

**EOS 2020**

# FINDING GOOD WORKERS

New Challenges, New Solutions



**BUREAU OF BUSINESS AND  
ECONOMIC RESEARCH**  
UNIVERSITY OF MONTANA

# ABOUT THE BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is the main research unit of the College of Business at the University of Montana. Established in 1948, its mission is to inform Montanans about the economic climate in which they live and work. In addition to conducting its economic outlook seminar across the state at the beginning of each year, BBER researchers are engaged in a wide range of applied research projects that deal with different aspects of the state economy, including survey research, economic analysis, health care research, forecasting, wood product research and energy research. Contact us at (406) 243-5113 or [bbermail@business.umt.edu](mailto:bbermail@business.umt.edu) if we can be of any help to you or your business.

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# WELCOME TO THE 2020 ECONOMIC OUTLOOK SEMINAR

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## FINDING GOOD WORKERS 4

Patrick Barkey, Director  
Bureau of Business and Economic Research  
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## U.S. & NATIONAL OUTLOOK 10

Patrick Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

## LOCAL ECONOMIC OUTLOOKS 18

Patrick Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

## TOURISM & RECREATION 32

Norma Nickerson, Director  
Institute for Tourism and Recreation Research  
University of Montana

## HEALTH CARE 36

Robert Sonora, Associate Director  
Bureau of Business and Economic Research  
University of Montana

## TECH & STARTUPS 43

Christina Quick Henderson, Executive Director  
Katy Spence, Communications Director  
Montana High Tech Business Alliance

## FOREST INDUSTRY 59

Todd Morgan, Associate Director  
Bureau of Business and Economic Research  
University of Montana

## REAL ESTATE 65

Brandon Bridge, Director of Forecasting  
Bureau of Business and Economic Research  
University of Montana

## AGRICULTURE 76

George Haynes, Professor  
Kate Fuller, Assistant Professor  
Department of Agricultural Economics & Economics  
Montana State University

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EOS 2020

# FINDING GOOD WORKERS

New Challenges, New Solutions

Patrick Barkey, Director  
Bureau of Business and Economic Research



## Finding Good Workers: A Good Problem?

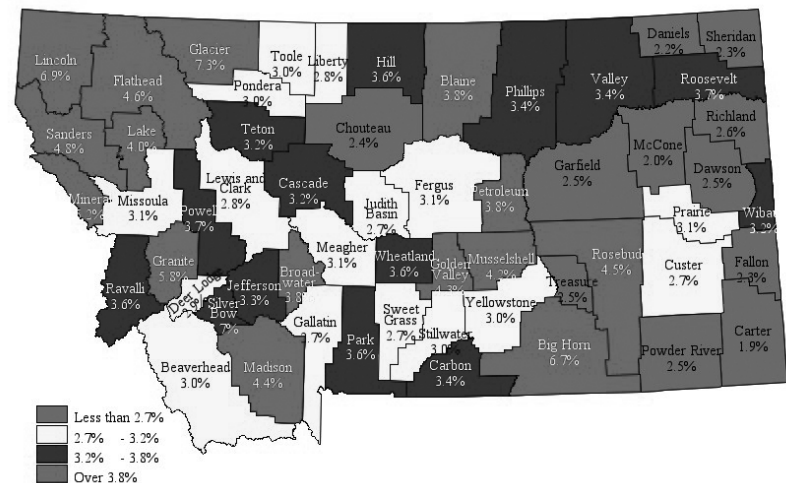
- Tight labor markets are pushing up wages, good for workers
- Low unemployment has always been the goal of economic policy
- Wage pressures from tight labor markets have yet to show up in inflation
- There are “bad jobs” as well as “good workers”
- “The market will fix it”
- Unemployment rates are an inadequate measure of labor market health
- Tight markets reveal daunting challenges producing workers with the right skills
- Some solutions are better than others
- Solutions that tap into under-utilized resources and/or match skill with jobs better are especially attractive

## Less Than One Unemployed Worker for Every Job Opening in the U.S. Economy Today



Source: U.S. Bureau of Economic Analysis

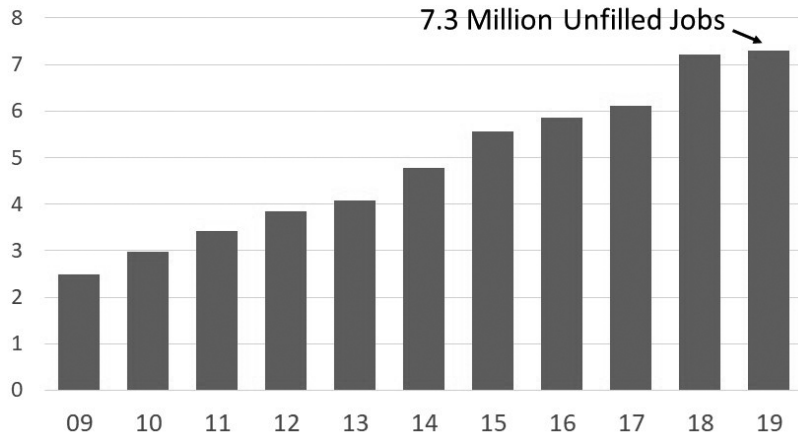
## Unemployment Rates, Nov 2019





## Number of Unfilled Positions Has Doubled in the Last 8 Years

Total Unfilled Job Vacancies, U.S., Millions



Source: OECD

## Why?

1. Demographics
2. Skill Mismatch
3. Generational Change
4. Everything Else

## The Broad Footprint of Demographic Change

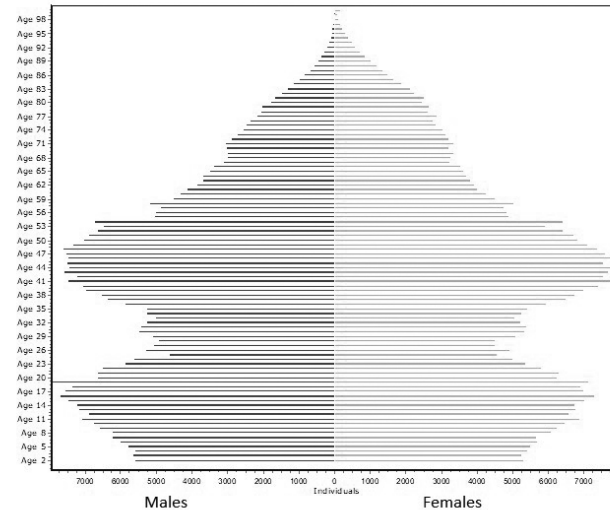
Growth in Older Population Shares



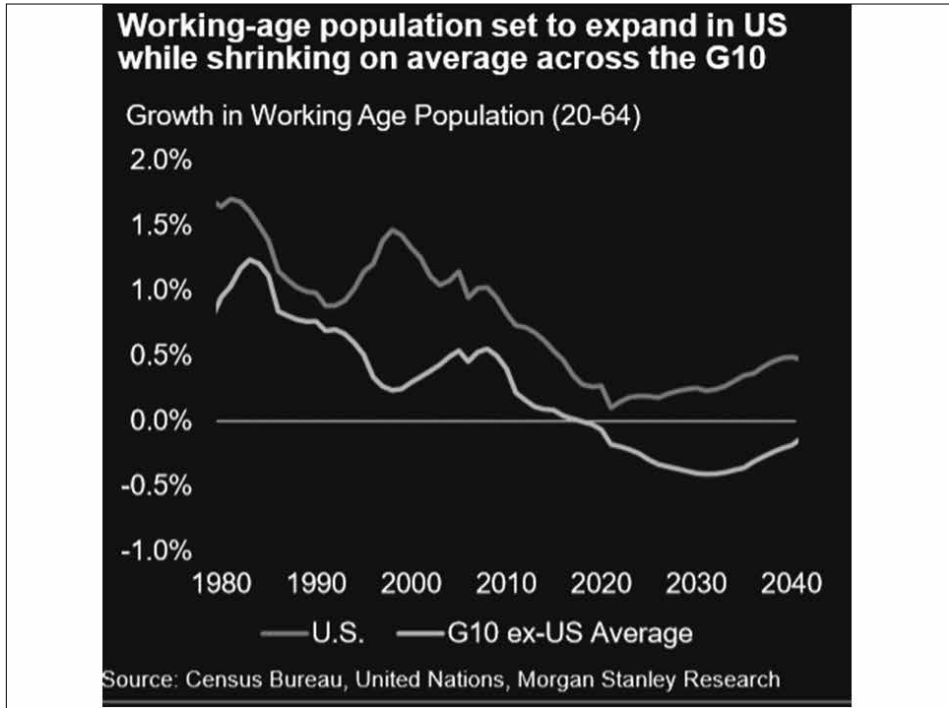
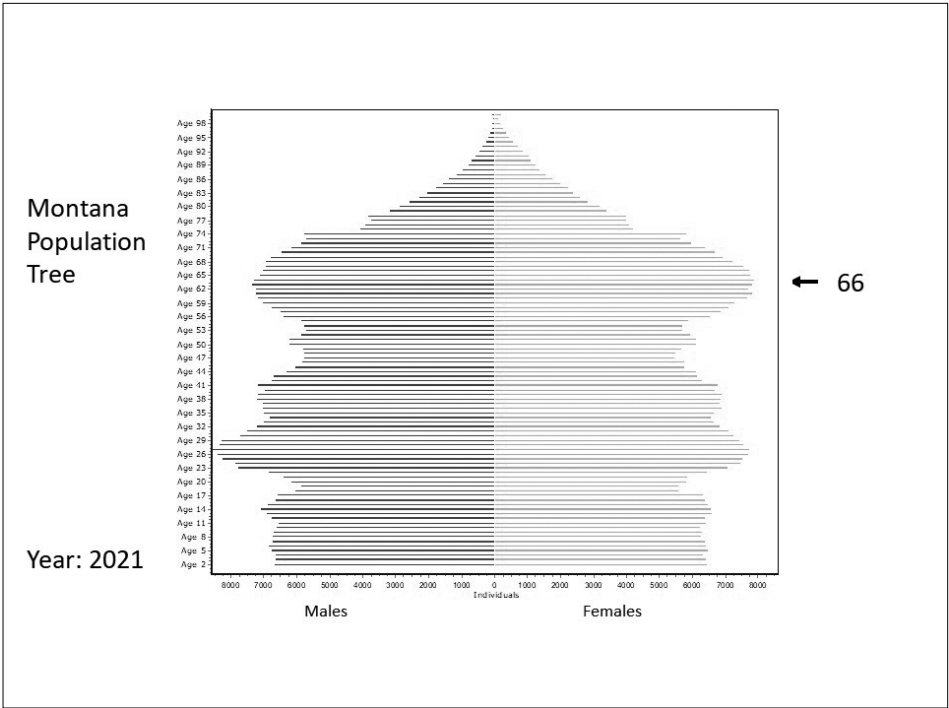
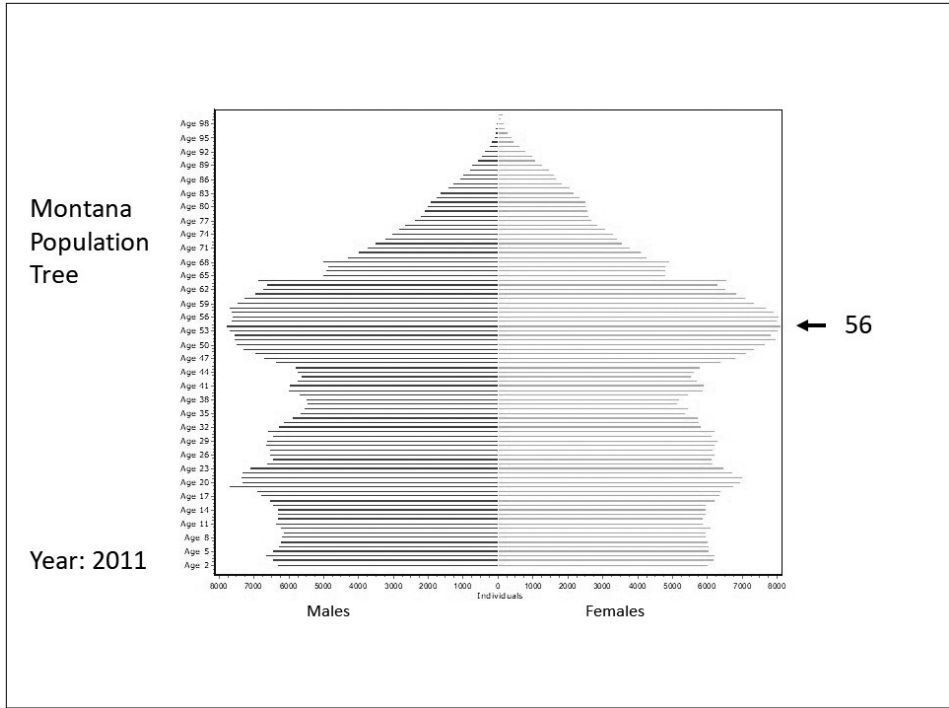
- Economic Growth
- Inflation
- Asset Returns
- Real Estate
- Public and Private Pensions
- Oh yes ... the labor market!

Montana Population Tree

Year: 2001



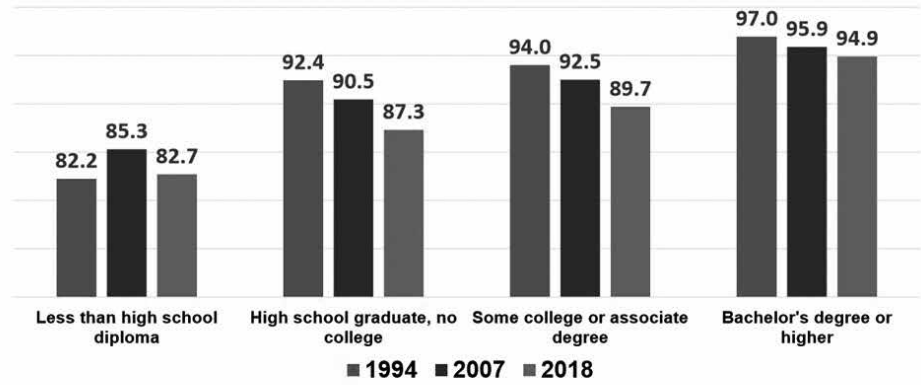
← 46



**Total Population, Share of 80+ and 60+ Groups**

	Total Population		Share of 80+		Share of 60+	
	Population (millions)	Growth (%p.a.)	1985 (%)	2017 (%)	1985 (%)	2017 (%)
World	7,550	1.4	0.9	1.8	8.8	12.7
France	65	0.5	3.2	6.2	18.2	25.7
Germany	82	0.2	3.2	6.3	19.9	28.0
Italy	59	0.1	2.6	7.1	18.7	29.4
Japan	127	0.1	1.7	8.1	14.5	33.4
United Kingdom	66	0.5	3.1	5.1	20.8	23.9
United States	324	0.9	2.6	3.8	16.7	21.5

### Labor force participation rates of White men 25 to 54 years old by education, annual averages

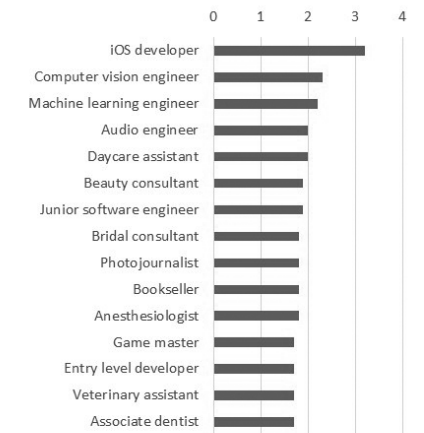


Source: Bureau of Labor Statistics, Current Population Survey.

### More Challenges in the Pipeline?

- Gen Z (born 1996-2010) value job satisfaction, college education, flexible hours more than Millennials
- Half of the most popular jobs they looked at on Indeed are tech jobs (right)
- 3 percent say they want a job in the construction trades (NAHB survey)
- 63 percent of those undecided about careers would consider construction trades even if pay were above \$100,000

Most Popular Jobs of the Next Generation



Source: Indeed.com

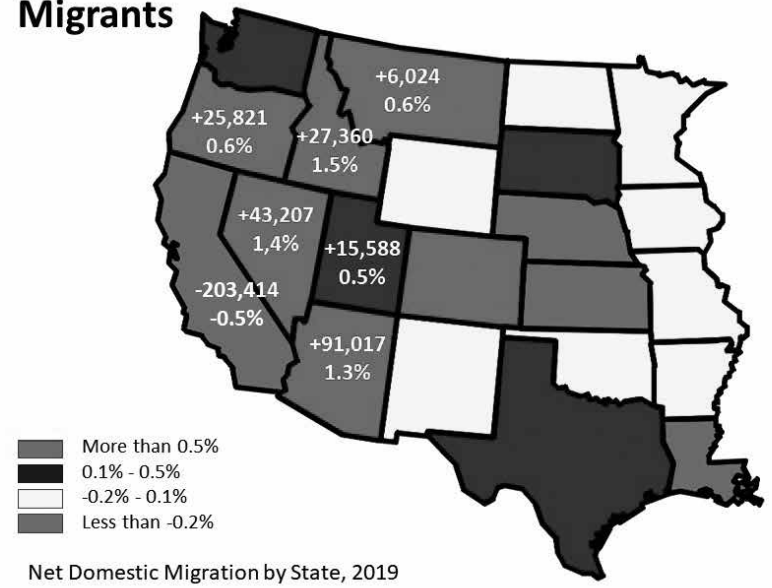
### Wages Are Accelerating, Especially for the Lowest Paid Workers

■ Lowest 25% of earners ■ Highest 25% of earners



Source: Federal Reserve Bank of Atlanta

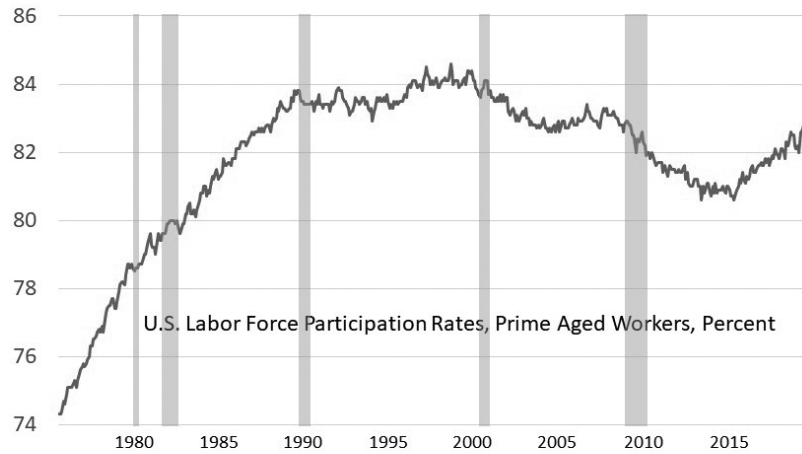
### Non-California West Continues to Attract New Migrants



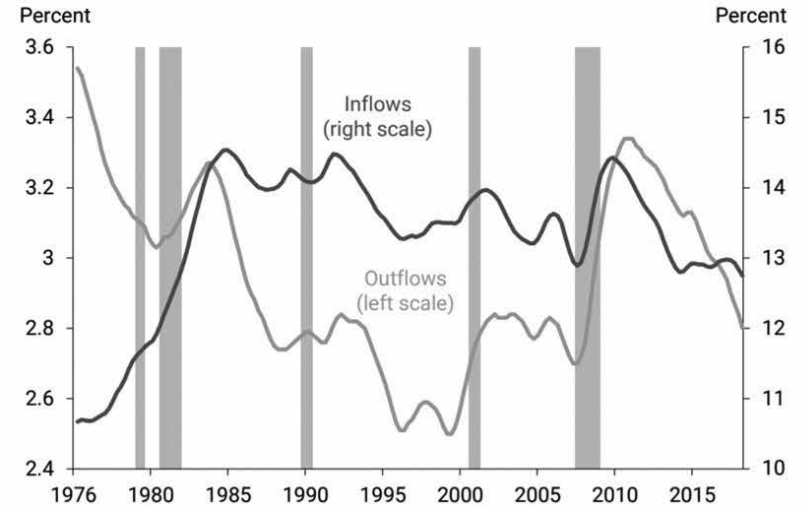
■ More than 0.5%  
 ■ 0.1% - 0.5%  
 ■ -0.2% - 0.1%  
 ■ Less than -0.2%

Net Domestic Migration by State, 2019

## The Market is Working: Strong Hiring is Drawing More Workers Into the Labor Market

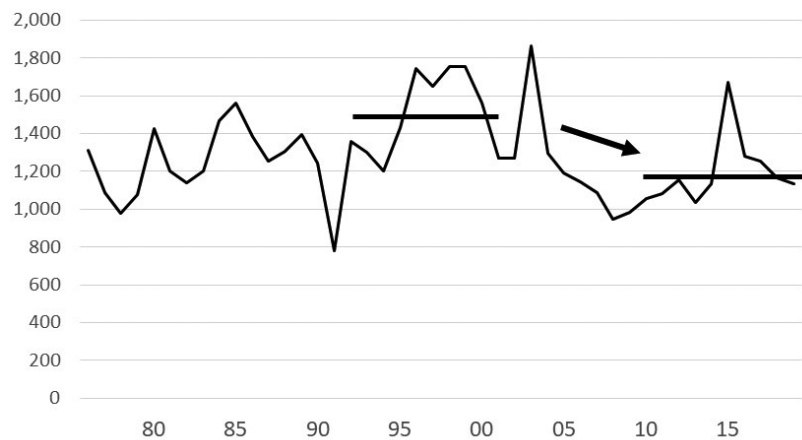


## Second Take: Improved Participation Rates Are Because Fewer People Are Leaving



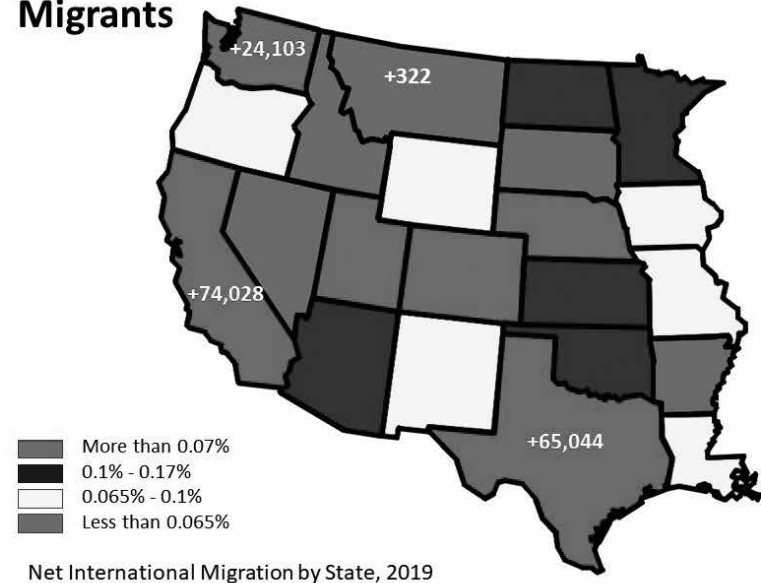
Inflow and Outflow Rates from Labor Force, U.S., Prime Aged Workers  
Source: Federal Reserve Bank of San Francisco

## International Migration is Lower than in the 1990s



Source: U.S. Census Bureau

## Border and Urban States Attract Foreign Migrants



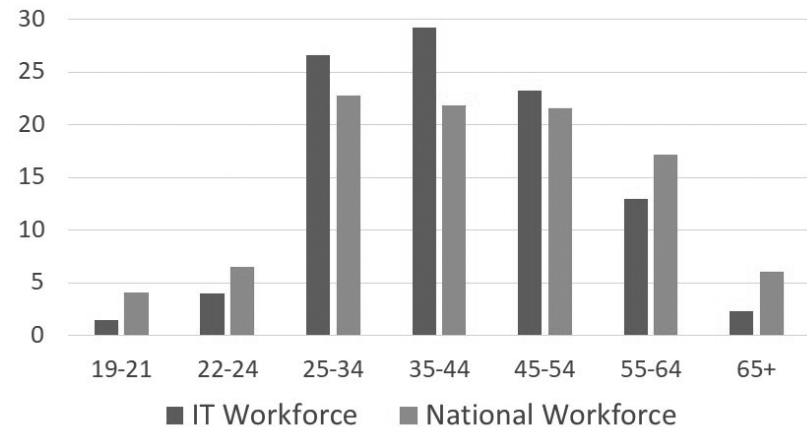
## Retirement Ages: Effective and Official

Retirement Age (Years)	Men		Women	
	Effective	Official	Effective	Official
Korea	72.0	61.0	72.2	61.0
Mexico	71.6	65.0	67.5	65.0
Turkey	66.1	60.0	66.3	58.0
Japan	70.2	65.0	68.8	65.0
New Zealand	68.4	65.0	66.4	65.0
Switzerland	66.0	65.0	64.3	64.0
United States	66.8	66.0	65.4	66.0
United Kingdom	64.6	65.0	63.2	63.0
Italy	62.1	66.6	61.3	65.6
Netherlands	63.5	65.5	62.3	65.5
France	60.0	61.6	60.3	61.6
Germany	63.3	65.0	63.2	65.0

Source: OECD. Red numbers indicate effective is greater than official.

## Information Technology Jobs Skew Young

Workforce by age, U.S., 2019



Source: Wall Street Journal

## What Companies Can Do

- **Pay people more.** This is already happening. Does it grow the total workforce?
- **Search more broadly.** Relax requirements. Look at non-traditional workers. Look outside local area, especially if remote work is feasible.
- **Invest more in training.** Hiring less qualified workers requires more training to bring them up to acceptable skill levels, even if there is a risk they will leave and take work elsewhere.
- **Reconfigure job roles.** Find ways to make existing staff more productive to cover needed functions with existing workers.
- **Recruit future workers.** Connect with middle school-aged people to raise awareness of career opportunities.
- **Automation and outsourcing.**
- **Turning down work.**

## What Policymakers Can Do

(But maybe not if they want to get re-elected)

- **Boost retirement age.** Social Security and Medicare need this change eventually anyway.
- **Increase female labor force participation.** More flexibility and a big expansion in child care availability is needed.
- **Fix immigration policy.** Has always been a U.S. strength.
- **Raise teenage participation.** Compatible with college prep?
- **Re-think drug testing policies.** This is quietly happening already.
- **Reconsider occupation licensing requirements.** These make it harder for two-earner couples to migrate to job opportunities.
- **Explore employment of incarcerated population.**

# The Economic Outlook for Montana and the U.S.

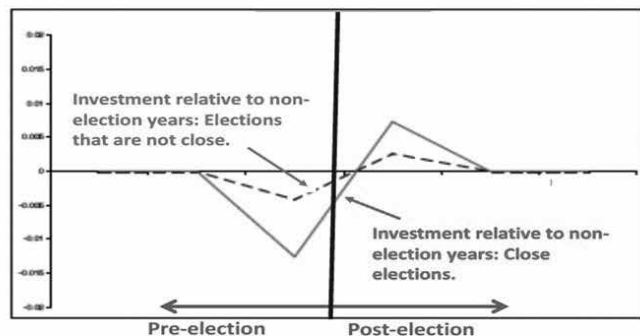
Patrick M. Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

## Is the U.S. Economic Expansion Coming to an End?\*

- Consumer fundamentals remain sound
- Home building perking up
- Yield inversion is over
- Has the global economy stabilized?
- Manufacturing has contracted all year
- Global environment is fragile
- Trade policy has taken a toll on investment
- Oh yes, isn't there an election?

\*Short answer: Nobody really knows, but probably not

## What Happens to Investment in Election Years?\*



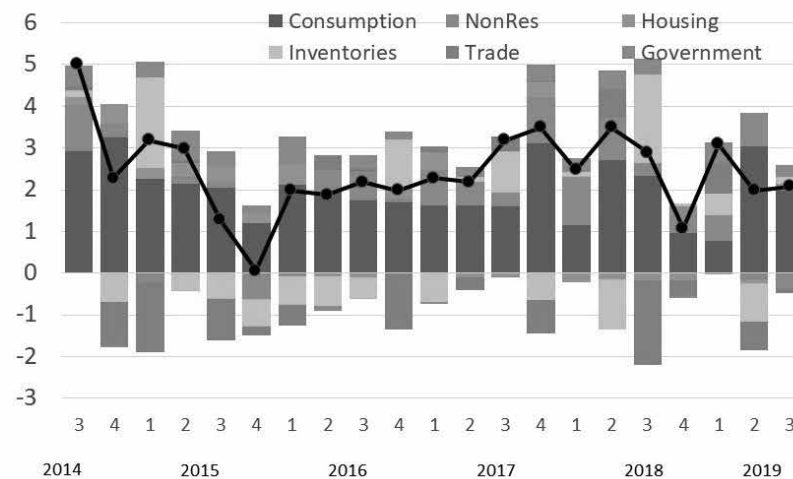
Note: The value "0" represents the level of average investment growth in non-election years.

Source: "Political Uncertainty and Corporate Investment Cycles," Brandon Julio and Youngsuk Yook, 2010.

\*Short answer: Nothing good.

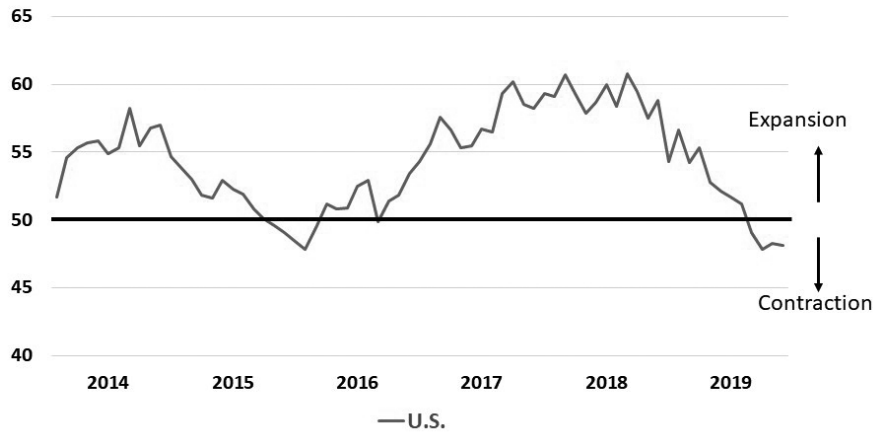
## Consumer Spending is Propelling Recent U.S. Growth

Contribution to Growth in Real Gross Domestic Product, Percent



## Manufacturing Has Been Contracting

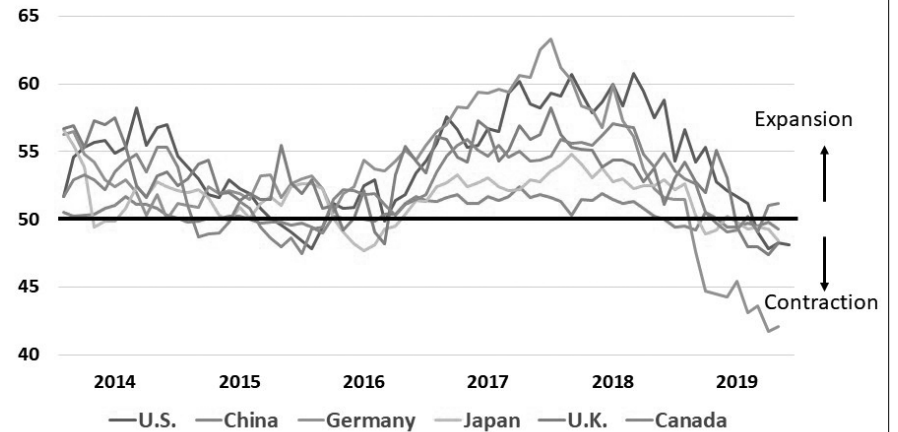
ISM Purchasing Managers Index, Percent



Source: Economy.com

## But It Is Really a Global Phenomenon

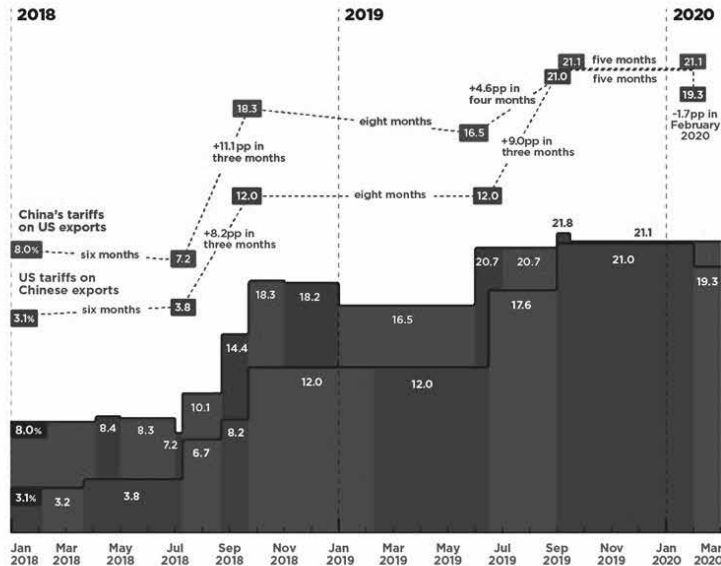
ISM Purchasing Managers Index, Percent



Source: Economy.com

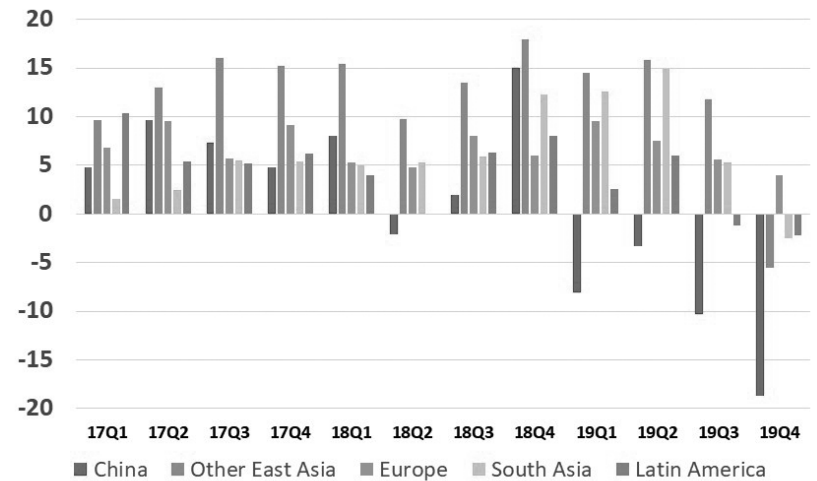
## US-China Trade War Tariffs: An Up-to-Date Chart

Average tariff rate, percent



Source: Peterson Institute

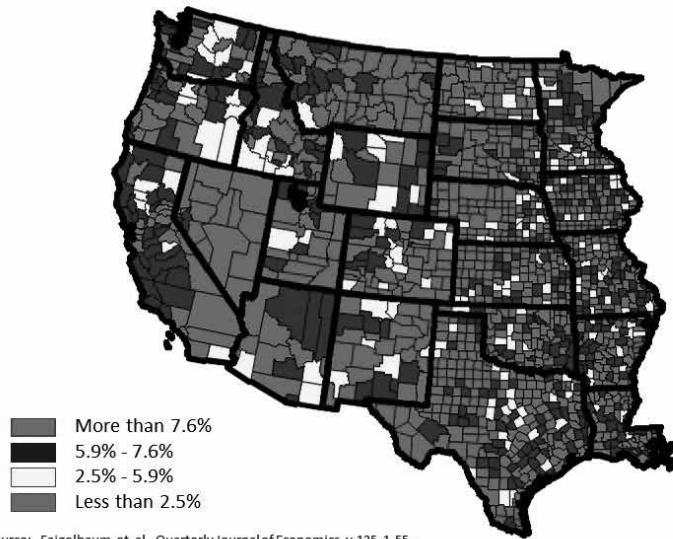
## Tariffs Have Impacted Import Volumes Dramatically



U.S. Container Import Growth by Origin, Year over Year Percent Change

## Montana is Highly Exposed to Retaliation

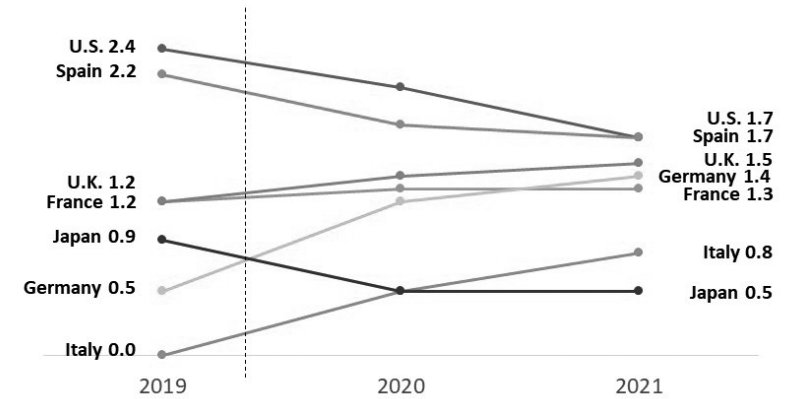
Average Tariff Rates on Traded Sector Production, by County, 2018



Source: Fajgelbaum, et. al., Quarterly Journal of Economics, v.135, 1-55.

## Global Economic Growth Set to Slow

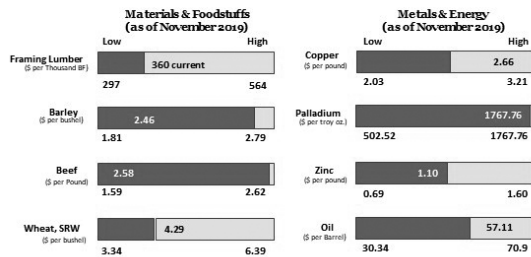
Real GDP Growth, Percent, Actual and Predicted, 2019-22



Source: International Monetary Fund

## Mixed Story for Most Important Commodities

Select Commodity Prices  
November 2019 vs. 5-Year High and Low



Source: World Bank, USDA, Random Lengths

## Copper Prices Closed the Year with Growth

Last Six Months



Source: Macrotrends.net



## Copper Prices Closed the Year with Growth?

Last Year



Source: Macrotrends.net

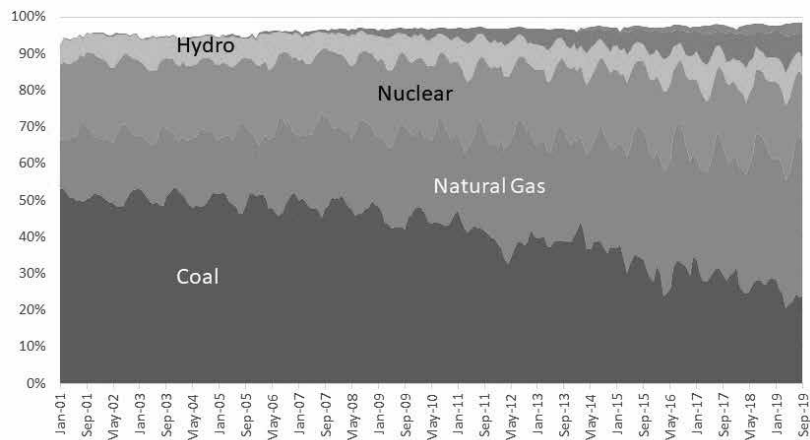
## Copper Prices Closed the Year with Growth??

Last Ten Years



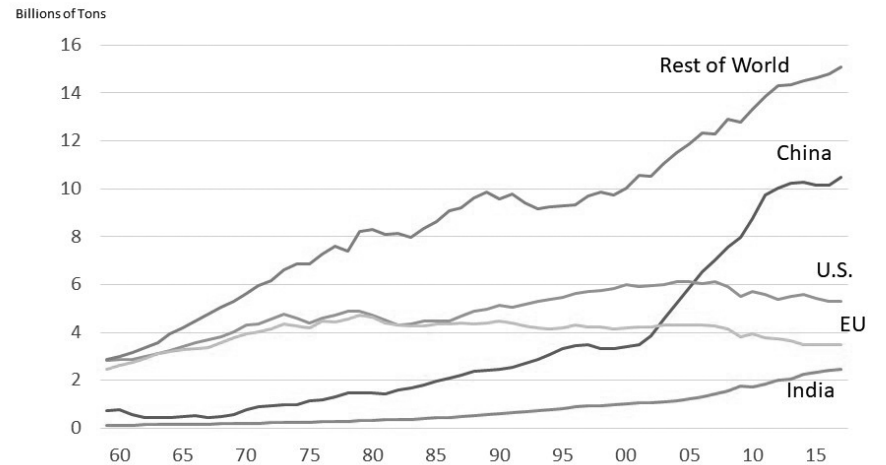
Source: Macrotrends.net

## Market for Thermal Coal Has Shrunk Dramatically Share of Net Electricity Generation by Fuel Type, U.S., percent



Source: U.S. Energy Information Administration

## De-Industrialization of U.S. and EU Reflected in CO2 Emissions

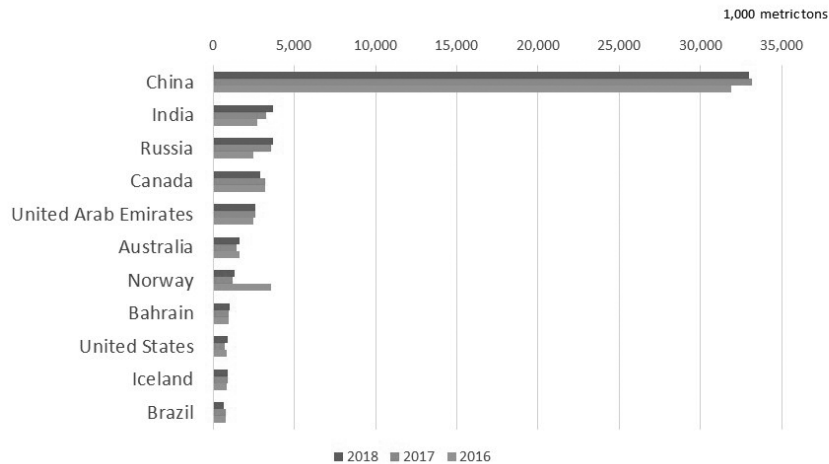


Annual CO2 Emissions from Fossil Fuels by Country, 1959-2017

Source: Global Carbon Project

## China is the World's Aluminum Producer

Smelter Production of Aluminum by Country, 2016-18



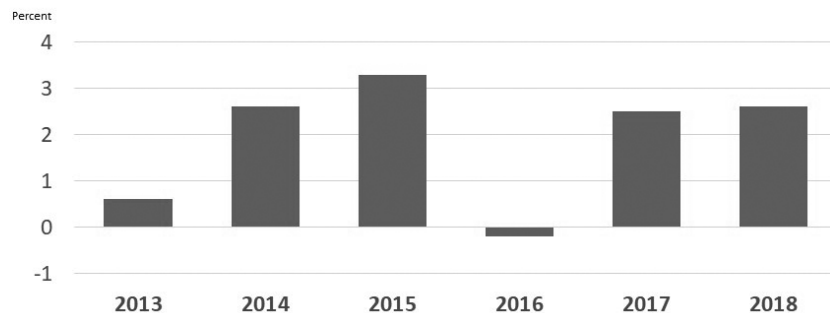
Source: Statista.com

## What We Know About the Montana Economy Today

- Growth since 2016 has continued
- Labor market continues to tighten
- State revenue growth has been good
- Wheat and Calf Prices Down Another 15 Percent
- Dark clouds looming for Powder River basin coal
- Tech is an under-reported good news story
- Gallatin County Now #2 Economy in the State

## State Economic Earnings Was Steady in 2018

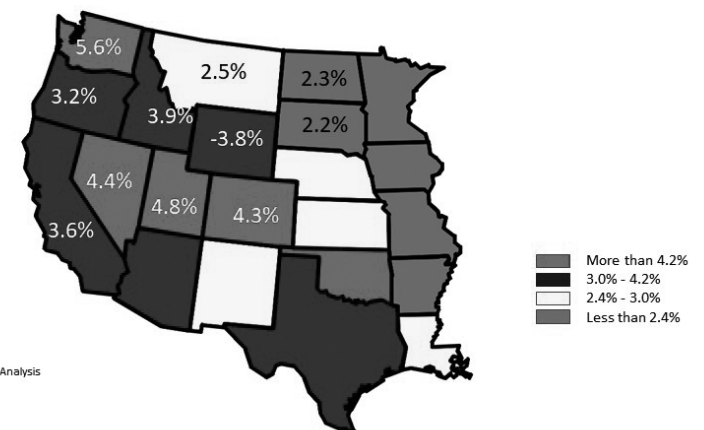
Percent Growth, Inflation-Corrected Nonfarm Earnings, Montana



Source: U.S. Bureau of Economic Analysis

## Montana Growth is Low by Western Standards

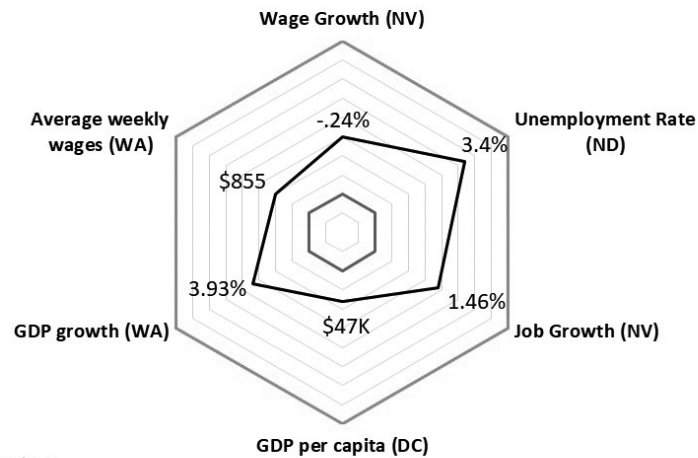
Percent Growth in Real Nonfarm Earnings, 2018



Source: U.S. Bureau of Economic Analysis

## Montana's Relative Economic Performance

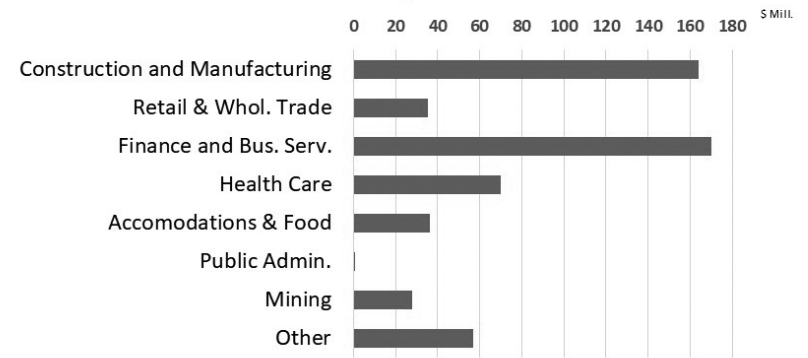
Relative Position Among All States and DC, 2019



Source: howmuch.net

## Growth Carried into 2019

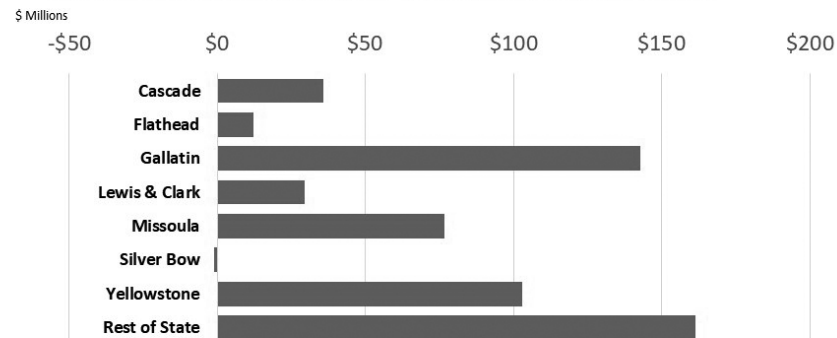
Inflation Corrected Earnings Growth FY18-FY19



Source: U.S. Bureau of Economic Analysis

## Billings and Non-Urban Counties Performing Better

Change in Inflation-Corrected Wages by County, Montana, Through 2019Q2



Source: U.S. Quarterly Census of Employment and Wages

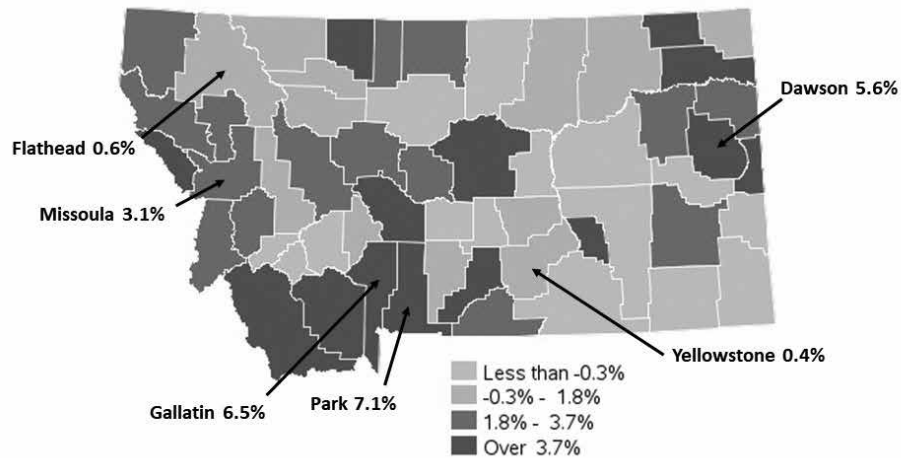
## Another Good Year for State Revenues

General Fund Revenue Sources (\$ Millions)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY18-19	
						Growth	Pct. Growth
<b>Top Seven Sources</b>							
Individual Income Tax	1,175.7	1,184.8	1,168.2	1,297.8	1,429.0	131.2	10.1
Property Tax	247.9	257.1	260.2	276.4	289.2	12.8	4.6
Corporation Income Tax	172.7	118.4	134.0	167.1	186.5	19.4	11.6
Vehicle Taxes & Fees	106.4	108.5	109.2	109.5	109.5	-	-
Oil & Natural Gas Production Tax	73.2	39.1	46.3	54.5	54.2	(0.3)	(0.6)
Insurance Tax & License Fees	66.6	69.3	75.6	75.3	76.1	0.8	1.1
Video Gambling Tax	59.8	60.6	60.0	60.3	63.2	2.9	4.8
<b>Other Selected Taxes</b>							
Lodging Taxes	19.7	21.5	21.8	24.1	26.7	2.6	10.8
Railroad Car Tax	3.7	3.6	3.8	3.6	3.6	-	-
Rental Car Sales Tax	3.9	3.9	3.4	3.7	4.4	0.7	18.9
Telecommunications Excise Tax	18.3	16.8	15.6	13.7	13.2	(0.5)	(3.6)
Coal Severance Tax	16.1	14.2	13.8	14.1	14.1	-	-
Metalliferous Mines Tax	8.3	4.2	4.8	6.3	6.9	0.6	9.5
US Mineral Royalty	27.0	16.8	17.3	20.1	21.6	1.5	7.5
Wholesale Energy Tax	3.8	3.5	3.5	3.6	3.5	(0.1)	(2.8)
<b>General Fund Total</b>	<b>2,199.7</b>	<b>2,121.3</b>	<b>2,141.5</b>	<b>2,405.4</b>	<b>2,573.6</b>	<b>168.2</b>	<b>7.0</b>

Source: Montana Legislative Fiscal Division

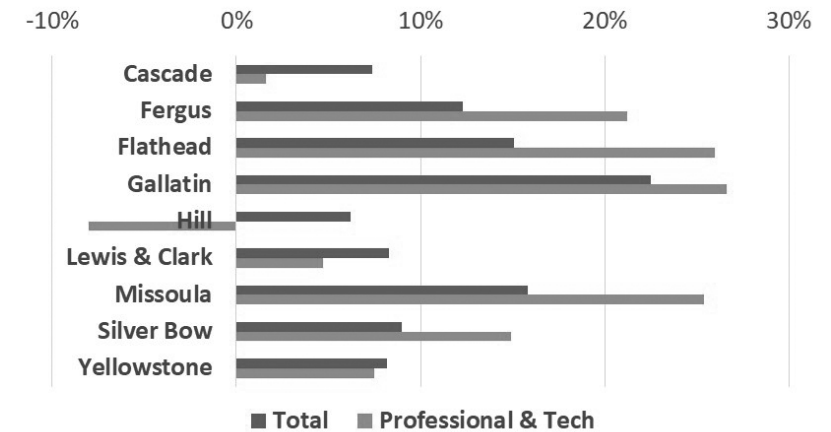
## Recent Growth Tilts West/Southwest

Percent Change in Real Wages, 18Q2-19Q2



## Tech Underlies the Faster Growth Since 2015

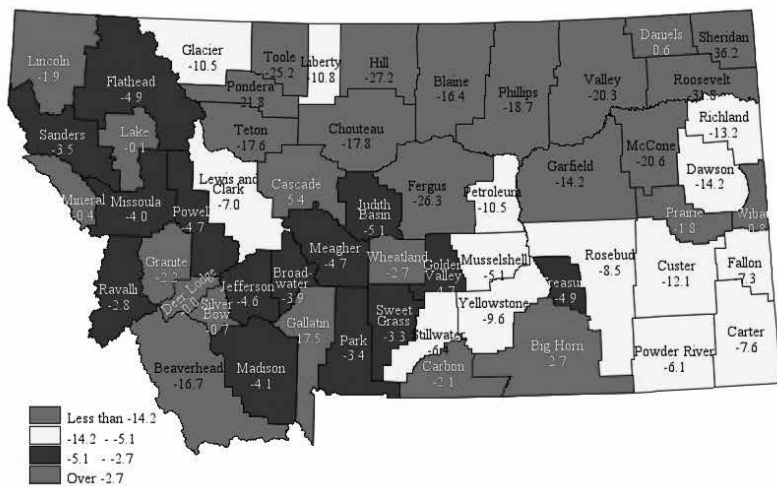
Percent Growth in Earnings Since 2015



Source: U.S. Bureau of Economic Analysis

## Declines in Farm Earnings Are Widespread

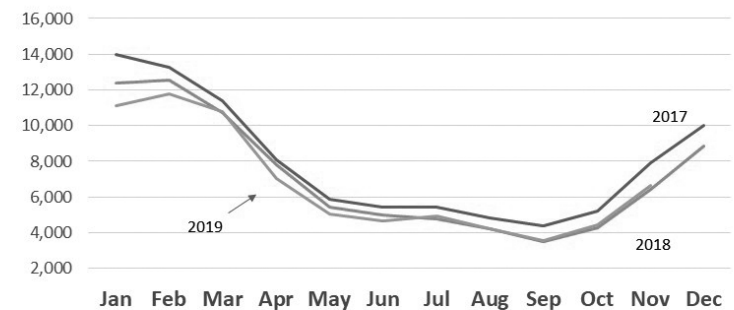
Change in Farm Earnings, 2018 vs. 2013, \$ Millions



Source: U.S. Bureau of Economic Analysis

## Montana Labor Market Still Tight

Unemployment Insurance Claims, 2017-19

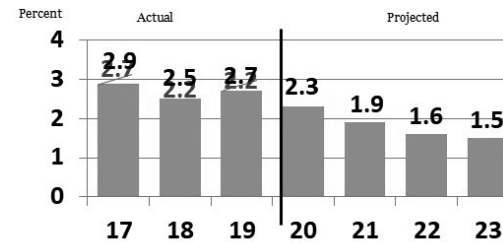


Source: Montana Department of Labor and Industry

## Outlook for Montana's Key Industries

- State faces new challenges, but with good momentum
- Closures in Colstrip, coal upheaval will hurt
- Commodity businesses (except palladium) face prospect of price declines
- Federal government spending is good for Montana
- Tech, construction, manufacturing propelling western growth
- Residential construction is the wild card

Growth in Nonfarm Earnings,  
Montana, 2017-23



Source: BBER and U.S. Bureau of Economic Analysis

# The Outlook for Cascade County

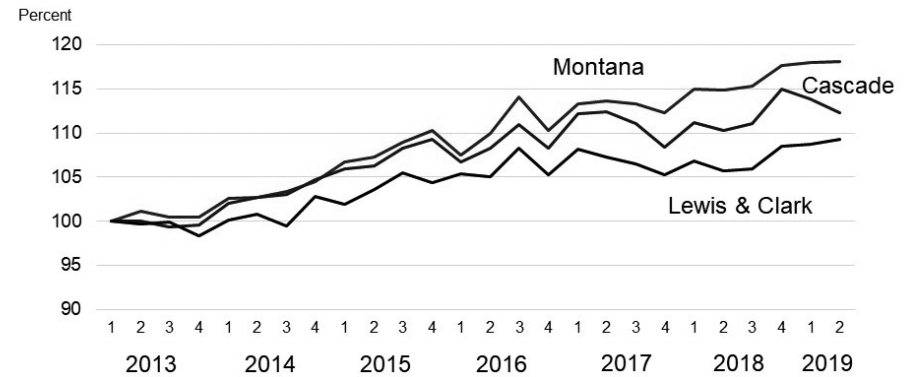
Patrick M. Barkey, Director  
 Bureau of Business and Economic Research  
 University of Montana



Cascade Outlook

## Growth in Total Wages Since 2013

Inflation-adjusted Covered Wages, Index, 2013=100



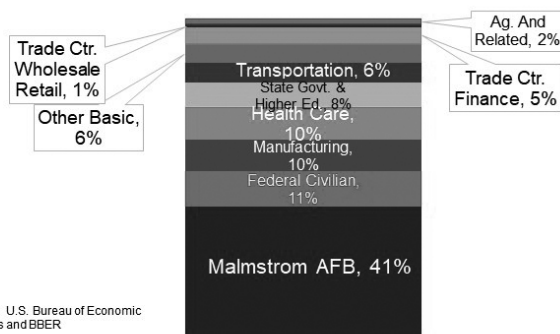
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis



Cascade Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Cascade County

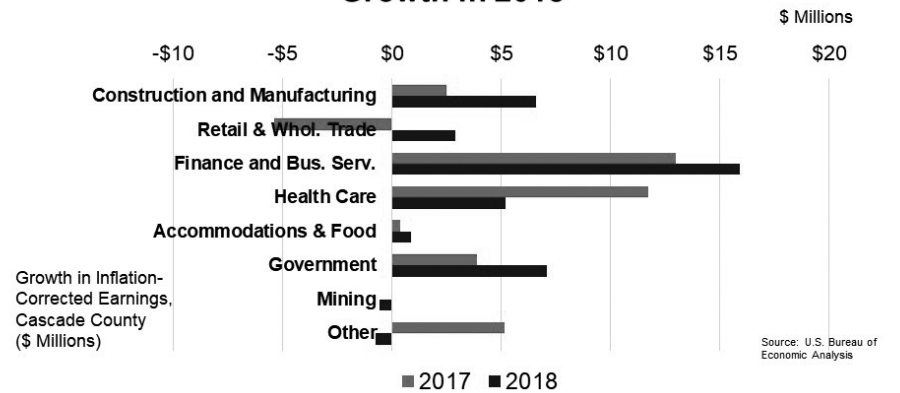


Source: U.S. Bureau of Economic Analysis and BBER



Cascade Outlook

## Finance and Business Services Led Growth in 2018

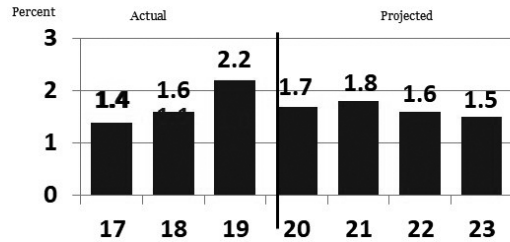


Source: U.S. Bureau of Economic Analysis



Cascade Outlook

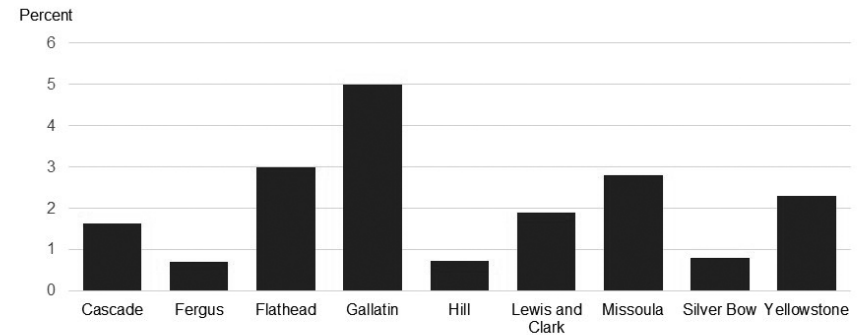
**Growth in Nonfarm Earnings,  
Cascade County, 2017-2023**



Source: BBER and U.S. Bureau of Economic Analysis

**Gallatin County Expected to Pace Growth**

Average Growth, 2020-23, Percent per Year



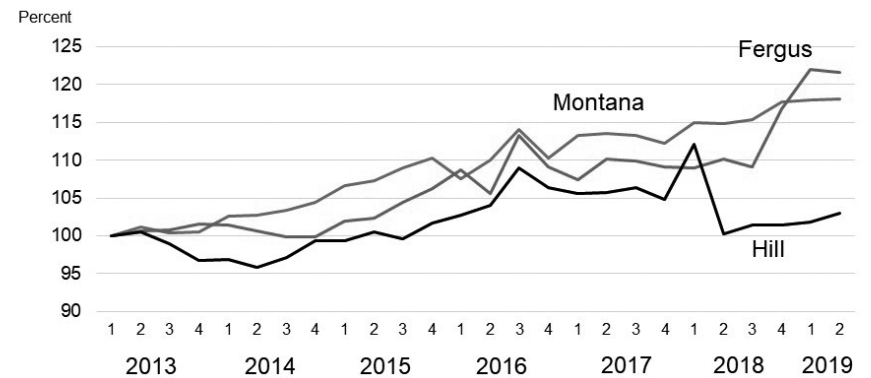
Source: Bureau of Business and Economic Research

**The Outlook for Fergus County**

Patrick M. Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

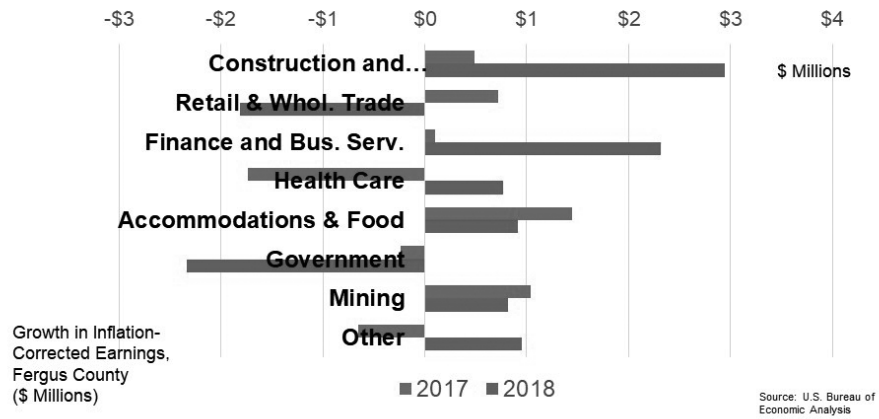
**Growth in Total Wages Since 2013**

Inflation-adjusted Covered Wages, Index, 2013=100



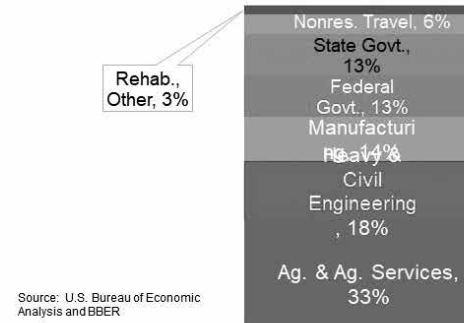
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

## Manufacturing and Business Services Were Bright Spots in 2018

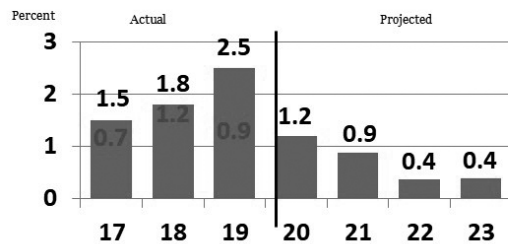


## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Fergus County



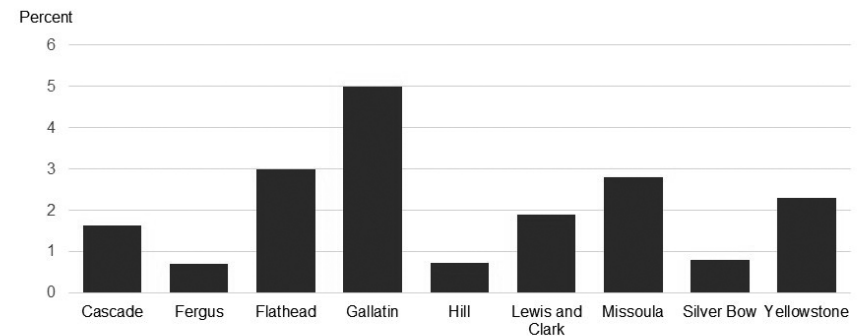
## Growth in Nonfarm Earnings, Fergus County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

## Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



Source: Bureau of Business and Economic Research



# The Outlook for Flathead County

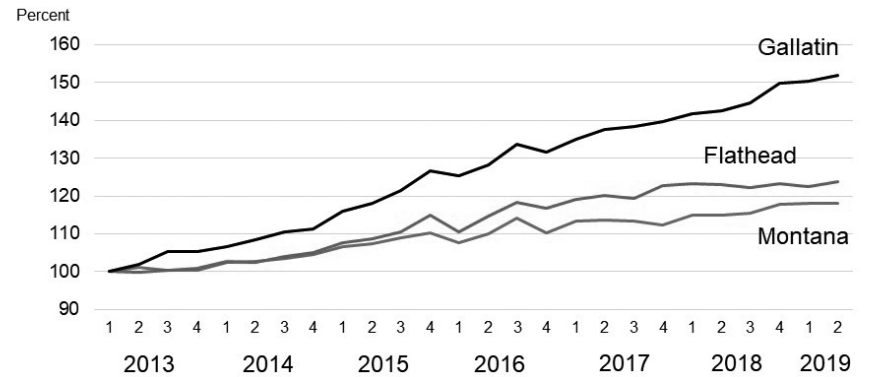
Patrick M. Barkey, Director  
 Bureau of Business and Economic Research  
 University of Montana



Flathead Outlook

## Growth in Total Wages Since 2013

Inflation-adjusted Covered Wages, Index, 2013=100



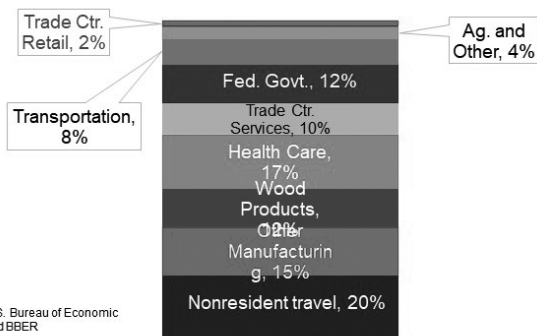
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis



Flathead Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Flathead County

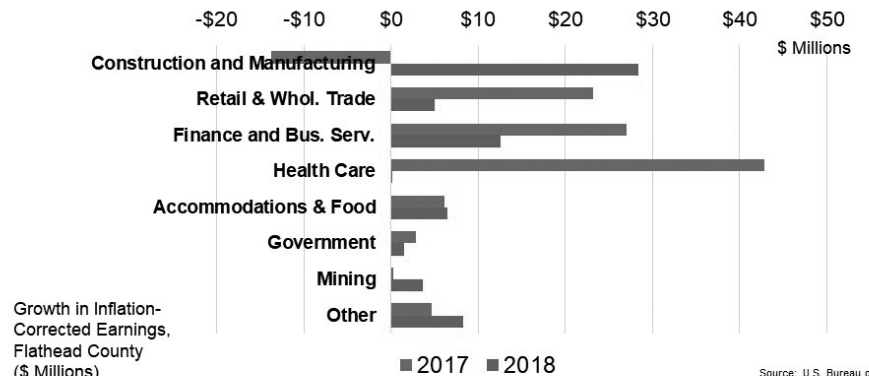


Source: U.S. Bureau of Economic Analysis and BBER



Flathead Outlook

## Fall Back in Health Care was Dramatic in 2018



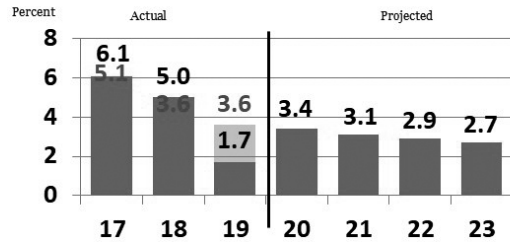
Growth in Inflation-Corrected Earnings, Flathead County (\$ Millions)

Source: U.S. Bureau of Economic Analysis



Flathead Outlook

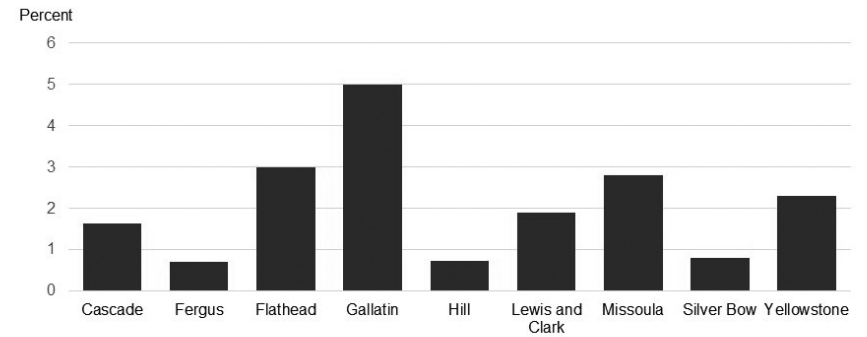
Growth in Nonfarm Earnings,  
Flathead County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



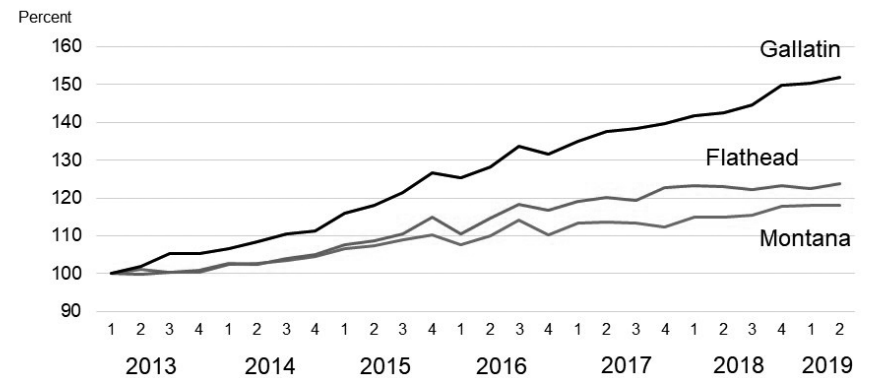
Source: Bureau of Business and Economic Research

The Outlook for Gallatin County

Patrick M. Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

Growth in Total Wages Since 2013

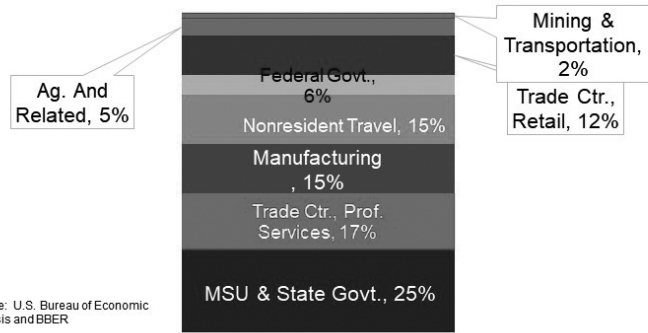
Inflation-adjusted Covered Wages, Index, 2013=100



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

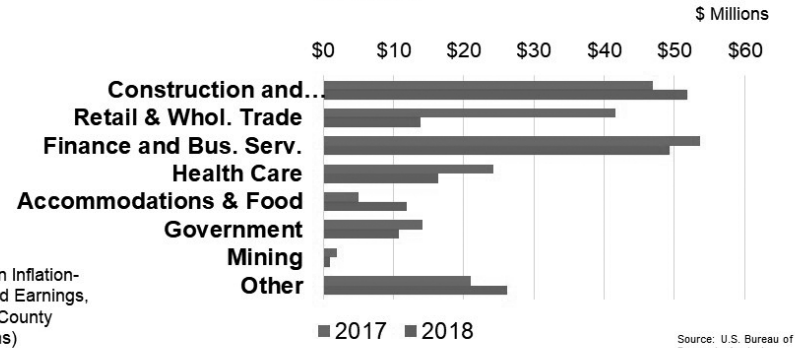
### Drivers of Economic Activity

Percent Share of Income in Basic Industries, Gallatin County



Source: U.S. Bureau of Economic Analysis and BBER

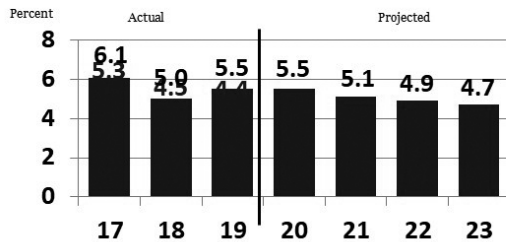
### Strong Growth Remained Broadbased in 2018



Growth in Inflation-Corrected Earnings, Gallatin County (\$ Millions)

Source: U.S. Bureau of Economic Analysis

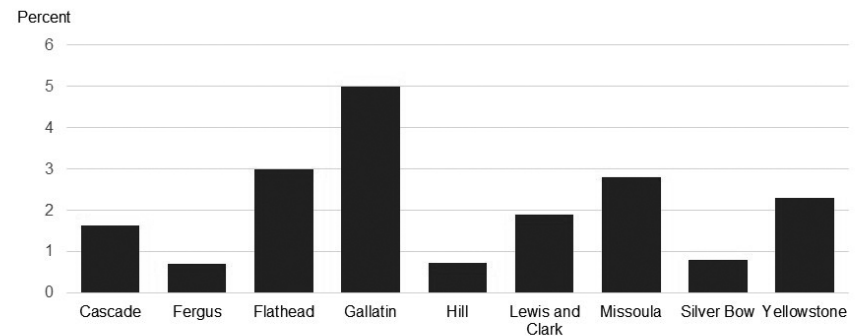
### Growth in Nonfarm Earnings, Gallatin County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

### Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



Source: Bureau of Business and Economic Research

# The Outlook for Hill County

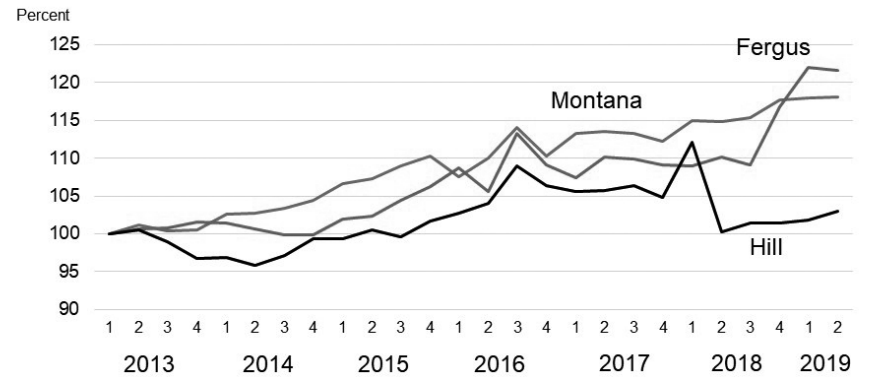
Patrick M. Barkey, Director  
 Bureau of Business and Economic Research  
 University of Montana



Hill Outlook

## Growth in Total Wages Since 2013

Inflation-adjusted Covered Wages, Index, 2013=100



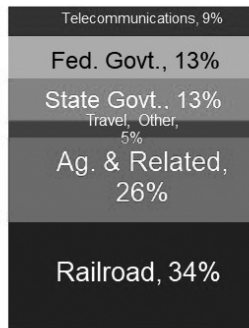
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis



Hill Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Hill County

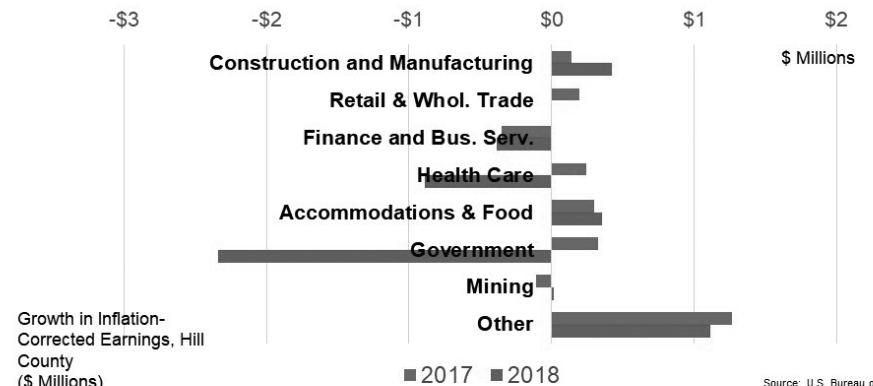


Source: U.S. Bureau of Economic Analysis and BBER



Hill Outlook

## Government Contraction Dominates Growth in 2018



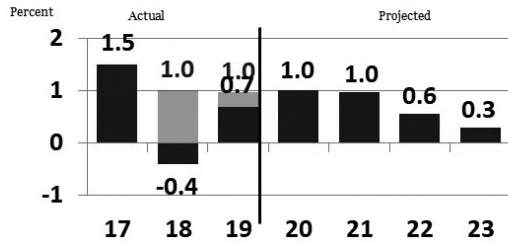
Growth in Inflation-Corrected Earnings, Hill County (\$ Millions)

Source: U.S. Bureau of Economic Analysis



Hill Outlook

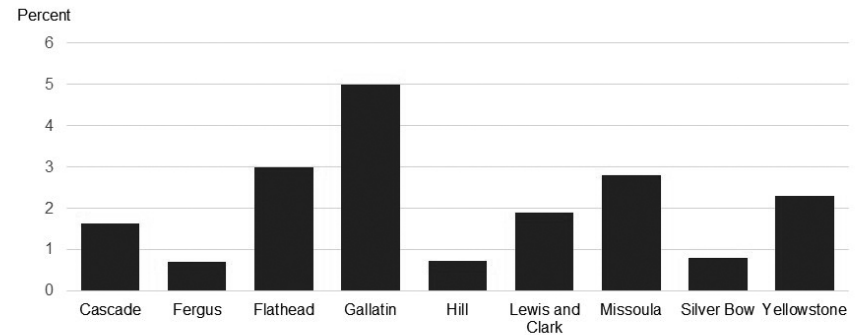
### Growth in Nonfarm Earnings, Hill County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

### Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



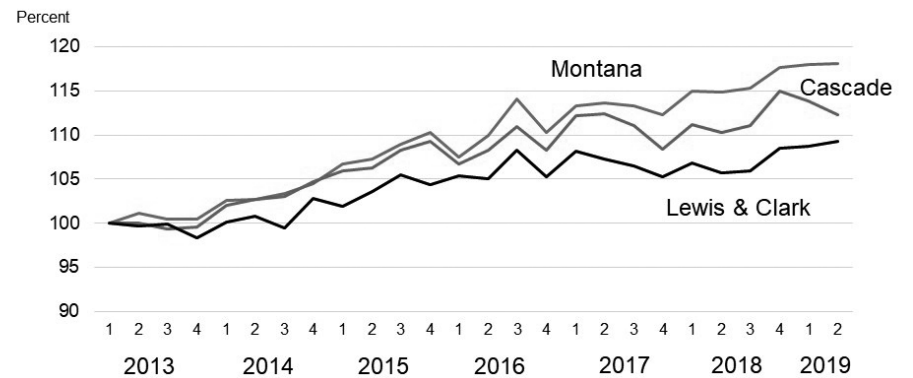
Source: Bureau of Business and Economic Research

## The Outlook for Lewis and Clark County

Patrick M. Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

### Growth in Total Wages Since 2013

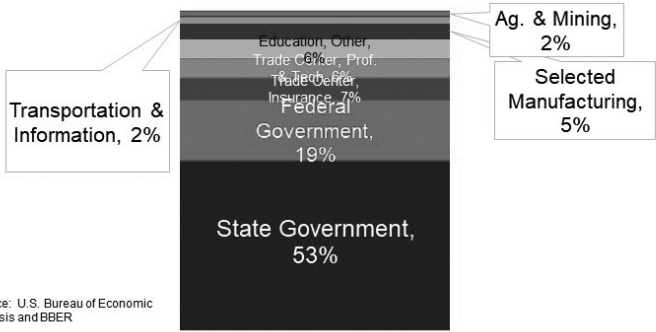
Inflation-adjusted Covered Wages, Index, 2013=100



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

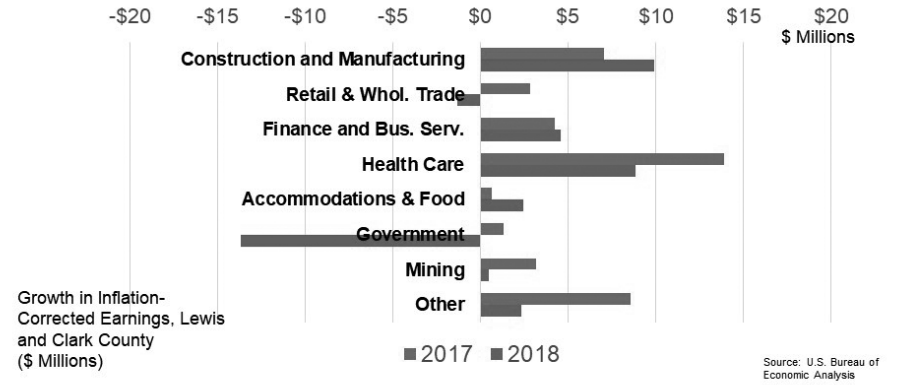
### Drivers of Economic Activity

Percent Share of Income in Basic Industries, Lewis and Clark County



Source: U.S. Bureau of Economic Analysis and BBER

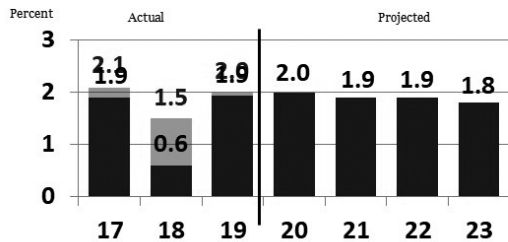
### Government Declines Mask Growth Elsewhere in 2018



Growth in Inflation-Corrected Earnings, Lewis and Clark County (\$ Millions)

Source: U.S. Bureau of Economic Analysis

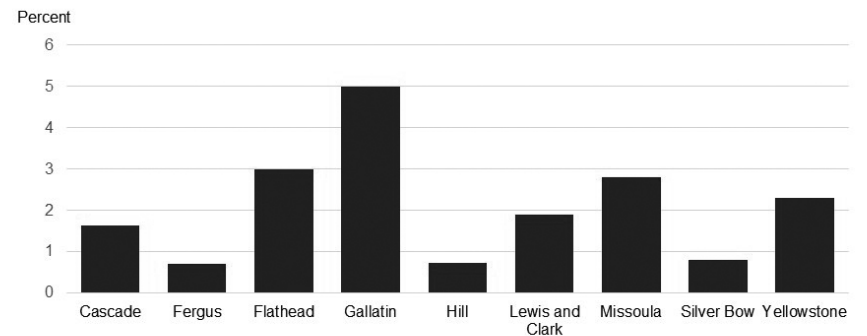
### Growth in Nonfarm Earnings, Lewis and Clark County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

### Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



Source: Bureau of Business and Economic Research

# The Outlook for Missoula and Ravalli Counties

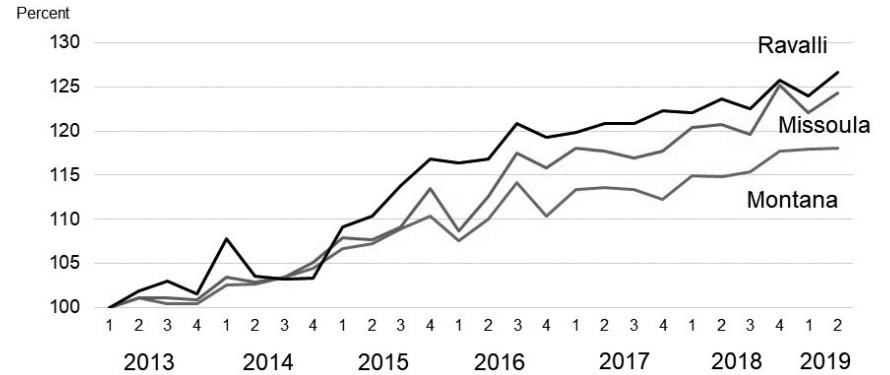
Patrick M. Barkey, Director  
 Bureau of Business and Economic Research  
 University of Montana



Missoula and Ravalli Outlook

## Growth in Total Wages Since 2013

Inflation-adjusted Covered Wages, Index, 2013=100



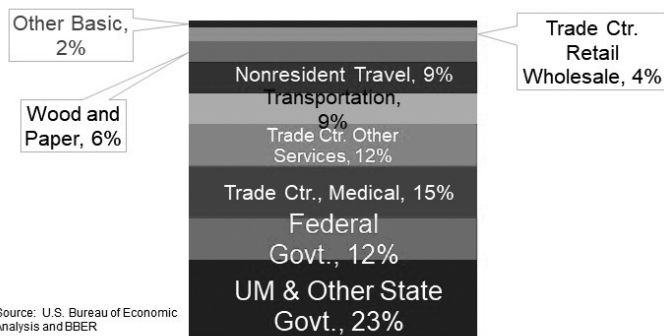
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis



Missoula and Ravalli Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Missoula County



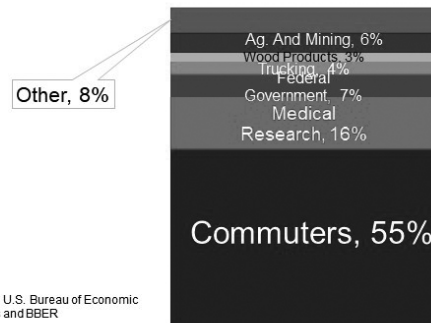
Source: U.S. Bureau of Economic Analysis and BBER



Missoula and Ravalli Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Ravalli County

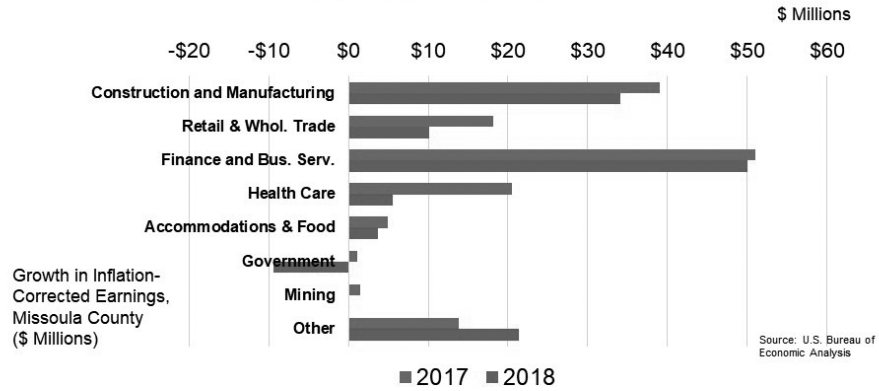


Source: U.S. Bureau of Economic Analysis and BBER

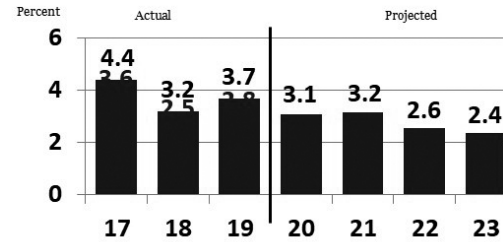


Missoula and Ravalli Outlook

### Business Services Has Led Growth for the Last Two Years

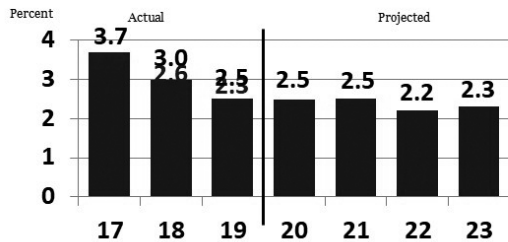


### Growth in Nonfarm Earnings, Missoula County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

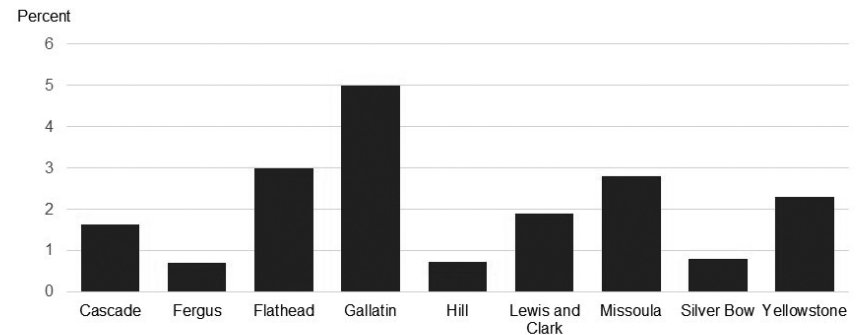
### Growth in Nonfarm Earnings, Ravalli County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

### Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



Source: Bureau of Business and Economic Research



# The Outlook for Silver Bow County

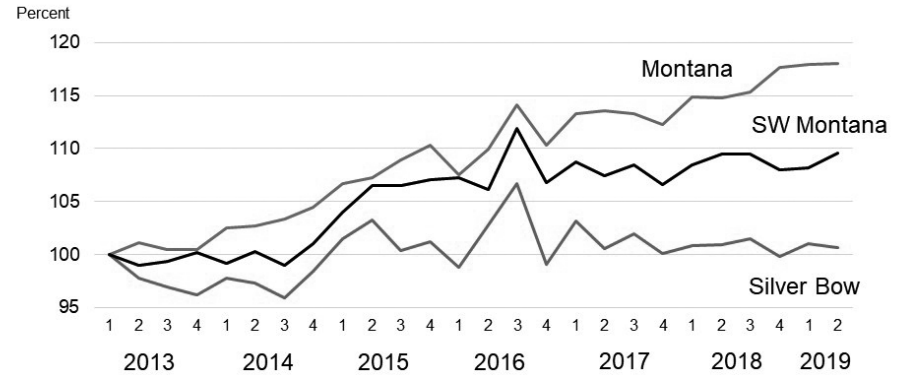
Patrick M. Barkey, Director  
 Bureau of Business and Economic Research  
 University of Montana



Silver Bow Outlook

## Growth in Total Wages Since 2013

Inflation-adjusted Covered Wages, Index, 2013=100



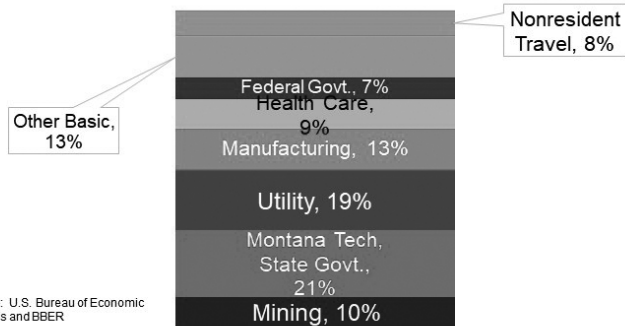
Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis



Silver Bow Outlook

## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Silver Bow County

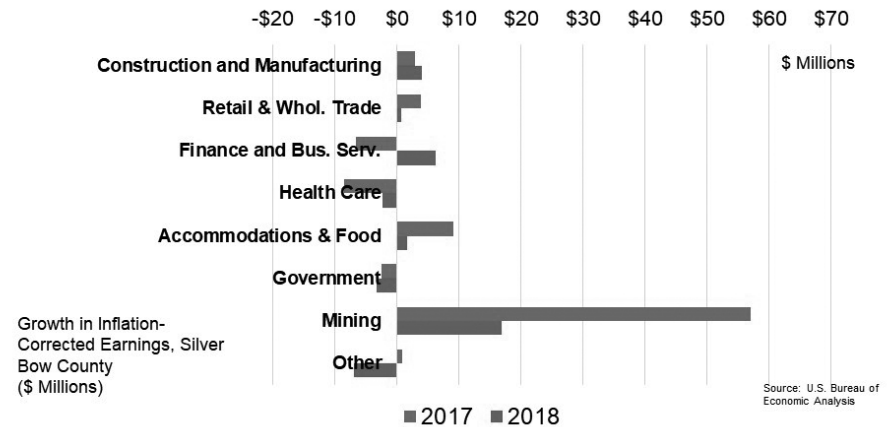


Source: U.S. Bureau of Economic Analysis and BBER



Silver Bow Outlook

## Mining Earnings Volatility Continues to Dominate

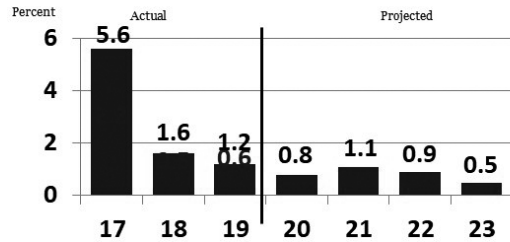


Source: U.S. Bureau of Economic Analysis



Silver Bow Outlook

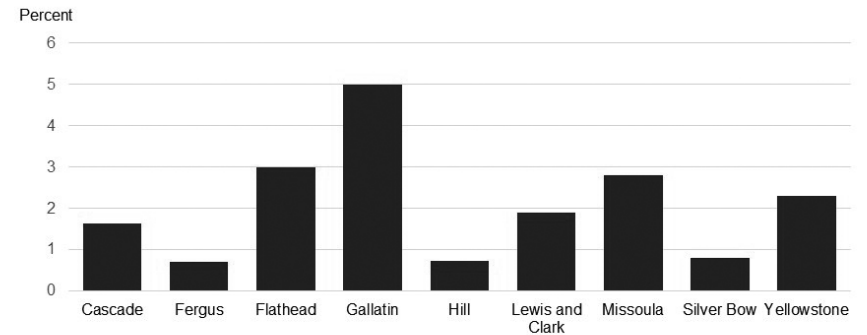
**Growth in Nonfarm Earnings,  
Silver Bow County, 2017-2023**



Source: BBER and U.S. Bureau of Economic Analysis

**Gallatin County Expected to Pace Growth**

Average Growth, 2020-23, Percent per Year



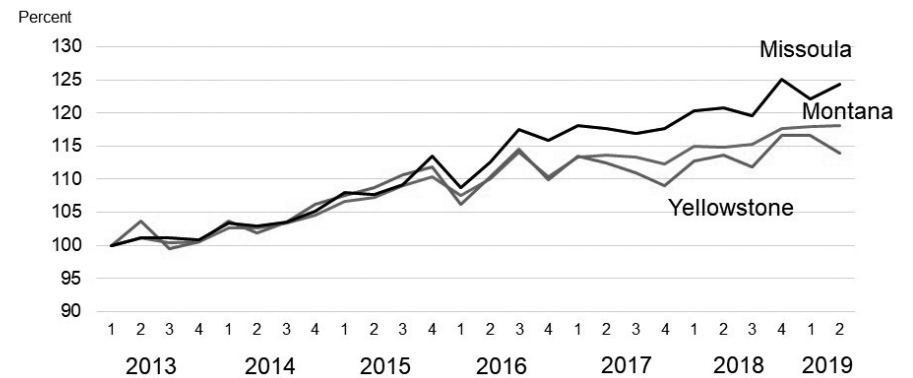
Source: Bureau of Business and Economic Research

**The Outlook for Yellowstone  
County**

Patrick M. Barkey, Director  
Bureau of Business and Economic Research  
University of Montana

**Growth in Total Wages Since 2013**

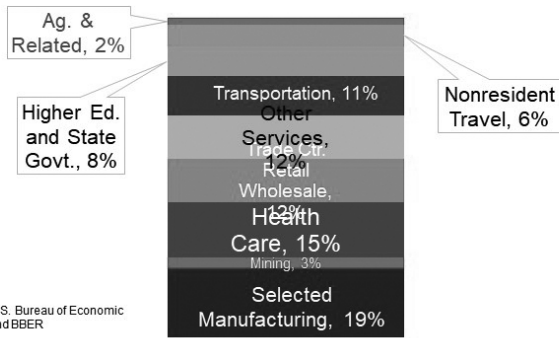
Inflation-adjusted Covered Wages, Index, 2013=100



Source: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

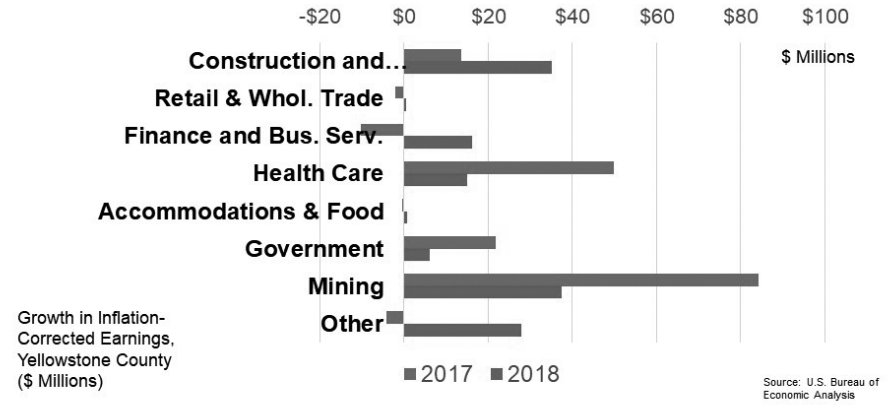
## Drivers of Economic Activity

Percent Share of Income in Basic Industries, Yellowstone County



Source: U.S. Bureau of Economic Analysis and BBER

## Construction and Mining Led Growth in 2018



Growth in Inflation-Corrected Earnings, Yellowstone County (\$ Millions)

Source: U.S. Bureau of Economic Analysis

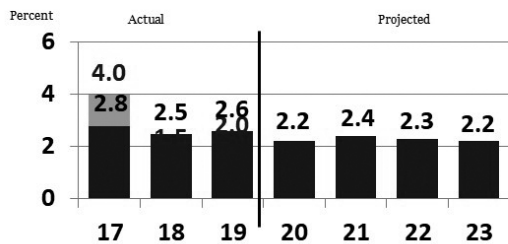


Yellowstone Outlook



Yellowstone Outlook

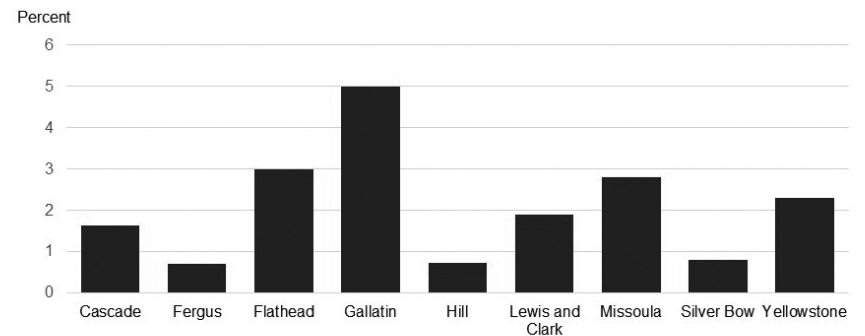
## Growth in Nonfarm Earnings, Yellowstone County, 2017-2023



Source: BBER and U.S. Bureau of Economic Analysis

## Gallatin County Expected to Pace Growth

Average Growth, 2020-23, Percent per Year



Source: Bureau of Business and Economic Research



2018 Yellowstone Outlook



2018 Yellowstone Outlook

# 2020 Hindsight Travel & Recreation Trends and Outlook

Norma P. Nickerson, Director  
Institute for Tourism and Recreation Research  
W.A. Franke College of Forestry and Conservation  
University of Montana

Hindsight is 20/20  
If we had only known!

## Tourism & Recreation Challenges & Opportunities

### 1 WORST SUMMER YET FOR SEASONAL STAFFING SHORTAGE

September 22, 2019 at 5:00 am | By BRET ANNE  
Employee Shortage Causes Bozeman Taco-Joints to Close  
Daily Inter Lake

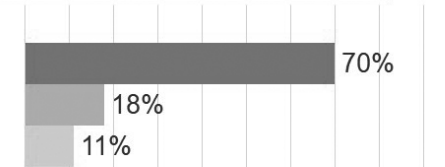


service industry workforce shortage ...

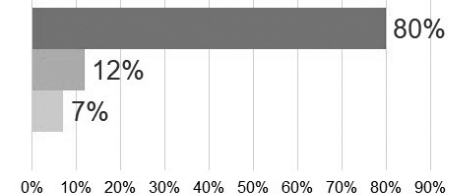
Bozeman

### 1 Difficulty in finding Workers

Finding quality year-round employees is becoming more difficult



Finding quality seasonal employees is becoming more difficult

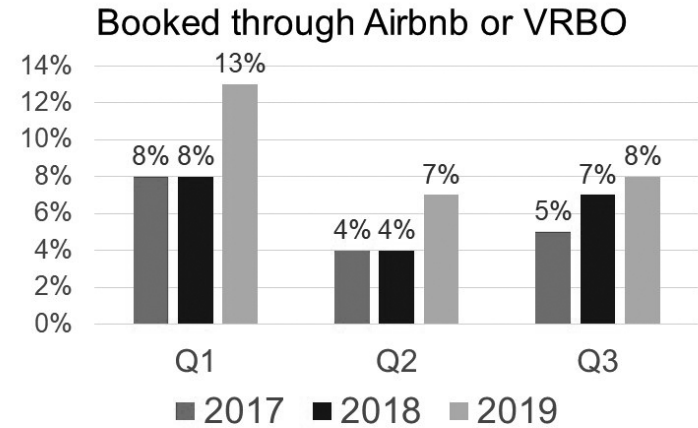


■ Agree ■ Neither Agree/Disagree ■ Disagree

# 1 Tourism Businesses solutions

- Pray
- Training
- Hire retirees
- Higher wages
- Hire J-1 workers
- Use contractors
- Provide benefits
- Broader advertising
- Keep business a sustainable size
- Be good employer – flexible start/end times

# 2 Short Term Rentals



# 3 Aquatic Invasive Species

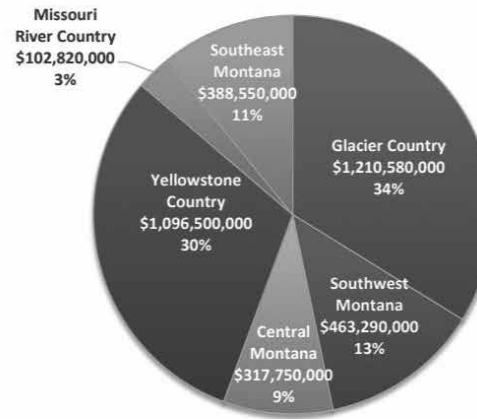
\$76.7 million in revenue for fishing outfitters



The environment, economy, recreation, tourism, and humans are all impacted by the introduction of aquatic invasive species.

# 4 Overcrowding vs Lagging Visitation

2018 Estimate of Nonresident Traveler Spending



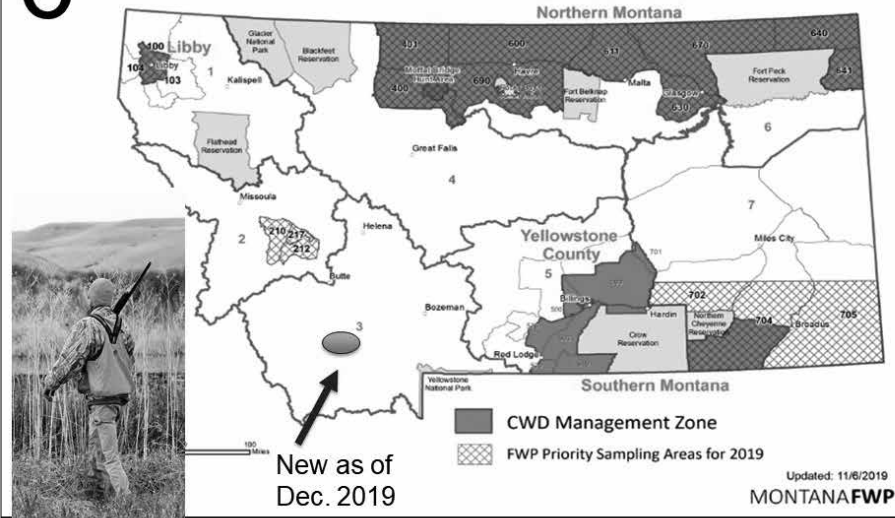
64% of all non-resident spending is in the regions where Glacier & Yellowstone reside.

# 5 Feral Pigs are Coming



INSTITUTE FOR TOURISM & RECREATION RESEARCH UNIVERSITY OF MONTANA

# 6 Chronic Wasting Disease Mgmt. Zones



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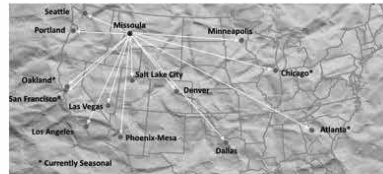
MT Travel and Recreation

# 7 Airline growth

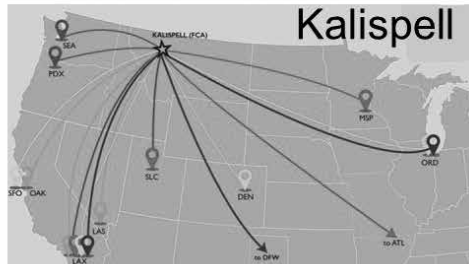
## Bozeman



## Missoula



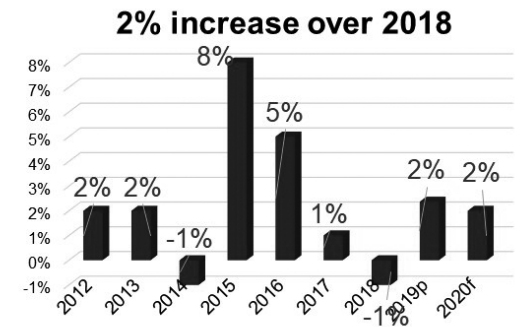
## Kalispell



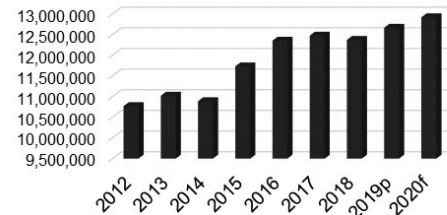
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# Nonresident visitation



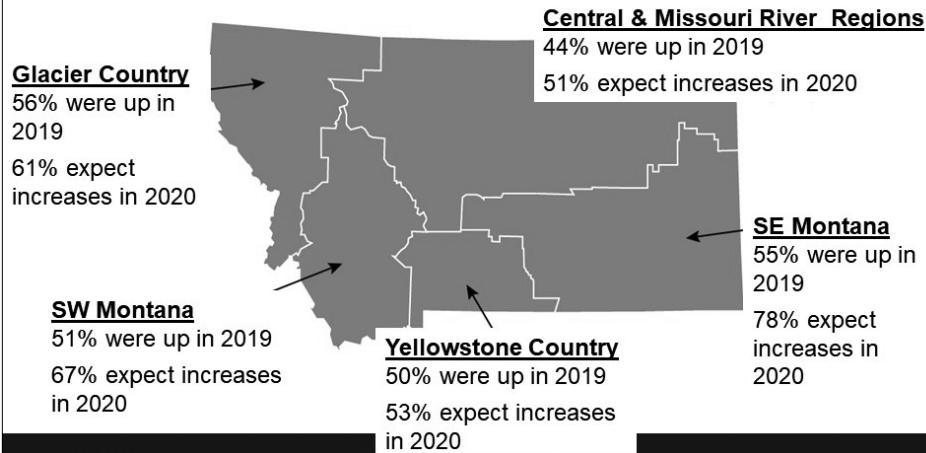
## 12.6 Million in 2019



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## Business Owners 2019 Volume Increase; Expected in 2020



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MT Travel and Recreation

# Thank you!

[www.itrr.umt.edu](http://www.itrr.umt.edu)

[norma.nickerson@mso.umt.edu](mailto:norma.nickerson@mso.umt.edu)

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UNIVERSITY OF MONTANA

MT Travel and Recreation

# Health Care

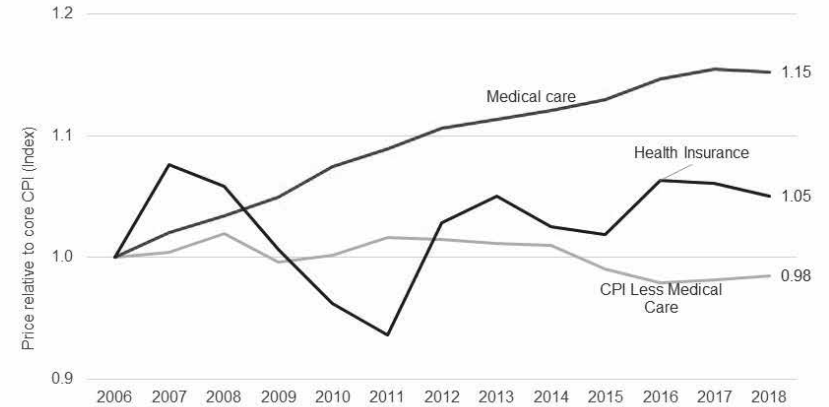


Dr. Robert Sonora

Associate Director|Director Health Research  
Bureau of Business and Economic Research  
Senior Research Professor  
University of Montana



# Price of Health Care is Rising



# Waste in health care

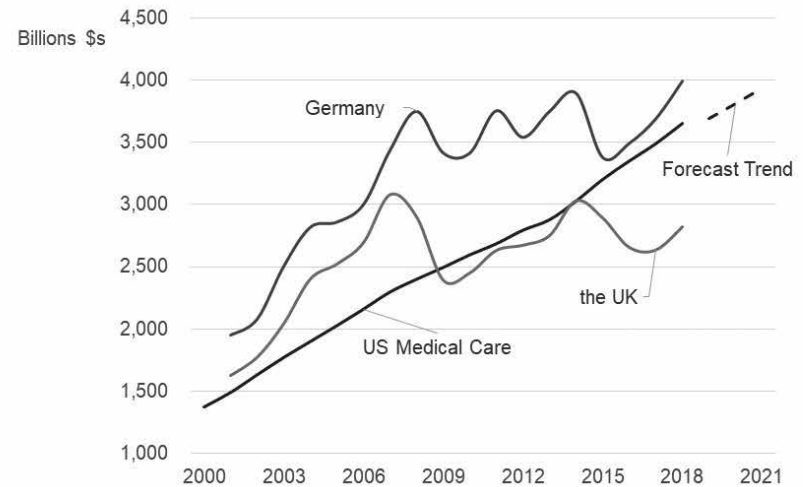
Table 2. Cost Estimates by Waste Domain

Domain	Costs, \$US Billion	
	Annual Estimates	Total Range
<b>Failure of Care Delivery</b>		
Hospital-acquired conditions and adverse events <sup>18-22</sup>	5.7-46.6	
Clinician-related inefficiency (variability in care, inefficient use of high-cost physicians) <sup>27-28</sup>	8.0	102.4-165.7
Lack of adoption of preventive care practices (obesity, vaccines, diabetes, hypertension) <sup>23-26</sup>	88.6-111.1	
<b>Failure of Care Coordination</b>		
Unnecessary admissions and avoidable complications <sup>19,29</sup>	5.9-56.3	
Readmissions <sup>30,31</sup>	21.25-21.93	27.2-78.2
<b>Overtreatment or Low-Value Care</b>		
Low-value medication use <sup>12,32-35</sup>	14.4-29.1	
Low-value screening, testing, or procedures <sup>14,36,37</sup>	17.2-27.9	75.7-101.2
Overuse of end-of-life care <sup>38</sup>	44.1	
<b>Pricing Failure</b>		
Medication pricing failure <sup>8</sup>	169.7	
Payer-based health services pricing failure <sup>39,40</sup>	31.4-41.2	230.7-240.5
Laboratory and ambulatory pricing <sup>41</sup>	29.7	
<b>Fraud and Abuse</b>		
Fraud and abuse in Medicare <sup>42-44</sup>	58.5-83.9	58.5-83.9
<b>Administrative Complexity</b>		
Billing and coding waste <sup>45</sup>	248	265.6
Physician time spent reporting on quality measures <sup>10</sup>	17.6	
<b>Total</b>		<b>760-935</b>

Source: Shrank, Rogstad, and Parekh N. "Waste in the US Health Care System: Estimated Costs and Potential for Savings". *Journal of the American Medical Association* (10/2019)

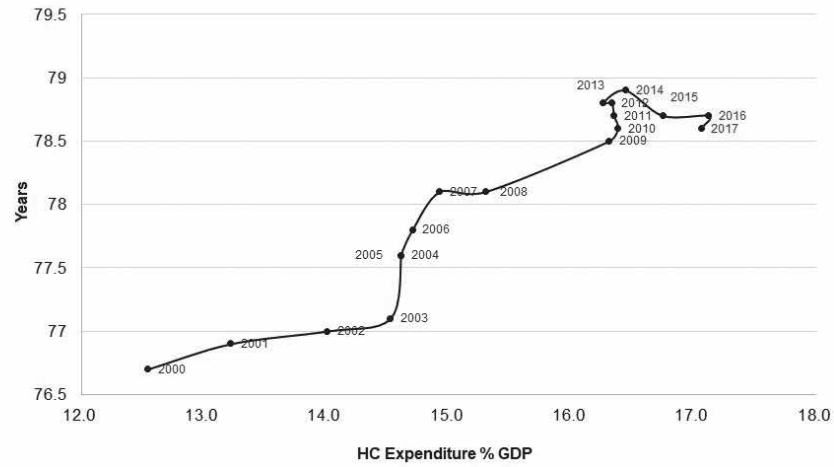


# "Am-Medi-stan" is growing: 5<sup>th</sup> largest global economy

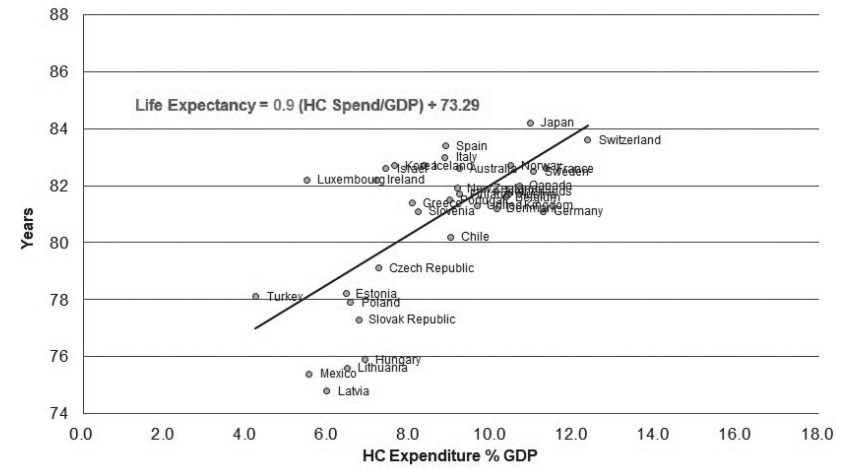




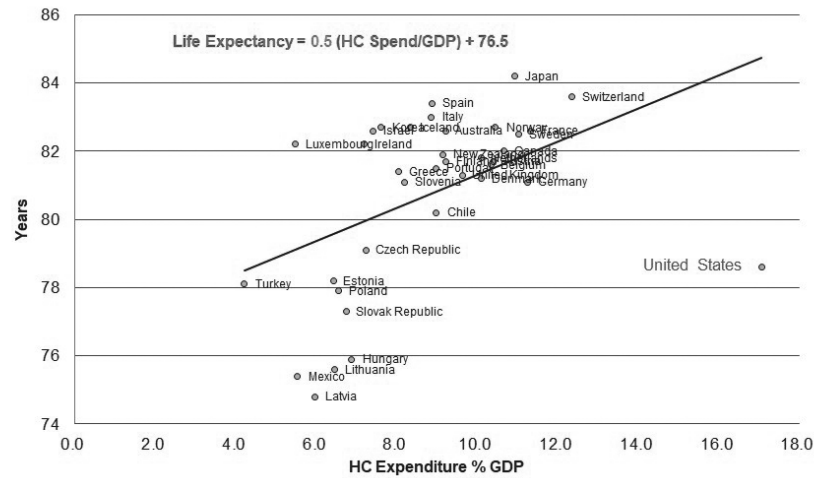
## US Expenditure and Life Expectancy



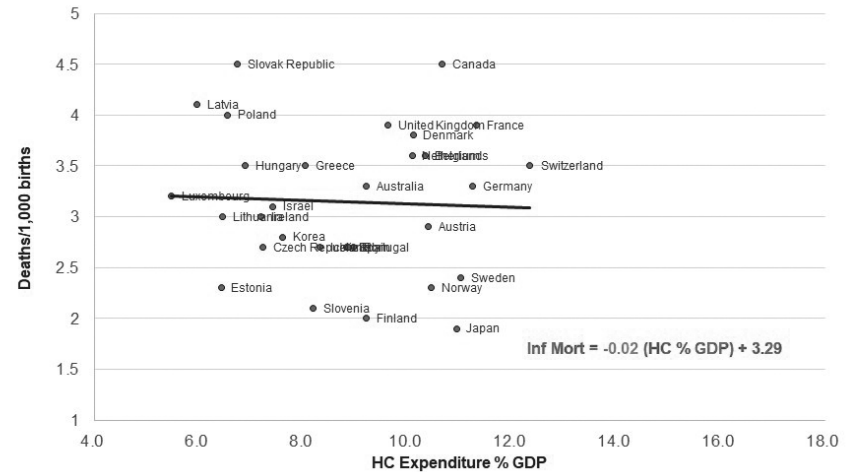
## Health Expenditure and Life Expectancy: OECD



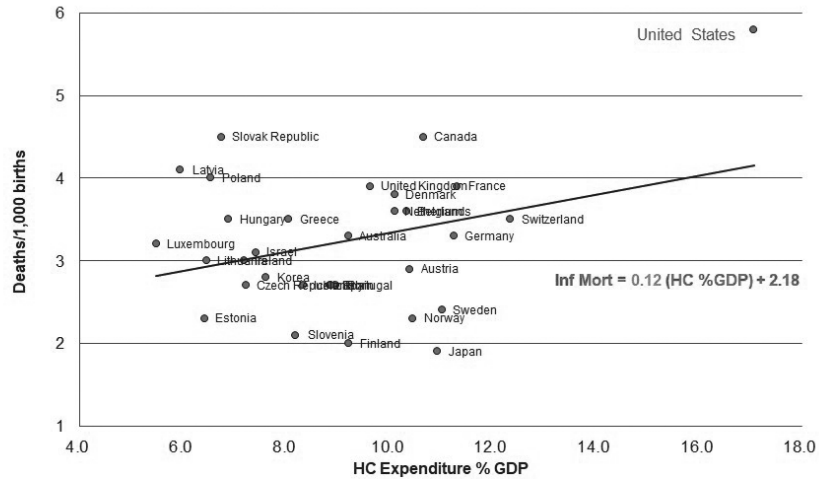
## Health Expenditure and Life Expectancy: OECD



## Health Expenditure and Infant Mortality: OECD

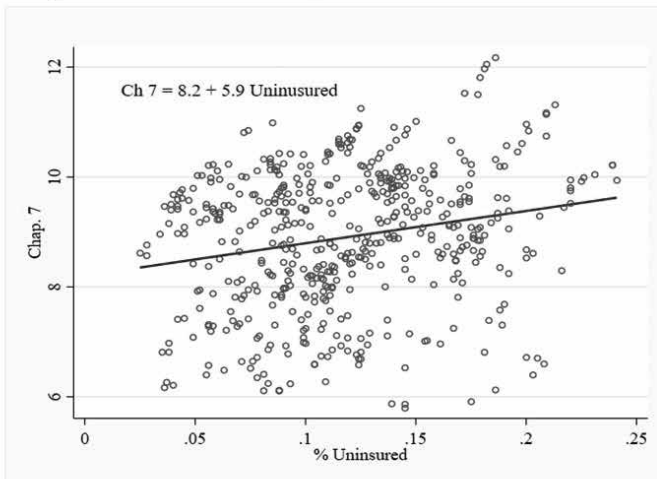


## Health Expenditure and Infant Mortality: OECD



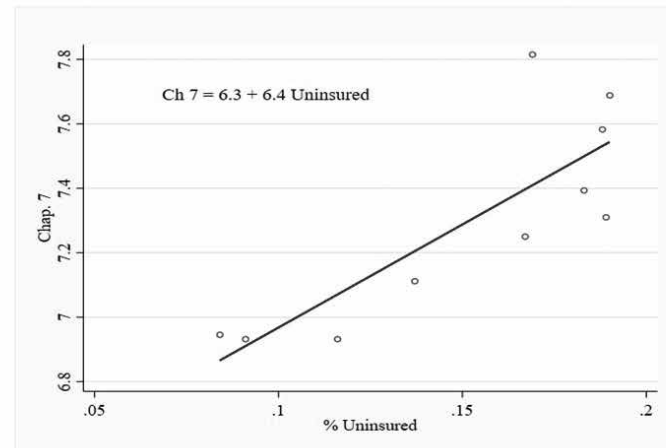
## Health Care Impacts

## US: Chapter 7 and % Uninsured



Nationally, 66% personal bankruptcy due to medical reasons

## MT: Chapter 7 and % Uninsured



## Health care and foreclosure

- 13% of foreclosures due to medical expenses and illness
- Uninsured more likely to go into foreclosure



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## Montana Health Care



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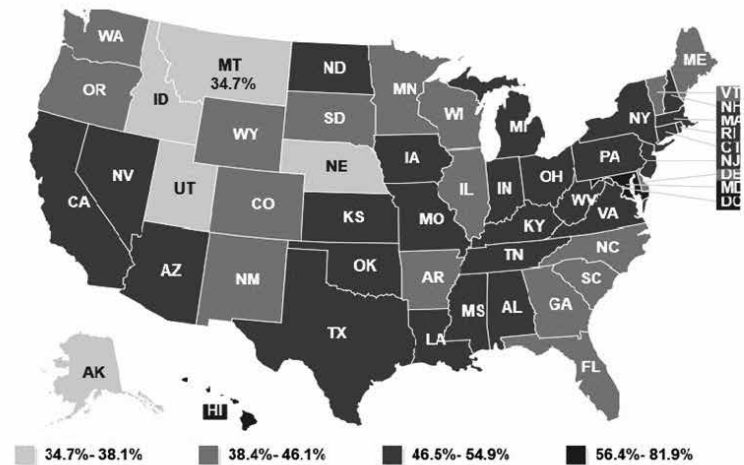
## Medicaid extension passed, HB0658

- BBER study: 2016 – 2020
  - \$1.6 billion economic impact
  - 6,000 jobs
- Additional requirements
  - Work, education, caretaker, increase in premiums and paperwork
  - Expected  $\approx$  4,000 Montanans lose coverage (4%)  $\rightarrow$  could reduce economic impact



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## Percent private firms offer insurance, 2018

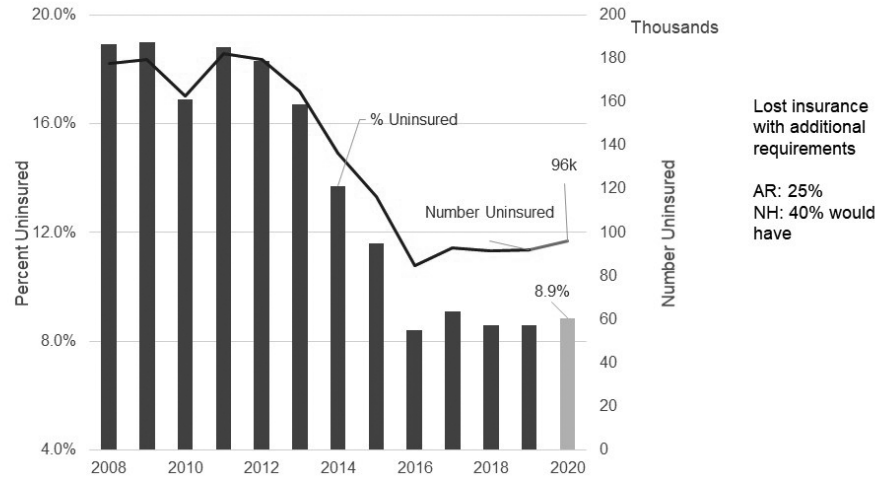


(source: Kaiser Family Foundation)

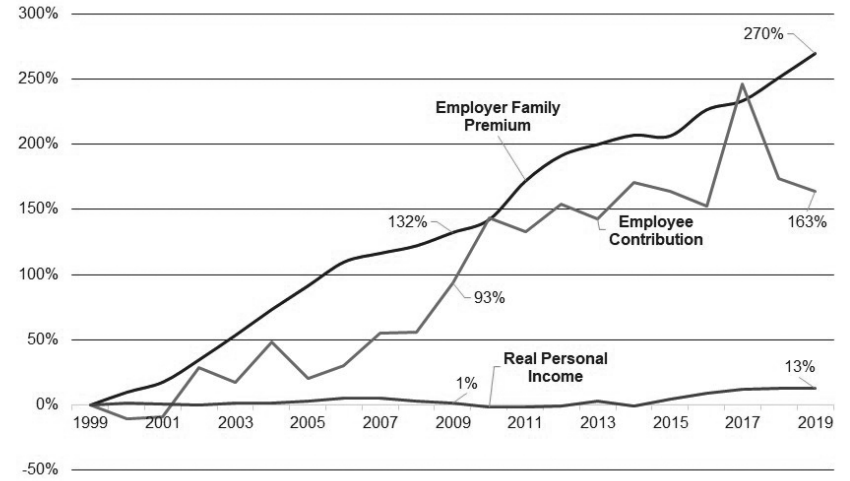


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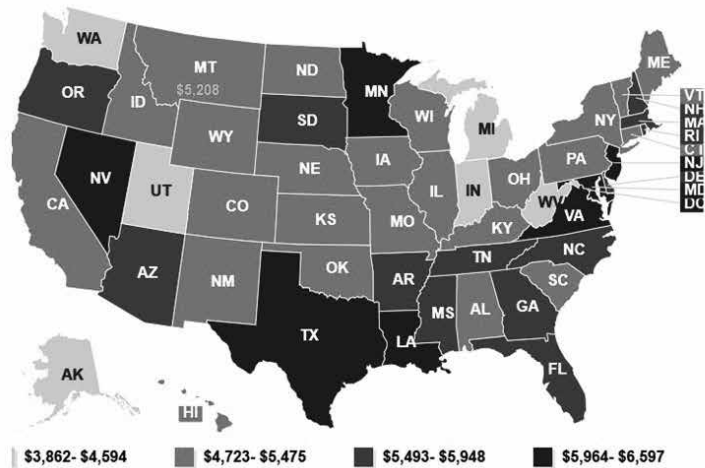
## Uninsured Montana



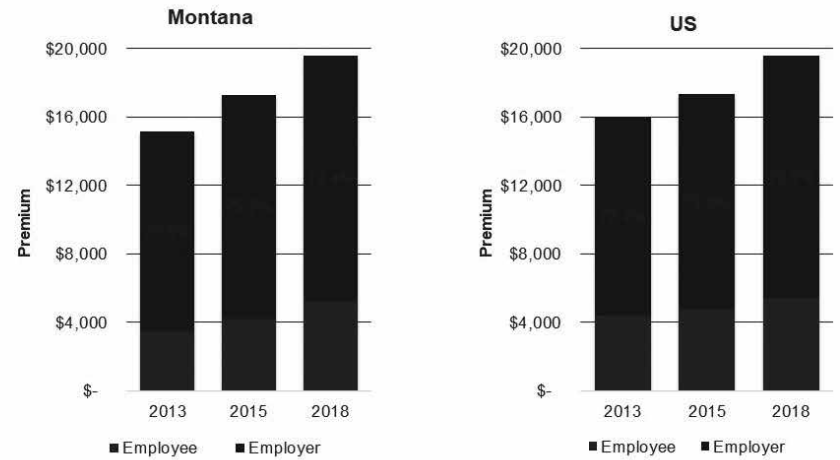
## Cumulative growth in Western states 1999 - 2019



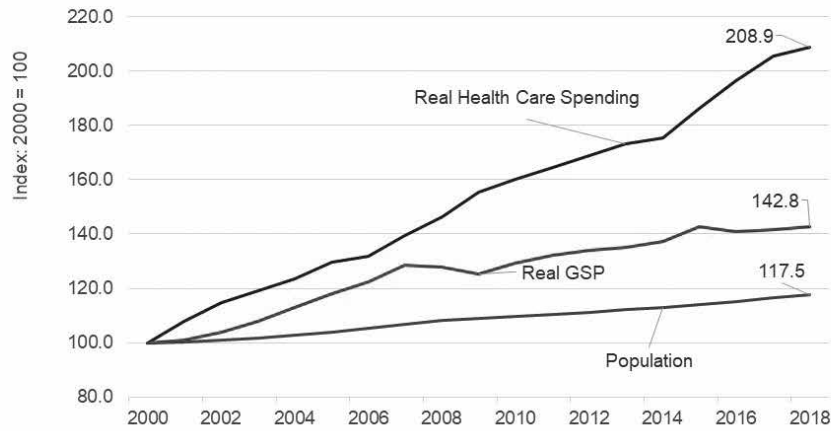
## Average annual family premium 2018



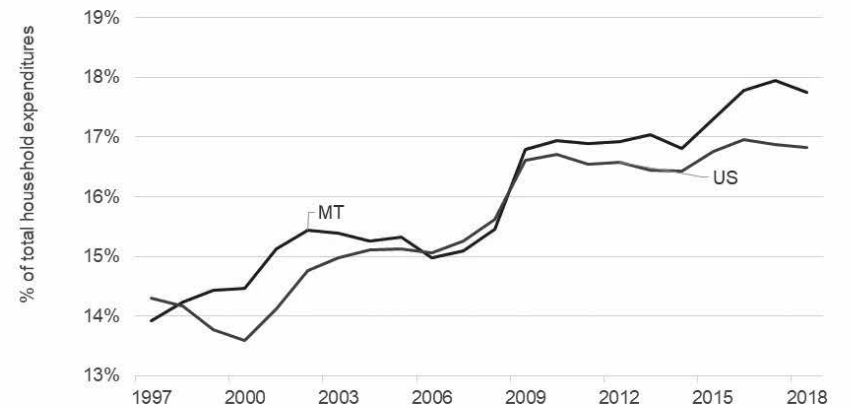
## Insurance premium contributions



### MT: Health Care, Real GSP, Population



### Healthcare share of household expenditures, percent



### Cumulative growth by sector from 20\_ to 2018



### Health "Score Card"

	US	Montana
% Children Immunized	70.4%	66.2%
Smoking	16.4%	17.2%
Alcohol Dependence	5.8%	8.0%
Opioid Misuse	4.3%	4.4%
Life Expectancy (years)	78.7	78.6
Physical Activity	73.4%	75.0%
Adult Obesity	65.4%	62.2%
Infant Mortality (per 1,000)	5.9	5.8
Heart Disease (per 100,000)	165.0	155.0
Diabetes (per 100,000)	21.5	21.6
Firearms (per 100,000)	12.0	22.5
Suicide (per 100,000)	14.0	28.9
Cancer (per 100,000)	152.5	152.6
Hypertension	32.4%	29.0%
Hospital inpatient expenses/day	\$2,424	\$1,070

(Source: Kaiser Family Foundation, green/red better/worse than national average)



## MT: Urban-Rural Divide

	Urban	Rural
Age-Adjusted Mortality (per 1,000)	349.0	348.6
Infant Mortality Rate (per 1,000)	5.4	8.0
% Frequent Physical Distress	10.3	10.8
% Frequent Mental Distress	10.7	11.1
% Diabetic	8.0	9.2
% Food Insecure	12.7	12.5
% Uninsured	14.2	19.0
Costs	\$7,616	\$7,708
Firearm Fatalities Rate (per 1,000)	20.1	28.6

Urban = <35% rural and Rural = >75% rural

- average age in MT is 40

- Median real per capita income in MT is \$46k

ACA premium Gold with 40 yr old with income \$40,000

Change in Lowest-Cost Metal Plan Before and After Tax Credit, 2019-2020

Metal Level: Silver  
Example Age and Income: 40-year-old with income of \$40,000 (320% of poverty)  
Select State (Optional): Montana

Change in Lowest-Cost Monthly Premium, 2019-2020: -\$31 to \$15



SOURCE: Kaiser Family Foundation analysis of premium data from Healthcare.gov and a review of state rate filings.  
NOTES: California, Vermont, and Massachusetts offer additional income-based subsidies not reflected in the premiums shown here. In Minnesota and New York, some low-income enrollees are eligible for alternative Basic Health Program coverage. For most states running their own exchange, premiums are at the rating area level. All premiums are displayed as the full price, rather than just the portion that covers essential health benefits.

Change in Lowest-Cost Metal Plan Before and After Tax Credit, 2019-2020

Metal Level: Gold  
Example Age and Income: 40-year-old with income of \$40,000 (320% of poverty)  
Select State (Optional): Montana

Change in Lowest-Cost Monthly Premium, 2019-2020: -\$43 to \$4



SOURCE: Kaiser Family Foundation analysis of premium data from Healthcare.gov and a review of state rate filings.  
NOTES: California, Vermont, and Massachusetts offer additional income-based subsidies not reflected in the premiums shown here. In Minnesota and New York, some low-income enrollees are eligible for alternative Basic Health Program coverage. For most states running their own exchange, premiums are at the rating area level. All premiums are displayed as the full price, rather than just the portion that covers essential health benefits.

ACA premium Gold with 40 yr old with income \$40,000

Thank You

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[www.bber.umt.edu](http://www.bber.umt.edu)

# High-tech & Startups

Christina Henderson,  
*Executive Director*

Katy Spence,  
*Communications Director*

[MTHighTech.org](http://MTHighTech.org)



## 2020 Outlook for Montana High-tech

Record Revenue,  
Jobs and Venture  
Capital Investment



Surveying Montana high-tech firms since 2014.

## Montana's high-tech sector



More than \$2 billion  
in annual revenue



Growing 9x the  
Montana economy



Pays 2x the median  
wage, \$65,000+



600+ firms

## What is high-tech?

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Make or sell high-tech products

---

Professional services related to high tech

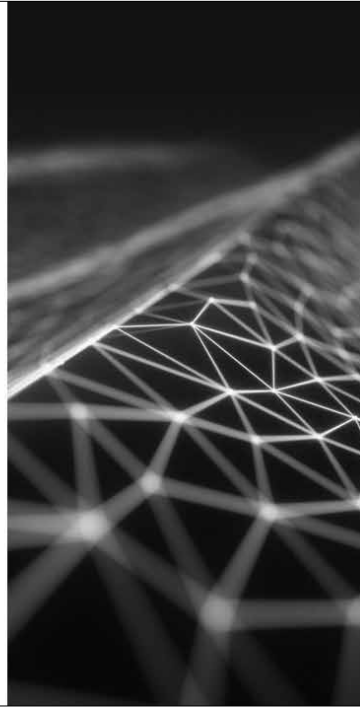
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E-commerce

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Advanced manufacturing

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## Top Montana Tech Subsectors

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Software

---

Consulting

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Marketing

---

Manufacturing

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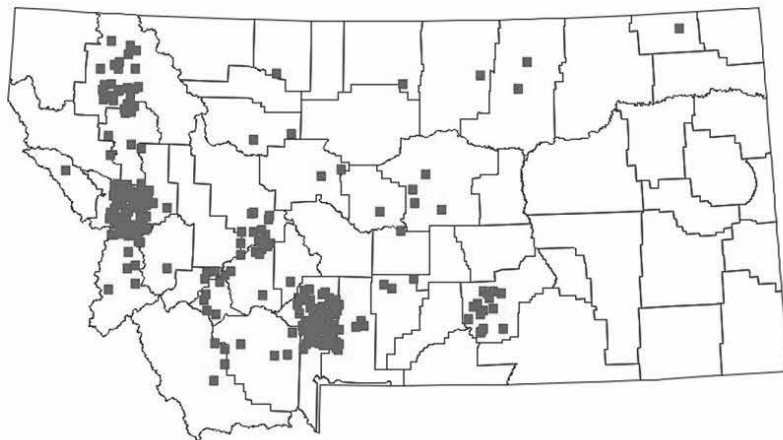
Professional Services

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Biotech



## Locations of High-Tech & Manufacturing Firms



## Tech leaders say...



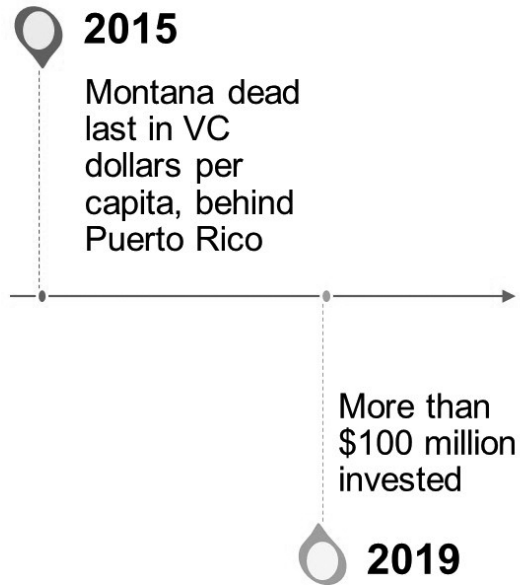
Biggest benefit of Montana = quality of life



Biggest barrier to growth = access to talent



Venture capital increased 10x in 5 years



## Key Trends Driving Montana's Innovation Economy

1. Technological
2. Social
3. Economic

## Technological



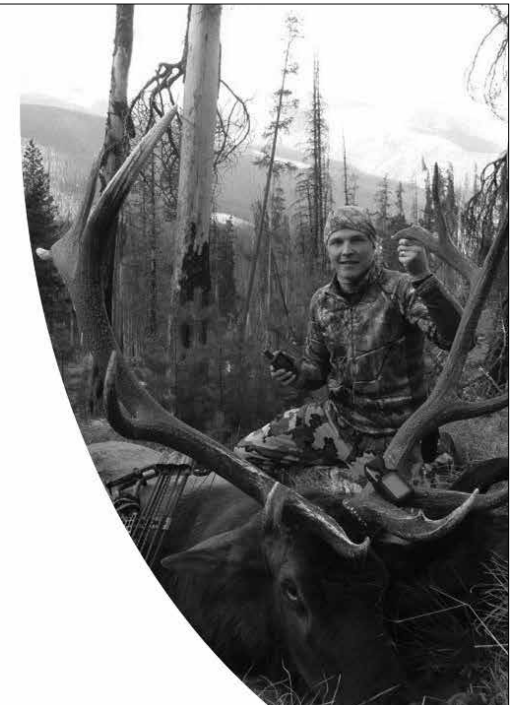
Reduced geographic barriers to growth



Affordability of starting and scaling company

## onX Maps

- Missoula outdoor technology company
- Founded by MSU grad Eric Siegfried in 2009 with \$500
- \$20+ million funding in 2018
- CEO Laura Orvidas a 17-year veteran of Amazon



# Social



Work/life balance important to younger generations



Knowledge workers like college towns with outdoor amenities

# MyVillage

- Tech-enabled childcare company
- Co-founded by new mom Erica Mackey in 2017
- Raised largest seed round in MT history in 2019 (nearly \$6M)
- Led a venture-backed startup in Africa, ultimately chose Bozeman



# Economic

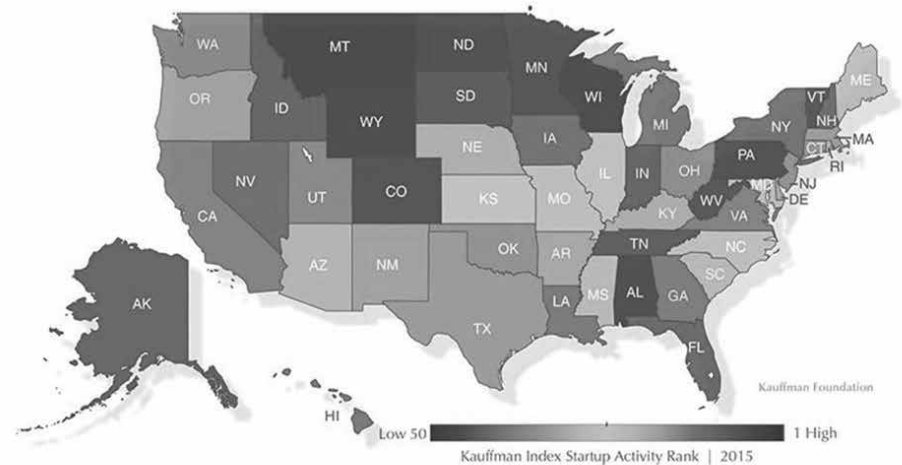


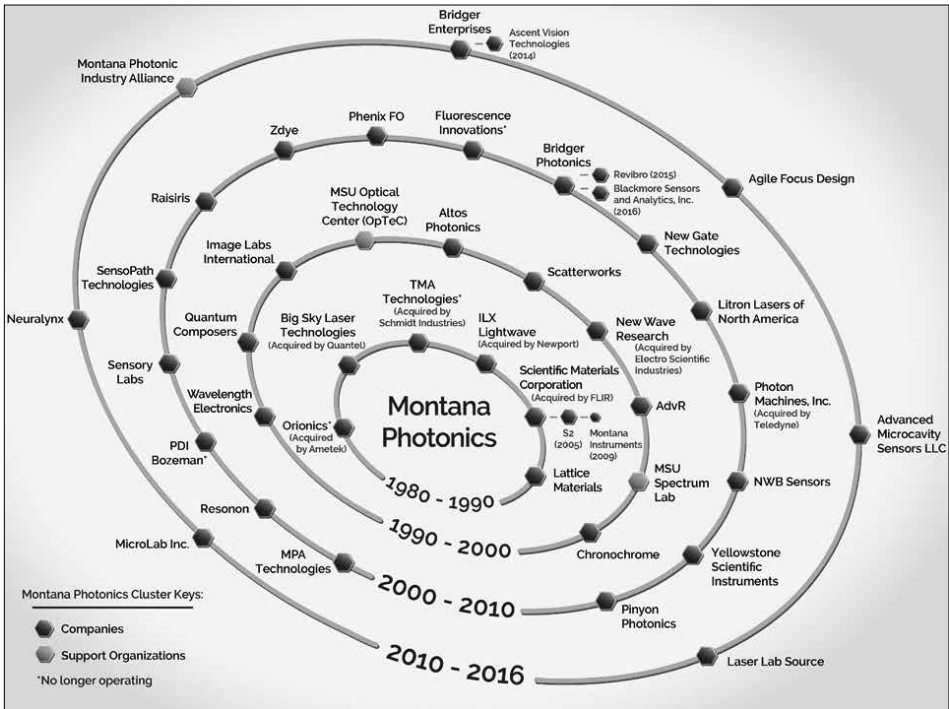
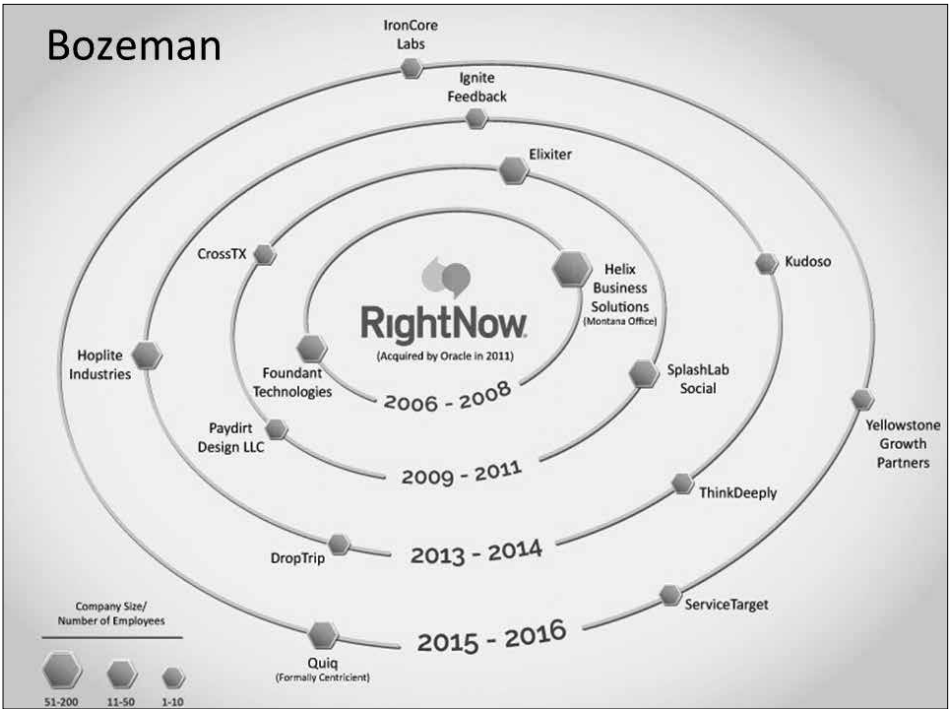
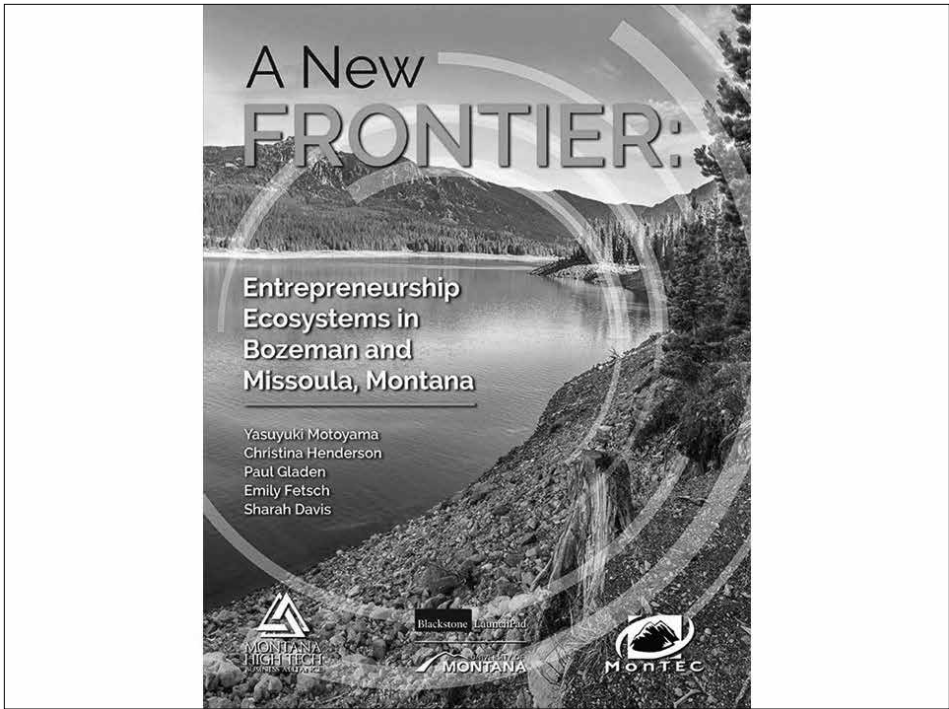
Sale of Bozeman's RightNow to Oracle for \$1.8 billion in 2012



Strong entrepreneurial ecosystem

# Montana named #1 state for startup activity from 2013-2016





## Montana Advantages

- Strong entrepreneurial support networks
- Excellent workers, high retention
- Elected leaders “champions of entrepreneurship”
- Montana values (work ethic, tolerance for risk) aligned with entrepreneurship



## iResponse

- Box Elder, Rocky Boy Reservation
- Founded in 2016
- Cree-owned
- Section 106 consultation
- Work with clients in US and Canada on tribal and ancestral lands
- 12+ employees



## Spika Design & Manufacturing

- Lewistown
- Founded in 2011
- Woman-led, family-owned
- Aviation maintenance equipment
- International exports
- Military contracts
- 2016 expansion



## Big Sky

## Ascent Vision Technologies

---

- Bozeman
- Founded in 2013
- Veteran-owned
- 120+ employees with Bridger Aerospace
- New Belgrade facility in 2017
- Government contracting
- International work



## Inimmune

---

- Missoula
- Founded by former GSK employees in 2016
- Partnership with University of Montana
- NIH contracts
- Grant funding
- Montana Bioscience Alliance



## Billings

## Zoot Enterprises

---

- Bozeman and Billings
- Founded in 1990
- FinTech
- 250+ employees
- Impact on Four Corners
- On-site childcare
- Community involvement



## GTUIT

- Billings
- Founded in 2011
- 45+ employees
- Small-scale mobile natural gas processing systems
- 2016 Inc. 5000 list
- Recent expansions into more national and international operations



## Kampgrounds of America

- Billings
- Founded in 1962
- Woman-led
- 75+ employees
- Independently-owned and operated campgrounds
- Proprietary reservation and management software
- Digital marketing



## Bozeman

## PFL

- Livingston and Indianapolis
- Founded in 1996
- 300+ employees
- Tactile marketing technology
- Goldman Sachs \$25M investment in 2018
- National awards and recognition



## Zoot Enterprises

- Bozeman and Billings
- Founded in 1990
- FinTech
- 250+ employees
- Impact on Four Corners
- On-site childcare
- Community involvement



## Ascent Vision Technologies

- Bozeman
- Founded in 2013
- Veteran-owned
- 120+ employees with Bridger Aerospace
- New Belgrade facility in 2017
- Government contracting
- International work



## Butte

## Montana Precision Products

- Butte
- Founded in 2012
- 170+ employees
- Joint venture between GE and SeaCast
- Aerospace manufacturing
- BSTF grant – ongoing employment growth





## Ascent Vision Technologies

- Bozeman
- Founded in 2013
- Veteran-owned
- 120+ employees with Bridger Aerospace
- New Belgrade facility in 2017
- Government contracting
- International work



## Inimmune

- Missoula
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- NIH contracts
- Grant funding
- Montana Bioscience Alliance



## Great Falls

## Loenbro

- Black Eagle
- Founded in 1998
- 500+ employees
- Suite of companies – construction, inspection, plumbing/heating, electrical, and more
- Primarily oil and gas clients





## D.A. Davidson

- Great Falls
- Founded in 1935
- Locations across Montana and the U.S.
- employee-owned financial services holding company
- Technology Team helps clients navigate evolving landscape



## Vision Net

- Great Falls, Billings, Missoula, Helena
- Founded in 1995
- Rural broadband, IoT, and communications technology
- New network provider for ~160 First Interstate Bank locations



## Havre

## Ascent Vision Technologies

- Bozeman
- Founded in 2013
- Veteran-owned
- 120+ employees with Bridger Aerospace
- New Belgrade facility in 2017
- Government contracting
- International work



## Inimmune

- Missoula
- Founded by former GSK employees in 2016
- Partnership with University of Montana
- NIH contracts
- Grant funding
- Montana Bioscience Alliance



## Helena

## Figure

- Helena and Bozeman
- Locations in CA and UT
- Founded in 2018
- 100+ employees
- FinTech utilizing and creating blockchain
- \$50M in 2018 seed round; \$65M 2019 Series B; \$103M 2019 Series C



## Montana Youth Apprenticeship Partnership

- Part of federal PAYA initiative – received \$150K grant
- Aimed to train and build skilled workforce
- Goal to increase completed MT apprenticeships by 2.6% by 2025
- Pilot programs in Billings and Helena
- 30+ partner organizations



Montana Youth  
Apprenticeship  
Partnership

## Kalispell

## Applied Materials

- Kalispell, plus more locations around the world
- Founded in 1967
- 500 MT employees
- Global semiconductor and display manufacturing equipment
- Community involvement



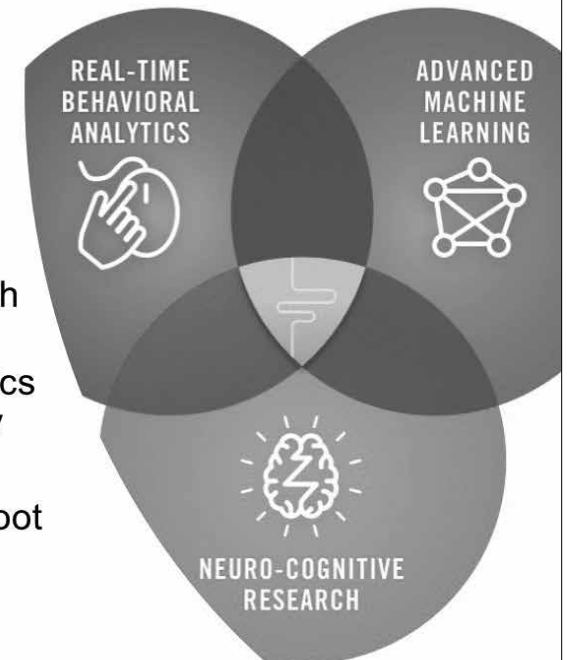
## ExcelliMatrix

- Kalispell and Bozeman
- Founded in 2013
- International teams
- ~30 employees
- Custom software solutions, app development, and consulting
- Partnership with Wildfire Defense Systems



## Neuro-ID

- Whitefish
- Founded in 2015
- 20+ employees with plans to hire
- Prescriptive analytics for the risk industry
- Patented software
- Partnership with Zoot
- \$8M in private funding



## Lewistown

## Allied Steel

- Lewistown
- Founded in 1980
- 100+ MT employees
- Structural steel manufacturer
- Passionate about rural Montana lifestyle
- High employee retention



## Ascent Vision Technologies

- Bozeman
- Founded in 2013
- Veteran-owned
- 120+ employees with Bridger Aerospace
- New Belgrade facility in 2017
- Government contracting
- International work



## Inimmune

- Missoula
- Founded by former GSK employees in 2016
- Partnership with University of Montana
- NIH contracts
- Grant funding
- Montana Bioscience Alliance



## Missoula

## LMG Security

- Missoula
- Founded in 2009
- Woman-owned
- Cybersecurity consulting and training
- Featured in national news outlets
- Conducted workshops for the DoD, American Bar Association, and more



## LumenAd

- Missoula
- Founded in 2014
- 60 employees
- Digital marketing software and services
- Named the 29th fastest-growing company on the 2019 Inc. 5000
- Named 4th on Inc.'s list of Top Software companies in 2019



## Inimmune

- Missoula
- Founded by former GSK employees in 2016
- Partnership with University of Montana
- NIH contracts
- Grant funding
- Montana Bioscience Alliance



## Christina Henderson

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## Additional resources

- Helena WINS
- Two Bear Capital
- Montana Bioscience Alliance
- Photonics Industry Alliance
- Montana Telecommunications Association

## Sources

- Kauffman Index of Startup Activity
- Florida, Richard (2012). The Rise of the Creative Class.
- A Profile of Montana's High Tech Industries (2019)
- Bozeman Daily Chronicle
- Missoula Current
- ParentMap
- Slikati
- Data Connectors
- National Venture Capital Association
- MHTBA website
- Member company websites

# Montana Manufacturing and Forest Industry Conditions and 2020 Outlook

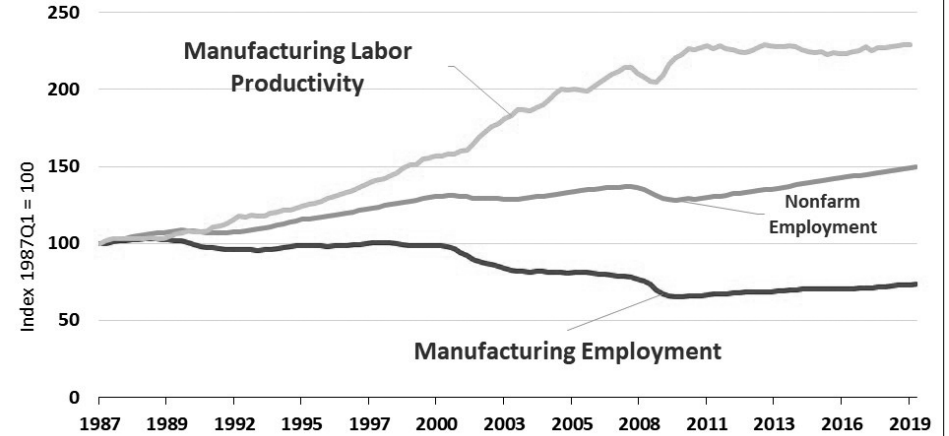
Todd A. Morgan, CF



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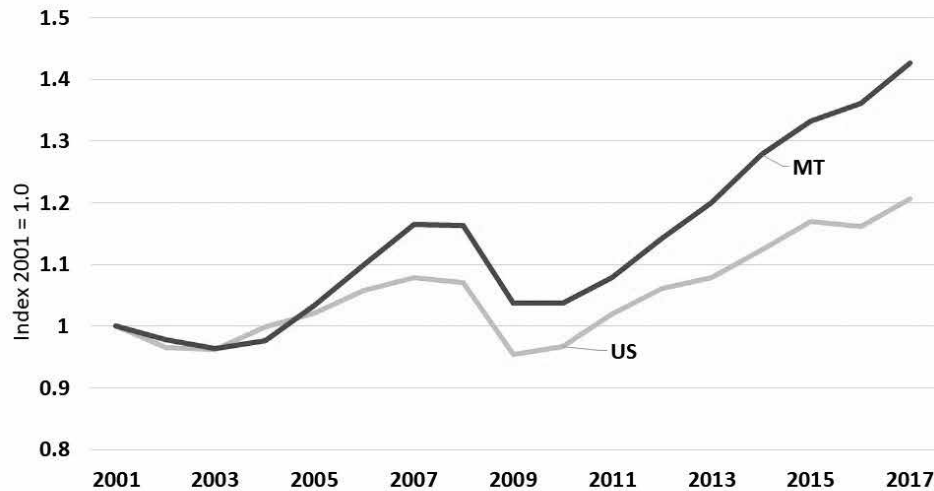
## U.S. Manufacturing



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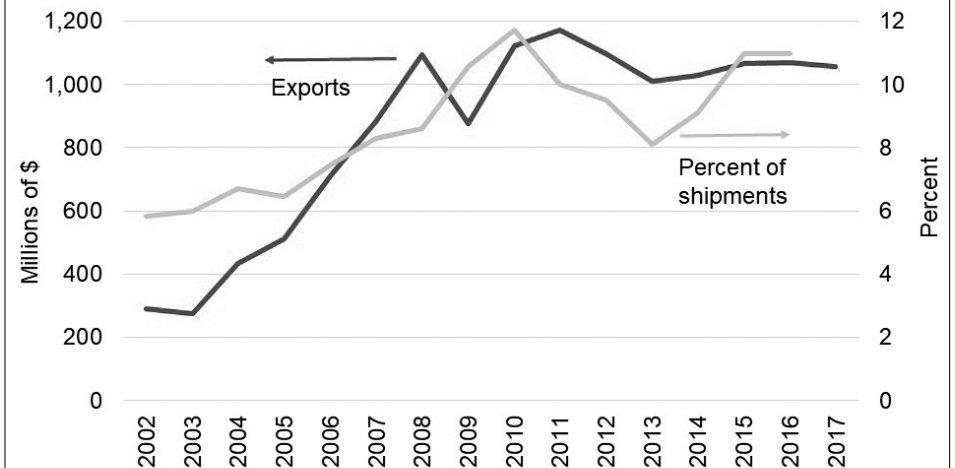
## MT vs. U.S. Manufacturing Output



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## MT Manufacturing Shipments



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## Retaliatory Tariff Impacts on MT Manufacturers' Exports

	Yes	No
<b>Total</b>	<b>8%</b>	<b>92%</b>
Food & Beverage	7%	93%
Textiles, Clothes, Leather	5%	95%
Wood & Paper	6%	94%
Petroleum, Coal, Chemicals, Plastics, Nonmetallic minerals	4%	96%
Fabricated metal	6%	94%
Machinery & Equipment	17%	83%
Miscellaneous	17%	83%



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## U.S. Tariff Impacts on MT Manufacturers' Input Costs

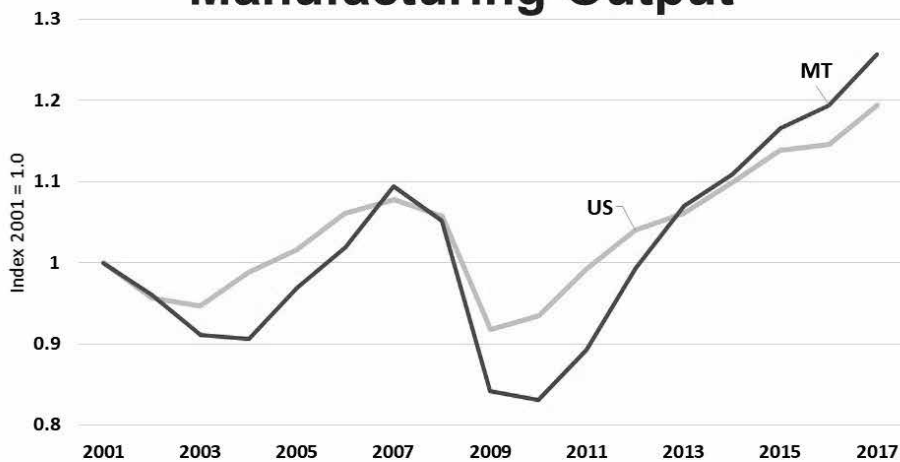
	Yes	No
<b>Total</b>	<b>51%</b>	<b>49%</b>
Food & Beverage	52%	48%
Textiles, Clothes, Leather	61%	39%
Wood & Paper	27%	73%
Petroleum, Coal, Chemicals, Plastics, Nonmetallic minerals	50%	50%
Fabricated metal	52%	48%
Machinery & Equipment	73%	27%
Miscellaneous	45%	55%



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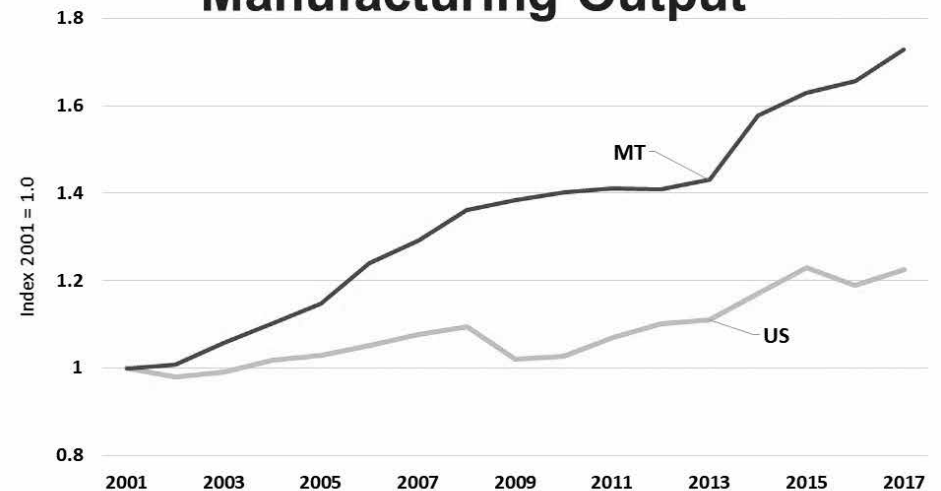
## MT vs. U.S. Durable Goods Manufacturing Output



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## MT vs. U.S. Nondurable Goods Manufacturing Output



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## MT Manufacturing Growth: Adult Beverages

	Growth 2012-18		
	2018	Average	Total
<b>Breweries:</b>			
Employees	979	18%	217%
Number Firms	87	18%	211%
Total Income (thousands)	\$20,815	19%	230%
<b>Wineries:</b>			
Employees	65	17%	195%
Number Firms	12	8%	71%
Total Income (thousands)	\$1,020	21%	272%
<b>Distilleries:</b>			
Employees	152	29%	485%
Number Firms	17	16%	183%
Total Income (thousands)	\$3,409	33%	652%



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## MT Manufacturing Employment Growth by Sector

Sector (* = Nondurable)	Employees	Growth 2007-2017	
		Average	Total
Wood	3,193	-3.9%	-35.6%
Machinery	1,401	-1.2%	-12.8%
Printing & related support*	1,229	-0.8%	-8.1%
Furniture & related	1,194	-0.3%	-3.5%
Food*	3,062	0.3%	3.4%
Nonmetallic mineral	1,507	2.3%	28.9%
Miscellaneous	3,181	2.4%	30.5%
Petroleum & coal*	1,329	2.7%	34.1%
Fabricated metal	3,038	3.9%	53.0%
Beverage & tobacco*	1,421	5.7%	84.1%



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## MT Manufacturing Worker Shortages

	Yes in 2016	Yes in 2017	Yes in 2018	Yes in 2019
<b>Total Manufacturing</b>	31%	71%	23%	27%
Wood Products	29%	81%	26%	35%
Chemical/refining/ metallic products	39%	67%	14%	22%
Food and beverage	30%	84%	20%	30%
Machinery/equipment	20%	70%	18%	38%
All other manufacturing	41%	63%	27%	18%



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## MT Manufacturing Workers 2019...

**Not enough applicants: 12%**

**No job openings in 2019: 23%**

**Not enough qualified applicants: 50%**

**Salary & benefits demanded by applicants were not seen as issues by manufactures during 2019.**

**Most have NOT worked with a local school, community college, or university in past 5 years to develop workforce or train employees.**



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## MT Manufacturing Worker Outlook

	Decrease in 2020	Stay the same	Increase in 2020
<b>Total</b>	<b>3%</b>	<b>63%</b>	<b>34%</b>
Food & Beverage	0%	58%	42%
Textiles, Clothes, Leather	0%	74%	26%
Wood & Paper	6%	71%	23%
Petroleum, Coal, Chemicals, Plastics, Nonmetallic minerals	2%	65%	33%
Fabricated metal	6%	70%	24%
Machinery & Equipment	0%	50%	50%
Miscellaneous	0%	48%	52%



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## MT Manufacturing Workers: 3-year Outlook...

- No job openings expected: 20%
- Not enough applicants: 33%
- Not enough qualified applicants: 64%

Salary and/or benefits demanded by applicants are expected to be more of an issue by manufactures in coming years.



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## MT Manufacturing 2020 Outlook

	Worse	Same	Better
<b>Total</b>	<b>3%</b>	<b>42%</b>	<b>55%</b>
Food & Beverage	0%	28%	72%
Textiles, Clothes, Leather	0%	53%	47%
Wood & Paper	3%	59%	38%
Petroleum, Coal, Chemicals, Plastics, Nonmetallic minerals	4%	37%	59%
Fabricated metal	9%	44%	47%
Machinery & Equipment	0%	43%	57%
Miscellaneous	0%	46%	54%



BUREAU OF BUSINESS AND ECONOMIC RESEARCH  
UNIVERSITY OF MONTANA

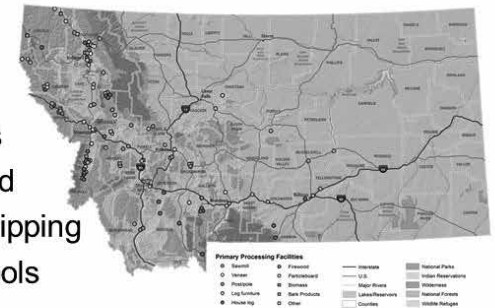
Manufacturing & Forest Industry

## Montana's Wood Products Facilities

~ 125 establishments

~ 70 timber users

- 8 larger, 20+ small sawmills
- Plywood, MDF, particleboard
- Log homes, post & pole, chipping
- Pellets, bark, fuels-for-schools



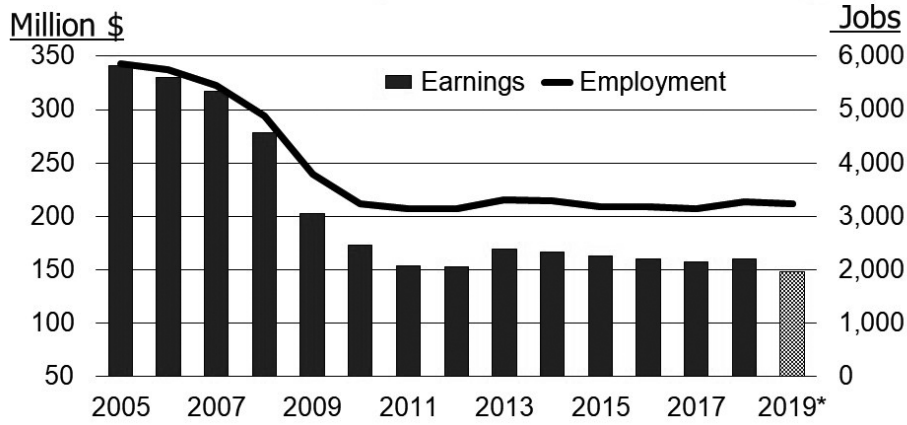
- Mostly small, privately held
- **Most don't own forest land**
- Nearly all rely on timber from public lands



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UNIVERSITY OF MONTANA

Manufacturing & Forest Industry

# Montana Wood & Paper Manufacturing



Sources: Bureau of Economic Analysis, Western Wood Products Association, BBER. \*2019 Estimated.



Manufacturing & Forest Industry

# Montana Forest Industry (Private Sector)

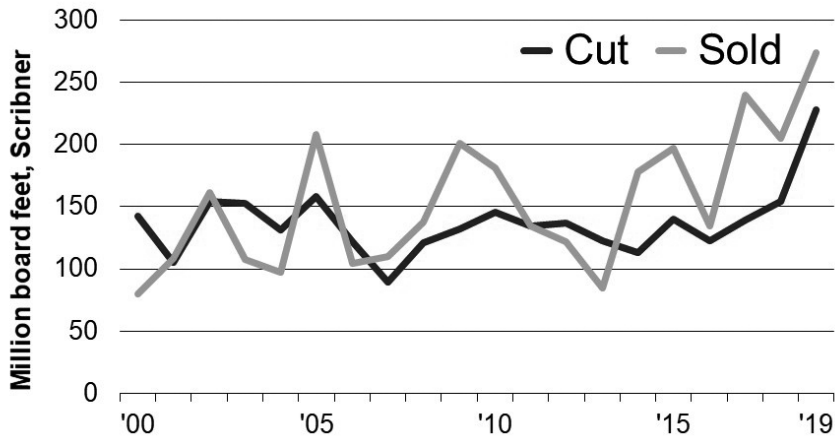
	2004	2010	2019*
<b>Workers (mills &amp; forest)</b>	<b>10,006</b>	<b>7,030</b>	<b>8,022</b>
<b>Earnings (millions)</b>	<b>\$508</b>	<b>\$305</b>	<b>\$365</b>
<b>Primary sales (millions)</b>	<b>\$1,577</b>	<b>\$516</b>	<b>\$520</b>
<b>Lumber production (MMBF)</b>	<b>985</b>	<b>503</b>	<b>480</b>

Sources: Bureau of Economic Analysis, Western Wood Products Association, BBER. \*2019 estimated



Manufacturing & Forest Industry

# National Forest Timber in Montana



Source: USDA Forest Service.

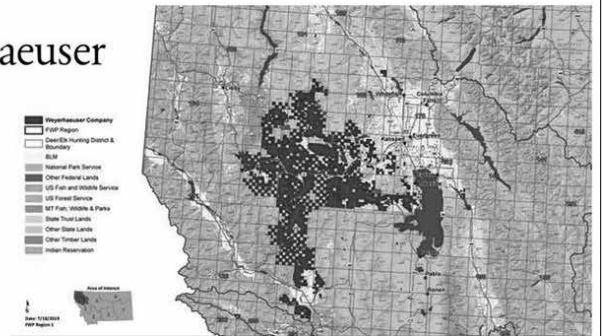


Manufacturing & Forest Industry

# Pending Timberland Sale



- 630,000 acres
- \$145 million
- 2<sup>nd</sup> quarter 2020
- Mostly in northwestern Montana
- to Southern Pine Plantations



Manufacturing & Forest Industry

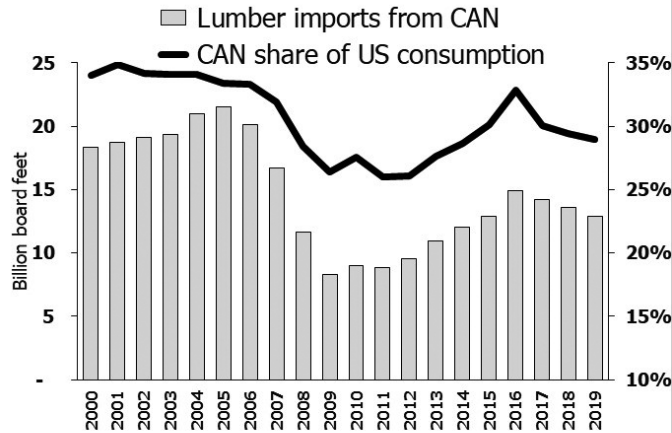
# Canadian Lumber

## Volume & share of US market down 3 years

Tariffs & CAN mills in US are having an impact.

Beetles & fires reduced BC timber & lumber supply.

Russia passed CAN as world's largest softwood lumber exporter in 2019.



# Thank you!

[todd.morgan@business.umt.edu](mailto:todd.morgan@business.umt.edu)  
[www.BBER.umt.edu/FIR](http://www.BBER.umt.edu/FIR)

# The Outlook for Real Estate and Construction

Brandon Bridge  
Economist and Director of Forecasting  
Bureau of Business and Economic Research  
University of Montana



Real Estate and Construction

## Reasons for Optimism?

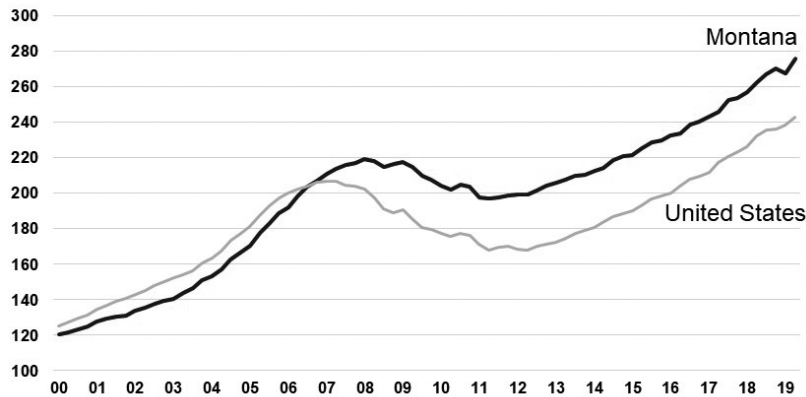
- Strong volumes nationally
- Steady price increases
- Mortgage risk subsiding
- Positive industry sentiment
- 2018 volumes down
- 2019 volumes looking stronger
- Bifurcated market
- Affordability getting worse
- Tight inventories



Real Estate and Construction

### Strong Housing Price Growth Since 2011

FHFA Housing Price Index, U.S., 1995=100

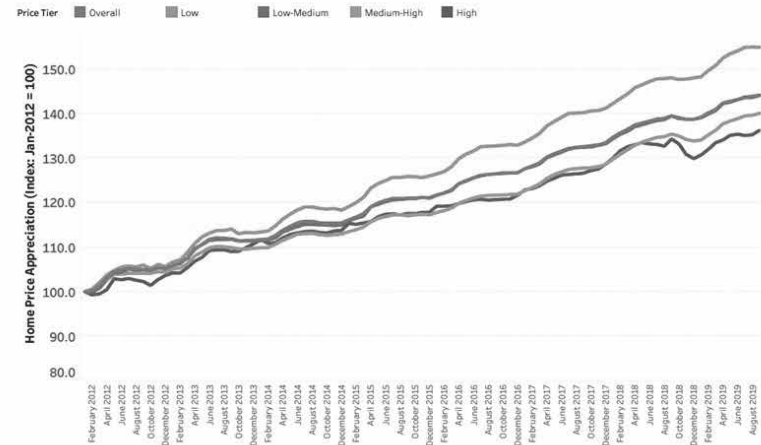


Source: Federal Housing Finance Agency



Real Estate and Construction

### National Price Growth Not Evenly Distributed Across Price Tiers



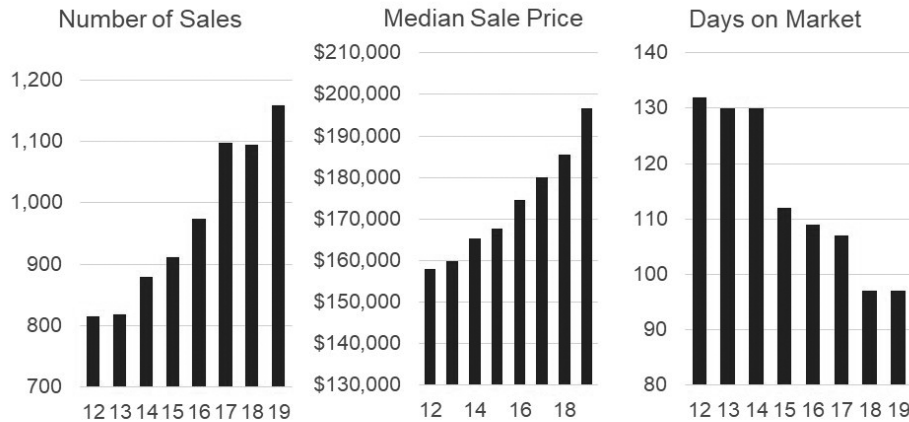
Source: AEI Center on Housing Markets and Finance



Real Estate and Construction

# Markets Looking Much Healthier

Cascade County Market Statistics for Single Family Homes



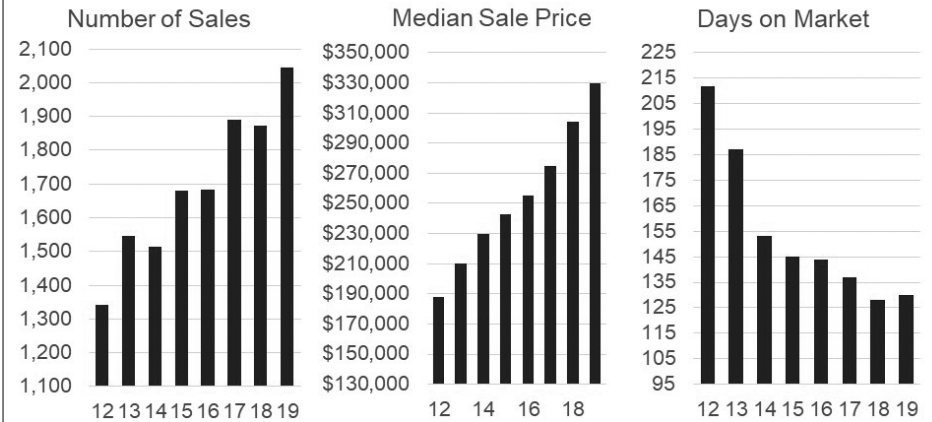
Source: Great Falls Association of Realtors.



Real Estate and Construction

# Markets Remaining Strong

Flathead County Market Statistics for Single Family Homes



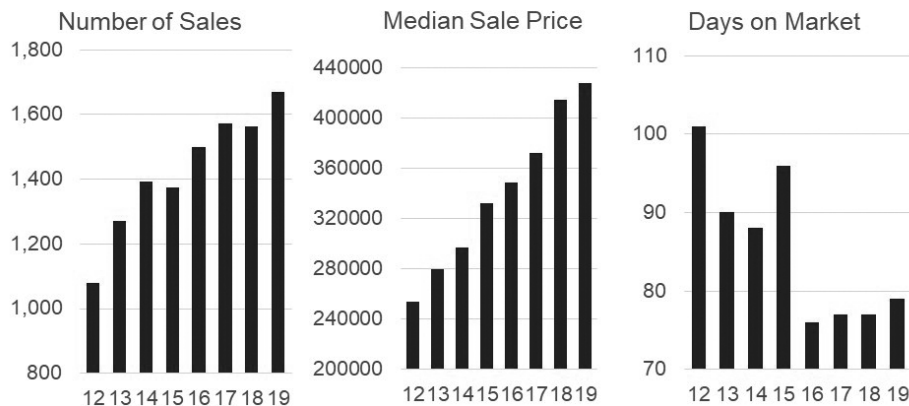
Source: Montana Regional MLS.



Real Estate and Construction

# Market Continues to Heat Up

Gallatin County Market Statistics for Single Family Homes



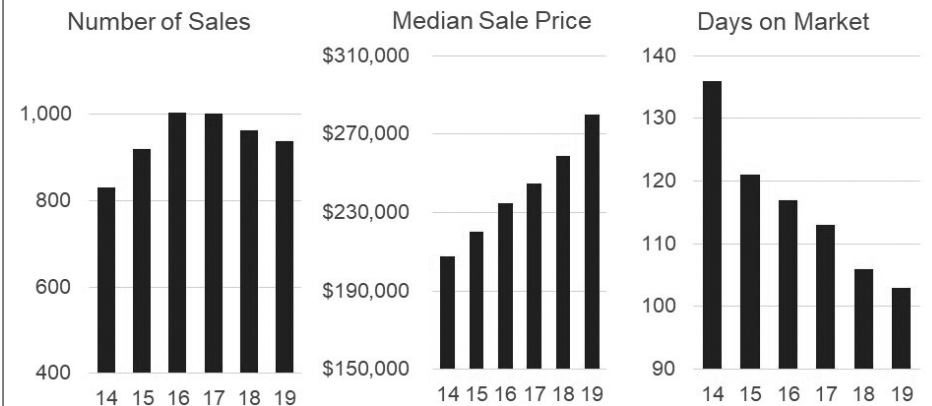
Source: Gallatin Association of Realtors.



Real Estate and Construction

# Market Price Increasing

Lewis & Clark County Market Statistics for Single Family Homes



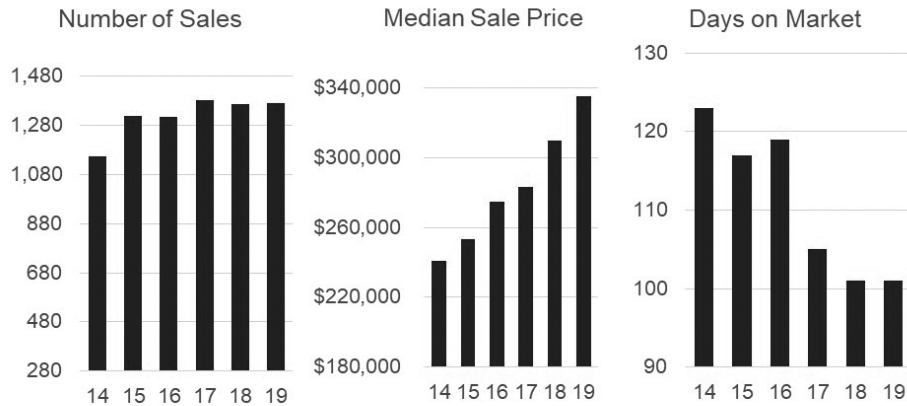
Source: Montana Regional MLS.



Real Estate and Construction

# Market Continues to Heat Up

Missoula County Market Statistics for Single Family Homes



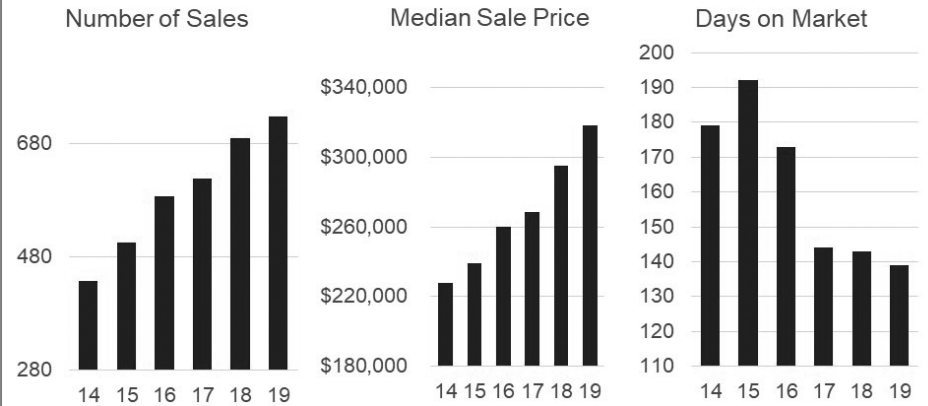
Source: Montana Regional MLS.



Real Estate and Construction

# Market Continues to Heat Up

Ravalli County Market Statistics for Single Family Homes



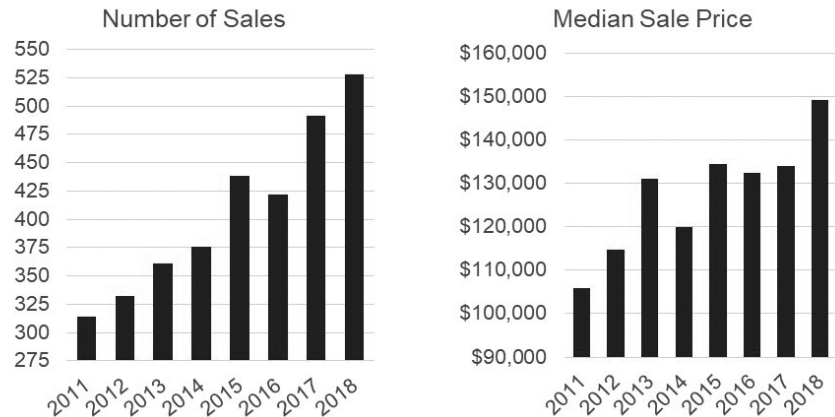
Source: Montana Regional MLS.



Real Estate and Construction

# Markets Looking Healthier

Silver Bow County Market Statistics



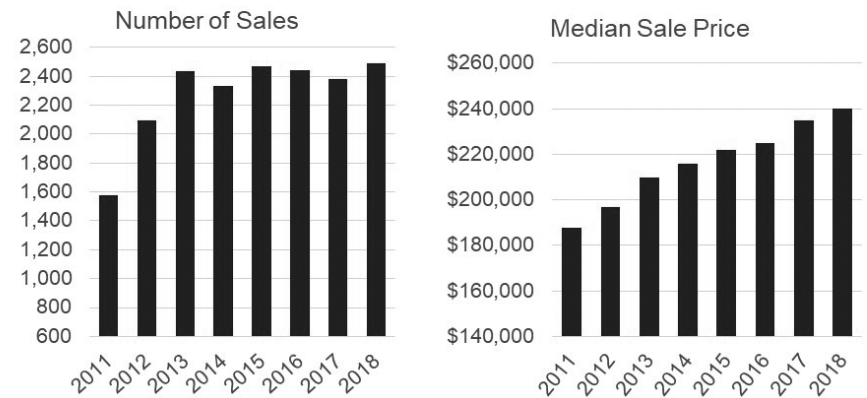
Source: Montana Department of Revenue.



Real Estate and Construction

# Sale Price Growth

Yellowstone County Market Statistics



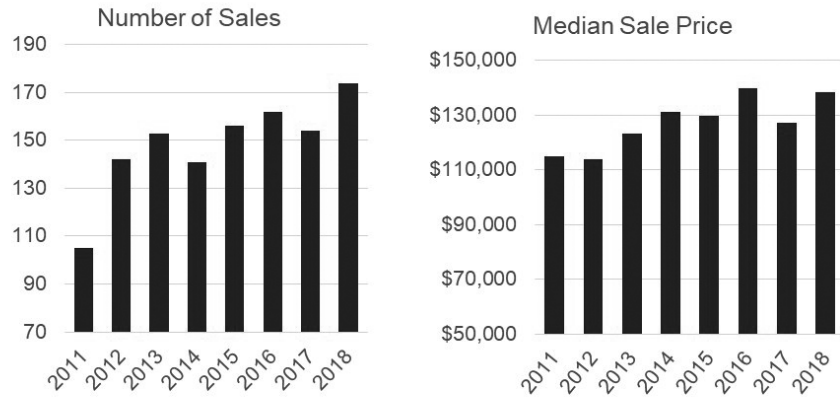
Source: Montana Department of Revenue



Real Estate and Construction

# Volumes Rising

Fergus County Market Statistics



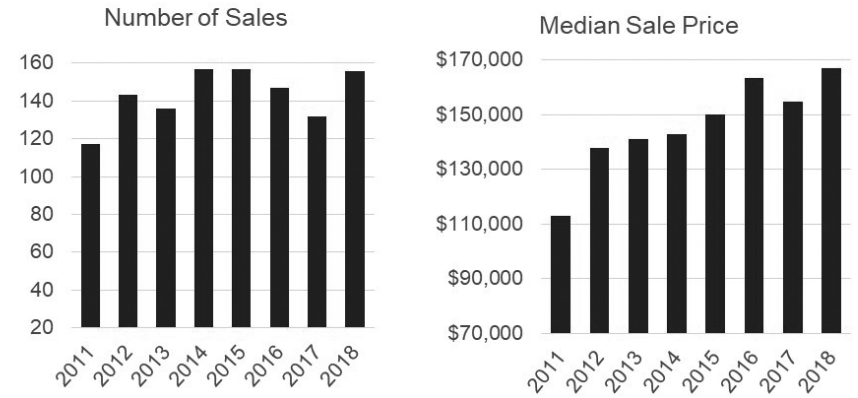
Source: Montana Department of Revenue.



Real Estate and Construction

# Markets Looking Healthier

Hill County Market Statistics

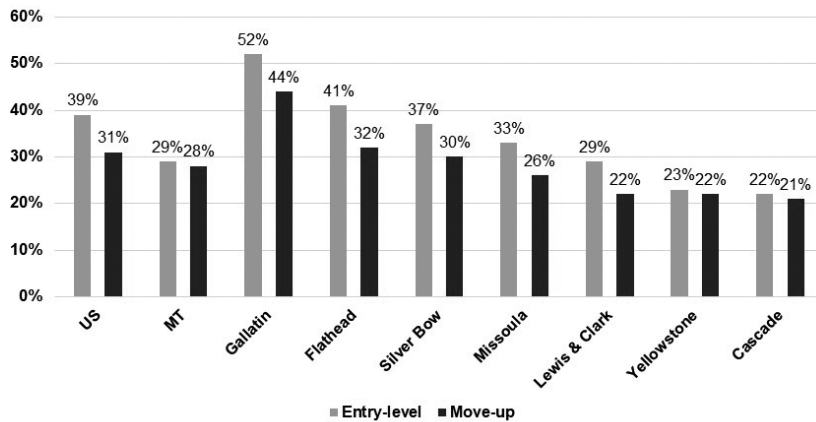


Source: Montana Department of Revenue.



Real Estate and Construction

# Home Price Appreciation Since 2012 by Market Segment

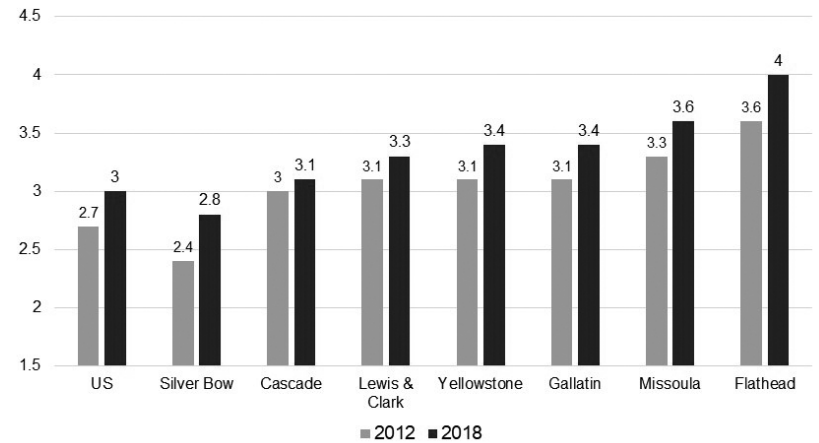


Source: American Enterprise Institute



Real Estate and Construction

# Median Price-to-Income Ratio for Entry-Level Homes



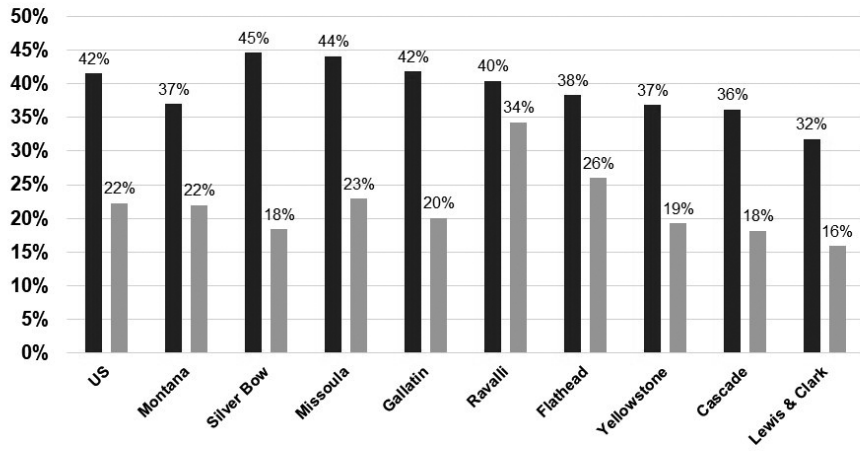
Source: American Enterprise Institute



Real Estate and Construction



### Percent of Households That Are Cost Burdened



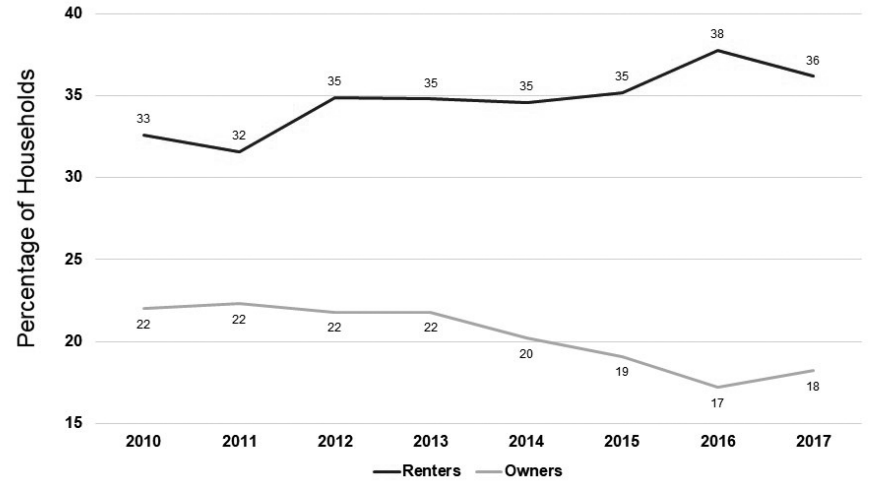
Source: U.S. Census Bureau.

■ Renters ■ Owners



Real Estate and Construction

### Cascade County Cost Burdened Households

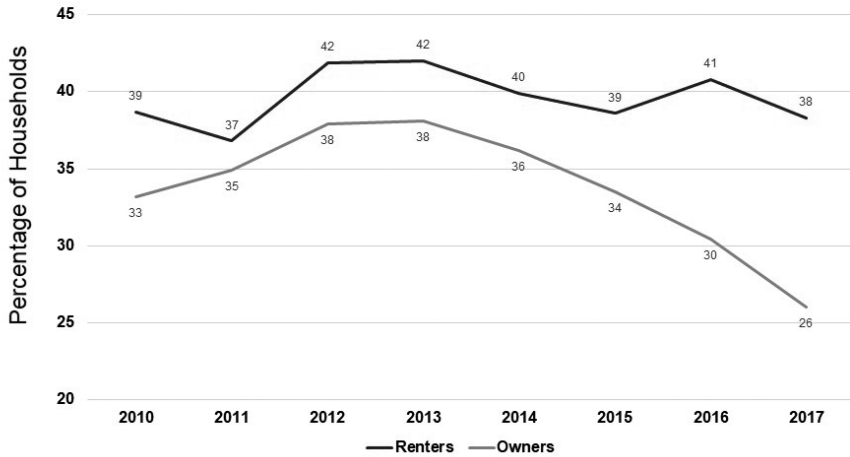


Source: U.S. Census Bureau.



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### Flathead County Cost Burdened Households

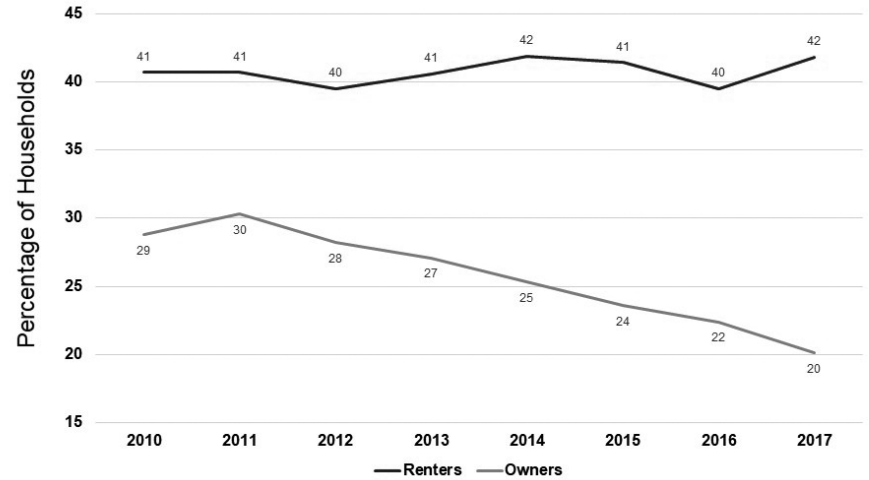


Source: U.S. Census Bureau.



Real Estate and Construction

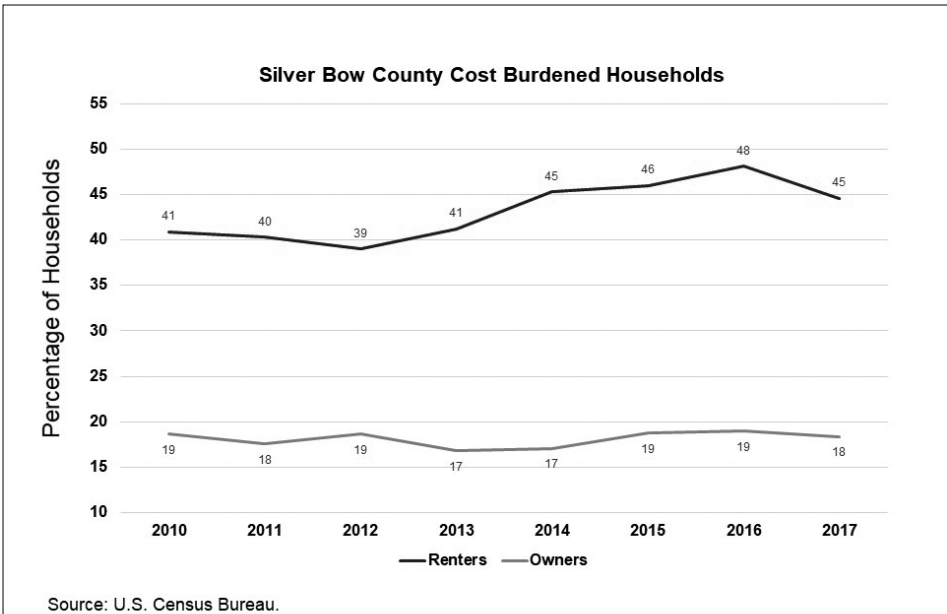
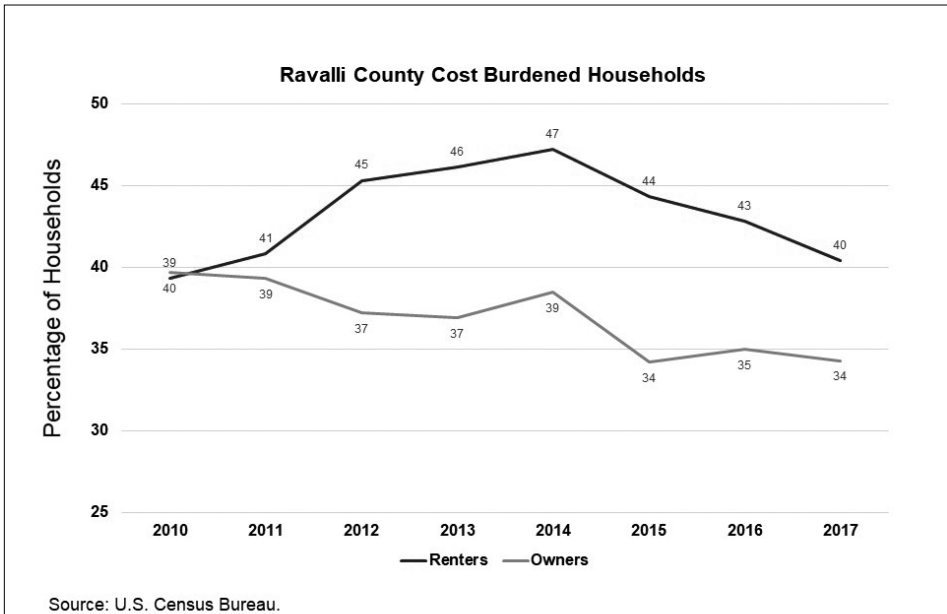
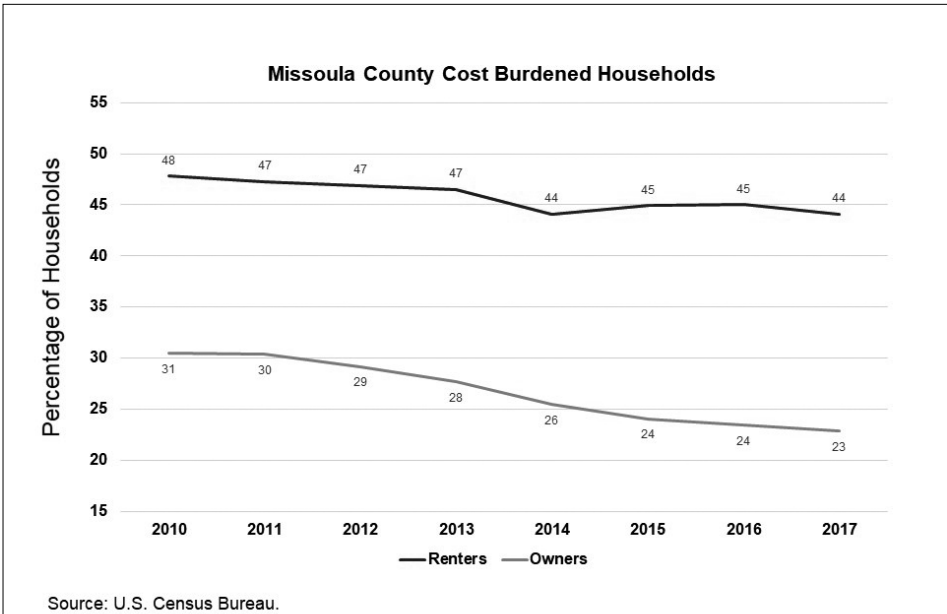
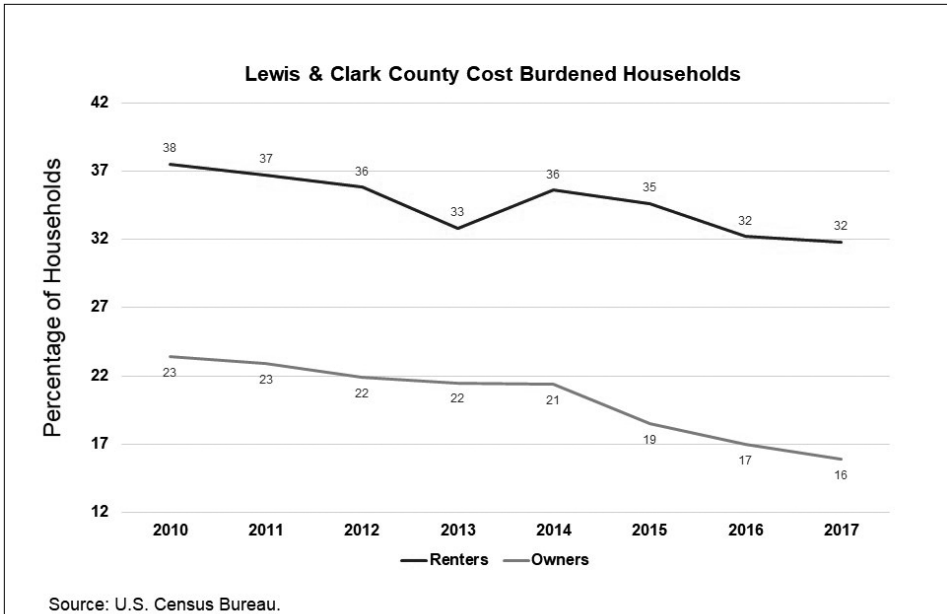
### Gallatin County Cost Burdened Households

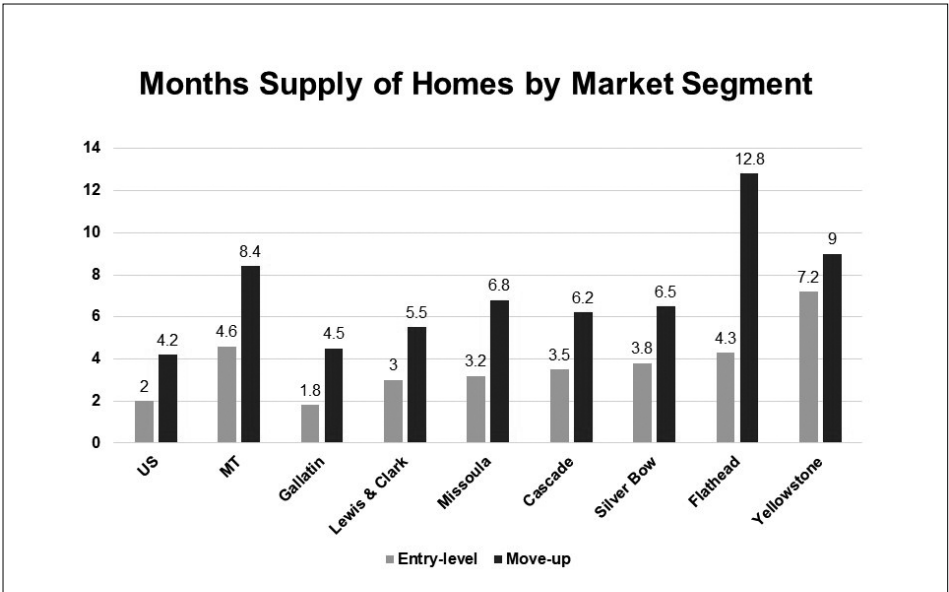
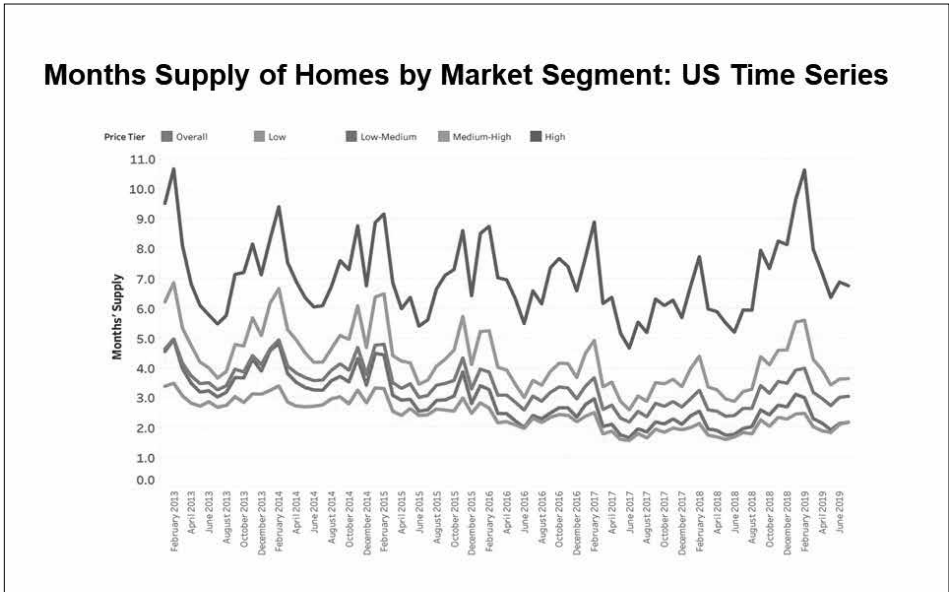
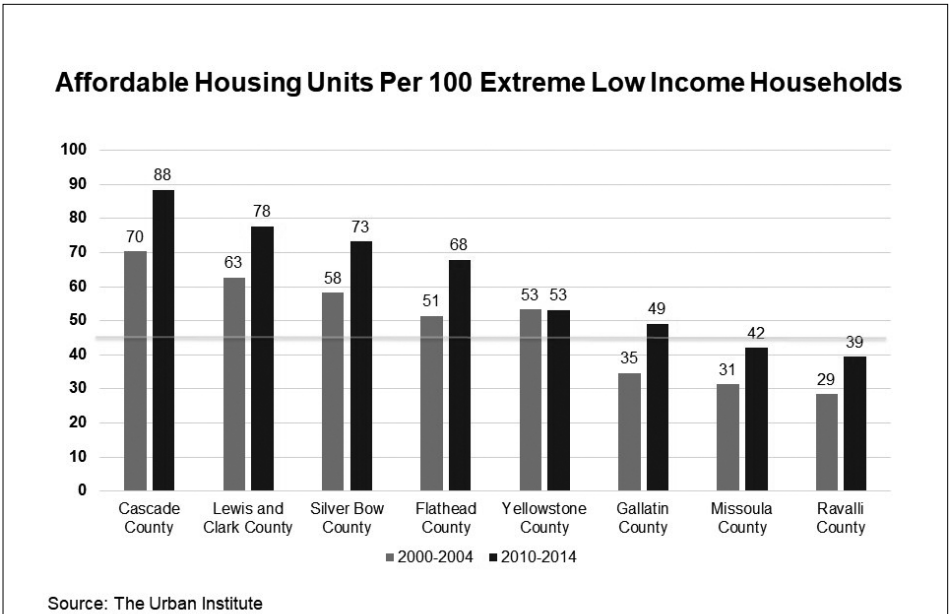
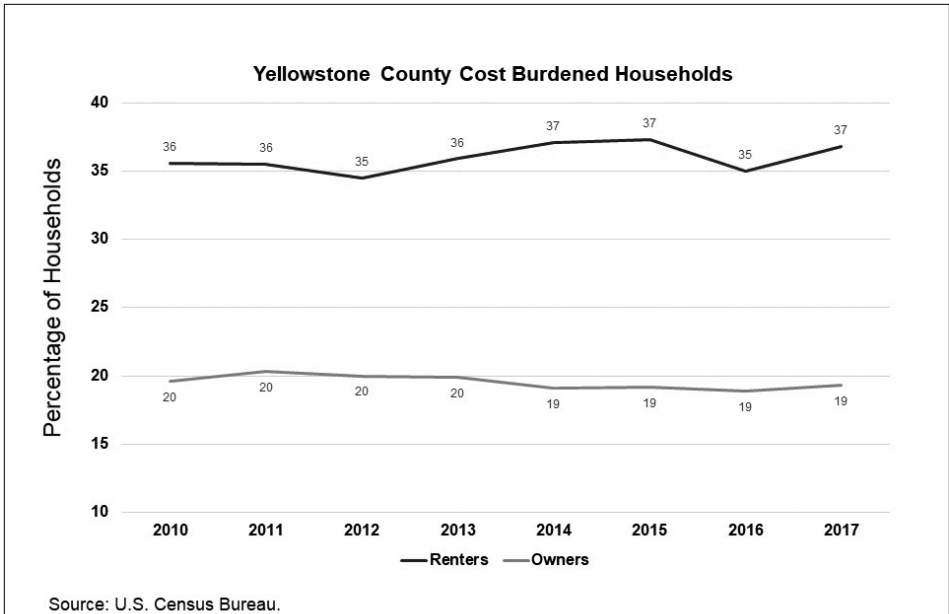


Source: U.S. Census Bureau.

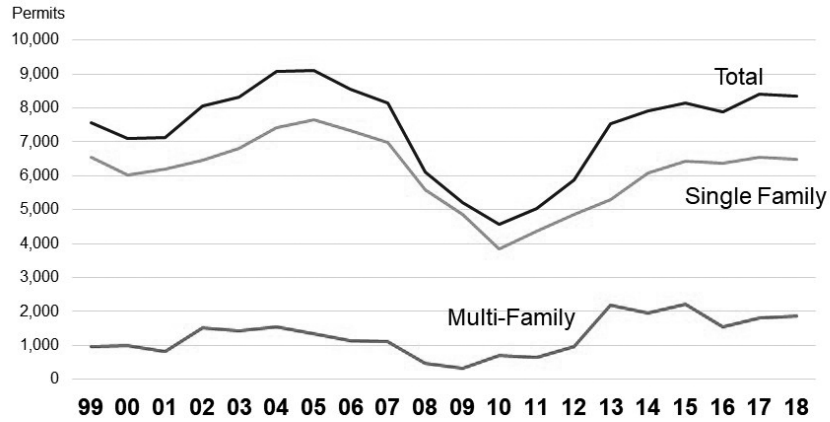


Real Estate and Construction

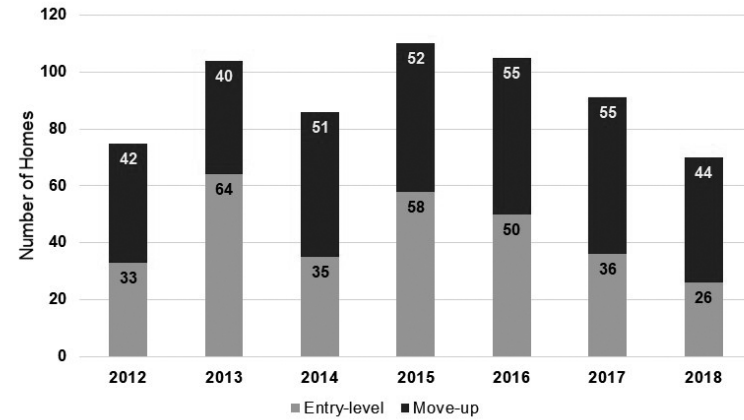




## New Home Construction Leveling Off Housing Permits, Montana

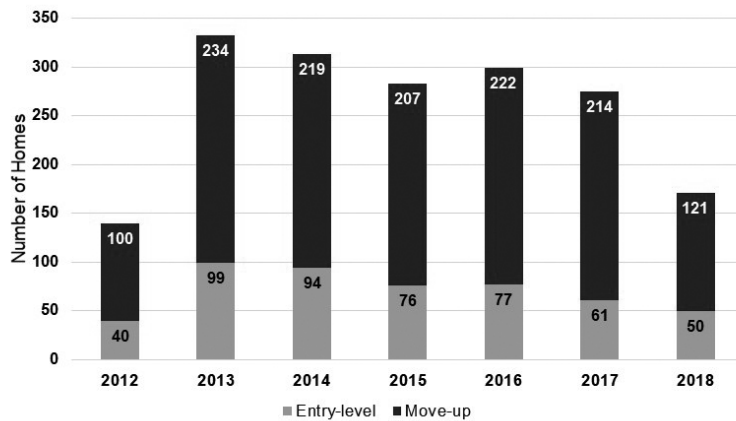


## New Construction by Market Segment: Cascade County



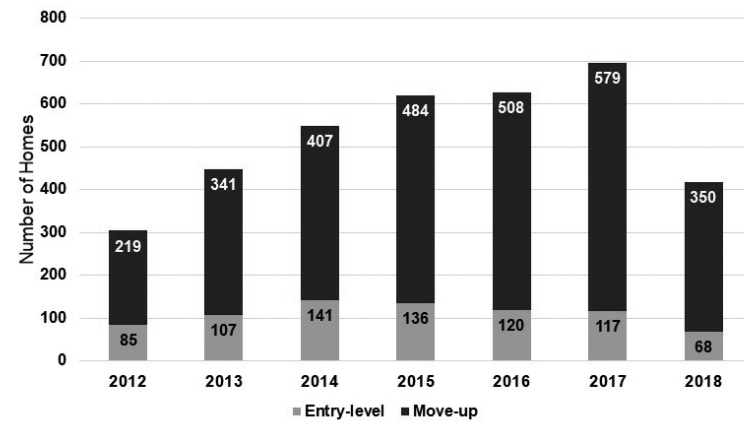
Source: American Enterprise Institute

## New Construction by Market Segment: Flathead County



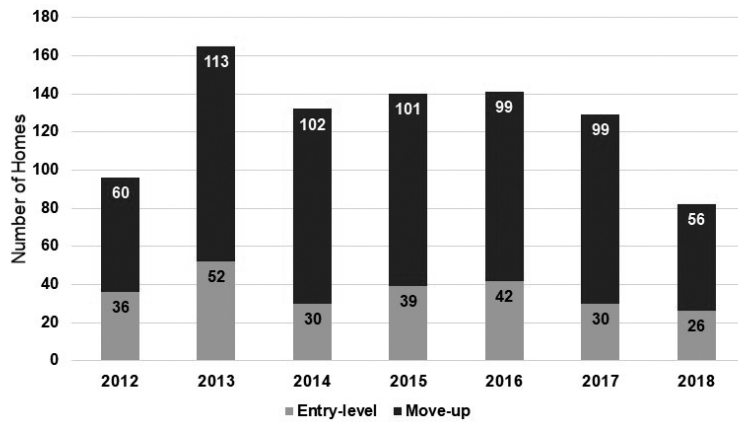
Source: American Enterprise Institute

## New Construction by Market Segment: Gallatin County



Source: American Enterprise Institute

### New Construction by Market Segment: Lewis & Clark County

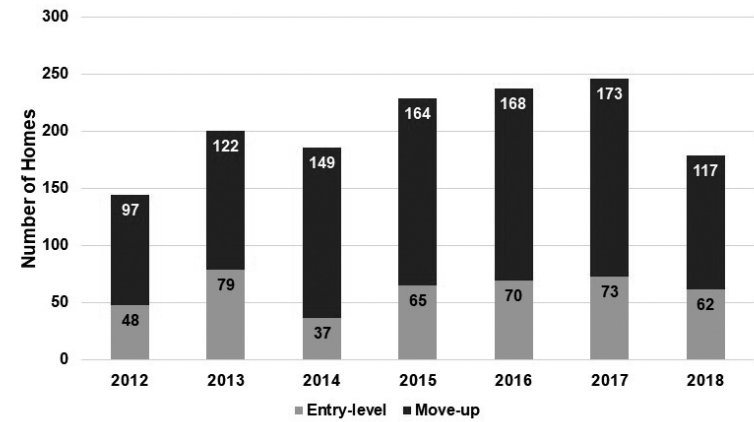


Source: American Enterprise Institute



Real Estate and Construction

### New Construction by Market Segment: Missoula County

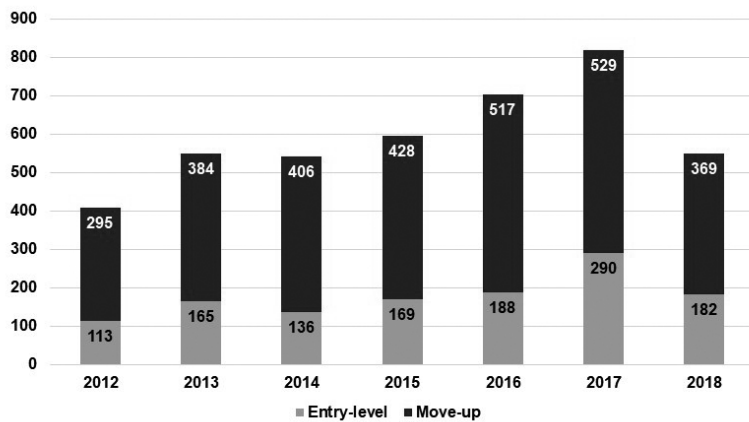


Source: American Enterprise Institute



Real Estate and Construction

### New Construction by Market Segment: Yellowstone County



Source: American Enterprise Institute



Real Estate and Construction

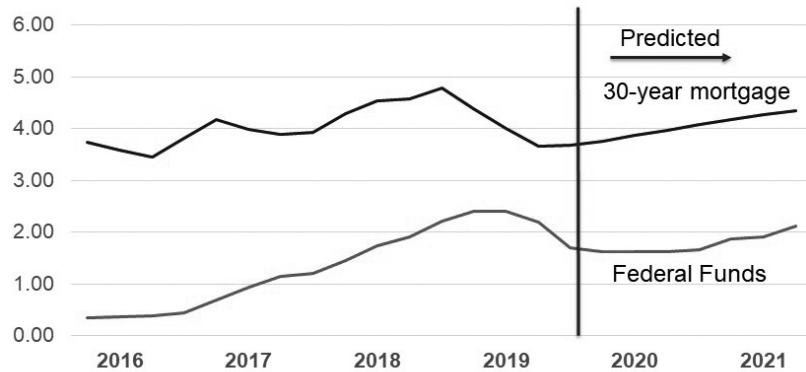
## Looking Ahead to 2020

- Interest Rates Likely to Remain Low



Real Estate and Construction

## Mortgage Rates Looking to Bottom Out



Source: IHS Markit



Real Estate and Construction

## Looking Ahead to 2020

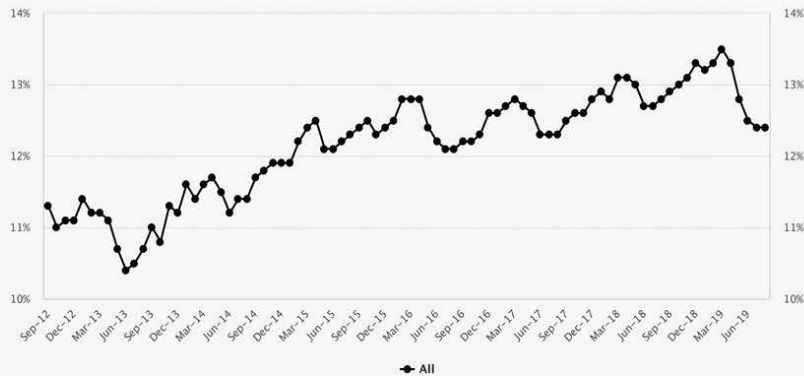
- Interest rates likely to remain low
- Real estate risk may be subsiding



Real Estate and Construction

## NMRI, Purchase Loans

Source: AEI Center on Housing Markets and Finance



The National Mortgage Risk Index (NMRI) measures how the loans originated in a given month would perform if subjected to the same stress as in the financial crisis that began in 2007. It measures the default risk of newly originated mortgages by assigning every loan a predicted default rate based on its credit score, CLTV, DTI, Loan Term, ARM status, and Agency. See NMRI methodology for details.

Highcharts.com

## Looking Ahead to 2020

- Interest rates likely to remain low
- Real estate risk may be subsiding
- Home builder sentiment indicates positive outlook

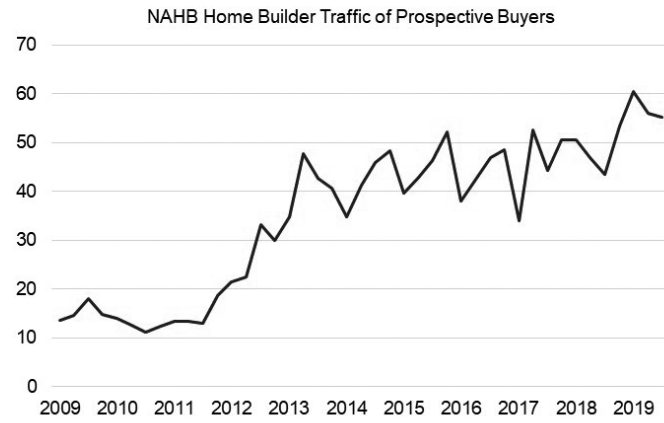


Real Estate and Construction



Real Estate and Construction

## Positive Builder Sentiment



Source: National Association of Home Builders



Real Estate and Construction

## Outlook for 2020

- Real estate markets in Montana will remain strong
- Low interest rates will continue to drive demand
- Affordability will get worse, particularly for entry-level homes
- Lowered market risk will boost optimism



Real Estate and Construction

## Questions?

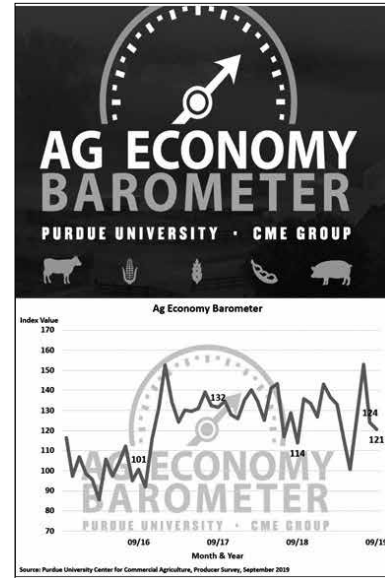


Real Estate and Construction

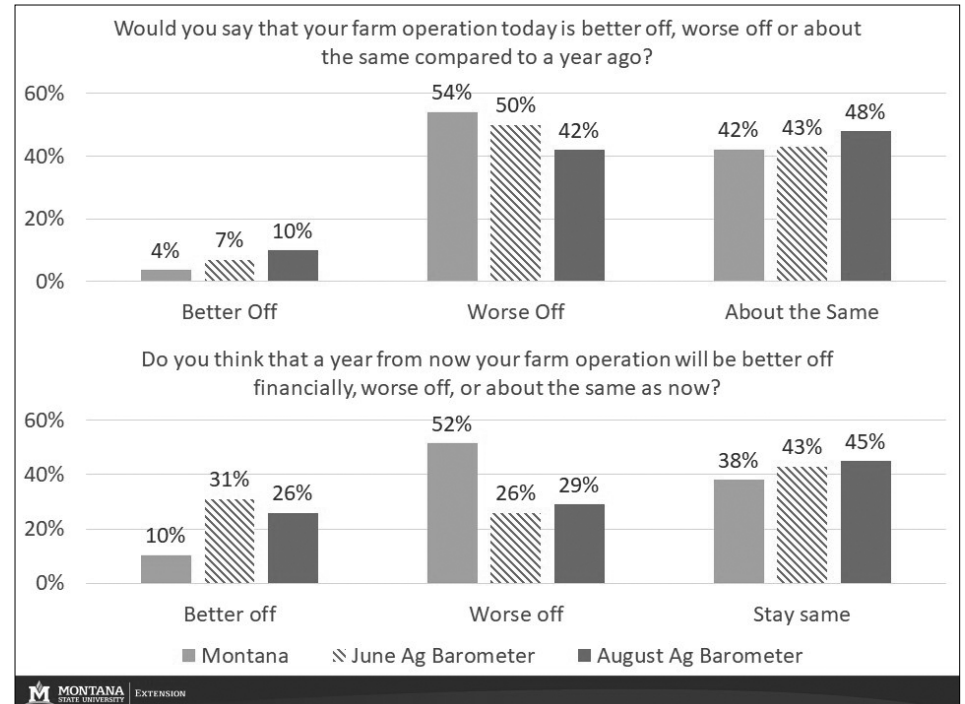
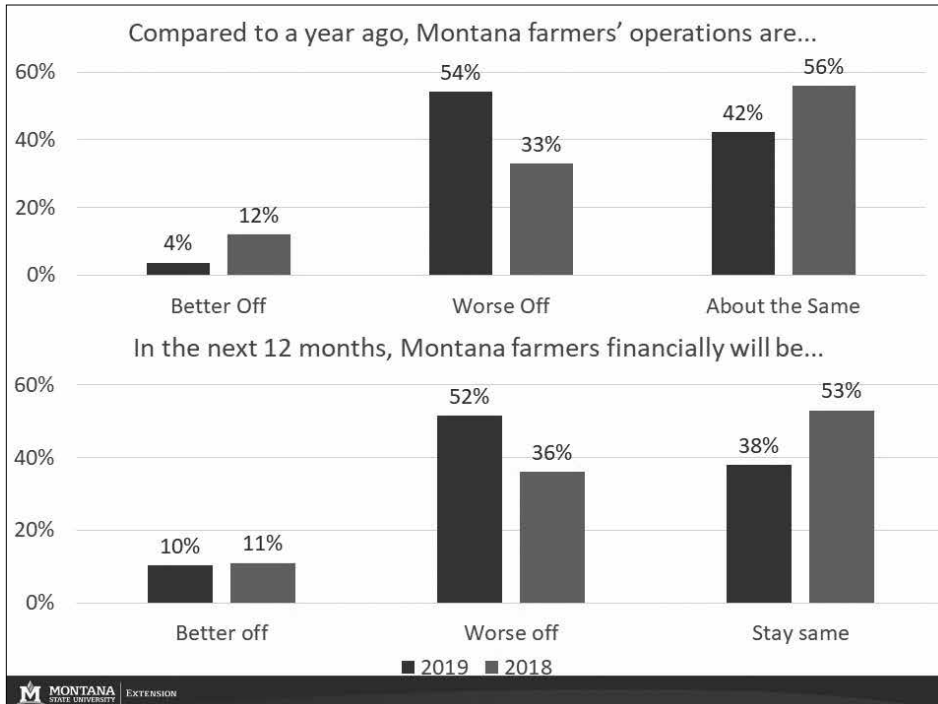
# 2018 Montana Agricultural Year in Review

Kate Binzen Fuller  
Assistant Professor/Extension Specialist

George W. Haynes  
Professor/Extension Specialist  
Department of Agricultural Economics & Economics  
MSU Extension

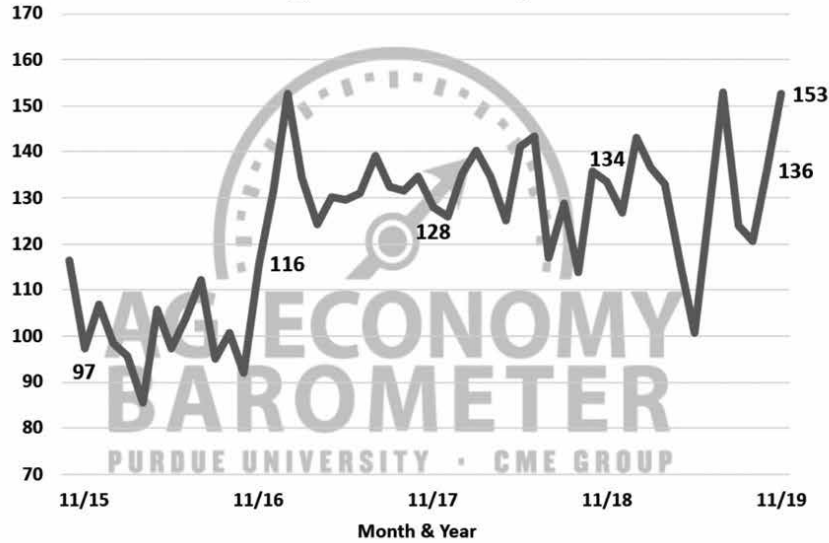


VS





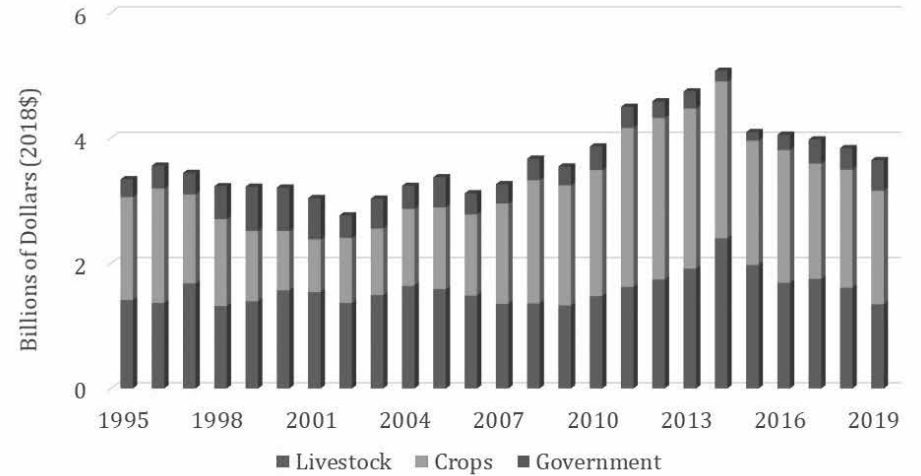
# November Ag Economy Barometer



Source: Purdue University Center for Commercial Agriculture, Producer Survey, November 2019



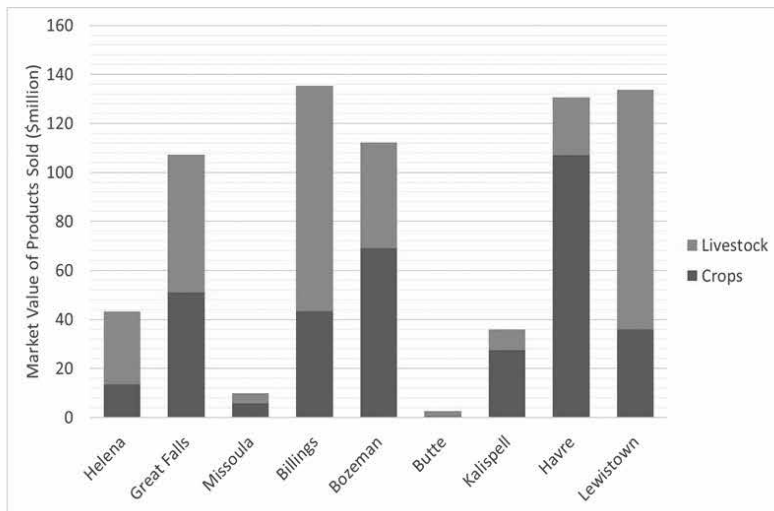
# Montana Cash Receipts (1995 – 2019F)



Source: USDA ERS Farm Income and Wealth Statistics



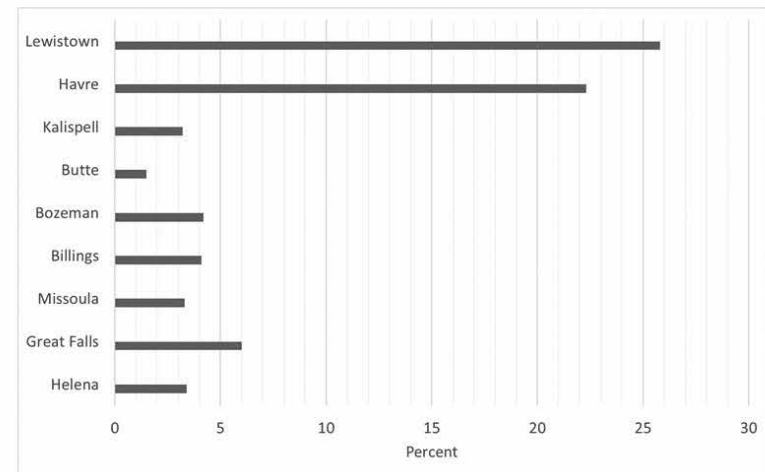
# Market Value of Livestock and Crops Sold



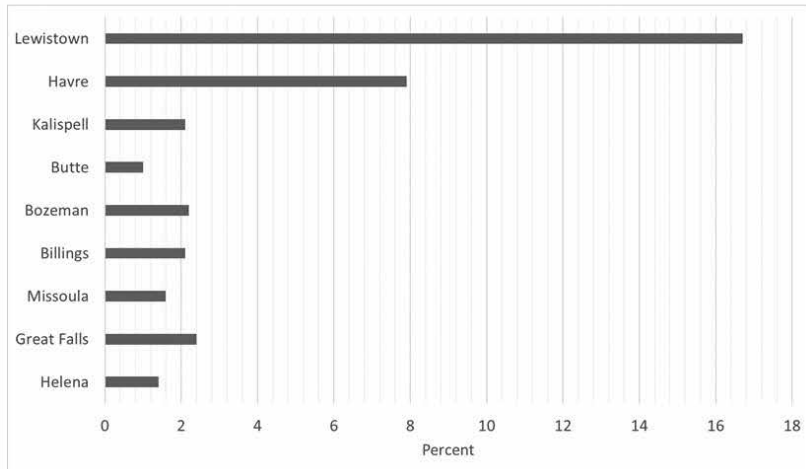
Source: 2017 Census of Agriculture



# Percentage of Jobs from Agriculture



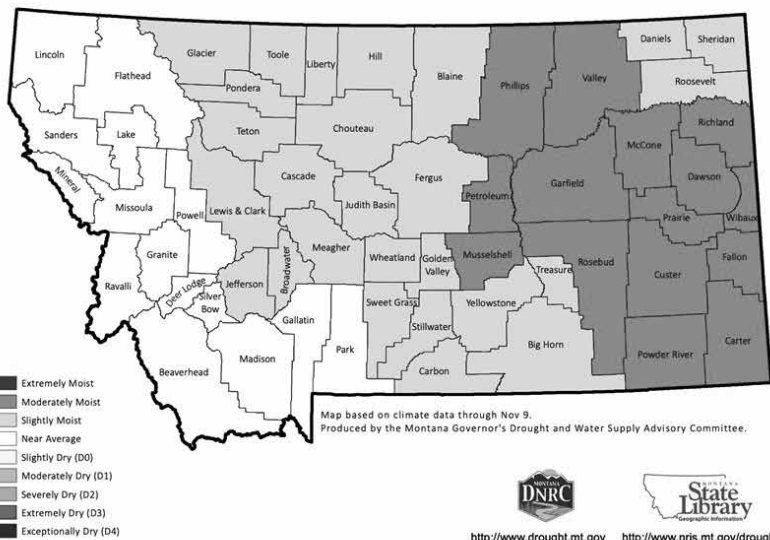
## Percentage of Value-Added from Agriculture



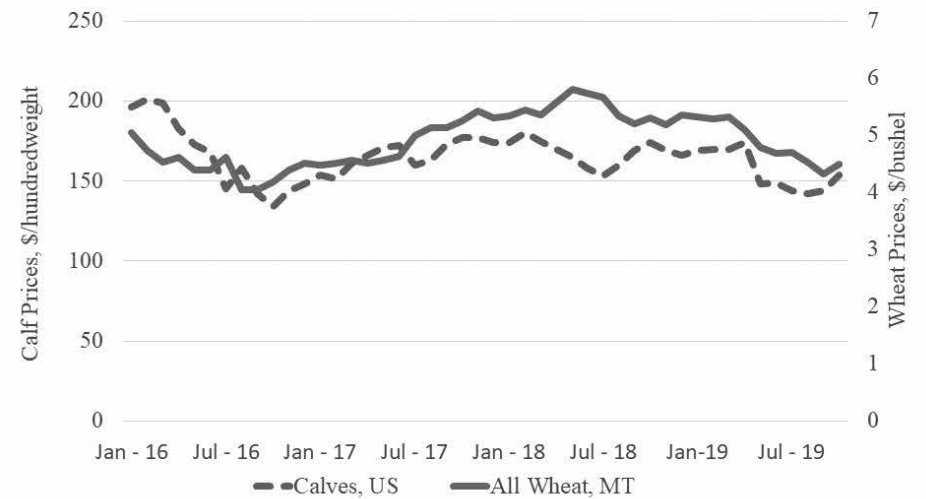
## Sept. 2019 Drought Map



## November 2019 Drought Map



## Prices: Slight Harvest Rally

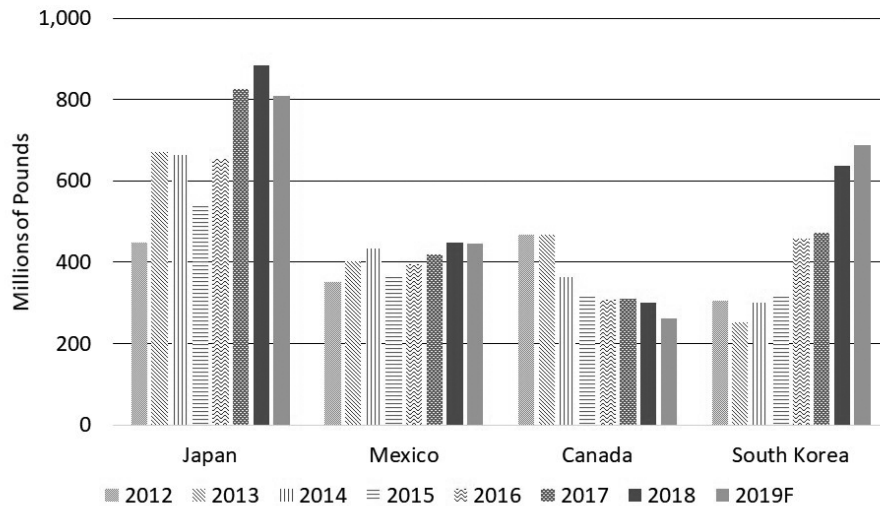


# CATTLE

## What Happened in the Late Spring?

- Corn price increase
    - Calves a more costly investment
  - Kansas beef packing plant fire
- ...And why are prices still low?**
- Drought in southern states
  - Snowstorm in Midwest in early October
  - Larger numbers of feeders on the market
    - Replacements not being held back

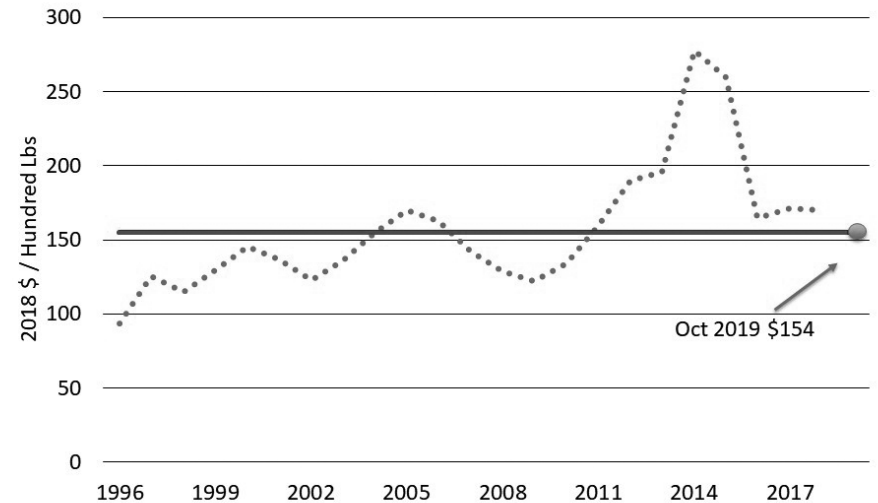
## Beef Exports



Source: USDA, ERS

China #12

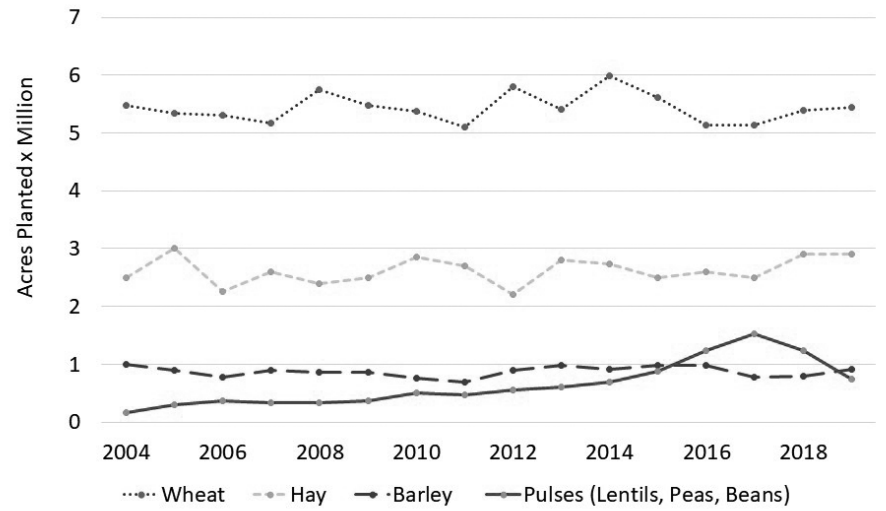
## U.S. Average Calf Prices (2018\$)



Source: NASS Quickstats

# CROPS

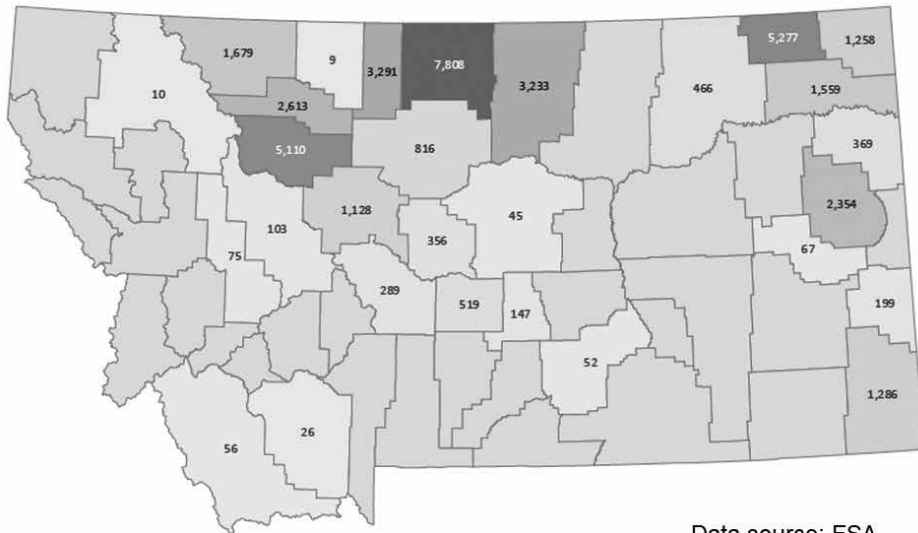
## Montana Major Crop Acreage



Source: NASS Quickstats, Mercaris, MDA

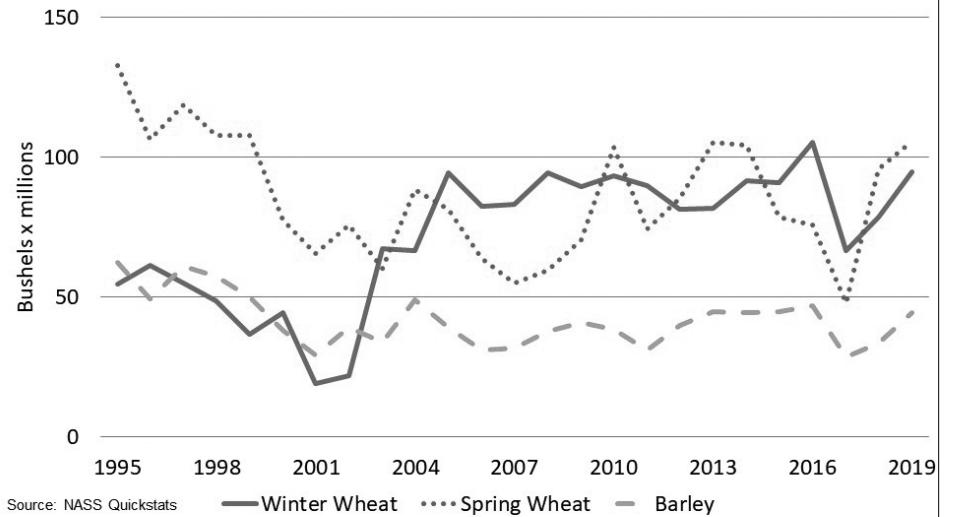
351K organic acres  
~40K hemp acres

## 2019 Montana Hemp Acres



Data source: FSA

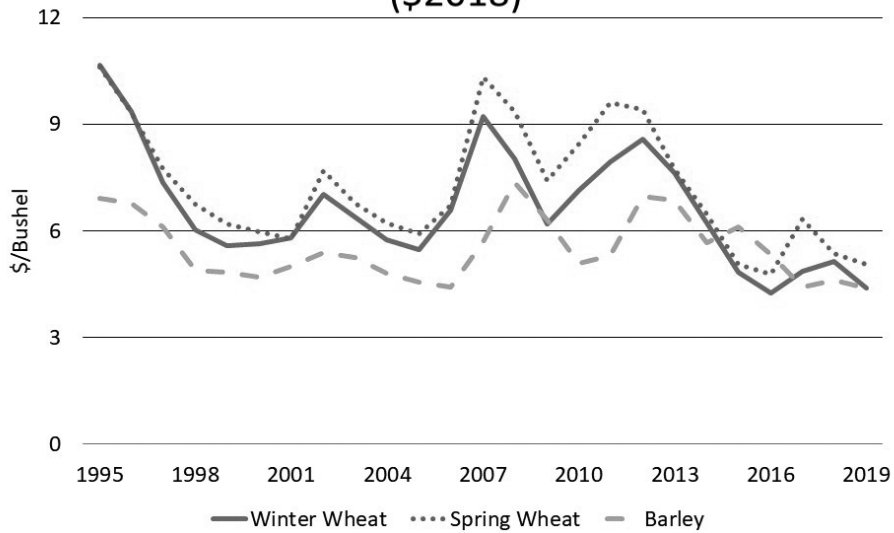
## Montana Grain Production



Source: NASS Quickstats

— Winter Wheat    ···· Spring Wheat    - - - Barley

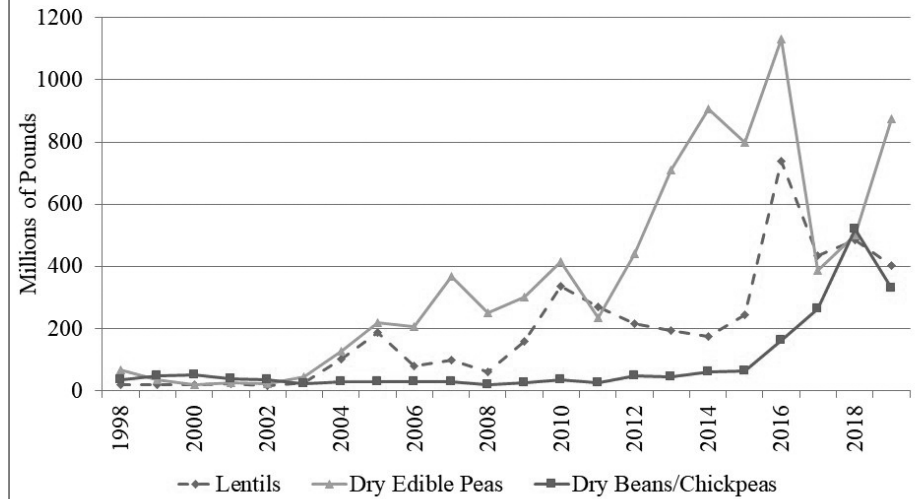
## Montana Grain Prices (\$2018)



Source: NASS Quickstats



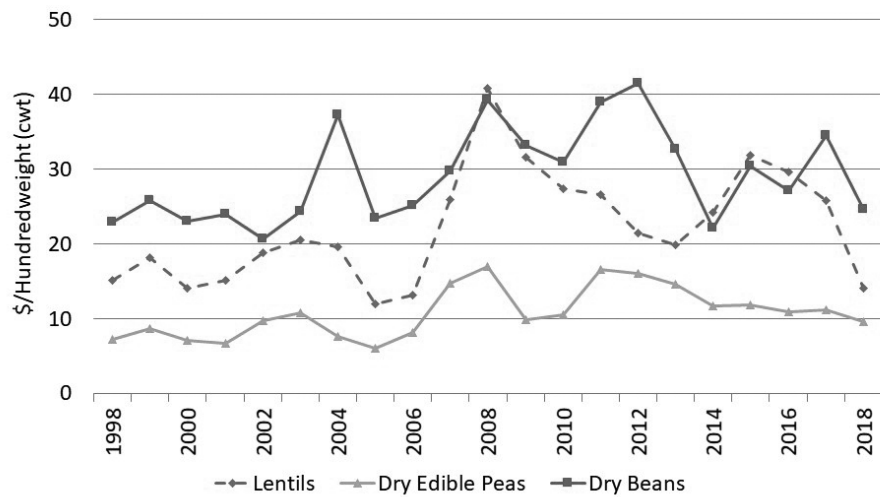
## Montana Pulse Production



Source: NASS Quickstats



## Montana Pulse Prices (\$2018)



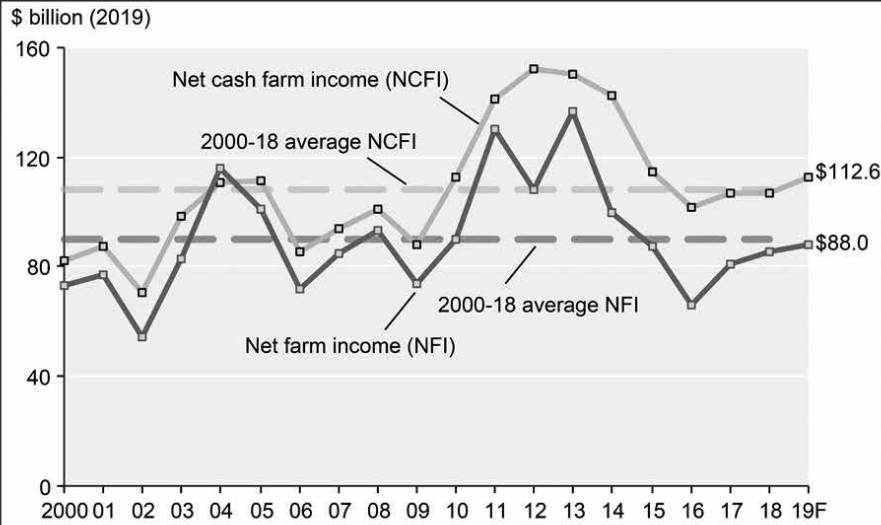
Source: NASS Quickstats



## TRENDS IN THE GREATER AG ECONOMY



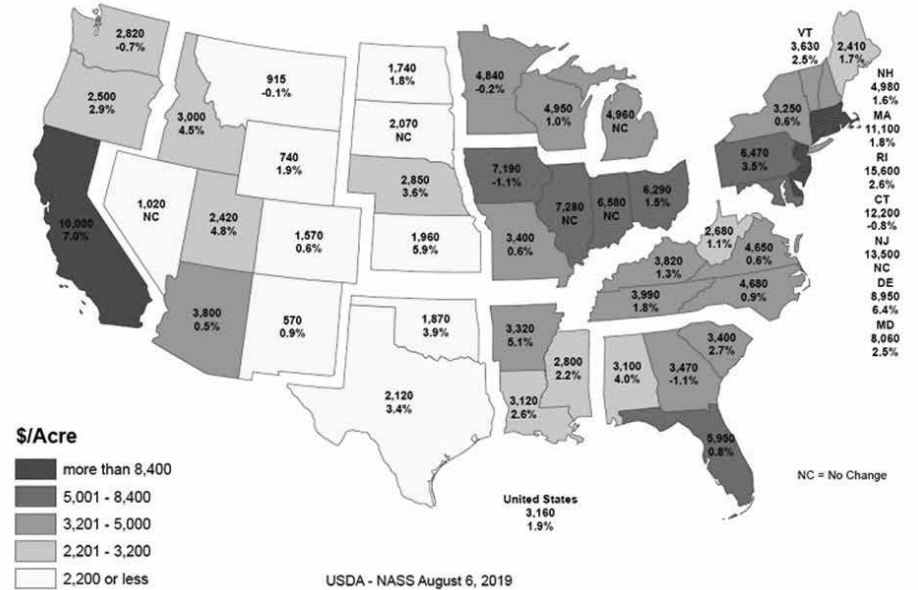
### Net farm income and net cash farm income, 2000-19F



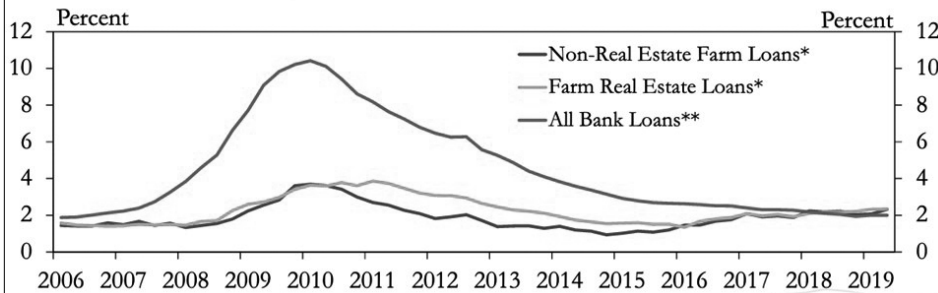
Note: F = forecast. Values are adjusted for inflation using the chain-type GDP deflator, 2019=100.  
 Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.  
 Data as of August 30, 2019.

### 2019 Farm Real Estate Value by State

Dollars per Acre and Percent Change from 2018

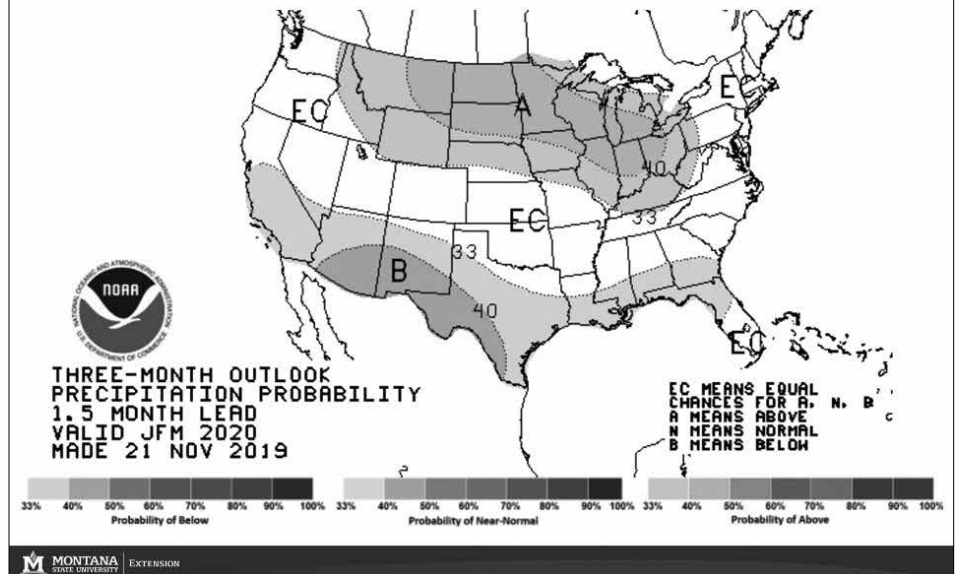


### Delinquency Rates at Commercial Banks

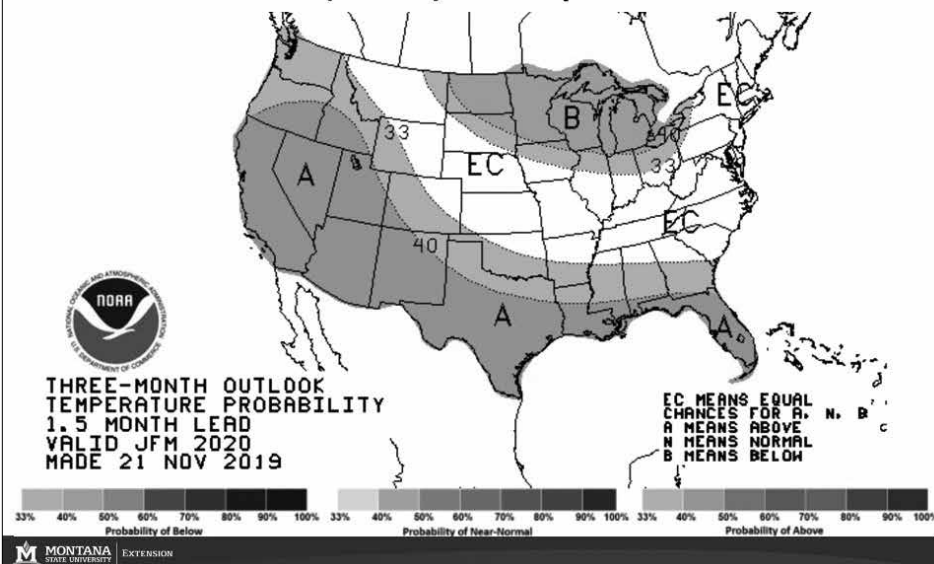


\* Includes the share of all past due, nonaccruing and net charge-off loans  
 \*\* All bank loans include all loans made at commercial banks. Q2 not yet available/reported as Q1 figure.  
 Source: Kansas City Federal Reserve U.S. Agricultural Outlook, Aug 2019

### Domestic Production Conditions: Winter (JFM) Precip. Forecast



# Domestic Production Conditions: Winter (JFM) Temp. Forecast



## Questions

[kate.fuller@montana.edu](mailto:kate.fuller@montana.edu)





HEALTHY MONTANA  
FORESTS, HEALTHY  
ECONOMIC FUTURE

IDAHO  FOREST  
G R O U P

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*Sibanye-Stillwater is a leading international precious metals mining company, with a diverse portfolio of platinum group metal (PGM) operations in the United States and Southern Africa, as well as gold operations and projects in South Africa. The Group is the world's largest primary producer of platinum and rhodium, and the second largest primary producer of palladium, while it ranks third globally, on a gold and gold-equivalent basis.*

### MONTANA OPERATIONS

Sibanye-Stillwater is engaged in the development, extraction and processing of PGMs from a geological formation in south-central Montana known as the J-M Reef, which is the only known significant source of PGMs in the US and the highest-grade PGM deposit known in the world. Sibanye-Stillwater is also one of the world's largest global recyclers of PGMs derived from spent catalytic converters. The majority of the company's PGMs are used in catalytic converters to reduce vehicle air emissions.

### STILLWATER AND EAST BOULDER MINES

	Leading low-cost PGM producer
	Nearly <b>600,000 ounces</b> mined in 2018
	Approximately <b>13 million total ounces</b> PGMs produced historically
	Over <b>25 million ounces</b> proven and probable reserves (78% palladium and 22% platinum)

### COLUMBUS METALLURGICAL COMPLEX

	Includes smelter, base metal refinery and analytical laboratory
	Nearly <b>690,000 ounces</b> of PGMs recycled in 2018
	Record nearly <b>1.3 million ounces</b> processed in 2018
	Consistently less than 5% of operating permit air emissions limits at the smelter

### COMMUNITY LEADER

At Sibanye-Stillwater, we believe our mining improves lives. We are committed to creating superior value for all of our stakeholders, including employees, suppliers and communities.

	Over <b>1,750</b> Montana employees
	Over <b>\$16.8 million</b> in local taxes annually
	Over <b>\$170 million</b> annual payroll costs
	Over <b>\$40 million</b> in annual employee taxes
	Over <b>\$490 million</b> in total annual purchases
	Over <b>\$55,000</b> in scholarships awarded
	Nearly <b>\$400,000</b> in charitable contributions annually with focus on rural emergency and healthcare services, STEM education, local community improvement activities and environmental stewardship

[www.sibanyestillwater.com](http://www.sibanyestillwater.com)



# Building a Strong America®

Our legacy of Building a Strong America® began in 1924 when we brought energy to towns on the Montana-North Dakota border. Today, from our headquarters in Bismarck, North Dakota, we operate in 45 states, delivering energy and providing construction materials and services. We power homes, businesses and industry with electricity and natural gas. We connect homes, factories, offices and stores with pipelines and wiring. We keep our country moving by building and maintaining the transportation network of roads, highways and airports. We are your resources, for today and tomorrow.


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# FINDING THE RIGHT BALANCE

Sustainability, affordability, and reliability – when it comes to energy, Montana deserves all three. Sometimes these goals can seem at odds with each other, but More Power to You believes it's possible to find the right balance. Join our effort to support balanced approaches to energy.

[www.MorePowerToYou.org](http://www.MorePowerToYou.org)





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