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FEELING THE PRESSURE

Montana Parks Deal with Surging Tourism

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The Bureau of Business and Economic Research has been providing information about Montana’s state and local economies for nearly 70 years. Housed on the Missoula campus of the University of Montana, the bureau is the research and public service branch of the School of Business Administration. 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 Montana Kids Count; 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.

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Tourists view steam following an eruption of Steamboat Geyser in Yellowstone National Park. (NPS, Neal Herbert)

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Message from the director of the Bureau of Business and Economic Research

■ call it the most under-reported news story every year – the state of the state economy. You would think something that is so important to the livelihood of Montanans would be reported in the media more often. Yet it seems we only hear about economic growth in our state when a politician makes an issue about it.

Of course, this is an economist talking. We read economic reports the way other folks read the sports page. But according to a recent Bureau of Business and Economic Research study, there is some evidence that the general public feels the same way. Jobs and the economy were identified as the most important issues facing our state in a statewide survey conducted in 2015, by a large margin.

That's an information hole we try to fill every day in outlets like the one you are holding. In this issue of the Montana Business Quarterly, we tap into the same expertise we share during our long-running Economic Outlook Seminar series to talk about the opportunities and challenges facing Montana's key industries. Will farm prices recover? Is there a downside to a larger tourist economy? Those questions and others are important for many Montana businesses and households as they plan their economic future.

Here's hoping you and your organizations are off to a good year!

Sincerely,

Patrick M. Barkey

Director

Bureau of Business and Economic Research

University of Montana



2017 Economic Round Table

This year, the Bureau of Business and Economic Research traveled to nine cities across Montana to deliver its annual assessment of economic activity in the state. The 2017 Economic Outlook Seminar covered a wide range of sectors and topics from job growth to energy and tourism. In this round table discussion, we highlight some of those topics and industries in an effort to better understand the state's economic climate.

Nation, State and Local

Patrick M. Barkey is director of the Bureau of Business and Economic Research at the University of Montana.

Q: Why did Montana tax revenues fail to grow last year and was there a recession?

The state's general fund revenue collections of \$78 million (3.6 percent) in fiscal year 2016 was the kind of decrease

you would associate with a recession. But Montana is not currently experiencing a recession. Growth slowed substantially across the state, especially in Billings and the east. What dragged down overall revenue were two business taxes. The corporation income tax, which is largely paid by only a handful of companies, collected \$54.3 million less last year and oil and gas production tax receipts suffered a \$34.1 million decline. The loss in oil and gas tax receipts was primarily driven by price movements.

There's no question that Gallatin County has been the growth leader in recent years, which has been fueled by high tech, manufacturing and visitor spending.

Q: What is driving U.S. economic growth right now?

It may be easier to note what is not contributing to growth. Exports, for instance, fell by 3.6 percent last year due to a strong dollar and weak economic growth abroad. Business spending is also holding us back. Three years ago, especially during the oil boom, investment spending was a big plus; now it's falling back. In this era of high-tech devices, business productivity is also down. What is working is consumer spending. Thanks to job growth, income growth and an increasing willingness to borrow, consumer spending has consistently grown over the past three years.

Q: Are some parts of Montana faring better economically than others?

The most recent data show pretty big disparities in growth between different parts of the state. Gallatin County, which accounts for about 12 percent of the entire state economy, was by itself responsible for 46 percent of the growth seen over the first half of last year. The growth pattern of 2015 was a bit more balanced than that, but there's no question that Gallatin County has been the growth leader in recent years, which has been fueled by high tech, manufacturing and visitor spending. The next tier of growth is in Missoula, Flathead and Yellowstone counties. Those areas are performing better than the state average. Growth is lower in Cascade and Lewis and Clark counties, with growth in Helena remains restrained after some strong years associated with stimulus spending after the recession.

Agriculture

George Haynes is a professor and agricultural policy specialist in the Department of Agriculture Economics and Economics at Montana State University.

Q: Commodity prices have fallen sharply, particularly for wheat and livestock. Are Montana farmers and ranchers financially prepared for the coming year?

Low commodity prices for grain (wheat and barley) and livestock (cattle) have caused financial challenges for many producers. Wheat prices have declined nearly 40 percent and cattle prices by more than 50 percent since January 2015. For well-established farms and ranches these low commodity prices are simply a bump in the road, but for more aggressive producers, who borrowed money to expand during the near record grain and cattle prices of 2013 and 2014, low commodity prices are very challenging. In short, expansion has caused a short-term cash flow problem for some producers.

Q: Will commodity prices bounce back or can we expect them to stay at lower levels for years to come?

Long-term commodity price projections report stable-to-slightly higher wheat and cattle prices than those experienced in 2016. The near term challenge for wheat producers is the enormous quantity of wheat available (stocks) and projections of higher stocks in 2017. The near term challenge for cattle producers is the impact of increased production on already low calf prices –

expected to increase by 3 percent or more this year. In addition, the strong dollar is putting pressure on both grain and cattle markets making our grain and cattle expensive exports for foreign buyers.

Energy

Terry Johnson is director of natural resources and energy research at the Bureau of Business and Economic Research at the University of Montana.

Q: How do low energy prices and production factor into the recent weakness in Montana state tax revenue?

State tax revenue can be difficult to understand because of how that revenue is distributed under state law. For

example, oil, natural gas and coal taxes are distributed to a number of state accounts (bank accounts) that do not directly impact the general operating account (general fund) of the state. However, when examining natural resource tax collections in total – regardless of how the funds were distributed – the reduction is in excess of 62 percent from fiscal 2008 to 2016. This means that state and local governments have about \$231 million less tax revenue today.

Q: Is there evidence that activity in the Bakken formation is improving now that crude oil prices are back up?

Based on actual oil production and price data reported to the Montana Department of Revenue, oil production



Patrick Barkey speaks at the 42nd Annual Economic Outlook Seminar in Missoula. (Todd Goodrich)

has declined every quarter since the fourth quarter of 2014. Fiscal 2016 second quarter production declined nearly 25 percent from fourth quarter 2014. This is six quarters of consecutive decline in production. In addition, there are no oil rigs operating in Montana at this time – the last operating rig was in November 2015.

Health Care

Bryce Ward is associate director and director of health care research at the Bureau of Business and Economic Research at the University of Montana.

Q: Are health care outcomes different in Montana than other places throughout the country?

Health outcomes in Montana are excellent. Life expectancy at age 40 is well above the U.S. average and most Montanans enjoy between 0.6 and 2.3 additional years of life expectancy. Fifty-five percent of Montanans report being in very good or excellent health – this ranks No. 14 among all states. We enjoy low obesity rates (No. 3), low heart disease rates (No. 6) and low rates of cancer deaths (ranks No. 13). But Montana is not perfect. The state ranks last in suicide rates, the rate of pertussis infection (whooping cough) and 47th in excessive drinking.

Q: How much of the recent growth in health care is related to Medicaid expansion in Montana?

During 2016, enrollment in Montana's Medicaid expansion program exceeded expectations – over 60,000 enrolled. 2016 also saw a surge in health care employment in the state. After a couple of years of relatively slow growth, health care employment grew

by more than 3 percent. It is unclear though the extent to which these are related. Nationally, the first year of Medicaid expansion was not consistently associated with a surge in health care employment. Some states that expanded Medicaid saw employment changes, some did not. Health care expenditures nationally increased in 2014 and 2015. However, in Montana large increases in premiums suggest that other forces may be affecting health care spending.

Manufacturing

Paul E. Polzin is director emeritus of the Bureau of Business and Economic Research at the University of Montana.

Q: What products are seeing the strongest performance in manufacturing?

Fabricated metal products have been the fastest growing component of manufacturing, led by new firms in Cascade and Missoula counties. ADF International (modular buildings) and Loenbro (pipes and pipelines) opened new facilities north of Great Falls and Harris Manufacturing (thermal products) recently located to the former mill site east of Missoula in Bonner. Alcoholic beverage producers have also increased. From 2010 to 2015, there were 46 new distilleries, wineries and breweries throughout Montana. Overall, manufacturing is growing. From the depth of the Great Recession in 2009 to the latest data for 2016, manufacturing employment grew 15 percent – significantly above the 4.8 percent U.S. growth during the same period.

Q: Are Montana manufacturers hopeful for the coming year? What hurdles can they expect?

Fifty-five percent of Montanans report being in very good or excellent health – this ranks No. 14 among all states.

When asked about their outlook for 2017, Montana manufacturers were generally optimistic. About 36 percent said they expected employment at their plant to increase in 2017 and roughly 56 percent thought that overall conditions for their plant would be better than they were in 2016. The future of manufacturing exports has one dark cloud on the horizon – lethargic worldwide economic conditions. After growing rapidly to \$1.1 billion in 2011, manufacturing exports have stagnated or decreased slightly. Even though exports account for only 10 percent of manufacturing they are very important for several of Montana’s largest manufacturers.

Tourism

Norma P. Nickerson, Ph.D., is the director of the Institute for Tourism and Recreation Research in the College of Forestry and Conservation at the University of Montana.

Q: What effect do forest fires have on park budgets, which are already stretched thin?

Public land management budgets continually steal from Peter to pay Paul. Most recreation budgets for national forests get stripped to fight fires, leaving campgrounds and trails with little to no maintenance. Land managers often depend on a “friends group” to raise money and hire workers. National and state parks are both hurting as visitation numbers continue to increase while budgets either decrease or remain stagnant. Outdoor recreation contributes substantially to the economy of both Montana and the U.S., but our love of recreation without adequate resource protection is showing problems.

Q: Is the dollar’s strength showing up in foreign visitor spending in Montana?

The U.S. dollar’s strength does affect international visitation and spending in Montana. When the dollar is strong we generally see fewer international visitors to the U.S., including Montana. Canadian visitation to the U.S. decreased 31 percent between 2011 and 2015, which is directly correlated with the exchange rate. Visitation

from Canada to Montana decreased 5 percent between 2012 and 2015, but the amount of spending per trip went down 19 percent in just four years.

Wood Products

Todd Morgan is director of forest industry research at the Bureau of Business and Economic Research at the University of Montana.

Q: Dire predictions were made about the expiration of the Softwood Lumber Agreement. Did those fears come to pass?

The expiration of the Canadian-U.S. softwood lumber agreement has had an impact on sawmills in the U.S. Lumber imports from Canada have increased, both in quantity and proportion, and are rising faster than domestic lumber production, which is keeping lumber prices lower than they would be if Canadian imports were not increasing. The U.S. Lumber Coalition has filed petitions asking the U.S. International Trade Commission and Department of Commerce to investigate if Canadian lumber imports are harming the U.S. industry. Their findings will determine if duties are placed on Canadian lumber imports.

Q: Can Montana’s loggers and mills expect more consolidations after the Weyerhaeuser/Plum Creek deal?

Montana’s wood products industry is comprised of privately held or family-owned businesses. The mills and land that Weyerhaeuser now owns in Montana were part of a much larger corporate merger between two of the biggest timberland companies in the U.S. I anticipate Weyerhaeuser selling some or all of their land and mills in Montana, as the company seeks to maximize their value. The sale could benefit other Montana mills by easing the competitive demand for logs. However, with two fewer mills, Montana’s timber owners and loggers will have fewer outlets, and communities around the mills will lose jobs and tax revenues. ■

Montana's Crowded Parks

Record Visitation is Taking its Toll

BY NORMA P. NICKERSON

Did you “Find Your Park” in 2016 to help celebrate the 100th birthday of the National Park Service? This was the theme throughout the year on TV, radio, special events and special programming. If you didn’t visit a park, apparently you were one of the few who stayed away. The year 2016 will likely go down in the record books as the largest jump ever in year-to-year visitation for most national parks. Final 2016 numbers show Glacier was up 20 percent, Yosemite +20 percent, Zion +18 percent, Arches +13 percent and Crater Lake +23 percent. Yellowstone and Grand Canyon were up 4 percent and 8 percent respectively, but that follows increases of 17 percent and 16 percent in 2015.



Vehicles waiting to enter the North Entrance of Yellowstone National Park. (NPS, Jim Peaco)

There are lines to get through entrance gates, lines at the bathrooms, campgrounds full by mid-morning and traffic is rush-hour-like on park roads.

While national park managers were prepared for a good year, many were trying to respond to an unprecedented increase in visitation that simply did not stop – each month broke the previous years' month visitation record. With Glacier and Yellowstone being Montana's premier vacation destinations drawing nearly half of all nonresident visitors to one or both parks, how do these destinations deal with the unprecedented growth?

Many say the parks are crowded. There are lines to get through entrance gates, lines at the bathrooms, campgrounds full by mid-morning and traffic is rush-hour-like on park roads. With duties similar to those of a mayor and city council, Glacier and Yellowstone managers have responsibility for public services, such as police, fire, sanitation, water, gas, roads and so on to provide a healthy living environment and to keep citizens safe. Along with that add the National Park Service mandate to “promote and regulate the use of the Federal areas known as national parks, monuments, and reservations...by such means and measures as conform to the fundamental purpose to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” The mission – preservation of wildness for the enjoyment of the people – is appealing, but difficult to accomplish. Parks have the societal challenges of managing a city alongside a societal mandate to protect the wildlife, waters and vegetation from the people and for the people.

According to Ryan Atwell, Yellowstone National Park social scientist, “Yellowstone National Park has been experiencing steady growth in visitation over the

past decade, topped off with a dramatic increase of 17 percent from 2014 to 2015 and even higher levels of visitation in 2016, the centennial year of the National Park Service. The park had not seen growth of more than 10 percent in over 25 years, so this dramatic short-term increase has shocked the park's current systems. We do not yet have a clear understanding of what is driving this growth, but suspect that retirement of baby boomers and international travel may both be playing a part. Given long-term trends in visitation, we believe that demand for Yellowstone experiences is likely to continue increasing over decadal time frames.”

Increased visitation is taking its toll on daily operations. In 2015, (with visitation up 17 percent) motor vehicle accidents with injuries were up 167 percent. Search and rescue incidents were up 61 percent. Emergency medical responses were up 37 percent and Life Flight evacuations were up 25 percent.

These statistics parallel those of a city, but within a national park. The resource management side has an entirely different set of challenges from those visitors. Results from Yellowstone National Park researchers observing people in Yellowstone on four separate days this past summer showed that 226 total visitors were seen off the boardwalk/trail system in Norris Geyser Basin between 9:30 a.m. and 3 p.m., equating to an average of one person every six minutes ignoring the regulations. This compares to 128 violations at Old Faithful and six violations at Midway Geyser Basin in four days.

High visitation numbers have been an economic boom to gateway communities. Third quarter resort taxes in West Yellowstone hit the \$1 million mark in 2013, which increased by 13 percent in 2014, 10 percent

in 2015 and 9 percent in 2016. On the other hand, the large visitor numbers have pushed water and sewer facilities to their capacity during the summer in West Yellowstone.

In Glacier National Park, it has been common for Logan Pass parking lot to completely fill up by 11 a.m. during July and August. Now, even with a shuttle system in place to transport people along Going-to-the-Sun Road, the parking lot is full by 9 a.m. most days. Apgar, the largest campground in Glacier with 194 sites, only had six total days in July and August with sites available. The other three large campgrounds did not have a single July day with an open vacancy. August was similar with only two days where vacancies existed in the larger campgrounds.

Viewing the scenery along the Going-to-the-Sun Road (GTSR) is what most people do while in Glacier.

Day hiking is the second most sought out activity. The Avalanche Lake trail is evidence of the extreme increase in hikers. According to data from Glacier, in 1988 about 30,000 people hiked the trail during the entire season compared to 90,000 in 2011. Similarly, the Highline Trail down to the loop on the GTSR saw about 1,800 hikers in 1988, which increased to over 40,000 in 2011. Much of the increase on these two trails has been attributed to the shuttle system, which provides access to visitors without a car. While the shuttle does allow more access, it has inherently created overcrowding and impacted resources.

While resource impacts can be easily measured, the effects of overcrowding on the visitor experience is more difficult to understand. Research shows that crowding, or the perception of crowding, is both an individual evaluation and a cultural conditioning not



Crowds at Old Faithful in Yellowstone National Park. (NPS, Neal Herbert)

easily understood from the psychological perspective. A summary on crowding research in natural areas includes the following:

- The perception of crowding is based on expectations or the lack of knowing what to expect.
- First-time visitors generally accept the current situation as normal and therefore are more tolerant to crowding.
- Those who do feel crowded tend to use one or more coping mechanisms:
 - Change their attitude or perception about crowding.
 - Change the time of day or season to visit.
 - Visit a less popular location in the same area.
 - Do not visit (this is the least-used coping mechanism).

Figure 1. A Day in the Life of Yellowstone. Source: Yellowstone National Park, Ryan Atwell.

Snapshot: August 9, 2015
2 arrests before 9 a.m.
4 major motor vehicle accidents (MVA) in the Old Faithful/Grant Area. <ul style="list-style-type: none"> - 1 fatality - 7 EMS patients - 6 Life Flights - 1 ground transport
44 traffic stops.
1 interagency assist for an MVA with extraction and injuries north of Gardiner.
2 MVA with no injuries at Canyon and Old Faithful.
2 cases of domestic violence (at the same time) at Old Faithful.
2 injuries with carry outs in the Canyon area.
1 ground transport for a back injury from Norris Geyser area.
1 interagency assist for a horse accident near Cooke City.
1 medical in the Madison campground for a visitor who sprayed herself with bear spray.
Numerous other calls.

The influence of culture on crowding norms appears to be related to crowding acceptability. Those in “contact cultures” or more socially oriented cultures, such as in Asian countries, were found to be more tolerant of crowds and even less likely to enjoy areas with very few people in it.

Research suggests crowding to be a personal evaluation based on culture, previous experience, expectations and an inward ability to accept and change as needed. If one were to take a group of people experiencing the same thing at the same place and time, their evaluation of crowding would be as diverse as the people in the experience. Most importantly, it appears that crowding perception is site specific. Therefore, taking research results and applying them to other parks or outdoor areas may not work. Each site is as diverse as there are outdoor sites to visit and recreate in. Solutions then are site specific and visitor specific.

Solutions to Crowding

In areas such as the front country in parks or highly developed recreation sites, one researcher suggests that management of crowding should focus on “limiting rude, depreciative and dangerous behavior” rather than trying to preserve certain types of psychological experiences. It does appear that people who act in disorderly ways (e.g. littering, getting too close to wildlife, loud voices or other detrimental environmental impacts) bothered other visitors more than the number of visitors. This suggests some possible solutions: 1) More ranger “boots on the ground” for educational and control purposes; 2) a new way of educating visitors before entering the area, or 3) additional fines to visitors.

Researchers also recommend that sufficient space for the activities be pursued. In unique places, like Yellowstone and Glacier, it is not possible to increase the number of geysers or expand Going-to-the-Sun Road. One cannot control where and when grizzly bears hang out by the roadway. Visitors are here to see that bear and get their wildlife photo. However, some solutions to sufficient space for activities such as wildlife watching would be to highlight areas outside the national parks that have equal wildlife opportunities, such as the National Bison Range, the multitude of wildlife refuges including the C.M. Russell Wildlife Refuge and various



Parking at Logan Pass in Glacier National Park (NPS, Jacob W. Frank)

other hot spots within Montana. Such actions serve to disperse the visitors and reduce concentration in hot spots highly susceptible to crowding.

Since crowding is site- and visitor-specific, it seems logical that managers of parks and outdoor recreation areas be allowed to enact management techniques as they experience visitor behavior becoming unacceptable and environmental conditions deteriorating. These managers know their landscape and situation better than most and should be able to decide what is good for the land and what may work for most people. Surveying visitors about trade-offs is one way to get the management decisions started. Other possible ways to determine limits is to assess the capacity of the current infrastructure.

Additionally, safety measures due to emergency situations could provide a limiting number. For example,

how quickly a park can evacuate all visitors in Glacier or Yellowstone when a wildfire explodes is influenced by the number of vehicles in the park. Knowing the acceptable evacuation time can help managers determine the maximum number of vehicles allowed for safety measures.

With current visitation trends over the past few years Glacier and Yellowstone managers are planning for uncertainty. ■

Norma P. Nickerson, Ph.D., is the director of the Institute for Tourism and Recreation Research in the College of Forestry and Conservation at the University of Montana.

High Tech Boom

BY CHRISTINA QUICK HENDERSON

A 2016 report by the Bureau of Business and Economic Research at the University of Montana, based on a survey of 200 Montana High Tech Business Alliance members, found high-tech and manufacturing companies were projected to grow seven times faster than the overall Montana economy and pay average annual salaries of \$57,000 – more than twice the median Montana wage. The sector shows no signs of slowing down in 2017.



Since acquiring RightNow Technologies in 2011 for \$1.8 billion, Oracle has maintained hundreds of high-paying jobs in Montana and is building a new operations center in Bozeman. RightNow alumni are leveraging their knowledge and resources to scale new high-growth ventures. Bozeman tech firms launched by former RightNow employees include Foundant Technologies and Elixiter, both are on the 2016 Inc. 5000 list of fastest-growing companies.

Venture capital investments in Montana are on the rise. Centricent, a Bozeman software company started by former RightNow CTO Mike Myer, closed a \$6.5 million round in 2016 led by Venrock (the venture capital arm of the Rockefeller family) and followed by Bozeman's Next Frontier Capital. In 2016, Next Frontier participated in rounds for Missoula's Clearas Water Recovery (\$4 million) and Orbital Shift (\$1.25 million).

Montana-grown companies are expanding rapidly across the state, including GTUIT (Billings), ViZn Energy (Columbia Falls), onXmaps (Missoula), Ascent Vision (Bozeman), Loenbro (Great Falls), Montana Precision Products (Butte), and Spika Design and Manufacturing (Lewistown).

The quality workforce has prompted large out-of-state firms to locate manufacturing and development sites in Montana, including Applied Materials (Kalispell), Workiva (Bozeman), and SoFi (Helena). Companies like Advanced Technology Group (Missoula), FICO (Bozeman), Helix Business Solutions (Dillon), Kount (Whitefish) and Deloitte (Helena) are hiring scores of people for technology services roles.

Montana's quality of life is a magnet for retaining talent. When GlaxoSmithKline recently moved research and development to Maryland, 15 researchers from GSK's Hamilton lab formed their own biotech firm rather than leave the state. Inimmune launched at MonTEC in Missoula in 2016, in partnership with the University of Montana, keeping over \$20 million in National Institutes of Health research contracts in Montana.

Montana has been the No. 1 state for startup activity for four straight years, according to the Kauffman Entrepreneurial Index. Supported by the Blackstone LaunchPad and business schools at the University of Montana and Montana State University, more Montana startups are earning spots at highly competitive accel-

Montana has been the No. 1 state for startup activity for four straight years.

erator programs. In 2016, Montainer, a Missoula firm that builds tiny houses in shipping containers, attended the 500 Startups program in Mountain View and Bozeman's HERO app to reduce drunken driving attended a Techstars accelerator.

Entrepreneurship is also creating wealth and jobs in Montana's tribal communities. S&K Technologies in St. Ignatius won a \$4.2 billion Air Force contract in 2016. S&K has returned more than \$25 million in dividends to the Confederated Salish and Kootenai Tribes since 2002 and employs 500 people – 50 in Montana. Island Mountain Development Group in Harlem has a high-tech call center and supports 50 jobs and \$1.4 million in payroll for the Gros Ventre and Assiniboine Nations.

Remote workforce is a growing trend, with tech firms hiring people on farms and ranches in towns like Cut Bank, Big Timber, Two Dot and Roundup. Rural communities are gaining new vitality by attracting remote workers, but fast broadband is a requirement.

Finding enough talent remains the No. 1 barrier to growth for Montana high-tech firms, particularly in computer science. Joint efforts to train workers and promote Montana jobs will help fast-growing companies fill positions and allow more Montanans to make a good living in the state they love.

Look for Montana's high-tech sector to add more firms and more high-paying jobs in 2017. ■

Christina Quick Henderson is executive director of the Montana High Tech Business Alliance and instructor of management and organizational behavior at the School of Business Administration at the University of Montana.

The High Wage Jobs Puzzle

Where Does Montana Fit?

BY **BRYCE WARD**

When evaluating a region's economy, the first question to ask is, "Do people want to live there?" If people want to live there, then something is working. If people do not want to live there, then something may be wrong.

By this metric, Montana is doing well because people want to live in Montana. In a recent Gallup poll, only 13 percent of Montanans indicated that they would move to another state if they could, the lowest percentage among all states. In contrast, almost half of the residents of New Jersey indicated that they would like to move to another state.

Migration data confirm Montana's desirability. About 5,200 more people move to Montana each year than move away, ranking Montana's net migration rate 13th among all states. By this simple measure, Montana's economy is performing well. However, if one digs deeper, there are rumblings. While Montanans love Montana, they do have some concerns.

Every Place Has a Problem

All places want to offer high wage jobs, a modest cost of living and an amazing quality of life, but no place can offer all three. If a place did offer all three, it would attract lots of people – those people moving in would lower wages, increase the cost of living and possibly reduce the quality of life. As a result, every place has at least one problem.

In Montana, low earnings have been an issue. Median earnings for Montana workers over age 24 are \$31,800. This is only 86 percent of the U.S. median (\$36,900) and places Montana 45th among all states.

While the cost of living in Montana is lower than the U.S. level, it is still high relative to income. Montana's



Old abandoned storefronts in historic Butte, Montana. (Jess Kraft)

cost of living is 94.5 percent of the U.S. level. For the median worker, less than half of Montana's earnings gap is offset by the state's lower cost of living.

These concerns are accentuated by the fact that Montana is becoming less affordable. Since the early 1990s, housing prices in Montana, adjusted for inflation, have doubled, growing at the third fastest rate in the country trailing only Colorado and Oregon. Income growth has not kept up with housing price growth. Median household income in Montana only increased by 19 percent over this same period. As such, Montana has become much less affordable over the past 25 years.

Yet, in spite of these affordability challenges, Montanans still want to live in the state, which speaks to Montana's quality of life. There are a number of other places where Montanans could move that offer higher wages, a lower cost of living, or both. For instance, Michigan offers higher

Only 37 percent of Montana natives with a college degree still reside here. This is the ninth lowest percentage among all states.

median earnings and a similar cost of living. Missouri offers similar wages and a lower cost of living, and Iowa offers both higher earnings and a lower cost of living. Yet, in spite of these opportunities, Montanans are not fleeing to these places.

For one group though, Montana's mix of jobs, costs and quality of life is not as appealing – those are young, college-educated workers. Between 2008 and 2012, on average, 564 more of these young, college-educated residents moved out of the state than moved in.

The outmigration of college-educated Montanans is a long-standing feature of the state's economy. Only 37 percent of Montana natives with a college degree still reside here. This is the ninth lowest percentage among all states and roughly half the level observed in states like Texas and California. In-migrants from other states replace many of the native Montanans who leave, but not all. Montana has 20,000 fewer college graduate residents than college graduate natives.

While some young Montanans may want to experience life outside the state or in an urban environment, limited job opportunities and low wages are likely driving this net outmigration. The median college-educated Montanan earns only 77 percent as much as the median college-educated American (82 percent adjusted for cost of living). In contrast, the median Montanan without a college degree earns 90 percent as much as the median American without a college degree (95 percent adjusted for cost of living).

Montana's inability to attract and retain more college graduates imposes costs on the state's economy. If Montana is not attractive to young, college-educated workers, it is not providing a full set of opportunities for its kids. Kids who grow up in Montana and go to college often feel they must leave the state to find opportunity and that is unfortunate.

Adding more college-educated workers would likely produce benefits for Montana's economy. Creative workers are an increasingly important source of a region's economic success. Economists find that regions with more skilled workers grow faster – they enjoy faster population, employment wage and housing price growth. More skilled workers increase the productivity of a region and increase its quality of life. Regions with more skilled workers also enjoy higher entrepreneurship rates and have proven more capable at recovering from inevitable downturns.

While no place is appealing to everyone, Montana's mix of offerings is somewhat unattractive for young college-educated workers, which may be a long-term problem for the state.

The New Geography of Jobs

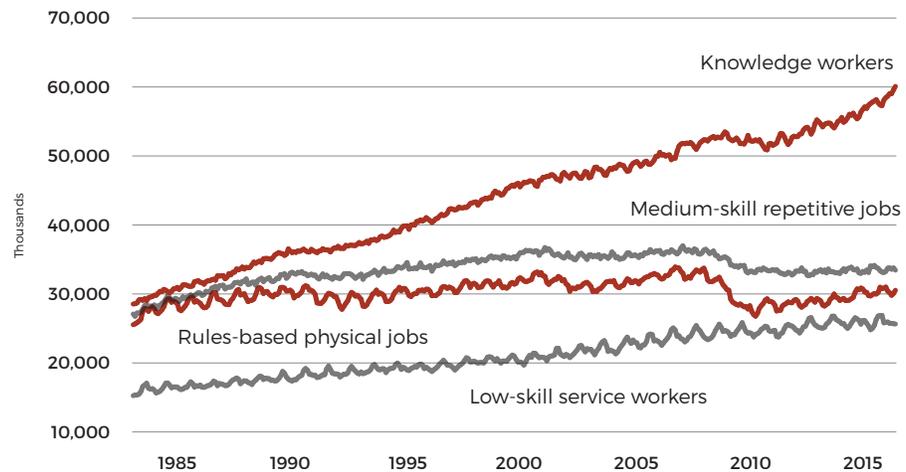
When the railroad came to Butte in the 1880s, a flood of people followed. Montana had abundant natural resources and those resources were valuable in larger markets. The railroad allowed those resources to reach the market and the state's economy blossomed.

This is the typical regional economic story. Historically, economies sprouted where soil was fertile, timber and minerals were abundant, and where transportation by water was easy, such as at the confluence of rivers or at natural ports. Over time, man-made advantages like railroads or highways helped further shape local economic development. In recent years, the link between natural resources and local prosperity has weakened. Natural resources and access to markets still matter, but a region's success is increasingly tied to human creativity. Recent changes have allowed the knowledge economy to become a reliable driver of economic growth.

Figures 1 and 2 help illustrate some of these changes. Figure 1 shows how the allocation of workers has changed.

Median earnings for Montana workers over age 24 are \$31,800 and places Montana 45th among all states.

Figure 1. Job Polarization: U.S. Employment by Occupation.
Source: Federal Reserve Bank of St. Louis.



It shows employment growth for four different types of occupations: creative, knowledge workers (doctors and computer programmers), low-skill service workers (janitors and home health aides), medium-skill repetitive jobs (secretaries and bank tellers) and rules-based physical jobs (factory workers or truck drivers).

Over the past several decades, the non-routine occupations have grown, while the routine occupations have stagnated. Economists refer to the changes shown in Figure 1 as the polarization of the labor market. High- and low-skill occupations have grown, while middle-skill occupations have stagnated.

Figure 2 shows a similar pattern for earnings growth. The figure shows earnings growth between 1990 and 2014 across the earnings distribution. Adjusted for inflation, the earnings levels for approximately the bottom 75 percent of people declined or improved little, while earnings for the top 25 percent and particularly the top few percent, increased.

Natural resources still matter and will continue to matter in Montana. Indeed, in recent decades, Montana's wage growth, employment growth and population growth have been strong, particularly for less-educated workers and much of this strong performance can likely be traced to natural resource booms, like the Bakken oil formation.

However, Montana could benefit from a more robust knowledge economy. A more robust knowledge economy would provide higher wages – particularly for Montana's college-educated population. It would provide

more robust opportunities for Montana's kids and a more diverse economy to help insulate the state from the booms and busts of its natural resource industries. It might also ensure that Montana does not become a playground for the wealthy.

To build a knowledge economy, knowledge industry firms need to be able to create goods and services in the state and deliver them to markets. Specifically, Montana needs entrepreneurs who can develop a company, assemble the workers and technology required to execute their vision and deliver their product to customers.

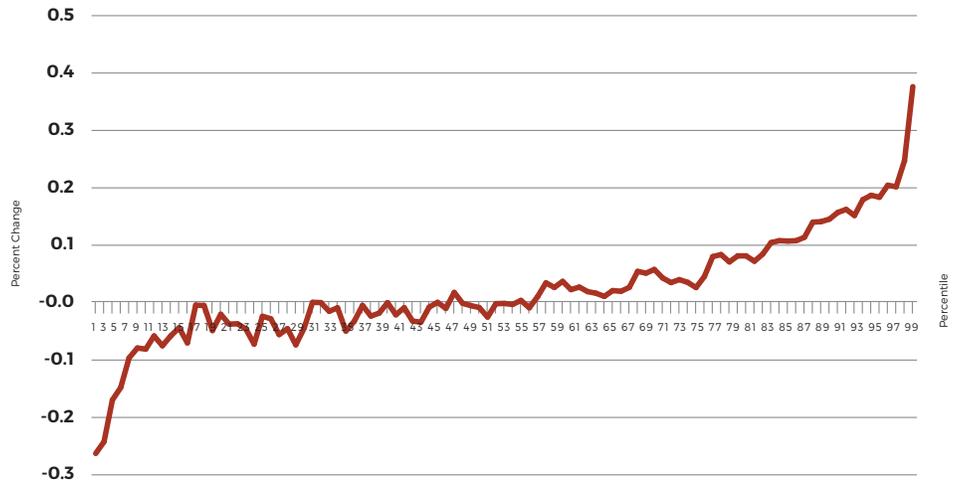
For the past several years, Montana has topped the Kauffman Foundation's rankings of start-up activity. Thus, Montana appears to have the necessary entrepreneurial spirit. However, the main impediment to more rapid growth in Montana's knowledge sector is the struggle to access the workers and capital required to succeed.

For instance, knowledge-industry firms in Montana may need programmers or developers, however, the state has relatively few workers in these areas. Montana employs only 7,850 people across all computer and mathematical occupations – that's 5,200 fewer workers to draw from than would be expected in a state Montana's size. This makes it more difficult for these types of firms to succeed in the state.

Breaking the Cycle

Montana faces two problems that reinforce each other: Low wages limit the set of college-educated workers available to Montana firms – but to raise wages

Figure 2. Cumulative Percent Change in Earnings (Adjusted for Inflation) by Income Percentile, 1990-2014, U.S.
 Source: BBER analysis of 1990 Census and 2009-2014, American Community Survey Public-Use Micro Data.



for these workers, Montana needs to develop a more robust knowledge economy and that requires a pool of skilled, creative workers. If Montana can break this cycle, it is likely to succeed in creating a more robust knowledge economy.

The good news is a knowledge economy is not tied to a particular place. It simply requires a collection of people and any place that proves desirable to knowledge workers and knowledge entrepreneurs can thrive in a knowledge economy. Thus, growing Montana’s nascent knowledge economy does not rely entirely on who is already in Montana, it also depends on who might be willing to come to Montana and the set of people willing to come to Montana is large.

Many former Montanans yearn to return to the state and others find it attractive overall as Montana’s quality of life is outstanding. Montana’s cost of living is lower than many other places and given a sufficient job, people can be better off here. Thus, Montana needs to do two things: it must attract or grow firms that can provide jobs and it must also develop the resources that allow these firms to attract potential residents. Montana’s entrepreneurs are essential to this process.

This requires overcoming Montana’s limitations. By empowering more entrepreneurs Montana is more likely to escape the unfortunate cycle described above. Montana’s small but growing technology sector offers hope that this process is underway and gaining momentum. Overall, Montana is a desirable place to live

and this suggests that its economy is working. However, Montana does face an important economic challenge – its knowledge sector is underdeveloped and as a result, it is somewhat unattractive to knowledge workers.

Developing a more robust knowledge economy would provide benefits to Montana. The state would offer a wider range of opportunities and higher earning to Montana’s workers. It would also have a more diverse and resilient economy.

It should be noted, however, that developing a more robust knowledge economy may also impose costs. The cost of living may grow faster than income. As a result, Montana may become even less affordable. Also, the state’s population may grow faster and this could affect quality of life. Both of these changes may make Montana less appealing to different groups.

These are the current tensions that underlie Montana’s economy. Montanans must work to better understand these trade-offs and decide how we want to balance them. However, as we make these choices we must keep in mind that we have limited control. Economic forces outside of Montanans’ control will also play a big role in determining the extent to which Montana develops a knowledge economy, as will the associated costs and benefits. ■

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