

MONTANA BUSINESS QUARTERLY



MONTANA'S ECONOMICS MAGAZINE // SPRING 2021

MONTANA'S UNAFFORDABLE HOUSING CRISIS

A SHORTAGE OF
HOMES AND STAGNANT
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Rocky Lowry walks back to work inside a new home construction in Helena. (AP Photo, Jon Ebelt)

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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 child well-being; 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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COVER

Illustration of a heavy house in a breaking net.
(Ola Patalas)



MESSAGE FROM THE ASSOCIATE DEAN OF THE COLLEGE OF BUSINESS

As one of the articles in this issue illustrates, cooperatives provide a significant contribution to Montana's economy. The College of Business at the University of Montana aids this economy by providing education for much of Montana's human capital. A significant part of the associated training comes from cooperation with Montana businesses.

This past spring, the College of Business partnered with LumenAd to design and launch a digital media planning and reporting course to mimic the structure, individual performance and professionalism demanded by a creative agency. The course provides students with a solid understanding of the digital marketing landscape and helps them differentiate themselves as digital marketers.

We've also partnered with Wilson Logistics to create a course on logistics and transportation. Students will gain a deeper understanding of logistics and supply chain management, as well as the skills and attributes required to succeed in the field.

Finally, we are setting out to offer micro-credentials and certificates on various aspects of business that function as continuing education for Montana's workforce. In addition to our graduate programs, we are seeing a growing number of people looking to advance their skill set, as well as corporations looking to invest in their staff.

It has been a turbulent year, but the College of Business is in an excellent position to help prepare Montana for the future of business. We hope you enjoy this issue of the Montana Business Quarterly.

Klaus Uhlenbruck, Ph.D.
Associate Dean and Professor of Management
College of Business at the University of Montana

YOUR SUCCESS IS OUR BUSINESS

Over 80 percent of UM College of Business students participate in at least one internship and are working or attending graduate school within three months of graduation.



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*- Mandy Fischer, class of 2020
Solution Advisor at Deloitte*

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CURRENTLY
IN THE WORKFORCE

THE ECONOMIC CONTRIBUTIONS OF MONTANA COOPERATIVES

Cooperatives Employ Thousands and Make Montana's Economy Significantly Larger

BY PATRICK M. BARKEY

Cooperatives have been part of the fabric of the Montana economy nearly as long as we have been a state. Their footprint is significant in industries that are central to the state's economy, including agriculture and food processing, banking and credit, electric power distribution and manufacturing. While their presence is most notable in Montana's rural communities, they are an important economic driver in urban areas as well.

The long-standing presence of these customer-owned organizations in cities and communities across the state has at times made their operations less visible to the general public. Yet they are jointly responsible for thousands of jobs, millions of dollars of income and investment, and the stability and viability of countless members and customers who do business with them. Assessing and presenting the economic contributions made by these organizations to the Montana economy is a useful way of highlighting their importance.

The Bureau of Business and Economic Research (BBER) has conducted an analysis that addresses the research question,

"What would the economy of the state look like if cooperatives did not exist?" The question is clearly hypothetical – no conceivable policy could (or should) make this event actually occur. Rather it is a way of highlighting how the operations of Montana's cooperatives connect with the rest of the economy.

Montana cooperatives are arguably among the most connected forms of business in Montana. Their collective ownership, the nature of the products and services they provide, and the wide geographic scope of their activities across the state puts them in close contact with customers and



A crew from Yellowstone Valley Electric Cooperative work on a power line on Grand Avenue in Billings. (Casey Page, Billings Gazette)

workers everywhere. And so, their presence in the economy can be expected to be felt widely as well.

Cooperatives in Montana

The cooperative model for organizing businesses dates to the industrial revolution in Europe in the 18th century. Its roots in this country are almost as old – the first cooperative business here was a mutual fire insurance company, founded in 1752 by Benjamin Franklin and still in operation today. Since the 1930s, cooperatives have grown, consolidated and evolved into key players across a wide spectrum of business activity, including agriculture, energy, credit, telecommunications and a variety of consumer businesses. Some agricultural cooperatives today rank among the country’s largest businesses of any kind, and operate in dozens of states.

In Montana, cooperatives have had a strong presence. The 101 cooperatives included in the analysis reported in this article included 27 electric co-ops, 48 credit unions and insurers, seven telecommunications cooperatives and a number of elevators, distributors, and other agricultural and nonagricultural businesses.

As shown in Table 1, more than a quarter of all of the cooperatives included in this study are located in eastern

Montana, a region that contains only 7% of the state population. Included in the table’s “other” category are grain elevators, energy distributors, a restaurant and an oil refinery.

When one (hypothetically) removes the sales, production, employment and income of cooperatives from the economy, the reduction in economic activity is much larger than the cooperatives themselves, since the spending of the organizations and their workers is received as income for other businesses and governments within their communities and in the state. Thus, the activity of cooperatives supports many jobs and livelihoods beyond those with a direct connection to the organizations themselves.

Ownership of Montana cooperatives is similarly varied. Two-thirds of the cooperatives included in this analysis are owned by individuals, typically customers. Of the remainder, 13% are worker-owned, 10% are owned by area farmers and ranchers, and 10% are owned by other cooperatives.

The Economic Contributions of Montana Cooperatives

Our approach to this research involved constructing two scenarios for the economy. The first is a baseline, status quo projection where no changes are made. The second is a “no cooperatives” scenario where the spending, production,

Table 1. Montana cooperatives by region and type. Source: Bureau of Business and Economic Research.

Co-op type	Region					Total
	Northwest	Southwest	North Central	Eastern	South Central	
Electricity utility	5	3	5	9	5	27
Telecommunications	2	0	2	3	0	7
Credit union or insurance	8	11	11	11	7	48
Other	5	1	4	5	5	20
Total	20	15	22	28	17	102

Table 2. The economic impact of Montana cooperatives, summary. Source: Bureau of Business and Economic Research.

Category	Units	Impact
Total employment	Jobs	23,480
Personal income	\$ millions	1,595.5
Disposable pers. income	\$ millions	1,417.3
Output	\$ millions	7,594.4
Population	People	33,072

Table 3. Economic impact of Montana cooperatives, impacts by type of cooperative. Source: Bureau of Business and Economic Research.

Category	Units	Credit unions	Electric coops	Telecomm	Ag coops and other	CHS refinery
Total Employment	Jobs	4,687	5,761	2,542	2,745	7,591
Personal Income	\$ Millions	294.7	357.4	189.2	175.2	560.5
Disposable Personal Income	\$ Millions	261.9	316.2	166.8	155.0	500.3
Output	\$ Millions	1,418.1	1,199.3	542.1	586.0	3,828.3
Population	People	6,174	7,673	3,533	3,561	11,435

sales and employment of cooperatives is subtracted from the economy. In the second case, the economy comes to a new equilibrium, or resting point, as other jobs and activities in the rest of the economy adjust to the absence of the cooperatives. The difference between the economic activity actually observed and this “no cooperative” scenario is the total economic contribution of Montana’s cooperatives.

Since this “no cooperative” Montana economy cannot be directly observed, it must be constructed by means of an economic model. BBER uses its policy analysis model, leased from Regional Economic Models, Inc. (REMI) and constructed explicitly for this purpose, to conduct this analysis. The REMI model is a well-known, well-respected tool for economic analysis that has been used in hundreds of studies and is the subject of dozens of peer-reviewed scholarly articles.

Specifically, we find that an economy with the cooperative businesses included in this study, representing more than 5,000 jobs, ultimately produces an economy that has:

- 23,480 additional permanent, year-round jobs, which are ultimately supported by the spending and production of the co-ops;
- Almost \$1.6 billion each year in additional income received by Montana households, of which more than \$1.4 billion is after-tax income, available for spending elsewhere in the economy;
- An increase in the gross receipts of business and nonbusiness organizations across the economy of \$7.6 billion per year; and
- More than 33,000 additional people, as workers and their families, are attracted to and remain in Montana due to expanded economic opportunities.

These impacts represent permanent, ongoing contributions to the state economy, and are significantly larger than the employment and spending of the cooperatives themselves. They represent the comparison between the actual economy, which includes cooperatives, with an artificially constructed, “no cooperatives” scenario of the economy, which removes co-op employment and spending.

The figures shown in Table 2 are the impacts of all cooperatives as a group, which include credit unions, electric cooperatives, telecommunications cooperatives, farm-related

co-ops and others. All of these categories of cooperatives represent different kinds of economic activities, with different products and services, different technologies, and different economic footprints. Yet they share in common impacts which ultimately make the economy larger.

Those impacts by type of cooperative, summarized in Table 3, are clearly substantial. The first three categories – credit unions, electric cooperatives and telecommunications cooperatives, consist of cooperatives of different sizes and locations who are in the same line of business. The different size of their overall impacts reflects the number of individual cooperatives contained in each (from 47 credit unions to six telecommunications co-ops), as well as differences in the nature of their businesses.

The remaining two categories contain more diverse collections of businesses. The CHS petroleum refinery, located in Laurel, Montana, is sufficiently different from the rest to merit its own category. Its highly capitalized, high value-added production processes and its highly compensated workforce underpin its outsized impacts. The remaining category includes a wider spectrum of businesses relating to agriculture, including grain elevators, distribution and wholesaling activities.

Conclusion

Montana’s customer-owned cooperatives are a diverse group of businesses that share one aspect in common, namely their close connections to the communities in which they operate. Those connections make what those businesses do and where they do it of special importance, and combine to create a substantial economic impact.

Our finding is that the operations of cooperatives makes the economy significantly larger, more prosperous and more populous. The more than 23,000 jobs, the \$1.6 billion in annual personal income, the \$7.4 billion in economic output every year, and the 33,000 additional people in Montana that exist because of their operations is vivid testimony to the substantial economic benefits their presence brings.

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

MONTANA'S UNAFFORDABLE HOUSING CRISIS

A Shortage of Homes and Stagnant Incomes Widen the Divide

BY BRANDON BRIDGE

The lack of affordable housing has been an increasingly difficult problem for many Montana communities. With relatively few affordable homes available for households earning a low income, and with much of the existing affordable inventory aging and in need of rehabilitation, many households earning a low income are being priced out of housing markets.

When households become highly cost burdened they experience many difficulties in regard to health and well-being outcomes, such as educational attainment of minors, employment opportunities, etc. Those households priced completely out of the market experience the unending difficulties associated with homelessness. And it is not merely the cost-burdened household members who suffer, the difficulties of being cost-burdened or homeless extend

from the individuals directly involved to the communities where they live. This imposes costs on community hospitals, schools, criminal justice efforts, infrastructure upkeep and many other community institutions. Reducing these costs will be an increasingly pressing problem moving forward.

Figure 1 shows the extent of cost burden among renters and homeowners in various counties in Montana, and compares that to national and statewide averages.



Figure 1: Percent of households that are cost burdened. Source: U.S. Census Bureau.

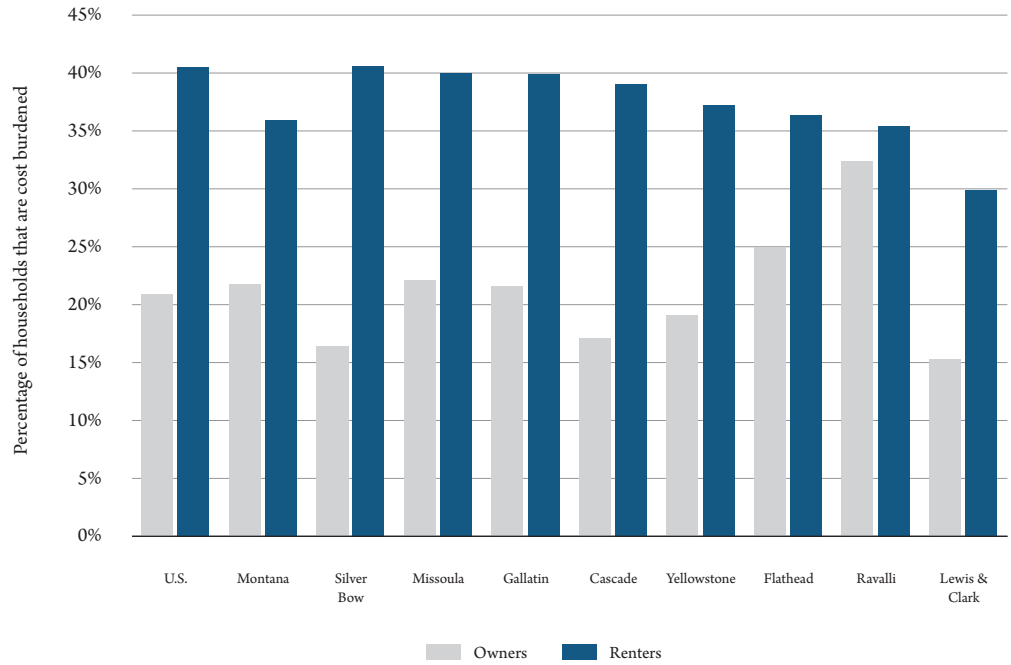
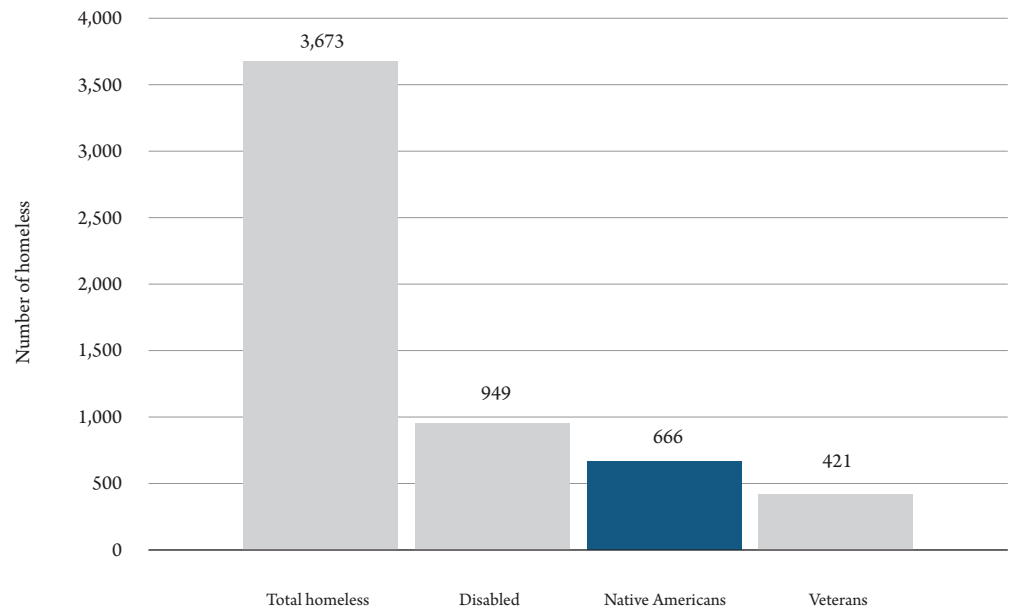


Figure 2: Montana homelessness by group. Source: Montana Homeless Management Information System.





New single-family homes under construction in Missoula. (David H. Wells)

Demand for affordable housing in Montana far outstrips supply. For example, statewide there are only 39 affordable housing units for every 100 households earning an extremely low income (below 30% of area median income). Since 2016, there have been over 30,000 applications for housing choice vouchers, with only about 4,000 issued. This indicates a demand-supply ratio of more than 7-to-1 for this program alone.

In order to understand the impacts of housing affordability challenges, it is helpful to consider the situation of complete unaffordability – homelessness. The costs borne by homeless individuals and families are stark and clearly visible. The instability caused by homelessness turns many basic necessities into near impossibilities. Finding adequate food, shelter, clothing, washing facilities, transportation, health care, education, personal safety and security, and employment become highly time-intensive and often impossible. These challenges are compounded by the high levels of substance abuse and mental illness experienced by homeless individuals and families.

Figure 2 shows an estimate of the number of individuals experiencing homelessness in Montana. The proportion of Native Americans experiencing homelessness in Montana

is noteworthy. It is estimated that Native Americans make up 6.5% of the population of Montana, yet individuals identifying as Native American make up 18% of the total homeless population. This constitutes an almost three times overrepresentation in the data.

Over the past several years affordable housing has become a nationwide concern. Prior to 2020, we had record lows in unemployment, record highs in the stock market, but troubling increases in income inequality. This had been a cause of growing concern, particularly in the area of housing where the cost of rent had been rising faster than wages in most areas of the United States. The year 2020 exacerbated these concerns by adding record unemployment claims and record business closures, on top of continuously rising housing costs.

As with any market, housing prices are influenced by supply and demand factors. The current boom in home prices is no different. One of the starkest factors driving this trend is the lack of available housing supply in the United States. Figure 3 illustrates this phenomenon by showing the number of single-family homes available for sale throughout the calendar year in the U.S. for the years 2018-20. We see that historically there have been roughly 1 million homes

Figure 3: Single-family homes for sale, United States. Source: Zillow Real Estate Research.

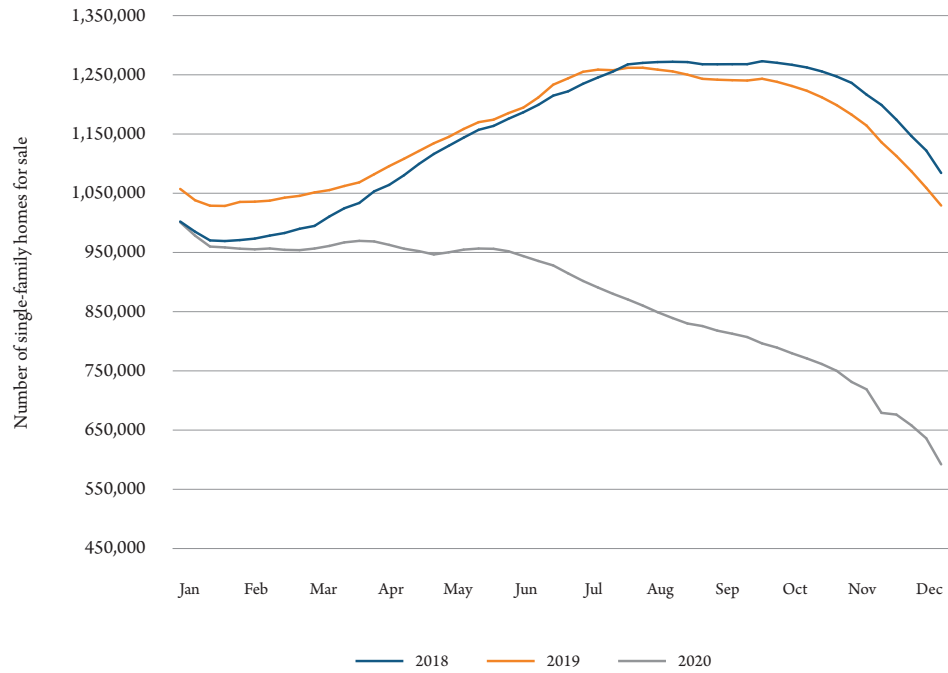
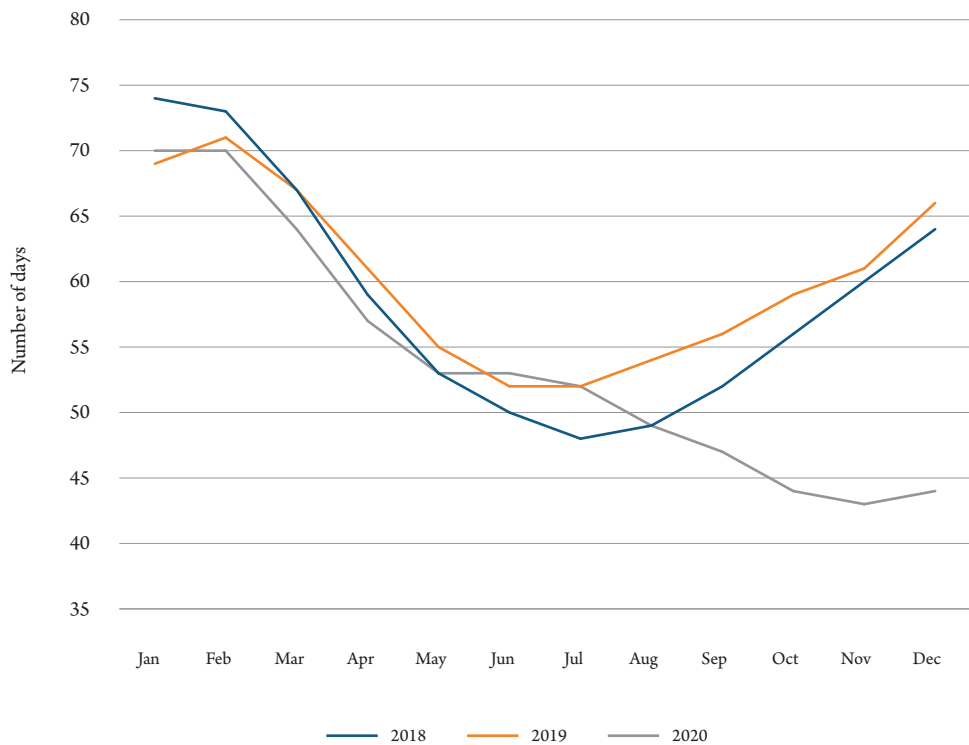


Figure 4: Average number of days to pending transaction, United States. Source: Zillow Real Estate Research.



for sale at the beginning of the calendar year. This number tends to rise through the spring and early summer, peak in late summer, and fall back to around 1 million by the end of the calendar year.

We see in Figure 3 that 2020 was a major deviation from this trend. While the year started with the same number of homes for sale as in previous years, the housing inventory did not rise through the spring, and started falling precipitously through the summer and fall. The available supply of single-family homes for sale at the end of 2020 was little more than half of the inventory at the beginning of the year. As of January 2021, there were less than 576,000 available single-family homes for sale across the country.

The demand side is also driving the recent housing market boom. Figure 4 shows the average number of days a home is on the market before a sale is pending throughout the calendar year for the years 2018-20. Again, we can see a clear 2020 deviation in buyer behavior from previous years. We have vastly fewer homes for sale nationwide, and buyers are acting fast to make deals.

Communities are economically stronger, and are able to offer a shared, higher quality of life when there are employment opportunities for all who seek jobs and a variety of homes available for renting or buying. In situations like this, almost every household can find the home that fits their needs and their budget. In these communities, children are able to focus on school instead of the stress of homelessness, there are fewer or no food-insecure families, people can spend more time focusing on their own health, and people are able to plan and save for their retirement.

The United States as a whole is currently facing a shortage of affordable homes, and Montana is no exception. With relatively few affordable homes available for households earning a low income, and with much of the existing affordable inventory aging and in need of rehabilitation, many households earning a low income are being priced out of housing markets. We are now facing ever expanding economic challenges, and these issues and concerns are not going away or getting better.

When housing becomes unaffordable, it imposes costs on entire communities, but the most vulnerable in society bear

the brunt of those costs. Housing affordability will likely be a challenge that Montanans continue to face in the coming years, and as such it deserves a place in public conversation.

Brandon Bridge is an economist and director of forecasting at the Bureau of Business and Economic Research at the University of Montana.

HOSPITALS MAKE SIZABLE IMPACT ON MONTANA'S ECONOMY

Spending, Demand and an Aging Population Spur Growth

BY ROBERT SONORA

The rapid growth of health care spending in the United States is well documented. According to data from the National Health Expenditure Accounts, in 2019 overall health care spending represented almost 18% of total gross domestic product and inflation adjusted per capita expenditures were \$10,400 per year (Figure 1). If current trends continue, over the next five years projected 2025 health expenditures (represented by dashes) will represent one-fifth of total U.S. output, as measured by gross domestic product. Real per capita expenditures will reach of \$12,000 per year, more than double what they were at the turn of the century. According to a report by the Bureau of Labor Statistics, over the next several years health care and social assistance will be the fastest growing sector in the U.S. economy.



Katie Kukowski cares for a patient in the intensive care unit at Billings Clinic during the COVID-19 pandemic. (AP Photo, Larry Mayer)

The reasons for the expansion of health care spending are numerous. The passage of the Affordable Care Act in 2010 reduced the percentage of uninsured Americans from 15.5% to 9.2% in 2019, though at its lowest in 2016 this ratio was 8.6%. This translates into roughly 13 million more people seeking consistent health care today than 10 years ago.

A second driver of this growth is the aging population and longer life expectancy – though this latter indicator has dropped over the past three years or so. Roughly one-half of all health care spending is for people over the age of 55, and individuals over 65 account for one-third of expenditures.

Economists call health a "normal good" – the higher your income the more you demand. Improvements to medical technology, such as pharmaceuticals, devices, etc., have been introduced to satisfy the increased demand for better health outcomes. Another factor is the rise of health risks. For example, the national obesity rate increased from 31% in 2000 to 42.4% in 2018. The rate of severe obesity doubled to 10% over the same period.

The result of this can be seen by comparing the prices of hospital services to the overall price level. Increased demand for hospital services derived from higher incomes, declining health and preferences can be seen in the ratio of hospital

prices to the general price level. Figure 2 shows the annual growth rate of the relationship, which has averaged about 4% since 1983.

Similar patterns can be found in Montana. Figure 3 shows health care output, measured as gross state product and employment from 2010 to 2023. To calculate the forecasts the model did not include data post-2020Q1 to remove the short term impacts of the COVID-19 pandemic. By the end of 2023 the Montana health care sector will be roughly 30% higher than it was 2010.

Projections by the Congressional Budget Office (CBO) show expenditures in both Medicare and Medicaid will continue to rise through 2031, averaging 6.9% and 5% respectively. By 2031, the CBO estimates the combined spending of both these programs to be roughly \$2.1 trillion.

Hospitals in Montana

The Bureau of Business and Economic Research at the University of Montana was contracted by the Montana Hospital Association to conduct an economic analysis of the state's hospitals and health centers. The results demonstrate a sizable, ongoing and permanent impact of Montana's hospitals on the economic performance on Montana.

Figure 1a-b. Health care spending, 2000-25.
 Source: National Health Expenditure and Bureau of Economic Analysis.

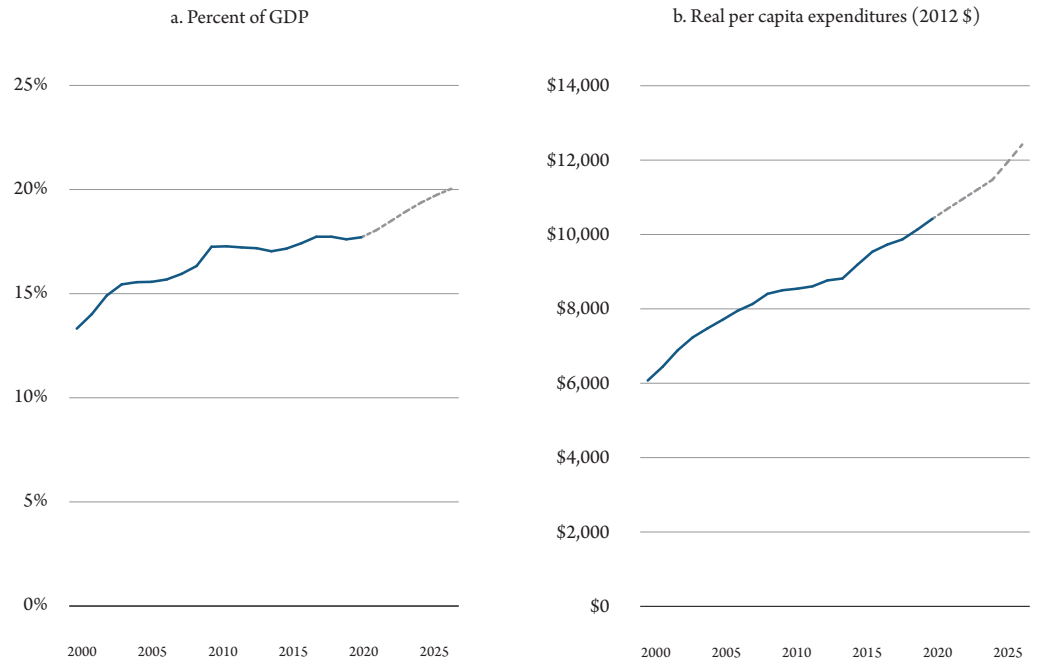


Figure 2. Hospital prices relative to core consumer price index. Source: Bureau of Labor Statistics.

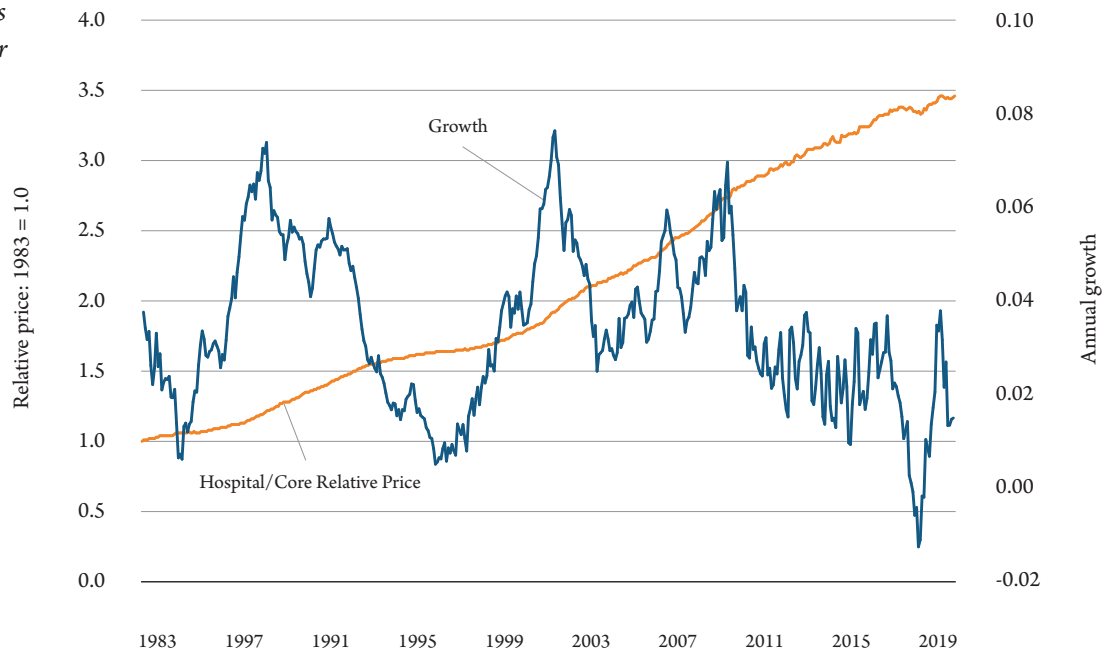


Table 1 shows hospital employment, total wages and salary, and average annual pay in five year increments between 2005 and 2019. Also tabulated are the annual growth rates for those years. Over the 15-year period, employment in Montana hospitals is 28% higher in 2019 than 2005, total wages are an impressive 116% higher, and average pay almost 70% more. To put that in perspective, over the same period, statewide employment, total wages and average annual pay rose 15.8%, 81.9% and 57.1%, respectively.

These data demonstrate the growing importance of the health care sector, including hospitals, in the Montana economy. A recent report by the World Health Organization provides evidence for the role the health care sector plays on economic activity.

Using data for 55 hospitals and health centers across 47 counties, BBER calculated the economic impact of Montana's hospitals. Economic impacts by hospitals are the total number

of direct and indirect jobs created; total personal income and after taxes, disposable income; economic output created; and total population which results from county hospitals.

Putting that in perspective, Montana hospitals directly and indirectly account for about 17.3% of state employment, 11.9% of total personal income and 13.8% of population.

While there are health centers located in most of Montana's counties, not all of the rural operations can handle all types of medical emergencies or procedures. Many smaller regional health centers do not have the facilities to conduct complicated procedures. It is also unlikely that a sufficient number of prospective patients would make it cost effective to provide facilities for infrequent procedures. Using outpatient billing data, BBER identified the hospital county destination for all of Montana's health centers.

As expected, counties with the largest hospitals had the largest billing percentage from outside their home county.

Figure 3. Montana health care output and employment, 2010-23. Source: Bureau of Economic Analysis.

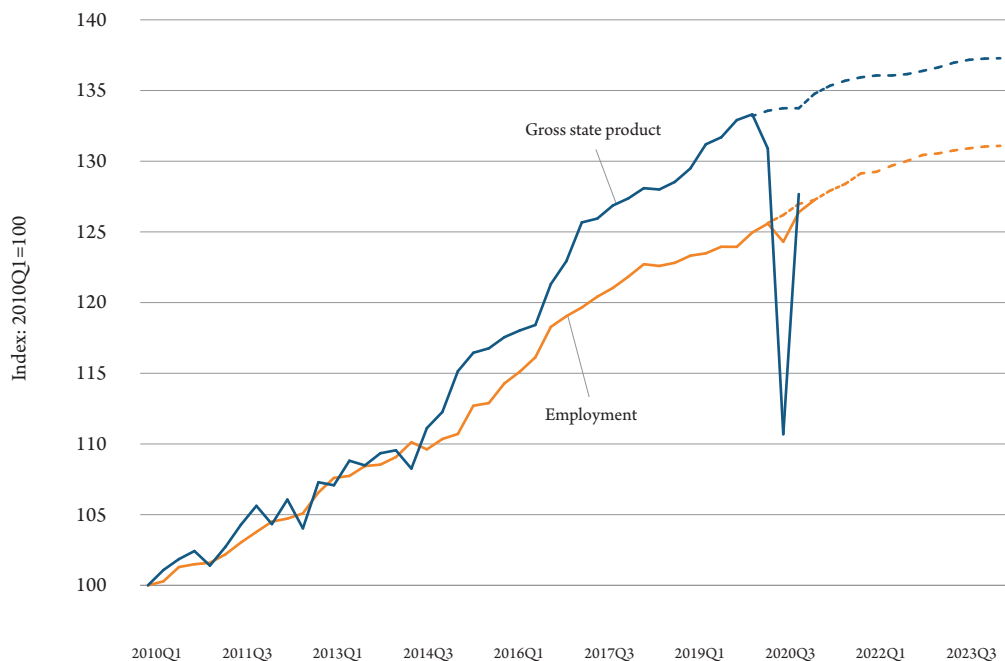


Table 1. Employment and income for Montana hospitals. Source: U.S. Bureau of Labor Statistics.

Year	Employees		Wages		Annual pay	
	Total	Annual growth	Total	Annual growth	Average	Annual growth
2005	19,824	3.6%	\$765,682	8.1%	\$38,623	4.4%
2010	20,546	0.9%	\$1,007,581	3.5%	\$49,040	2.7%
2015	22,346	-0.2%	\$1,309,607	5.4%	\$58,606	5.7%
2019	25,297	1.0%	\$1,657,259	5.0%	\$65,511	4.0%
Population	People	6,174	7,673	3,533	3,561	11,435
Growth 2005-19		27.6%		116.4%		69.6%

Figure 4. Yellowstone County hospital charges. Source: Illinois Health and Hospital Association and BBER.

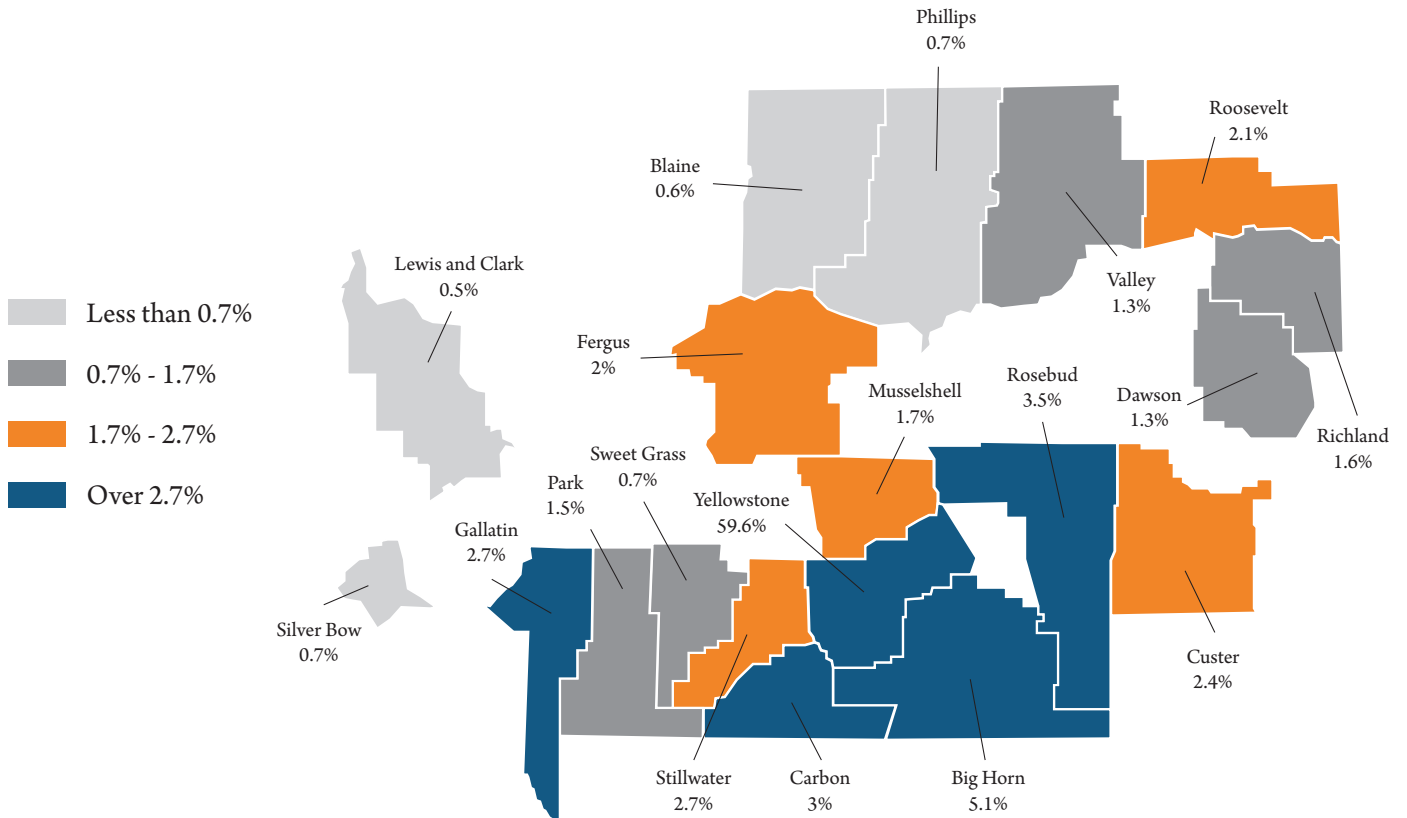


Table 2. Aggregate economic impact of Montana hospitals. Source: Bureau of Business and Economic Research.

Category	Impact
Impact	23,480
Total employment	83,603
Personal income	\$6,336.4
After tax personal income	\$5,700.4
Output	\$16,082.2
Residents	147,018

For example, Figure 4 shows where Yellowstone County hospitals, Billings Clinic and St. Vincent Healthcare, billed their outpatients in 2019. The data only includes those counties which represented greater than or equal to 0.5% of total billing by Yellowstone hospitals. About 60% of invoiced bills were to Yellowstone residents. Patients from Big Horn County were the source of the largest out-of-county billing. Patients from Lewis and Clark County accounted for about 0.5% of Yellowstone’s hospitals billing.

Hospitals in Missoula County had the smallest share of resident billing, accounting for about 53% of the total. As might be expected, most of Missoula hospitals billing was in the western third of the state, while in Yellowstone County patients tended to be from the central and eastern two-thirds of the state.

Other counties which tended to export health services to nonresident patients were Cascade County (66%), Flathead County (73%), Gallatin County (78%), Lewis and Clark County (76%), and Silver Bow County (75%). For states such as Montana, recognizing patient flows is crucial to improving rural health care in the future, such as which services should be provided on-site and what can be provided remotely; recruiting and retaining health care workers; and how to improve affordability.

Health care is on track to continue its high growth rates and become an ever increasing sector in the national and state economies for many years to come. If demographics, health and economic activity remain on the same course, given the considerable effect of Montana’s hospitals on Montana’s economy, the health care sector’s direct and indirect impact will follow national trends. The health care sector in the U.S. is projected to be as high as 20% by 2027, however if

we include the indirect impacts, that number increases to roughly 30% of gross domestic product – becoming one of the largest, if not the largest sector in the state’s economy.

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

LUMBER PRICES SKYROCKET DURING PANDEMIC

Costs Soar Amid Construction and Remodeling Boom

BY TODD A. MORGAN AND STEVEN W. HAYES

The Bureau of Business and Economic Research has been measuring and reporting on Montana's wood products industry since the 1970s. We collect data from the mills and loggers themselves, aggregate and analyze economic data from state and federal agencies, follow articles in the popular press, and summarize and share that information through outlets like the Montana Business Quarterly, U.S. Forest Service publications and journal articles. This article examines recent developments in Montana's forests and wood products industry and presents some comparisons with other parts of the United States.

A recent article in the Wall Street Journal did an excellent job describing why the prices that landowners in the Southeast U.S. receive for their logs did not go up when lumber prices in the U.S. spiked during late 2020 and again in early 2021 (Dezenger and Monga 2021). In short, the economic fundamentals of supply and demand played out differently in the

national markets for wood products (i.e., lumber) versus the local markets for timber (i.e., logs).

During the second half of 2020, the demand for lumber used in new home construction, repairs and remodeling far exceeded the supply of lumber being produced by mills in the U.S. and Canada, causing lumber prices to rise all over



Bill Calovis watches as lumber is loaded onto his truck at the B&J Sawmill in Reed Point. (AP Photo, James Woodcock)

the country. Meanwhile, sawmills in the Southeast enjoyed very low prices for logs from local landowners. This was due to many private landowners in that region who have been planting and growing trees for decades. The homebuilding bust of 2009 through 2012 meant a lot of timber did not get cut and was left on the stump to keep growing. Thus, the glut of available timber in the Southeast resulted in low prices for logs in the region. Even though more sawmills are being built there, the over-supply of logs is expected to exceed the capacity of mills for years to come. For many landowners the investments they made in planting and tending their forests did not yet pay off, but for mills and mill workers in that region the ample supply of logs was good news.

Folks in Montana might wonder if the same situation exists here – not so much. To understand why, we will look at a few major differences between the southern United States and Montana. The explanations are not nearly as simplistic as the climate being warmer and wetter in the South and trees growing faster.

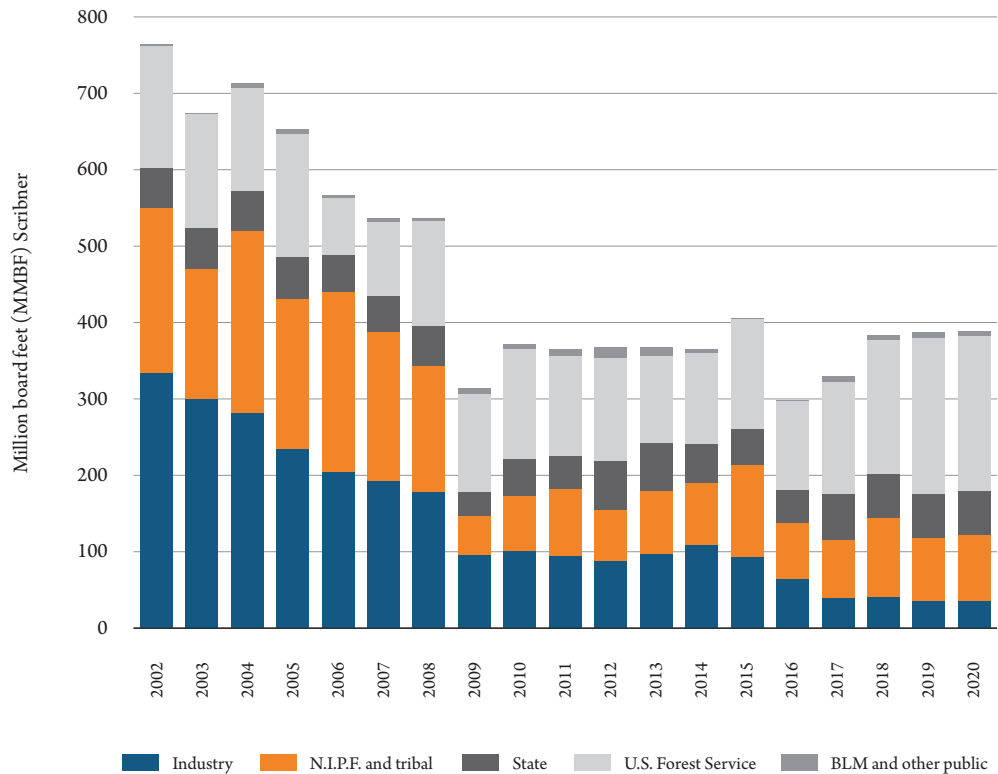
First, land ownership is quite different in Montana than in the South. According to the U.S. Forest Service's Forest Inventory and Analysis (FIA) program, which is responsible for keeping count of the nation's forests, among the 12 states

that makeup the South, less than 13% of timberland is publicly owned. Most of the public timberland is state-owned, about 30% of timberland is in corporate ownership and about 57% is owned by private individuals or families (USDA 2021).

In Montana, over 62% of timberland is owned by the U.S. Forest Service, another 5% is owned by the state, and another federal agency – the Bureau of Land Management (BLM) – owns about 4% (USDA 2021). About 29% of timberland in Montana is owned by private landowners including Native American tribes, and the amount of privately owned timberland is declining, particularly the amount of industrial timberland that is owned by companies that also own or operate mills. Different policies for public versus private ownership of timber influence those ownerships' ability to respond to price signals from markets.

The large share of private ownership of timberland in the South has been a boon for the wood products industry in that region, enabling the growth of the South's wood products industry during the past three decades of decline in Montana's industry. That public-private divide has not just impacted the supply of timber, which can hardly be overstated as a major factor influencing the industry (Morgan et al. 2018). The large amount of private land ownership in

Figure 1. Montana timber harvest by ownership class, 2002-20. Sources: U.S. Forest Service, Montana DNRC and BBER.



the South also contributes to growth in the region's home construction and population, which have boosted regional demand for wood products and the number of available workers. Canadian lumber companies have recognized these trends and made major investments in the South, buying and expanding mills in that region, which has a large supply of available logs, growing demand for lumber and a growing labor supply (Koenig 2019).

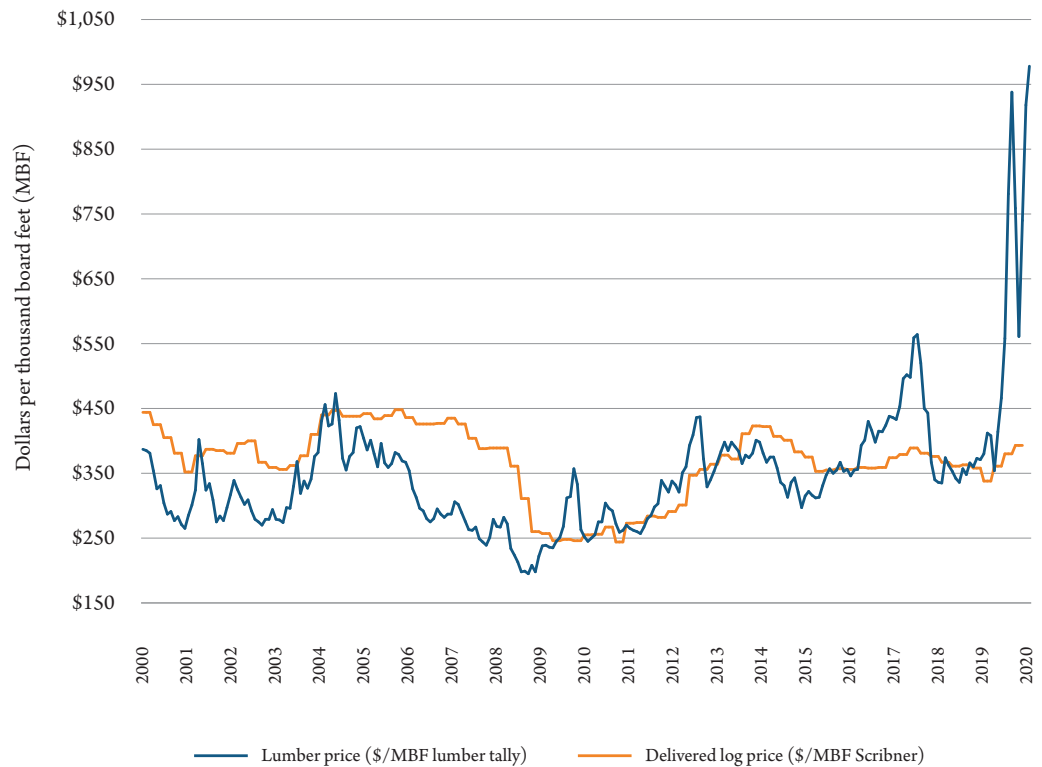
Before we move past land ownership as an influence on the wood products industry, let's look at the changing ownership of Montana's timberland and timber harvest. According to FIA, Montana had more than 1.6 million acres of industrial timberland in 1989 (Conner and O'Brien 1993). Today, approximately 800,000 acres of timberland are corporate or industrial ownership.

Substantial amounts of private industrial timberland have been sold in the past two decades. Beginning in the early-2000s, Plum Creek sold about 570,000 acres to The Nature

Conservancy (TNC) and Stimson Lumber before the 2016 merger with Weyerhaeuser (Missoula Current 2020). Much of that land was resold by TNC to the U.S. Forest Service, BLM, the Montana Department of Natural Resources and Conservation, and Fish Wildlife and Parks, as well as several private landowners. In early 2020, Weyerhaeuser sold most of its remaining Montana land – about 630,000 acres – to Southern Pine Plantations (SPP) (Weyerhaeuser Company 2020). In early 2021, SPP sold about 291,000 acres to Green Diamond Resources and another 125,800 to a married couple from Texas (Scott 2021 a,b).

Changing private ownership of timberland in Montana is not new but has resulted in more public land and less consolidated ownership among private owners. This has raised concern among Montana's recreation community and may create more uncertainty in timber supply for the state's wood products industry. Timber harvest from industrial and nonindustrial private lands has been declining in recent

Figure 2. U.S. lumber prices and Montana delivered log prices (in nominal dollars), January 2000 through February 2021. Sources: Random Lengths and BBER.



years, while the harvest from U.S. Forest Service lands has been increasing, and state-owned harvest has been fairly consistent (Figure 1).

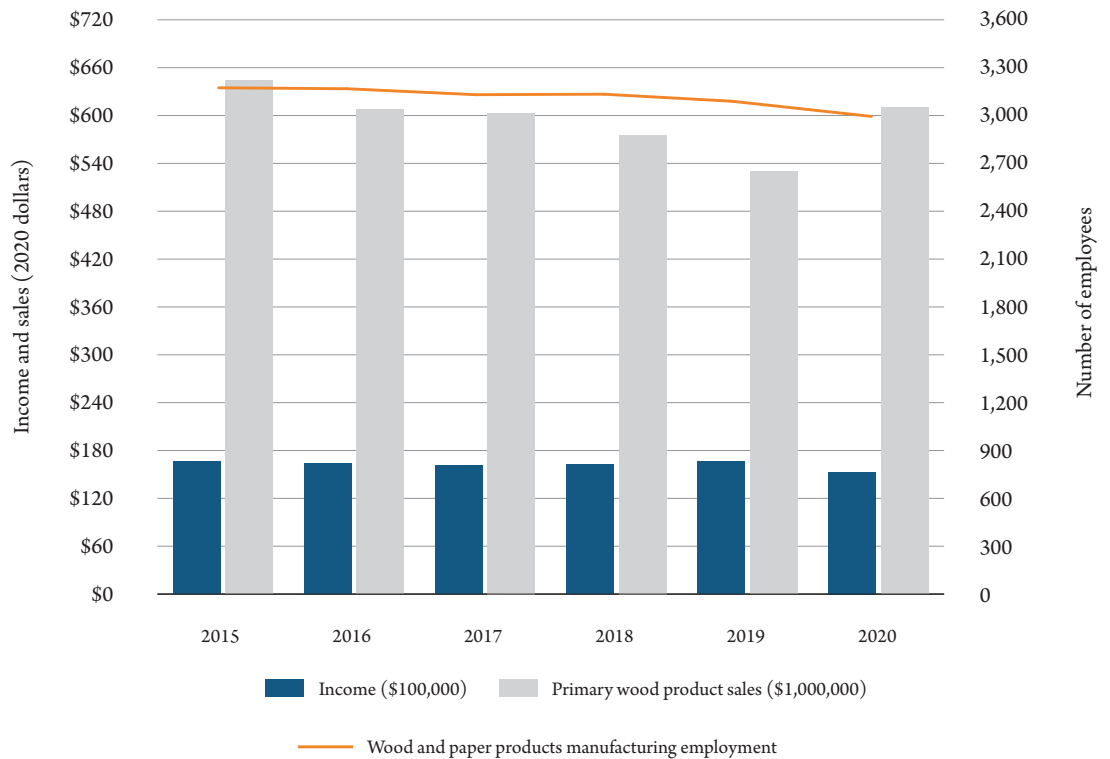
With COVID-related shutdowns and stay-at-home orders in effect across the U.S., many people found time for do-it-yourself and home improvement projects. Nationwide, this created additional demand for wood products. Meanwhile, the U.S. timber producing regions (i.e., the South and Pacific Coast) that provide most of the wood products, encountered production slowdowns and curtailments due to the virus' impact on workers, supply chain disruptions and general confusion. Lumber shipments from Canada declined due to limited timber supply and reduced milling capacity in British Columbia, which contributed to U.S. wood product shortages.

Lumber and panel markets responded with historic price spikes. The Random Lengths framing lumber composite price index increased nearly 150% from the beginning of

2020 to a record high in September, when it started to slowly decline before going even higher in early 2021 (Figure 2). In Montana, delivered log prices to mills were up 4% to 15% depending upon species from 2019, just a small increase compared to national lumber prices. However, unlike many southern landowners, Montanans did see higher log prices during 2020.

Montana mills were generally able to continue operating throughout the year. Lumber production in Montana for 2020 was 428 million board feet (MMBF), down 10.8% compared to 2019. Employment in the state's wood products facilities was down 3%, and worker income slipped 7.8% compared to 2019 (Figure 3). However, few of these declines can be directly attributed to COVID-19. Changes at just a couple of Montana mills contributed to the employment and income differences during 2020. The R-Y sawmill in Townsend curtailed operations midyear because of a lack of log supply, which had been announced in January 2020.

Figure 3. Montana wood and paper products manufacturing employment, income and primary wood product sales, 2015-20. Sources: Bureau of Economic Analysis and BBER.



The Idaho Forest Group's sawmill in St. Regis was down several months for a planned equipment upgrade, then resumed operations in August and expects to substantially increase future production.

Remarkably, sales from Montana's industry during 2020 were up about 15% (adjusted for inflation) compared to 2019 because of the higher prices for wood products. Expectations for 2021 are generally positive. Lumber and plywood demand is expected to remain strong and prices remain historically high. New housing starts continue to increase, interest rates are low, and the home repair and remodel markets are expected to contribute to strong wood products sales. Likewise, there are positive signs for Montana on the forest management side. State and federal agencies continue to cooperate under the 2014 Farm Bill's Good Neighbor Authority to restore forest health, reduce wildfire hazard and harvest timber to meet ecological and economic objectives.

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