

# Flagstaff MSA Minimum Wage Study Quantitative Results Synopsis

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## Difference-in-Difference Economic Model

This study uses a Difference-in-Differences (DinD) economic model to analyze changes in economic and workforce outcomes – such as wages, employment, establishment counts, and cost of living - due to the minimum wage increases. To implement the DinD approach, we constructed a synthetic control group for the Flagstaff Metropolitan Statistical Area (MSA). This “synthetic Flagstaff MSA” was created using algorithms that calculate a weighted average of a compilation of other MSAs in the US with less than a \$1 increase in minimum wage from 2017 to 2023. By comparing changes in outcomes between the Flagstaff MSA and the synthetic Flagstaff MSA before and after the minimum wage policy, the DinD model identifies the policy’s impacts by subtracting the changes observed in the synthetic control group from the changes observed in the Flagstaff MSA. Results are interpreted by examining the positive (green shades) or negative (orange shades) changes in the Flagstaff MSA compared to its synthetic counterpart. The strongest, most reliable results have three stars.

Key:	Positive	Negative
p<0.1, less than 10% chance of no impact	*	*
p<0.05, less than 5% chance of no impact	**	**
p<0.01, less than 1% chance of no impact	***	***

## Statistically Significant Results of DinD Comparisons for INDUSTRIES

OUTCOME VARIABLES					
INDUSTRIES	Establishment count	Employment	Weekly wage	Annual pay	Total wage (million dollars)
All Industries		-4,118*	-\$18.56*	-\$989.41*	
Construction	17.76**	-1,602.07***			-\$100.56***
Manufacturing	6.67***	-1,800.84***			-\$135.90***
Trade, Transportation, and Utilities	-25.42***		\$15.32***	\$744.22***	\$16.82**
Professional and Business Services	100.38***		-\$123.08***	-\$6,606.96***	
Leisure and Hospitality	20.25**	531.63**			\$37.95***

The minimum wage policy has impacted INDUSTRIES in the Flagstaff MSA in the following ways:

- Across **all industries**, there are 4,118 fewer jobs created annually (\*) in the Flagstaff MSA than there would have been without the minimum wage policy, suggesting that while total employment has increased, it did so at a slower rate. Weekly wages are \$18.56 less (\*) on average and annual pay is \$989.41 less (\*) on average than it would have been without the policy, indicating that wage growth has been tempered.
- The **construction industry** shows that there are about 18 more establishments (\*\*\*) than there would have been without the minimum wage policy, however, the industry is employing on average 1,602 fewer people annually (\*\*\*) than they would have, contributing to a reduction of about \$100,000,000 in total wages annually (\*\*\*) among industry employees than there would have been without the minimum wage policy. This indicates fewer jobs and possibly shorter hours or lower compensation within the industry.
- The **manufacturing industry** shows similar trends to the construction industry. There are about 7 more establishments (\*\*\*) , employing 1,801 fewer people (\*\*\*) , showing a reduction of about \$135,900,000 in total wages (\*\*\*) per year than there would have been without the minimum wage policy, reflecting a substantial negative impact on employment and overall earnings.
- The **trade, transportation, and utilities industry** show positive effects for workers, but negative effects for the industry because there are about 25 fewer establishments (\*\*\*) than there would have been without the policy. Workers in this industry make \$15.32 more weekly (\*\*\*) , \$744 more annually (\*\*\*) , and \$16,820,000 more overall as an industry than they would have, suggesting fewer establishments but higher pay for employees in the remaining ones.
- The **professional and business services industry** increased by 100 more establishments (\*\*\*) than it would have, yet workers are making \$123 less per week (\*\*\*) and \$6,607 less per year (\*\*\*) than they would have, showing that this industry's wages have trended downward to account for the higher minimum wage.
- The **leisure and hospitality industry** is the only one showing all positive values among statistically significant results. There are 20 more establishments than there would have been, 532 more employees, and \$37,950,000 more in total wages annually than there would have been without the minimum wage. More research in this industry is needed because of its size in the Flagstaff MSA economy and workforce, and because the quantitative results do not match with the qualitative results of the focus groups and interviews. The impact of the minimum wage in this

industry is significant, with a 234% increase in wages in eight years. It could be that there is more to the story, such as an expansion of corporate franchises instead of locally-owned establishments.

### Statistically Significant Results of DiND Comparisons for OCCUPATIONS

OCCUPATIONS	OUTCOME VARIABLES		
	Employment	Median hourly wage	Median annual wage
All Occupations		\$0.34**	\$1,252.70**
Retail Salespersons		\$1.60***	\$3,323.62***
Hotel Clerks	126.31**	\$1.01***	\$2,113.66***
Healthcare	-168.69*	-2.27***	-\$4,741.87***
Transportation	-103.47*		
Forestry		\$1.84*	\$3,925.92*
Management		-\$2.16**	-\$4,635.89**
Scientific Jobs	-239.96***		

The minimum wage policy has provided wage benefits to lower-paid occupations but has also resulted in employment reductions in several higher-skilled or higher-paying sectors. These outcomes reflect trade-offs between improving pay for some workers and potential constraints on job growth and wage reductions in others.

- Across **all occupations**, workers earn \$0.34 more per hour (\*\*) and \$1,252.70 more annually (\*\*) than they would have, indicating a modest overall wage increase in the Flagstaff MSA attributable to the policy.
- **Retail salespersons** earn \$1.60 more per hour (\*\*\*) and their annual earnings are \$3,323.62 higher (\*\*\*) than they would have been. This suggests that the policy has substantially increased wages for retail workers, a group often close to the minimum wage threshold.
- The **hotel clerks** sector added 126 more jobs (\*\*) than it would have without the policy, reflecting job growth in this occupation. Hotel clerks earn \$1.01 more per hour (\*\*\*) and their annual earnings are \$2,113.66 higher (\*\*\*) than they would have been. These results indicate that hotel clerks have benefited significantly from the policy, both in terms of higher wages and increased employment opportunities.
- **Healthcare occupations** show the most negative results of all the occupations. There are 169 fewer jobs (\*) than there would have been without the policy. Workers in this sector earn \$2.27 less per hour (\*\*\*) and their annual earnings are \$4,741.87 lower (\*\*\*) than they would have been. This suggests that healthcare occupations

have been negatively impacted by the policy, potentially due to higher wage costs leading to reduced hiring or hours, or salary compression for middle managers.

- **Transportation occupations** show 103 fewer jobs (\*) than there would have been without the policy. No significant effects on wages were observed, suggesting that the policy may have constrained employment without directly affecting compensation levels.
- Workers in **forestry occupations** earn \$1.84 more per hour (\*) and \$3,925.92 more per year (\*) than they would have. These results show modest wage growth for forestry occupations, potentially reflecting the positive impact of the minimum wage policy in this sector.
- **Managers** earn \$2.16 less per hour (\*\*) and \$4,635.89 less annually (\*\*) than they would have without the policy, suggesting that higher minimum wages have suppressed wage growth for management positions.
- There are 240 fewer **scientific jobs** (\*\*\*) than there would have been without the policy. No significant wage effects were observed, indicating that the policy may have discouraged hiring in this occupation without influencing compensation.

### Statistically Significant Results of DinD for COST OF LIVING

OUTCOME VARIABLES		
COST OF LIVING INDEX	Composite Index	Misc. Good and Services
Cost of Living	2.34**	6.65**

While the minimum wage policy has enhanced wages for many workers, it has also raised the cost of living in two areas.

- The **Composite Index** reflects the overall cost of living, which includes multiple components like housing, transportation, food, healthcare, and other essentials. The result indicates that the cost of living in the Flagstaff MSA is 2.34% higher (\*\*) than it would have been without the minimum wage policy. This suggests that the policy may have contributed to slightly higher overall costs, potentially due to increased wages translating into higher prices for goods and services.
- The **Miscellaneous Goods and Services Index** includes non-essential or discretionary spending items like personal care products, entertainment, and other goods or services. The result shows that the cost of miscellaneous goods and services is 6.65% higher than it would have been without the policy. This suggests a stronger impact of the minimum wage policy on discretionary or variable costs.