

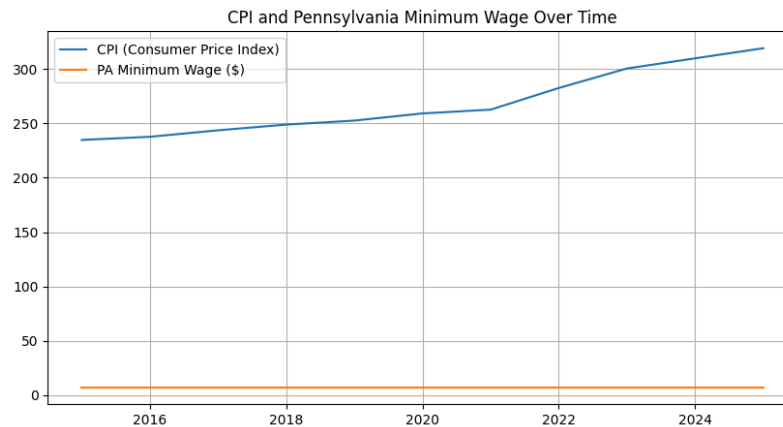
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Introduction

Minimum wage laws set a basic standard for what workers must be paid, but some worry that raising the minimum wage could also raise prices. To explore this relationship, we explore the following question: Does an increase in Pennsylvania's minimum wage lead to higher inflation, measured by the Consumer Price Index (CPI)?

Data Methods

We used data from FRED for both Pennsylvania's state minimum wage and the Consumer Price Index (CPI). After merging the two datasets, we created a multi-line graph to compare trends from 2015 to 2025.



The graph shows that Pennsylvania's minimum wage stayed constant at \$7.25 across all years, with no change over time. However, CPI increased steadily especially after 2021 which reflects rising prices and higher inflation during that period.

Statistical Methods

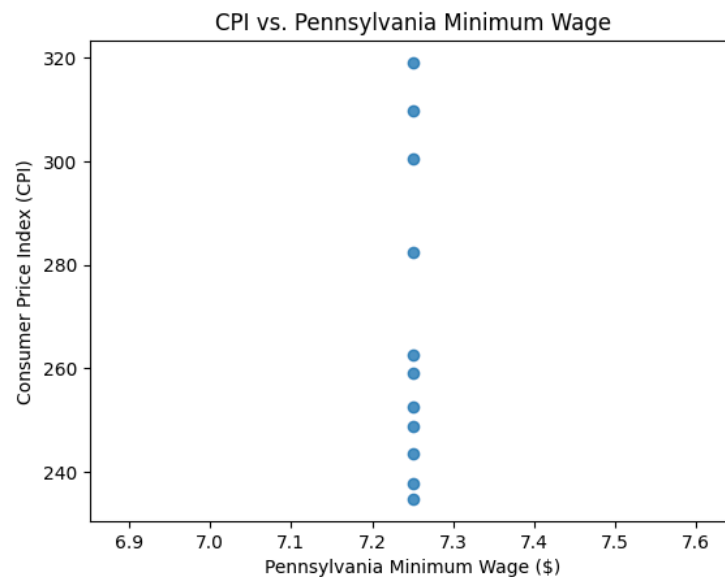
To answer the question, we used a simple linear regression to see whether Pennsylvania's minimum wage is related to inflation.

$$\text{Consumer_price_index} = B_0 + B_1 (\text{Minimum_wage}) + E$$

Our null hypothesis states that the minimum wage has no impact on inflation. However, because the minimum wage stays fixed at \$7.25 for all years, the model is limited and cannot measure the effect of an actual wage increase.

Results

	coef	std err	t	P> t	[0.025	0.975]
Intercept	5.0087	0.168	29.736	0.000	4.633	5.384
PA_Min_Wage	36.3133	1.221	29.736	0.000	33.592	39.034



The regression output reports a statistically significant coefficient ($p < 0.05$), but the result is not meaningful because the predictor variable (minimum wage) does not change over time. We can see that the graph shows every point lines up vertically at \$7.25, while CPI continues to rise over time.

Conclusion

Since the minimum wage stayed constant throughout the years, the results show no measurable relationship between minimum wage and inflation.

Sources

- <https://fred.stlouisfed.org/> (FRED)
- <https://fred.stlouisfed.org/series/STTMINWGPA> (minimum wage)
- <https://fred.stlouisfed.org/series/CPIAUCSL> (consumer price index)