

The Post-Covid New World Order What does it mean for Montana?

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Christopher Thornberg, PhD

Founding Partner, Beacon Economics Director, UCR SoBA Center for Economic Forecasting and Development



Overview



"It's tough to make predictions, especially about the future."

— Yogi Berra

The Short Run

- —The Covid recession: where have we been
- —What next? Fears and worries.
- —How has Montana performed?

The Long Run

- —How has the Montana economy developed pre-Covid?
- —What will the post-covid economy look like?
- —How will this impact future growth trends?
- Caveats: An outsider's perspective...
 - —A local economy takes years to fully appreciate
 - —These are intended to start a conversation, not end it

The Big Picture



The Short-term

- The Covid pandemic is a tragic natural disaster, yet history shows that natural disasters have little long-run economic impact. A quicker-than-normal recovery was certain.
- The narrative of miserabilism drove fiscal and monetary policy reactions to the crisis that have been excessive and are overheating the economy.
- Cyclical risks now lie primarily in the public sector; the twin issues of inflation and an out-ofcontrol budget deficit—but this may expand in the months to come.
- Geopolitical uncertainty is heating up—which will largely extend the US asset cycle because of of the reserve currency status of the US dollar

The Long-term

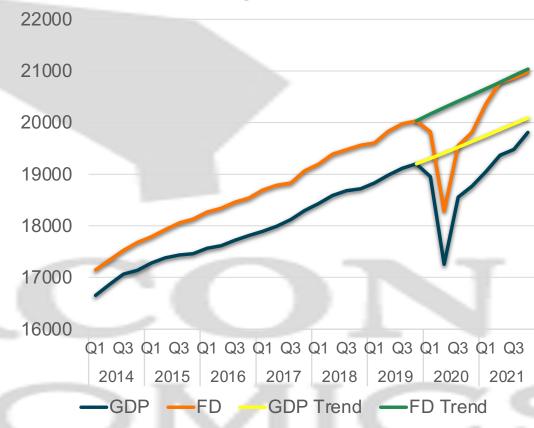
- There are no economic "new-normals" from the pandemic, but it has accelerated underlying trends that were already in place, particularly the movement of boomers into retirement, WFH and online shopping. This has huge implications for land use, and housing demand.
- Labor markets have flipped, and shortages are here to stay. This has important implications for economic and social policy. Development will shift from "jobs jobs" to "workers workers".

The U or V Debate...



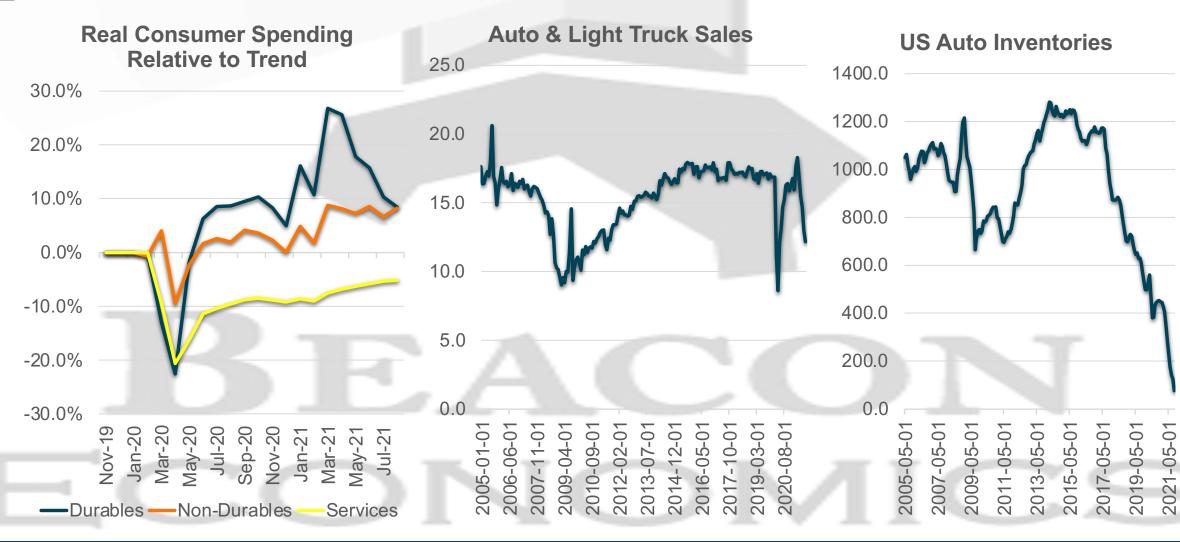
Real Growth Rates	Q417-Q419	Q419-Q421
Gross domestic product	4.9%	3.2%
Final Demand	5.1%	4.0%
Personal consumption expenditures	4.9%	4.4%
Durable goods	9.9%	21.1%
Nondurable goods	4.8%	13.0%
Services	4.2%	-0.5%
Fixed investment	6.8%	4.9%
Structures	7.7%	-22.3%
Equipment	5.1%	6.0%
Intellectual property products	16.1%	14.7%
Residential	-1.8%	13.7%
Net exports of goods and services	3.8%	58.3%
Exports	0.5%	-6.1%
Imports	1.3%	9.9%
Government	4.2%	1.3%
National defense	9.4%	-1.4%
Nondefense	4.8%	7.2%
State and local	2.2%	0.9%

Real GDP and Final Demand relative to long run trend



An Uneven Recovery





Supply Problems

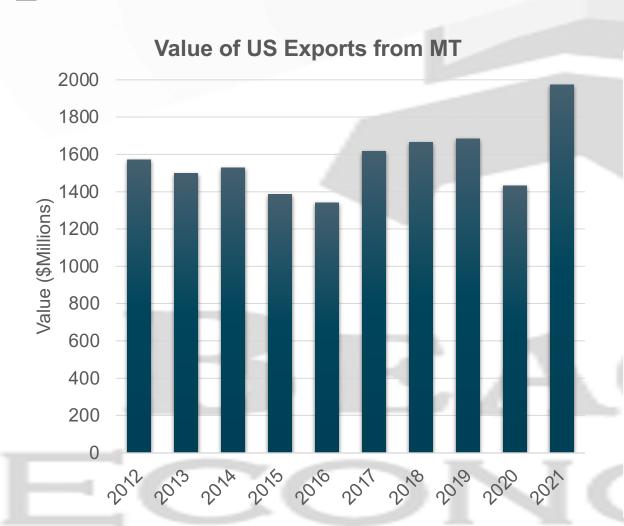


- Domestic Industries
 - —JIT Inventories
 - —Bad forecasts in 2020
 - —Excess demand by consumers
- Global production capacity
 - —Slow shipping capacity growth in recent years
 - —Small delays cascade where a lot of capacity is sitting idle waiting to get into port
- Does it matter?
 - —Supply follows demand



Trade - Montana





Industry		rade E , Millio	% Share	
(10 Largest MT Industries)	2020	1-Yr Dif.	1-Yr % Chg	of US Exp.
Total	1,433	-252	-15.0	0.1
Coal	112	-14	-11.5	7.8
Copper Ores & Concentrates	109	97	808.3	7.6
Copper Oxides & Hydroxides	108	-2	-2.0	7.5
Lentils	73	29	66.4	5.1
Cattle	55	-6	-10.3	3.8
Semi Manufacturing Machines	54	-34	-37.9	3.8
Civ. Aircraft and Parts	54	-38	-40.9	3.8
Hydrides, Nitrides, Azides	50	-9	-15.7	3.5
Therapeutic Bloods	45	-6	-11.8	3.2
Bituminous Coal	42	11	33.0	2.9

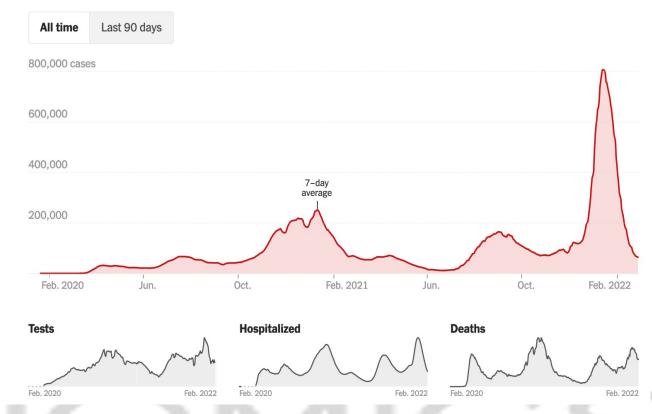
As for the Service Sector...



Real Consumer Spending Services Q4 19 to Q3 21

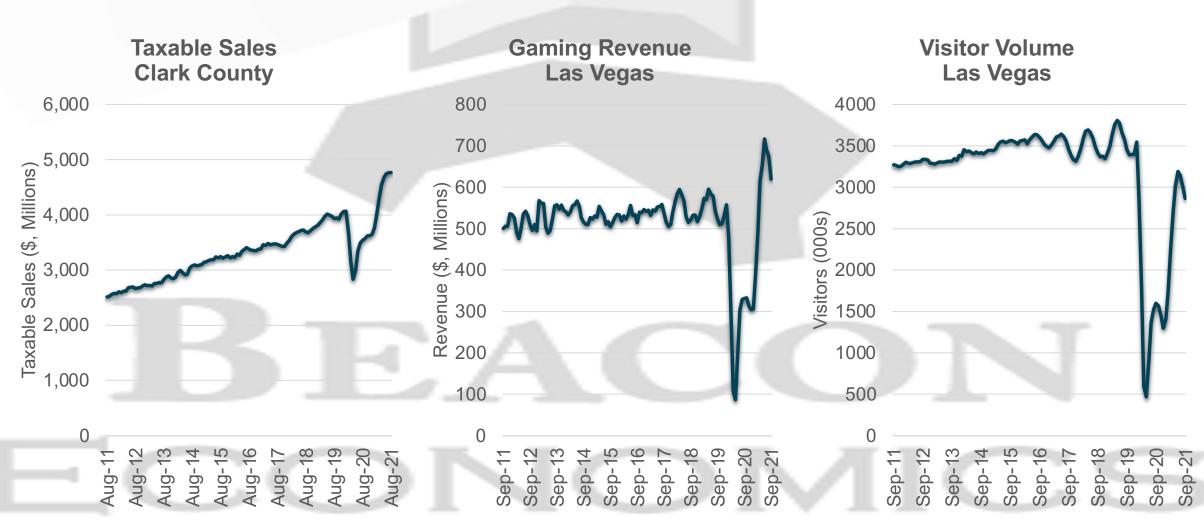
	2019	2021	
	Q4	Q4	
Services	8505.9	8459.4	-0.5%
Financial services and insurance	850.9	890.5	4.7%
Housing and utilities	2111.8	2155.1	2.1%
Food services and accommodations	854.6	856.2	0.2%
Health care	2263.3	2249.7	-0.6%
Other services	1132.6	1104.2	-2.5%
Transportation services	461.9	421.2	-8.8%
Recreation services	510.2	442.9	-13.2%

New reported cases



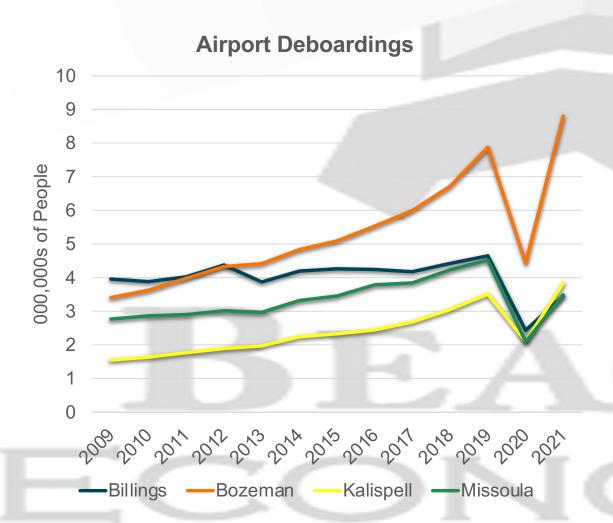
Viva Las Vegas!

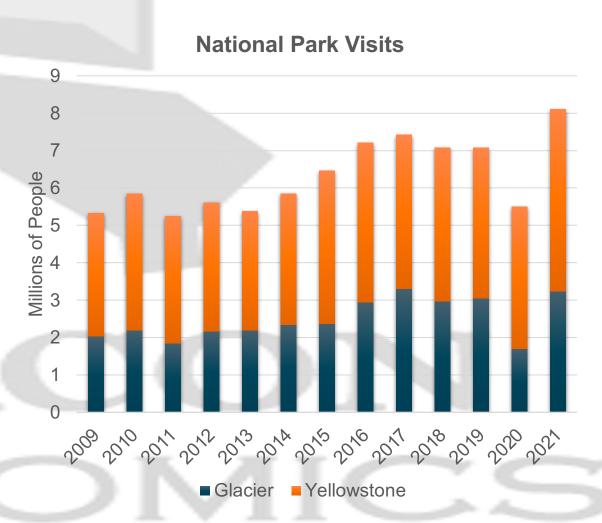




Tourism Figures



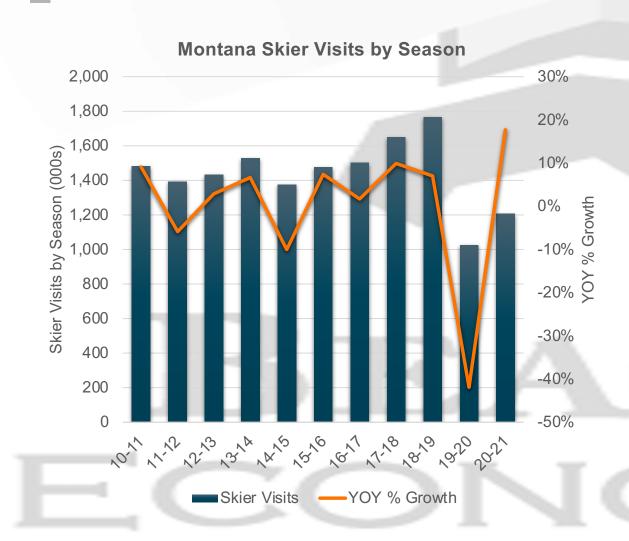




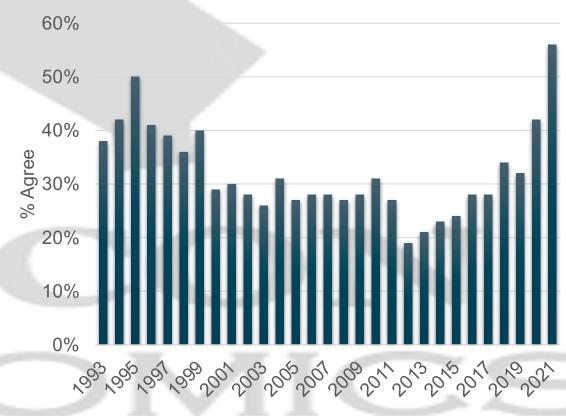
Source: University of Montana Beacon Economics

Skiers Don't Explain Booming Population





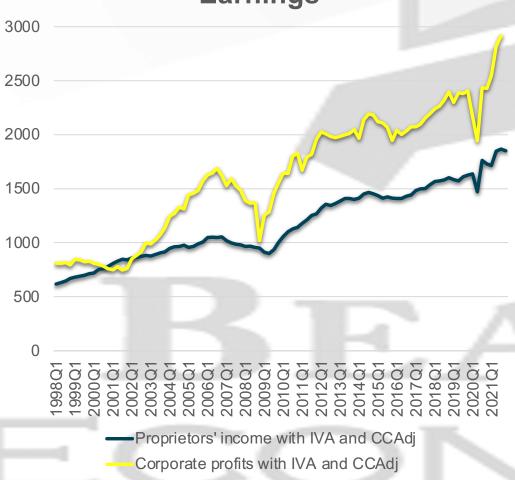
Percent MT Residents Who Agree: "In Recent Years, the State is Becoming Overcrowded Because of More Tourists"



Earnings and Investments



Earnings

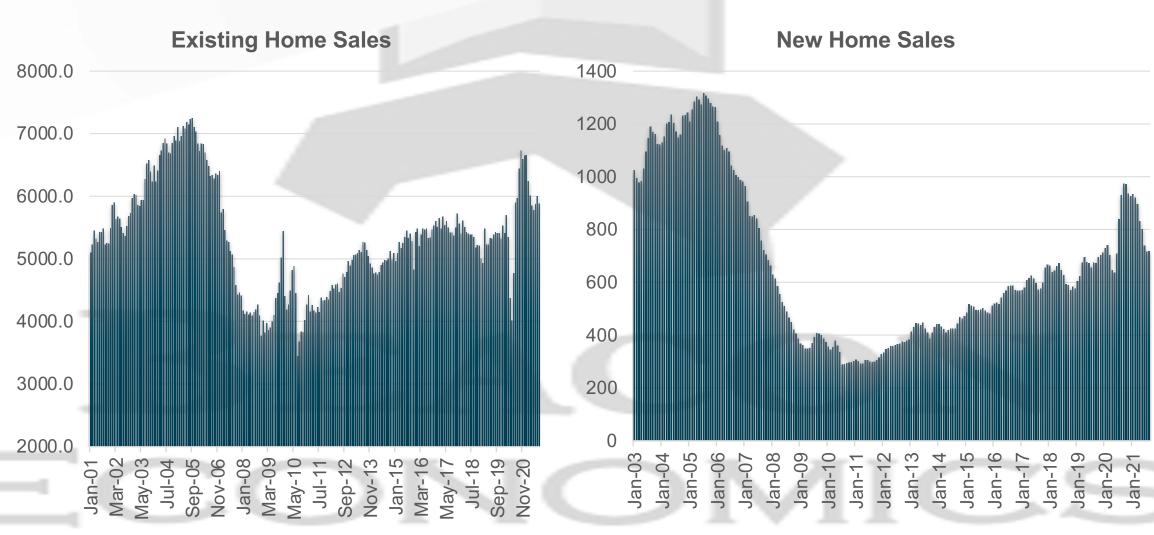


Real Investment

	2019Q4	2021Q4	
Private fixed investment	3781.4	4254	12.5%
Structures	685.3	594.8	-13.2%
Power and communication	148.1	118.6	-19.9%
Mining exploration, shafts	115.3	94.9	-17.7%
Manufacturing	77.1	73.7	-4.4%
Commercial and health	212.2	205.9	-3.0%
Equipment	1210.3	1300.6	7.5%
Information processing eq	390.2	488.5	25.2%
Industrial equipment	247.8	310.8	25.4%
Transportation equipment	307.4	203.6	-33.8%
Intellectual property products	1057	1250.2	18.3%
Software	439.1	526.9	20.0%
Research and development	524.3	621.1	18.5%
Entertainment	93.6	102.2	9.2%
Residential	828.8	1108.5	33.7%

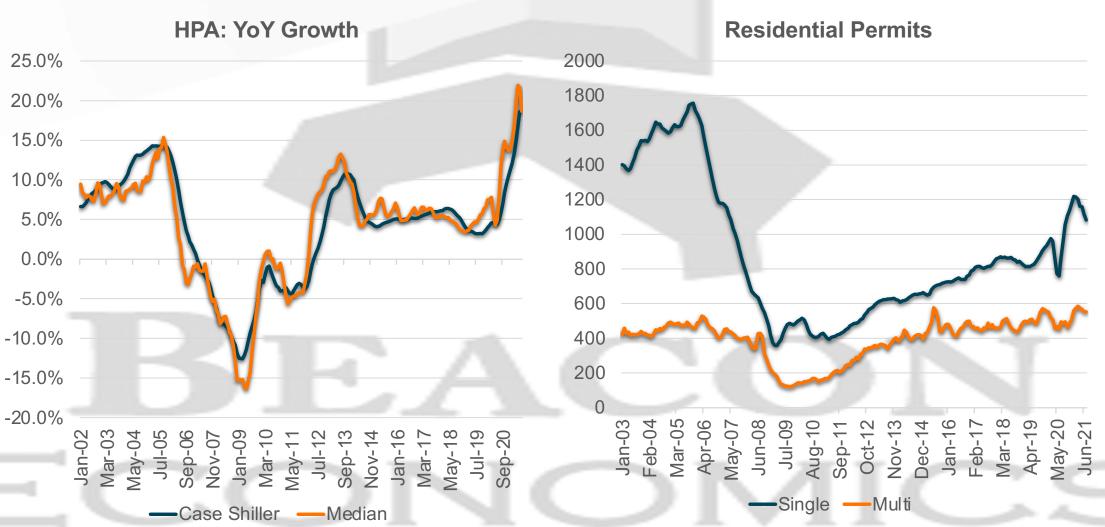
Housing – U.S.





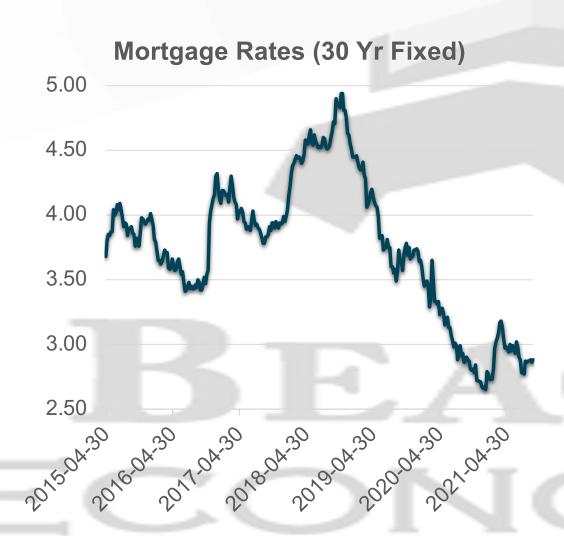
Housing – U.S.



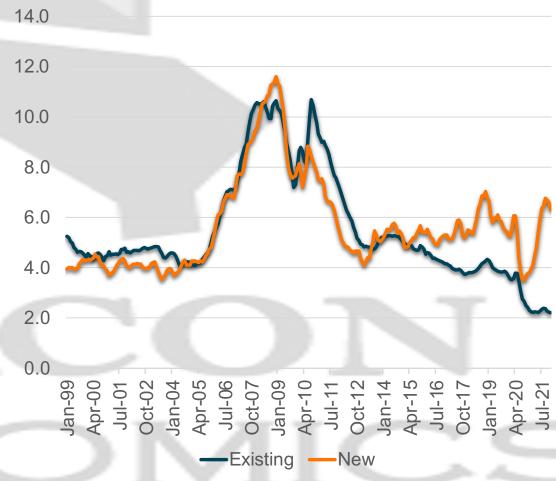


Drivers of the Boom





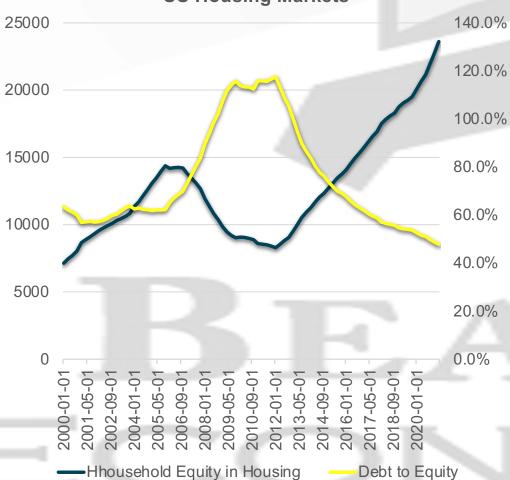
Months Supply of Homes



Bubble Alert? Not Yet...



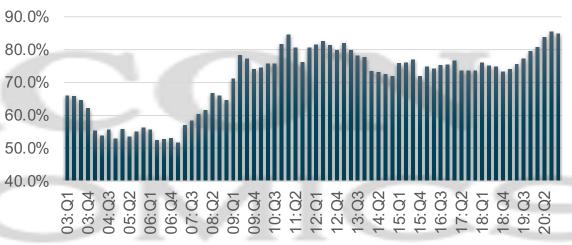
US Housing Markets



Share Owners Housing Cost Constrained

		2011	2019	
		35.0 percent or more		
US	49,049,732	28.1%	19.9%	
Arizona	1,023,943	30.5%	19.3%	
California	5,064,795	38.6%	28.5%	
Colorado	948,904	26.1%	20.7%	
Nevada	403,792	33.4%	21.0%	
Utah	446,690	24.9%	16.9%	

Share Mortgage Originations > 720 Fico



The Great Recession vs Today



Recession Driver

The Pre-Recession Economy

Government Response

Then

Demand shock caused by collapse in wealth, flow-stock issues

Over-heated by sub-prime lending bubble

Inadequate

Now

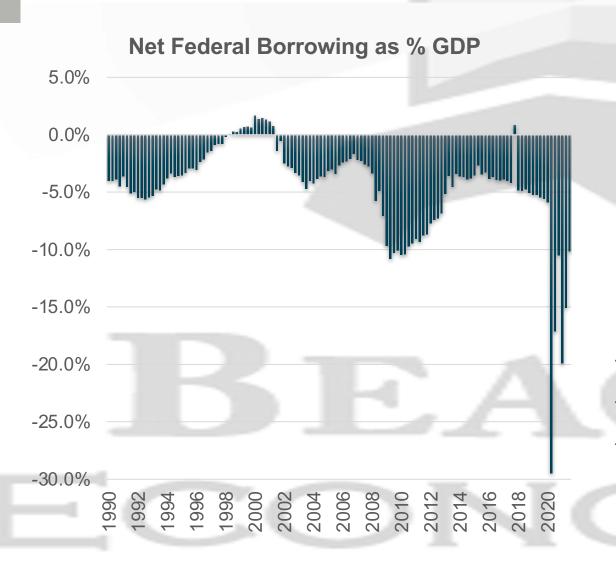
Short run supply shock driven by fear and health mandates

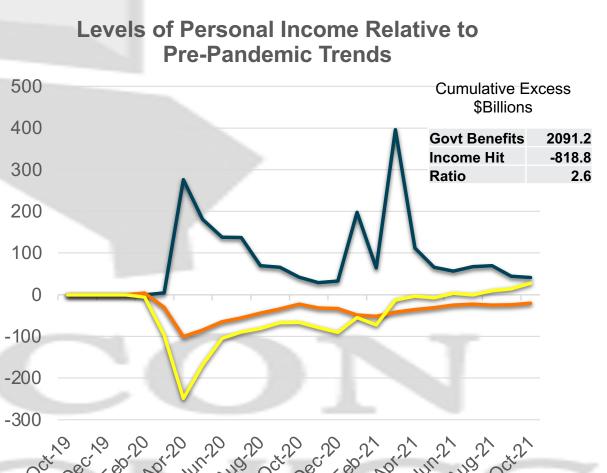
Slow but steady growth due to labor shortages / trade disruptions

Excessive

Federal Fiscal (Over)reaction



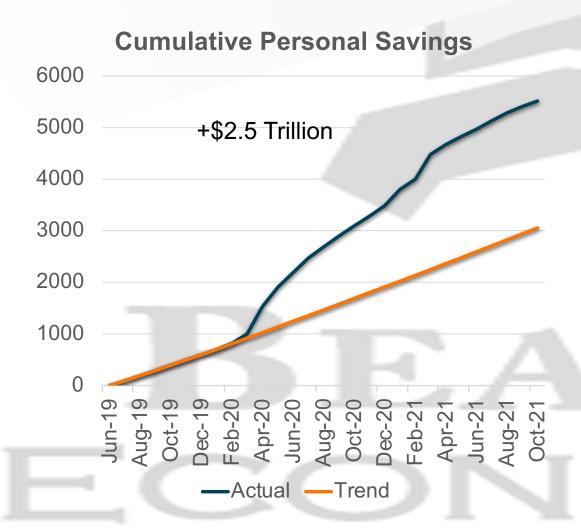


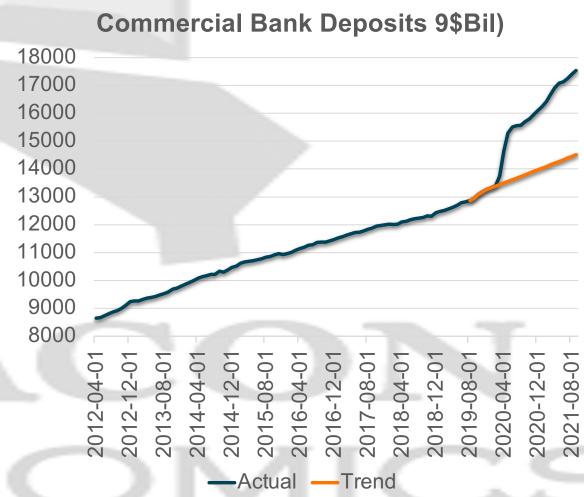


—Govt Benefits —Disp Inc - Gov Bene —Consumption

The Covid Boondoggle



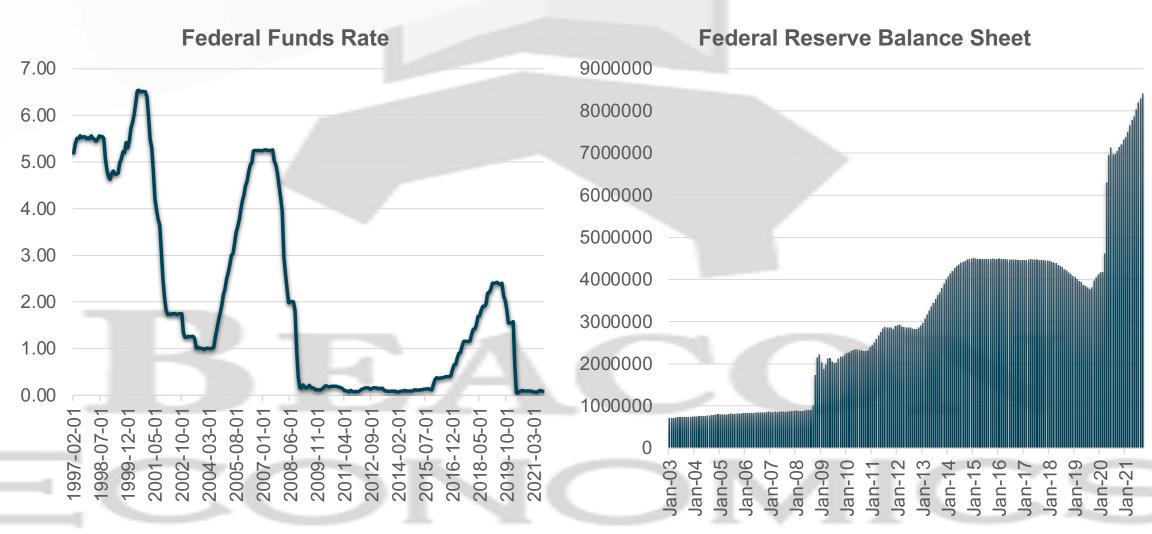




Mr. Powell's War



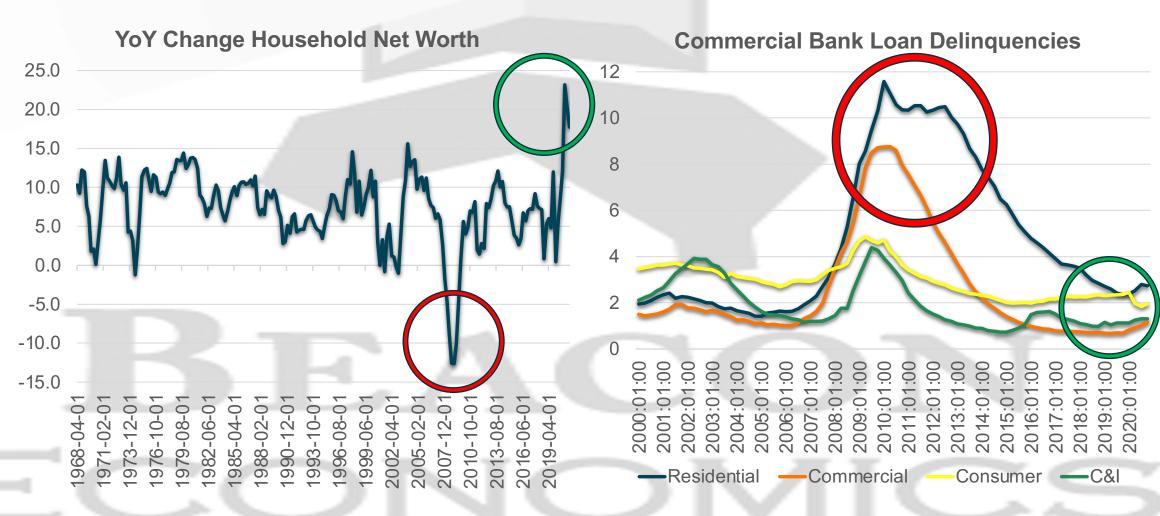
20



Source: FRED Beacon Economics

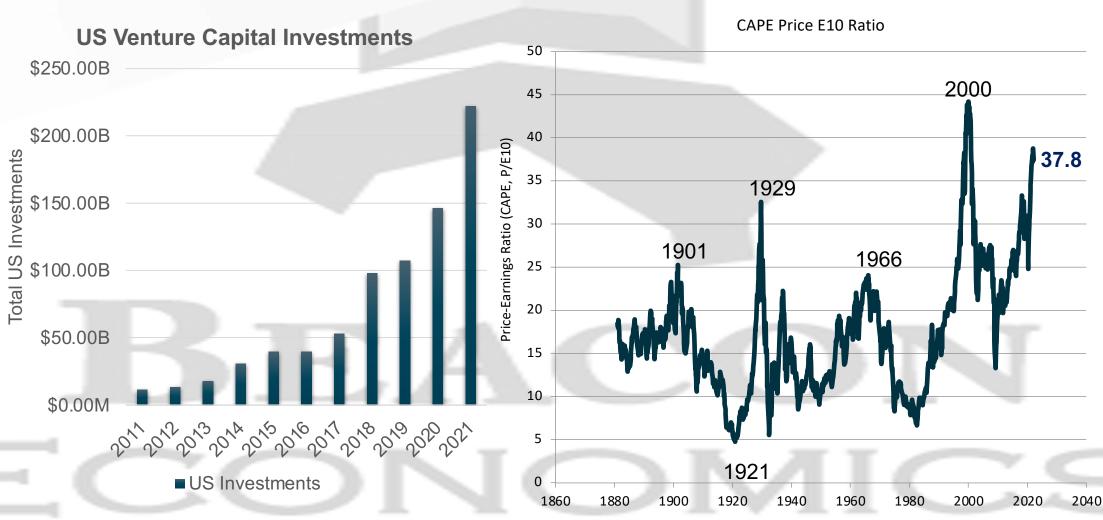
Expansion HH Net Worth





Speculation Planet

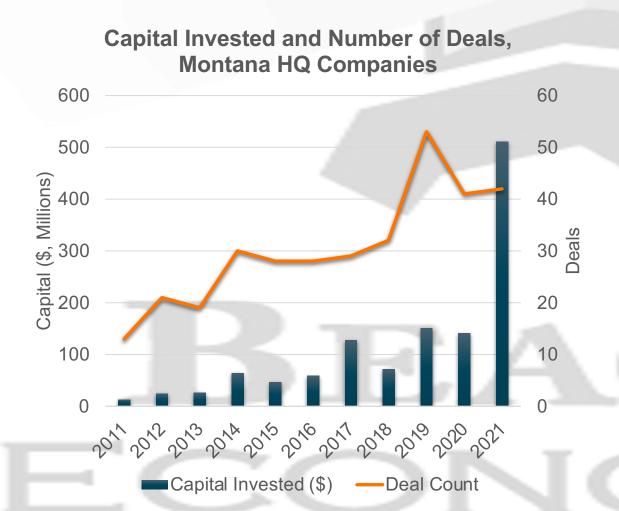




Source: PitchBook Beacon Economics

Venture Capital – Montana





Company (MT HQ)	Deal Size (\$, Mil.)	Vertical / Industry
Montana Renewables	300.0	Energy
onX (Information Services)	87.4	Consumer P&S (B2C)
SmartLam North America	49.2	Business P&S (B2B)
Neuro-ID	32.0	Information Technology
S2 Corporation	30.0	Business P&S (B2B)
Ligocyte Pharmaceuticals	28.0	Healthcare
Resodyn	26.2	Business P&S (B2B)
Rivertop Renewables	26.0	Business P&S (B2B)
Microbion	25.0	Healthcare
Blackmore	22.0	Information Technology

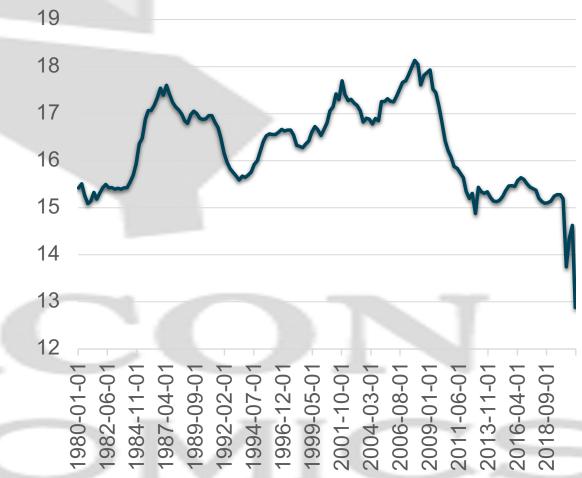
Source: PitchBook Beacon Economics

The Wealth Bubble



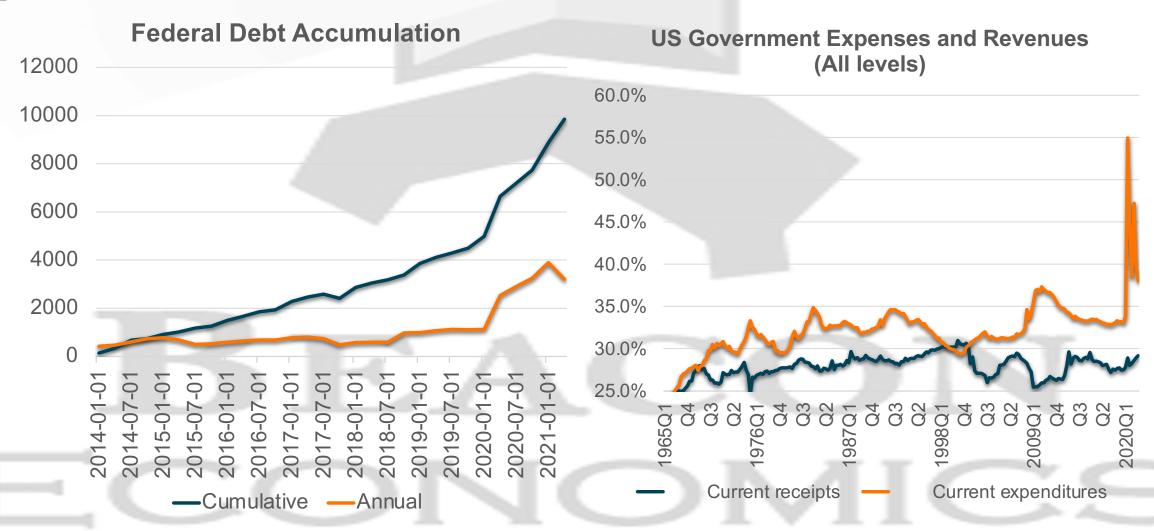






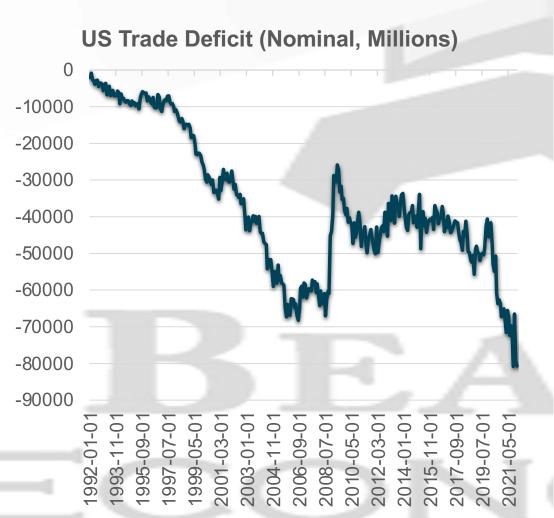
No Such Thing as a Free Lunch...

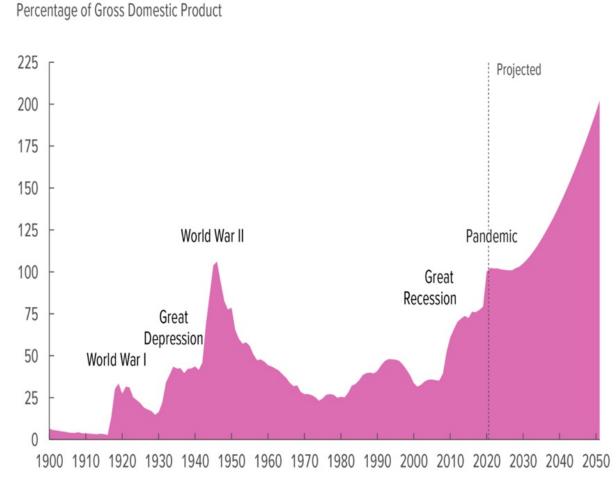




Binging on Global Credit Instead of Saving

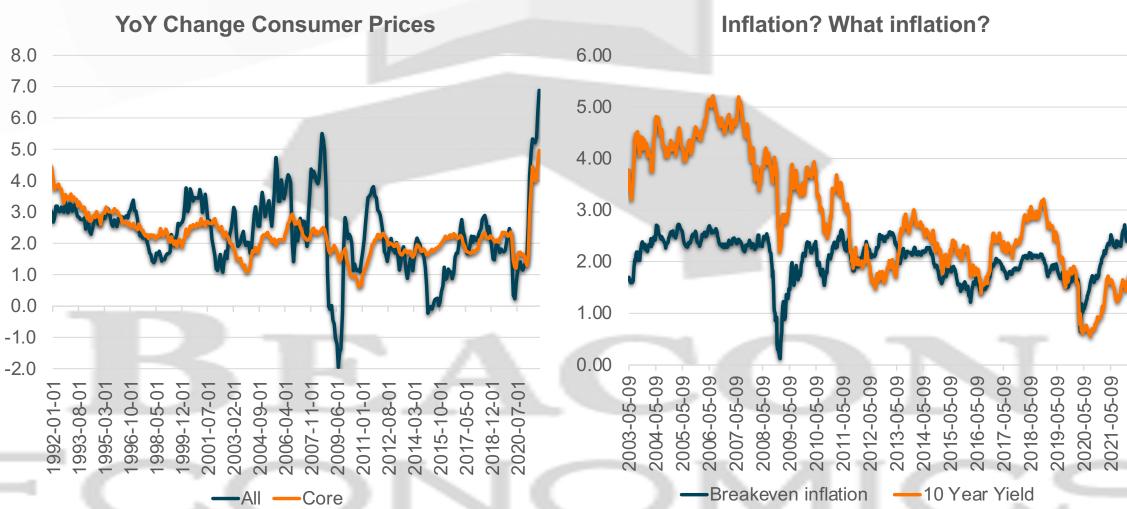






Inflation Nation...

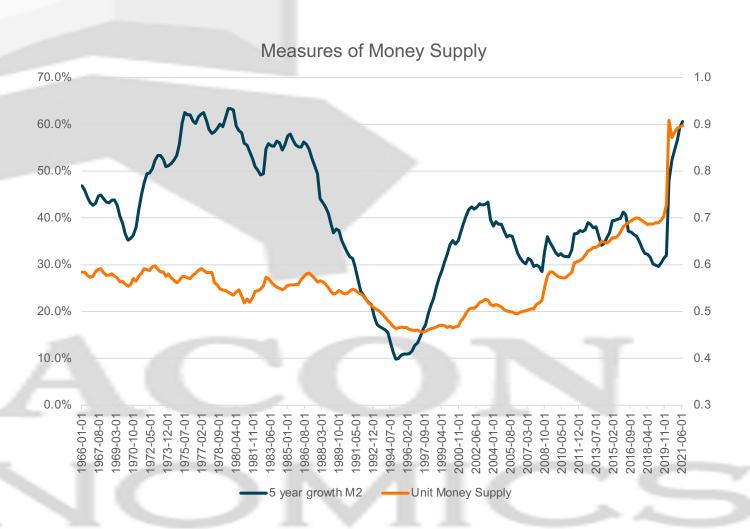




What Drives Inflation?

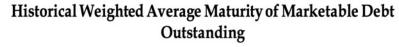


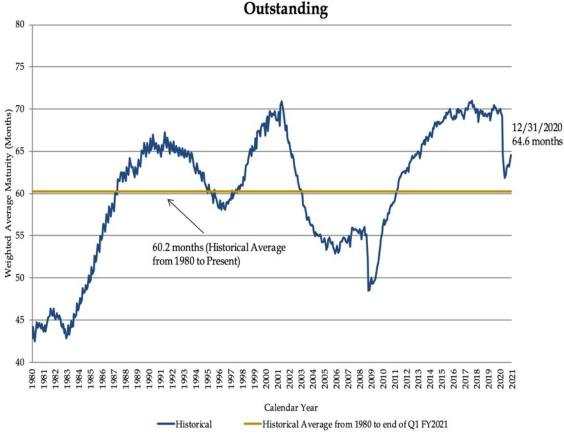
- Drivers
 - Federal Funds Rate
 - Commodity Prices
 - Federal deficit
 - Wages
 - Money Supply
 - Demand



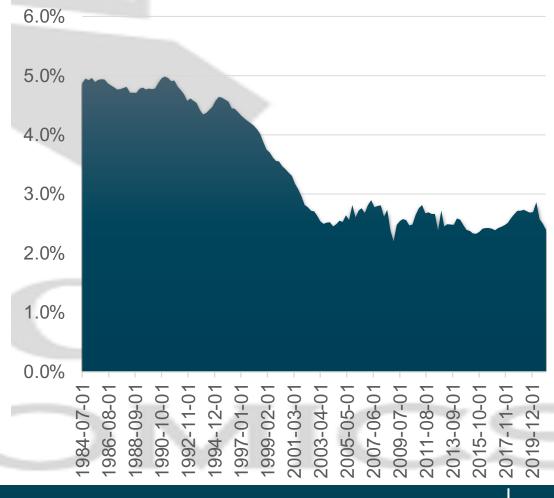
Interaction of Monetary and Fiscal Problems





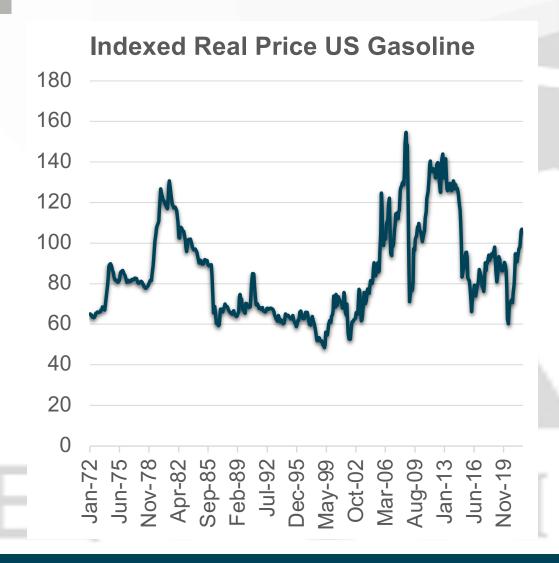


Federal Interest Payments as % of GDP



The Wrong and Right Worries



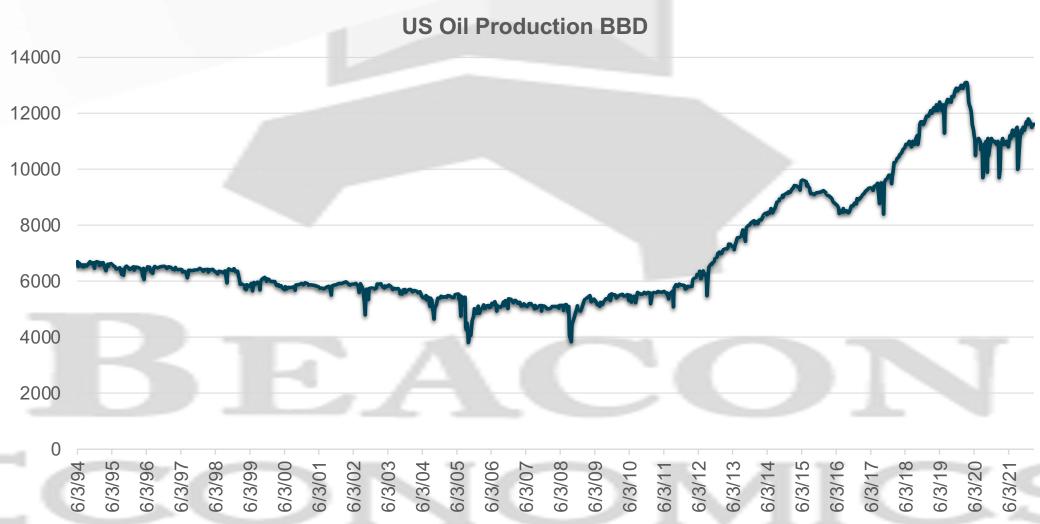


Real Consumer Growth - Real GDP Growth (5 year cumulative)



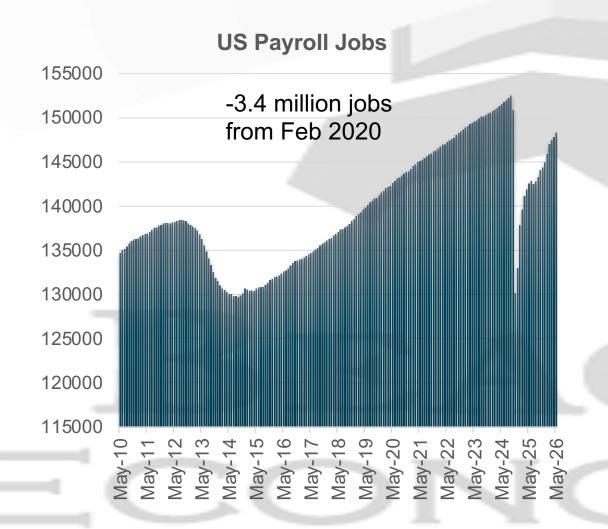
Commodity Cycles





A Labor Market Paradox?

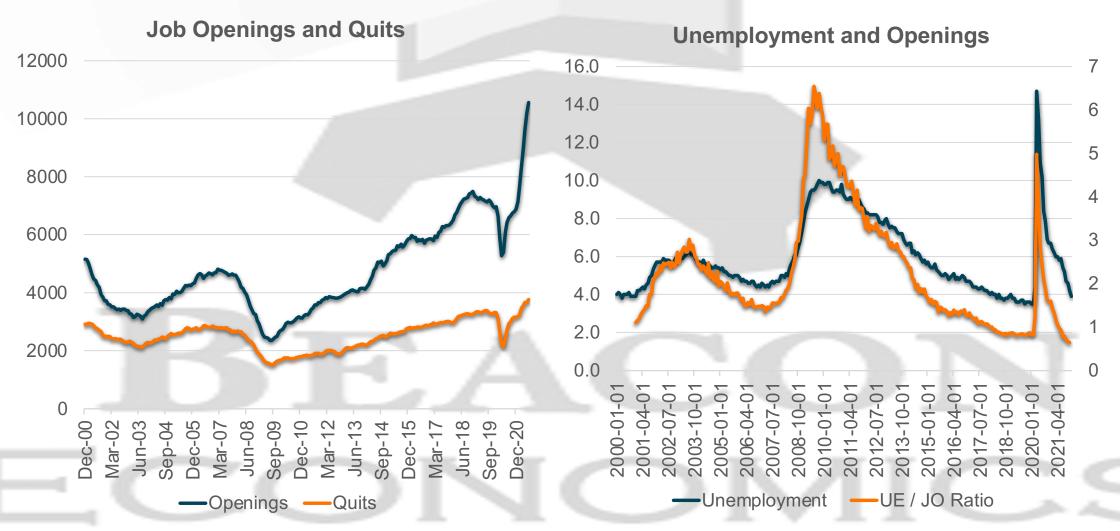




	Current	2 Yr Ch	2 Yr Ach
Financial activities	8887.7	0.9%	83.3
Construction	7498.0	-0.5%	-40.0
Professional business	21299.7	-0.3%	-73.3
Information	2788.7	-3.1%	-90.0
Other services	5768.3	-2.4%	-139.3
Retail trade	15435.0	-1.0%	-154.6
Manufacturing	12509.3	-2.3%	-291.0
Education and health	23749.7	-2.5%	-600.7
Government	21944.0	-3.3%	-755.3
Leisure and hospitality	15509.0	-7.2%	-1205.7
Hours	34.8	1.2%	
Hourly Pay	26.3	10.6%	

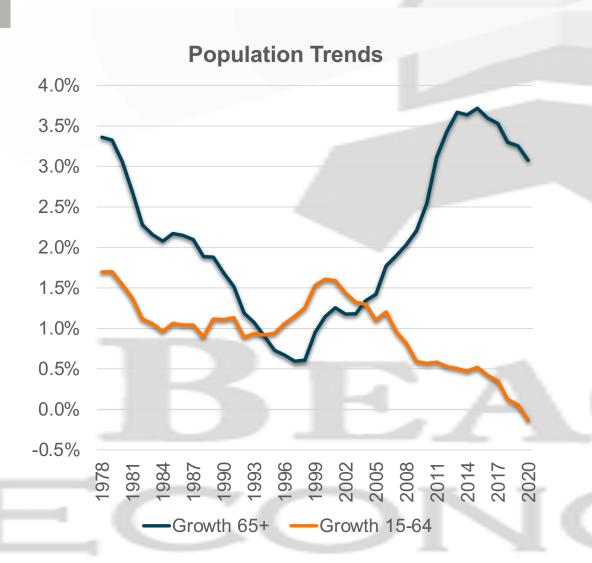
Labor Supply, Not Labor Demand



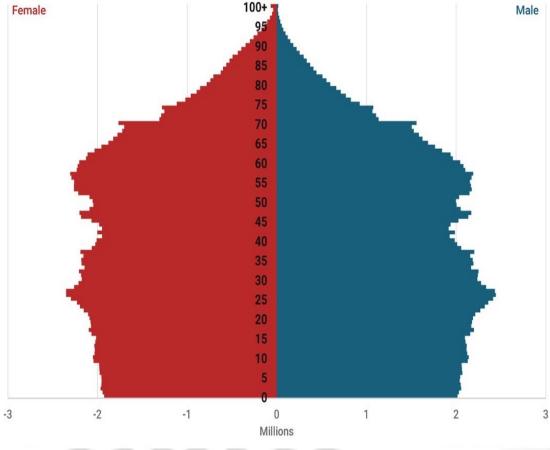


The Long Run Labor Force Issue



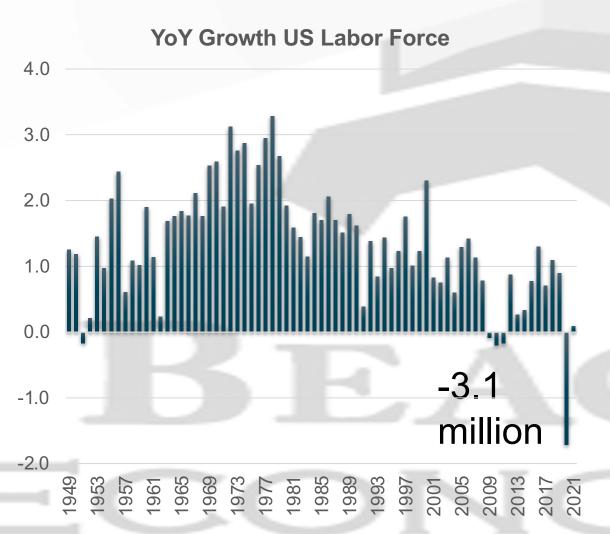


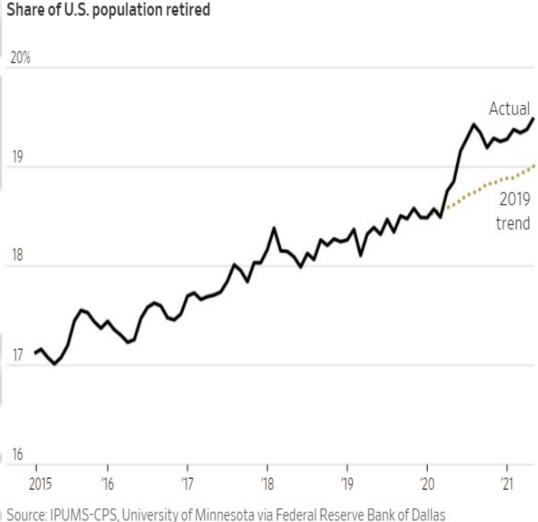




Labor Supply, Not Labor Demand

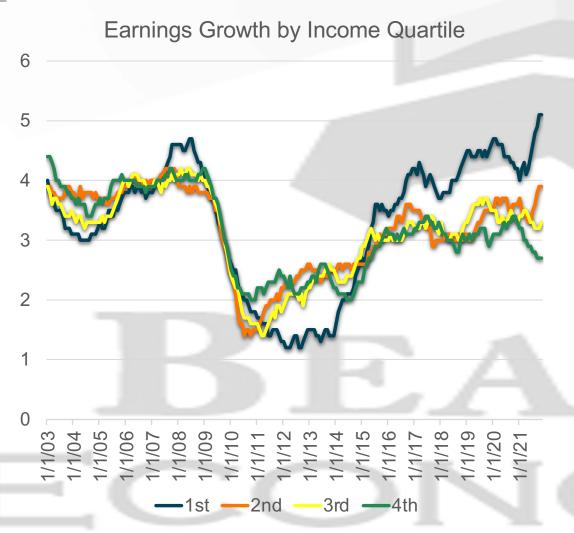


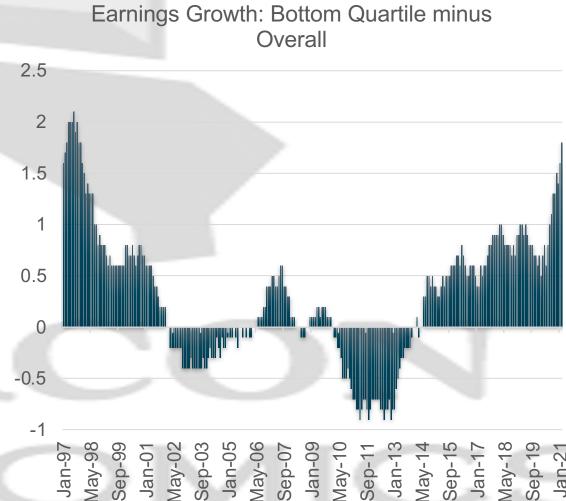




A Sellers' Market in Labor





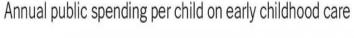


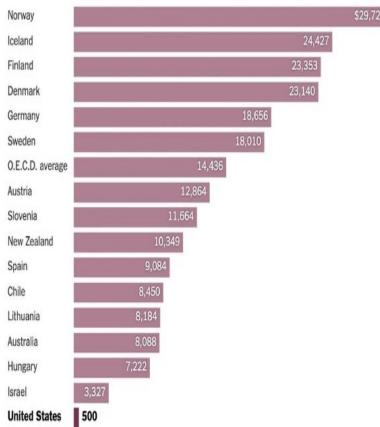
Labor Shortage Solutions



Solutions

- Extensive: Increasing labor force through immigration (SR) or birthrates (LR)
- Intensive: Raising participation rates among the existing population
- —Productivityenhancements: capital investments / skill training





Labor force participation rate Females 25-54

i ciliales 25-54	
Sweden	88.7
Austria	85.7
Finland	84.9
Canada	83.5
Netherlands	83.3
Germany	83.3
France	83.1
Denmark	82.8
Spain	82.3
United Kingdom	81.5
Belgium	80.3
Japan	80.0
Israel	79.9
Australia	79.3
Poland	79.0
Greece	77.6
United States	76.0
Korea	67.8

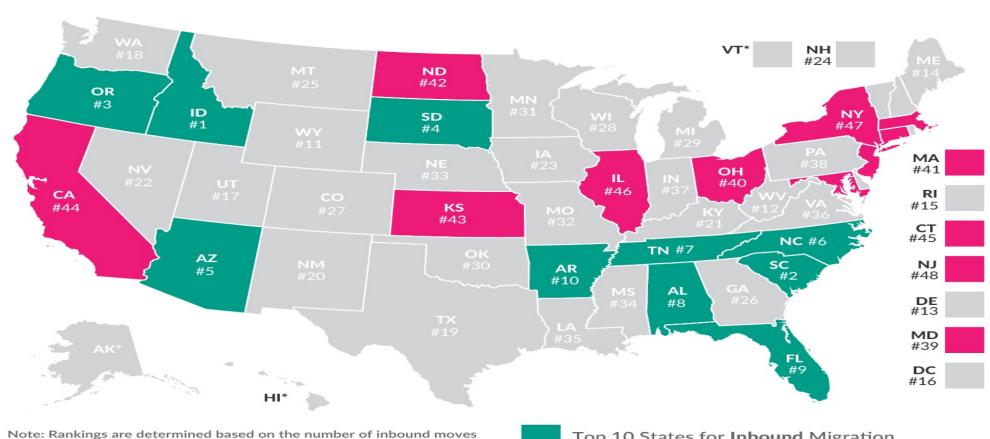
1 pp = 600,000 female workers in US

The Future of Economic Development



Where Did Americans Move in 2020?

State Migration Patterns, from Most Inbound to Most Outbound, 2020



Note: Rankings are determined based on the number of inbound moves as a percentage of total moves in a state. DC is included in state rankings while Vermont is excluded because of its small sample size. Alaska and Hawaii are not included in the study.

Source: United Van Lines, 2020 National Movers Study.

Top 10 States for Inbound Migration

Top 10 States for Outbound Migration

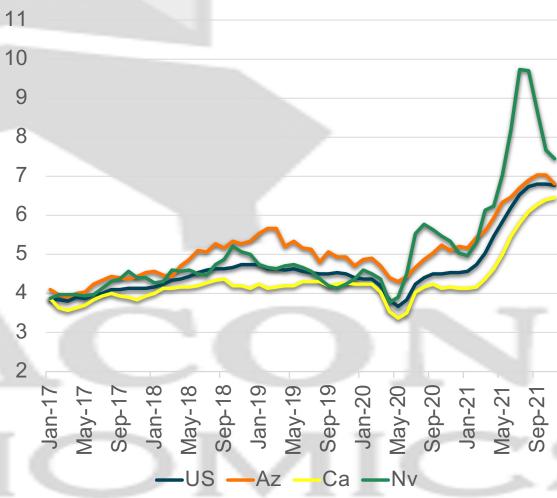
Regional Changes



Unemployment Rate Nov 2021

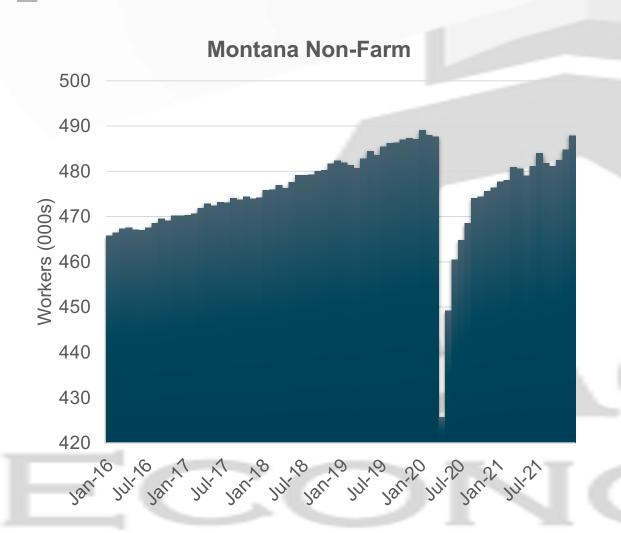
Puerto Rico	7.8
California	6.9
Nevada	6.8
New Jersey	6.6
New York	6.6
New Mexico	6.2
Alaska	6
Connecticut	6
District of Columbia	6
Hawaii	6
Michigan	5.9
Illinois	5.7
Pennsylvania	5.7
Maryland	5.4
Massachusetts	5.4
Texas	5.2
Colorado	5.1

Job Openings Rate



Montana Employment



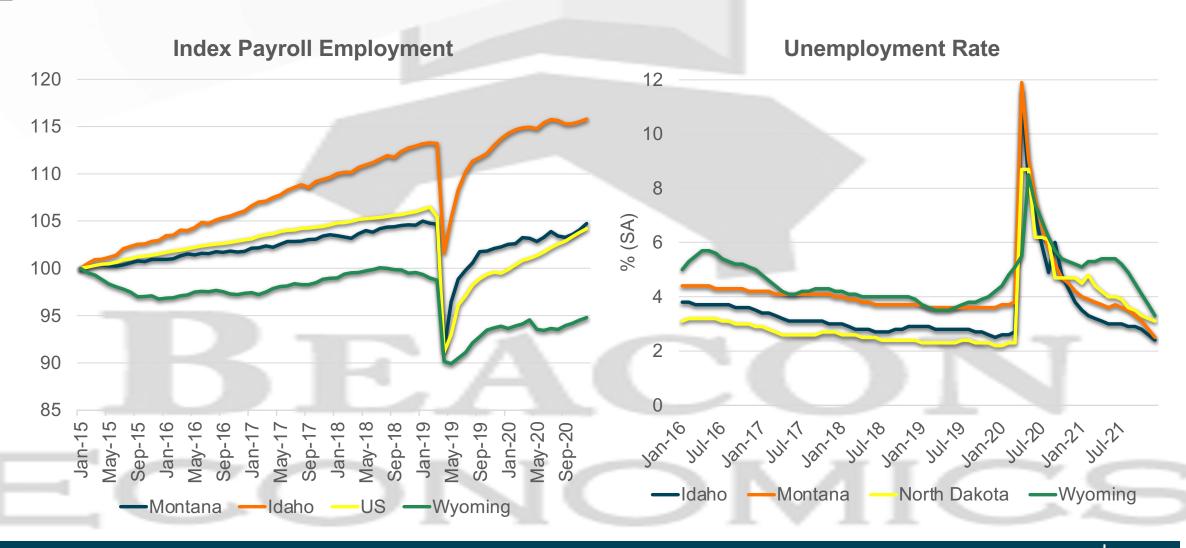


	Dec-21	Change from Dec-19			
Industry	Emp (000s)	Abs. Chg	% Chg		
Total Nonfarm	481.6	-2.9	-0.6		
Logistics	95.2	1.1	1.2		
Government	89.4	-1.4	-1.5		
Education/Health	78.4	-0.6	-0.8		
Hospitality	64.8	-2.5	-3.7		
Retail Trade	58.5	0.2	0.3		
Construction	30.4	0.4	1.2		
Financial Activities	26.0	-0.4	-1.7		
Prof Sci and Tech	24.9	1.8	7.9		
Manufacturing	21.4	0.4	1.9		
Admin Support	16.9	-1.3	-7.1		

Source: EDD Beacon Economics

Employment





Source: EDD Beacon Economics

Montana Employment Deep Dive



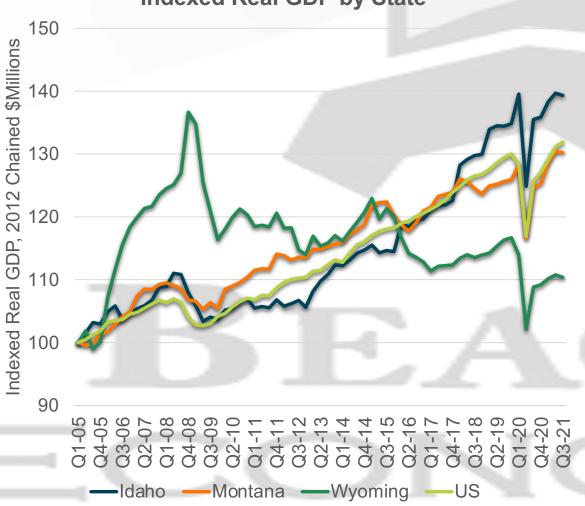
la dicatar	2019 Emp	2019 Emp 2019 Avg (000s) Wages (\$000s)	Montana Employment LQ vs US		
Industry	(000s)		2005	2011	2019
Total	470.5	44.9	1.0	1.0	1.0
Government	167.3	49.5	2.4	2.4	2.4
Health Care	69.6	50.6	1.2	1.1	1.1
Leisure and Hospitality	67.0	20.0	1.4	1.3	1.3
Retail Trade	58.3	31.3	1.2	1.1	1.2
Prof. Services	43.4	54.6	0.7	0.7	0.6
NR/Construction	42.7	57.9	1.4	1.4	1.4
Financial Activities	22.2	60.9	0.8	0.8	0.8
Manufacturing	21.0	51.7	0.4	0.4	0.5
Other Services	18.4	31.8	1.2	1.1	1.3
Wholesale Trade	17.2	61.4	0.9	0.9	0.9
Logistics	15.5	54.5	0.9	0.9	0.8
Information	6.2	56.6	0.8	0.8	0.7
Education	5.0	30.5	0.6	0.5	0.5

Source: QCEW Beacon Economics

GDP by State







Contributions to Growth

	05-19		
	US	MT	Diff
All industry total	1.8%	1.6%	-0.12%
Information	0.28%	0.08%	-0.20%
Professional	0.24%	0.18%	-0.07%
Real estate and rental	0.23%	0.32%	0.09%
Health care	0.19%	0.29%	0.11%
Manufacturing	0.16%	0.11%	-0.05%
Mining, quarrying, and oil	0.11%	0.04%	-0.07%
Finance and insurance	0.07%	0.05%	-0.02%
Administrative	0.07%	0.06%	-0.01%
Management of companies	0.07%	0.03%	-0.04%
Wholesale trade	0.06%	0.09%	0.02%
Retail trade	0.05%	0.10%	0.05%
Government	0.05%	0.07%	0.02%
Transportation	0.05%	0.02%	-0.03%
Accommodation and food	0.03%	0.06%	0.02%
Utilities	0.03%	0.03%	0.01%
Arts and recreation	0.03%	0.02%	-0.01%
Educational services	0.02%	0.01%	-0.01%
Agriculture	0.01%	0.11%	0.10%
Other services	-0.01%	0.00%	0.01%
Construction	-0.05%	-0.06%	-0.01%

Source: BEA Beacon Economics

Industry GDP



	2020 MT	Monta	US			
Industry	Real GDP (\$Mil)	2005	2010	2015	2020	2020 Shares
All industry total	184,632	1.00	1.00	1.00	1.00	100.0%
Financial Services	32,527	0.86	0.90	0.93	0.91	19.4%
Government	25,924	1.14	1.12	1.12	1.18	11.9%
Manuf. & Const.	22,159	0.79	0.71	0.84	0.78	15.3%
Healthcare & Educ.	19,182	1.11	1.10	1.14	1.22	8.5%
Retail trade	12,983	1.08	1.23	1.08	1.19	5.9%
Ag, forestry	11,183	3.72	3.84	4.29	4.37	1.4%
Logistics	10,467	1.47	1.46	1.42	1.32	4.3%
Wholesale trade	10,313	0.86	0.86	0.88	0.95	5.9%
Prof. Services	10,186	0.61	0.63	0.62	0.68	8.2%
Mining, Oil, & Gas	99,20	3.29	3.00	2.30	2.25	2.4%
Leisure Hospitality	6,941	1.17	1.15	1.19	1.34	2.8%
Information	5,372	0.54	0.54	0.46	0.41	7.1%
Admin	5,003	0.44	0.56	0.50	0.50	5.4%
Other	3,498	1.02	0.99	0.97	1.08	1.8%

Contributions to Growth

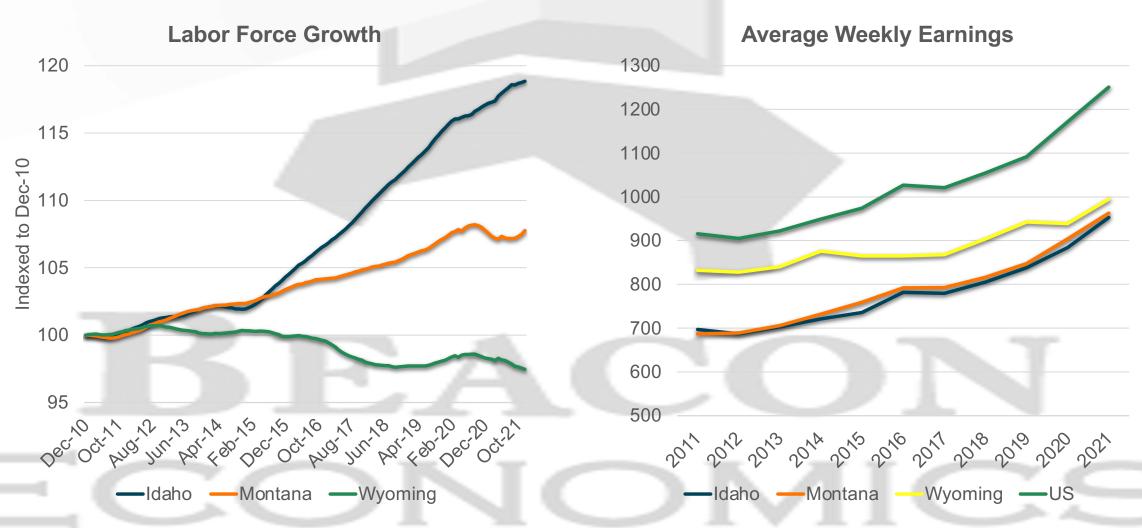


Source: BEA. 2012 Chained RGDP.

Beacon Economics

Labor Force and Income Dynamics



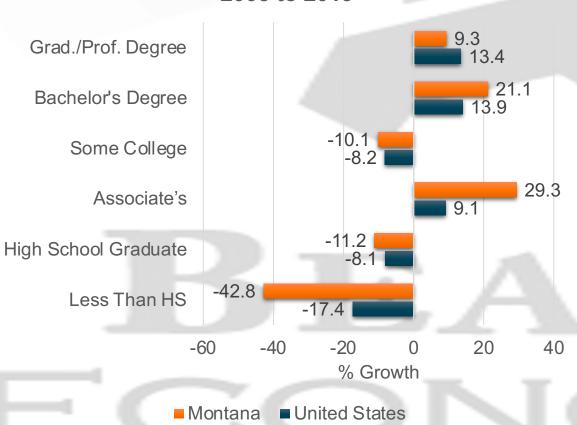


Source: EDD Beacon Economics

Educational Attainment





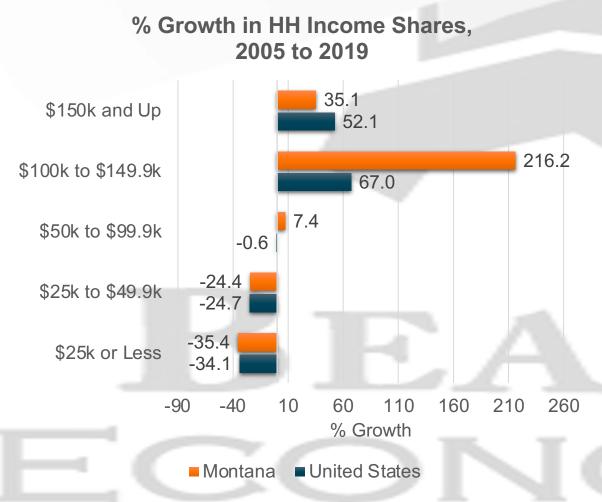


Educ. Attainment	2019 MT Workers	Share of MT Workers			2019 MT Workers		2019 US
		2005	2011	2019	Share		
Less Than HS	14,043	5.4%	4.0%	3.1%	7.9%		
HS Grad	113,139	28.2%	25.6%	25.1%	23.5%		
Associate's	47,174	8.1%	9.3%	10.5%	9.6%		
Some College	102,366	25.2%	26.5%	22.7%	20.1%		
Bachelor's	120,635	22.1%	24.2%	26.7%	23.9%		
Grad./Prof.	53,837	10.9%	10.5%	11.9%	15.1%		

Source: ACS PUMS Beacon Economics

Household (HH) Income



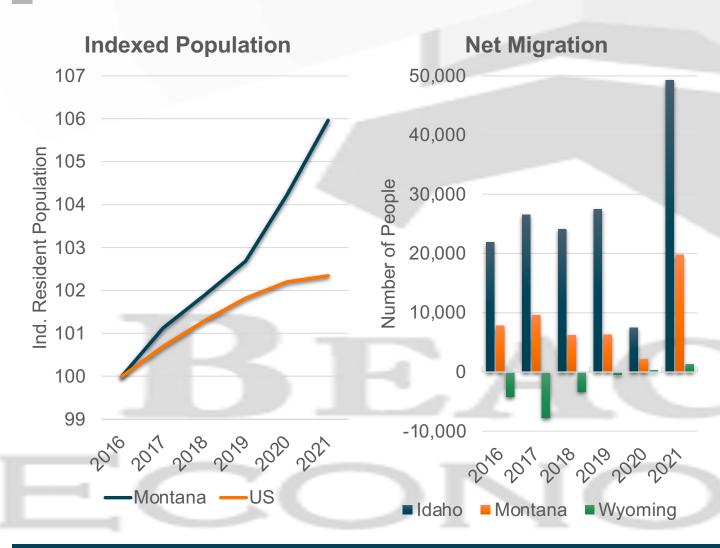


	2010	Share	2019		
HH Income Bucket	2019 MT HHs	2005	2011	2019	US Share
Total HH	520k	426k	489k	520k	140m
\$25k or Less	90,908	27.1%	23.2%	17.5%	16.0%
\$25k to \$49.9k	102,756	26.1%	22.9%	19.8%	18.0%
\$50k to \$99.9k	141,071	25.3%	25.4%	27.1%	26.5%
\$100k to \$149.9k	59,340	3.6%	7.6%	11.4%	13.6%
\$150k and Up	125,863	17.9%	20.9%	24.2%	25.9%

Source: ACS PUMS Beacon Economics

Population





County	2020 Pop Est.	1-Yr Abs. Dif	1-Yr % Gr	5-Yr % Gr
MT Total	1,080,577	10,454	1.0	4.8
Gallatin	116,806	2,334	2.0	15.6
Flathead	105,851	1,971	1.9	10.3
Yellowstone	162,990	1,641	1.0	4.0
Missoula	121,630	1,564	1.3	6.4
Ravalli	45,002	853	1.9	9.2
Lewis & Clark	70,229	651	0.9	5.9

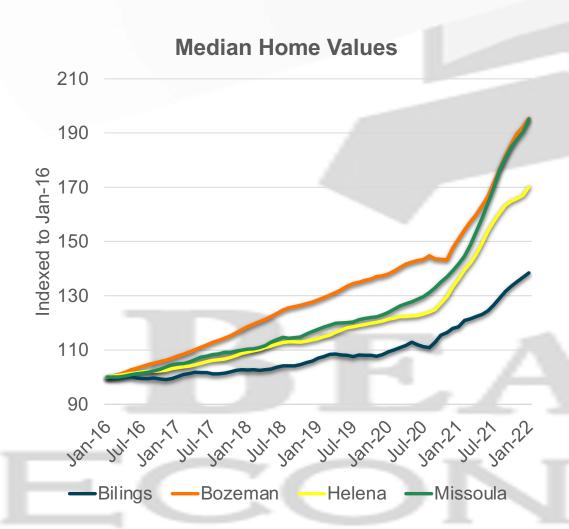
Population by Age, Changes 10-19

	United States	Montana	Bozeman
15 to 44 years	39.7%	37.8%	49.6%
	-1.0%	0.5%	0.3%
18 years and over	77.8%	78.8%	80.8%
	1.8%	1.3%	1.6%
60 years and over	22.9%	26.8%	19.3%
	4.3%	5.4%	4.7%

Source: US Census Bureau Beacon Economics

Residential Home Prices



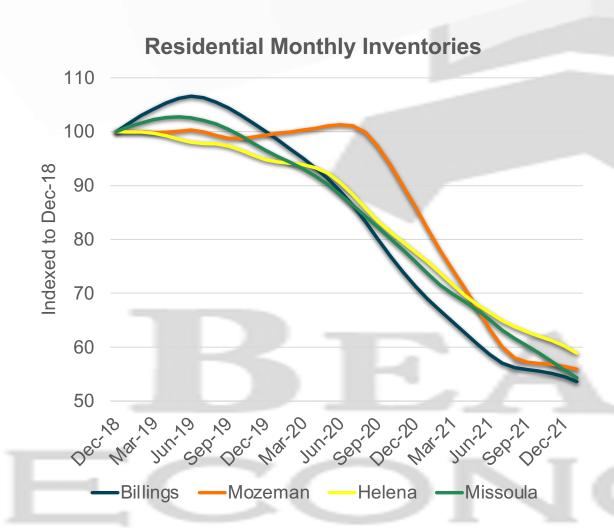


	Median Home Values				
City	Jan-22 2-Yr Chg		% Chg		
Missoula	549,782	200,779	57.5		
Bozeman	682,589	200,475	41.6		
Helena	407,176	116,760	40.2		
Billings	334,237	70,226	26.6		

Source: Zillow Beacon Economics

Housing Market



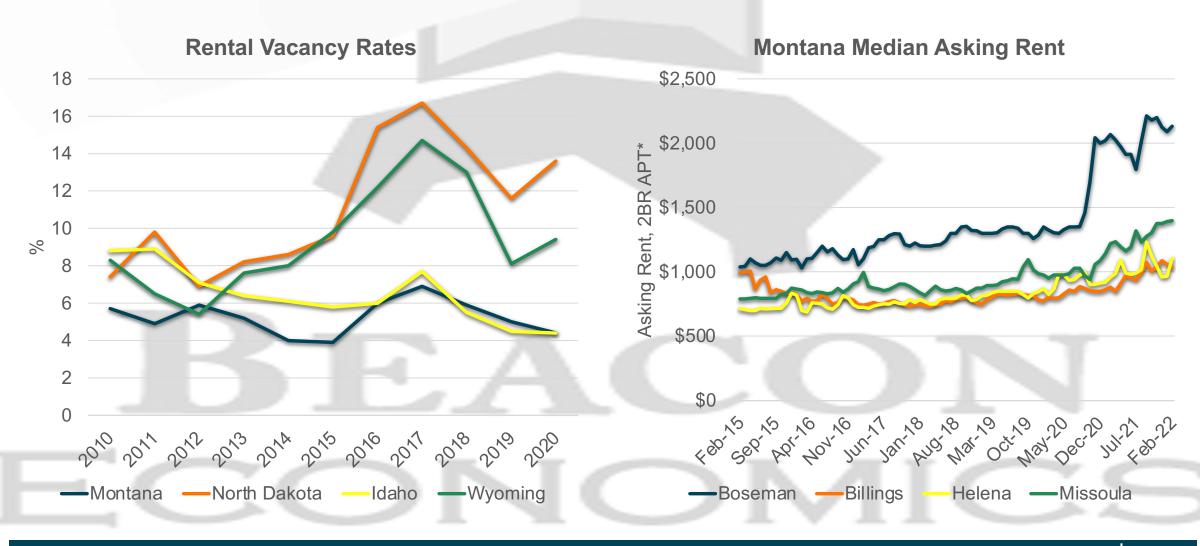


	Home Inventories				
City	Jan-22	2-Yr Chg	2-Yr % Chg		
Helena	154	-144	-48.3		
Billings	370	-379	-50.6		
Missoula	162	-224	-58.0		
Bozeman	287	-423	-59.6		

Source: Ziillow Beacon Economics

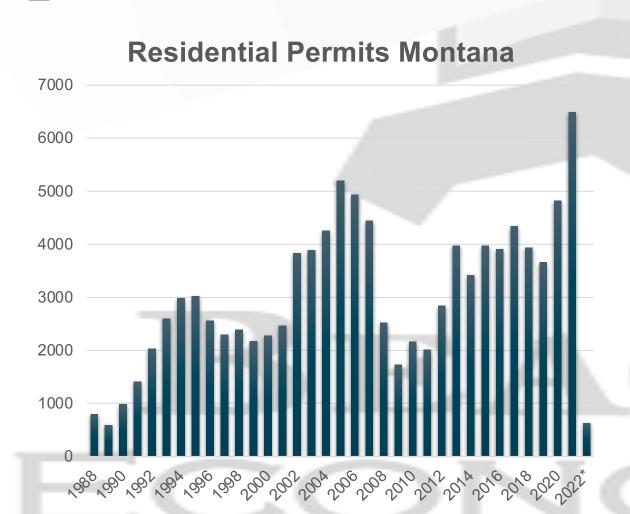
Apartments





Residential Permits





Residential Permits– Comparison					
State	2021	Abs Chg	% Chg		
Montana	6,491	2,829	77.2		
North Dakota	4,299	1,858	76.1		
Wyoming	2,518	685	37.4		
Idaho	19,341	3,443	21.7		

*YTD

Source: FRED Beacon Economics

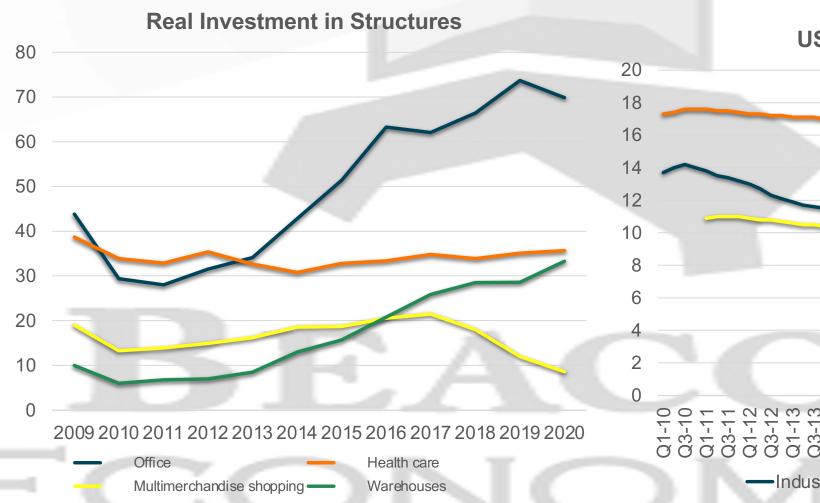
Housing Dynamics

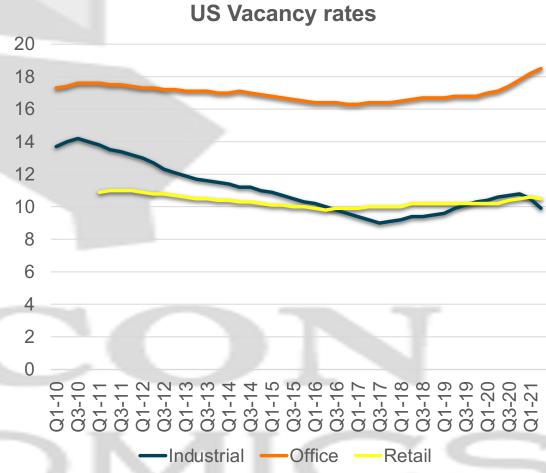


	United States		Montana		Bozeman, MT	Micro Area
HOUSING OCCUPANCY						
Total housing units	139,686,209	5.6%	519,938	6.3%	52,558	23.4%
Owner-occupied	64.1%		68.9%		60.2%	
House Price						
\$500,000 to \$999,999	13.1%	5.2%	10.6%	5.2%	27.8%	16.0%
\$1,000,000 or more	3.9%	1.9%	2.1%	-0.1%	6.3%	-2.1%
Housing units with a						
mortgage	48,403,285		166,220		18,267	
Share > 30% of HH Income	26.6%	-10.2%	29.0%	-8.2%	32.0%	-9.1%
Occupied units paying rent	41,048,717		124,994		18,171	
Share > 30% of HH Income	48.5%	-4.9%	44.8%	-1.8%	47.5%	2.0%
Vacant	16,883,357	-2.5%	82,287	-3.1%	5,568	3.0%
Vacant housing units	12.1%	-1.0%	15.8%	-1.6%	10.6%	-2.1%
For seasonal, recreational,						
or occasional use	5,387,274	1.0%	42,314	4.6%		
Other vacant	6,151,626	10.9%	19,144	-17.6%		

Commercial Markets







Commercial Rents and Vacancies



Office	Cost	of Rent	Vacancy Rate		
Office	Q4-21 (\$/SF)	1-Yr % Growth	Q4-21 (%)	1-Yr Abs. Change	
Billings	\$18.7	1.1%	4.4%	0.4%	
Great Falls	\$16.0	1.0%	11.5%	1.1%	
Missoula	\$22.9	1.3%	4.8%	-0.5%	

Industrial				
Billings	\$7.3	5.3%	1.4%	-0.3%
Great Falls	\$7.8	5.7%	2.7%	-3.1%
Missoula	\$8.6	5.2%	0.5%	-4.3%

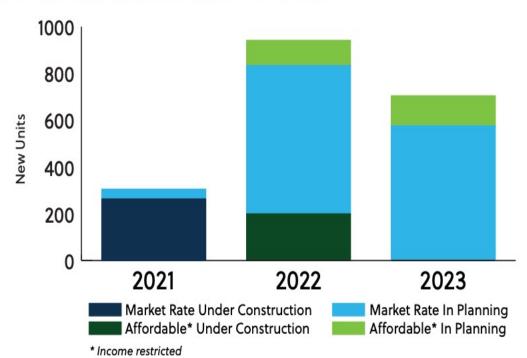
Retail				
Billings	\$13.0	-0.5%	0.9%	-1.4%
Great Falls	\$11.8	1.0%	7.5%	2.8%
Missoula	\$14.6	1.9%	2.4%	2.2%

Commercial Permits



• Missoula MF:

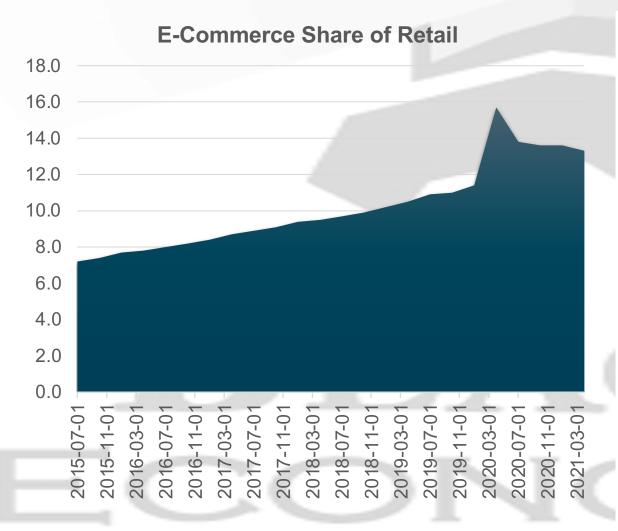




	Q4-2021 Multifamily Commercial				
Region	Inventory	1-YR Net Deliv.	Units Under Const.	Under Const. as % of Invent.	
U.S.	17.1Mil	370k	681k	4.0%	
Billings	4,911	-	-	-	
Great Falls	1,678	-	-	-	
Missoula	3,181	-	32	1.0%	

Retail/Industrial: The Mix

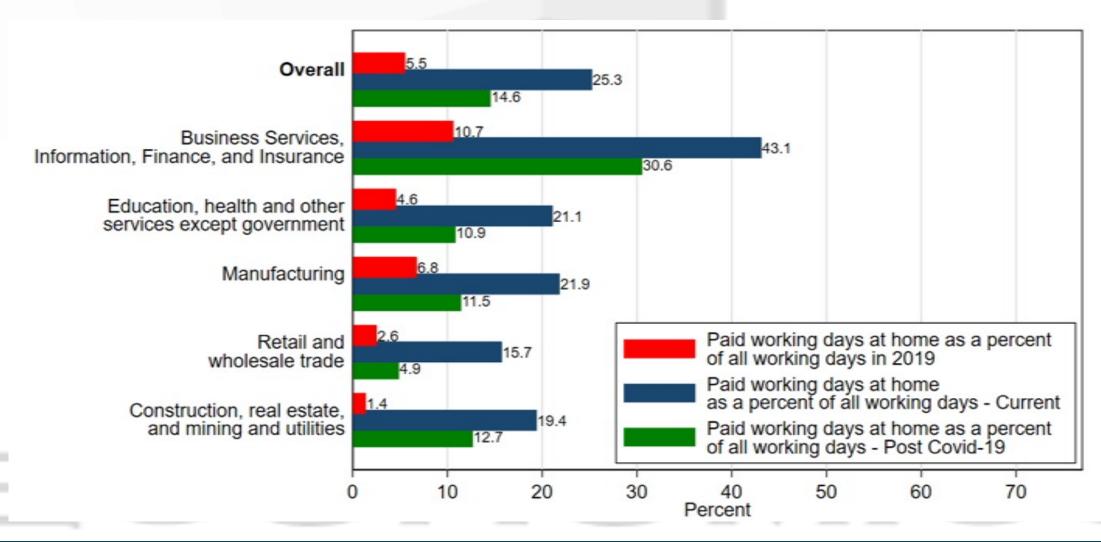






WFH Before, During, and After COVID





The Future of Downtowns

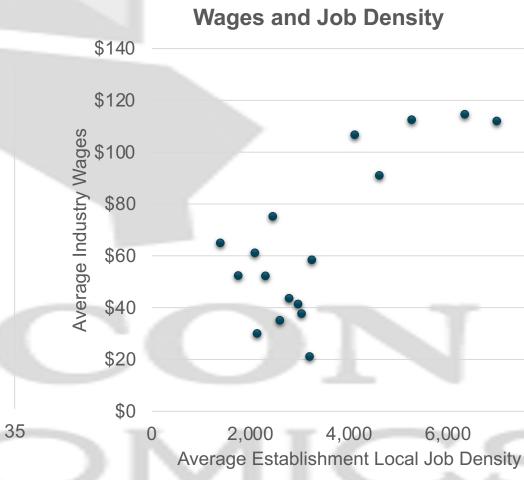


8.000



4 Days Per Week

5 Days Per Week



% of Respondents Amongst Respondents able to WFH

25

30

The Long Run Still Matters



- The Economy is back..
 - The "V" was the only logical outcome
 - Recovery hampered not by lack of demand but by lack of supply
 - Economy has plenty of pent up demand to drive it forward for the near future
- Labor market slow recovery is a function of labor supply
 - Good for workers at all skill levels, reduces inequality issues, tough for businesses
 - Not Jobs Jobs, but Workers Workers
 Workers, household rather that payroll
 - Immigration policy, programs to encourage senior and female employment
 - Montana: a new path forward focusing on place rather than commodity

The Outlook

- US economy will remain heated for the next year:
 a new roaring 20's in the works?
- Unemployment to 3.4% by year end, labor market tightness sets off an investment boom
- Expect a sugar crash to come, combination of tight federal budget and inflation.

Scenarios

- 1: Dramatic Fed action turns the tide before things get out of control
- 2: Consumer Spending drives the economy until a moderately painful crash
- 3: Investment / debt fueled boom drives the economy even farther with a more painful crash

What can Beacon do for you?



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Continue the conversation.

Contact **Dr. Chris Thornberg** directly at **chris@beaconecon.com** or **310.571.3399**

Let's discuss your goals and needs.

Beacon has **6 Practice Areas** covering a range of services and products.

Our 6 Practice Areas



Housing, Land Use, & Real Estate Advisory



Sustainable Growth and Development



Economic & Revenue Forecasting



Economic, Fiscal and Social Impact Analysis



Regional and Sub-Regional Analysis



Litigation and Testimony

Portfolio Spotlight





Regional and Sub-Regional Analysis

Beacon conducts analysis at an international, national, state, county, and city level -- and even down to the zip code, pending data availability. We analyze data on **Employment, Industry, Real Estate, and Consumption**.

Past Clients:

- City and County of Los Angeles
- City and County of Riverside
- East Bay Economic Dev. Agency



Impact (Economic, Fiscal, Social) & EB5 Analysis

Beacon has evaluated the impact of entities like universities, music festivals, infrastructure projects, and real estate development projects.

Beacon has also conducted impact analyses that combine more than one of the above like that of L.A's Olympic bid.

Past Clients:

- University of Southern California
- Metropolitan Water District
- LA 2024 Olympic Bid Committee



Sustainable Growth & Development

Beacon conducts industry and policy analysis on topics like green innovation, tech and workforce development, and industry sector strategies. Beacon has strong in-house expertise around housing policy and economic development support.

Past Clients:

- California Apartment Association
- Long Beach Downtown Dev. Corp.
- Santa Cruz Workforce Dev. Board



Housing, Land Use, & Real Estate Advisory



Economic & revenue forecasting



Litigation and testimony



Thank You

Chris@BeaconEcon.com | beaconecon.com