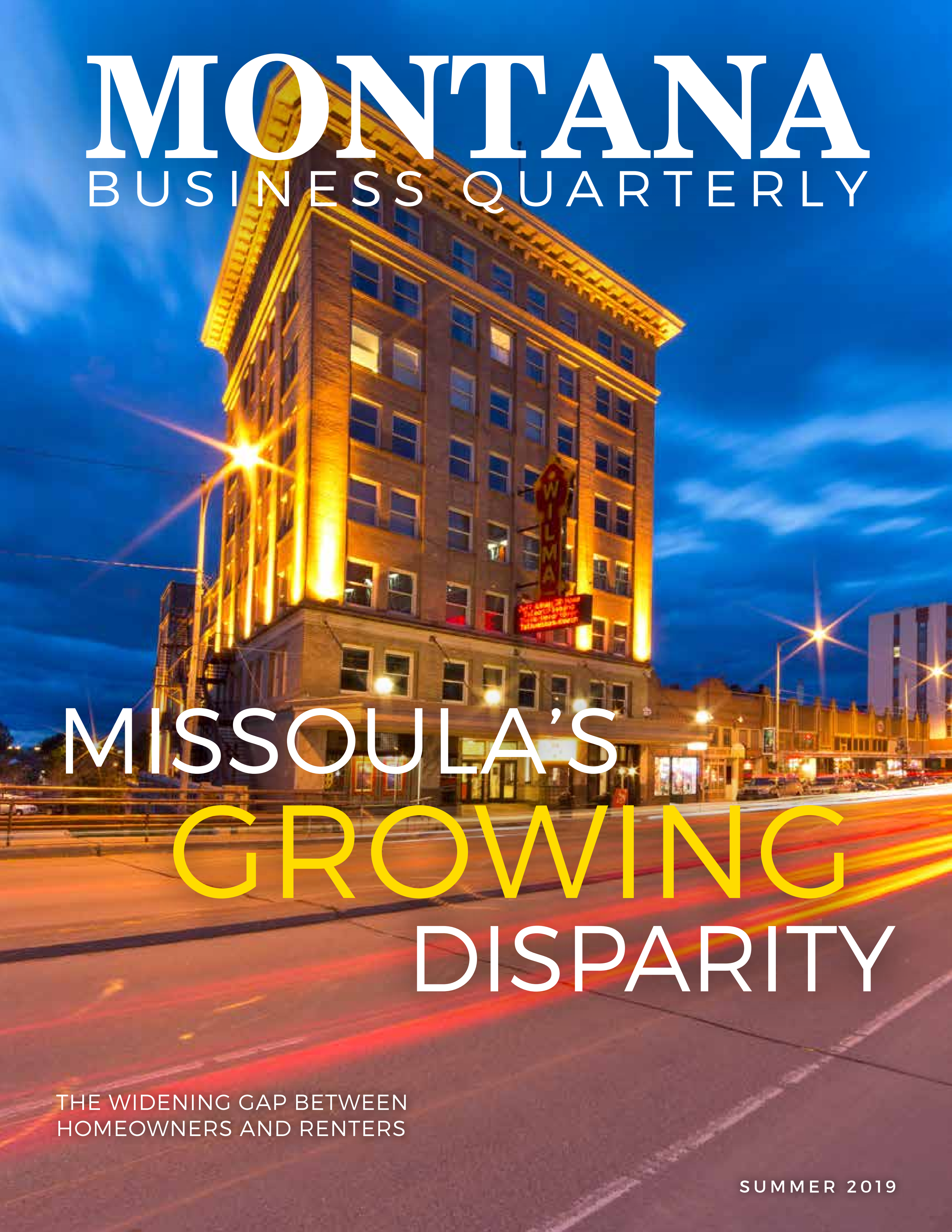

MONTANA BUSINESS QUARTERLY

MISSOULA'S GROWING DISPARITY

THE WIDENING GAP BETWEEN HOMEOWNERS AND RENTERS

SUMMER 2019

MONTANA
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BUREAU OF BUSINESS AND ECONOMIC RESEARCH
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The Bureau of Business and Economic Research has been providing information about Montana's state and local economies for more than 70 years. Housed on the Missoula campus of the University of Montana, the bureau is the research and public service branch of the College of Business. On an ongoing basis the bureau analyzes local, state and national economies; provides annual income, employment and population forecasts; conducts extensive research on forest products, manufacturing, health care and the Montana Child Research Initiative; designs and conducts comprehensive survey research at its on-site call center; presents annual economic outlook seminars in cities throughout Montana; and publishes the award-winning Montana Business Quarterly.

COVER
Traffic flows past the historic Wilma Theatre in downtown Missoula. (Danita Delimont)

INSIDE COVER
The North Missoula Community Development Corporation holds a ribbon cutting for Lee Gordon Place, seven affordable residential townhouses in downtown Missoula. (Hermina Harold)

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MESSAGE FROM THE INTERIM DEAN OF THE COLLEGE OF BUSINESS

The College of Business at the University of Montana is proud to host the Bureau of Business and Economic Research. BBER's research informs our business leaders and policymakers to enhance economic development in the state and region. In addition to being a premier learning ecosystem educating students in order to achieve better lives, the College of Business partners with stakeholders to heighten economic development.

This issue of the Montana Business Quarterly shares research on issues important to improving the lives of Montana students by addressing youth suicide in Montana. Although tragic, the more we know to prevent suicide the more likely we are to help all Montanans achieve better outcomes.

Additionally, this issue provides important information on trends in the regional and U.S. economic environment. We have a growing high-tech industry in Montana. An increasing number of graduates from the College of Business are working in high-tech businesses in the state. These new employees and business leaders are graduates from all of our majors, including management information systems, accounting, finance, management and marketing. In fact, 82 percent of alumni from the College of Business are employed full-time or attend graduate school within three months of graduation. Employers appreciate our graduates work ethic and ability to solve complex problems – abilities that propel our alumni to successful careers and lives.

We hope you benefit from the insights provided in this issue of Montana Business Quarterly. Visit us at the College of Business at the University of Montana in Missoula, online at www.business.umt.edu or on social media @umontanabiz.

Thank you for reading!

Suzanne Tilleman, Ph.D.
Interim Dean, Knick Family Fellow
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YOUTH SUICIDE IN MONTANA

Guns Are the Method of Choice

BY DAPHNE HERLING

Montana persistently ranks in the top three states with the most youth who die by suicide – and their method of choice is overwhelmingly firearms. Preventing youth from killing themselves should and must be a priority, yet nothing sets off an ideological firestorm like the mention of gun regulation in America. It is difficult to talk about youth suicide without addressing the means most often used though, and the only way to ensure that a young person doesn't use a gun to kill themselves is to prevent access to one.

Youth suicide prevention requires a multifaceted approach. However, the fact remains that from 2014-16, 62 percent of Montanans who died by suicide used a gun. While the percentage of firearms used by Montanans to successfully kill themselves has stayed consistently high for years, the numbers of people dying has risen significantly (Figure 1).

Using a gun as a means to kill oneself is significant because people are far more likely to die using a firearm than from any other means – 83 percent of suicide attempts using a firearm results in death. This is particularly important because if someone survives a suicide attempt they are unlikely to try again. Among those who have attempted suicide, 70 percent make no further attempts.

Youth Suicide and Firearms

Nationally, 39 percent of youth ages 11 to 17 have used a firearm to kill themselves. In Montana, that number is significantly higher (63 percent). Figure 2 shows the rates at which male and female youth in Montana die using a firearm versus the United States as a whole. It's important to note not only the rate by which both males and females kill themselves with firearms, but the significant difference in the rate between girls in Montana and girls overall: Girls in Montana kill themselves at a rate that's six times higher than the rest of the country.

What means people choose is a complex interaction of seriousness of intent, availability of means, cultural norms or acceptability of means and preconceived notions of lethality. Choosing a firearm has a high potential for success (seriousness). Guns also are readily available – 42 percent of Americans and 58 percent of Montanans live in a household with a gun – and firearms are culturally acceptable (the Second Amendment to the U.S. Constitution enshrines the right to keep and bear arms). Thus, culture plays a large part in what

means are chosen, especially in the context of youth suicide in Montana.

Growing up with firearms does not make an individual more prone to suicide. But if a gun is present in a household, having access is an important consideration. Almost half of all people who've survived a suicide attempt report that they spent less than 10 minutes deliberating between the emergence of suicidal thoughts and the actual attempt. Therefore, delaying access is important so that someone has time to consider their actions.

While a majority of gun owners with children are careful to unload and lock up their firearms, 46 percent of gun owners with children do not keep their guns locked, and 47 percent keep a loaded weapon in their home. Thirty-eight percent of gun owners reported that they always keep a loaded gun within easy reach, whether they have children in the home or not.

Policies that have proven successful in reducing youth suicide with guns are largely child access prevention laws, which include safe storage laws and minimum age requirements for purchasing a firearm. Child access prevention laws lower both the total number of suicides and the number of suicides with a firearm.

NATIONALLY, 39 PERCENT OF YOUTH HAVE USED A FIREARM TO KILL THEMSELVES. IN MONTANA, THAT NUMBER IS SIGNIFICANTLY HIGHER AT 63 PERCENT.

Montana law prohibits anyone who has charge of a child under 14 years old from allowing that child to carry or use a firearm in public. The exception is if the child is accompanied by a legal guardian or parent, is being supervised by a qualified firearms safety instructor or is with someone who has charge or custody of the minor. A violation constitutes a misdemeanor.

Safe storage laws refer specifically to laws requiring firearm locking devices to be in place or requiring gun owners to keep their firearms out of the reach of others, such as

Figure 1. Number of people in Montana dying by suicide, all suicides and suicide by firearms, 2008-11 and 2012-16. Source: Center for Disease Control and Prevention, WISQARS Fatal Injury Reports, National, Regional and State.

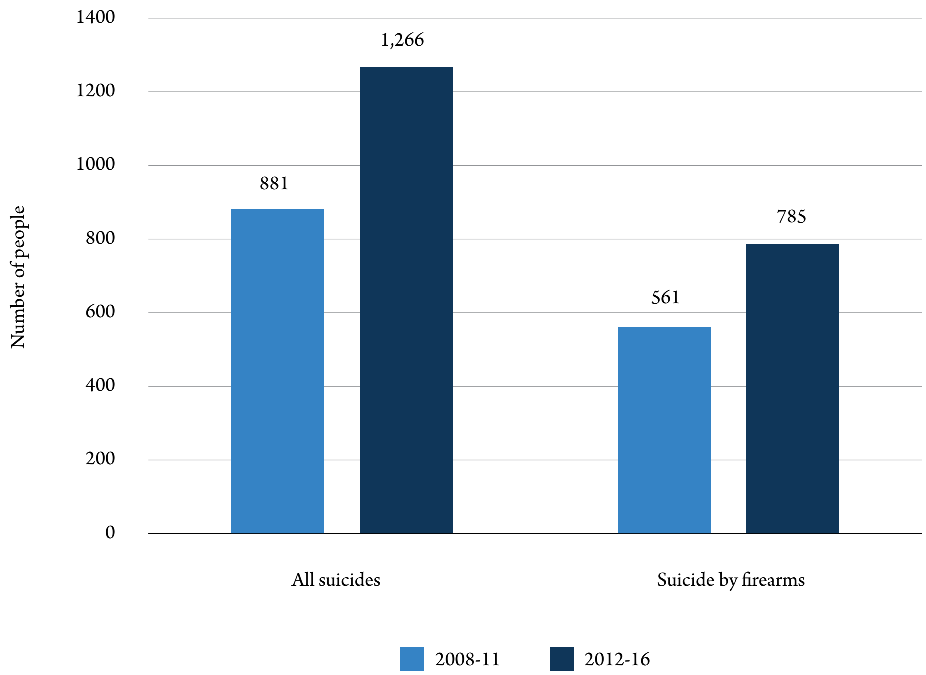


Figure 2. U.S. and Montana suicide rates by gender 2012-16, ages 10-18 for all suicides and suicides by firearms. Source: Center for Disease Control and Prevention, WISQARS Fatal Injury Reports, National, Regional and State.

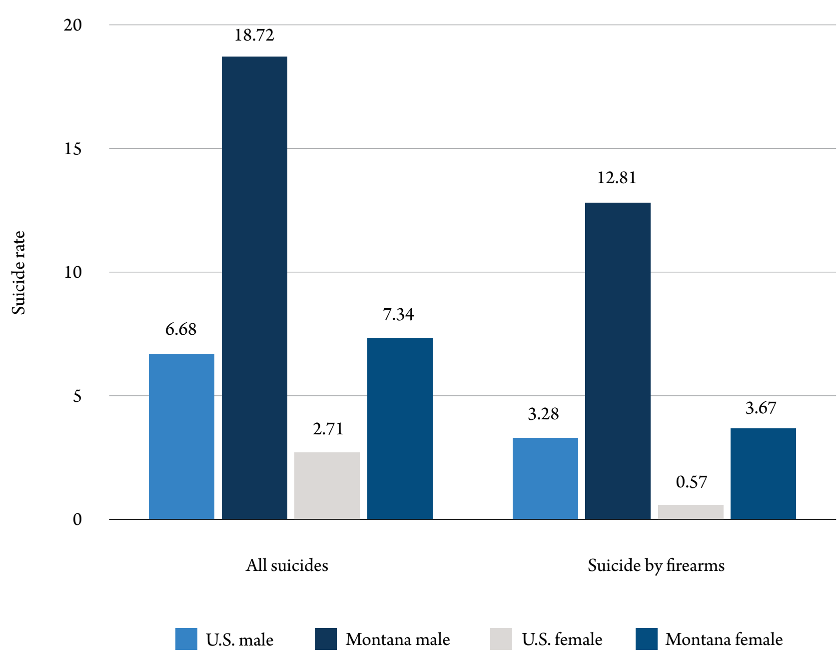


Table 1. Percent of gun owners and non-gun owners who say each measure is essential for gun owners. Source: Pew Research Center Social & Demographic Trends. America's Complex Relationship with Guns. June 22, 2017.

	Households with children	
Key responsibility of gun owners	**Gun owners**	**Non-gun owners**
Talk to their children about gun safety	95%	89%
Take gun safety courses	59%	79%
Keep all of their guns in a locked place	66%	90%
Keep all of their guns unloaded	44%	73%
Store guns and ammunition separately	43%	69%
Keep their shooting skills up-to-date	41%	48%
Advise visitors with children that there are guns in the house	26%	48%
Advise visitors that there are guns in the house	5%	24%

children or prohibited persons. Montana does not require a locking device to accompany the sale of a weapon, and no Montana statute requires firearm owners to lock or secure their weapons, although the federal law applies. Additionally, Montana imposes no specific age restrictions on the purchase or possession of any firearm.

More research into the connection between firearm laws and suicide is needed to help inform gun policy. However, federal agencies are limited in what data they may or may not collect. For instance, the Center for Disease Control and Prevention is restricted by Congress from gathering data on gun violence – a restriction that should be lifted.

Non-Legislative Approaches

Non-legislative approaches to gun policy might be the best hope in addressing the issue, as gun regulation is a highly polarized topic. Non-legislative approaches do not require passing laws, and they are less likely to be misinterpreted as gun control. These approaches include counseling at-risk youth and their families, promoting educational campaigns and partnering with other key players, such as providers, gatekeepers and gun owner groups.

Despite the different attitudes around gun policies, there is some agreement between gun owners and non-gun owners when it comes to gun safety in households with children – those include talking with children about gun safety, taking gun safety courses and keeping firearms locked up.

Groups from the private and public sectors in Montana have implemented some non-legislative approaches to reducing youth access to firearms. For instance, a pediatric group in Bozeman partnered with the Rural Institute for Veteran Education and Research to provide 1,000 trigger locks to families with children under 12. Since 2007, the Montana Department of Public Health and Human Services has distributed over 20,000 gun locks with suicide prevention tags, and free gun locks are available at most local health departments, police and fire stations across the state.

Youth suicide is a public health crisis. Keeping guns out of the hands of youth who are having suicidal thoughts makes sense, and delaying action has proven to give them time to reassess their choices. But Montana needs to strengthen its child access restriction laws, safe storage laws and minimum age requirements to purchase a firearm. Sadly, in the current political climate, Montanans may not have the political will to pass such laws. Until broader laws can be passed, the best approach might be community level education and discussion, as well as higher state funding levels for Montana's suicide prevention efforts.

Daphne Herling is the senior research analyst for the Montana Child Research Initiative at the Bureau of Business and Economic Research.

MISSOULA'S INCOME DISPARITY AND HOUSING TROUBLES

A Growing Divide Between Homeowners and Renters

BY SCOTT HAWK AND BRANDON BRIDGE

The issues facing working class Montanans seem daunting – struggling to afford a basic middle class life with historically low wages and soaring housing costs. It's an issue seen across the country where nearly 43 percent of households don't earn enough to afford their monthly budget of food, rent, child care, health care and bills. In the microcosm of a city like Missoula, it's even more apparent.

There is a growing disparity between those who own a home and those who rent. According to the American Community Survey performed by the U.S. Census Bureau in 2017, Missoula County saw a dramatic yearly increase of 17.5 percent in the median household incomes of those who own their homes compared to a 4.5 percent decrease for those who rent. As 41 percent of residents in the county are renters, that means almost half the community is seeing rising incomes while the other half are seeing their incomes drop.

It's a widening gap that is concerning. Homeowners have seen a jump in their estimated median household income to $75,940, while the estimated median household income for renters is now $29,793. While the average price of rent dropped nearly 1.5 percent, affordability has worsened. The percentage of renters in Missoula who are cost-burdened climbed to 49 percent. In other words, half of the residents who rent are spending more than 30 percent of their income on housing (Figure 1).

In 2016, the median priced home in Missoula was $255,000 – meaning the household income required to purchase a home in this price range was around $81,000. That figure has continued to grow to a record $290,000 in 2018 (an 8.1 percent increase over 2017), while the median price

Trail and flowers on Mount Sentinel overlooking Missoula. (Jon Bilous)

Figure 1. Housing costs 30 percent or higher, Missoula County, 2016 and 2017. Source: U.S. Census Bureau, American Community Survey.

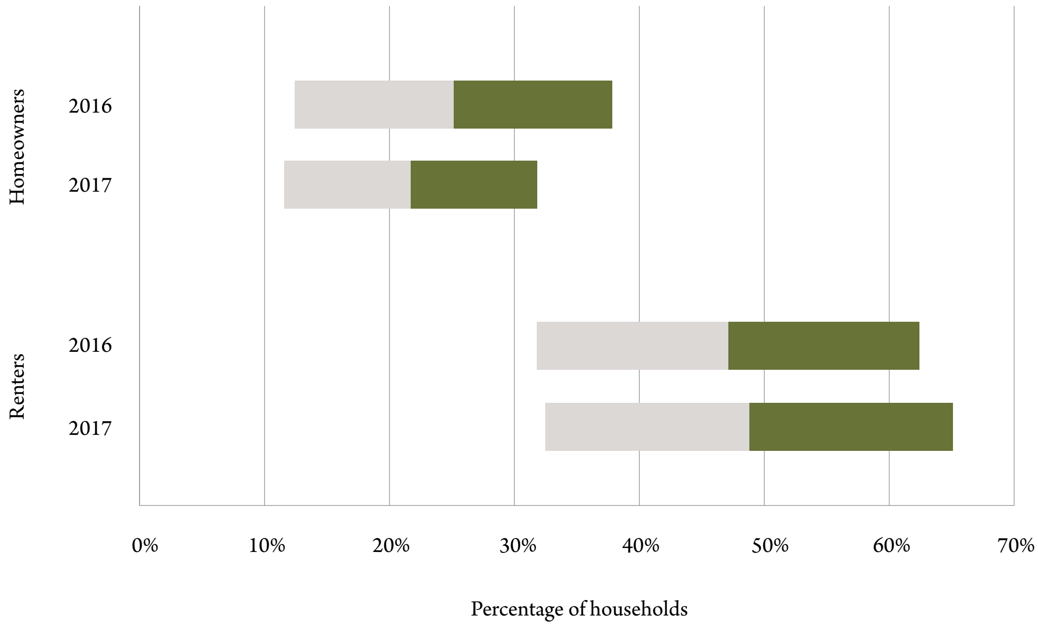
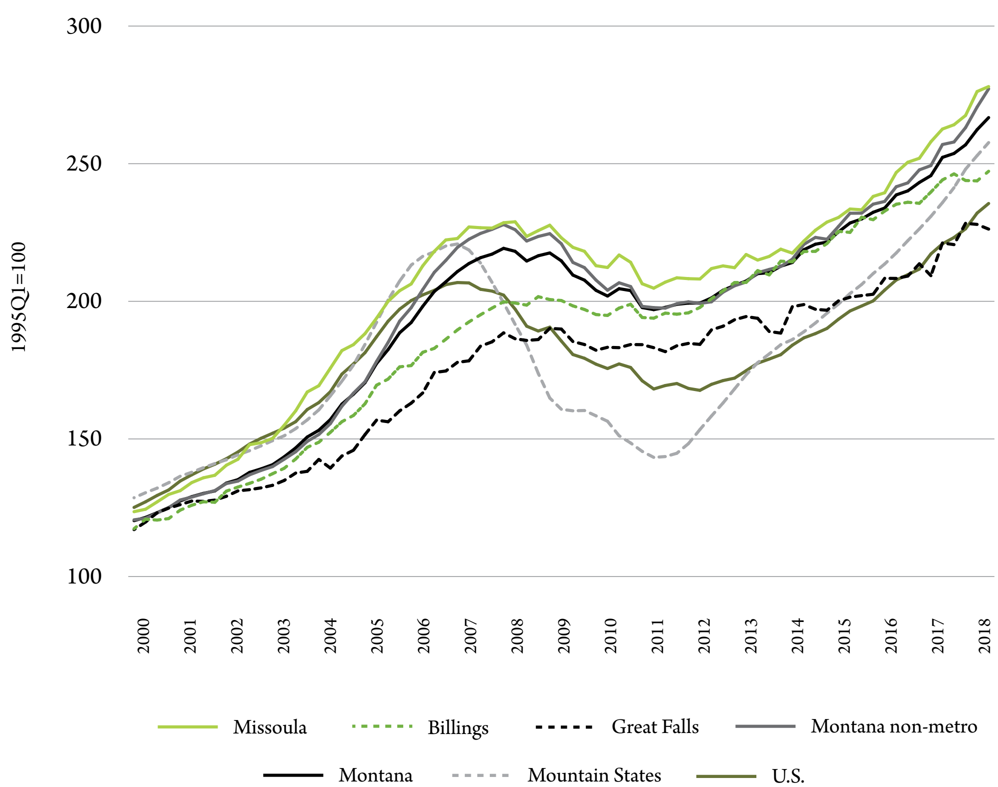


Figure 2. Housing price index, 2000Q1-2017Q2. Source: Federal Housing Finance Agency.




View of Missoula and the University of Montana from Mount Sentinel. (Jon Bilous)

of a newly constructed home rose 26 percent to $383,500, according to a report from the Missoula Organization of Realtors. Today, the Missoula Organization of Realtors estimates that Missoulians would need an income of at least $95,731 to purchase a median priced home.

There is a correlation between income and home ownership. Patrick Barkey, director of the Bureau of Business and Economic Research at the University of Montana, recently noted that the price-to-income ratios for 38 Montana counties revealed affordability worsened as one traveled west. Median home sale prices in Ravalli and Lake counties, the least affordable in the state, were six times as high as median household incomes there.

He found that while Gallatin County has seen housing prices increase by 50 percent since 2012, their median household income was the third highest in the state ($60,439) making it more affordable than most counties in northwest Montana, including Missoula. The median sales price of a home in Missoula has increased by 39 percent in the last 10 years (Figure 2).

In 2017, Montana placed 45th among all states for median earnings, while the estimated median income for all households in Missoula County was $54,311, a 17 percent

TODAY, MISSOULIANS WOULD NEED AN INCOME OF AT LEAST $95,731 TO PURCHASE A MEDIAN PRICED HOME.

increase from $46,550 in 2016. This marks the first time in recent years that Missoula's median income has exceeded that of Montana households ($53,386). In comparison, the U.S. median income for all households was $60,336 in 2017.

Since 1990, Montana's affordability advantages have eroded. A 2018 Gallup study found that 45 percent of Montanans were dissatisfied with the availability of good affordable housing. This tied Montana with Maryland and Oregon for eighth worst in the country.

The issue has heightened as a growing number of people have moved to Montana who have the means to live wherever they choose. These are people who have income from non-wage

Figure 3. Population change, Missoula County, 1991-2017. Source: U.S. Census Bureau and Bureau of Business and Economic Research at the University of Montana.

sources (e.g., capitalists and retirees). The Treasure State has always had a larger share of this demographic. Twenty-three percent of the state's personal income comes from dividends, interest and rent. This is higher than the U.S. level (19 percent) and ranks third highest among all states. But it's more significant in places like Missoula where over 40 percent of residents have incomes from non-wage sources.

Typically, more people move to Missoula than move away, giving it positive net migration. Net migration in Missoula County, while still positive in 2017, decreased for the first time since 2013 (Figure 3). In 2017, the net migration was 1,174 people, compared to 1,758 in 2016. Since 2000, Missoula County's population has grown by over 20,000 people, currently making Missoula the second largest city in the state. The majority of people moving into Missoula County came from outside of Montana while 41 percent came from within Montana. Almost half of those who migrated from out of state came from the western United States.

The number of Missoula residents living in poverty has remained around 15 percent for the last several years. But the issues surrounding poverty for Montana families have been long-standing. Back in 1959, 40 percent of all Montanans living alone had incomes below the poverty level and half of the families classified as poor had at least one child.

Today in Montana, 19 percent of children live in poverty, while 28 percent of parents lack secure employment. In Missoula, an estimated 500 children were homeless or in unstable housing during the 2017-18 school year, according to Missoula County Public Schools.

Economically, Missoula experienced a strong 2018 with lots of new building, including the new Marriott Hotel at the old Missoula Mercantile location. The county is currently replacing the bridge on Russell Street over the Clark Fork River and plans to widen the street to five lanes.

In an effort to address affordability, Missoula County has donated a 4-acre plot of land near the Missoula County Detention Center for affordable housing, coupled with a 200-unit project on the Northside and a 75-unit project on the Westside. Even so, affordability in the Garden City remains challenging.

Scott Hawk is editor of the Montana Business Quarterly and publications director at the Bureau of Business and Economic Research at the University of Montana. Brandon Bridge is an economist and director of forecasting at the Bureau of Business and Economic Research.

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THE U.S. ECONOMY REMAINS ROBUST

Is a Recession Coming in 2019?

BY ROBERT SONORA

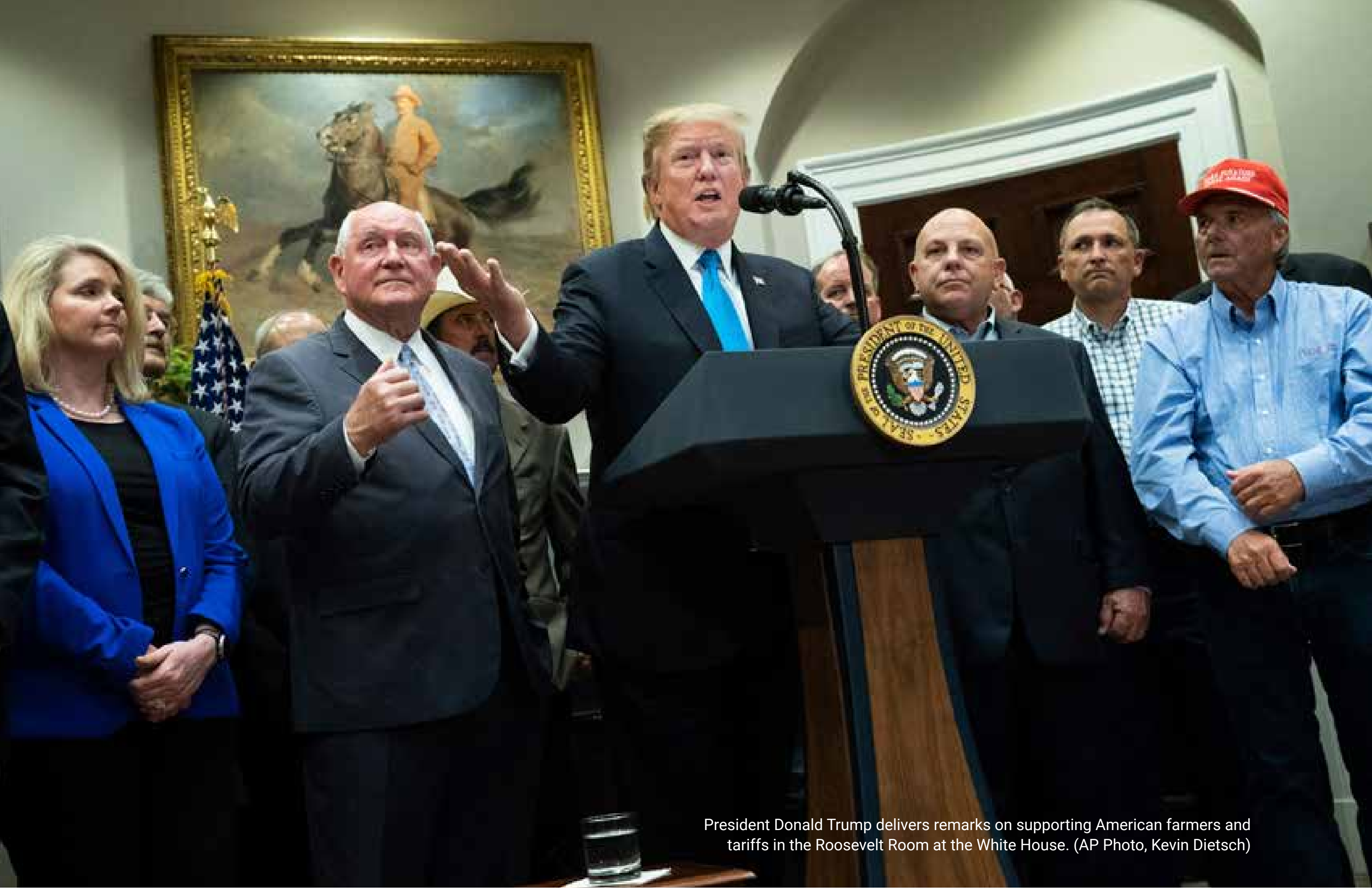
The U.S. economy continues to move into positive territory. For the first quarter of 2019, real GDP in 2012 prices was about $18.9 trillion after a healthy year-on-year growth of 3.2 percent. Plus, the national unemployment rate is at a near historic low of 3.6 percent, about 1 percent below the Congressional Budget Office's estimated level of full employment. We are also experiencing an extraordinary period of stable and low inflation.

Figure 1 shows both the unemployment rate and inflation using the price of consumer expenditures without food and energy (core inflation), which is the preferred price index by the Federal Reserve.

There appears to be little relationship between the two series. This is notable because until recently policymakers based their decisions on the negative relationship between inflation and unemployment. In economics, the Phillips Curve states that inflation and unemployment have a stable and inverse relationship. For instance, if inflation gets too high, the Fed will put the brakes on the economy by raising interest rates, but at the cost of higher unemployment or vice versa.

However, the weakening of the Phillips relationship does give the Fed more flexibility in terms of policy decisions. This is partially due to average labor costs and productivity, which have remained low and steady since the end of the Great Recession, keeping inflation in check.

The growth of wages leveled off between 2013 and 2015, growing at 1 percent after an average growth rate of zero percent from 1987 to 2011. The argument for the Phillips Curve is that as unemployment gets lower, firms must offer higher wages to either entice potential employees into the labor force or to attract higher quality labor from other employers.



President Donald Trump delivers remarks on supporting American farmers and tariffs in the Roosevelt Room at the White House. (AP Photo, Kevin Dietsch)

But the labor market may not be as tight as statistics suggest. U6 unemployment, which includes discouraged workers, marginally attached workers and workers who work part time but want to work full time, remains above 7 percent.

The output gap is defined as the percentage difference between current real GDP and potential long run real GDP. It currently sits at 0.85 percent. One of the primary reasons for this is the Tax Cuts and Jobs Act, which was passed in 2017, a Keynesian stimulus deficit spending package. This is the type of policy required when an economy is experiencing a recession to reduce unemployment and generate some inflation.

Since the end of 2018, government expenditures have been rising at an average annualized quarterly growth rate of 5 percent, whereas receipts have been rising at 0.5 percent. This has yielded a growing budget deficit. By the end of fiscal year 2019, the Congressional Budget Office predicts the deficit to be $1.1 trillion and $1.3 trillion by 2029.

The Tax Cuts and Jobs Act was intended to increase corporate investment in new capital, which in turn would result in more hiring. But as we have seen, at the time the law was signed unemployment was at its lowest since the end of 2000. So there is little reason to believe that unemployment can go much lower, which it really has not. Since the start of 2018, the unemployment rate has been between 3.6 and 4.1 percent.

ROUGH ESTIMATES FROM THE FIRST ROUND OF TARIFFS HAVE ESTIMATED U.S. LOSSES OF THREE TO FIVE JOBS PER A JOB SAVED.

An unfortunate side effect of deficit spending is twofold. First, according to the Office of Management and Budget, the deficit in 2019 will be almost $400 billion, which is 8 percent of the total budget. This is forecasted to grow to $760 billion by 2026, eating up 13 percent of the budget. Thus, a growing percentage of the budget is being used to service debt and not on the very real issues facing our country, such as climate change, student debt, health care or social security.

Figure 1. Output gap, core inflation and the unemployment rate. Source: Bureau of Economic Analysis, Bureau of Labor Statistics and Bureau of Business and Economic Research.

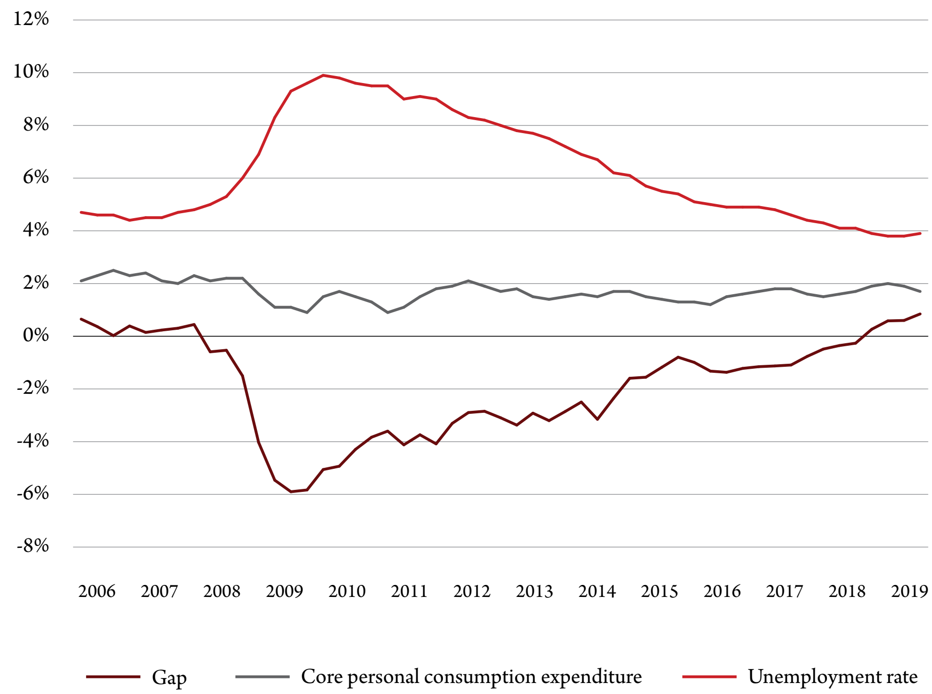
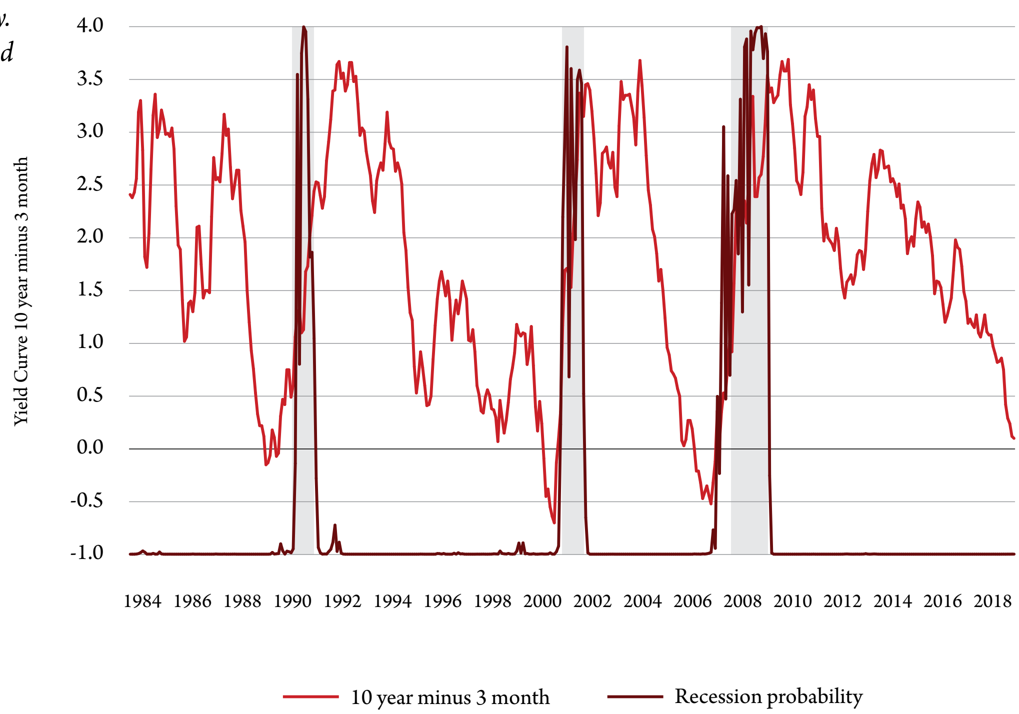


Figure 2. Recession probability. Source: Bureau of Business and Economic Research.



Customers shop near dried cranberry products from the United States at a supermarket in Beijing. China announced higher tariffs on $60 billion worth of American goods in retaliation for American tariffs. (AP Photo, Mark Schiefelbein)

Second, since 1980 the U.S. economy has been stricken by five recessions. During each of those recessions the deficit was less than 3 percent of GDP – the exception being the 1 percent budget surplus in 2000. Currently the deficit is below 4 percent of GDP and rising.

By 2039, the Congressional Budget Office projects the deficit to be about 9 percent of GDP, which is where it was after the massive Recovery Act that was designed to pull the U.S. out of the worst recession since 1929. This forecast assumes government spending will remain at current levels as will taxes.

Alternative estimates suggest the deficit could reach the 9 percent level by 2027. This implies that when the next recession hits, the federal government may be less willing or able to fight back. And if the government can't, won't or starts to renege on its debt, interest rates will rise.

More uncertainties lie in the disruptions caused by the Trump administration's trade policy. In 2018, the Tax Foundation estimated that the first round of tariffs on imported goods from China, Mexico, Canada would cost the U.S. about a half-million jobs from retaliation and higher imported intermediate goods, such as steel. Rough estimates from the first round of tariffs have estimated U.S. losses of three to five jobs per one job saved.

The tariffs are not only resulting in job losses - the agriculture sector in particular is suffering from retaliatory tariffs. According to Wisconsin Sen. Tammy Baldwin (R), Chinese retaliatory tariffs have contributed to 1,500 bankruptcies in the dairy industry – 90 in April alone. The government has provided nearly $30 billion in aid to farmers to compensate them for lost revenues.

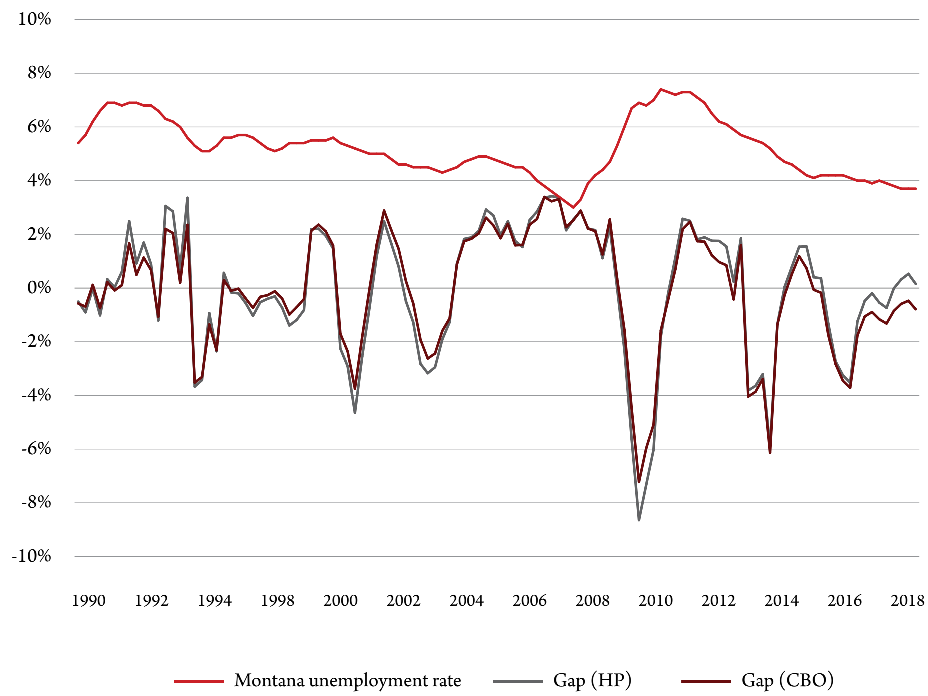
Unfortunately, it is American households who are paying for this. According to economists from the Federal Reserve, Princeton and Columbia, American families are paying nearly 100 percent of the tariffs in the form of higher prices. The aid package to farmers is paid for by U.S. taxpayers as well.

Fortunately, this is not likely to throw the U.S. economy into a recession and we predict no recession over the next 12 to 16 months (Figure 2).

Montana

Because the U.S. economic performance represents aggregate state economic outcomes, state economies are somewhat more unstable. Figure 3 shows Montana's output

Figure 3. Montana output gap and unemployment rate. Source: Bureau of Economic Analysis, Bureau of Labor Statistics and Bureau of Business and Economic Research.



gap. Unlike the country as a whole, there is no government estimate for the potential GDP at the state level.

This figure allows us to approximate recession dates for the state. Following the Great Recession, Montana appears to have survived two additional recessions – one in 2012-14 and again in 2016. The biggest drivers of these two downturns were natural resources, both agriculture and mineral extraction. Part of this can be explained by lower prices in agricultural output and coal around 2012, and lower gas and oil prices between 2015 and 2016. Manufacturing also declined in 2015 and 2016.

Meanwhile overall unemployment in the state has remained the same since 2015. Population and nonfarm employment have been growing at the same rate and it's likely that the unemployment rate is at or near it's long run trend – estimated to be between 3.5 percent and 4 percent.

Summary

Are we experiencing the calm before the storm? It is still too early to know. Labor markets remain healthy in terms of the number of jobs. Unemployment claims continue to fall and hiring rates are above quit rates. Stock markets and fear indices continue to shrug off policy shocks and consumer confidence is rising, contrary to what is happening in Japan and Europe.

But there are some storms clouds forming over the horizon – wealth, health and education inequality in the U.S. is stirring economic discord. The probability of a European recession is rising and the effects of the ongoing trade dispute will fully manifest over the next year or so, if the current state of affairs continues.

Robert Sonora is associate director at the Bureau of Business and Economic Research at the University of Montana.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TIMBER JOBS MATTER

The Flawed Transition of Timber-Dependent Communities in Idaho

BY PAUL E. POLZIN

There have been a number of reports, mostly in the media, describing how rural timber-dependent communities are faring in the wake of a decades-long decline in employment and mill closings. Stories often highlight a new industry that's sprouted in its place or a new plant that's opened and filled the gap. One example from Washington comes from the town of Leavenworth, which has been highlighted as changing from a timber town to a Bavarian Alps-styled tourist destination.

In Idaho, wood products employment has decreased by roughly 6,200 jobs since 1998 (nearly 23 percent). Many of those jobs losses were particularly hard on rural areas with few alternative employment opportunities.

Headwaters Economics of Bozeman, Montana, recently concluded that, "As a group, formerly timber-dependent counties are not doing better or worse than the rest of the West." They also noted, "We found no statistically significant differences between timber and non-timber counties according to five measures of socioeconomic performance."

Unfortunately, these conclusions are not true as rural timber-dependent counties in Idaho have suffered significantly. An impact analysis comes to a very different conclusion – there have been sizable losses and these timber-dependent counties have not grown as rapidly as other communities.

The Headwaters Economics Analysis

The Headwaters Economics report on "The Transition from Western Timber Dependence: Lessons for Counties" begins by presenting trends in the timber-related industries from 1970 to 2015. It uses inflation-adjusted labor earnings in 11 western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming). Using this measure, the size of the timber-related industry decreased by almost one-half during this 45-year period.

A worker processes wood at a sawmill. (Shutterstock, Vano Vasaio)

Headwaters Economics identified 25 historically timber-dependent counties in these western states – counties where timber-related jobs accounted for 20 percent or more of labor earnings between 1970 and 1989. These counties are located in five western states (Montana, Idaho, Washington, Oregon and California).

In comparing these counties with other counties in the West with populations of less than 200,000, they concluded that there was no statistical difference between them. They also concluded that the timber-dependent counties had successfully transitioned away from being dominated by one industry.

The Wrong Variables and Statistical Tests

Headwaters Economics compared traditionally timber-dependent counties and the other counties using data for five variables:

- Population change from 2000 to 2015.
- Average wages across all sectors.
- Median household income in 2015.
- Percent of adults with a college degree in 2015.
- Percent of families in poverty in 2015.

While these variables may be slightly related to certain economic activities, they are not indicators of regional economic performance. None of them measure the size of the regional economy or its growth. They are also not related to the production of goods and services in a region as the variables measure neither inputs nor outputs of economic activity. Therefore, they are not appropriate tests to measure the differences in economic growth between counties.

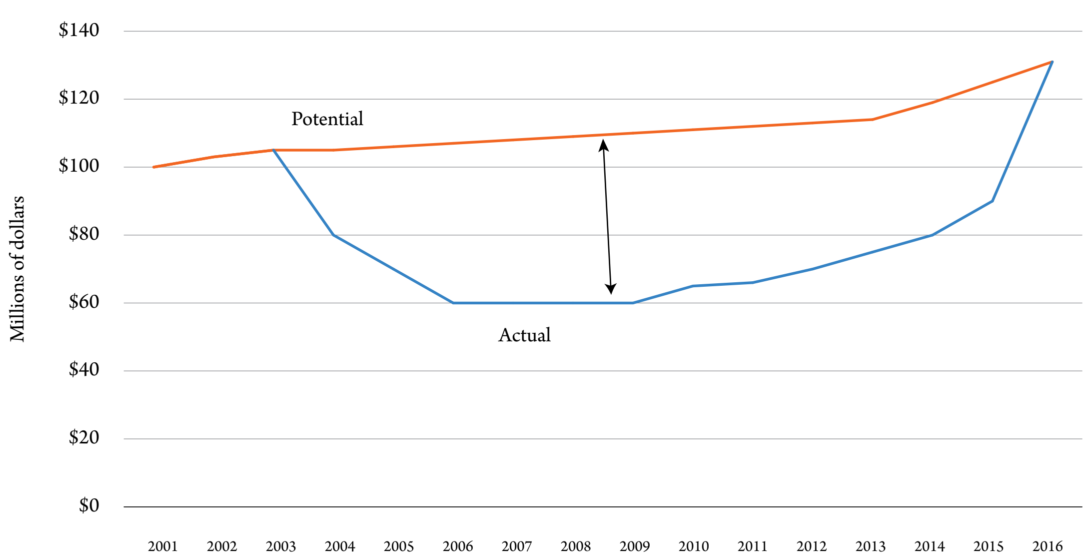
In addition, when comparing timber-dependent and non-timber dependent counties, Headwaters Economics used indicators that were reported in terms of their medians rather than means. But the statistical tests for means are very different from those appropriate of medians. In other words, the statistical tests they used are appropriate for parametric statistics (means) but not appropriate for non-parametric statistics (medians). In short, their conclusions were incorrect.

Economic Impacts of Wood Products Declines in Idaho

Just as problematic was the misuse of the concept of economic impact analysis. An economic impact analysis typically measures or estimates the change in economic activity between two scenarios, one assuming the economic event occurs and one assuming it *does not occur*, which is referred to as the *counterfactual* case (or *potential*).

An economic impact analysis, which follows this approach, can be illustrated by constructing an example for a hypothetical timber dependent county. Figure 1 presents an example of labor income in a hypothetical county from 2001 to 2016.

Figure 1. Labor income, hypothetical timber county. Source: Bureau of Business and Economic Research.



AN IMPACT ANALYSIS COMES TO A VERY DIFFERENT CONCLUSION – THERE HAVE BEEN SIZABLE LOSSES AND THESE TIMBER-DEPENDENT COUNTIES HAVE NOT GROWN AS RAPIDLY AS OTHER COMMUNITIES.

These data portray labor income growing from 2001 to 2003. Then a negative event, perhaps a plant closure, occurs in 2003. Labor income turns downward in 2004 and declines until 2006, as the impacts are felt throughout the economy. The economy stabilizes from 2006 to 2010, then turns upward and begins to grow in 2010, accelerating during 2015 and 2016.

The *potential* data shows what would have happened if the negative event did not occur. In this case, the economy would have continued to grow at the historic rate and then accelerate in 2015 and 2016. The economic impact of the negative event is the difference between the potential and the actual lines.

Figure 1 illustrates some very important features of an economic impact analysis:

- Economic impacts are not a single number; they have a time dimension. There are negative economic impacts for as long as the actual data lie below the counterfactual.
- Stability in an economy after a negative impact does not mean the negative impacts are over.
- A return to growth does not mean the negative impacts are over, even if the economy accelerates and grows the same rate or faster than the counterfactual (2015 and 2016).
- A return to pre-event levels (e.g. 100) does not mean the negative impacts are over, as this does not consider the growth that would have occurred anyway.
- A return to the previous trend (the actual line catches up to the counterfactual) does not eliminate the negative impacts. The lower levels of economic activity from 2003 to 2015 remain on the books.

Following Headwater's approach and using the above guidelines, the economic conditions in Idaho's timber-dependent counties were compared to those for other non-urban counties in the state from 2001 to 2016. The timber-dependent counties identified by Headwaters Economics were Benewah, Bonner, Clearwater, Gem and Idaho counties. The actual performance of the timber counties was measured using inflation adjusted nonfarm earnings as reported by the U.S. Bureau of Economic Analysis.

The hypothetical values denoted as *potential* were calculated as nonfarm earnings if the timber counties had performed the same as other non-urban counties in Idaho. In other words, starting with actual nonfarm earnings in 2001, values for subsequent years were calculated by applying the growth rates for the non-urban counties in Idaho.

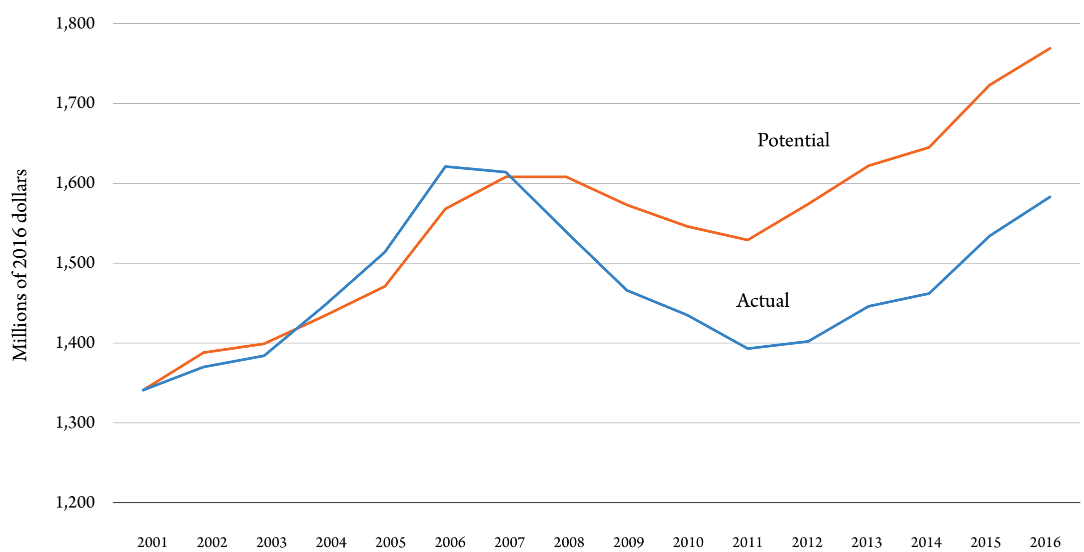
Figure 2 presents the five historically timber-dependent counties in Idaho taken as a group. The figures show that actual and potential nonfarm earnings had very similar trends from 2001 to 2007. Then actual nonfarm earnings turned sharply downward while potential nonfarm earnings declined more slowly. Actual nonfarm earnings reached a trough in 2011 and turned upward starting in 2012. The negative economic impact is shown by the difference between the two lines.

If there were no differences between these groups, as Headwaters Economics claims, the actual and potential lines would coincide and there would be no economic impact. But this was not an ordinary business cycle for the wood products industry. A large number of major sawmills and other wood products firms closed and their equipment was dismantled. These facilities would not reopen when the economy recovered after the Great Recession. About 20 Idaho sawmills, and plywood and veneer plants closed between 2001 and 2016.

In addition to the calculations for the timber-dependent counties as a group, a similar analysis was conducted on a county-by-county basis. Significant negative impacts began to appear about 2008 and continued until 2016 for six of the seven counties reported.

The negative impacts reached double-digit levels for several years in all six counties. In Bonner and Gem counties, the negative impacts reached a peak and began to moderate somewhat by 2016. The negative impacts continued to

Figure 2. Nonfarm earnings, actual and potential traditionally timber-dependent counties, Idaho. Source: Bureau of Business and Economic Research.



increase during the entire period in Clearwater and Idaho counties. In Benewah and Nez Perce counties, the negative impacts stabilized during the last few years.

The computed impacts for Boundary County were relatively small and both positive and negative. Boundary County borders Canada with two ports of entry. Further investigation revealed that the earnings for federal government employees more than doubled between 2001 and 2016, perhaps reflecting increased border security measures. Recomputing impacts for nonfarm earnings without the federal government may yield larger negative impacts.

The relative size of the negative economic impacts differs from one county to another. Overall, Clearwater County reported some of the largest computed impacts while Gem County reported the smallest. Regardless of their size, these negative impacts may be interpreted as saying, for example, that nonfarm earnings in Clearwater County would have been almost 19 percent higher in 2016 if that county had grown at the same rate as other non-metro counties in Idaho.

Summary

Headwaters Economics concluded there is no statistical difference between the 25 most timber-dependent counties in the West and other rural counties. This conclusion is incorrect because they analyzed the wrong variables and used the wrong statistical test.

An impact analysis following accepted methods of the five timber-dependent counties in Idaho came to very different conclusions. Namely, inflation-adjusted nonfarm earnings in these counties as a group would have been about 11 percent higher in 2016 if they had grown at the same rate as other non-metro counties in Idaho. A county-by-county analysis reached a similar conclusion. In six of the seven counties (five identified by Headwaters Economics, plus two others) the timber-dependent counties grew slower than the other non-metro counties in Idaho. The only transition for these timber-dependent counties was to a smaller economy.

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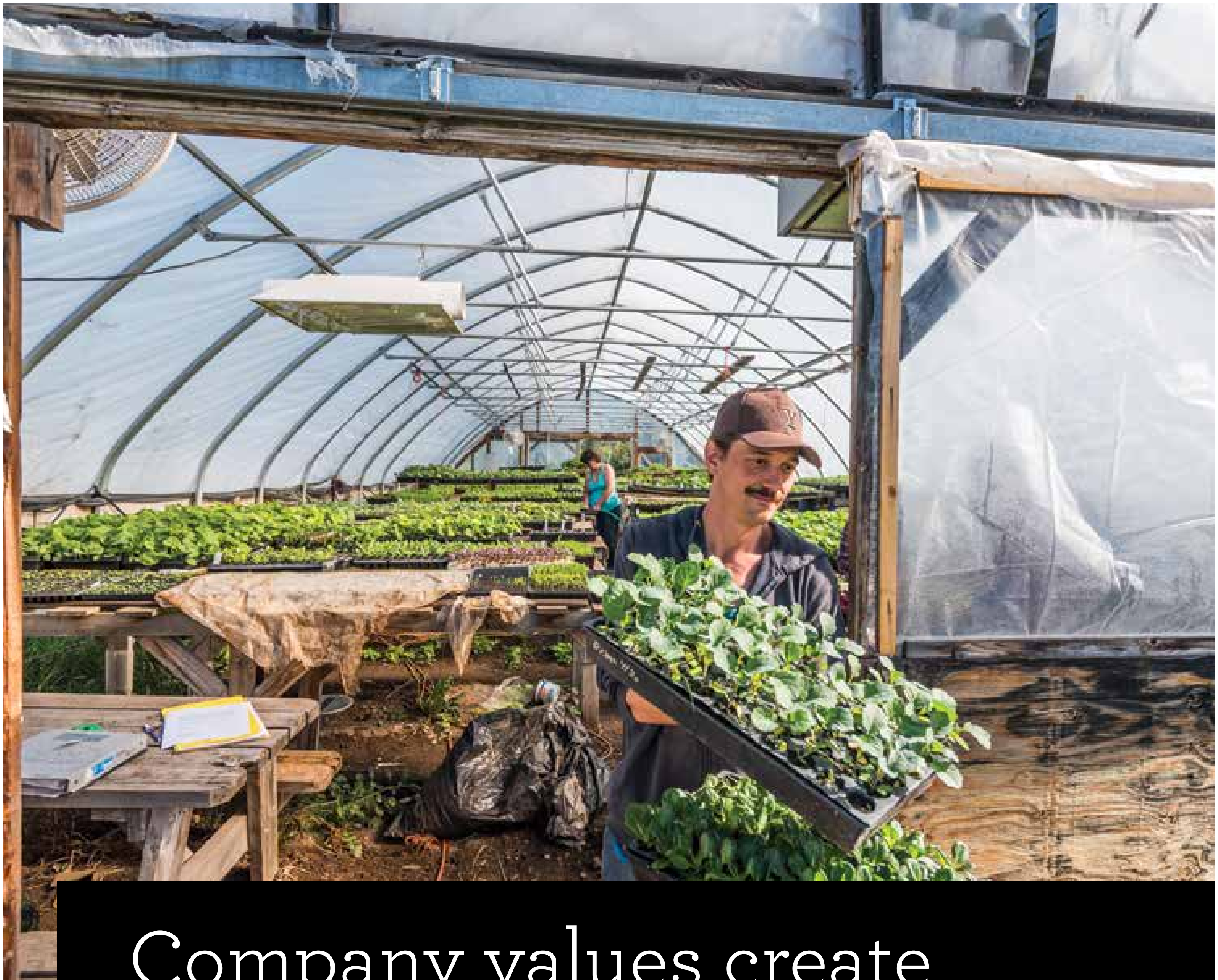

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