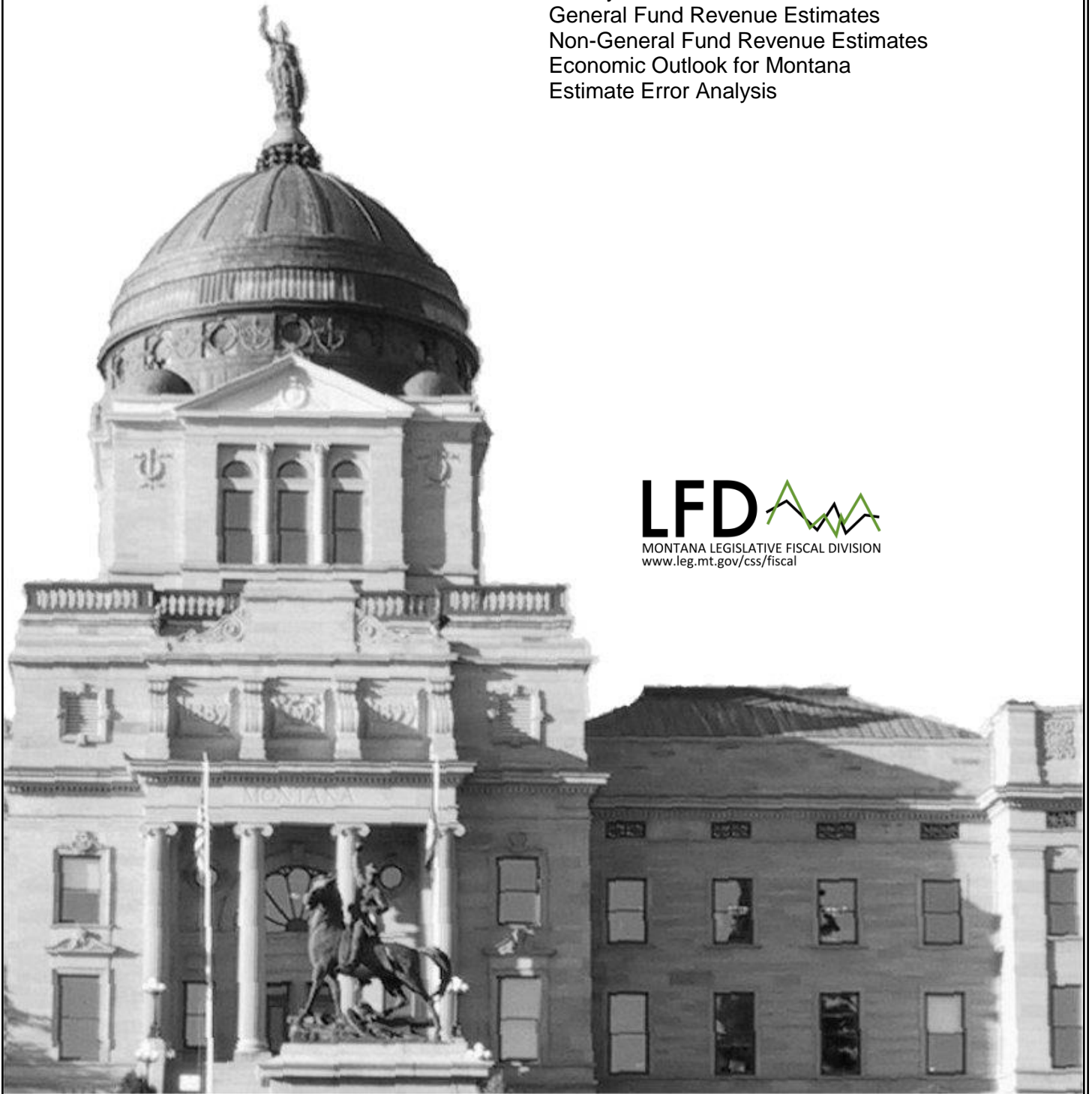


# OVERVIEW

Purpose of the Report  
History  
General Fund Revenue Estimates  
Non-General Fund Revenue Estimates  
Economic Outlook for Montana  
Estimate Error Analysis

**LFD**   
MONTANA LEGISLATIVE FISCAL DIVISION  
[www.leg.mt.gov/css/fiscal](http://www.leg.mt.gov/css/fiscal)





## Overview

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### Purpose of the Report

As delineated in [5-5-227\(2\)\(a\), MCA](#), the Revenue and Transportation Interim Committee (RTIC) is required to prepare an estimate of the amount of revenue projected to be available for legislative appropriation. In addition, [5-12-302, MCA](#) specifically requires the Legislative Fiscal Analyst (LFA) to estimate revenue from existing and proposed taxes and also requires the LFA to assist RTIC in performing its revenue estimating duties.

The purpose of this report is to document the Legislative Fiscal Division (LFD) recommendations for anticipated revenues for FY 2015 through 2017. In almost all cases, estimates are based on current federal and state laws and do not include estimates for revenues due to litigation or any other pending legal issues. This position is consistent with past recommendations to RTIC.

### History

In 1989, the Montana Legislature established a process for the Legislature to develop revenue estimates for legislative appropriation. SB 341 (1989 Session) directed the then-Revenue Oversight Committee to prepare the revenue estimates. The legislation also provided that the revenue estimating resolution introduced by the Committee and subsequent periodic reports issued by the Committee constitute the Legislature's current revenue estimate until final adoption of the resolution by both houses of the Legislature.

In 1991, the Legislature revised the procedures of estimating revenue by inserting the language that is now contained in [5-5-227\(2\)\(a\) and \(3\), MCA](#), including the language that the Committee's revenue estimates and underlying assumptions should be used by state agencies in the preparation of fiscal notes (Chapter 603, Laws 1991).

Because of disparities in the revenue estimates between the LFD and the Department of Revenue (DOR) during the 1997 session, House leadership requested that the Revenue Oversight Committee work with LFD and DOR to develop a process to resolve differences in revenue estimates before the 1999 legislative session.

### Recent Process

In 1999, the Legislature revised the structure of interim committees and assigned the revenue estimating responsibilities to RTIC (Chapter 19, Laws 1999). In the past, RTIC has adopted the revenue estimates in November of the year proceeding the next regular session. As a practical matter, the Committee cannot adopt the estimates much earlier than mid-November because the DOR income tax data is not available until November 1 (October 15 is the general deadline for taxpayers who requested an extension of time for filing an income tax return).

Staff of the LFD and the Governor's Office of Budget and Program Planning (OBPP) each present assumptions and corresponding revenue estimates for the Committee's consideration. In the past, the Committee has initially adopted the revenue estimates of the LFD and may make changes to those estimates based on information presented by OBPP, economists from the Montana university system, and other experts.

Finally, the resolution containing the Committee's revenue estimates must be pre-introduced by December 15th (see Rules of the Montana Legislature, Joint Rules 40-40(5)(a)). The Committee's estimate, as introduced in the Legislature, constituted the Legislature's current revenue estimate until amended or until final adoption of the estimate by both houses.

### Path through the Legislature

In the 1999 through 2003 legislative sessions, both houses of the Legislature adopted the resolution, and it was filed with the Secretary of State. During more recent sessions, the resolution has stalled at various stages of the legislative process:

## Overview

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- In 2005, the House of Representatives did not concur in the Senate amendments to the resolution, and the resolution died in the process. As such, the Senate estimates were the Legislature's current revenue estimates.
- In 2007, the resolution died in the House Taxation Committee. As such, the Revenue and Transportation Interim Committee's estimates were the Legislature's current revenue estimates.
- On February 18, 2009, the House Taxation Committee amended HJR 2 and adopted a committee report. The resolution was rereferred to the Committee. On March 21, 2009, the Committee again amended the resolution and adopted a committee report. In each instance, the House Taxation Committee estimates became the Legislature's current revenue estimate. The resolution died in the process.
- On March 23, 2011, the House Taxation Committee amended HJR 2 and adopted a committee report. The resolution was rereferred to the Committee on March 28, where it died in process.
- On November 19, 2012, RTIC met to review and adopt a revenue estimate recommendation, but were unable to agree on the estimate. Therefore, the committee did not introduce a resolution with the Committee's estimate. The Rules Committee subsequently met and adopted rules for the 63<sup>rd</sup> Legislative Session, including a requirement that the chair of the Senate Taxation Committee prepare a revenue estimate to be introduced in the Senate. The estimate contained in SJR 2, along with an initial set of amendments passed both houses by early February of the 2013 Legislative Session. A revised estimate contained in SJR 27 was introduced in early April; however, due missing the transmittal deadline for revenue bills, it ultimately failed to pass both houses.
- On November 20, 2014, RTIC met to review and adopt a revenue estimate recommendation. The executive recommendation was \$295.4 million above the LFD recommendation. The committee ultimately adopted the LFD recommendations, with total adjustments in individual income tax and oil & natural gas tax equal to half of the total difference between the executive and LFD recommendations for individual income tax, corporation income tax, and oil & natural gas tax.

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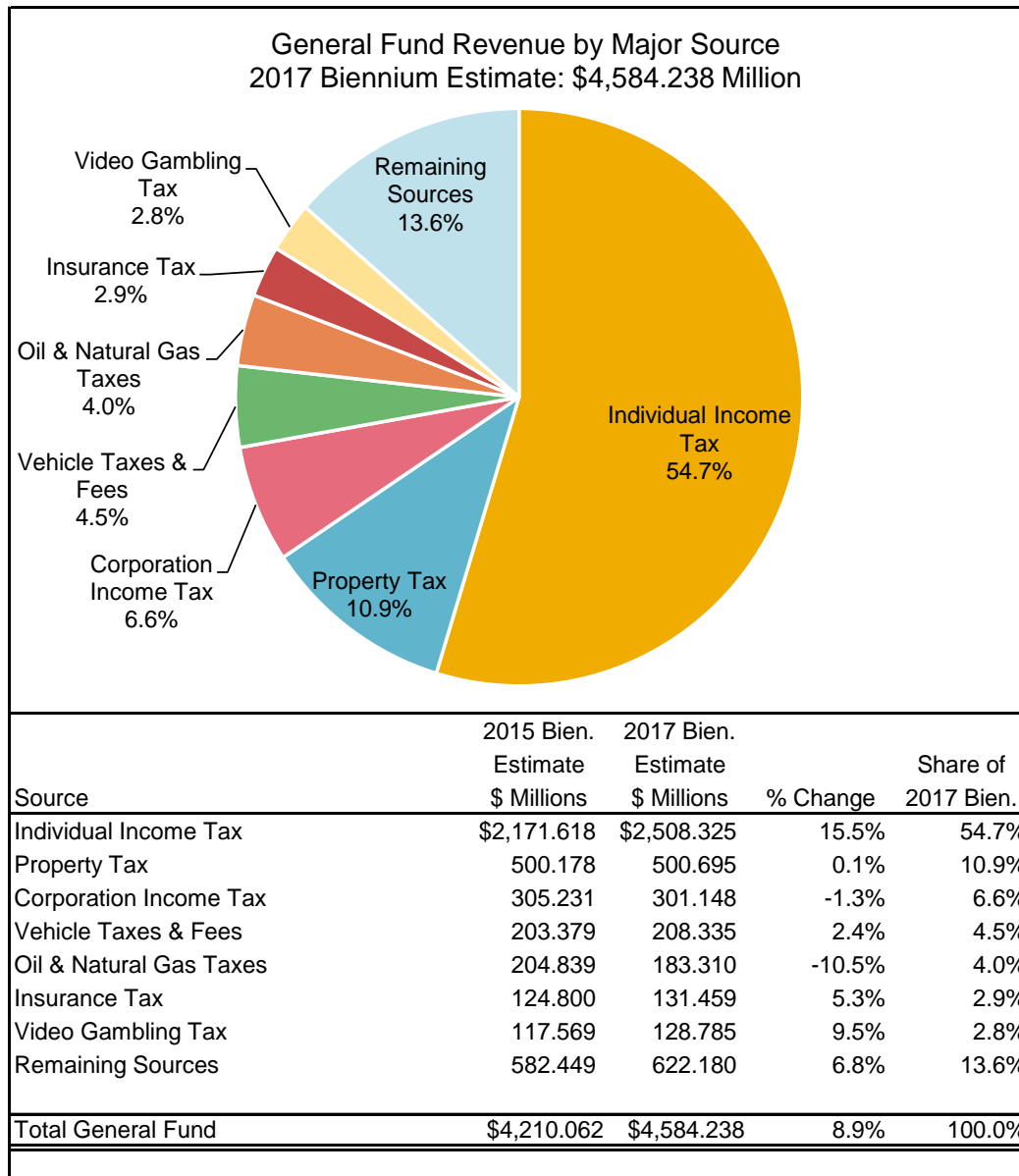
### General Fund Revenue Estimate Recommendations

The table below shows the LFD general fund estimate recommendations by revenue category. Actual FY 2014 collections are shown, along with projections for FY 2015 through 2017.

General Fund Revenue Estimate Summary (\$ Millions)						
Source of Revenue	Actual FY 2014	Estimated FY 2015	Estimated FY 2016	Estimated FY 2017	Estimated 2015 Bien	Estimated 2017 Bien
<b>Largest Seven Sources</b>						
Individual Income Tax	\$1,063.284	\$1,108.333	\$1,212.526	\$1,295.799	\$2,171.618	\$2,508.325
Property Tax	250.344	249.834	245.351	255.344	500.178	500.695
Corporation Income Tax	147.548	157.683	148.626	152.522	305.231	301.148
Vehicle Taxes & Fees	101.088	102.290	103.566	104.769	203.379	208.335
Oil & Natural Gas Production Tax	109.606	95.233	90.628	92.682	204.839	183.310
Insurance Tax & License Fees	60.873	63.928	65.357	66.102	124.800	131.459
Video Gambling Tax	57.147	60.423	62.744	66.041	117.569	128.785
<b>Other Business Taxes</b>						
Driver's License Fee	4.051	4.397	4.082	4.468	8.448	8.550
Investment License Fee	7.115	7.257	7.412	7.567	14.372	14.978
Lodging Taxes	17.725	19.169	20.114	21.316	36.894	41.430
Public Contractors Tax	0.887	2.817	3.560	3.476	3.704	7.036
Railroad Car Tax	2.418	3.641	3.698	3.849	6.059	7.547
Rental Car Sales Tax	3.521	3.749	3.896	4.071	7.271	7.967
Telecommunications Excise Tax	19.657	20.186	19.934	19.771	39.842	39.705
<b>Other Natural Resource Taxes</b>						
Coal Severance Tax	14.745	15.427	16.118	16.612	30.172	32.730
Electrical Energy Tax	4.280	4.721	4.708	4.696	9.001	9.404
Metalliferous Mines Tax	7.948	8.004	8.015	7.491	15.951	15.506
US Mineral Royalty	27.744	26.888	24.726	24.557	54.632	49.282
Wholesale Energy Tax	3.112	3.652	3.629	3.608	6.765	7.236
<b>Other Interest Earnings</b>						
Coal Trust Interest	21.996	20.473	19.849	22.491	42.468	42.340
Treasury Cash Account Interest	1.756	1.605	9.196	21.378	3.361	30.574
<b>Other Consumption Taxes</b>						
Beer Tax	3.023	3.110	3.169	3.229	6.133	6.399
Cigarette Tax	30.623	30.363	30.914	30.191	60.986	61.105
Liquor Excise & License Tax	18.418	19.086	19.720	20.446	37.504	40.166
Liquor Profits	10.500	10.744	11.184	11.618	21.244	22.801
Lottery Profits	12.091	12.596	13.409	14.440	24.687	27.849
Tobacco Tax	5.929	6.235	6.413	6.579	12.165	12.992
Wine Tax	2.250	2.299	2.366	2.438	4.549	4.804
<b>Other Sources</b>						
All Other Revenue	37.320	39.492	36.426	36.656	76.812	73.082
Highway Patrol Fines	4.142	4.224	4.255	4.251	8.366	8.506
Nursing Facilities Fee	4.961	4.859	4.756	4.654	9.820	9.410
Public Institution Reimbursements	17.298	17.123	17.239	17.280	34.421	34.519
Tobacco Settlement	3.646	3.176	3.145	3.115	6.822	6.260
<b>Total General Fund</b>	<b>\$2,077.044</b>	<b>\$2,133.018</b>	<b>\$2,230.731</b>	<b>\$2,353.508</b>	<b>\$4,210.062</b>	<b>\$4,584.238</b>

## Overview

General fund revenue for the 2017 biennium is projected to increase 8.9% over the 2015 biennium projection. As shown in the pie chart below, the largest seven revenue sources are anticipated to account for 85% of general fund revenue in the 2017 biennium; since 2002, these sources have on average accounted for 82% of general fund revenue.



## Overview

### Select Non-General Fund Revenue Estimates Recommendations

The LFD estimate recommendations for selected non-general fund revenue sources are shown in the table below. These estimates are included because of their importance in the budgeting process.

Selected Non-General Revenue Estimates Summary (\$ Millions)						
Source of Revenue	Actual FY 2014	Estimated FY 2015	Estimated FY 2016	Estimated FY 2017	Estimated 2015 Bien	Estimated 2017 Bien
Property Tax: 6 Mill	\$16.156	\$16.006	\$15.914	\$16.613	\$32.162	\$32.527
Natural Resource Taxes						
Federal Forest Receipts	18.675	2.137	2.053	2.017	20.811	4.070
Resource Indemnity Tax	2.279	2.402	2.492	2.565	4.681	5.057
Interest Earnings						
Capital Land Grant Interest and Income	0.666	0.892	1.044	0.880	1.558	1.924
Common School Interest and Income	49.676	50.688	49.673	48.952	100.364	98.625
Cultural Trust Interest	0.504	0.501	0.485	0.472	1.005	0.957
Deaf & Blind Interest and Income	0.275	0.287	0.290	0.285	0.562	0.574
Economic Development Trust	2.822	3.090	3.265	3.478	5.912	6.742
Parks Trust Interest	0.906	0.911	0.892	0.876	1.817	1.768
Pine Hills Interest and Income	0.345	0.388	0.396	0.401	0.732	0.797
Regional Water Trust Interest	2.993	3.207	3.269	-	6.200	3.269
RIT Trust Interest	4.296	4.044	3.787	3.530	8.340	7.317
TSE Trust Interest	9.356	9.708	9.852	10.088	19.063	19.940
Tobacco Trust Interest	6.592	7.041	7.175	7.278	13.633	14.453
Consumption Taxes						
Diesel Tax	75.560	76.411	76.752	77.975	151.972	154.726
Gasoline Tax	139.653	137.310	136.257	135.867	276.963	272.124
GVW and Other Fees	35.923	36.467	37.031	37.595	72.389	74.626
Total Selected Non-General Fund	\$366.678	\$351.488	\$350.628	\$348.869	\$718.166	\$699.497

## Overview

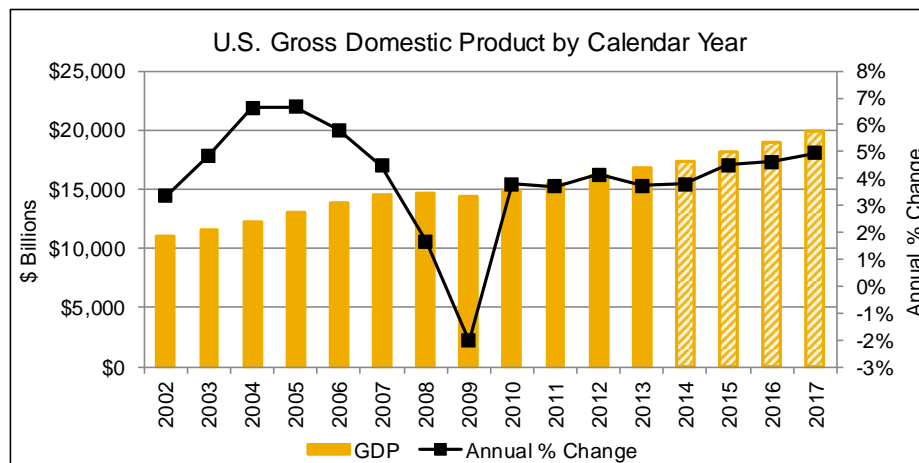
### Economic Outlook for Montana

This section highlights a few of the key national and state-specific economic variables that are used in the revenue estimate. The forecasts for each of these economic indicators—and many others that are also used in the revenue estimate—are provided by IHS.

#### U.S. Economic Indicators

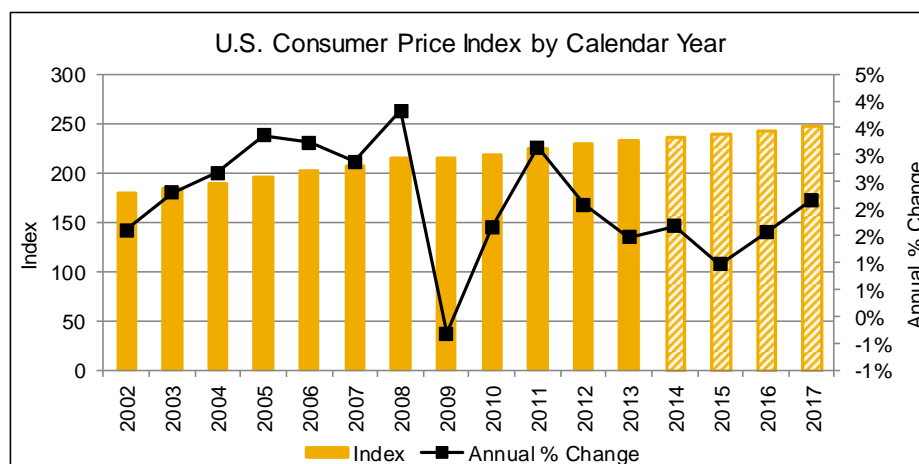
##### Gross Domestic Product (GDP)

GDP is one of the most comprehensive national economic statistics. As noted by the Bureau of Economic Analysis (BEA), GDP is used by the White House and Congress to prepare the Federal budget, by the Federal Reserve to formulate monetary policy, by Wall Street as an indicator of economic activity, and by the business community to prepare forecasts of economic performance that provide the basis for production, investment, and employment planning.



##### Consumer Price Index (CPI)

The inflation rate is measured by the price change of the CPI “shopping basket” of goods and services. Inflation is noted to have both good and bad effects. As prices rise, businesses increase prices and tend to become more profitable. At the same time, the consumer realizes a reduction in disposable income and spends less.

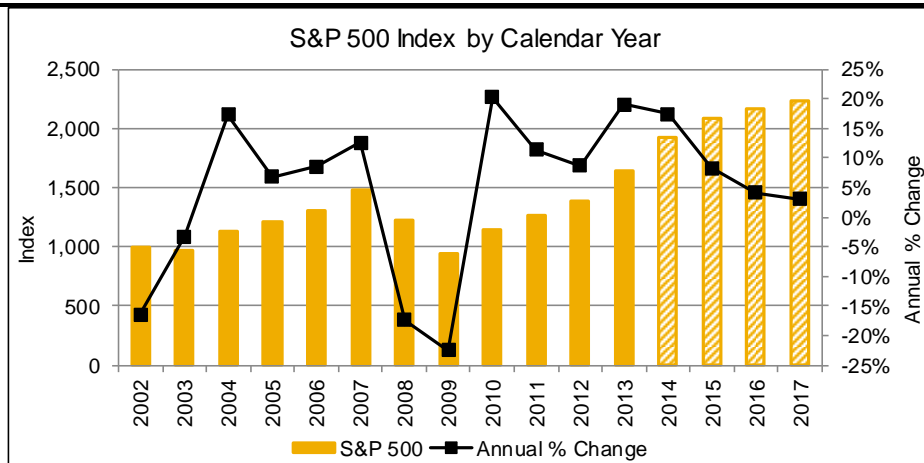


##### S&P 500 Stock Market Index

The S&P 500 is a stock market index based on the market capitalizations of 500 large companies. Due to the diversity of companies, it is a broad representation of the U.S. stock market and is a good indicator for investment income.

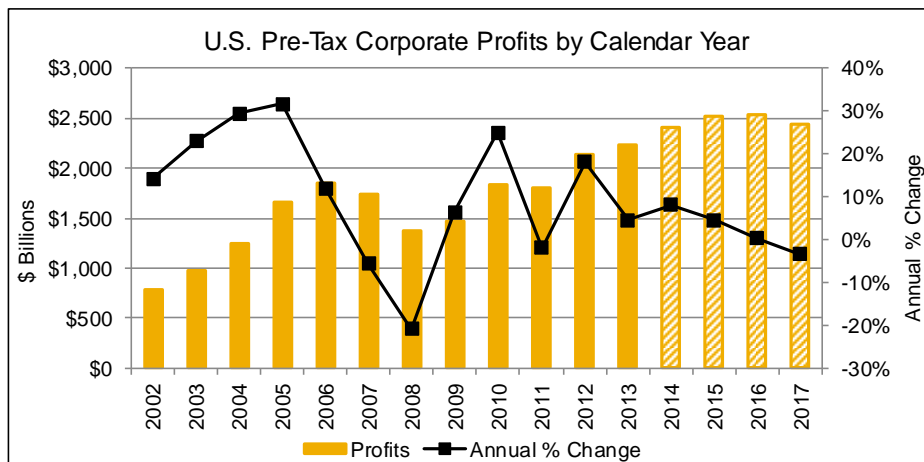


## Overview



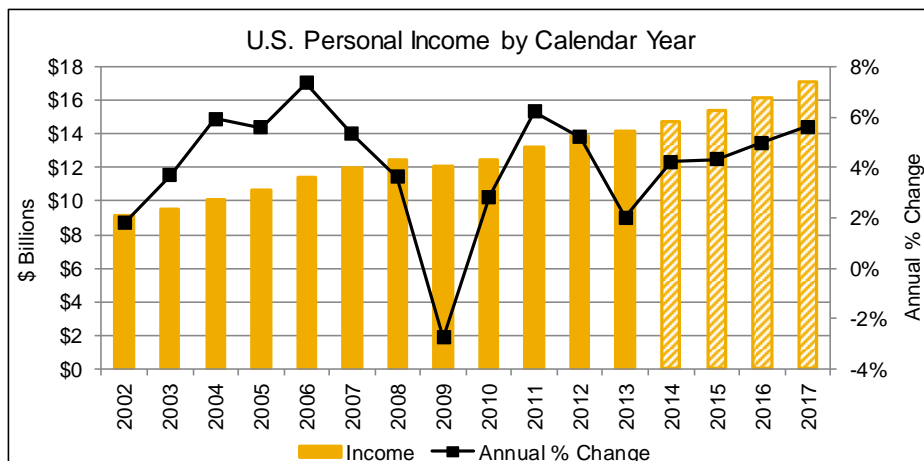
### U.S. Corporate Profits

Corporate profitability affects both corporation license tax and individual income tax estimates. When corporations are profitable nationally, there is an expectation that corporations will be profitable in Montana. Additionally, greater corporate profitability is largely responsible for the amount of dividends corporations pay to stockholders as well as the value of equity investments.



### U.S. Personal Income

Growth in Montana's tourism industry is related to growth in U.S. personal income. In addition, the outlook for U.S. personal income likely impacts the outlook for Montana personal income.

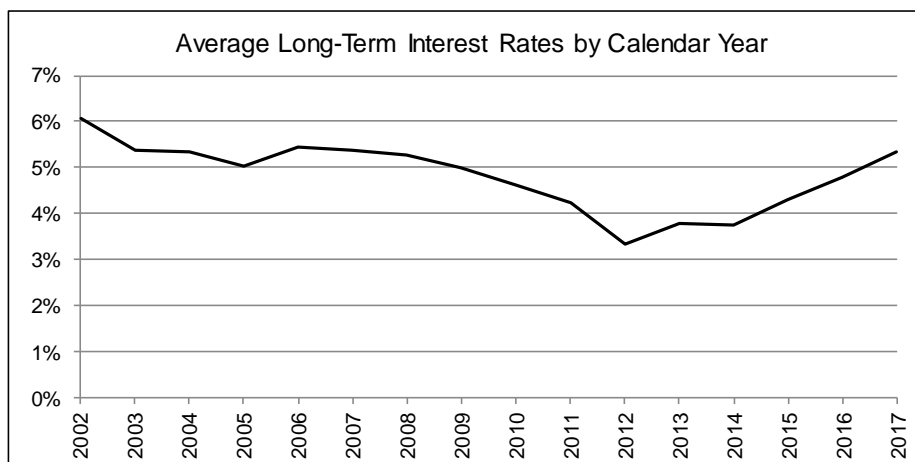
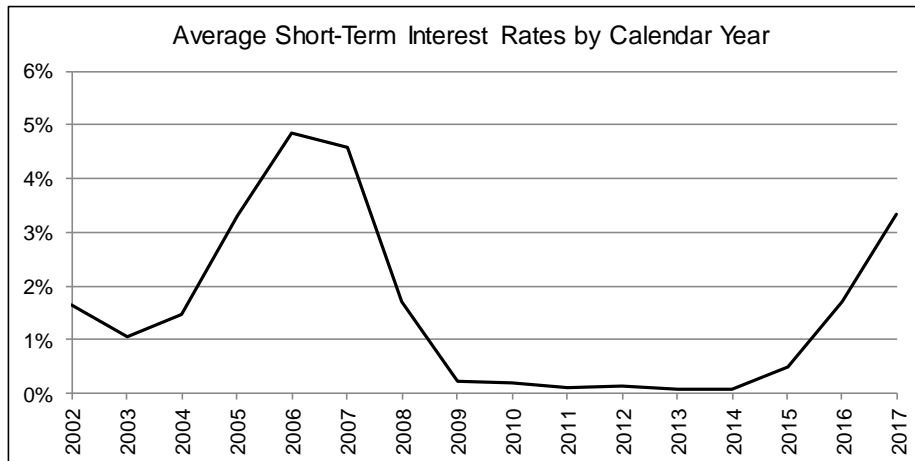


## Overview

### *Long & Short Term Interest Rates*

A large portion of Montana's revenues is derived from investment earnings from trust accounts and daily invested cash. Interest rates also affect the amount of investment income that is reported on individual income tax returns. In addition to the state revenue impact, interest rates impact the climate in which consumers and businesses are likely to make investments and large purchases. While low interest rates produce less revenue for Montana's trust and interest holdings, higher income tax earnings might be expected as construction and sales activities increase.

Short-term rates are an average of 3-month corporate paper and 3 and 6-month Treasury bills. Long-term rates are an average of Corporate Aaa and Baa bonds, 10-year Treasury bonds, and 30-year Treasury bonds.

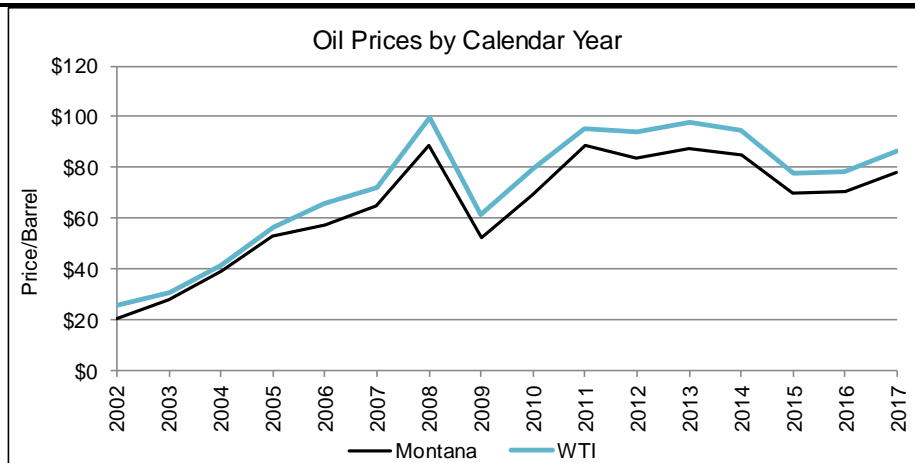


### *Oil Price: West Texas Intermediate (WTI)*

At the national level, lower oil prices tend to correspond with a better economic outlook; manufacturing and transportation costs are lower, and consumers have more income to spend on goods and services. The impact on Montana revenue is more nuanced, however—although overall consumer activity may increase with lower prices, natural resource extraction and related industry activity may also decline, resulting in lower individual, corporation and natural resource tax collections.

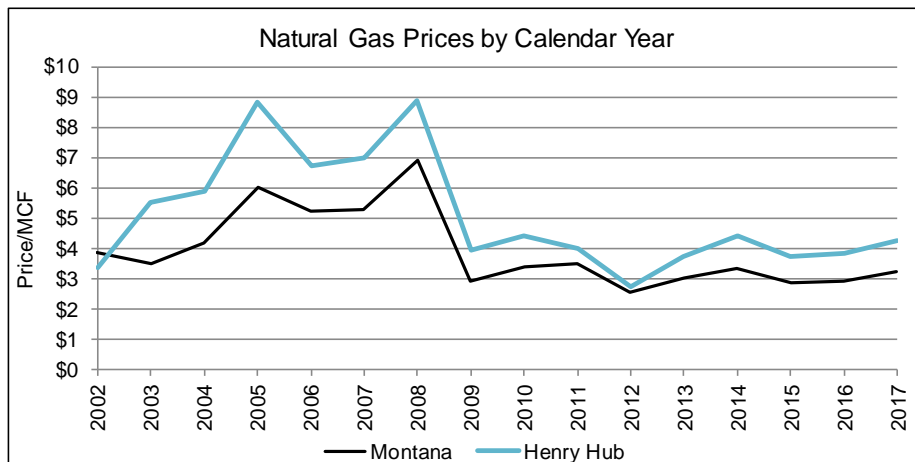
Montana oil price tracks closely with WTI, with an approximate 10% reduction to account for transportation costs.

## Overview



### *Natural Gas Price: Henry Hub*

Montana natural gas price tracks the national Henry Hub price, with an average 24% deduction for transportation costs.

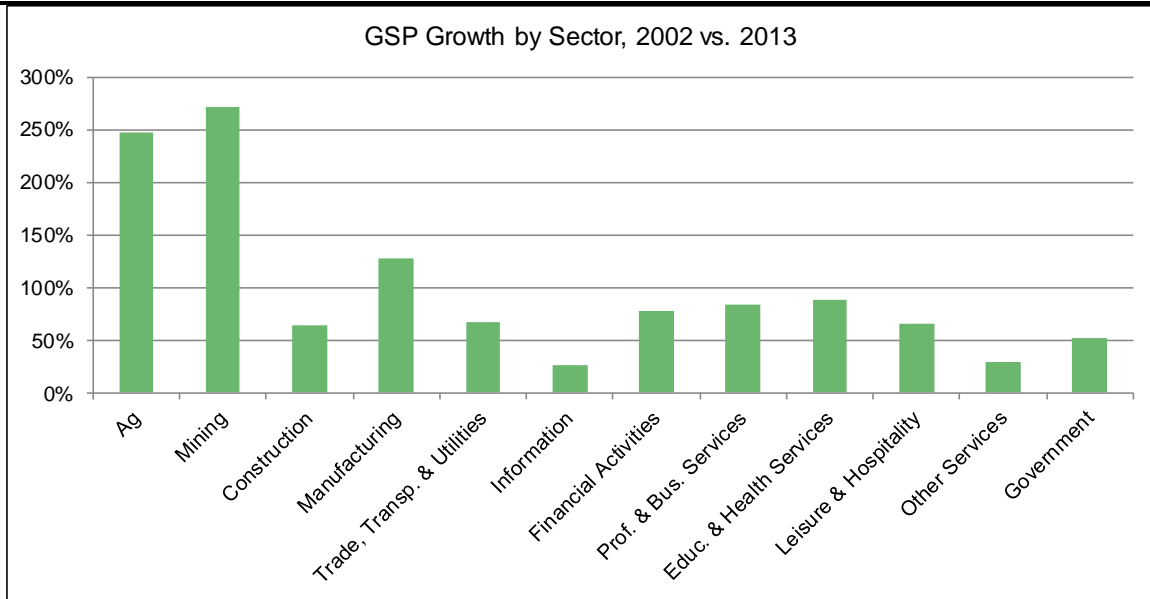


### Montana Economic Indicators

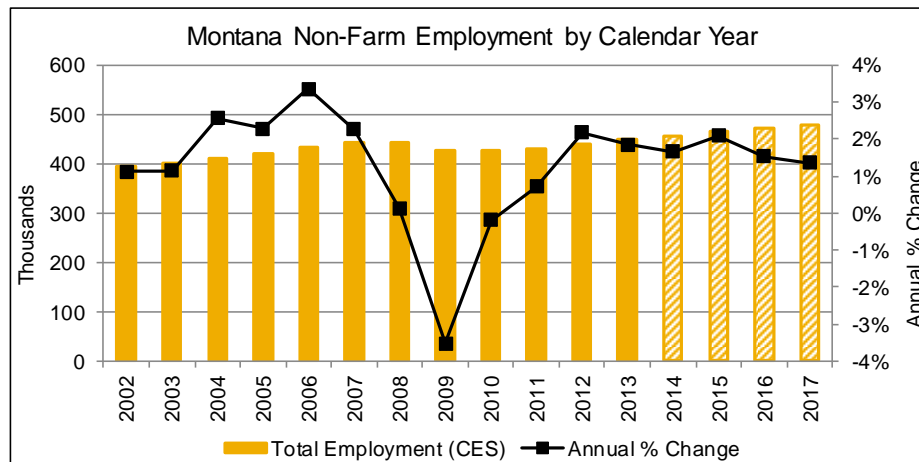
#### *Gross State Product (GSP)*

All broad industry categories have grown since 2002, as measured by GSP; however, the strongest growth has occurred in the agriculture and mining (which includes oil extraction) industries. These two industries combined account for 6.4% of total GSP in 2002, and grew to account for 12.5% of GSP in 2013.

## Overview



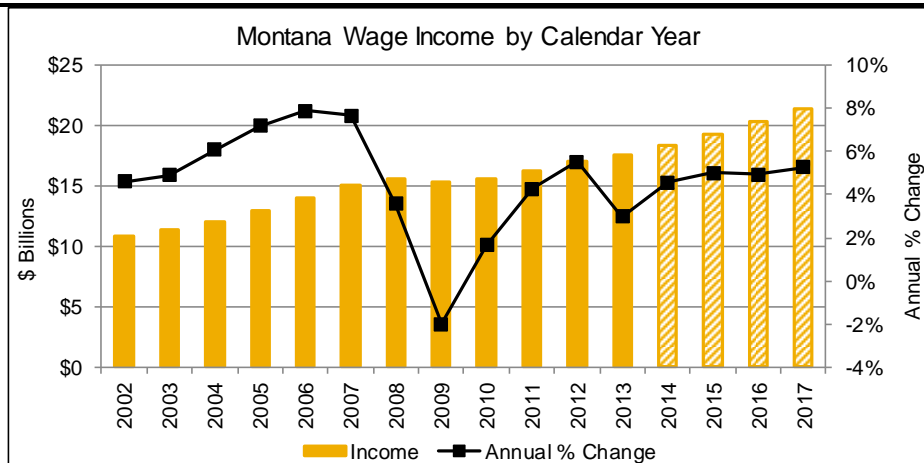
## Employment



## Wages

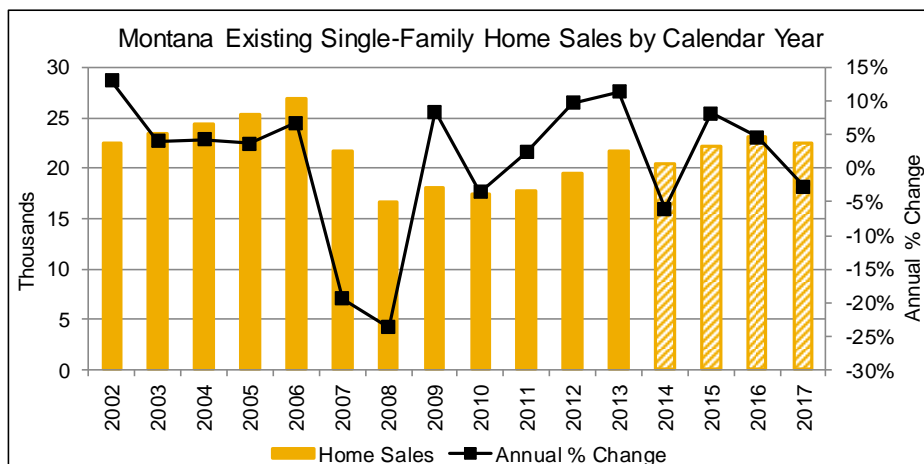
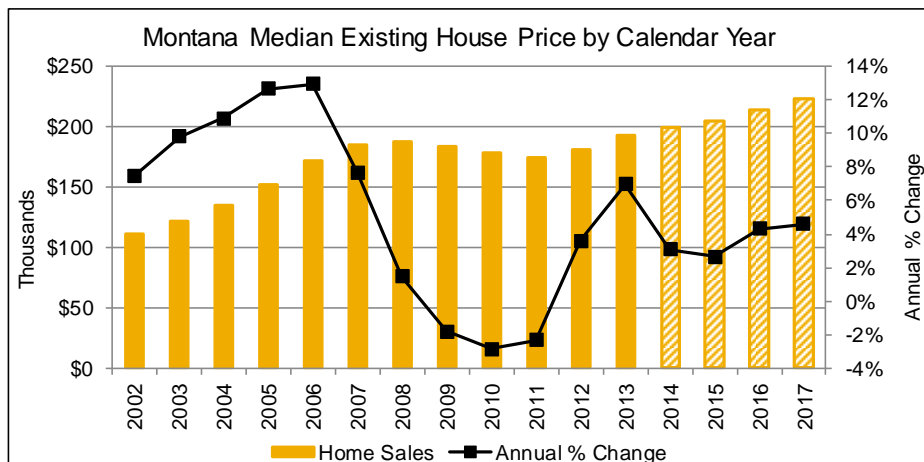
Wage income accounts for nearly two-thirds of individual income, and individual income tax accounts for about half of general fund revenue. Although wage income is not as volatile as several other income or revenue sources, even small changes in the outlook for wage income and produce large swings in the revenue estimate. The IHS wage disbursements variable for Montana is probably the single most important underlying indicator in the entire general fund revenue estimate.

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## Housing

The health of the housing market can be measured by median house price and annual sales. Housing is an important—and leading—measure of economic activity: it drives construction and related industry growth, and reflects household formation and asset accumulation. Housing indicators are used in the individual and corporation income tax estimates.

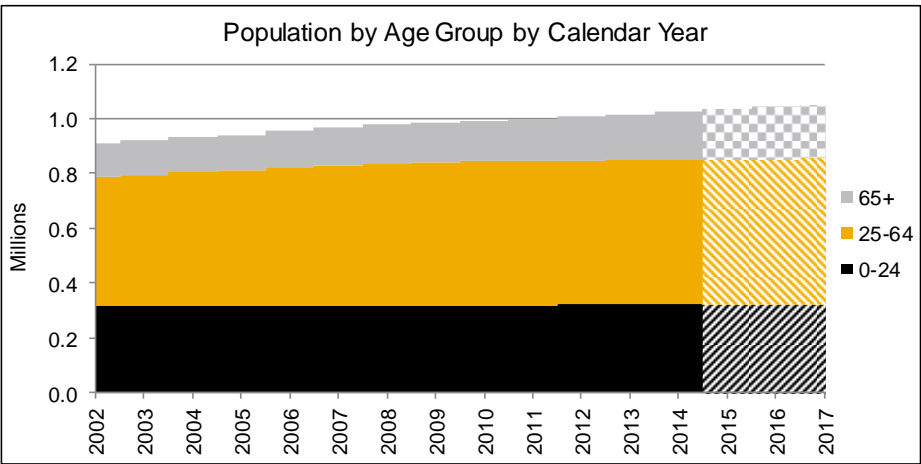
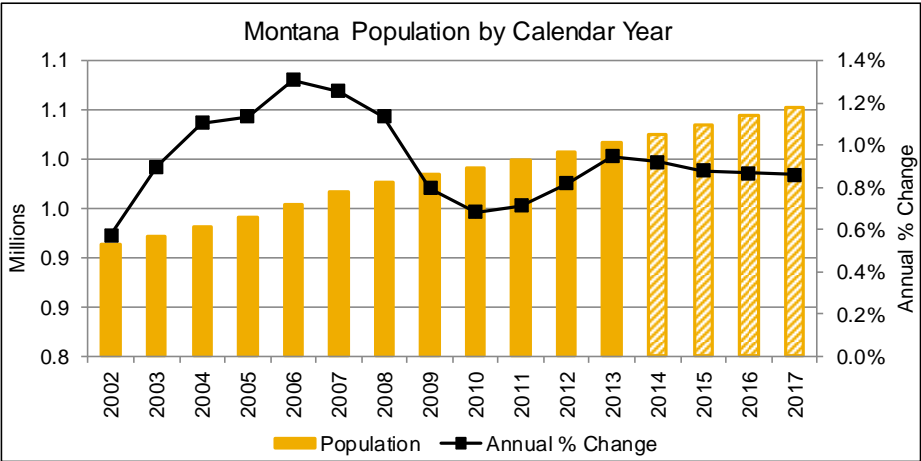


## Population

Population statistics are used to develop estimates for many of the revenue sources including beer, wine, liquor, and cigarette taxes. In addition to those sources where population has a direct effect, the

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size of the population indirectly affects the profitability of all businesses and the employment levels statewide.



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### Estimate Error Analysis

LFD revenue analyst Sam Schaefer has extended his rigorous [standard error analysis](#)—undertaken to better understand the source of estimate volatility and to direct data and model changes that would minimize the estimating error—to all top seven general fund revenue sources, as well as TCA interest earnings.

Each of the revenue estimates in the following table is calculated using a source-specific model. In any given year it is highly unlikely that the model will estimate the actual revenues perfectly. A model may overestimate actual revenues one year, while underestimating revenue the next. Since the direction and magnitude of errors may vary widely from one year to the next, it is difficult to assign a level of certainty to an error term in any specific future year. As a result, to study the overall accuracy of any one model it makes sense to study the model's average error. Studying the average error gives insight into the long-term efficiency of any specific model, and allows for accurate model comparison.

For each revenue source below, a corresponding 95% confidence interval for an estimate of the average error is listed for the estimates one, two, and three years into the biennium. Note that the actual error in a given year will almost always be larger or smaller than the average error, and could fall outside the confidence interval for the average error.

Intervals of Average Error by Estimate Year with 95% Confidence Interval							
Revenue Source	Year 1		Year 2		Year 3		Analysis Notes
	Low	High	Low	High	Low	High	
Individual Income Tax	-10.0%	13.1%	-15.0%	14.6%	-18.2%	13.0%	Represents maximum bound
Property Tax	0.0%	1.4%	-1.6%	1.7%	-1.3%	3.8%	Based on historical estimates
Corporation Income Tax	-5.1%	23.4%	-5.3%	23.9%	-11.7%	27.8%	Based on a proxy model
Vehicle Taxes & Fees	-5.5%	-0.6%	-8.3%	-1.9%	-11.4%	-3.7%	
Oil & Natural Gas Taxes	-5.8%	15.9%	-11.6%	23.4%	-16.5%	28.1%	
Insurance Tax	-3.7%	8.0%	-5.4%	6.8%	-3.3%	10.4%	
Video Gambling Tax	-0.8%	6.5%	-0.9%	7.1%	-4.9%	5.6%	Lower bound of \$0
Treasury Cash Account Interest	0.3%	50.0%	-195.5%	29.8%	-550.8%	-15.8%	

### Key Takeaways

The standard error analysis of the top seven general fund revenue sources, along with TCA, allows for the following:

- Comparison of model efficiency which allows for more focused research in the future
  - Comparison of model types
    - Currently applied to corporation income tax and oil taxes
    - Future application to individual income and others
  - Comparison of IHS forecast accuracy
- Insight into a particular model's tendency to overestimate or underestimate revenue
- Understanding of long-term model accuracy

### Note of Caution

The inquisitive reader may wish to construct an aggregate confidence interval for the sources listed above by simply applying the interval bounds to the corresponding estimate and summing them. This would result in a maximum average error interval. An interval this large, however, is highly unlikely as these revenue sources have an inherent relationship with one another. This relationship often causes estimate error from different sources to partially offset each other. As an example, lower oil prices result in less oil taxes; however, reduced oil prices may actually stimulate other parts of the economy—especially consumer spending—by increasing disposable income.

### Future Work

Currently, data limitations prevent understanding revenue offsetting relationships fully enough to create the average error interval for an aggregate revenue estimate of the sources listed above. As

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more data becomes available in the coming years, the plan is to extend these confidence intervals to a revenue estimate for the entire general fund. Furthermore, more data may provide a means to begin understanding the error term associated with any one year's revenue estimate, as opposed to analyzing its average error.

## General Fund Projection

The graph below shows actual total general fund collections from FY 2002 to FY 2014 and includes LFD estimate recommendations for FY 2015 through FY 2017.

