MEMORANDUM

TO: Economic Affairs Interim Committee
Keith Kelly, Commissioner, Montana Dept. of Labor and Industry
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DATE: October 5, 2011
SUBJECT: Cyclical versus Structural Unemployment

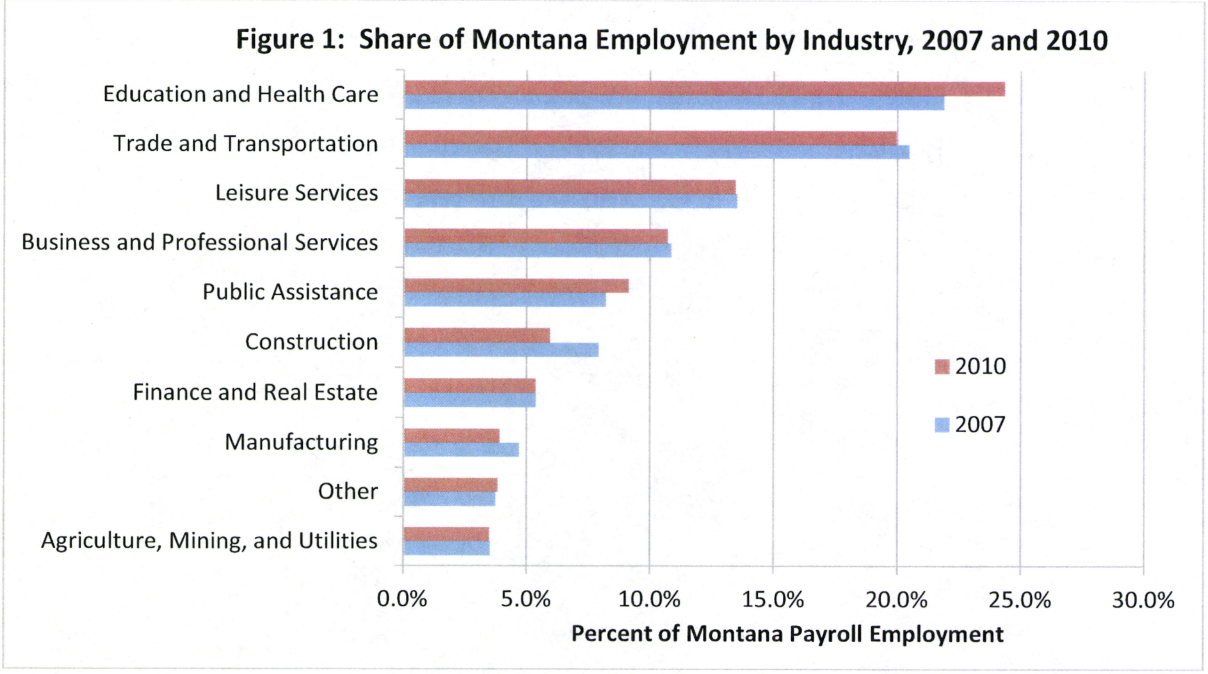
As the national and Montana economies recover from the 2007 recession, economists have raised concerns about future structural unemployment. The difference between structural and cyclical unemployment is more than just semantics; it is important to economic policy debates because each type of unemployment suggests different policy responses. Put simply, cyclical unemployment is temporary job losses where the same types of jobs return when the economy returns. In contrast, structural unemployment results when jobs are available, but the unemployed workers available to fill the positions do not have the skills or education necessary to fill the positions.

Evidence of both structural and cyclical employment exists in Montana's economy, but it is clear that many workers will need to be retrained to new occupations to avoid a long period of unemployment. Overall, Montana's workforce will need to increase both its education and skill levels. This memorandum describes both structural and cyclical unemployment, presents evidence to suggest the presence of both types of unemployment in Montana's economy, and provides a limited discussion on the policy options available to address both types of unemployment.

Background on Cyclical versus Structural Unemployment and Policy Outcomes:
Economies are cyclical, meaning that the economy naturally goes through periods of economic booms followed by recessions. Recovery out of a recession is often led by industries that develop new innovative products or processes, but all industries are expected to recover employment up to roughly the same relative levels as prior to the recession. For example, if the retail industry comprised about 15% of the employment prior to the recession, we expect the retail industry to still comprise 15% of employment exiting the recession. Because the industry mix is the same, we expect the same mix of jobs both entering and exiting the recessions.

Figure 1 illustrates the percent of Montana payroll employment within each industry prior to the recession in 2007 to the most recent year of data, 2010. In general, the health care and education industry (which is primarily health care) added jobs throughout the recession, increasing its share of Montana employment. In contrast, the industries of construction, manufacturing, and trade and transportation were among the worst-hit industries during the recession, with construction losing the largest number of jobs. These industries lost employment share during the recession. Even with the large job losses in construction and the gains in health care, the structure of the economy in terms of industry shares had not changed substantially. The order of the industries has not changed from 2007 to 2010. The largest share change occurred in health care, which increased from about 22% of employment up to 24.4% of employment. Figure 1 seems to

indicate that Montana's economy has not undergone significant structural changes, although the behavior of the industries as Montana exits the recession may alter that conclusion.



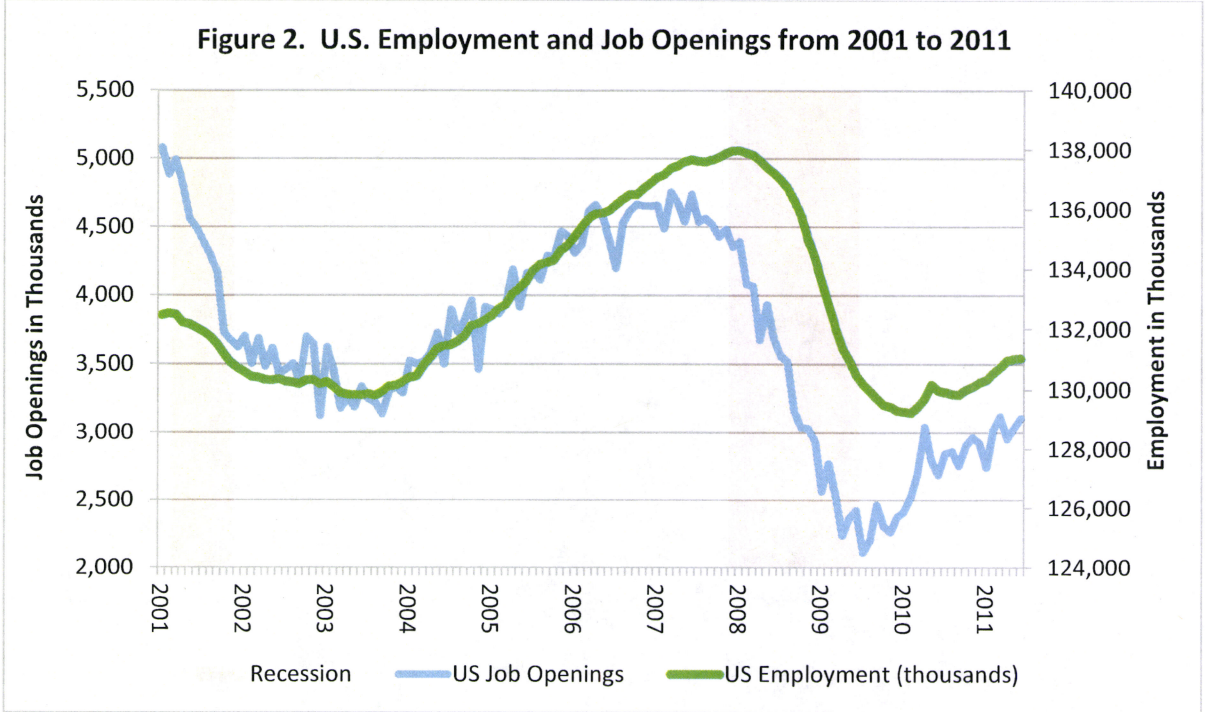
If the recession is merely cyclical, the policy response debate centers on the appropriate level of counter-cyclical monetary and fiscal policy. The general aim of federal monetary and fiscal policy is to moderate the cyclical cycle to achieve more stable economic growth and to reduce social upheaval during recessionary periods. With balanced budget requirements and relatively small influence over the national economy, state-level policy makers have few options to address cyclical changes in the economy. While state policy makers may choose to increase spending during recessionary periods, this spending is often directed to local governments and social support systems to address some the social difficulties related to recessionary periods, with economic stabilization as a secondary benefit.

However, some economists have raised concerns that there have been structural changes in the economy during the 2007 recession, meaning that industries have not recovered in the same ratios as before. Changes in the structure of the economy mean that a different mix of workers will be needed in the future. Structural changes are not as large of a concern if the new mix of jobs requires similar education and skill levels as the old mix of jobs. However, structural unemployment arises when significant amounts of education and training are needed to prepare workers to fill new jobs. Structural unemployment occurs when the job openings are found among occupations that require a high degree of education, such as doctors or engineers, yet the majority of the unemployed previously worked in occupations with lower education requirements, such as food preparation workers or retail clerks. Significant worker training is needed for the unemployed food preparation worker to fill an open engineering position.

Structural unemployment is also a concern when highly educated workers are required to fill low-skill jobs because it represents a loss of human capital that could be better employed

elsewhere. For example, sizable resources are spent in obtaining the education and training to become an engineer. If the engineer is not gainfully employed in utilizing that education and training, it represents a loss of those resources and a loss of the human capital developed in the education program. Further, the engineer is also likely to leave a low-skill job as soon as better opportunities arise, which causes the business to incur additional costs of finding and hiring a new employee.

Figure 2 illustrates U.S. job openings and employment, which are two of the data sources commonly used as evidence of structural unemployment. Similar data on job openings is not available at the state level. Figure 2 illustrates the number of quarterly job openings, shown on the right axis, compared to total employment shown on the left axis exiting both the 2001 recession and the 2007 recession, with the recessions shaded. Exiting the 2001 recession, employment increased at the same rate as job openings. During the 2007 recession, the correlation between the data diminished. Exiting the 2007 recession, job openings appear to be increasing faster than employment, leading some to argue that many job openings are not being filled with employment because of structural unemployment. In other words, job openings exist, but workers are not filling those positions because they do not have the education or skills necessary for the job, or that the job is far below their education or skill level.



Although the data in Figure 2 suggest structural unemployment exists, three other factors are important to note. First, job openings are still far below pre-recession levels and even below the 2001 recession levels. The majority of the unemployed are unemployed due to lack of jobs, not because of structural unemployment. Second, temporary changes to the unemployment insurance program have allowed workers to receive benefits longer than the standard 28 weeks allowed in Montana. Some economists have argued that the extended benefits have reduced the

incentive for workers to accept unfavorable jobs. This issue is discussed further on page 6, but economists at the San Francisco Federal Reserve have estimated that extended benefits did increase the unemployment rate, but only by about 0.4%.[i] In comparison, the U.S. unemployment rate has increased by over 5% since the start of the 2007 recession. Finally, Figure 2 does not provide any information about the geographical dispersion of jobs compared to available workers. The job openings could be in New York while the unemployed workers are in California. In Montana, the unemployment rate for the Northwestern portion of the state was 9.9% in 2010, the highest region in the state, while job openings in Eastern Montana go unfilled. In other words, structural unemployment is not the only explanation for the reduced correlation between employment and job openings.

The policy solution for structural unemployment is worker training, and the debate revolves around the right type of training for future jobs, proper incentives for training, and the role of the government versus private workers and businesses in funding worker training. Businesses usually take a larger role in short-term worker training specific to their industry or business, while workers bear a larger portion of the costs when obtaining higher education.

Have there been structural changes in Montana's economy?

Data suggest that both structural and cyclical unemployment exists within Montana's economy, but ultimately, the job losses in certain occupations are so great that workers would be better off training for a new occupation than waiting to be rehired in their old occupation. Figure 3 illustrates the ten occupations with the largest job losses from 2007 to 2010 according to internal estimates. Occupations common in the construction and retail industries frequent the list; these two industries had the greatest number of job losses during the recession. In the future, we are expecting all of these occupations to grow. But the growth exiting the recession will be slow, and it will take several years to re-employ all of the dislocated workers. Workers in these occupations will find better employment opportunities in other occupations.

Figure 3. Montana Occupations with the Worst Recession Job Losses and Expected Recovery Year

		2007-2010 Job Loss	Annual Job Growth, 2012-2020	Annual Replacement Openings	Year Employment Recovered
1	Carpenters	-2,260	140	78	post 2020
2	Retail Salespersons	-1,174	116	438	2014
3	Construction Laborers	-1,171	94	25	post 2020
4	Bookkeeping and Auditing Clerks	-791	149	147	2015
5	Cashiers	-776	121	604	2013
6	Secretaries	-702	15	134	2017
7	Truck Drivers, Heavy	-644	66	124	2015
8	Janitors and Cleaners, Except Maids	-563	30	153	2015
9	Electricians	-561	60	50	2017
10	General and Operations Managers	-547	30	148	2015

Source: Montana Employment Projections, 2010-2020, Montana Department of Labor and Industry

For example, bookkeeping and auditing clerks are expected to experience fairly rapid employment growth exiting the recession, at about 150 jobs per year. Another 150 bookkeeping openings per year are expected to replace departing workers, who may be retiring or moving onto another job. At a rate of 300 job openings per year, it will still take over three years to re-employ all of the displaced bookkeepers if these workers were not retrained for other occupations.

Thankfully, there are plenty of opportunities in other occupations for displaced workers, and the occupations in Figure 3 are the worst occupations and others have more positive prospects. As mentioned above, the health care industry continued to grow throughout the recession and does not have a large over-supply of unemployed workers. Any job openings in the health care industry will need to be replaced by new workers. Registered nurses, home health care aides, and medical assistants are all occupations that did not have recession job losses and that are expected to have job growth in the future. Child care workers and network systems analysts are also occupations that are expected to have unfilled jobs in the future. However, many of these occupations require a two-year degree or more.

Overall, employment projections indicate that jobs requiring a post-secondary degree will need new workers in the future. In contrast, jobs requiring less than a post-secondary degree will be growing, but job losses have resulted in an oversupply of labor for these jobs. Figure 4 illustrates the projected job growth and estimated recession losses by education and training category. Occupations requiring only on-the-job training lost over 23,000 jobs during the recession. These types of jobs are expected to grow in the future, but only at a rate of about 3,000 jobs annually. At this rate of growth, jobs requiring only on-the-job training are not expected to regain their pre-recession peak until after 2016. In contrast, jobs requiring a post-secondary degree have grown during the recession and are expected to continue to grow in the future. Workers may be interested in improving job prospects by increasing their education and training levels.

Figure 4. Montana Projected Job Growth and Recession Losses by Education and Training Category

	Percent of Jobs	Recession Change	Annual Job Growth 2010-2012	Annual Job Growth 2010-2020	Year Workers Reemployed
Short to Moderate On-the-Job Training	55%	(15,959)	2,514	2,537	2016
Long-Term On-the-Job Training or Work Experience	16%	(7,415)	445	802	2020
Associate or Vocational Degree	11%	286	283	477	no losses
Bachelor's Degree or Higher	19%	(78)	608	841	2011

Source: Montana Employment Projections, 2010 to 2020, Montana Department of Labor and Industry

Would changing Unemployment Insurance (UI) laws improve structural unemployment?
The federal debate about UI reform and benefit extensions have raised issues about whether UI increases structural unemployment by distorting the incentives for workers to accept jobs in a new field or to obtain training for a new occupation. Recent changes to the UI system have already been implemented to reduce this disincentive, such as allowing part-time workers to receive prorated benefits and expanding the number of accepted training programs in which workers can enroll and still receive benefits. Suggested further changes are plentiful, including expanding or cutting benefits, expanding or reducing the duration of benefits, subsidizing the wages of newly employed workers, requiring community service work, or requiring worker training. Many of the suggested solutions are controversial.

As mentioned in the description to Figure 2, some economists have argued that the job openings have remained unfilled because extended benefits allowed some workers to turn down unfavorable employment positions. Researchers at the Federal Reserve found this effect to be fairly small – only about 0.4% of the 5% increase in the unemployment rate since the start of the 2007 recession. The effect on the unemployment rate is smaller when there are more unemployed workers – one individual may reject an unfavorable job offer, but there are a number of other unemployed workers willing to accept the position during periods of high unemployment. In fact, the moral hazard of an individual not accepting a job because of extended benefits also results in benefits for other workers because of decreased competition, and possibly results in economic benefits because the employer hires a worker who is interested in the job and the economy achieves a better job match.

The disincentive effect is also likely small in Montana because UI benefits replace only 48% of previous income at best. Given current benefit laws, a worker that previously earned over $43,100 would gain more in unemployment insurance benefits than what they would earn in a full-time position making less than $20,688 annually. Most positions at this pay range are part-time. A 2009 law change allowed part-time workers to continue to receive prorated UI benefits, which reduces the number of workers facing a work/UI disincentive even further. Dislocated workers can now accept part-time jobs as they continue to search for more appropriate work.

A more complex argument arises when considering whether UI reduces incentives for workers to find training for a new occupation. The UI program is primarily designed for short periods of unemployment as the worker transitions from an old job into a new job in the same field or occupation. In other words, the UI program is designed for short-term transitory or cyclical unemployment that assumes there will be job openings in the worker's old occupation. The 28-week benefit period is not long enough for the worker to complete training for a new occupation. Further, workers tend to lose job skills during periods of unemployment. Some policy makers have suggested that worker training programs be mandated for those receiving unemployment benefits to reduce the loss of skills and address structural unemployment concerns. However, others argue against such changes because they move UI away from the insurance concept, where workers (through businesses) pay premiums to guard against the risk of unemployment, and change UI into an entitlement program, where individuals are eligible for benefits regardless of the amount paid into the system as long as they meet certain criteria.

Currently, workers in Montana can qualify for a maximum of 62 weeks of unemployment, but the only workers that are likely to qualify for this length of time are workers who formerly were employed full-time for over five quarters. Workers without a high salary or without a stable work history are unlikely to qualify.

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[i]Valletta, Rob and Kuang, Katherine. "Extended Unemployment and UI Benefits," FRBSF EconomicLetter, Federal Reserve Bank of San Francisco. April 19, 2010. www.frbsf.org/publications/economics/letter/2010/el2010-122.html.