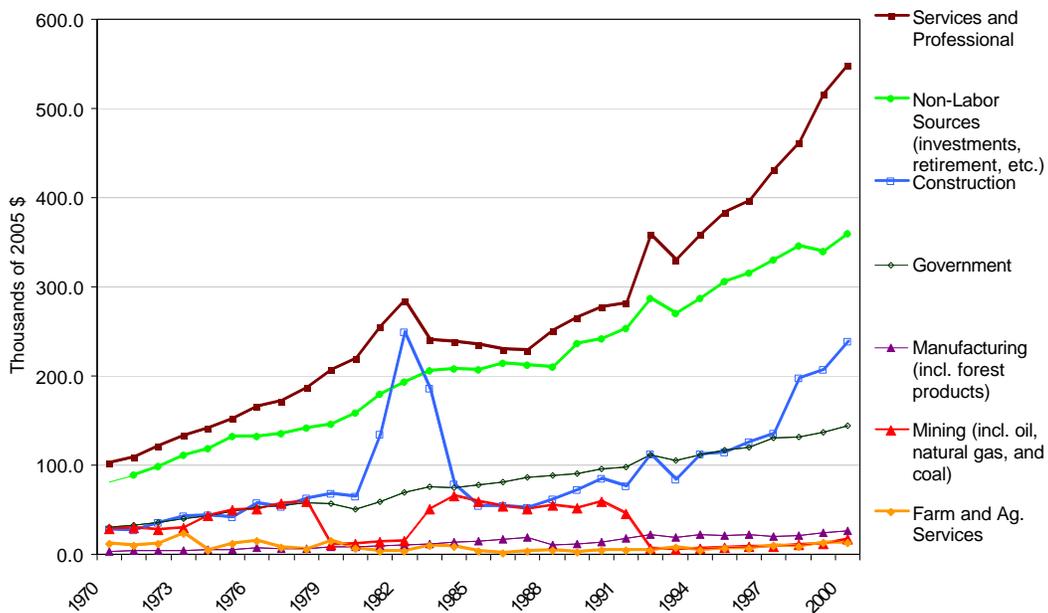
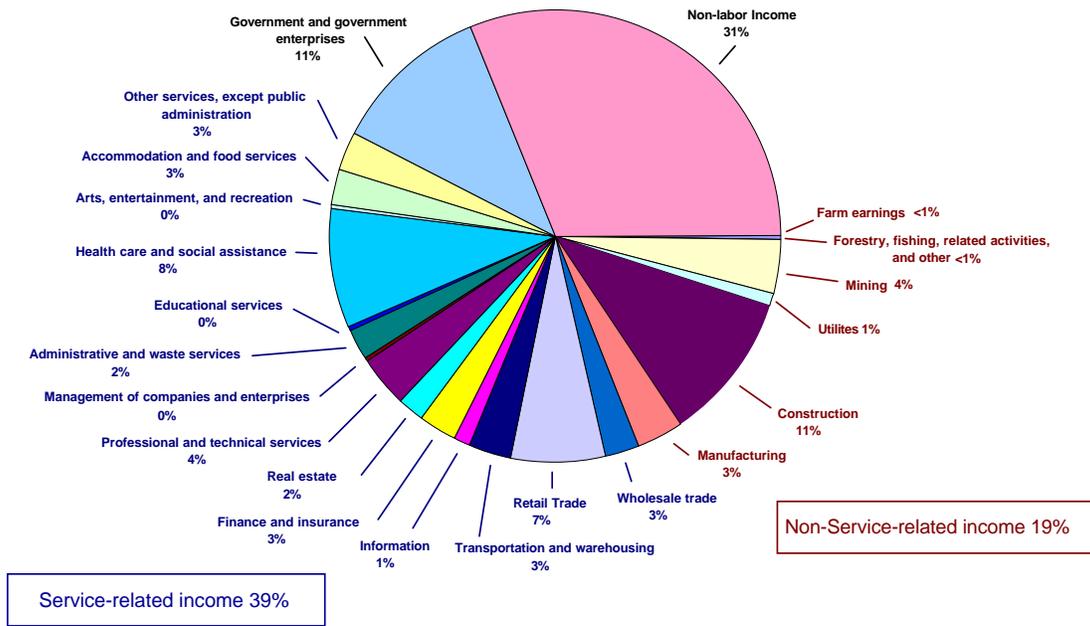


Figure 11 shows more recent data for both counties, for 2005, using NAICS industry categories which allow for a better rendering of the growing service economy. The overall economies of these counties show a similar profile. Service-related income dwarfs other sources of income, at 39 percent of total. Non-labor income provides nearly one-third (31%) of total personal income in the combined two-county area. Government and government enterprises are important sources of work in the region, amounting to 12 percent of total personal income. And construction is also strong player in the region, contributing 11 percent of all personal income.³⁸

Figure 11. Personal Income by Source in Mesa and Garfield Counties (combined), 2005 (NAICS)³⁹



The current energy surge in the area, focused on developing unconventional natural gas deposits in tight sands formations, took off in the early 2000s. Mining and energy development created more than 2,300 jobs and generated \$158 million in new personal income between 2000 and 2005. Still, the industry was only 4 percent of total personal income in the two counties in 2005.

It is important to note that natural gas development continues to grow quickly, and as it does it is becoming a larger part of the employment and personal income profile of the regional economy. In Garfield County, where significantly more drilling activity is situated, mining and energy development accounted for 5 percent of all employment and 8 percent of total personal income in 2005.

In addition, the fact that employment has been growing faster than population in the region since the late 1980s has reduced unemployment and meant that the rapid run-up in natural gas drilling

has put competitive pressure on other sectors, especially construction and service businesses participating in the resort economies, for access to labor. For more on the relationship between industries in the region see the final section of this report.

Wages by Industry

Tables 2 and 3 below show wages by industry for major industries in 2005. The employment figures only count wage and salary employees (i.e., not proprietors) and exclude the value of benefits such as health care. Sectors with wages that are 20 percent above or 20 percent below the average wages across all sectors are marked by green and red highlighting, respectively.

Average wages on the West Slope are significantly lower than for the state as a whole. The Colorado average annual wage was \$41,601 in 2005, while in Mesa County it was \$31,611 and in Garfield it was \$35,216. These wage figures do not account for differences in the cost of living in the two places, which were known until recently for their relative affordability.

Table 2. County Wages and Employment in Mesa County, 2005

Mesa County	Employment	% of Total	Average Annual Wage
Total Private & Public	55,560	100%	31,611
Total Private	47,433	85%	30,122
Goods-Producing	9,960	18%	37,862
Natural Resources and Mining	1,761	3%	44,662
Agriculture, forestry, fishing & hunting	547	1%	19,662
Mining	1,214	2%	55,952
Construction	4,756	9%	36,542
Manufacturing (Incl. Forest Products)	3,444	6%	36,192
Service-Providing	37,473	67%	28,062
Trade, Transportation, and Utilities	12,184	22%	28,982
Information	929	2%	34,902
Financial Activities	3,101	6%	38,292
Professional and Business Services	4,999	9%	29,622
Education and Health Services	8,029	14%	34,952
Leisure and Hospitality	6,619	12%	11,972
Other Services	1,606	3%	24,372
Unclassified	5	0%	17,412
Total Public	8,127	15%	40,312
Federal Government	1,234	2%	61,002
State Government	1,627	3%	41,092
Local Government	5,266	9%	35,222

Wages are shaded in green when they are more than 20% higher than the wages for all sectors and in red when they are less than 20% lower.

Table 3. County Wages and Employment in Garfield County, 2005⁴⁰

Garfield County	Employment	% of Total	Average Annual Wage
Total Private & Public	22,961	100%	35,216
Total Private	19,006	83%	35,194
Goods-Producing	5,588	24%	44,356
Natural Resources and Mining	1,699	7%	53,778
Agriculture, forestry, fishing & hunting	155	1%	26,928
Mining	1,544	7%	56,471
Construction	3,443	15%	39,572
Manufacturing (Incl. Forest Products)	446	2%	45,407
Service-Providing	13,418	58%	31,379
Trade, Transportation, and Utilities	4,555	20%	33,545
Information	241	1%	43,271
Financial Activities	1,052	5%	41,632
Professional and Business Services	1,956	9%	38,841
Education and Health Services	2,005	9%	38,652
Leisure and Hospitality	2,920	13%	15,001
Other Services	687	3%	24,364
Unclassified	3	0%	14,653
Total Public	3,955	17%	35,320
Federal Government	298	1%	54,741
State Government	428	2%	42,413
Local Government	3,229	14%	32,587

Wages are shaded in green when they are more than 20% higher than the wages for all sectors and in red when they are less than 20% lower.

The wage disparity between the West Slope and the state points to the importance of competing successfully for higher-wage service jobs. On the West Slope there is a large share of relatively low-paying service jobs—for example, leisure and hospitality jobs were 12 percent and 13 percent of wage and salary employment and paid \$11,972 and \$15,001 in Mesa and Garfield counties, respectively. These are often part-time and seasonal jobs, and may complement other

employment.

Still, the region has been less successful at attracting and creating higher paying service jobs (information services were 2% and 1% in Mesa and Garfield, respectively), though there are some positive developments (financial activities are higher paying and were 6% and 5% in Mesa and Garfield, respectively).

In 2005 mining, which includes energy development, paid the second highest average wage in Mesa County (at \$55,957, lower than \$61,002 for the federal government) and the highest average wage in Garfield County (at \$56,471, higher than \$54,471 for the federal government). On average, the energy industry pays wages 60 percent higher than average wages in both counties. It also offers higher-paying employment opportunities to workers without high levels of education or professional certification.

Unemployment and Wage Gaps

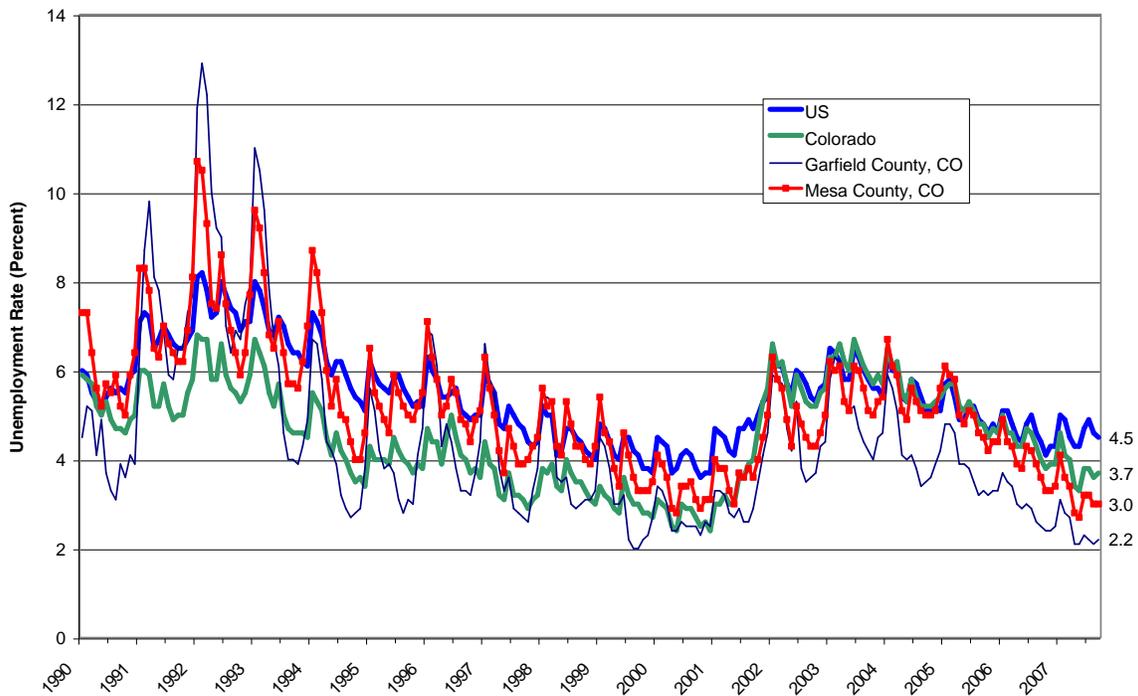
Fueled by a wide range of services and professional sectors, the strong economic growth on the West Slope in the 1990s, already faster than the state and nation, has accelerated in the 2000s with the ramp-up of natural gas extraction.

Two successful economies—resorts and amenity-driven migration, and jobs and business creation in a wide of service sectors on the one hand, and mining and the energy industry on the other—have driven unemployment to historic lows and are now competing for labor.

Figure 12 compares unemployment rates for the United States, Colorado, Garfield County, and Mesa County from 1990 through 2007.⁴¹ The impact of the energy surge on unemployment is evident from the mid-2000s. Unemployment on the West Slope—3.0 percent in Mesa and 2.2 percent in Garfield in 2007—is well below national and state levels, and approaching what economists describe as a full employment economy—in the sense that every able-bodied adult who wants to work should be able to find work.

The strong demand for labor coupled with a saturated regional labor market has accelerated in-migration, along with new demands for housing and government services. With its higher wages, the energy industry is also attracting workers from other sectors, “crowding out” other local businesses—this appears to be particularly acute in the construction and resort labor pools.⁴² One would expect this situation to lead to a general rise in wages, as businesses in every sector compete for labor.

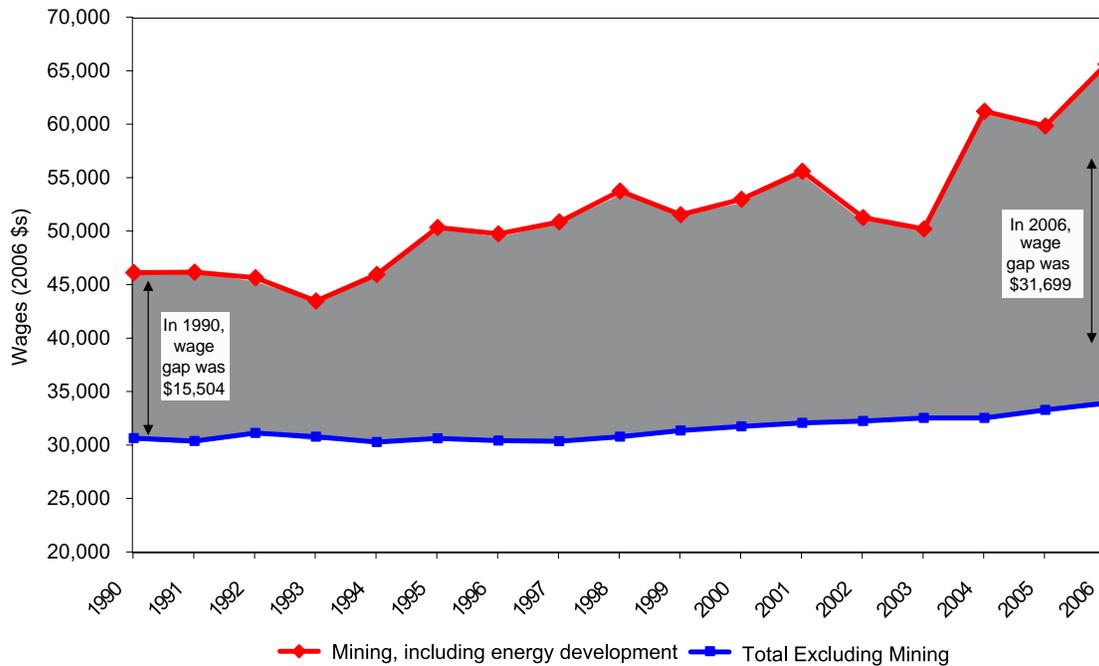
Figure 12. Unemployment Rates in Mesa and Garfield Counties, Colorado and the Nation, 1990–2007⁴³



Figures 13 and 14 explore wage inflation and the wage gap more specifically by comparing wage trends in mining, including energy development, to wages in all other sectors combined in Mesa and Garfield counties.

In Mesa County, overall wages are on the rise, increasing by \$4,065, in real terms, from 1990 to 2006. At the same time, the wage gap between energy and everything else, which was \$15,504 in 1990 at the beginning of the broader recovery of the last decade, grew to \$31,699 in 2006—a doubling of the wage gap. Mining and energy wages grew by 24 percent from 1990 to 2006, while all other wages grew by only 7 percent. This limited trickle down can be beneficial for employers, if they can compete for workers, but disadvantageous for the general working population trying to stay afloat in an environment where the cost of living, especially housing, is quickly appreciating.

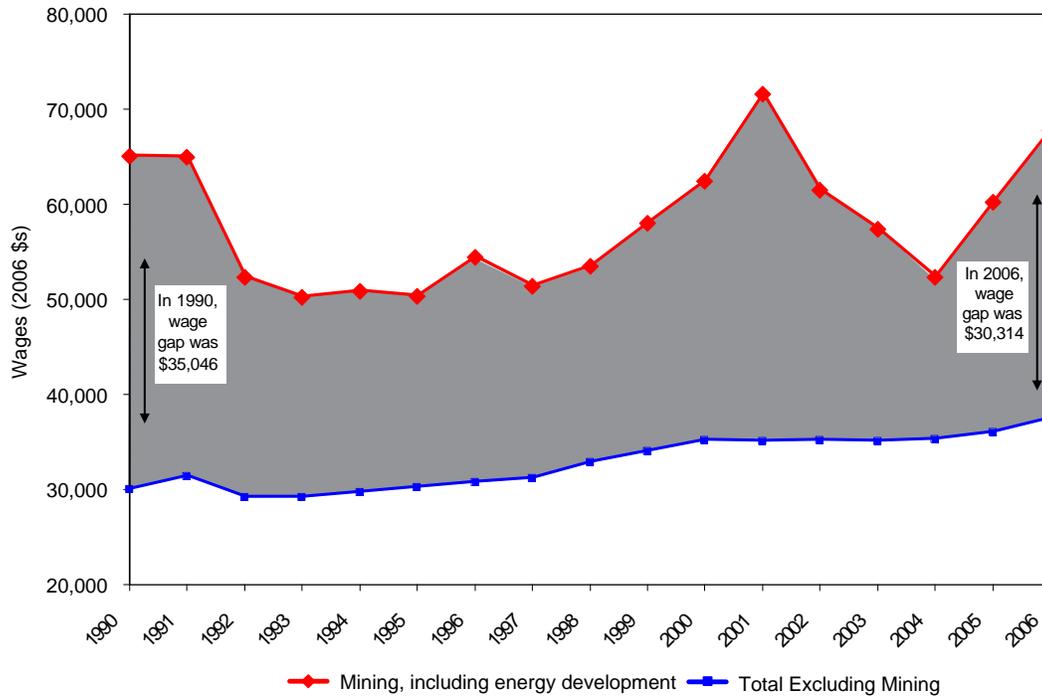
Figure 13. Average Annual Wages in Mining Compared to the Rest of the Economy, Mesa County, 1990–2006⁴⁴



In Garfield County, the trends are more volatile. Overall wages were up \$7,664, in real terms, from 1990 to 2006. At the same time, the wage gap between mining, including energy development, and all other industries has constantly changed—from a low of \$20,214 in 1997 to a high of \$36,581 in 2001. The wage gap was \$30,314 in 2006. When mining wages shot up in the late 1990s (from 1997 to 2001), by 39 percent, all other wages rose by 12 percent. Between 2004 and 2006, another period of steep mining wage increases, mining wages grew by 30 percent while all other wages increased by 6 percent.

There is a greater trickle-down wage effect in Garfield than in Mesa, when mining wages are going up, perhaps due to a tighter and less diverse labor market, but the gap in Garfield remains similar to that in Mesa at over \$30,000.

Figure 14. Average Annual Wages in Mining Compared to the Rest of the Economy, Garfield County, 1990–2006⁴⁵



For retirees on fixed incomes, government employees such as school teachers whose pay rates increase modestly, and workers in the lower-paying service sectors, the surge in energy jobs offers an opportunity to re-enter the job market, change jobs, or fall behind as the general cost of living increases for residents and business on the West Slope.

Summary Findings

Mesa and Garfield counties on Colorado's West Slope have undergone major economic swings and a thorough industry-level transformation in the last 25 years.

The Exxon Colony Project ramped up local population, employment, and personal income, but when it collapsed Mesa and Garfield counties, along with area towns, were left to contend with tremendous and abrupt losses—more than 10,000 people left the area, 11,000 jobs were lost, and personal income dropped by almost \$400 million.

Remarkably, population and economic growth recovered starting in the late 1980s and flourished in the 1990s, population, employment, and personal income growth in Mesa and Garfield counties outpaced the state and nation.

This recovery was based on the region's affordability, proximity to booming resorts in the Eagle and Roaring Fork valleys, Grand Junction's maturation as a regional service center, and the successful marketing of the region's natural amenities and recreational opportunities to a growing number of people and businesses looking for a better quality of life. (See our companion report *Energy Development and the Changing Economy of the Changing West* for more on this west-wide phenomenon.)

Services and professional sectors, non-labor income, and construction were the driving industries and sources of new income throughout this period. This recovery happened at a time when the mining and energy sectors continued to decline, and signaled a new competitive position for the West Slope based on affordability and quality, and a more diverse set of economic activities.

In the early 2000s, the development of natural gas in the area reignited the energy sector and led to significant new jobs and income—more than 2,300 jobs and \$158 million in new personal income in Mesa and Garfield counties combined between 2000 and 2005. Mining and energy sector wages are among the highest wages in the area, which is welcome on the West Slope where wages are well below state averages.

The rapid growth of the natural gas industry has pushed unemployment levels to historically low levels (3.0% in Mesa and 2.2% in Garfield in 2007). It has led to rapid in-migration and made regional competition for labor fierce. Although mining and energy wages have risen significantly, wages in the rest of the economy have not kept pace. This has enabled the natural gas industry to compete successfully for labor from other industries, and put pressure on other workers as the cost of living increases.

Today, two successful economies—resorts and amenity-driven migration, and jobs and business creation in a wide range of service sectors on the one hand, and mining and the energy industry on the other—are increasingly in competition with each other for limited resources. Following a discussion of the fiscal aspects of the energy surge in Colorado and our study area, the final section of this report details the uneasy coexistence of these two economies on the West Slope.

DOES COLORADO DO A GOOD JOB TAXING FOSSIL FUEL ENERGY EXTRACTION?

Fossil fuel energy development entails the one-time removal of a valuable, non-renewable natural resource from the ground. Taxes on extracted resources enable state and local government to accomplish two objectives that are critical to benefiting from energy development. First, taxes fund government provision of support services, infrastructure, and oversight for energy development along with impact mitigation. Second, taxes are intended to provide seed funds for government investments that can help to replace extracted wealth with future economic opportunities.

What are the elements of a best-case energy tax scenario? Revenue must be sufficient, and arrive in the time and form necessary to enable government to keep pace with demands on infrastructure and services. In addition, the structures for distribution and investment of energy revenue need to be designed and operated with the region and state's long-term economic competitiveness in mind. We apply these two criteria to assessing how well Colorado's tax policies perform.

Does Colorado's energy tax program deliver all that it could? The short answer is no. Colorado's tax structure is underperforming at capturing wealth from the current surge in oil and natural gas production, leaving the state with insufficient funds to provide direct services to industry and mitigate the impacts of extraction activities.

The state returns a relatively high proportion of revenue to local governments and agencies dealing with the direct impacts of energy development. However, architectural flaws in the tax program—an overreliance on property taxes and the structure of state severance tax distributions—prevent the delivery of funds to local governments in the time, amount, and/or form necessary to meet pressing needs. Counties appear to be meeting short-term service demands and maintaining fiscal health. However, they are falling behind on long-term capital facilities needs, have a revenue stream overly exposed to volatile and uncertain state grants and industry contributions, and struggle to maintain diversity and health in sectors outside energy.

To arrive at this conclusion, we conducted a detailed assessment of the architecture and implementation of Colorado's tax policies at the state and county levels. In addition, our case study analysis of Mesa and Garfield counties focused on the relationship between fiscal policy (tax collection and distribution) and the capacity for local governments to deal with the impacts of the energy surge while also maintaining an economically viable position for the long term.

A guide to energy tax terms and the key findings of our two-pronged research agenda are presented in summary form on the following pages, with the detailed analysis of the tax program featured in Appendices 2 and 3. Discussion of the fiscal impacts to local case study areas follows in the next section of the report.

Tax Policy Primer: Basic Terms and How Colorado Taxes Energy Resources

Energy Revenue

Refers to taxes and royalties paid to federal, state and local governments that are derived directly from the extraction of oil, natural gas, and coal. The majority of energy revenue comes from the severance tax, property tax, and state and federal royalties, each linked directly to the production value of extracted energy resources.⁴⁶

Production Value

Energy revenue is generated from taxes and royalties levied against the production value of oil, natural gas, and coal extraction. Production value is the product of the price and the production volume, and can vary dramatically from year to year.

Severance Tax

The severance tax is a tax on oil, natural gas, and coal extracted, or severed, from the earth. Colorado levies a progressive 2 to 5 percent severance tax on the production value of energy resources that increases with the size of the producer. Production value of oil and natural gas in Colorado is highly volatile, and so too is severance tax revenue from these commodities. Coal severance taxes are based on tonnage, and tend to be more stable from year to year. Oil and natural gas producers deduct transportation and processing costs and mineral royalties from gross production value to reach the net, or taxable, value. Colorado also allows industry to deduct property taxes from their severance taxes. Low production, or “stripper,” wells are exempt from the severance tax. These incentives and deductions reduce the effective tax rate, and exaggerate the volatility of severance tax revenue in Colorado.⁴⁷

Federal and State Royalties

Royalties are “production” taxes paid to the land owner, including federal and state governments, Indian tribes, and private individuals. Federal and state royalties on oil and natural gas are 12.5 percent on production value. Roughly half of federal royalties are returned to the state where drilling takes place. Royalty figures include bonuses paid through the competitive leasing process (a premium paid by a company to win a leasing contract to drill in a specific area) and fees or rents paid to maintain a lease.

Sales and Corporate Income Taxes

The oil and gas industry also pays sales taxes on services and equipment directly associated with drilling activities, and corporate income tax on net profits. Sales taxes can be important to some local governments, but these revenue sources make up a small proportion of total energy revenue in Colorado.

Effective Tax Rate

The effective tax rate is a ratio of tax revenue to production value:

$$\frac{\text{Production Value}}{\text{Tax Revenue}} = \text{Effective Tax Rate}$$

The effective tax rate measures the proportion of production value captured as tax revenue, after all exemptions, deductions, and incentives are accounted for. The effective tax rate is calculated using production taxes (severance and property) and royalties. (Sales taxes and corporate income taxes are omitted because they are not directly based on production value, in other words, they have different numerators.)

Key Fiscal Issues Related to Benefiting from the Current Energy Surge in Colorado

Low Effective Tax Rate

- Policies that allow for significant deductions by industry leave Colorado with the lowest effective tax rate (6.2%) of the five Intermountain West states leading today's energy surge. In other words, Colorado is capturing less value from the energy surge than its neighbors (see Figure 8 and Appendix 2, page 61).
- Colorado's low effective tax rate means there are fewer funds available for service delivery and impact mitigation, as well as long-term investment.
- While industry often argues that taxes drive production away and raise consumer prices, academic studies and evidence from the current energy surge in the Intermountain West suggest otherwise (see page 70).

Exaggerated Volatility Creates Budgetary Instability

- Colorado's tax policy offers incentives to industry that exaggerate the inherent volatility of energy prices, leaving the state's budget exposed to uncertainties in the market.
- Budgetary volatility increases the risk the state assumes when committing to necessary long-term capital improvements, such as roads and buildings.
- Budgetary volatility puts ongoing operating expenses, such as police department salaries, at risk.

Fiscal Challenges Facing Local Governments

- Local governments rely heavily on property taxes to fund service delivery (more than half of Garfield County's total revenue), but the lag between the activities that create new demands and when property tax revenues are actually received makes it difficult to keep pace with surging service demands.
- State government can help counties to bridge this property tax gap, but state assistance is limited due to flaws in Colorado's revenue distribution mechanisms and the depressive impact of a low effective tax rate. Counties must pursue other options, including issuing debt, spending down reserves, or seeking contributions from industry.
- Mesa and Garfield counties are keeping pace with current operating expenses and service demands related to the energy surge in different ways. Mesa county's revenue base and fund balances are relatively larger and more diversified, and the county is better able to absorb new service demands than smaller, less diversified Garfield County. Garfield County has voted to remove revenue limits imposed by TABOR, and is better positioned to expand their revenue base to keep pace with the energy surge.

- Despite current fiscal health, both counties are falling short in their ability to invest in capital facilities necessary to support the energy industry in the future, and are exposed to uncertain and volatile revenue streams from energy production. Mesa County is spending down reserves and borrowing from enterprise funds to make ends meet. Garfield County is dependent on one-time grants from the Department of Local Affairs and direct contributions from industry to meet infrastructure needs.

Limited Long-Term Investment

- A low effective tax rate and the state's existing commitments to assisting local governments leaves the state less money than its neighbors to invest in long-term capital improvements, including projects related to the energy surge (e.g., roads, pipelines, etc.) as well as projects and funds focused on promoting economic diversity and ensuring future prosperity.
- Colorado invests the largest proportion of severance taxes in the five energy-producing Intermountain West states into a trust fund (10% of all oil and natural gas revenue), but ranks fourth of four states with established permanent funds in 2006 in overall savings. This means Colorado has fewer options for funding infrastructure, education, and other services that contribute to the state's long-term economic competitiveness.

WHAT ARE THE IMPLICATIONS OF SUPERIMPOSING AN ENERGY SURGE ON AN EXISTING BOOM?

In this section, we delve more deeply into the question of what it means for the West Slope to overlay a surge in energy development on top of an existing amenity boom. Are we seeing a collision with losers on all fronts, or a partnership with many winners?

It is not hard to find negative characterizations of recent trends. Mesa and Garfield counties have been profiled in local and national media outlets as places overwhelmed by the impacts of the energy surge, with many of the classic problems attendant to mining boomtowns: spiraling problems with alcohol, drug-related misbehavior, a crisis in housing availability and affordability, and a rural infrastructure on the brink of collapse.⁴⁸

Nor is it difficult to see benefits, which include better-paying jobs, increased government revenue, and new investments in the community. West Slope counties have some of the lowest unemployment rates in the state, and the recent growth of energy-related jobs is increasing wages. Revenue from energy development has helped to grow the hospital budget in Mesa County, for example, at a pace that other economic sectors could never match.⁴⁹ And Colorado Mountain College built a new campus in Rifle, funded in large part by donations from other energy companies, and has the lowest tuition fees in the state, thanks to rising property taxes from natural gas production.⁵⁰

The question is not so much are there costs, and are there benefits, but do the costs outweigh the benefits in net terms, or vice versa? Is the competitive position of the West Slope—and that of its communities and businesses—stronger now than before the current energy surge? Finally, can energy development be managed to avoid the worst impacts, and capture the greatest benefits?

The most straightforward way to try to answer these tough questions is to go back to the foundation of the recovery in western Colorado after the last energy boom collapsed and ask if that growing and more diverse economy can thrive alongside a rapidly growing extractive economy.

We focus on three key challenges facing Mesa and Garfield counties—cost of living and housing, full-employment and crowding-out, and fiscal shortfalls and exposure—because these topics exemplify major friction points associated with layering one economic boom on top of another.

Cost of Living and Housing

The affordability of Mesa and Garfield counties was a significant component of their economic recovery and competitive advantage during the 1990s.⁵¹

The City of Grand Junction worked hard and successfully to bill itself as an attractive and affordable place to retire. According to Diane Schwenke, Grand Junction Area Chamber of Commerce, “Back in the mid-80s to early 90s, as part of dealing with the last energy bust the community did promote itself as a good place to retire.... We did have a lot of housing stock.”⁵² As early as 2000, 15 percent of the population in Mesa County was older than 65 years, and by 2005 age-related transfer

payments in the county amounted to nearly \$400 million in personal income.⁵³

Garfield County attracted a growing share of retirees, but more dramatically it functioned as a relief valve for the pressure of ever-mounting housing costs in resort areas in Pitkin and Eagle counties with a high frequency of second-home ownership.⁵⁴ Fully 78 percent of the jobs created in Pitkin County between 1990 and 2000 were staffed by residents who lived outside the county, two-thirds of them in Garfield County, according to a 2007 study by BBC Research and Consulting.⁵⁵

The resort economy was taking its toll on affordability in Garfield County by the late 1990s. As the resort economies of Aspen and Vail/Beaver Creek grew, so did the cost of housing in Garfield County.⁵⁶ While the Roaring Fork Valley and Carbondale housed many service workers in the early 1990s, by the end of the decade, workers were looking much further down the Grand Valley, toward towns like New Castle, Silt, and Rifle, for affordable housing.⁵⁷

When the energy surge took off in the early 2000s, arriving workers added a new set of pressures to the mix and contributed to housing shortages as well as greater affordability challenges.

Short-term Housing

Jobs in construction and exploration in the oil and natural gas fields brought a flood of workers in 2002 and 2003 that quickly overwhelmed the housing stocks in the smaller towns closest to the oil and natural gas fields, such as Rifle, Silt, and Parachute.

Regional centers like Glenwood Springs and Grand Junction ended up filling the gaps, but in these places too, housing availability soon became a major issue. Tom Zieman, Director of the Glenwood Springs Chapter of Catholic Charities, observed in an interview with Headwaters Economics that short-term accommodations were so expensive and hard to find that incoming oil and natural gas workers often found themselves living in the woods and in campgrounds, and in winter in underground thermal caves. New workers could be dependent on area relief services to tide them over until they received their first few paychecks.⁵⁸

Reporting on a busy 2007–2008 winter at the homeless shelter in Grand Junction, the Grand Junction *Daily Sentinel* reported in February 2008 that the demand energy workers put on local hotel rooms has eliminated the shelter's overflow capacities (as hotels once provided overflow rooms for busy nights at the shelter, subsidized by local charities). In Rifle, it is estimated that 80 percent of hotel rooms are occupied by energy workers, which also restricts visitor stays and economies that rely on visitation, such as tourism and hunting.⁵⁹

Since 2006 Garfield County has permitted 47 “man camps” (temporary employee housing) that can each house up to 24 people. These camps are stark symbols of the lack of available housing. Initially designed and permitted for a year or less, some facilities can be renewed indefinitely. It is Garfield County's contention that energy companies “will need to construct permanent housing for their employees if they wish to continue operating within the economic, political and physical constraints of this region.”⁶⁰

In the longer term, natural gas workers have tended to settle in the regional centers due to a shortage of housing (and other amenities) near the oil fields. 2006 data suggested that 54.4 percent of oil and natural gas employees working in Rio Blanco, Mesa and Garfield Counties live in Mesa County, 36.8 percent in Garfield.⁶¹ In 2007, rental vacancies in Grand Junction, the only area large enough to feature in census data on housing statistics, were below 3 percent.⁶²

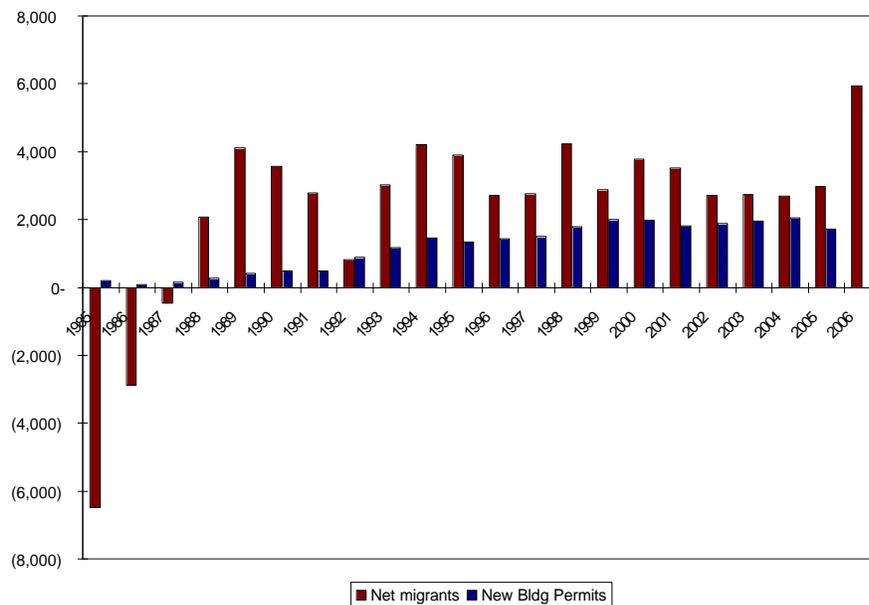
More recently, the Colorado Division of Housing reported that Grand Junction has the lowest housing vacancy rate (1.6%) out of 1,600 rental markets in the state, and steep average monthly rates (\$624). Kathi Williams, director of the Colorado Division of Housing, was recently quoted in the Grand Junction *Daily Sentinel* saying, “this market is going to be tight for a while.”⁶³

Homes

When it comes to permanent accommodations, the number of new residents each year handily outstrips the number of new houses. This has resulted in higher housing prices, which are rapidly moving beyond the reach of a growing number of residents. Add strong demand for second or seasonal homes, and the wage gap between energy workers and all other workers, and you have a housing crisis in the making.⁶⁴

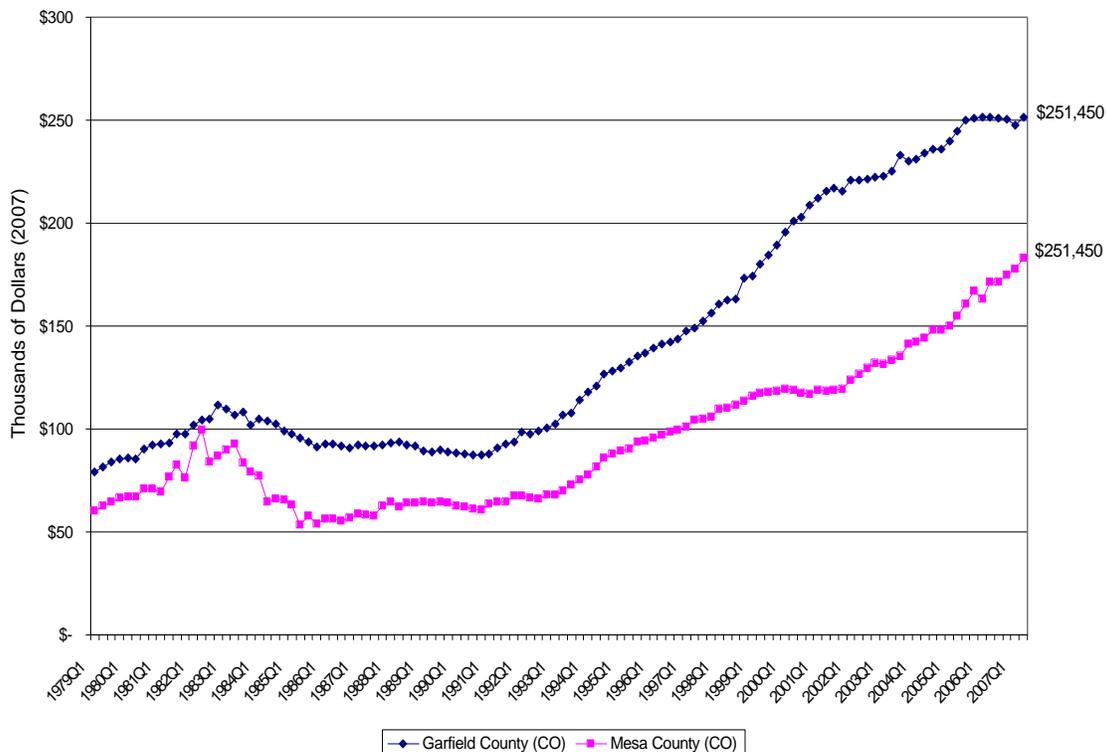
Figure 15 depicts the remarkable efforts of the building industry to keep pace with population growth in Mesa and Garfield counties.⁶⁵ Since 1988, when population growth first went positive after the 1980s bust, the two counties have together received an average of 3,200 newcomers every year. Housing permits for new houses have increased as well, with the two counties combined permitting an average of 1,370 new residences each year.

Figure 15. Net Migration and Permits for New Housing in Mesa and Garfield Counties, 1985–2006⁶⁶



The increasing cost of housing is shown in Figure 16, which charts the median home price in Mesa and Garfield counties from 1979 to 2007.⁶⁷ The median home price in Mesa County in 2007 was \$183,190, having risen 50 percent from 2000. At \$251,450, the median home price in Garfield County in 2007 was up 30 percent from 2000.⁶⁸

Figure 16. Median Home Prices, Mesa and Garfield Counties, 1979–2007⁶⁹



Grand Junction, in Mesa County, went quickly from being very affordable—one and a half times more affordable than the national average in the late 1990s—to being on par with the U.S. average in 2005. This change poses particular problems for low- and moderate-income home buyers. In 2007 there were an estimated 5,400 renters in the metro area who were potential first-home buyers, but 3,100 were precluded from purchase due to low income or lack of down payment.⁷⁰

In Garfield County, closer to the drilling activity and resorts, housing availability and pricing pressures are more acute. Describing Garfield County, a 2007 study observes that “Recent increases in housing prices throughout most of Garfield County, largely driven by energy-related job growth, also raise concerns that there may not be enough affordable housing to accommodate all of the anticipated future out-commuters.”⁷¹

Discussing the impacts of the energy surge, Keith Lambert, Mayor of Rifle, noted that historically Rifle has been the location of affordable housing, but that ended several years ago.⁷² A report based on Multiple Listing Service data found that median home prices in Rifle grew from \$200,000 to \$275,000 from 2005 to 2007, a 38 percent increase in two years. In addition, only 32 percent of families making 180 percent of area median income in 2007 could afford housing.⁷³

Social Impacts of the Rising Cost of Living

Housing affordability has profound consequences for the greater social health of Mesa and Garfield counties. Those whose wages are not tied to the energy industry are falling behind as the cost of living, especially housing, spirals out of reach. Professional workers—teachers, health care workers, and government staff—increasingly cannot afford to live in area. A Mesa State College 2007 study on cost of living found that home prices had risen 48 percent in Garfield County between 1999 and 2005, while wages increased by 18 percent during the same period.⁷⁴

A list of the largest employers in Mesa County in 2007 reveals that these employers are county government, hospitals, schools, supermarkets, health care spin-offs, and hotels. None of these employers are tied to the energy surge in ways that would enable them to raise wages and salaries to be competitive with wages in the energy industry.⁷⁵ CEO of the Grand Valley Hospital District, Martie Wisdom, related mounting problems recruiting and retaining health care workers in a 2007 interview with Headwaters Economics.

A 2007 article in the *Rocky Mountain News* (Denver) related the challenges facing David Smucker, superintendent of the Garfield County School District in hiring and keeping teaching staff. Facing rising enrollments and a staff shortage, Smucker went on an out-of-state recruiting mission in 2005. But according to the paper, “Nearly a dozen new teachers he hired ... came to the county, scoped out the soaring cost of living, the helter-skelter pace of life, and said no thanks.”⁷⁶ This anecdotal evidence was reinforced in a 2007 presentation by Dr. Gary Pack of the Garfield RE-2 school district, who noted the cost of labor and cost of living as the primary challenges to maintaining a viable school system in the context of the energy surge. Scrambling to fill open positions, prior to the 2007–08 academic year, Pack said the district made offers to 20 teachers who “declined strictly due to housing costs.”⁷⁷

Arriving in the midst of a steady expansion of the resort and retirement economies, the surge in energy jobs and wages has added pressure to already strained social infrastructure in Mesa and Garfield counties. It has also had significant consequences for local and regional businesses.

The Overheated Economy

The fast-growing and increasingly diversified economy of the West Slope accelerated further with the addition of jobs and income related to the extraction of natural gas in the early 2000s. As a result, unemployment has fallen to historic lows (3.0% in Mesa and 2.2% in Garfield as of September, 2007), resulting in a full-employment economy where virtually any adult who wants to work can find work. In Mesa and Garfield counties, this rapid growth fuels concerns that the energy industry is “siphoning” labor from other local businesses.⁷⁸

The inability of the regional market to meet the demand for labor has stimulated in-migration to the area, exacerbating growth pressures and cost of living inflation. It has also caused area workers in non-energy sectors to leave their current employment, in part due to higher wages paid by energy companies, and go to work in the energy fields. And it has contributed to a growing wage gap between energy workers, and the wages of all other sectors combined (see Figures 13 and 14, pp. 26-27).

Virtually all economic sectors are affected by these trends. In 2007, the City of Grand Junction’s Economic Development Council conducted a survey of its members regarding the impacts of energy development. Respondents were unanimous about the difficulties the rapid growth in high-paying energy jobs posed for local business owners. According to a summary of the report in the *Grand Junction Free Press*: “The number one challenge of the energy activity that was cited related to workforce issues including rising wage levels, the inability to find qualified labor and the difficulty in recruiting due to rising housing costs.”⁷⁹

The construction industry is a case in point. The already understaffed housing and construction business sector has been in the midst of a serious labor shortage since the advent of natural gas exploration. This is due not only to the demand for new construction, but also to workers leaving local trades to work in the natural gas fields.

Locals report weeks- or months-long waits for skilled tradesmen. Some residential construction firms are scaling back because they cannot retain workers, or schedule subcontractors for electrical and plumbing jobs. According to the Grand Junction *Daily Sentinel*, “Landscapers are so busy with subdivisions and new commercial construction it could take a homeowner several months to get one to turn the dirt in their yard.”⁸⁰ The article went on to suggest that undocumented workers are increasingly filling positions vacated by workers headed for the natural gas fields, noting that “Mexican” crews were frequently taking over low-skill work in the housing industry, such as roofing.

In fact, local officials in Garfield County are planning for a large increase in the number of undocumented workers in the county, according to the county’s 5-year plan, which states:

[a]s the documented workforce turns its attention to more lucrative oil and natural gas extraction industry jobs, the undocumented workforce will increase dramatically to ‘fill the breach.’ Although we are unable to get an accurate reading of the size of this undocumented population, we estimate that it is currently in the neighborhood of 15,000 people. For this five year planning horizon, our projections are that the documented population will grow to 66,000 people by 2011 and that the undocumented population will grow by 22,000, making a total population impact of 88,000 in 2012.⁸¹

The willingness of undocumented workers to work for low wages notwithstanding, the strong demand for workers—coupled with the high demand for new buildings and houses—further increases construction costs, compounding the affordability problem.

The resorts are also facing challenges. The loss of relatively more affordable housing in the Grand Valley, discussed above, in combination with higher-wage employment opportunities, have put pressure on the Vail and Aspen resorts and associated businesses to find and house workers in the region. Travel and tourism industries were twice as large as mining and energy development in Garfield County and three times as large in Mesa County in 2006.⁸² These significant regional sectors may have to pay higher wages, create worker housing not unlike temporary energy “man camps” to meet their labor needs, or scale back their businesses.

Businesses that cater to hunting and fishing in the two counties, much of it on public lands where drilling activities are underway or proposed, also face hurdles as drilling encroaches on hunting and fishing grounds. According to Randy Hampton, spokesman for Colorado Division of Wildlife (DOW), the hunting units that converge on Garfield County are home to the largest elk herd in North America. DOW issues an estimated 15,000 bull elk licenses, over 24,000 cow elk tags, and more than 38,000 deer licenses for areas around Garfield County. A recent report for the DOW estimates that hunting and fishing in Garfield County generated \$30 million in direct spending (\$7.2 million from Colorado residents, and \$20.8 million from non-residents) and supported almost 700 jobs in 2002.⁸³

Public services suffer in an environment of low unemployment and wage competition as well, because public budgets often do not have the flexibility to increase wages at the rate that they are increasing in the energy sector. In 2005, the gap between local government wages, and mining and energy wages in Mesa and Garfield counties was \$20,728 and \$23,884, respectively.⁸⁴

Garfield County Assistant Manager Jess Smith was quoted by the *Rocky Mountain News* in December, 2007 as saying “the gas industry pays drivers or maintenance workers at least \$10 more than the county’s rate of \$18 per hour, luring away workers and hurting the county’s ability to complete public works.”⁸⁵ Keith Lambert, Mayor of Rifle, reported that when some city projects go out for bid, there are no proposals due to competition from the natural gas fields.⁸⁶

That competition extends to young people, principally young men, who are choosing high-paying energy jobs right out of high school instead of going to college. According to Mesa State College President, Tim Foster, “fewer and fewer male high school graduates are going to college” in Mesa County.⁸⁷ This “rational” under-investment in education and human capital leaves energy workers with specialized skills that are often not readily transferable to other sectors, and reduces the employability and earnings of individuals and resource-focused communities.⁸⁸ Our companion report, *Fossil Fuel Extraction as an Economic Development Strategy* also found an education deficit in energy-focusing counties.⁸⁹

Agriculture, while a small part of the regional economy, has historically been an important land use, and source of jobs and income. It is currently facing challenges related to surface conflicts and drilling operations, rising land values, and access to labor. These are additional burdens that are difficult for producers to face when in aggregate in Mesa and Garfield counties agricultural net business income was negative \$1.3 million dollars in 2005.⁹⁰

Retirees, an early agent of economic recovery for the region after the Exxon Colony bust, are rethinking their future on the West Slope. As a recent story in *The Daily Sentinel*, “Retirees Leaving Battlement Mesa as Energy Workers Alter Town,” put it, “Radical increases in housing prices... have prompted some retirees to cash out. Other aging seniors yearn to be closer to family or medical services, and some leave because of a noticeable decrease in air quality and an aversion to a landscape that has evolved from bucolic to one dotted with gas wells.”⁹¹

Cheryl Cain, who runs Garfield County’s Retired Senior Volunteer Program, says “Basically what we’re seeing is a lot of seniors are leaving. They don’t like the way things are changing and without a lot of investment in community.” And Diane Schwenke, CEO of the Grand Junction Area Chamber of Commerce notes that “What made us a good place to retire when we were marketing the location is not what you see today... We’re definitely not at an advantage for someone who is looking to retire here.”⁹² It may be that these sentiments underlie the difficulty energy-focusing counties in the West face in capturing investment and retirement income—a trend we identified in our companion report, *Fossil Fuel Extraction as a County Economic Development Strategy*.⁹³

The challenges faced by non-energy economic sectors in the context of an energy surge all point to the possibility of narrowing—not expanding—the diversity of economic activity in the region. This concern is emphatically expressed by Rio Blanco County, which has emerged as the new center for drilling in the Piceance Basin. In the county’s comments on the 2008 Associated Governments of Northwest Colorado energy report, they note the “stifling affect [*sic*] that energy development is having on attempts to diversify the economy. The heavy Truck traffic, unavailability of hotel/motel accommodations, industrial activity in remote rural areas can only hurt the efforts at developing Cultural Heritage Tourism, wildlife-related businesses, and general recreation.” The county goes on to say that “Without the development of alternatives to the energy economy of this small, rural county, we will be constrained to participate in the boom-bust cycles of the energy economy that have dogged us for decades.”⁹⁴

In their comments to the same report, Garfield County and the City of Rifle both single out “Dutch Disease,” what Mike Braaten, Government Affairs and Energy Coordinator for the City of Rifle, refers to as “the crowding out effect being experienced in the Region due to energy development and production.”⁹⁵ Whether from the high wages that attract workers in other industries, the sheer pace of development that sucks up all available resources, the cost of living inflation that makes it more difficult for households earning lower, or even median, wages to maintain their standard of living, or the deterrent of large truck traffic, air pollution, and wells marring the area’s scenic landscape, there is a distinct possibility that the region’s economy may once again become more narrowly focused on energy activities.

Figure 17. Percent Change in Personal Income, Mesa and Garfield Counties (combined), 1980–1984⁹⁶



If this were to happen, the region could return to the more volatile days reminiscent of the late 1970s and early 1980s. (Figure 17 shows income volatility during the last energy boom and bust in Mesa and Garfield counties.) The area might experience strong growth during the cycle of new drilling, only to find that over the long term, specialization on energy extraction leads to slower economic growth—a finding for Colorado counties and energy-focusing counties across the West (see page 17 above).

This possibility points to the dangers of economic specialization and compromising the region’s competitive position. One of the area’s competitive strengths is the presence of highly valued fossil fuel energy resources. Another is the quality of life, both in area communities and the surrounding landscape, that attracts people and business, and constitutes the major economic engine of the region—in 2005, for example, 59 percent of total personal income in Mesa and Garfield counties derived from service-related industries.

Fiscal Shortfalls and Exposure

A full cost-benefit analysis is beyond the scope of this report. Instead, this study draws upon existing research, information from local budgets and financial statements, and interviews with local officials to get a picture of service demands, and the strategies Mesa and Garfield counties are pursuing to meet these needs.

Growing Service and Infrastructure Demands

As described in Appendix 3 (see page 71), Mesa and Garfield counties each reported good fiscal health in 2007. Revenue is increasing thanks to population growth that is driving higher sales and property taxes, and new revenue associated with natural gas development. Both counties report manageable debt levels and are attempting to keep pace with service delivery demands.

The current snapshot of fiscal good health, however, may be hiding larger problems. A 2008 Associated Governments of Northwest Colorado report estimates that counties and municipalities in Northwest Colorado will face a \$300 million shortfall in meeting future infrastructure demands created by projected oil and natural gas development by 2035. (These projections do not include the potential for oil shale development in these counties.⁹⁷)

There are several reasons to anticipate future difficulties for local governments in Garfield and Mesa counties. Existing demands associated with the exploratory phase and early period of development activities arrived at a time when local governments were already struggling to meet new demands born from rapid, amenity-related growth through the 1990s. And the service demands associated with the exploration, drilling, and production of natural gas place different demands on infrastructure and local services—meaning that local governments have not only to increase the level, but also the breadth of their services. Delays in the distribution of tax revenue from oil and natural gas development, as well as the inherently volatile nature of the amount of oil and natural gas revenue, contribute to the difficulties local governments face in planning for and providing the expanded services created by the energy surge.

Public Safety and Health

A host of social service demands, such as those associated with public health and safety, have increased with population growth on the West Slope. In some areas, the increase in demand has created immediate problems directly connected to the energy surge that affect local governments acutely. For example, speaking to the *Rocky Mountain News* in 2007, Garfield County Sheriff Lou Vallario noted that the influx of workers “nearly blew us out of the water”; he requested 25 new positions for 2008.⁹⁸

Other social service demands, linked more broadly to population growth and larger regional issues, but are compounded by the energy surge. A recent task force on the ongoing problem of methamphetamine abuse in Mesas County stressed the complex roots of the problem, while the use of methamphetamines in natural gas work sites has received wide anecdotal coverage.⁹⁹ Growing demands on emergency medical services in Grand Junction are related both to a high proportion of aging patients and the lack of health insurance for many incoming oil and natural

gas workers, who use emergency services rather than primary care. According to the 2007 Mesa State College study, growth in demand for all medical procedures was 30% over the previous year (2006 data).¹⁰⁰

The ability of local government and other bodies, such as school and hospital boards, to respond to the increased demands for social services varies widely and is complicated by the multiple sources of funding that typically support these activities (e.g., a mix of private funding, state and federal grants, and local revenue). Just as many of these new demands are not exclusively related to the energy surge, nor are funding and funding shortfalls easily attributed exclusively to energy tax policies. Still, social, health, and emergency service demands are growing with population growth on the West Slope, adding to the burdens faced by local governments and other service providers.

Roads

In contrast to the complexities of social service demands, the example of county roads is a more clearcut example of the immediate impacts of energy development on infrastructure and the challenges they pose to local governments in terms of planning and funding. County roads and bridges are often not built to standards adequate to withstand heavy drill rigs and other industrial traffic. A 2007 *Rocky Mountain News* article stated that “Officials from La Plata, Rio Blanco, Yuma and Garfield counties and others say they will have to spend hundreds of millions of dollars over the next two decades to repair their roads from industry wear, with the cost estimated at about \$2.5 million per mile.”¹⁰¹

Vehicle miles traveled increased by 39 percent between 2000 and 2007 in Garfield County while population increased by only 16 percent, illustrating the regional nature of new housing and employment patterns, and the dispersed nature of the “workplace”.¹⁰²

Mesa County’s road department estimates that it needs to improve 35 road miles per year at a minimum to keep up with current service demands. However, costs have gone up 70 percent in the last three years. The department’s budget allows for improvement of only 31 to 32 miles a year, meaning the county is constantly falling behind on necessary service improvements.¹⁰³

Yet the distributions of tax revenue from production, employment, and sales taxes are tied to specific locations. This means that the funds do not always arrive to the jurisdictions responsible for mitigating the impacts of energy development activities on local infrastructure. For example, a surge in exploration activity in Mesa County forced a \$1.6 million upgrade of the bridge over the Colorado River at the small town of DeBeque before any production revenue could be realized.¹⁰⁴ The county dug into existing reserves to foot the bill for half the cost of the bridge project.

The inability of some counties to keep up has led companies to respond by circumventing county infrastructure altogether by paying for or constructing infrastructure themselves because they cannot wait. Williams Company built a 4.5-mile road and dug a 3,200-foot tunnel into a mountain north of Parachute in Garfield County to divert heavy traffic away from highways and

county roads. Chevron is expected to donate up to \$12 million to Garfield County in 2008 for necessary road improvements.¹⁰⁵ These donations are important aid to counties in the short-term, but they are one-time donations that do not include provisions for long-term maintenance, a set of costs that counties will face in the future.

Contributing Factors to Potential Fiscal Shortfalls

There are several factors that set local governments in Colorado up for fiscal challenges in the context of the energy surge (and the existing amenity-based economic boom). Some factors, such as wage inflation and the fundamental volatility of oil and natural gas values, are structural in the sense that they are due to complex economic and market forces. Other sources of fiscal difficulty for local governments, such as linking revenue to volatile production values and statewide restrictions on tax rate increases, originate in policy that can be changed.

Wage and Cost Inflation

Earlier, this report discussed how wage inflation can make it difficult for local government and non-energy related businesses to compete for workers (see page 37). In interviews, Jim Peacock, Mesa County Administrator, and Keith Lambert, Mayor of Rifle, both reported difficulty getting bidders on construction projects, particularly small projects (under \$10 million) because of labor shortages.¹⁰⁶ The cost of building Rifle's badly-needed waste water management plant escalated from \$18 to \$23 million in the course of 12 months in 2006 (before the project even got underway) due to competition for construction workers in the oil and natural gas fields as rising costs of materials.¹⁰⁷

The difficulties local governments face in keeping pace with new service demands are compounded by inflationary pressures that mean that the cost of service provision is increasing faster than the rate at which tax revenues increase in amount and value. Appendix 3 considers the role of Colorado's TABOR amendment restrictions on tax increases in suppressing revenue in Mesa County to a level below the local inflation rate (see page 71). This makes it impossible for Mesa County to meet the rising costs of necessary projects.

Revenue Uncertainty

Volatility and uncertainty are problems for local government because providing a consistent and adequate level of service requires stable revenue streams to pay county officials, police officers, school teachers and road maintenance crews. In addition, planning for growth often requires bonding for new infrastructure and hiring new staff to meet projected needs. If the revenue projections upon which funding commitments are based are unreliable, local governments may face costs they cannot afford.

Production and property taxes from oil and natural gas are inherently volatile over the short-term, and have proved to be cyclical over the long-term. In Appendix 2 (page 53) we present data on the volatility of production value and compare the subsequent revenue volatility of Colorado and Wyoming's severance taxes. In addition to the volatility in the basic energy taxation structure, over-reliance on intergovernmental grants and private contributions leaves the balances of county

budgets vulnerable factors largely outside local control. For example, Mesa County has borrowed money from an enterprise fund established to fund the eventual closure of the landfill, a project necessitated by ongoing growth. If the revenue the county expected to bring in, in order to repay the loan does not eventuate (for example, if the value of revenue from sales taxes declines), the county may end up without the resources it needs when the landfill reaches its capacity.

The decrease in commodity prices resulting from the current national credit crisis and declining economic activity of late 2008 put a fine point on the problems associated with revenue volatility and uncertainty. According to the *Christian Science Monitor*, 41 states including Colorado are facing budget shortfalls in FY 2009 or 2010.¹⁰⁸ Counties will see likely declining revenue from property taxes, sales taxes, and others unrelated to energy prices and production.

Local Government Strategies for Capturing Benefits from Natural Gas Development

As described in Appendix 2, the basic energy tax structure in Colorado encourages both short-term and systemic budgetary shortfalls for state and local government entities. Meeting a growing service delivery burden therefore requires creative financing solutions. At the local level, such solutions include impact fees, public/private partnerships with industry, or increased assistance from the state and federal government. Ideally, the solutions will be consistent, long-term, and sufficient to meet current needs and save for the future.

The following section discusses some of the solutions available to counties for addressing the fiscal challenges created by rapid oil and natural gas development, and their relative costs and benefits.

Debt Financing

The time lag between the creation of demand for new infrastructure and the collection of property tax revenue (see page 65 for more on why the lag exists) forces counties to utilize debt financing to fund necessary infrastructure. By financing infrastructure through debt, counties can raise necessary funds today, and repay them over time with anticipated tax revenues from development based on the new infrastructure (e.g., oil and natural gas extraction). Debt financing is a common and accepted practice among local and state governments nationwide.

However, both Mesa and Garfield Counties have been reluctant to issue new debt to pay for infrastructure in the current surge in energy production. Leaders in the counties remember the energy bust of the early 1980s, and are acting conservatively to avoid exposing taxpayers to large debt obligations dependent on uncertain future revenue from oil and natural gas production. This means, essentially, that debt financing—the most common and typically reliable way to fund growing infrastructure demands—is off the table in these two counties.

Other local governments on the West Slope are not as cautious. The City of Rifle is facing tremendous new demands, and has fewer options for meeting them without incurring new debt. The City is aggressively planning for and investing in the needs of a rapidly growing community.¹⁰⁹

It remains to be seen which approach will ultimately prove wisest: Mesa and Garfield counties' conservative approach to debt that means reserves are declining and that the counties rely heavily

on state grants and private contributions; or Rifle's aggressive approach to financing necessary infrastructure. The problems facing these local governments illustrate the difficult choices and the exposed fiscal position energy development imposes on energy-producing communities in Colorado.

Special Districts

In order to tax and pay for new infrastructure and services, counties and cities can establish special taxing districts to provide a direct service for a specific geographic area. For example, all houses that will fall within a new sewer district will pay a special levy, but no homes outside the district (who cannot receive the service) will pay for its construction and operation. Creative approaches to the use of this tool can enable counties to address complex emergent needs efficiently.

For example, Mesa County is expanding the use of special districts, and broadening their definition to create multiple services districts. The county recently created a special district they are calling a "public service district" around Whitewater—a new community developing in an unincorporated area county that mostly houses natural gas workers. The new public service district allows Mesa County to tax the new homes in Whitewater to provide a wide range of direct services, including sewer, water, and public safety—a more expansive range of services than has previously been associated with special districts. The district replaces the need for a network of many single-purpose special districts, each taxing and funding one specific service. In essence, the district will act like a city government, taxing and paying for a range of urban services. The final advantage is that a public service district can be "de-Bruced" upon creation (eliminating the need for a public vote) removing TABOR's revenue restrictions. That means the revenue generated within the public service district can grow at the same pace as local inflation in property value and new construction.¹¹⁰

The special service district is a good approach for Mesa County to keep pace with population growth and growing service demands. It is necessitated, however, by the restrictions of TABOR, and the inability of the county to provide basic services to new residents under the current tax structure.

Unrestricted Reserves and Intergovernmental Transfers

The ability for local government to absorb new costs varies tremendously. Mesa County has more options simply because of its size. It can spend down its reserves and shift money between internal funds to meet pressing needs in the short term. Garfield County has similar options, but with a smaller budget its capacity is limited. For example, Mesa County is borrowing money from one of its own enterprise funds to build a new methamphetamine treatment center because the funding is not currently available in the health and human services budget. Mesa County is also spending unrestricted budget reserves, stockpiled for contingencies, to fund a new sewer plant rather than finance the construction by issuing bonds. This may turn out to be prudent, risk-averse behavior,

or the county may end up without adequate flexibility to deal with changing circumstances in the future. Either way, short-term surpluses are being used to meet urgent demands. This cannot go on forever. Unless there is a break in the pace and scale of energy development and the associated population growth, Mesa County will have to resort to other options.

Public-Private Partnerships

Many energy-focused counties enter into direct negotiations with companies for donations to fund local services and infrastructure. For example, Garfield County expects to receive up to \$12 million from Chevron in FY 2008 for critical road maintenance projects the company needs for its drilling operations.¹¹¹ Such arrangements can be win-win in the short run, providing access for the energy company and providing the county with a valuable asset it could not otherwise fund. However, such agreements can saddle the county with more expensive future maintenance and reconstruction projects. Depending on public-private partnerships is also risky, as these agreements tend to be *ad hoc*, and companies often use their contributions to local government as political leverage against policy changes in favor of more predictable tax structures and regulations (e.g., impact fees).

Impact Fees

Colorado cities and counties have authority to levy impact fees on development provided a proper nexus is found between the direct impact of the development activity and the cost of providing local services and infrastructure. Many cities and counties in Colorado have levied impact fees on residential and commercial development, including Mesa County. Fewer have studied and adopted fees directly addressing oil and natural gas wells and facilities. In 2008, Rio Blanco County imposed emergency impact fees for road repair of \$6,000 for the first well on a pad, and \$5,000 for each subsequent well drilled from the same pad.¹¹²

Impact fees can be politically and legally challenging and expensive for rural counties to adopt. It is also unclear whether such fees are adequate to cover new costs.

Master Planning and Local Regulations

Not all of the impacts of energy development on communities can be dealt with by raising more money. For example, it may be wiser to avoid groundwater contamination than to attempt to raise mitigation funds after the fact. A number of large-scale environmental, economic, and social problems that stem from the pace and scale of development can best be addressed by slowing the rate of leasing and drilling and implementing coordinated local and state-level plans and regulations to ensure the compatibility of energy development with the rest of the regional economy.

Mesa County is just beginning the process of developing an Energy Master Plan for the County, and Garfield County adopted local regulations in 2008. Part of the process in Mesa County will be to develop an online geographic system so producers can point to a location where they want

to drill and immediately receive information on the likely concerns local government will have, and what regulations and fees may be in place.¹¹³ Tod Tibbetts, Mayor Pro-Tem of the town of Silt, in Garfield County, explains the need, saying “in so many cases we don’t really know what the impacts are. We’re scrambling to get factual information—to be fair to industry and protect the public interest.”¹¹⁴

Other local plans and permits regulate water quality, public safety, and even scenic issues. Mesa County’s development permits direct infrastructure off ridgelines, behind topographic features, and suggests using screening such as trees or stonework to minimize the industrial look and feel of drilling activities. One company built a barn over a compressor station to maintain the rural agricultural setting.¹¹⁵

Finally, the regional nature of employment, exploration, and drilling demands a regional approach. Mesa County, through the process of developing its energy master plan, has offered to work with neighboring cities and counties on a regional transportation plan. So far, however, Jim Peacock reports only lukewarm responses from his colleagues.¹¹⁶

The problem with regulations is that they are controversial and politically difficult to adopt and can be expensive to monitor and enforce. Often, the rapid pace of development emerges as a justification for minimizing oversight of oil and natural gas activities—precisely the opposite of what local leaders like Tibbetts believe their communities want or need.

Summary Findings

In this section we have tried to shed light on what it means for the West Slope to layer a surge in energy development on top of an existing amenity boom. This question is tremendously important. Natural gas extraction is by its very nature a finite activity and the industry is subject to large price and production swings.

In addition, early evidence suggests that the natural gas surge on the West Slope is making it harder, not easier, for other sectors of the regional economy to thrive. Yet it is today’s more diverse industry mix that brought the region out of its last energy bust, and currently sustains most households on the West Slope.

We focused on three key challenges facing Mesa and Garfield counties—cost of living and housing, full-employment and crowding-out, and fiscal shortfalls and exposure—because they point to areas of conflict that affect longer-term economic success, and represent topics where concerted action today could make a significant difference in the future competitiveness of the West Slope.

The rapid rise of natural gas development has increased the cost of living and made housing less affordable for most people in Mesa and Garfield counties. The sheer pace of energy development requires in-migration and new demand for housing and, when combined with higher industry wages and the shift of construction workers into the gas fields, has made it harder to bring new housing online and raised prices beyond reach for a growing segment of the population.

The pace of natural gas development has driven unemployment to historic lows, and high wages have allowed the natural gas industry to siphon off workers from other sectors. Wages overall are

up, but there is a growing wage gap between energy and all other workers that exacerbates cost of living pressures. Local government and lower-paying service sectors, including resort employment, are suffering as they are not able to compete on a wage basis. The concern is that the energy industry will grow to a large enough scale, while making it hard for other industries to compete for labor, that the regional economy once again will become more narrowly specialized and subject to slower long-term growth as well as greater volatility.

In the short term, Garfield and Garfield counties are reporting strong fiscal health. However, the twin problems associated with a growing backlog of necessary infrastructure and service demands, along with a broken tax structure, means this happy situation will not last. Both counties are thinking about creative local solutions, and some may help bridge the gap between projected revenue and anticipated demands. However, even the most creative fiscal solutions cannot address the hard-driving pace and scale of development, or mitigate the industrial nature of oil and natural gas development.

Unless a slower pace of development or new regulations address these issues, the number of unaddressed impacts will grow and the broader economy will likely find its competitive strengths—affordability, diversity, quality, and community character—weaken over time.

CONCLUSIONS

Today, Colorado's economy is very different than several decades ago. The state experienced a dramatic recovery from the energy bust and recession of the early 1980s, and because of strong diversification, energy development is no longer a major player. During the last 35 years, Colorado grew rapidly, more than doubling its population, almost tripling the number of jobs, and nearly quadrupling total personal income.

By 2005, Colorado's economy employed more than three million people and generated almost \$175 billion in personal income, with only 27,000 of these workers (0.9% of state total) and \$4 billion of the personal income (2.3% of state total) in the energy sector. The statewide fiscal picture shows a similar story: energy contributed more than \$500 million in tax and royalty revenue to the state and local governments in 2005, accounting for just 1.6 percent of all government revenues.

This does not suggest that energy development is unimportant. But the new position of the energy sector as one of many economic drivers suggests that caution be taken so that energy development does not restrict other important sectors of the economy.

The tension between energy extraction and the rest of the economy is most readily evident on the West Slope. Mesa and Garfield Counties have experienced a remarkable economic recovery since the last energy boom and bust cycle ending in the early 1980s. This recovery has been driven by successful trading on quality of life. The region's economy has diversified substantially and outpaces the state in economic growth.

The challenge and the opportunity on the West Slope is to manage the surge in natural gas extraction in the context of the ongoing "amenity" boom based on the region's natural attractions, recreation, a mix of services, and ability to attract retirement and investment income.

This analysis looked at the question of how energy extraction and amenity economies coexist, and whether local communities and governments can meet growing infrastructure and service needs. On the positive side, energy development on the West Slope has created new economic opportunities, reduced unemployment, and raised wages for many workers. On the negative, its fast growth has exacerbated inflation, housing, and commuting pressures; contributed to a growing wage and wealth gap; and made it more difficult for other industries to thrive. The energy surge also raises the danger of returning to a more specialized economy subject to slower long-term growth as well as greater volatility.

From a fiscal perspective, there are pros and cons as well. Energy development generates considerable new revenue, but these additional proceeds are not sufficient to cover associated impacts on roads and other capital facilities. An additional concern is that a poorly performing tax structure at the state and local level is exposing affected jurisdictions to considerable financial risk.

The question of whether Colorado and the West Slope will benefit from fast-paced energy development and maintain the state and region's thriving economy remains open. With an impending recession, the stakes are even higher. Government is not a passive player, and should consider steps to ensure the public benefits from energy extraction.

State government can:

- (1) communicate forcefully with the federal government, and the BLM in particular, to reach agreement on reasonable pace, scale, and location of future fossil fuel energy development to avoid unduly impacting natural resources and the ability of other economic sectors to thrive;
- (2) use the authority of the Colorado Oil and Gas Conservation Commission to implement standards that protect communities and the landscape while offering a fair shake to energy companies, and
- (3) change the mineral tax structure to capture more value and smooth revenue volatility, allowing the state to more effectively mitigate impacts and set aside revenue to invest in infrastructure and education.

Local government can:

- (1) develop master plan guidelines aimed to minimize surface conflicts and aid in planning for needed infrastructure;
- (2) remove fiscal restrictions like TABOR and assess impact fees to capture greater revenue for immediate and long-term needs;
- (3) argue for larger and more predictable intergovernmental transfers of energy revenue to aid planning and investment; and
- (4) highlight the regional dimensions of the natural resources impacts to the landscape, housing imbalances, and transportation deficiencies, and pursue planning and revenue sharing agreements to meet these regional challenges.

APPENDIX 1

NORTH AMERICAN INDUSTRIAL CLASSIFICATION SYSTEM (NAICS) DEFINITIONS

The language below is copied verbatim from the U.S. Census Bureau's 2002 NAICS Manual <http://www.census.gov/epcd/naics02/index.html>

211 Oil and Gas Extraction

Industries in the Oil and Gas Extraction subsector operate and/or develop oil and gas field properties. Such activities may include exploration for crude petroleum and natural gas; drilling, completing, and equipping wells; operating separators, emulsion breakers, desilting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This subsector includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, and the production of natural gas, sulfur recovery from natural gas, and recovery of hydrocarbon liquids.

Establishments in this subsector include those that operate oil and gas wells on their own account or for others on a contract or fee basis. Establishments primarily engaged in providing support services, on a fee or contract basis, required for the drilling or operation of oil and gas wells (except geophysical surveying and mapping, mine site preparation, and construction of oil/gas pipelines) are classified in Subsector 213, Support Activities for Mining.

213111 Drilling Oil and Gas Wells

This U.S. industry comprises establishments primarily engaged in drilling oil and gas wells for others on a contract or fee basis. This industry includes contractors that specialize in spudding in, drilling in, re-drilling, and directional drilling.

213112 Support Activities for Oil and Gas Operations

This U.S. industry comprises establishments primarily engaged in performing support activities on a contract or fee basis for oil and gas operations (except site preparation and related construction activities). Services included are exploration (except geophysical surveying and mapping); excavating slush pits and cellars, well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells, shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells.

2121 Coal Mining

This industry comprises establishments primarily engaged in one or more of the following: (1) mining bituminous coal, anthracite, and lignite by underground mining, auger mining, strip mining, culm bank mining, and other surface mining; (2) developing coal mine sites; and (3) beneficiating (i.e., preparing) coal (e.g., cleaning, washing, screening, and sizing coal).

213113 Support Activities for Coal Mining

This U.S. industry comprises establishments primarily engaged in providing support activities for coal mining (except site preparation and related construction activities) on a contract or fee basis. Exploration for coal is included in this industry. Exploration includes traditional prospecting methods, such as taking core samples and making geological observations at prospective sites.

APPENDIX 2

COLORADO'S FISCAL APPROACH TO ENERGY DEVELOPMENT

Communities that have significant oil and natural gas resources have clear opportunities to benefit from energy development. Taxes and royalties on oil and natural gas production are designed to do two things: to facilitate energy development and mitigate its impacts through the provision of necessary infrastructure and services; and second, to create long-term wealth for the benefit of the state's citizens to compensate for the removal of non-renewable resources.

Tax policy is important because decisions about tax rates, tax incentives, and distribution of revenue largely determine the extent to which energy production improves or weakens government fiscal health. Fiscal health is a measure of the quality of services and infrastructure government provides, and the amount and security of revenue that pays for them. In effect, benefiting from energy development begins with good tax policy.

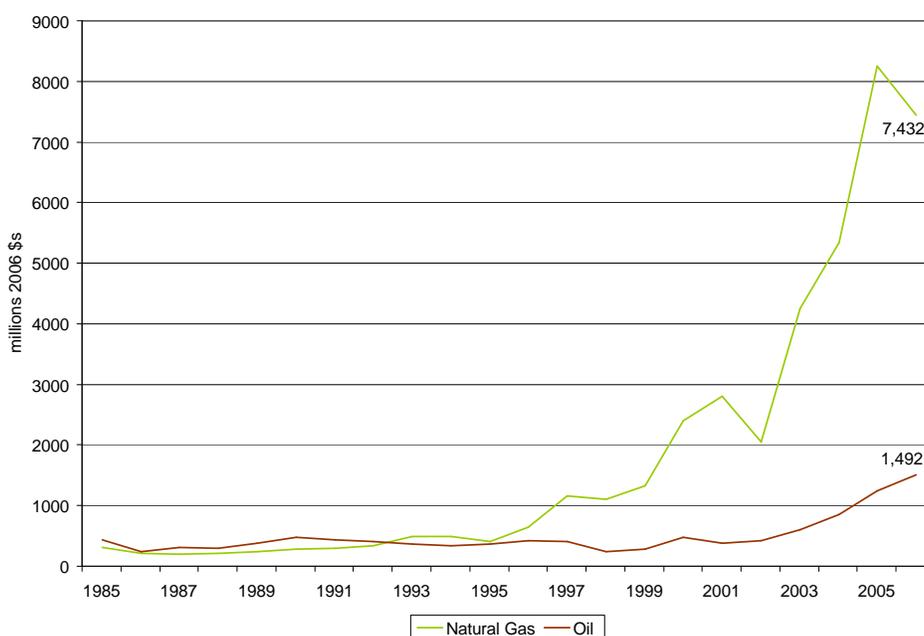
In this appendix, we present revenue and expenditure data for oil and natural gas, and assess how well Colorado's tax policy is meeting current needs and providing long-term benefits. We chart how revenue is derived from energy production, and how state and local governments distribute and spend these resources.

Revenue from Oil and Gas Production

Oil and Natural Gas Production Value

Taxes and royalties on oil and natural gas are levied against the production value of these commodities, so production value is the basis for taxation. Production value is the product of production volume (measured in barrels of oil and cubic feet of natural gas) and the price of each commodity.

Figure 2.1. Production Value of Oil, Natural Gas, and Coal in Colorado, 1985–2006 (2006 Dollars)¹⁷

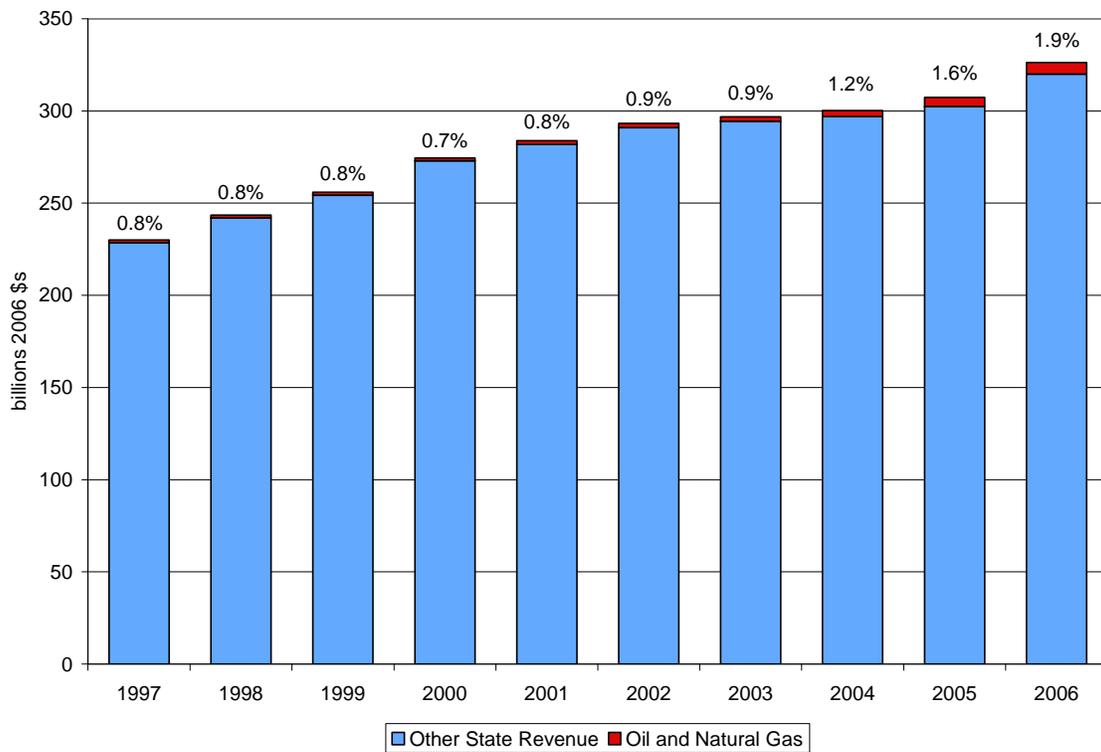


Most of the growth in Colorado’s production value since 2000 is from a rapid increase in natural gas drilling, and from higher prices for both oil and natural gas. Figure 2.1 shows that natural gas production value rose dramatically over the last decade to nearly \$7.5 billion in 2006. Oil lags behind, but generated \$1.5 billion in production value in 2006.

Total Revenue from Oil and Natural Gas

Figure 2.2 shows the importance of oil and natural gas revenue compared to all state revenue in Colorado.¹¹⁸ Oil and natural gas provides revenue to the state and to local governments where development takes place, so it is important to compare energy revenue to total revenue across all government types. Total oil and natural gas revenue includes severance taxes, property taxes, state and federal royalties, sales taxes, and corporate income taxes.

Figure 2.2. Oil and Natural Gas Revenue as a Portion of Total State and Local Government Revenue in Colorado, 1997–2006 (2006 Dollars)¹¹⁹



Oil and gas revenue comprised 2 percent of total state and local government revenue in 2006. Colorado’s economy has performed well over the last decade, and despite the rapid increase in oil and gas production values, revenue generated by these industries is still only a small portion of total government revenue.

Figure 2.2 illustrates the relative importance of different sources of oil and natural gas revenue in Colorado. (See sidebar on page 30 for a complete description of types of energy revenue.)

Figure 2.3. Contribution of Severance Tax, Property Taxes, Royalty Revenue, Sales Taxes, and Corporate Income Taxes to Total Oil and Natural Gas Revenue in Colorado, 1996–2007 (2006 Dollars)¹²⁰

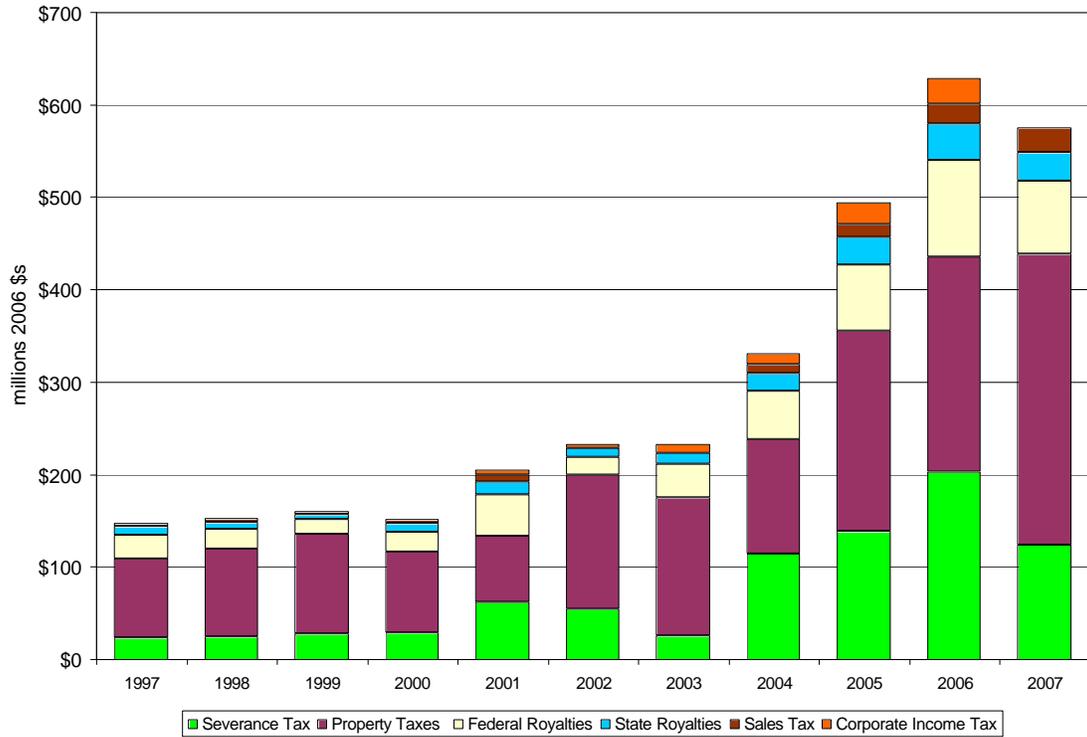


Figure 2.3 shows that property taxes are the largest source of oil and natural gas income, grossing \$314 million in 2007, followed by severance taxes (\$203 million in 2007). Federal and state royalties grossed \$147 million in 2007. Sales taxes (brown) and corporate income taxes (orange) provide the smallest share of revenue to Colorado, accounting for \$54 million in 2006.

Expenditures

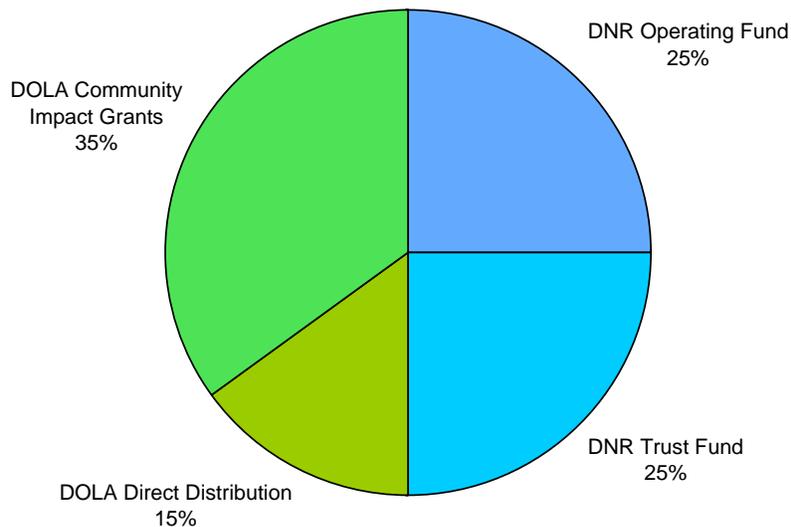
Spending and distribution decisions in Colorado say a lot about the priorities of state and local governments, and the resources made available to provide necessary services and mitigate the impacts of extraction. In this section, we profile how severance taxes, property taxes, federal and state royalties, sales taxes, and corporate income taxes are distributed.

Severance Taxes

Half of the severance tax revenue collected in Colorado is distributed to local governments in areas affected by energy development through the Department of Local Affairs (DOLA). DOLA distributes 30 percent of its share of severance taxes (15% of all severance taxes) directly to local governments based on local levels of industry employment. Seventy percent of DOLA severance tax funds (35% of all severance taxes) are distributed through the Community Impact grants program.

The other half of Colorado’s severance tax funds go to the Department of Natural Resources (DNR). Half of these funds (25% of all severance taxes) are used to fund the DNR’s operations, and the other half (25% of all severance taxes) are placed in a revolving loan fund used to support water projects in Colorado.

Figure 2.4. Distribution of Severance Tax in Colorado, 2007 (2007 total = \$203m)¹²¹



Property Taxes

All property taxes in Colorado are collected and retained by local governments, including counties, municipalities, school districts, and special improvement districts. Special districts are taxing districts established to fund a specific service in a specific location, such as a sewer district, where only land in the district receives the service, and only land in the district is taxed. Property tax from oil and natural gas is only realized by those cities, counties, school districts, and special districts that have wells within their borders. State-wide, oil and natural gas accounts for 10 percent of all property taxes (see Figure 2.6, page 59), but can be much more important in areas where production occurs. For example, oil and natural gas accounted for 66 percent of all property taxes in Garfield County in 2007 (see Figure 3.5, page 79).

Figure 2.5. Distribution of Property Tax by Collecting Local Government in Colorado, 2007
(2007 total = \$314m)¹²²

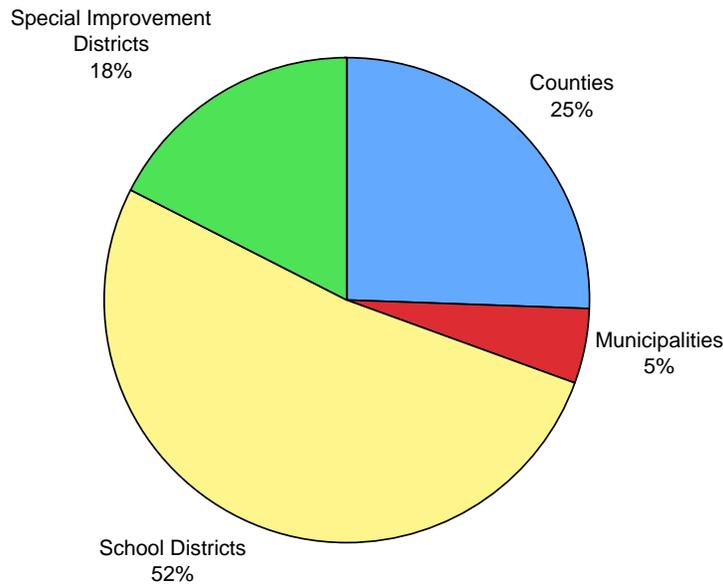
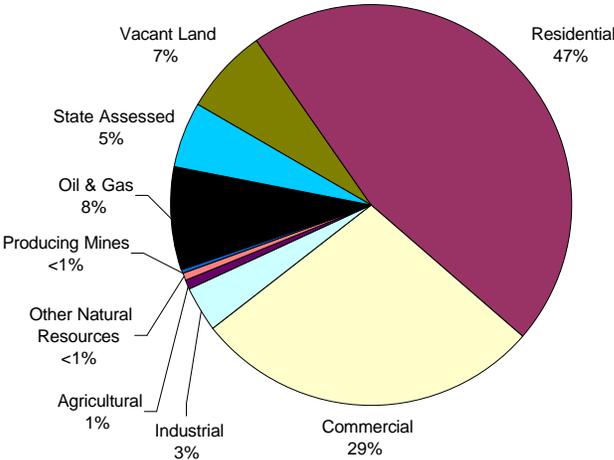


Figure 2.5 shows that statewide, local school districts (yellow) collect more than half of all property taxes (52%), counties (blue) collect one quarter (25%), special districts (green) 19 percent, and municipalities (red) only 5 percent.

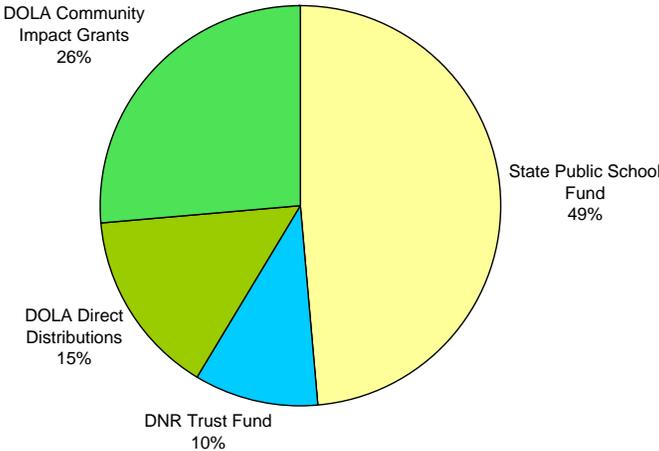
Figure 2.6. Assessed Property Tax by Class in Colorado, 2007¹²³



Federal Mineral Royalties

The formula used to distribute federal royalties is complex, and the revenue distributed to different agencies and funds changes as total royalty distributions rise and fall. In 2007, nearly half went to the state’s public schools fund (49%), 41 percent went to DOLA for distribution to local government through both direct distributions and community impact grants, and 10 percent was distributed to the DNR’s Severance Tax Trust Fund that supports water projects.

Figure 2.7. Distribution of Federal Mineral Royalties in Colorado, 2007 (2007 total = \$101m)¹²⁴



State Royalties

Royalties earned from production on state lands are used to support the state's schools. In 2007, \$46 million was collected and about \$40 million went to the Colorado State Schools fund. A small portion is retained by the State Land Board to fund its operations and management of state land.

Sales Taxes and Corporate Income Taxes

State sales taxes and corporate income taxes are distributed to the General Fund (local sales taxes are retained in the city or county that levies the tax). Sales taxes from oil and natural gas make up 4.5 percent of all revenue from oil and gas, and an even smaller portion of all sales taxes in Colorado (1.4%). Corporate income taxes are also a small portion of total revenue from oil and natural gas, providing 4.5 percent of all oil and natural gas revenue to the state in 2006.

Sales taxes can be important locally in the communities where support services for drilling operations are located. For example, Mesa County and Grand Junction benefit from relatively high sales tax revenue from oil and natural gas (30% of all oil and natural gas revenue). In contrast, Garfield County receives relatively few sales taxes (only 2% of all energy revenue) despite being the location of most of the current drilling activity. Sales taxes, like property taxes, only accrue to the jurisdiction within which the activity takes place.

Evaluating Colorado’s Energy Tax Policies and Their Implementation

The question of whether Colorado’s tax structure works for the state can be answered according to two main criteria: whether tax revenue enables state and local governments to provide direct services and mitigate the impact of energy development; and if the extraction of natural resources provides net public benefits.

To answer these questions, we evaluate whether Colorado’s tax structure delivers revenue in the appropriate amount, time, and form to agencies and local governments providing these critical services and investing in the state’s economic future.

First, we compare Colorado’s tax structure to its peers in the Intermountain West. Second, we take a close look at two counties in Colorado to assess if resources are sufficient to meet pressing needs, and to improve long-term fiscal and economic health.

The comparative analysis is presented in another report in our Energy and the West series: *Energy Revenue in the Intermountain West*. We recap the main findings for Colorado in this appendix. The case studies of Mesa and Garfield counties are discussed in the main body of this report (see page 33).

Effective Tax Rate: What Proportion of Production Value Does Colorado Capture?

The effective tax rate is a ratio of tax revenue to production value:

$$\frac{\text{Production Value}}{\text{Tax Revenue}} = \text{Effective Tax Rate}$$

The effective tax rate measures the proportion of production value captured as tax revenue, after all exemptions, deductions, and incentives are accounted for. Higher effective taxes rate capture more value from the same amount of production. Table 2.1 on the following page shows Colorado’s production value and oil and natural gas revenue from all sources for 1997 to 2007, and calculates the effective tax rate. The effective tax rate is calculated using only production taxes (severance and property) and royalties. (Sales taxes and corporate income taxes are omitted because they are not directly based on production value; in other words, they have different numerators. According to a report commissioned by the Colorado Petroleum Association, Colorado’s sales tax on oil and natural gas is the lowest of nine energy-producing states, and the corporate income tax is also at the low end of the effective rates captured by these same nine states.¹²⁵

Table 2.1. Production Value, Revenue from Oil and Natural Gas, and Effective Tax Rate in Colorado, 1997–2007 (2006 Dollars)¹²⁶

	Production Value	Severance Taxes	Property Taxes	Federal Royalties	State Royalties	Total Oil and Natural Gas Revenue	Effective Tax Rate
1997	2,323,344,665	23,477,835	85,427,136	25,470,633	9,332,584	147,241,764	7.8%
1998	1,929,454,468	24,420,344	95,179,234	21,390,941	7,375,782	152,224,261	6.9%
1999	2,244,769,229	28,240,570	107,748,184	15,273,308	5,911,849	160,530,589	7.8%
2000	3,808,339,710	28,853,259	87,822,014	21,265,990	8,849,898	151,804,463	5.5%
2001	4,016,174,226	61,940,462	71,753,986	44,884,967	13,764,409	205,029,067	4.9%
2002	3,022,104,403	54,836,584	144,618,834	19,080,209	9,298,996	232,359,761	6.4%
2003	5,744,721,247	25,863,069	148,959,474	36,099,031	11,655,839	232,435,648	6.2%
2004	6,983,067,551	114,349,447	123,799,360	52,353,650	19,436,410	331,320,972	4.8%
2005	10,065,481,204	138,338,240	216,718,266	72,092,319	29,386,166	494,286,276	5.5%
2006	8,924,385,520	202,668,239	233,000,000	104,562,575	39,680,013	629,007,212	6.2%
2007	NA	123,647,850	314,397,649	79,488,650	31,402,308	574,940,038	NA

Figure 2.8. Production Value and Effective Tax Rate in Wyoming, New Mexico, Montana, Utah, and Colorado, 2006¹²⁷

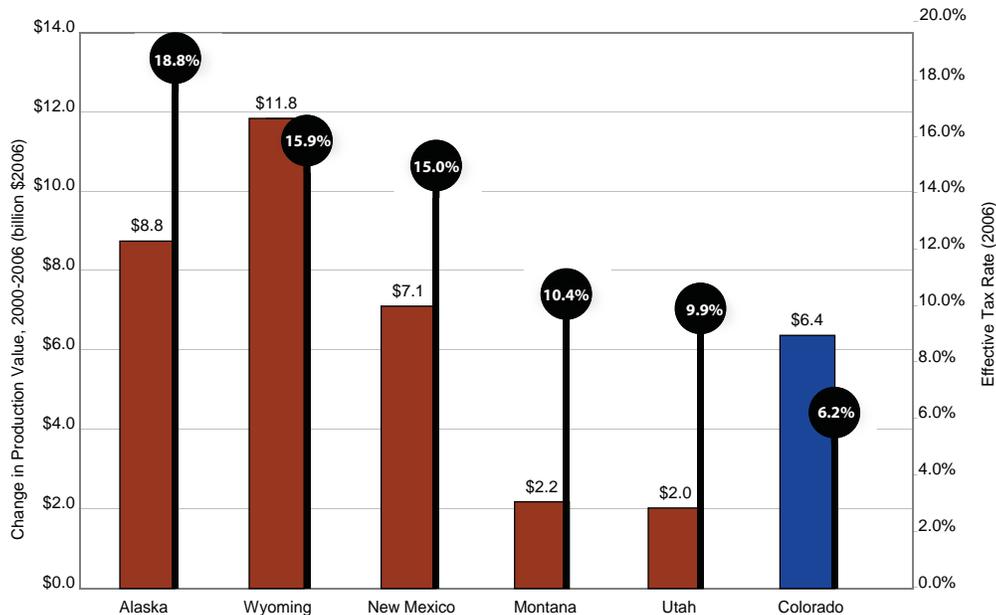


Figure 2.8 shows that Colorado has the fourth highest production value of the six states we compare, but the lowest effective tax rate.

Figure 2.9. Energy Tax Revenue as a Portion of Total State and Local Government Revenue, 2006, Colorado, Montana, New Mexico, Utah, and Wyoming¹²⁸

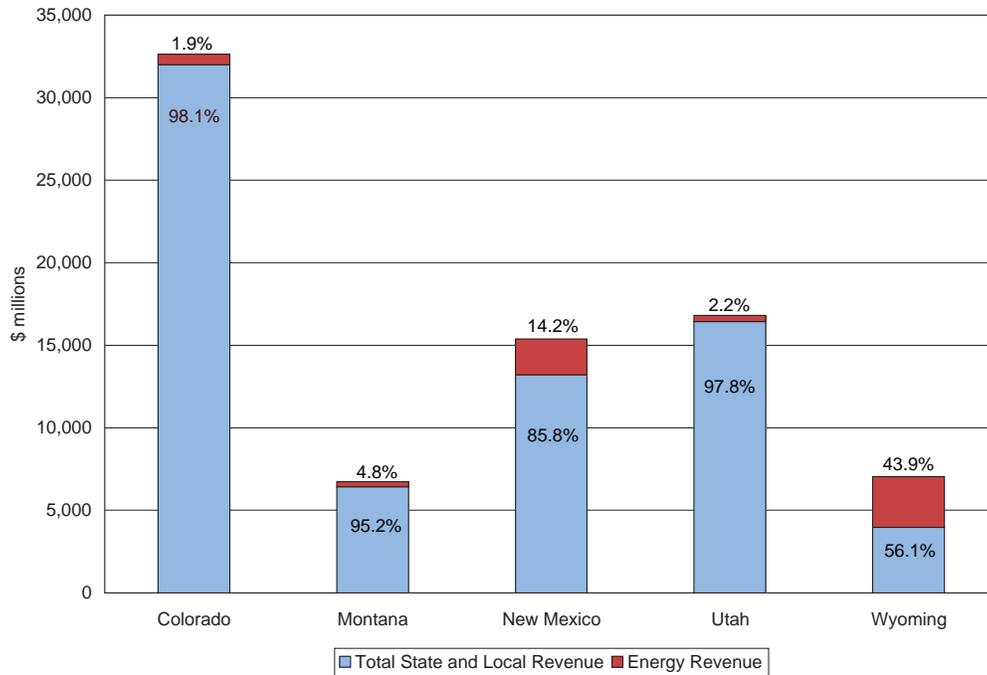


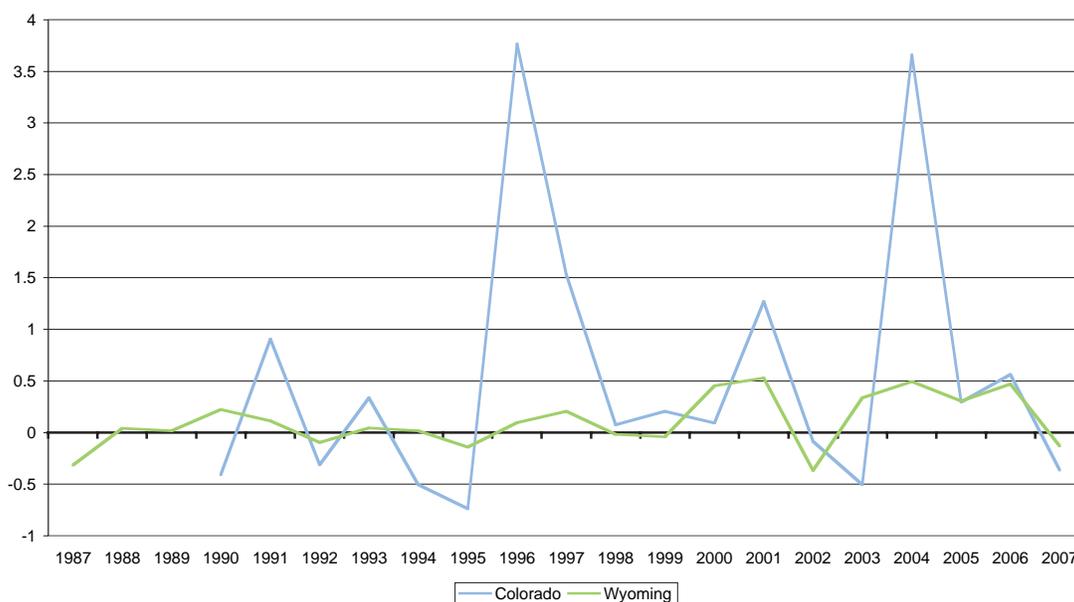
Figure 2.9 shows that energy revenue is less important to governments in Colorado than to its neighbors in the Intermountain West. This is largely due to the fact that Colorado’s economy is larger and more diverse. Colorado’s low effective tax rate also depresses the potential contribution of energy revenue to state funds and thus the importance of energy taxes relative to other sources of revenue. In the event that the costs of energy development exceed incoming revenue, energy revenue can potentially weaken Colorado’s otherwise enviable position of having a large and diverse tax base.

Revenue Volatility

Figure 2.10 (next page) shows volatility of oil and natural gas production value over time in five energy-producing states. Because severance taxes, property taxes, and royalties are levied against production value, revenue derived from taxes and royalties roughly mirrors the volatility in production value. Volatility is undesirable because it makes planning for services and infrastructure difficult. If high revenues in one year allow a local government to hire a new sheriff’s deputy or teacher, decreases the next year could force layoffs. Infrastructure is financed based on expected future revenue from production, and declines in energy revenue could expose taxpayers to these debt burdens.

Although some volatility is inherent to revenue from oil and natural gas, tax structure can serve to dampen or exaggerate volatility. Colorado’s tax structure does a poor job of managing volatility, and in some cases, exacerbates volatility. Figure 2.10 illustrates revenue volatility in Colorado and Wyoming by charting the percent change in severance tax revenue from year to year. Colorado’s severance tax revenue is generally more volatile than production value because the state offers a property tax deduction on severance tax liability. Wyoming has dampened the volatility of its revenue stream by investing a significant portion of severance tax revenue into the Wyoming Permanent Severance Tax Trust Fund that returns interest to the state’s general fund, providing a more consistent and perpetual income stream for the state.

Figure 2.10. Volatility of Oil and Natural Gas Revenue, Change from Previous Year, Colorado and Wyoming, 1987–2007¹²⁹

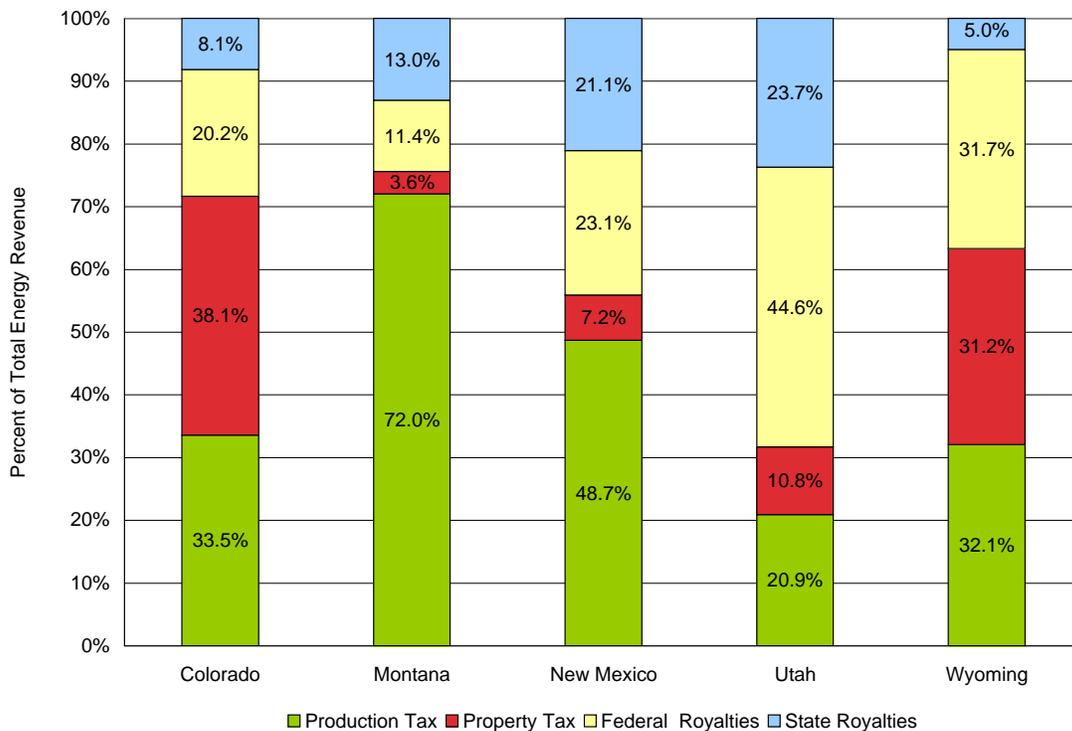


Revenue Timing: Over-Reliance on Property Taxes

Local governments depend largely on property taxes to fund local services, including roads, public safety, and education. Low severance tax collections and problems with the Department of Local Affairs community impact grants program (see below) leave local governments over-dependent on property taxes, which are a poor tax for capturing value from highly volatile resources.

Figure 2.11 shows the relative importance of property tax as a portion of total energy revenue in five states in the Intermountain West.

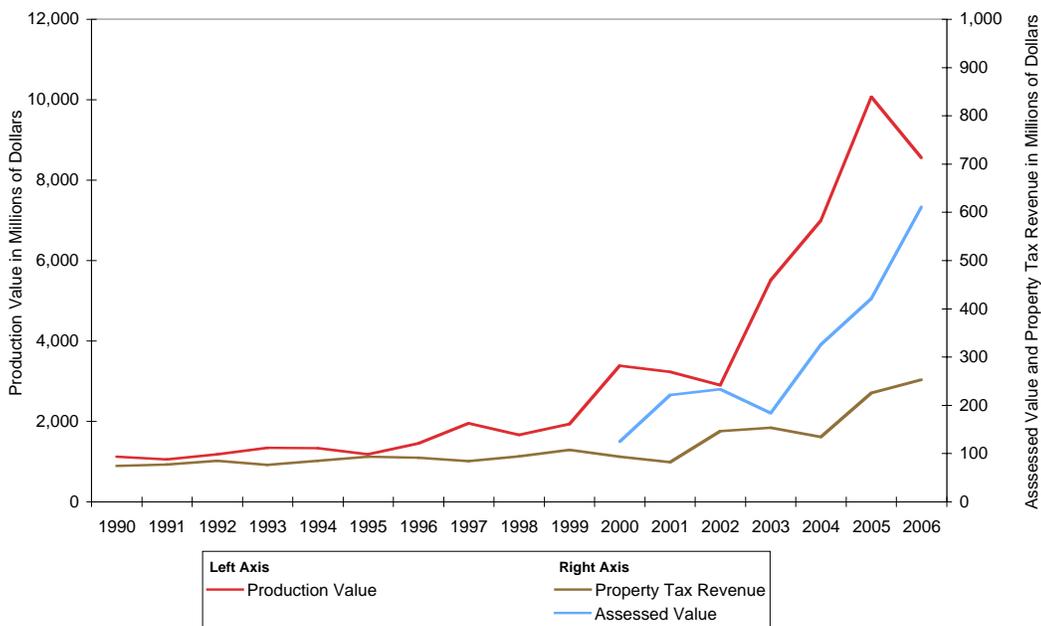
Figure 2.11. Contribution of Production Taxes, Property Taxes, and Royalty Revenue to Total Energy Revenue, 2006, Colorado, Montana, New Mexico, Utah, and Wyoming¹³⁰



Property tax works effectively when assessing property with stable or slowly growing value, including homes and commercial property. However, the current pace and scale of energy development as well as the volatile nature of production value (and severance taxes) mean that the revenue local governments need to keep pace with rapidly growing needs does not arrive in time to build new infrastructure or plan for growing service demands.

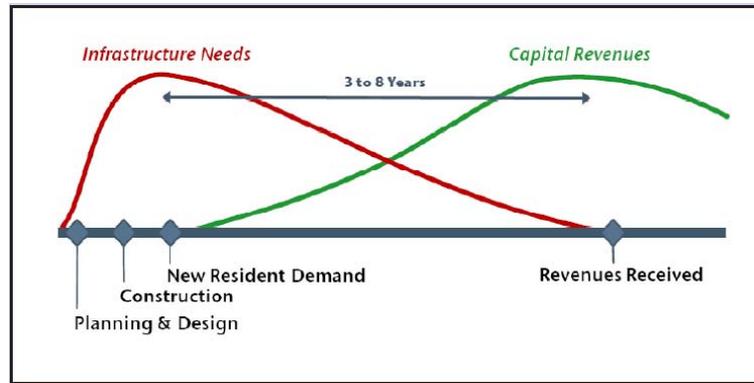
Oil and natural gas is assessed for taxation based on the previous year’s production value, and tax collections are based on the previous year’s assessments, adding up to a two-year lag between when production occurs, and when taxes are collected. Figure 11 illustrates this lag by comparing production, assessments, and tax collections over time. The rapid increase in oil and natural gas production value in 2000 resulted in a subsequent increase in assessed value in 2001, but revenue did not flow to counties, cities and schools until 2002.

Figure 2.12. Production Value, Assessed Value, and Tax Revenue from Oil and Natural Gas in Colorado, 1990–2007¹³¹



A recent report commissioned by the Northwest Colorado Council of Governments describes how the lag is exacerbated by the need to plan, design and construct capital facilities (e.g., roads, hospitals, etc.) so that they are in place to accommodate the growth and demands from the oil and natural gas surge.¹³² The lag means that local governments dependent on property taxes as their main source of revenue must go into debt, borrow from other funds, or go without these critical services.

Figure 2.13. Timing of Infrastructure Needs vs. Availability of Revenue from Property Taxes (NWCOC)¹³³



Form of Oil and Natural Gas Revenue: The Department of Local Affairs (DOLA) Community Impact Grants Program is Underperforming.

DOLA distributed \$16 million directly to energy-impacted communities, and another \$120 million through the Local Government Energy and Mineral Impact Assistance Grant and Loan Program in 2007.¹³⁴ The competitive grants are an important revenue stream to energy-producing counties, however, a Colorado State Auditor’s report shows that only 50 percent of grants were returned to counties experiencing direct service demands and impacts from oil and gas.¹³⁵

In addition, the annual nature of the grants scheme makes it difficult to use DOLA funds for ongoing service needs—illustrated by the volatility of grant funds received by Mesa and Garfield counties in Appendix 3 (Figure 3.12, page 87). The grants are often not in the size, form, or time that local governments need to fund big infrastructure projects or other needs. Reforms have been implemented or are in the works and the state appears to be moving in the direction of guaranteeing a larger share of funds to energy-producing counties.

Revenue Management: The Department of Natural Resources Budget

DOLA severance tax distribution data document that \$41 million in severance taxes in 2007 funded “other state programs” instead of accruing to the DNR—the agency responsible for monitoring and regulating energy development in the state. This is a problem of not protecting the DNR’s operations fund, providing a tempting pot of money for legislators and the governor to draw on to fund other state needs, or favored projects. A second state auditor’s report explains that the lack of funding and training for DNR staff has led to ineffective oversight of industry in Colorado, meaning that the raided funds have real impact on the state’s ability to benefit from oil and natural gas production. For example, the auditor’s report found that the DNR cannot be assured it is collecting what it is owed, potentially contributing to the state’s low effective tax rate.

Long-term Investment

Relative to its peers, Colorado does a good job directing revenue to local government and agencies providing direct services to the oil and natural gas industries. However, a low effective tax rate means the state is less able to make long-term investments commensurate with the scale of energy production. Figure 2.14 (see following page) shows that Colorado invests the largest proportion of severance taxes of the five energy-producing Intermountain West states we profile into a trust fund that provides low interest loans for water projects in the state. Figure 2.14 shows that this significant commitment results in fewer dollars than other states, meaning that relative to peer states, Colorado has fewer resources for water projects, and fewer options for funding infrastructure, education, and other services that contribute to the state’s long-term economic competitiveness than its neighbors.

Figure 2.14. Allocation of Oil, Natural Gas and Coal Revenue in Colorado, Montana, New Mexico, Utah and Wyoming, 2006¹³⁶

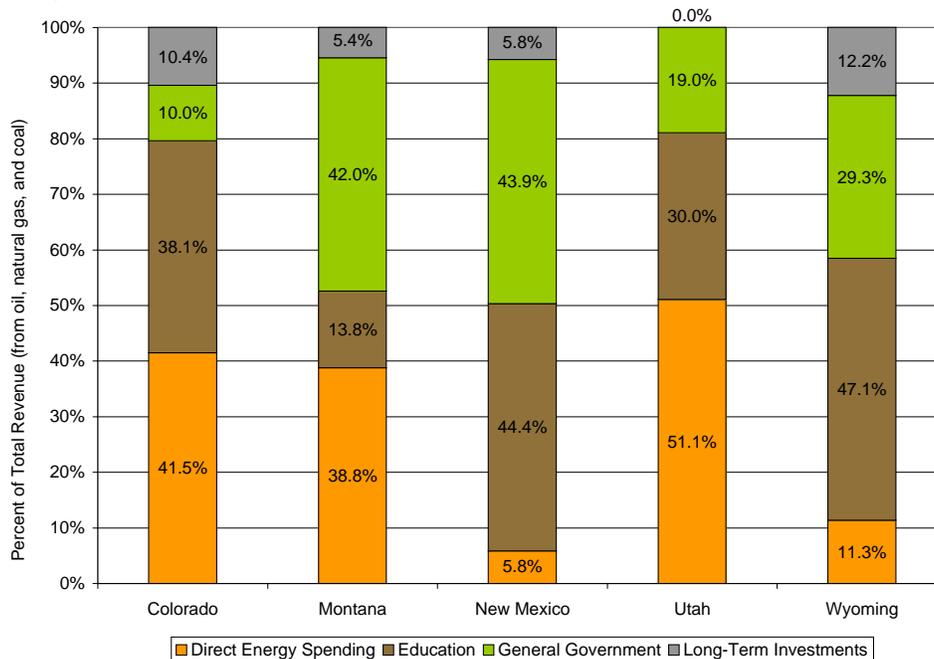
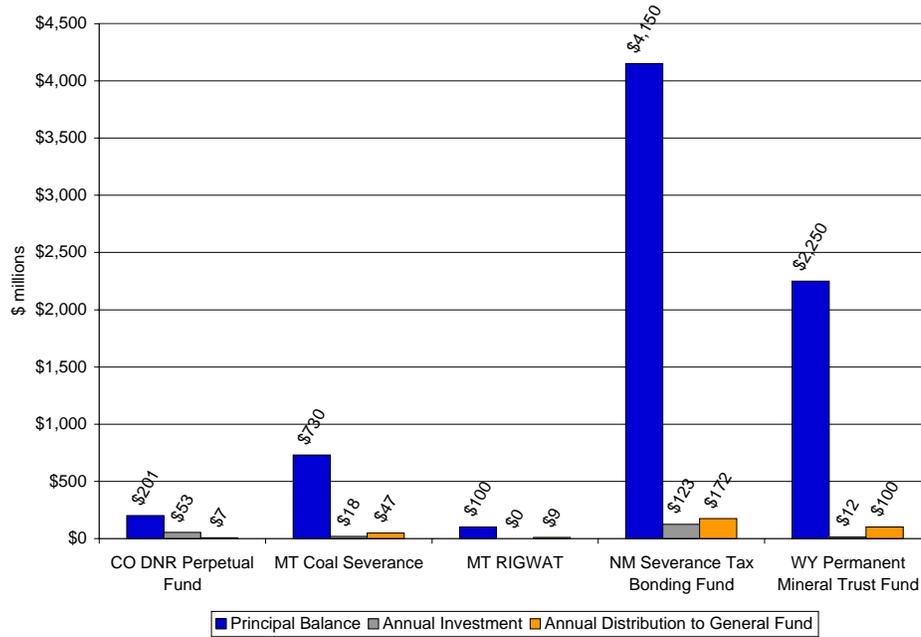


Figure 2.15. Principal Balance, Annual Investments, and Annual Income from Production Tax Permanent Investment Funds, FY 2006¹³⁷



Can Colorado Do Better?

The impact of state taxation on the oil and natural gas economy, and consumer prices is an important question for states to ask. Benefiting from oil and natural gas production begins with a sound tax policy that returns sufficient revenue to state and local government. But how far can government go in taxing industry activities before the costs are felt in higher consumer prices and lost jobs?

Colorado's current tax policy is underperforming, and there is room to increase tax rates and better manage the timing, volatility, and form of revenue with little risk of affecting the energy economy.

- We find no evidence that the dramatically different effective tax rates across the West have led industry to make investments in those states with lower taxes. Alaska, Wyoming, and New Mexico, the states with the highest tax rates (more than one and a half times higher than Colorado), experienced the largest increases in new drilling and production value between 2000 and 2006.
- Evidence also shows that different tax policy from state to state has little or no bearing on the price consumers pay. The Bell Policy Center and the Sonoran Institute both find that tax rates and consumer prices are unrelated, largely because the mechanisms that dictate price are more powerful and more widespread than local taxation impacts on production costs.¹³⁸
- The Wyoming legislature studied the likely outcome of a tax incentive on oil and natural gas production, and found that little to no new production could be expected. The main result of a tax break, according to the studies, would be a dramatic loss in revenue to the state. Key findings of the Wyoming research include:
 - The oil and natural gas industries are guided chiefly by the location of reserves, and are less able to relocate than are industries with mobile capital resources (such as textile mills or automakers).
 - Production taxes are deductible from federal income tax liability so industry does not feel the full benefit of tax increases. When taxes are raised, revenue is shifted from the federal to the state government, and vice versa.
 - Production taxes are “downstream” taxes, meaning they are levied only on successfully producing wells and have little impact on exploration and drilling activity. Production taxes can change the timing of extraction, but taxes on exploration are more likely to affect the location of drilling.
 - Other factors such as price, access to markets (e.g., oil and natural gas pipelines), technology, and regulations have more significant effects on industry activities.

For more, see our 2008 report, *Energy Revenue in the Intermountain West*:
<http://www.headwaterseconomics.org/energy>

APPENDIX 3

FISCAL PROFILE OF GARFIELD AND MESA COUNTIES

Local governments are the front line in providing basic government services to industry and communities, including road maintenance, fire and police protection, 911 emergency services, and public schools. As a result, local governments feel the direct impacts of growth related to oil and natural gas extraction most acutely.

The amount of money generated by energy development activities is important to mitigating some of the direct impacts on government services. In addition, local government should have the fiscal resources to build a reserve from oil and natural gas revenue to ensure money will be available if and when the current surge ends, and to invest in infrastructure and economic development programs that contribute to overall economic and fiscal health.

In this section, we take a close look at the revenue from energy development that accrues to Garfield and Mesa counties, and how it contributes to fiscal health.

Assessing the Contributions of Energy Development to Local Fiscal Health

The criteria for assessing the local contributions of oil and natural gas are essentially the same as the criteria used for the state: local governments need the revenue required to provide services and mitigate impacts from growth related to energy development; and counties should have additional resources that provide the opportunity to build budget reserves and make investments in the rest of the economy to ensure net benefits from the depletion of natural resources.

This report deploys two metrics for making these assessments. The fiscal profile that follows provides baseline data that can be used to assess current fiscal health. Earlier in this report, we also provide interviews with local service providers and cite additional studies of the West Slope to provide an on-the-ground assessment of how well needs are being met (see page 33).

Based on the fiscal profile presented here, it appears that both Mesa and Garfield counties are in good fiscal health. In each case, spending is within the limits of current revenue and budget reserves, and debt remains at manageable levels. The respective county budgets and audited annual financial statements report they expect strong revenue growth to continue. However, each county has significant exposure to volatile and uncertain revenue streams.

Garfield County's budget is heavily reliant on grants and contributions from industry. Each of these revenue streams is highly uncertain, and essentially add to an already volatile tax base built on property taxes from oil and natural gas production.

Mesa County is severely restricted by TABOR, and has so far been able to keep pace by redistributing revenue from a much larger and more diverse tax base and fund balances. It remains to be seen if and how each county will continue to maintain the sound fiscal footing they are on today.

We conclude that while Mesa and Garfield counties are meeting the first requirement to provide services and mitigate the impacts on communities, they are unlikely to continue to do so without the development of new and creative revenue-generating and cost-reducing policies. The basic tax structure is not enough now, and will not provide sufficient revenue in the future to meet projected needs. There is also little evidence to suggest that these counties are receiving net benefits from oil and natural gas production that are being set aside into long-term reserves or can be invested in infrastructure intended to improve and expand the existing level of service. One of these counties just started a fund, but Garfield is spending down budget reserves this year, and current spending is reliant on continued revenue growth.

Garfield County Fiscal Profile

Revenue

Garfield County's economy grew and diversified through the 1990s and into the early part of this century, and county revenue related to this growth grew as well. More recently, oil and natural gas production has added significantly to revenue, particularly in new property taxes, state grants, and contributions from energy companies. Figure 3.1 shows that the County is projecting revenue in 2008 to be nearly double that in 2005.

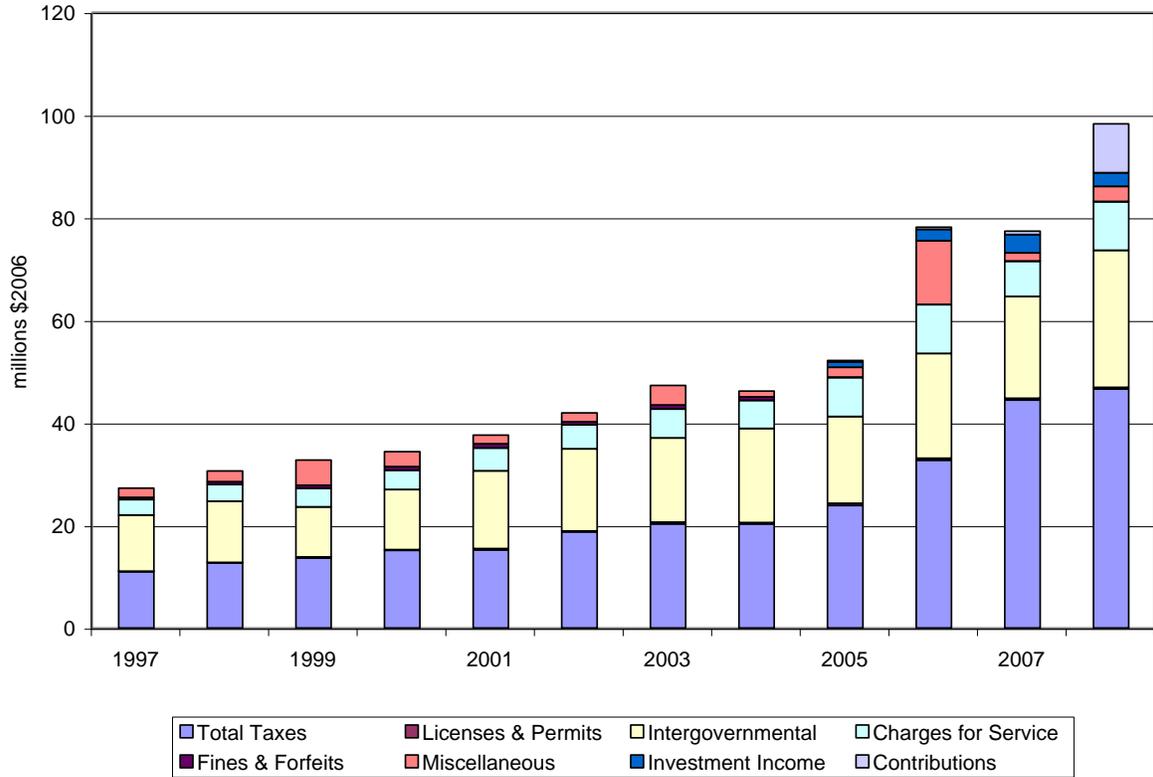
Garfield County "de-Bruced" in 1994, meaning residents voted to overturn the revenue limits imposed by the Taxpayer's Bill of Rights (TABOR).¹³⁹ This change was critical to the county's ability to capture and retain new wealth generated by growth, without raising tax rates.

For the purposes of assessing fiscal health, we look beyond basic revenue growth to understand what sources of new revenue are most important, and how useful and secure they are over the long term. Figure 3.1 shows that 73 percent of total revenue came from "own source" revenue in 2007 (revenue generated within the county from sources including property taxes, sales taxes, and charges for services), and 27 percent of revenue came from intergovernmental sources (revenue from federal payments to counties, state grants, and contributions from energy companies). Own source revenue is projected to decline to 63 percent of all revenue in 2008.¹⁴⁰

This tells us that the strong growth in revenue is coming from sources outside the county that tend to be less predictable over time, and may come with strings attached.

The makeup of own source revenue is also important. In Garfield County, property taxes make up the majority of own source revenue, and two thirds of property taxes are generated from the production of oil and natural gas. Because most drilling occurs in unincorporated areas, Garfield County benefits from property taxes that accrue only within the district where extraction takes place. Sales taxes are less important to the county, largely because most of the economic activity and employment that drilling generates is located in Grand Junction (in adjacent Mesa County), or inside smaller municipalities. Sales taxes too only accrue to the government where transactions take place, thus the geography of drilling and related economic activity often means revenue, and associated impacts may be remote from one another.¹⁴¹

Figure 3.1. Garfield County Revenue by Source, 1997–2008 (2006 Dollars)¹⁴²

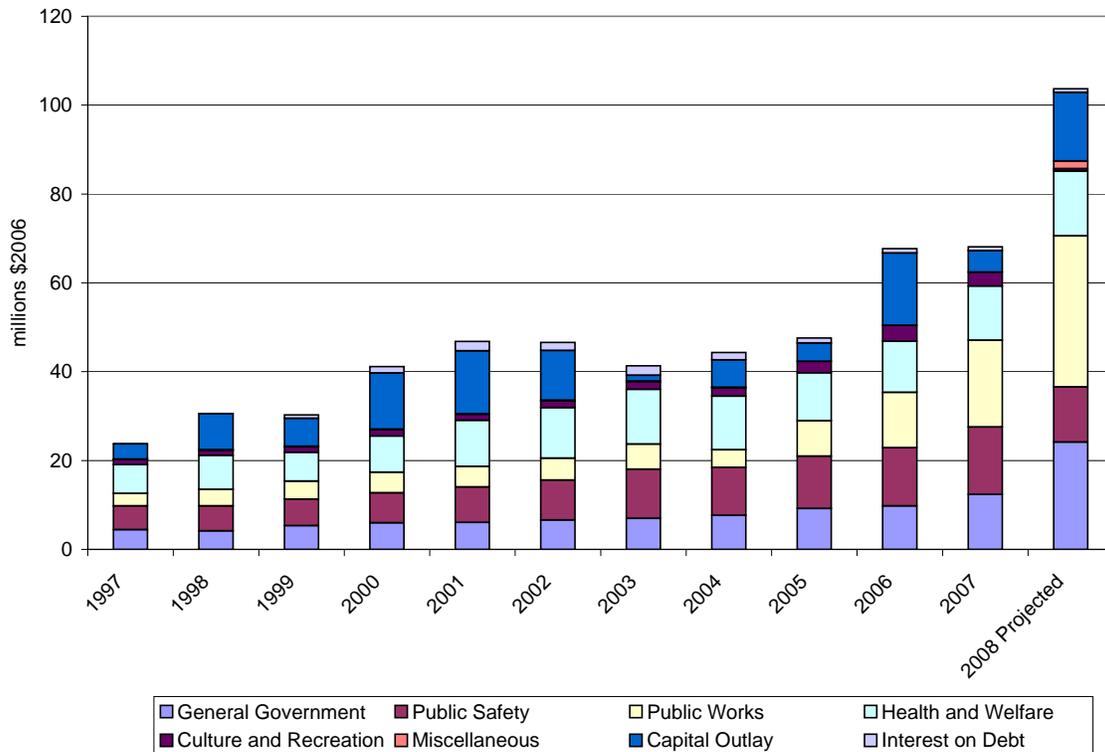


The makeup of Garfield County’s strong revenue growth indicates that the county may be exposed to economic downturns from over-dependence on just a few sources of revenue. The county recognizes this risk, and is hopeful it can diversify its tax base and other own source revenues. Dependence on state grants and industry to improve and maintain the county’s infrastructure is harder to replace if the surge in energy development declines. However, for now, the county’s finances look strong.

Expenditures

Figure 3.2 shows that Garfield County is projecting to spend about \$7 million more than it took in in 2008. The shortfall will be covered by budget surpluses generated over the last few years.

Figure 3.2. Garfield County General Expenditures by Function, 1997–2008 (2006 Dollars)¹⁴³



The largest increases in spending are projected in general government and public works. The road department is planning significant operations in 2008, largely funded with one-time contributions from industry, and grants from the state.

Counties in Colorado have a balanced budget mandate, so measures of expenditure typically track the level of service provided to citizens or households to understand if spending is keeping pace with needs, or providing a higher or lower standard of services over time. We use the simplest measure of level of service—per capita spending over time—to see where new revenue is being spent. Across all categories other than debt service, per capita spending is increasing faster than the rate of inflation. Per capita spending has increased fastest on public works, growing 260 percent from 2000 to 2007. Per capita spending on health and welfare grew only 42 percent over the same period. Overall, per capita spending increased 110 percent from 2000 to 2007.

This quick assessment of expenditures shows an expected rapid increase in spending on public works, most likely resulting from the dispersed nature of oil and gas drilling and employment and the subsequent demands on county roads. However, this report did not adequately consider public health and welfare services, and if they are keeping pace with new demands. These may be areas of future strain.

Debt

The county's outstanding debt in 2007 amounted to \$18.8 million. Measures of fiscal health typically track the relationship of debt service payments (the amount required to pay down principal and interest on debt annually) to total revenue to provide an understanding of the relative size of the total debt load. A second indicator typically used for comparisons between counties is debt per capita, or the amount of debt for each individual in the county. On each score, Garfield County's debt is within the normal range. Debt service payments make up less than 2 percent of total revenue, and per capita debt stands at less than \$100. It appears that the County is navigating the current pressures of rapid growth without exposing taxpayers to significant new debt. We do not know, however, what needs, if any, are going unmet. In the section on Infrastructure and Fiscal Exposure, we use interviews and other literature to assess the current needs in relationship to current spending, and find that the county may face significant infrastructure costs in the future.

Mineral Revenue to Garfield County

Garfield County taxes energy production directly through local property and sales taxes, and receives distributions of severance taxes and federal mineral royalties from the state. The particular makeup of the revenue stream has an influence over the timing of revenues relative to the impact of extraction activities, and which uses these funds can be put to. Figure 3.3 illustrates the proportion of the county’s budget energy revenue accounts for, and Figure 3.4 shows the makeup of the energy revenue stream in Garfield County.

Figure 3.3. Garfield County Oil and Gas Revenue as a Portion of Total County Revenue, 1997–2006¹⁴⁴

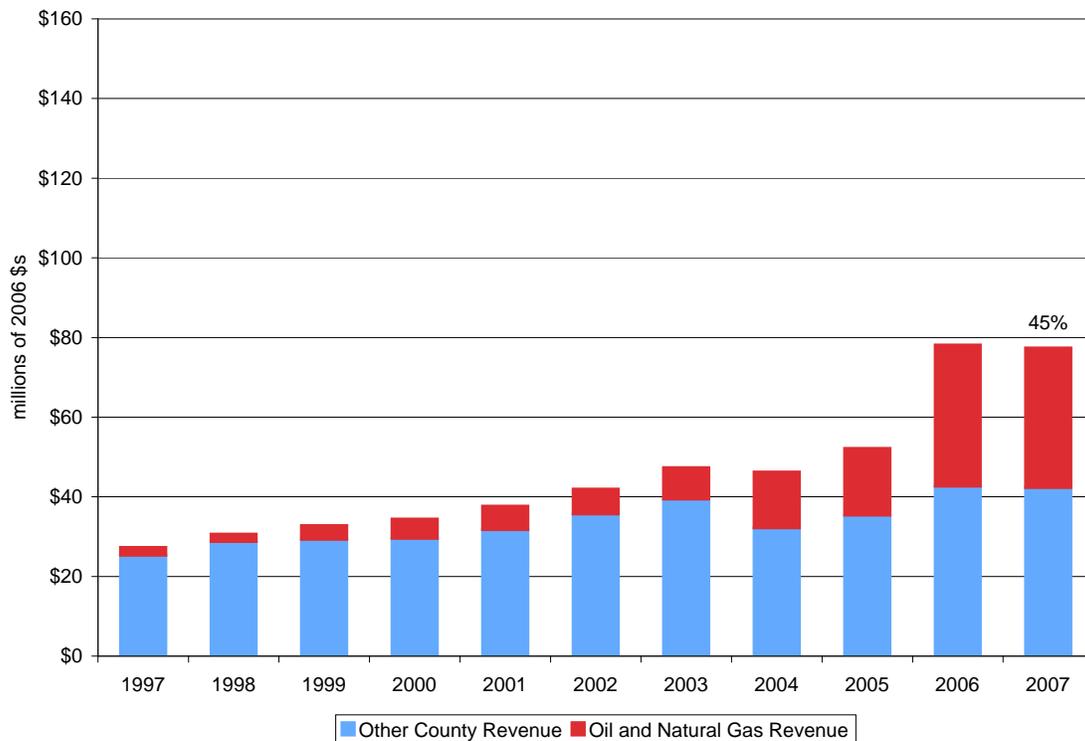


Figure 3.4. Contributions of Different Sources of Oil and Natural Gas Revenue in Garfield County, 1997–2007 (2006 Dollars)¹⁴⁵

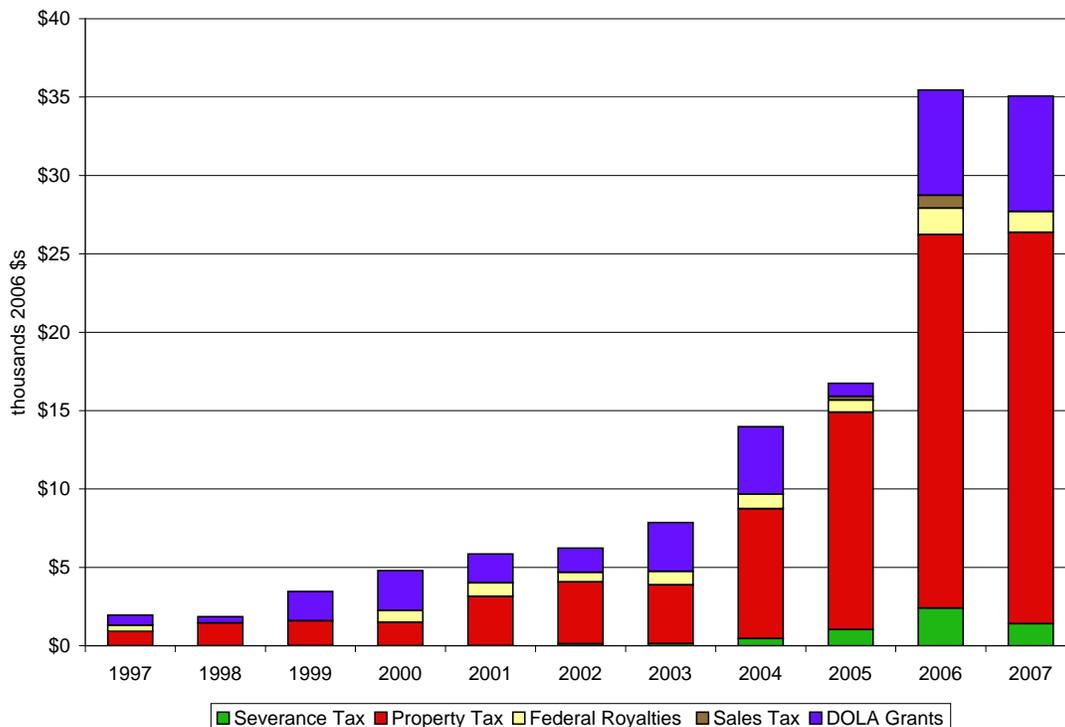


Figure 3.4 shows that Garfield County collected \$35 million from oil and natural gas taxes in 2007, nearly half of total county revenue (45%). Figure 3.4 shows that 71 percent of all oil and gas revenue comes from property tax in Garfield County in 2006, reflecting significant drilling activity within the county. Distributions from DOLA accounted for 28 percent (7% from direct distributions of severance tax and federal royalty dollars, and another 21% from DOLA community impact grants). Sales tax data are not available for 2007 at the time of writing, but accounted for only 2 percent of all oil and natural gas revenue in 2006.

Figure 3.5. Garfield County Assessed Value by Class of Property, 2007¹⁴⁶

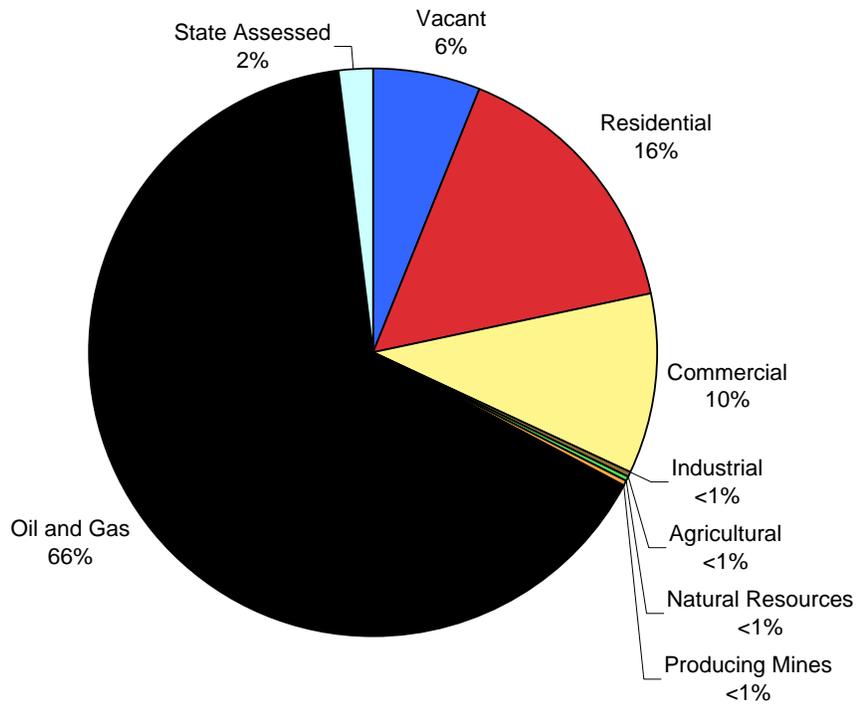


Figure 3.5 breaks down property taxes by type, and shows that oil and natural gas make up two thirds of all assessed value (the total value of taxable property) in Garfield County.

Garfield County’s relative reliance on property taxes means that the majority of funds will arrive late, and will not respond to rapid increases in drilling activity, new growth in local communities, or increases in price. Severance tax distributions and grants from DOLA are important, but have several limitations, from the total amount of money available for distribution, to their predictability over time. As a result, Garfield County should be working to assist with ongoing reforms at the state level to make the severance tax more responsive to local needs and to raise the tax rate, and to be creative at home in diversifying, stabilizing, and increasing local revenues from oil and natural gas.

Mesa County Fiscal Profile

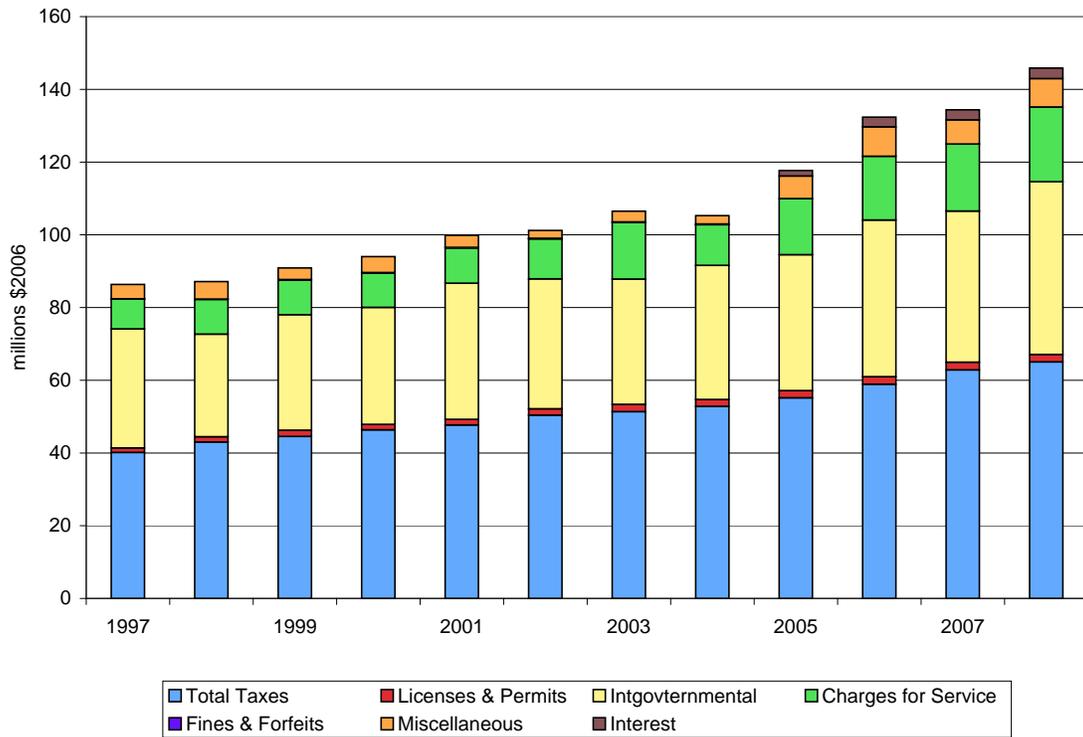
We profile all county revenue, expenditures and debt to get an overall picture of the county’s finances. We document the portion of revenue generated by the oil and natural gas industry, and discuss some of the fiscal issues facing Mesa County.

Revenue

Mesa County’s revenue has increased, but at a much slower rate than than in Garfield County. The county’s economy has grown in similar ways, and particularly over the last three years due to an increase in population and economic activity associated with oil and natural gas development in Garfield County. However, TABOR’s restrictions remain in place, and Mesa County has been forced to reduce its property tax rate repeatedly as assessed values have risen, and must even forgo state distributions of severance taxes when they exceed revenue limits.

Figure 3.6 shows projected revenue growth of about 24 percent between 2005 and 2008.

Figure 3.6. Mesa County Revenue by Source, 1997-2008 (2006 Dollars)¹⁴⁷

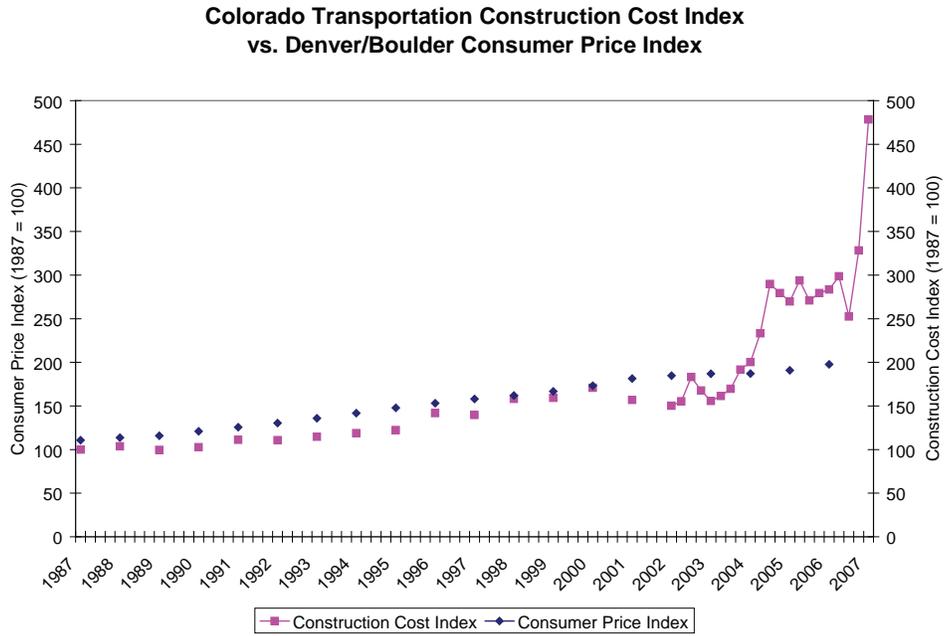


About two thirds of Mesa County's revenue comes from own source revenues, and that proportion has remained relatively stable over the last few years. Sales tax revenue has increased rapidly over the past few years because of rapid population growth and oil and natural gas activity in surrounding counties boosting retail sales. The assessed value of property also increased rapidly, jumping 33 percent between 2006 and 2007, however net property tax collections are projected to decline because of Taxpayer Bill of Rights (TABOR) restrictions and projected refunds.¹⁴⁸ Mesa County lowered its property taxes 22 percent from 1995 to 2006. Had Mesa County maintained the same mill levy from 2000, it would have collected about \$15 million more in property tax in 2007 than actual tax collections.

Intergovernmental revenue is important, making up about a third of all county revenue. Much of this total comes from federal and state grants that support social services, transportation, and education. DOLA grants make up a small portion of intergovernmental revenue, and TABOR restrictions have prohibited Mesa County from realizing the full potential of state distributions. Mesa County has to forgo \$2.4 million in severance tax distributions from DOLA in 2008 because of TABOR's restrictions.¹⁴⁹

TABOR, passed in 1992, restricts increases in government tax collections and spending to the rate of inflation plus population growth.¹⁵⁰ The inflation index against which TABOR's restrictions are calibrated is the Denver/Boulder Consumer Price Index. Figure 3.7 shows that local inflation in the West Slope, indicated by the transportation construction cost index, has been much higher than the Denver/Boulder CPI over the last few years due to rapid growth in the oil and natural gas industries. As a result of these rapidly increasing costs for Mesa County, TABOR's actual impact on the county actually restricts growth to below the rate of inflation (because the rate of inflation used to set limits is below the local inflation rate).

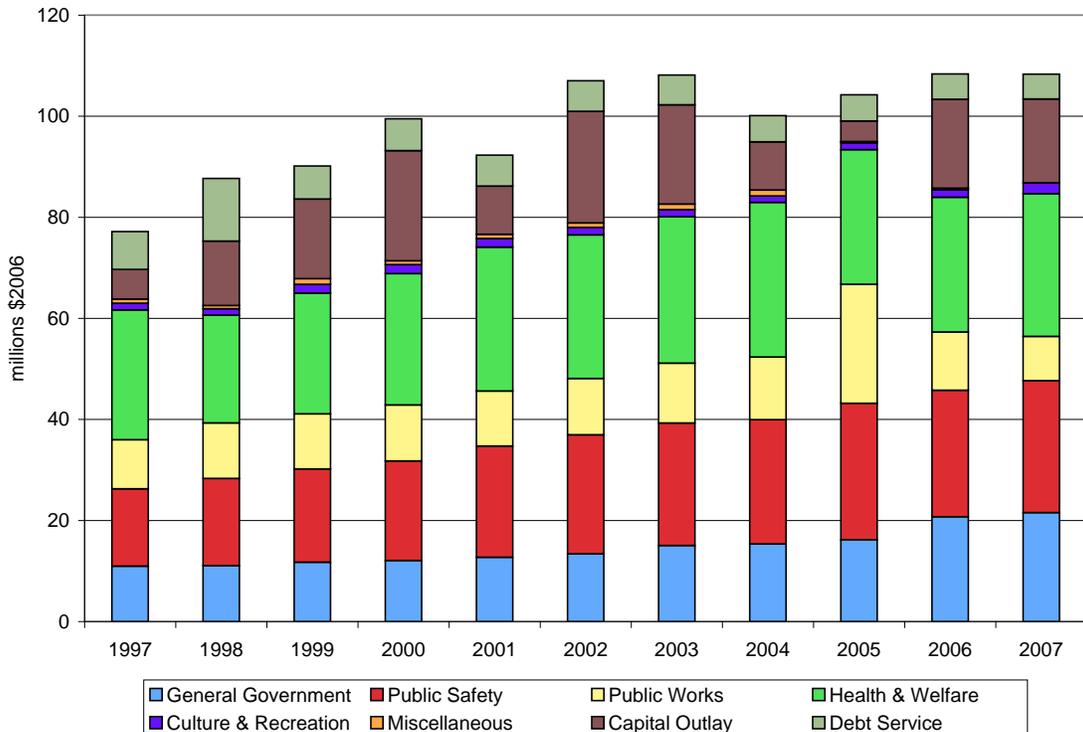
Figure 3.7. Colorado Transportation Cost Index v. Denver/Boulder Consumer Price Index, 1987–2007¹⁵¹



Expenditures

Mesa County’s 2007 budget places its greatest emphasis on roads and public safety as a response to rapid population growth. Adjusted for inflation, Figure 3.8 shows that county expenditures have been relatively flat over the last five years.

Figure 3.8. Mesa County General Expenditures by Function, 1997–2008 (2006 Dollars)¹⁵²



On a per capita basis, spending in Mesa has grown only 9 percent between 2000 and 2007. Spending on public works declined by 25 percent over the same period, and spending on health and welfare is essentially flat (growth of 0.2%). These trends are markedly different from those in Garfield County, where spending has more than doubled. Because local inflation is more rapid than the national CPI that we use to adjust spending for inflation, it is very likely that per capita spending is down across the board in Mesa County, and the level of service provided is declining over time.

Debt

Mesa County’s debt is at manageable levels. Debt service is 4.5 percent of total expenditures, and per capita debt stands at \$94 in 2007.

The County has specifically avoided issuing debt to pay for new infrastructure demanded by population growth associated with oil and natural gas development because of fears that these gains, and the associated revenue, may be volatile and short-lived. Mesa County remembers the oil shale bust in the 1980s, and is reticent to bank on the current surge in oil and natural gas extraction being fundamentally different from past episodes of boom and bust energy development.¹⁵³

Mineral Revenue to Mesa County

Like Garfield County, Mesa County receives mineral revenue from direct taxation of activity within the county, and from distributions from the state. Figure 3.9 illustrates total oil and natural gas revenue from these sources as a portion of total county revenue, and Figure 3.10 shows the relative importance of individual mineral revenue types.

Figure 3.9. Mesa County Oil and Gas Revenue as a Portion of Total County Revenue, 1997–2006¹⁵⁴

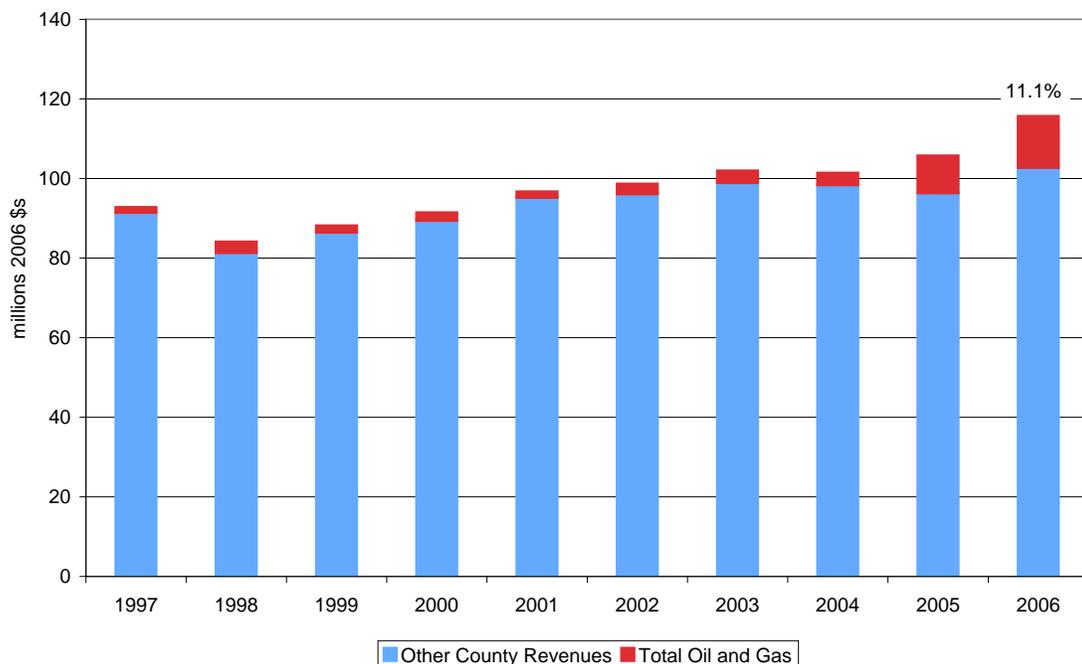


Figure 3.10. Contributions of Different Sources of Oil and Natural Gas Revenue in Mesa County, 1997–2006 (2006 Dollars)¹⁵⁵

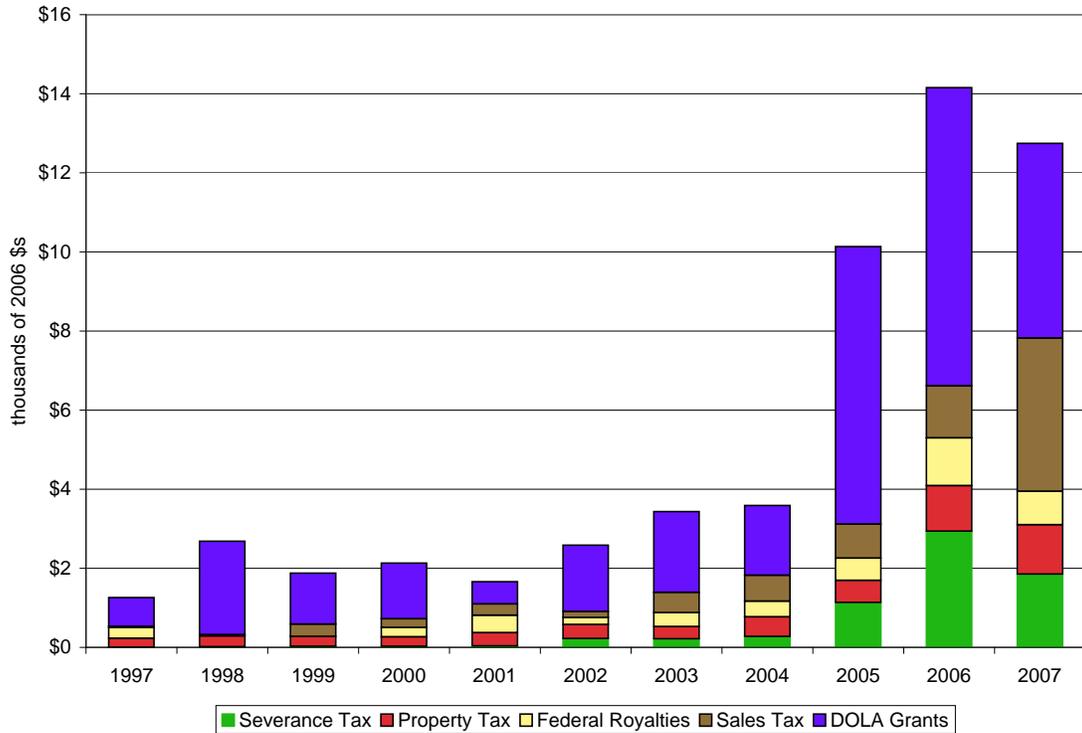
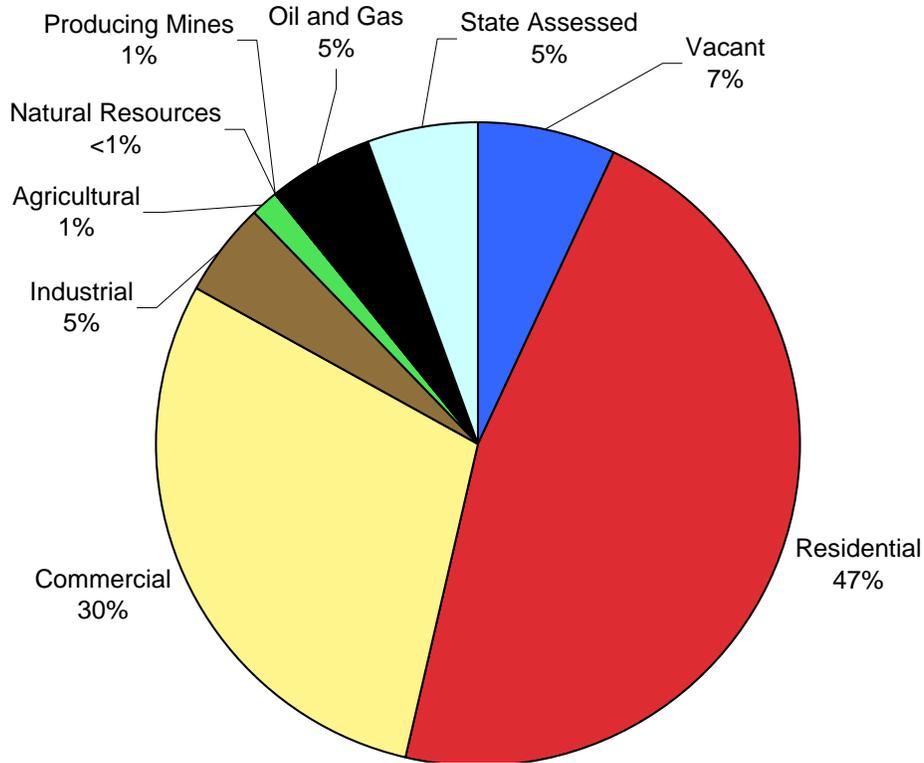


Figure 3.10 shows that Mesa County received \$12.7 million from oil and natural gas taxes in 2007, making up 9.4 percent of total county revenue. Mesa County’s budget is about twice the size of Garfield County’s budget, and depends less on revenue from oil and natural gas taxes, so its overall importance is smaller, although still significant.

Mesa County has relatively little production within its borders, and Figure 3.10 shows oil and natural gas property taxes make up only 9 percent of total oil and natural gas revenue in 2007. Direct distributions from severance taxes and federal royalties, and DOLA Local Impact Fund grants make up 53 percent of local oil and natural gas revenue combined.

Figure 3.11. Mesa County Assessed Value by Class of Property, 2007¹⁵⁶



The relative importance of DOLA direct distributions in Mesa County is mainly due to the number of industry employees living in Mesa County and working in Garfield County—meaning Mesa County receives relatively more job-based severance tax and federal royalty distributions from the state and relatively fewer production-based property tax revenues when compared with Garfield County. Sales taxes are also important in Mesa County, and increasingly so with nearly a third of all revenue from oil and natural gas generated through sales taxes in 2007 (30.4%).

Figure 3.12. DOLA Grant Revenue to Mesa and Garfield County, 1995–2007¹⁵⁷

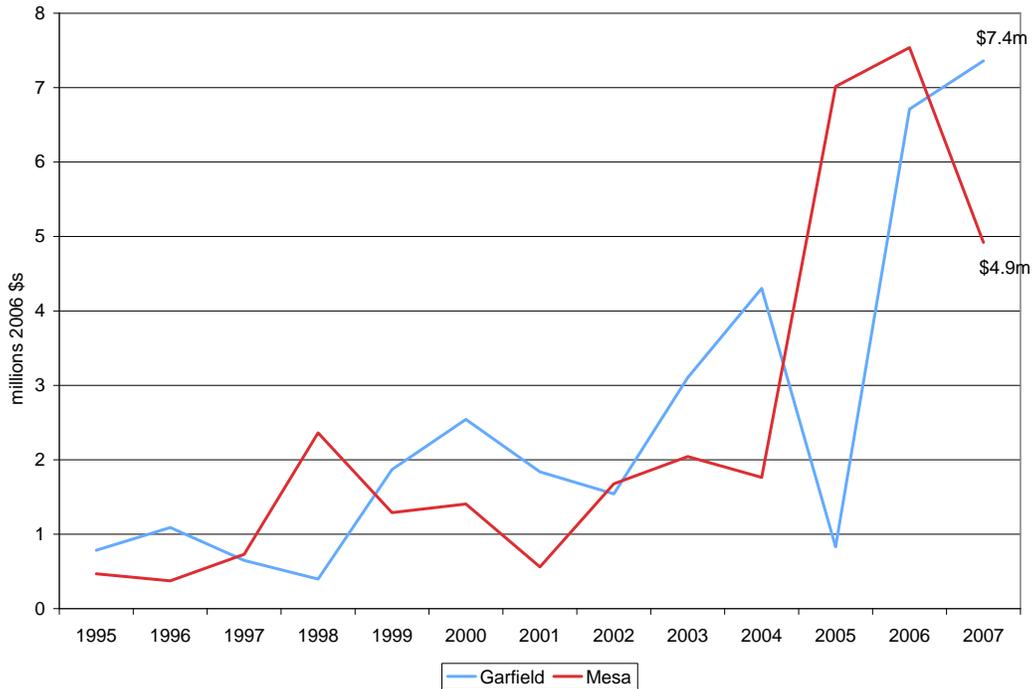


Figure 3.12 shows the uncertainty of revenue from DOLA local impact grant funds from year to year. The annual grant cycle makes it difficult to plan on receiving grant funds, and therefore can only be used for one-time capital costs rather than funding permanent investments in staff or programs required by new demands placed on counties by energy development.

ENDNOTES

- ¹ A useful summary of this experience is Andrew Gulliford, *Boomtown Blues: Colorado Oil Shale*, Boulder: Univ. of Colo. Press, 1989 (2003).
- ² See, for example: J.B. Cromartie and J.M. Wardwell, “Migrants Settling Far and Wide in the Rural West.” *Rural Development Perspectives* 14 (1999): 2–8; W. B. Beyers, D.P. Lindahl, and E. Hamill, “Lone Eagles and Other High Fliers in the Rural Producer Services.” Paper presented at the Pacific Northwest Regional Economic Conference, May 1995, Missoula, Montana; G. V. Fuguitt and C.L. Beale, “Recent Trends in Nonmetropolitan Migration: toward a New Turnaround?” *Growth and Change* 27 (1996): 156–174; D. A. McGranahan, “Natural Amenities Drive Population Change.” Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture. Report 781 (1999): 1–24; A. J. Hansen et al., “Ecological Causes and Consequences of Demographic Change in the New West.” *BioScience* 52 (2002): 151–162.
- ³ The Economic Profile System creates detailed 32-page socio-economic profiles of counties, states, and regions. On our web site, you may browse and access EPS profiles for any county and state in the West, request custom profiles, or download a free copy of the automated EPS software at <http://www.headwaterseconomics.org/eps>.
- ⁴ U.S. Census Bureau, Population Division, Cumulative Estimates of the Components of Population Change for the United States, Regions, and States: April 1, 2000 to July 1, 2007 (NST-EST2007-04); <http://www.dola.state.co.us/dlg/demog/components.html>. Division of Local Government, State Demography Office, IRS state to state migration data.
- ⁵ BEA REIS 2005 Table CA30.
- ⁶ Ibid.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ BEA REIS 2005 Table CA05.
- ¹⁰ U.S. Department of Commerce. 2008. Bureau of Economic Analysis, Regional Economic Information System (BEA REIS). Washington, D.C. www.bea.gov/beat/regional/reis.
- ¹¹ Ibid.
- ¹² BEA REIS 2005 CD TableCA05.
- ¹³ Ibid.
- ¹⁴ BEA REIS 2005 Table CA05N.
- ¹⁵ Available at www.headwaterseconomics.org/energy.
- ¹⁶ For a useful review of the academic literature on economic diversity, see Andrew Sterling, “On the Economics and Analysis of Diversity.” Electronic Working Papers Series, University of Sussex: 1998. <http://www.sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp28/sewp28.pdf>. More narrowly, consult Malizia, E. E. and K. Shanzai, “The Influence of Economic Diversity on Unemployment and Stability.” *Journal of Regional Science* 33(2006): 221-235.
- ¹⁷ U.S. Census Bureau. County Business Patterns (CBP), 2008. Washington, D.C.
- ¹⁸ T. R. Smith, “The Relationship between the Tenth District Economy and the National Economy”, *Federal Reserve Bank of Kansas City Economic Review Fourth Quarter*, 81 (1996): 77–90. www.kc.frb.org/publicat/econrev/pdf/4q96smit.pdf.
- ¹⁹ Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW).
- ²⁰ Kurt Reinecke, “Drilling History of the Piceance Basin.” Paper given at American Assoc. of Petroleum Geologists Annual Meeting, 2002. <http://www.searchanddiscovery.net/documents/abstracts/rocky2002/images/reinecke.htm>
- ²¹ BBC Research and Consulting, “Northwest Colorado Socioeconomic Analysis and Forecasts,” Report prepared for Associated Governments of Northwest Colorado. April, 2008, page ES-4.

- ²² See note 118, page 92 (notes to Appendix 2).
- ²³ BBC Research and Consulting, “Garfield County Socio-Economic Impact Study,” Report prepared for Garfield County, CO, January, 2007, page II-3.
- ²⁴ Colorado Oil and Gas Conservation Commission, Production and Sales by County, 1995-2006.
- ²⁵ Headwaters Economics, *U.S. Energy Needs and the Role of Western Public Lands*, 2008.
<http://www.headwaterseconomics.org/energy>
- ²⁶ BLM, White River Field Office, Reasonable Foreseeable Development Scenario. 2007. An Executive Summary of the RFD is available on the planning website, <http://www.blm.gov/rmp/co/whiteriver/documents.htm>.
- ²⁷ The COGCC rulemaking home page is: <http://cogcc.state.co.us/RuleMaking/2007RuleMaking.cfm>.
- ²⁸ U.S. BLM, Oil Shale and Tar Sands Final Programmatic Environmental Impact Statement, Executive Summary, 2008. p. ES-7. See <http://ostseis.anl.gov>.
- ²⁹ BBC, “Northwest Colorado Socioeconomic Forecast,” III-2.
- ³⁰ U.S. Census Bureau population finder.
- ³¹ BEA REIS 2005 CD Table CA05.
- ³² Ibid.
- ³³ Ibid.
- ³⁴ Mesa State College Natural Resource and Land Policy Institute, “Socioeconomic Impacts of Growth.” Grand Junction, CO: 2007, 37.
- ³⁵ Ibid. See also, Conrad F. Schader, *Glenwood Canyon: From Origin to Interstate*. Golden, CO: Regio Alto Pub., 1996.
- ³⁶ BEA REIS 2005 CD Table CA05.
- ³⁷ Ibid.
- ³⁸ BEA REIS 2005 CD Table CA05N.
- ³⁹ BEA REIS 2005 CD Table CA05N.
- ⁴⁰ Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW).
- ⁴¹ U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics.
- ⁴² BBC Research and Consulting, “City of Rifle: A Case Study of Community Renewal, Growth and Change in Northwest Colorado,” Report, May 1, 2008, Section III.
- ⁴³ U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics.
- ⁴⁴ Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW).
- ⁴⁵ Ibid.
- ⁴⁶ The oil and gas industry also generates an array of secondary and indirect revenue, including corporate and individual income taxes, sales taxes and indirect business taxes associated with increased economic activity. We focus here only on revenue directly associated with extraction activities.
- ⁴⁷ “Energy-tax initiative filed for Colorado’s November ballot,” *Denver Business Journal*, Wednesday, March 5, 2008. <http://www.bizjournals.com/denver/stories/2008/03/03/daily28.html>, Accessed on June 23, 2008
- ⁴⁸ The Rocky Mountain News produced a highly critical series on energy development in Colorado in December 2007. Mesa and Garfield counties were profiled in a number of the stories. <http://www.rockymountainnews.com/special-reports/colorado-oil-gas/beyond-the-boom/>
- ⁴⁹ In an interview with Headwaters Economics, Martie Wisdom, the CEO of the Grand Junction hospital related that the hospital’s budget is comprised of 20 percent of gross revenue from property tax and 80 percent of property tax from energy companies, noting: “It’s been hugely beneficial to have the natural gas industry.” (7/19/2007)
- ⁵⁰ *Rocky Mountain News* “Energy Rush Creates Haves and Have-Nots. December 12, 2007.
- ⁵¹ Interview, Ann Driggers, President and CEO, Grand Junction Economic Partnership. 7/20/2007. See also, James Coil Research and Consulting, LLC. “Grand Junction Housing Market Analysis,” Report prepared for Colorado Housing and Finance Authority, Jan. 12, 2007.
- ⁵² Anna Maria Basquez, “Retirement Magazine Touts GJ,” *The Daily Sentinel* (Grand Junction, CO), June 3, 2008.
- ⁵³ Decennial Census 2000; BEA REIS 2008.

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